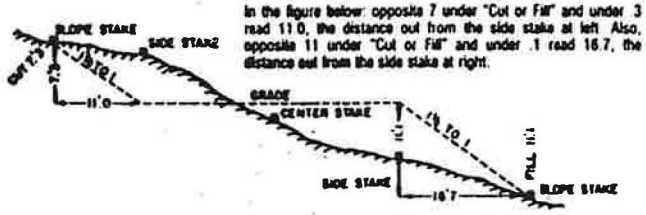
ATTACHMENT A

FIELD LOGBOOKS

DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING

Roadway of any Width. Side Slopes 1½ to 1.

In the figure below: opposite 7 under "Cut or Fill" and under .3 read 11.0, the distance out from the side stake at left. Also, opposite 11 under "Cut or Fill" and under .1 read 16.7, the distance out from the side stake at right.



Cut or Fill	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	Cut or Fill
	Distance out from Side or Shoulder Stake										
0	0.0	0.2	0.3	0.5	0.6	0.8	0.9	1.1	1.2	1.4	0
1	1.5	1.7	1.8	2.0	2.1	2.3	2.4	2.6	2.7	2.9	1
2	3.0	3.2	3.3	3.5	3.6	3.8	3.9	4.1	4.2	4.4	2
3	4.5	4.7	4.8	5.0	5.1	5.3	5.4	5.6	5.7	5.9	3
4	6.0	6.2	6.3	6.5	6.6	6.8	6.9	7.1	7.2	7.4	4
5	7.5	7.7	7.8	8.0	8.1	8.3	8.4	8.6	8.7	8.9	5
6	9.0	9.2	9.3	9.5	9.6	9.8	9.9	10.1	10.2	10.4	6
7	10.5	10.7	10.8	11.0	11.1	11.3	11.4	11.6	11.7	11.9	7
8	12.0	12.2	12.3	12.5	12.6	12.8	12.9	13.1	13.2	13.4	8
9	13.5	13.7	13.8	14.0	14.1	14.3	14.4	14.6	14.7	14.9	9
10	15.0	15.2	15.3	15.5	15.6	15.8	15.9	16.1	16.2	16.4	10
11	16.5	16.7	16.8	17.0	17.1	17.3	17.4	17.6	17.7	17.9	11
12	18.0	18.2	18.3	18.5	18.6	18.8	18.9	19.1	19.2	19.4	12
13	19.5	19.7	19.8	20.0	20.1	20.3	20.4	20.6	20.7	20.9	13
14	21.0	21.2	21.3	21.5	21.6	21.8	21.9	22.1	22.2	22.4	14
15	22.5	22.7	22.8	23.0	23.1	23.3	23.4	23.6	23.7	23.9	15
16	24.0	24.2	24.3	24.5	24.6	24.8	24.9	25.1	25.2	25.4	16
17	25.5	25.7	25.8	26.0	26.1	26.3	26.4	26.6	26.7	26.9	17
18	27.0	27.2	27.3	27.5	27.6	27.8	27.9	28.1	28.2	28.4	18
19	28.5	28.7	28.8	29.0	29.1	29.3	29.4	29.6	29.7	29.9	19
20	30.0	30.2	30.3	30.5	30.6	30.8	30.9	31.1	31.2	31.4	20
21	31.5	31.7	31.8	32.0	32.1	32.3	32.4	32.6	32.7	32.9	21
22	33.0	33.2	33.3	33.5	33.6	33.8	33.9	34.1	34.2	34.4	22
23	34.5	34.7	34.8	35.0	35.1	35.3	35.4	35.6	35.7	35.9	23
24	36.0	36.2	36.3	36.5	36.6	36.8	36.9	37.1	37.2	37.4	24
25	37.5	37.7	37.8	38.0	38.1	38.3	38.4	38.6	38.7	38.9	25
26	39.0	39.2	39.3	39.5	39.6	39.8	39.9	40.1	40.2	40.4	26
27	40.5	40.7	40.8	41.0	41.1	41.3	41.4	41.6	41.7	41.9	27
28	42.0	42.2	42.3	42.5	42.6	42.8	42.9	43.1	43.2	43.4	28
29	43.5	43.7	43.8	44.0	44.1	44.3	44.4	44.6	44.7	44.9	29
30	45.0	45.2	45.3	45.5	45.6	45.8	45.9	46.1	46.2	46.4	30
31	46.5	46.7	46.8	47.0	47.1	47.3	47.4	47.6	47.7	47.9	31
32	48.0	48.2	48.3	48.5	48.6	48.8	48.9	49.1	49.2	49.4	32
33	49.5	49.7	49.8	50.0	50.1	50.3	50.4	50.6	50.7	50.9	33
34	51.0	51.2	51.3	51.5	51.6	51.8	51.9	52.1	52.2	52.4	34
35	52.5	52.7	52.8	53.0	53.1	53.3	53.4	53.6	53.7	53.9	35
36	54.0	54.2	54.3	54.5	54.6	54.8	54.9	55.1	55.2	55.4	36
37	55.5	55.7	55.8	56.0	56.1	56.3	56.4	56.6	56.7	56.9	37
38	57.0	57.2	57.3	57.5	57.6	57.8	57.9	58.1	58.2	58.4	38
39	58.5	58.7	58.8	59.0	59.1	59.3	59.4	59.6	59.7	59.9	39
40	60.0	60.2	60.3	60.5	60.6	60.8	60.9	61.1	61.2	61.4	40

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CTA JD MDD053945432

VST

Bethlehem Steel

Sparrows Pt., MD

6/17/91 - 6/21/91

& 6/24/91

6/17 @ 11:20 AM

Cloudy (hazy)

hot

The paper in this book is made of 50% high grade rag stock with a WATER RESISTING surface sizing.

6/17 11:24 AM.

Dominique Luckenhoff opened up meeting. We're here to update inspection report of '87. Joe Mendelson has a concern that the communication btwn plant, state & EPA is poor. There seems to be lots of miscommunications. Meeting re. FED presentation was for technical info on Project Mobehill only. Dominique - we need

[illegible]

6/17 11:28 am 2.

to fill in EPAs knowledge of what goes on & has been going on at Beth Steel. (~~[illegible]~~)

Ed Wilson — some interpretations from the Jan meeting were complex, but they may not be right.

Joe Mend. — we need to discuss what State / EPA want us to do

Dorothy LaRusso — wants copy of signature list.

Joe Mend. — gets copies.

Dominique wants Dorothy to

[illegible]

6/17 11:30am 3.

- take over meeting now.

Attendees at meeting:
Ed Wilson
Joe Mendelson
Joe Dolan
Bob Abate
Charles McClullan
Susan Frenz
Moody O'Neill
Dorothy LaRusso
Paula Coggin
Dominique Luckenhoff

Joe Mendelson - explains plant map ('85)
2300 acres
plant flow
- coke ovens (nos. 11+12 Battery) + Battery started '78
bottom left corner.
- ore fields
sinter plant
blast furnaces & BF "L"
(BF) not operating now
Bottom right

[illegible]

6/7 11:40 c/

- Center left
  Open hearth
  BOF
  Steelmaking ops
    takes pig iron from blast furnace
    + puts thru continuous
    caster to make slabs
  billets fed to Rod Mill
    near Pipe Mill
  Primary
- Tin mills
  Center right
  Converts slabs into coils
  Cold mills
  Coating ops - galvanized
    tin plate
    chrome
- Humphreys WWTP
  " Landfill
  Grays Landfill
  - Tin Mill Cable
  Sludge Treatment
- Treated effluent goes to
  Humphrey's Creek

[illegible]

6/17 11:46 5

Salt water inlet
— bottom rt. side

Treated effluent — use
85-100 million gal/day

"L" Furnace — makes 8,000 tons/day

Sinter — 12,000 tons/day

Slag 200,000,000 tons of steel/yr

1 — lt
21 — left
13 —
12 —
14 —
17 — lt
16 — lt
18 — lt

No major changes to maps.

Only minor changes.

[illegible]

6/7 11:53 6.

all sludges go to Humphreys Creek for dewatering then to Grays after recycling for metals.

Monitoring wells - located in top left corner of map

1985 - SWMU list (#170)
BCM Steel Reps pay 30 of them are not SWMUs. They are process.

ATKs SWMU list
~~1-6 levelled~~
~~7-8 levelled~~ disregard
~~9-10 levelled~~
1. Batteries 1-10 gone
2. 11+12 still there
3. still there
4.
5.
6.
7. inactive + still there
8

PMG

4/17 12:04 7.

9.
20. in process of demolishing
21. Product Stg. Tanks/Demolishing
22. need to clarify
23. "
24.
25.
38. listed before
39. need clarification
43. has been removed
45. Gone
46.–48. Gone
58. Clarification
59. No. 4 is down / runnable
No. 3 being tarred down
61. Clarification
probably w/ "L" Blast Furnace
69. have not operated in 10-15 yrs
70. "
71. "
72. None in steel mat. operated
possibly primary mills area
73. yes
74. Tin mill Coil Pack then SHA yes
75 & 76. need clarification

PLT

4/17 12:10 8

77. + 88. possibly not wst. process tanks
98. There are approx 10 truck docks
99. Clarification needed / poorly: Port is an oil recovery contraction near TMC
105 + 106. [illegible] sig. tanks spent pickling.
108. Same as 105 + 106
107. Should be w/ Coke Ovens
110. No pickling done there now
111. has several names
112. Basements & Sub-basements 20-30 acres of them
113. Where remediation is going on
114. Pipe mill sold to Turkey
116. 117. Together - 1 thing
120. Down - when scrubbers in furnace had sept
121. Lots of them
122. " (see maps)
127. possibly same as 113
128. + 132. Same

PMG

6/17 12:23 9

133. needs clarification.
133 + 137 same
135 + 138 same
143 + 111. same
146. needs former finishing needs end of Rod + Wire
144 + 145. old wire mill
150. same as [illegible]
149. very nebulous
150. was slush out
gone
151. same as 152
155. only 1
156. gone / Horn down
158. gone
159. gone
160. gone
161. gone
162 clarification on what kind of fuel?

ACs
B Needs clarification
G "
H "

[illegible]

4/17 12.30 10.

J. needs clarification
M. "
N. "
P. gone
S. needs clarification
U. "
W. possibly gone
BB ERS

Trying to determine how/where to begin. Possibly take driving tour of facility together.

Partial driving tour of facility.

[illegible]

6/18 8:30 am /1.

Arrived at facility met by Ed Wilson, Charlie McAuley, Bob Abate. Got passes left for tour. TMC first arrived at 9:25 am Head of TMC - storm water drainage only. Bigger Creek drains into this creek. This has a natural bank. contains fish, mustard, slacks. Stormwater drainage from community of Edgemere.

PMH

6/18 (3-4-31) 12.

and RR/coil
stockyard across st.
at TMC by chrome
recovery plt. Prior to
1985, slurry trucks
dumped contents into
TMC. washed out trucks
& liquid to TMC too. TCLP
& EPTOX results ⇒ non-haz.
BOF + Sitter Strand slurry
to here. Pipe is
rainwater run-off from
area around chrom

pine

6/18 @ 9:45 13.

recovery plt. Pipe installed in '86 when Cr Recov Plt installed. Nothing to monitor depth. Oily Stream on top of water. Hardended Oil-like deposits on edge. Possibly tar-like substance. White, green, blue/gray around area of pipe discharge. possibly Calcium deposistis. Directional flow to W at Cr Recov Plt. Building across st. warehouse for cold storage. Boom and skimmer just past bridge down to W.

PMH

6/18 @ 9 ~~10~~ pm 55 14.

Width of TMC is ≅ 35' ft.

to N Pipe for run off

from warehouse across st.

Slag is crushed rock.

Possibly sampling pts —

- disching pts
- tar/oil substance

No regular schedule of

dredging. Possibly dredge

mat'l on side of TMC.

near storm water drain.

which drains to large pipe

Build up of slag on side

near storm water drain. [illegible]

6/18 10:04 15.

plag - impurities from BOF
or steel making process.
another ~~outfall~~ discharge pipe.
Mill scale from Hot Strip
Mill + Cold Steel Mill ⇒
black substance along edge.
A few pallets are outside
of TMC. Primarily
Storm water run off. Also,
rinse waters, cooling waters,
maintenance of sumps
which were acid/alk.
& were neutralized then
discharg. PMK

6/18 10:21 16.

Pre '85-'86 Cr - nose-
waters dschg to TMC.
After '85-'86 Cr - Recov Pt.
installed. Limits for Cr,
Zn etc for NPDES.
Dschg pt 31A faces W.
North of 31A an unmarked
sewer/dischg pt.
Dredge pile area w/3
drum-like marks. Probably
from mouth of dschg pt.
so that it doesn't get clogged.

Dick

4/18 10:40 17.

Part of TMC near Boiler House has less oily sheen. Baffle/Skimmer, to sump, to tanks, Pori vacumm trucks it out, recycles it BS reuses it. Dredging Containments across from Baffle/Skimmer. Approx 4/5 dredging containments across from 4/5 Baffle/Skimmer areas. Empty tanks approx 1-3 times/wk depends on Truck ops.

It looks like TMC plans to

[illegible]

48 10:47 18.

Slowdown/build up BS
dredges it. Baffle/skimmer
installed in '70. Depth of
slag ≈ 40 ft. Thicker at
tap end/thinner at dschg end.
Dschgpt. #30 - wide mouthed.
cloudy/greenish dischg.
Wash down from Tin Mill.
alk. area. Some
continuous flow of non-contact
cooling water. Some ↑ in amt
if ops ↑. Pipe to drain off
tank containment. Tank is
brown ↑ PM
[illegible]

6/18 11.11 19.

used as a pH adjuster for TMC. Not used normally. Used for abnormal/emergency conditions. It is being used now b/c hot strip mill is down. PH adjustment pipes along bridge. Mike Vogler joined group. Mngr. of Cr Recov PH + Humphrey's Creek WWT PH. PH adjuster operational July '90 for acid addition. Lime adjuster since '70.

PMG

6/8 11.22 20.

Sample Station just beyond bridge. Controls acid addition to ↓ pH to 3.3 -> 3.5 which aids in metal recovery / treatment. No other testing done here besides pH. Large dredge pit approx 20 X 35. Other side of TMC. From far side of TMC - see baffle collecting oil / skimmer skimming oil to place to tank. Skimmed waste oil tank. Laid in gravel lined pit. Some wst. oil staining.

DMH

6/18 11:40 2.1

Pit is 4½ ft. deep, 15 ft long, tank 10 ft high, 6000 gal, in use there for 5 yrs., may be older than that old Bisching valve. Tanks vacuumed trucked out to Pori & recycled & reused at BS. Polypropylene hose collects oil on outside of hose. at top, oil is scrapped off & caught in pm collection vessel. Hose goes back down for more.

P.

6/8 11:42 22

Collection vessel discharges to tank
Mop skimmer collects oil
& some water. Collects in
box & piped to tank.
Before tank had dumpster
box. Skimmer here approx
15 yrs. Dumpster sat on
grad level where tank
is located now. Dumpster
removed & replacement
dumpster OR shut skimmer
down until box returned
It was also vacuumed out.
P.L.G.

6/18 11:50 23

RORI - palm oil
- satellite oil acc.
pre 1970

Am. Recov - handled all (various)
oil - They were shutdown

Pipe in ground was for support
not doing actually
& facilitating boom to
get oil to move toward
skimmers better

Oil sheen after skimmer

Break for lunch 11:58.

Return from lunch 1:30.

5 Sample Stations monitor pH.

Incoming pH 2.5 → 4.5.

If not, acid add in station
up canal to adjust pH
Pline

6/8 1:31 24.

For better metal precip.

1st Add'n lime to ↑ pH to 6.0.

2nd Add'n lime to ↑ pH to 8.2.

3 aerators / mixing for lime.

If lime failure, liq. caustic feed pt at 2nd lime add'n.

Install '71 original lime (#2), & aerators.

'86 – 2nd lime (#1).

Upgraded '87 – more sampl stations (3) – originally 3.

Acid control '90.

Next bldg. add polymer to make a flock to drop solids out to basins for removal.

[illegible]

0:8 1:32 25

6 aerators total
- 3 near lime
- 2 down canal
- 2 on down canal air ejectors

3rd aerator 6
use 1 of Diss. O2 probs.

Dredgers pump solids up to machinery.
3 dredge basins.

Water from 3 basins come together at baffle
2 aerators here

Meas. final pH Diss. O2 before dosing to Bears Creek
1 - continuous monitor
other - stand by probe
take samples here for outside lab testing
- ex TDS/TSS

pH also 1 - continuous
other - stand by
PHG

4:8 1:41 26.

4 pumps — capability
40,000 gal/min

1 pump run at time
1 level control
2 — only high level

Dredger pumps at 1000 gal/min

Basin dimen
100(w) x 300(l) x 12 ft deep

3 basins here at same time (.73/.74)
at some time passage
ways btwn 3 basins
to dredge

Dredges pump solids to
thickness
each thickness have 3 pumps
4 centrifuges in each

2 centrifuge/1 pump usually
working / add polymer
to solidify

[illegible]

6/13 2:03 27.

Polymer add'n at beginning of centrifuge

Sludge pumped thru pipe lines to centrifuges

2 of 4 centrifuges working

Water goes to Humprey's Creek (3 Basins (Back of))

Sludge comes down on screw conveyors (5) to dumpsters

80 - 200 tons/day depends on Gps.

18 ton box (2)

haul Gray's Landfill

35% solids / sludge is

don't sample sludge regularly

PLG

6 8 2:11 28

b-c deemed non-haz.

Old Alum tank
now inactive (≅ 75)

CR Recov Plt

#8 Cr line
#1 & 2 halogen lines } influent

to influent surge tank
50,000 gal

2 pumps (usually 1 working)
(1 sensative to tank level)

100-500 (mg/1000) ppm Cr

Installed '87

pH 2.0-5.0 of influent

Influent tank to reduction tank
Cr bt - add acid to control
pH to 2.0 -

[illegible]

.8 2:31 29

sulfur dioxide to Cr^{6+} → Cr^{3+}

rest of system is gravity fed

to Neutralization tank
lime as added
pH 8.2 to 8.8

to flock tank add
polymer to form
bigger particles → solids

to thickner
2 sludge recirculation pumps
16 gal/min
back to neutralization tank
(again flock / thickner)
has alkalization tank w/in
but on top of neut tank
for sludges only
sludges overflows to neut tank

PK40

2:39 30.

filter sludge to vac. filt. to filter cake
Water goes to filter pack
(4 sand filters)
Then to Humphrey Creek

vac. filt. ⇒ 26,000-34,000 lbs / 2-4 wks
to fill box (16-18/yr)
goes to Envirite

Smpl'd in beginning / no longer
Bob Abate may have sampling info

Trench / Sumps
- seal water
- filtrate water
- dewatered filter cake water
back to floc. tank

alkalization / Neut. Tank
Containment ≅ 5(h) x 20(W) x 20(h)
has sand in it from sand
filter / corner sump full
of water go to bldg sump

6-18 2:51 31

Rainwater pumped to bldg. sump with a pump (eventually to floc tank)

Sump for drainage into drain syst – not used anymore use hand pump to drain syst => floc, etc.

Floc tank no 3 containment is situated in a concrete ring
pump goes into concrete ring approx 1½ ft below foot of above portion of floc tank

Joe Robier / Charlie McCullan have showed us Cr Recov + Humphrey's WWT Plt.

End of Day

PMG

6/19 8:58 32

Cloudy day
overcast
65°

Finished taking photos of Cr
Recov Pit.

Noticed Process Sldg pipe dead
ended in a valve
reportedly never used
possibly use to take a smpl

Sand filters in 2 cells
cleaned 6x's a day
backwashed (isolate 1 cell)
after washing
→ water goes to floc tank
Clean cell to dirty cell

Cr facility kicks on w/ level
in storage tank
not necessarily 24 hrs

flow 500 gal/min

MEA

6/14 9:28 33

Discharge from Sand filters to outfall #30 to TMC to eventually Humphreys Creek WWT Plt.

Back to Humphrey's WWT Plt. water going into sump to keep the lime sludge from settling in the sump.

Par side Discharge Pt into TMC (#29 + #27) from Rod + Wire Mill Clean-up Sl. Process #3 - rinse water from pulling ops - alt. rinse water

Near side discharge pt from Caster (#33) primary mill area non-contact cooling water caster process water soaking pit overflow rainwater

Spent Pickle Liq Tanks 60,000 gal each

6/19 10:13 34

10-15 yrs old

cold sheet mill + tin mill
pickling ops
approx 50,000 gal/day
truck majority out to
① Back ~~Water~~ River Creek POTW
(Balt. City Sewage Tremont Pt.)
② Blue Plains on Potomac DC

Bsuse for ① Controlling Fe levels
in Humphreys Creek
② enhances sedimentation
of solids/oil
5 gal/min
several reports to EPA

also use @ HDS (high density sly)
at Sinter Pt.
35,000 gal/wk
to reduce metals +
precip metals

gets to ~~(sewer)~~ TMC thru a
sewer (acid brick)

PJ [illegible]

6/19 10:21 35

Reportedly no history of releases/leaks
whole area drains to TMC

lots of stained gravel
gravel lined
not concrete lined
concrete for metal stand structures - pond in middle

Cd Trtmnt Area
2 Cd + Zn shutes
one in place now
other
sldg falls to bins
sloppy work
not all in bins ⇒ contamination

10 cfs
+ 10 shallow wells (10 ft deep)
water goes to tank
- acid rain sept to wet field for 8 hrs/mile

[illegible]

6/15 10:49:36

pH @ 34

2 deep wells (50-60 ft)
pump 150,000-300,00/mo
for shallow wells
pump total 750,000/mo

Soil excavation where
bins stood + where
wells were drilled

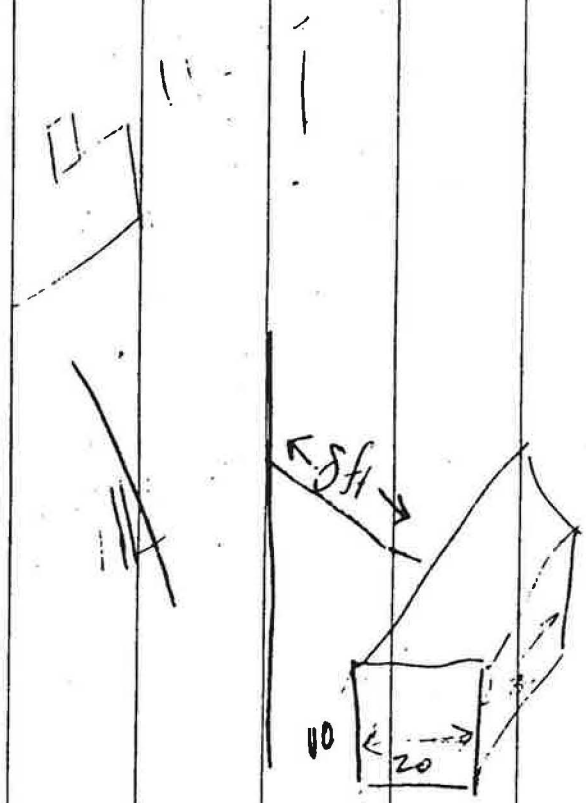
5 yrs of ops

Clear on bins only
bins were taken out
accord to States procedures

plan run for 5 yrs +
reasses

syst runs seasonally
apr → NW

[illegible]



6/19 1053 37

This end of plant is dead

well field was originally a parking lot

There is a report stating procedures for well installs

Pro-active remedia not under order

failed EPTOX for Cd

bins approx 30(l) x 20(w) x 10(h)

Front end loader came to bin removed slg (dry) and sold it

area 50ft x 200ft

Originally 12 shallow wells (thin or large)

Now 10 lg wells (green)

(PM)

6/19 11:05 38

Wells not locked
12" diam / concrete base

horiz tank collects well water
pumps thru integrator to other tanks inside bldg.
They are equalization tanks (2)
vert tank is acid rain water tank

water goes thru piping to south end treatment facility

collection tank 6000 gal cap
acid rinse tank 3000 gal cap.

2 - 12000 gal equalization tanks w/ integrators

tanks originally used in "react plant"

level sensative

6/19 11:22 39

old brick lined tank
set up for acid

basically just pt tanks
for shallow + deep wells
no equalization occurs here
(Wire mill)
This building shut down
approx 8 yrs ago
other tanks supposedly
emptied out

tanks located in N end
of wire mill bldg.

Collect tank to equilibrate
tanks red rubber hose
from shallow wells
from deep wells PVC ≈ 50-31 ft
from equalization tanks
PVC to treatment
≈ 400 ft

PMO

6/19 11:41 40

Cd Trtmnt Facility

HDS = High ⇔ Density Sludge Process
Reactor - add caustic => ↑ pH to 9
- recycled sludge (sludge thin sys + time)
200 gal cap
NaOH alt tank - 30 gal (mixing)
Thickner over flows (add polymer) to
sand filter to
sewer line to Humprey Creek
WWT
effluent composite sampling M-F
Cd, Zn (sm-pl just to 4 leaving)
15 gal/min process flow
use NaOH to ↑ pH to 9

well sample weekly mo
Cd, Zn, pH

use filter press to dewater
sludge
filtrate back to sump
to reactor to go thru
process again

[illegible]

6/19 11:46 41.

sludge to boxes
to NJ Zinc
every 2-3 wks
ship out 8 boxes
boxes 2 to no lack

5 yrs ops
TCLP was run on filter cake

boxes lined with plastic

normally 2 boxes under
filter press

Caustic ~~Acid~~ Stg tank
secondary containment
lg crack
again thickener (15 ft diam / ? cap)
→ filter feed tank 300 gal →
to send filter (1000 gal)

possibly get copies of
flow diagrams of
treatment from Bob

Break for lunch

[illegible]

6/19 1:38 42.

#34 outfall from spent pickle liquor to TMC

continuous flow

15 gal/min flow

some pickle rinse waters
rainwater

pickles are caked w/ green & blk substances

Tony Sorra - Rod Mill

Non-contact cooling water ~~goes~~
~~reused to Humphrey's Creek WWTP~~

Contact cooling water goes down
central trench to scale pit 1/2 goes back to process
off cooling water use
other 1/2 goes to Humphrey's Creek
thru TMC
7000 gal/min total

[illegible]

6/19 2:24 43.

Mill scale bucketed out to Sinter Plant for use possibly

Waste oil most goes w/ contact cooling water
some in drums
some in tank (PORI)

cleaning house (1 used)
(2 unused)
- sulfuric acid tank
- lime/cleaning tank
- drier

- to coat rod/wires

generate waste when
① leak
② clean out (every 3 mos)

goes to TMC then Humphrey's Creek WWTP

unknown capacities

[illegible]

6/19 1452 44

last 65 yrs ops

1 tank replaced 6 mos ago
brick lined pit
tank made possibly of steel

rinse overflow from rinse tank
unknown flow to ____
does flow to TMC
and HCWWTP

Joe Gallup helped us w/
cleaning house

4 unlabelled drums
at end of cold drawing area

most analysis down out-house
except NPDES in-house

out-PORT
Vendors run smpls, ex Clean-taken

FMR

6/19 1509 45

Waste 1,1,1 trichloroethane gen by

~~before galvanizing~~ mostly
all nails went thru a
cleaning bath using TCE

- then nails to boxing OR
galvanizing etc?

2 drums at end of line
catching waste TCE
from emptying sumps

inactive '84

Quantity unknown

3 indoor wells to monitor
Cd Treatment
smpl'd 1/4 ly

60' BW16
28 ~~30~~ BW15
14 ~~15~~ BW14

see annual report
Dick

4/19 1522 46

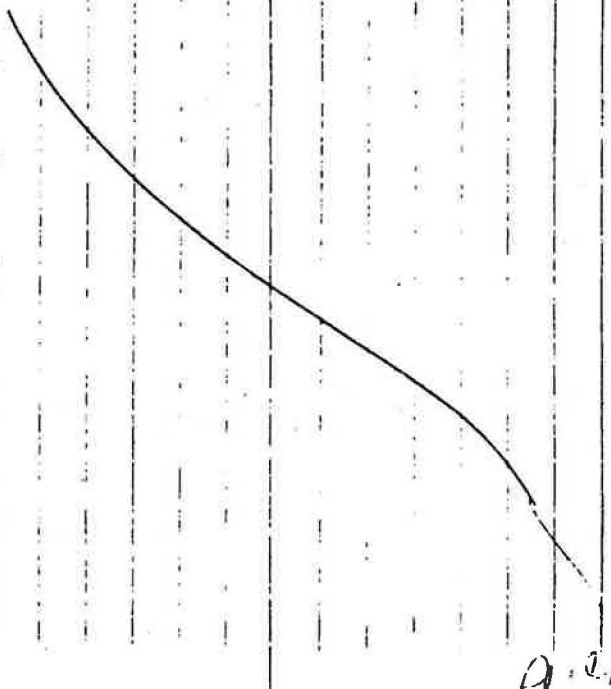
Unknown tank

waste oil pumped from compactors to 2,600 gal wastewater + oil tank

need to ✓ w/ Merle on cap

End of day

A.G.



6/20 8:59AM 47.

Merle Smith
Bob Abate
Charlie McCullen
Paula Gogan
Dorothy Calcasso

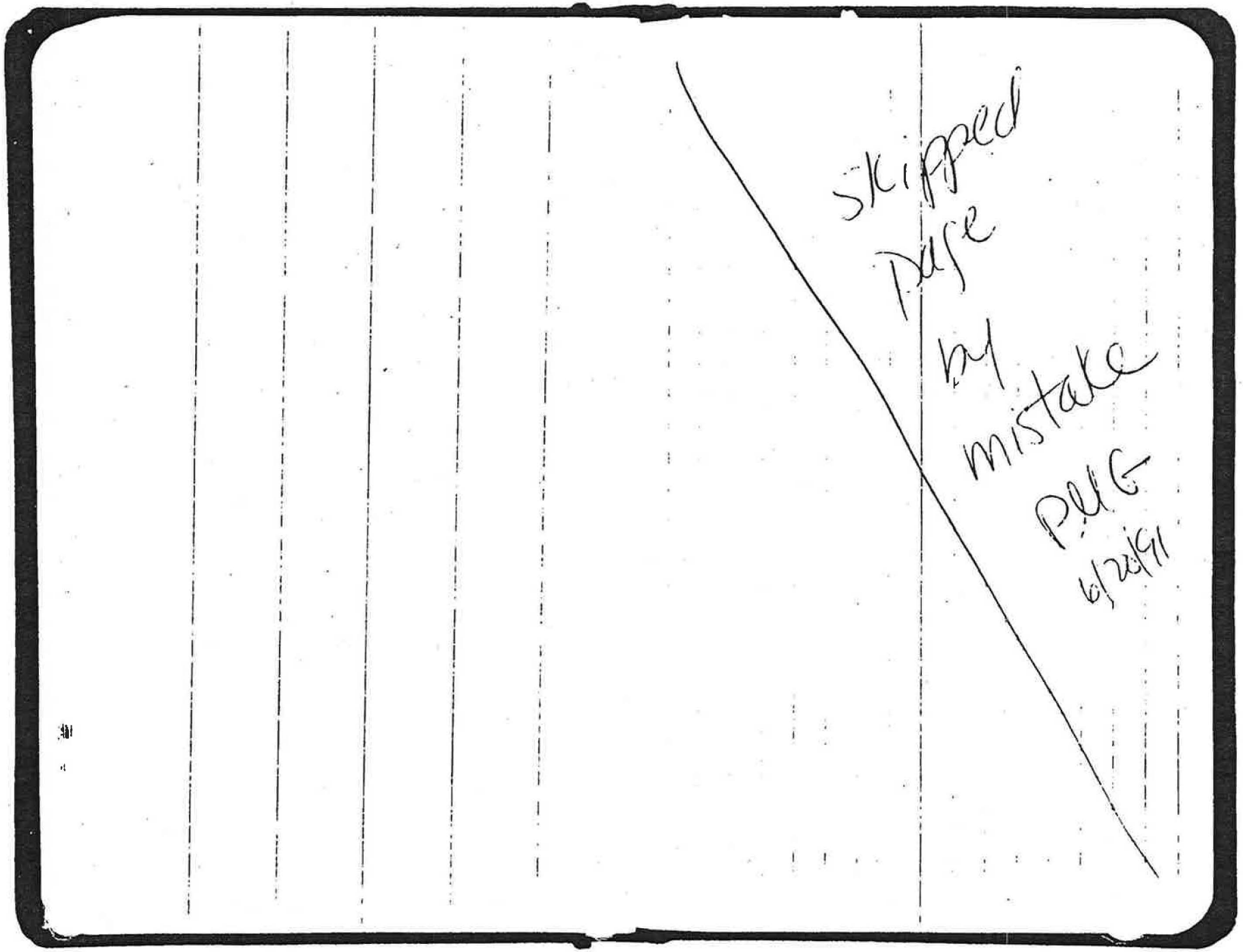
Sunny
70+

Old Pipe Mill
inactive '83

Smpl'd for Se
Se prob
excavated
put in new slag
smpl'd again
O.K.

Balt. Co supposed to take
this from BS
no plans now

Paula


skipped
page
by
mistake
PMG
6/29/91

6/20 9:17 48

4 Unknown raised tanks
10 ft high
20 ft long
10 ft wide
raised 20 ft off ground
located next to galvanizing bldg.

most likely acid
possibly used in galvanizing
not used in 80s
not sure before 80s

2 on cement border
2 above lg trench
sump in trench

≅ 15,000 – 20,000 gal cap.

RR tracks in trench
Sump goes to TMC
possibly outfall #29

2 unk drums 55 gal
partially gone in
elec weld finishing

6/20 9:34 49.

1 unk drum 55 gal
possibly hydraulic oil
near trench

Mill Cooling water pool
probably contact cooling water
15 ft wide
30 ft long
depth unk
TMC ← water
oil/water separator
oil to PORT

---

while unk tank from 6/19
chloroethene prod
used in nail process
unused since 83

---

several drums
some quill
some empty
approx 20
grout cover
prence on pallets

[illegible]

+/20 10:05 50

Waste Oil Stg. Tank
1500 - 2000 gal cap
+89 - 90
gravel area

Billet Prep. Bldg.
began '65 - '66
Gerry Wineski

Mill Scale → Bedding Pit →
Sinter Pit → Blast Furn

For inspection purposes under
light / billet glows:
Mixt = Water + Powder
Phosphorescent Iron Filling
→ pour over billet → trough
wst = Water + Powder Residue
→ HCWWT
TMC #27

The grinder ⇒ 2 kinds of
metals ① swarf → open Hearth
② dust → Sinter Pit

[illegible]

6/20 10:31 51

gr 3 boxes/wk of dust →
sinter Plt.
capacities — see permit
Baghouse

ingredients of powder
- iron
- yellow pigment
- 1,2 - ethanediamine

Cooling Tower for Pad/Wire Mill
edged w/ Mill Scale
remove w/ Chain →
to Bedding Plt
contact cooling water
some water to Mills/some
to TMC

pipe Mill used to feed in fuel
until shut down

PMD

6/20 10:57 52

Former Spent Pickle Liq. Tanks (2)
used until '75

8 ft diam X 30 ft long
on 15 ft ptilt st concrete
blocks for support

gravel/grass area

≅ 20,000 - 30,000 gal cap

- tanks triple rinsed
closure report on them

Zinc Nomm. Stg Drum Stg Area
stage pkg drums
on pallets

1 time event before
pipe mill closed

10 yrs ago

gravel asphalted area
Pickle

6/20 1119 53

possibly dug out b/c of spill

check sp / reports

RCRA Drum Stg Area

1 - Antimony Trichloride
2 - Mercury Filled Tubes/Relays
8 - Chromic Acid (Gongtoer Recov) WWTP

TSCA Drum Stg Area -
Rest is PCBs
- Drums
- Transformers

Metal containment pan
- compartmentalized
- 20 ft 25 ft X 1 ft

Transformed on pallets

Manage drums rejected by PORI

drums are labelled

no signs except for PCBs

6/20 11:42 54

2 Kerosene tanks
used for PCB clean up
4 ft diam X 8 ft long
raised 3 ft off grnd
metal containment pan

Waste Oil Stabilizing/
Packing area

Wst Oil brought in from
various pts in drums
wst oil that are contam w/
soil / speedy dry
PORI doesn't want it

unloaded on concrete pad

drums dumped into box

28 boxes / 20 yd boxes
20 tons/box

CMH

6/20 11:47 55

100 ~~tons~~ drums/mo
↳ on avg

less than 1 yr in op

used to take it to Balt
Risco OR Harrisburg PA

now goes to GSX in S. Caro
American Wst Sevices
used to be Britenstein

Stabilized w/ lime OR
contam soil

Lots of boxes here from UST
removal

pad 15 ft wide
2 in thick
20 yds long
cracked severely

lunch break

[illegible]

6/20 13:35 56.

Cold Sheet Mill
~~Dave Baker~~
Continuous Galvanizing

Quencher + WW goes to
TMC → HWSWTP

ops since 1950

Waste Chromic Acid (DOOP)

Line 3 has 1, line 2 has 1, line 1 no 1
sump collects (#C S3)
If ppill → Envirite removes
treats + disposes

chrg powder → liq '75

tank cleaning
liq - Envirite
sol - Eastern Chem Wst / Clean Harb

PMA

6/20 1354 57.

One time spill —
tank overflowed
sewer backed up
into #4 line cellar
Erwin the came in,
removed wst,
cleaned up
26,000 - 27,000 gal
≅ Sept '90

John Whitesif
Ron Bendetti

Cold Sheet Mill

Spent acid starts at N end
goes thru PVC Piping to
60,000 gal tanks outside

speedy dry on spills
put in drums
acid spills washed into
sump → TMC →
1 KWWTP

[illegible]

4/20 1417 58.

try to fix quickly

1947 ops began

Scrubbers to remove acid
fumes from acid baths
~14% acid

water bath 22% acid

wet well - spent acid (pulfuric)
level indicator
pump kicks in and off
acid goes to tanks
has overflow containment area

minimal solids - disposed
by envir. grp.

~~tanks~~ wet wells
- brick
- rubber } layers
- metal

fumes - Hydrogen
- Sulfuric gas

PMJ.

4/20 1431 59.

coils dipped in acid bath
to remove scale
rinsed w/ industrial w. spray
rinse tank w/ hot indus. w.
fresh water spray

Sprays to TMC → HCWWTP

monitor pH 5

9 scrubbers total
2 [illegible] steam
rest [illegible] acid

trench to TMC →
HCWWTP

lubricant
- water
- lubetypes
→ TMC →
HCWWTP

Dunn,

6/21 9:02 60

Sunny/Hazy
Hot (80°)
Humid

Back to Pickling Lines if
Cold Strip Mill to take photos

Teams
Paulus
Dorothy
Bob
Ed

Skin Mill Trench System
→ PORI oil/water
separator → oil to PORI
→ water to MC

~~Tanning~~ Tandem Mill
dry ops

PORI oil/water separator
3 basin
continuous paddle to
skim oil
[illegible]

6/21 9:45 61

10 ft high
50 ft X 60 ft
2 influent pts
PORI → oil
water → TMC

Secondary containment tread
pumped back into syst
depth unk / 2 ft wide / length of tank
20 yrs ops

influent line

holding tank (for oil)
10 ft high
10 ft diam
has 2° containment
1 ft high
11 ft X 11 ft

PORI has their own UPDES
Permit to [illegible] the
from ~~[illegible]~~ lagoon to TMC

[illegible]

6/21 10 03 .62

N End Cold Sheet Mill
Wst staging area
- wst oil / speedy dry / sludge
- mill scale

at least last 20 yr
cover came later

on concrete pad
no berm
on pallets
water on concrete

dumpster emptied 2 times/wk
TCLP tested after 6 times/yr

empty drums to scrap yard
after cleaning to BOF

PMH

6/21 1024 63

ML Swan

S. Basins (Mill Scale)
Center ↓ (Dirt/Sludge)
N (Mill Scale)

(240 tons/wk
Dirt/Sludge → Coke Oven Landfill
Mill Scale → Coke Oven Landfill
(99% scale / 1% dirt (480 tons/wk

Oil Platform
Oil → Tank → Tanker
removes oil → PORT
20% water
8% oil
12% dirt
450 gal/day

Furnace (old/)
36 tons/wk
Scale down inside
diff conveyor →
Bucket Elevator → top
Drop Chute → box

6/21 1031 64

grease/oil disposal
200 gal/mo
depends on ops
→ PORI

remove soil → lg box area
near RCRA area
fill in w/ new slag

cooling waters/solids
all polymer to thickener → slg

Water goes from S. Pit to
cooling towers to Center basin
→ HC only w/
emergency overflow

recirculation of water

N&S – descaling ops
Center – cooling water
overs slabs

Milton – basin capacity 12 gal

Pills

6/21 1043 65

40 yrs ops

30-35 ft deep
35-40 ft wide
150-175 ft long / 35 ft long
[illegible] / [illegible]

2 wst oil drums → PORI
during chng from natl gas
to oil

1 55 gal drum/mo
depends on ops

on pallet
on gravel

Wst oil acc area → PORI
Concrete
Pallets
↑ plastic lined
≠ 3x [illegible]

[illegible]

6/21 1:01 66

Pickling ops
inactive 5 yrs ago
Mobil Dredging removed 8 yrs

now stg area for product
— salt
— cement
cleaning prods

alkaline drums

wst pickle liq tank
[illegible]
removed at least 5 yrs ago
tank line here
gravel area cement border

N Pit mill scale mostly

mill scale wst pile on
ground → truck

Lunch

[illegible]

6/21 1:34 67.

Afternoon Meeting (Closeout)

- Went thru SWMU list
- next MOI @ 8:30 AM
- need to bring RFA TMC discharge list on Mon.
- went thru map

Pg. 4

6/24 8:52 68.

Bower Station — PCB Persons
Herman Hagen + Jim Ryder

The weather is sunny, 75°, and some clouds.

Approx 112 Transformers w/ PCBs (pulled).

Trying to phase out PCB Transformers — it will take a while.

So far removed 3 this year:
Halcyon Mill
56" Hot Line
Penwood Wharf

No spills/leaks from Transformers/Lines.

55-gal drum of PCB oil reported in 56 Hot St. pulled

6/24 9:21 69

Area fenced off
Cleaned residual area
Just got resulted back
& clean enough
< 100

Spilled occurred March 21st 1991

Need copy of spill report &
sampling results.
ask Charlie / Bob

Tin mill Spill
#10 Tin Line
87-88

cleaned area
sealed area
EPA took sample
results => area clean
don't use area
b+c feds can
come back + sample

Pl[illegible]

6/24 9:29 70.

Sheet Mill Spill

galvanizing line

transformers still active

cleaned up
1 area scrubbed &
couldn't come clean
core concrete sampl - heavier
PCBs in bottom vs top
got variance from Feds
if shut area down
need to clean up
& dispose
if use area, leave as is

Clean w/
- Kerosene (main)
- Citriclean (trying)

Most spills w/in Buildings
one outside
except:
ERS - 20-25 gals
spill

PMS

6/24 9:34 71.

transformer set for repairs
& leaked
dug up 16 tons of earth,
black top
disposed in Buffalo
landfill
19 Smpls = clean

6 over water
in good shape
by ore unloaders
about 20 yrs old
on crane itself
move w/ crane

Charlie McMullen took us to
see PCB Transformers
on cranes

In motor control center
the transformers are
located.

3 cranes total over Patapsco
Riv.

PL.

6/24 9:58 72

Former Green Pellet Plant Area
Demolished 1990
Inactive ~80s
Ops Began early-mid 70s

6 Electro Static Precips
2 scrubbers
2 thickners
van Tuin spray drier
⇓
dust

dust ⇒ pellets
charged back into
steel making furnaces
recycled

no chemicals added for
pellet making

nothing added to thicken

sm tank used for holding
polymer - didn't
help - so out of service -
poly to BOF

[illegible]

4/24 10:11 73

Electrical Repair Shop
(ERS) PCB Spill Site

See area
70 ft X 30 35 ft
filled in w/ slag

No. 4 Open Hearth
- has been inactive for ≈ 1 yr
may go back into service
Began ops in '55 '56
precips added 61-62
scrubbers add early 70s

steel making process
- ore/stone/lime
- scrap
- hot metal
- oxygen (early 60s)

16 hrs

1 hr

6 furnaces total ops at 1 time

[illegible]

6/24 10:25 7X

Caster

Baghouse Stg bin

Approx 15 boxes (wooden)
billed w/ bags
2½ + 3 tons

usually load 17 bags
on a truck to Penn
4/in 90 days
depends on ops

4 ft 3 wooden boxes
Cd contain
Waste Conversion in PA
Concrete floor 20 ft x 20 ft
no protected by
less than 90 days

4/24 1032 75

DeSulfuring Bag House

4 chambers/all 1 unit

early SOS - present

for BOF ops - need to desulfuring metal

5 yds/mo - depend on ops

baghouses catch dust/particles

on screw conveyor

to box (5 yds)

to Sinter/Bedding Pit

for reuse

dust - Sulfur

- Kish (graphite)

Skimmer Baghouse

Skims impurities off

top of metal - BOF

ops early SOS → pres

4

6/24 1038 76

to dumpster
to Sinter Strand
for recise

Gen 5 yds/mo
depends on ops

same type of ~~[illegible]~~ dumpster being
used for trash
other dumpsters being
emptied now

4 chambers desulfurizer
same as ~~[illegible]~~ PWG Baghouse

No 3 Open Hearth
inactive 70s
beginning - unk

BOF was site of No. 2
Open Hearth
ops ended 60's
begin - unk

[illegible]

6/24 1053 77

No 1 Open Hearth
Demolished Site
ops 59-62 approx
skeleton structure
and slag filled
area where
cranes are

No Baghouse back then

Caster Baghouse
ops 80s - present
collects fumes from
hot steel poured
into caster ops
ust goes to Caster Bgho.
8 Bg Area / boxcut bags

exit chute is indoors
box / bags

[illegible]

6/24 1109 78

Soaking Pits

big furnace (reheat)

ingots laid in + heated

Slab Cut-off Spill

Hydraulic Oil Spill
'89 - '90
near orgne struct.

Oil/Water UST for EKS

removed '89
Smgt'd - O.K.
ops - unk.
to TMC
Cap - unk.

PLAS

6/24 1133 79

Diesel Fuel Spill discovered '91
50 tons of soil
Wst Oil on rds to keep
dust down
across st.

UST — removed '89-90
install tank
cap - tank
near pile

Plant Garage
present USTs
1 - Diesel 10,000 gal
1 - gas 8,000 gal

Mason's Garage
pre ~~(2 ...)~~ 4 pre 3 USTs removed '89
2 - gas 10000 gal 8000 gal cap unk pre
1 - diesel fuel 1000 gal
1 - wst oil cap unk
Removed 60-80 tons
disposed G&K Pinewood SC

PMS

6/24 1154 80

4 drums still have
most oil in them

55-gal

mix-tank pumps

Mix 55 gal drums
oil in each
full of wst oil
most empty

Jim

CURVE TABLES

HOW TO USE CURVE TABLES

Table I. contains Tangents and Externals to a 1° curve. Tan. and Ext. to any other radius may be found nearly enough, by dividing the Tan. or Ext. opposite the given Central Angle by the given degree of curve.

To find Deg. of Curve, having the Central Angle and Tangent: Divide Tan. opposite the given Central Angle by the given Tangent.

To find Deg. of Curve, having the Central Angle and External: Divide Ext. opposite the given Central Angle by the given External.

To find Nat. Tan. and Nat. Ex. Sec. for any angle by Table I.: Tan. or Ext. of twice the given angle divided by the radius of a 1° curve will be the Nat. Tan: or Nat. Ex. Sec.

EXAMPLE

Wanted a Curve with an Ext. of about 12 ft. Angle of Intersection or I. P. = 23° 20' to the R. at Station 542 + 72.

Ext. in Tab. I opposite 23° 20' = 120.87
120.87 ÷ 12 = 10.07. Say a 10° Curve.

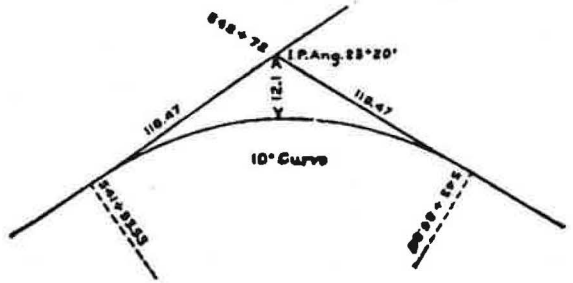
Tan. in Tab. I opp. 23° 20' = 1183.1
1183.1 ÷ 10 = 118.31.

Correction for A. 23° 20' for a 10° Cur. = 0.16
118.31 + 0.16 = 118.47 = corrected Tangent.

(If corrected Ext. is required find in same way)
Ang. 23° 20' = 23.33° ÷ 10 = 2.3333 = L. C.

2° 19½' = def. for sta.	542	I. P. = sta.	542 + 72
4° 49½' = " " "	+ 50	Tan. =	1 .18.47
7° 19½' = " " "	543	B. C. = sta.	541 + 53.53
9° 49½' = " " "	+ 50	L. C. =	2 .33.33
11° 40' = " " "	543 + 86.86	E. C. = Sta.	543 + 86.86

100 – 53.53 = 46.47 × 3'(def. for 1 ft. of 10° Cur.) = 139.41' =
2° 19½' = def. for sta. 542.
Def. for 50 ft. = 2° 30' for a 10° Curve.
Def. for 36.86 ft. = 1° 50½' for a 10° Curve.



6/17

(2)

Bear Creek

Key Bridge

N

Patapsco River

021

Chesapeake Bay

DJ

6/17

(3)

Building Plant prepares
Mix Tank for Sinter Plant

Blast
L Furnace

Coke Batteries
A built 10's
automatic

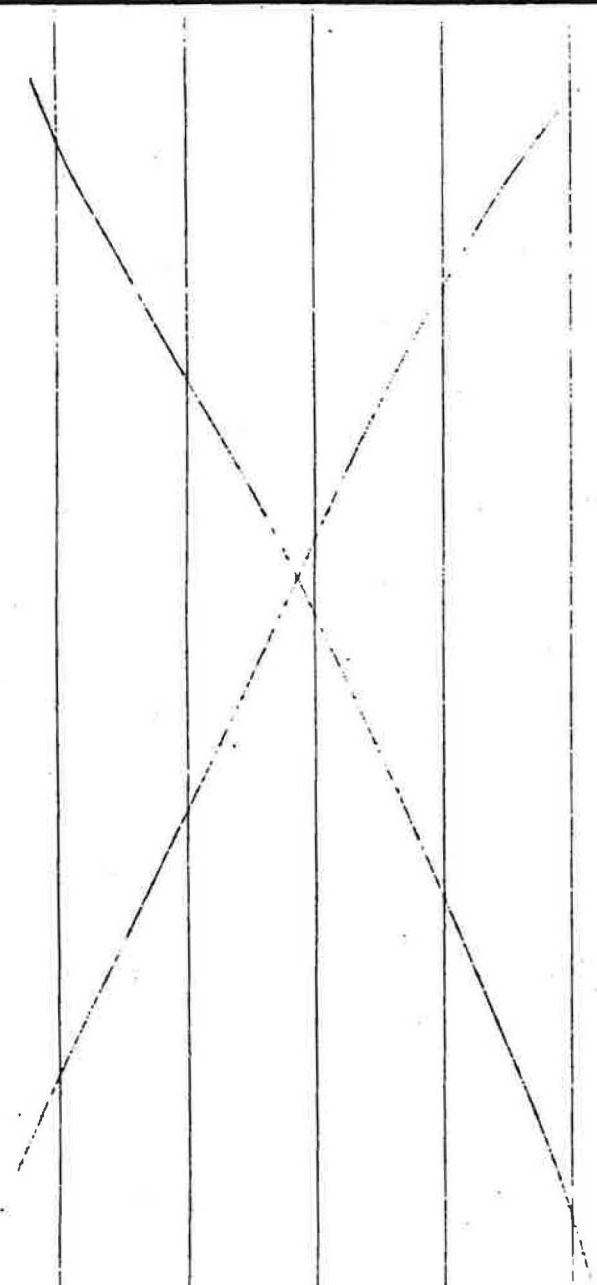
12 + 11 built mid 50's
manual

Outfall 021

booms can prevent oil
fr being discharged
coke oven area only
noncontact cooling water
25000 gpm +
bio tool
discharge
water

acid not a prob since
cut 90

DJ



6/17

(4)

P 14 1533 facing E
booms + prior to
discharge of outfall 021

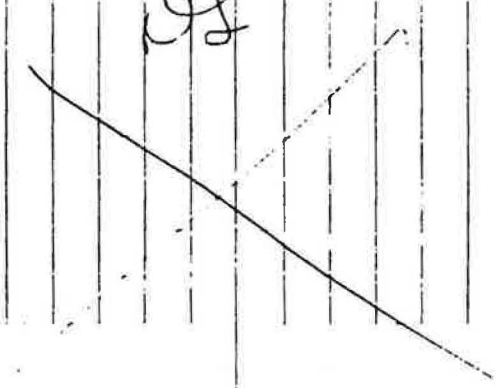
P 1-5 1540 facing N
discharge fr 021
sampling for
continuous monitor pH, flow
temp, naphthalene DF

Elevate sampling 75 °F [illegible]

naphthalene
oil/gas 1/wk
nitrate/ite
ammonia monthly

BOF Primary steel making

DF



6/18

0530 Arrived at facility
Got passes & waited
for BSC personnel
Joe Abate
Ed Wilson
Charles

Climate - raining
~75°F

Tin Mill Canal built around 70
Headwaters
two pipes
stormwater drainage
process water 1/4 mile
down road
Drainage basin for
Edgemere ~~start~~ fields
~~a~~ headwaters
~~Creek~~ of Headwaters
natural bottom
Runoff for railroad tracks
for railroad stock yard
flows to headwaters

6/18 (6)

RR yard

Street

Headwaters

DJ

6/18 (7)

P- 1-6 - 1-4 0438
panorama of
headwaters
facing east → west

Samples were taken by BSC
fr canal - ran TCLP
no contamination

Tin Mill Canal
liquid slurry fr
BOF + ~~glass bar~~ sitter blast furnace
discharged to Humphreys
Creek + eventually
canal - Today slurry
not hazardous
cake - LF

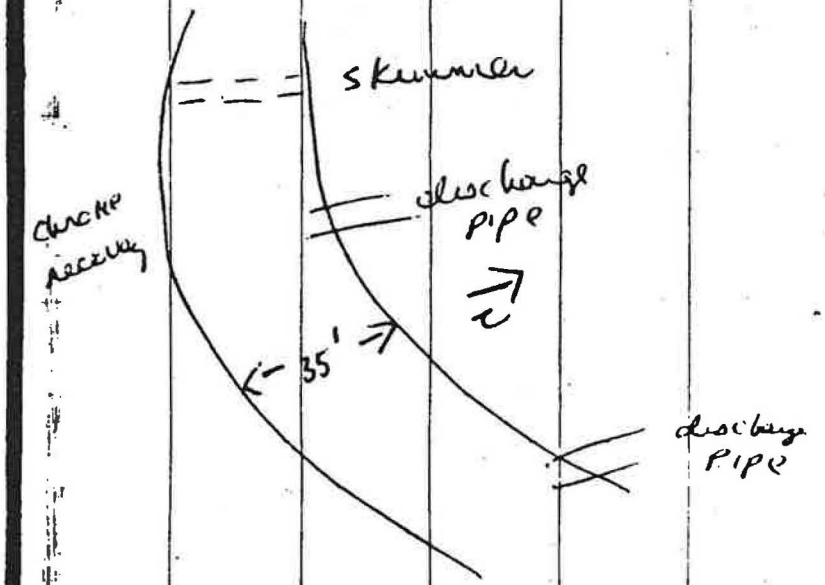
Since 1986
DJ ~~[illegible]~~ pipe discharges
run off fr area surrounding
Chicago
recovery plant + treated
effluent

DJ

6/18 (8)

1-10 0957
discharge pipe
chrome recovery
plant

1-11 0958 facing west of
canal boom, skimmer
+ collection tank



DL

6/18 (9)

oily sheen on water
Appears to be black oily substance on
DL ~~edg~~ sides of canal

Discharge pipe - rocks appeared
white + bluish grey color

2nd Discharge pipe east
runoff fr ~~coal~~ ~~tin~~ cold
~~finishing storage~~ mill area
DL

1-12 0959 facing east discharge
pipe

Possible sampling points
near each discharge
point (sludge + oil tar
substance)

DL

6/18 (10)

1-12 1008 facing south
dredged matl →

Berm of soil, rocks, gravel
DJ ~~on~~ one side of canal
~3' high

1-13 facing west
1010 discharge fr
cold tin mill
oily sheen on water
pallets on edge
black mill scale
fr cold ~~tin~~ DJ
steel + hot
strip mills

#31 fr Figure 34 of discharge

1-14 1020 facing south
of canal
DJ

6/18 (11)

Dredge matl fr canal been
DJ ~~here~~ here awhile accord
to Bob Abate
Manole cover west of
dredged matl

31A
#~~32~~ Discharge Point
DJ neutralized sump of
cleaning solution,
rinsewaters
acid + alkaline solutions
are neutralized before
discharged

1985-1986 chrome sol } to
chromic acid } chrome
recovery

Prior 1985 chrome rinse water
in canal
DJ

6/14 (12)

1-15 1029 facing West 31A discharge

1-16 1032 facing north ~~to w~~ west DJ →

1-17 1036 facing southwest of dredged matl Appears imp units of 3 - 55 gal drums

1-18 1048 facing Northwest skimmer + baffles tanks

1-19 1052 facing south dredge containment

DJ

6/14 (13)

Void of vegetation along canal

DJ ~~South~~ North of 31A discharge pipe manhole on east side of berm

Matl blocking discharged pipe dredged occasionally. Dredged matl placed on the ground east of berm Dredged matl just north of 2nd discharge pipe

Existing Oil Baffle + Skimmer less of a sheen on water than downstream collected oil goes to a sump then pumped to a tank then vacuum truck takes oil to oil recovery

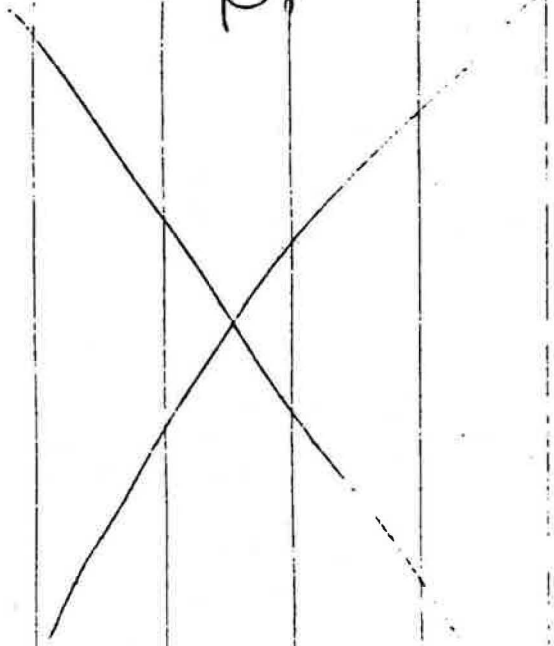
DJ

(14)

6/18

1-20 facing southwest
1053 leaking pipe
baffle + skimmer in background

prior to 1970 + 1975
No skimming at this location
May have had skimming at headwaters



DF

(15)

6/18

Dredging containment
Dredged matl collected from skimmer
25 located along canal
25 skimmer + baffles to collect oil along canal

~1970 + 1975
Startup Dates of Skimmers

Chemline 31-35 yrs on Steel side
3 yrs environmental

Tanks emptied depends on mill operation
one - three times per week

Dredging containment
built up at chunks of slag
2 4' high berms along canal
Some vegetation in containment

DF

6/18 (16)

1-21 facing
1120 milky discharge
fr 30

Need flow rates fr
discharge points

1-22 facing NW
1121 acid being
applied to canal
for treatment,
tank containment

Charlie v Bob BSC
accompanying team
Tin Mill Canal

DJ

6/18 (17)

Discharge 3
washdown fr
alkaline area discharge
some contaminants ~~of flow~~
of non contact cooling
water

10" line runoff fr
tank containment
~~acid~~ prod. line used to
control pH in canal

Acid storage tank used
for pH adjustment
used only for emergencies
Being used today
bec hot strip mill down
located east of canal
~50' fr canal

Mike Vogler
pH 2

Genl Foreman
of Treatment
Plants
Humphry Creek
Cadmium

DJ

6/18 (8)

July 90 pH adjustment acid
1970 Lime adjustment
Mike over 10yrs at plant

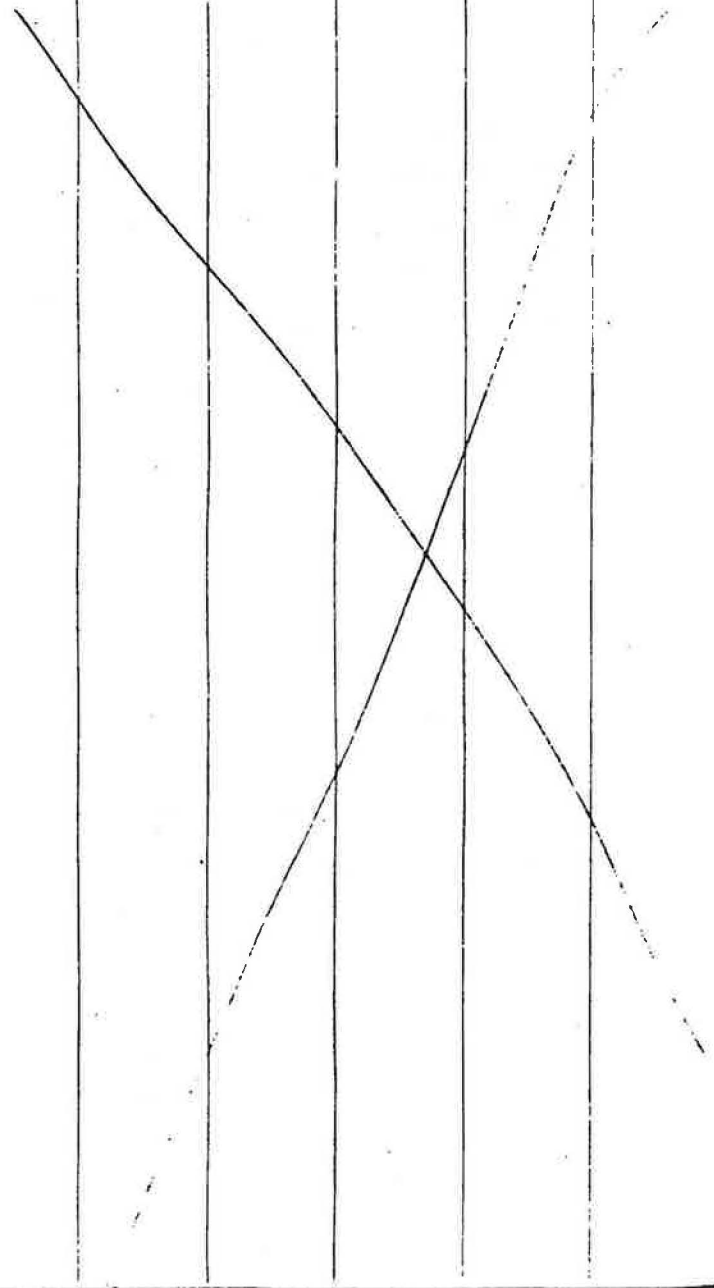
Sample station Monitors
pH continuously
5 pH stations
2 lime additions
PH 6.0 lime 1st station
" 8.0 lime 2nd

treatment facility
needs 8.0 - 8.3
effluent 8.5 optimum

No other testing is done
only at treatment effluent

Right before bridge,
sheen & yellowish
water

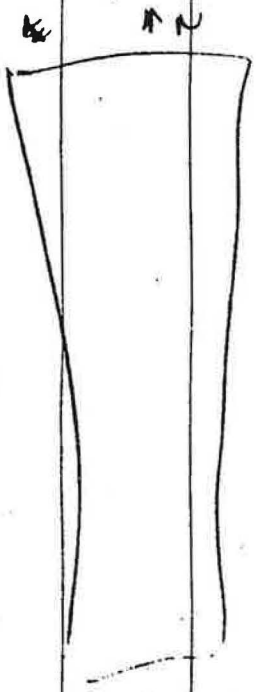
DS



(19)

6/18

1-23 facing NE
1131 dredging contain



Canal

1-24 facing South
1136 oil collecting in
baffle, storage tank
in background

DJ

(20)

6/18

Dredge Containment

vegetation growing inside

4' high berm of
gravel, slag

void of vegetation on south side
of canal black siding

Skimmed Waste Oil Tank
1-25 facing north
1139

Tank sits on gravel
& surrounded by
4½ sides of gravel
15' long
10' wide] pit

Mop skimmer

collection box feeds into
tank - 6000 gal
tank
operating for at least
5 yrs no est on
date of purchase

DJ

6/18 (21)

1-25 facing NE
1148 hose skimmer

1-26 facing NE
1149 mop skimmer, collection box + hose

pipe in ground
never served any
func other than
support for ~~skimmer~~ of
floating boom before
baffle installed

DS

6/18 (22)

Tank emptied 1/wk
usually ~3000 full
is emptied

Hose skimmer made of polypropylene
runs on a pulley DS
oil wiped off + coll flows
through pipe to tank

before tank used dumpster
emptied every day
Skimmers here ~15 years
removed dumpster
towards end emptied
it

POLIN ~~Polin~~ oil recovery
DS oil fr rolling mills
+ satellite locations
throughout plant
operated pre 1970

DS

6/18 (23)

1-27 facing NE
1158 Sheen floating
on surface water →



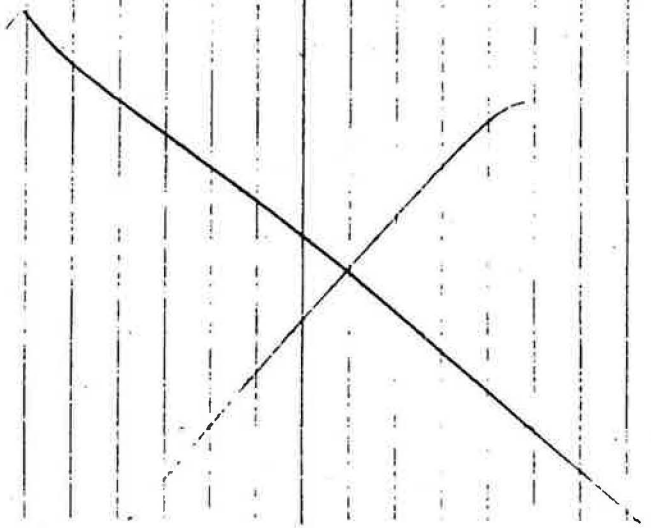
DJ

6/18 (24)

American Recovery located
behind boiler handled
oil - state sheet them down
due to problems

Oil sheen observed
after skimming point
south of skimming
point

12 - 1 Lunch break



DJ

6/18 (25)

35,000 - 50,000 GPM
down canal

5 pt DJ Monitoring station for pH

2.5 incoming pH
lower if not
for precipitation of
solids

pH station
- lime addition station to
inc pH
- test pH 2nd lime addition
inc pH to 7.0-8.2
3 aerators
Mixing chamber for lime

if lime failure
caustic backup sys (liquid)

1971 operation treat sys
DJ

6/18

Joe Robert Head Foreman
WWTS 10 yrs at plant

monitoring station

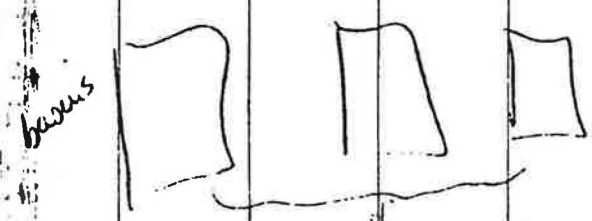
1st lime

2nd lime add

aerators

polymer added

aerator not working only when DO prob



baffle

2 aerators

DJ

6/18 (27) DJ

only one lime addition pt

2nd lime addition pt 1986-87
upgraded sys for
3-5 sampling stations inc

polymer added to make
floc to drop
solids out

7 aerators

3 basins when changed

monitored
DO measured before
+pH discharge to Bear Creek

lab collects sampler
once/day 6 days/wk

4 pumps + 40,000 GPM
pump water to
Bear Creek

DJ

6/18 (26)

Sludge thru ~~Rotary~~ Vacuum drum filter.

located in doors concrete surface

⇓

Screw conveyor

↓

Sludge box ~ 26,000 lbs. 34,000

Shipped to Envirite PA. for recycling

2 wks - 1 month to fill a box

CK sampling results of filter cake was sampled in past not anymore

2-3 1449 rotary filter press

2-4 1450 ~~Slud~~ DJ filter cake ~~stor~~ of collection

DJ

6/18 (27)

~~55 gal tank~~ DJ

filtrate fr sun sys pumped to FLOC Tank

run M-F daylight only

2-5 1453 Sump of filtrate

Tanks Secondary contain Concrete dikes + walls

DJ ~~FLOC~~ next Tank

5' concrete dike

Concrete surface

Tank above grd on concrete slab

leak fr elbow sand used to contain

hasn't been cleaned up yet

leak fixed

DJ

6/18 (28)

Rainwater pumped out

Sumps pumped to sys

Reduc Tank

~~Same~~ Similar

DJ

Sec containment

to floc tank

Floc Tank

Concrete 3½ ft high surrounds

1 ft thick Tank

pumps on concrete

surface w/

1 ft high concrete dike

Above ground pumping

& piping some over

concrete, some over

gravel

DJ

6/18 (29)

2-5 facing NW

1503 Floc tank pumps,

Sec contain

2-6 facing NE

1504 Neutralization Tank

DJ ~~of~~

2-7 No picture camera

15 2-8 Reduc Tank died

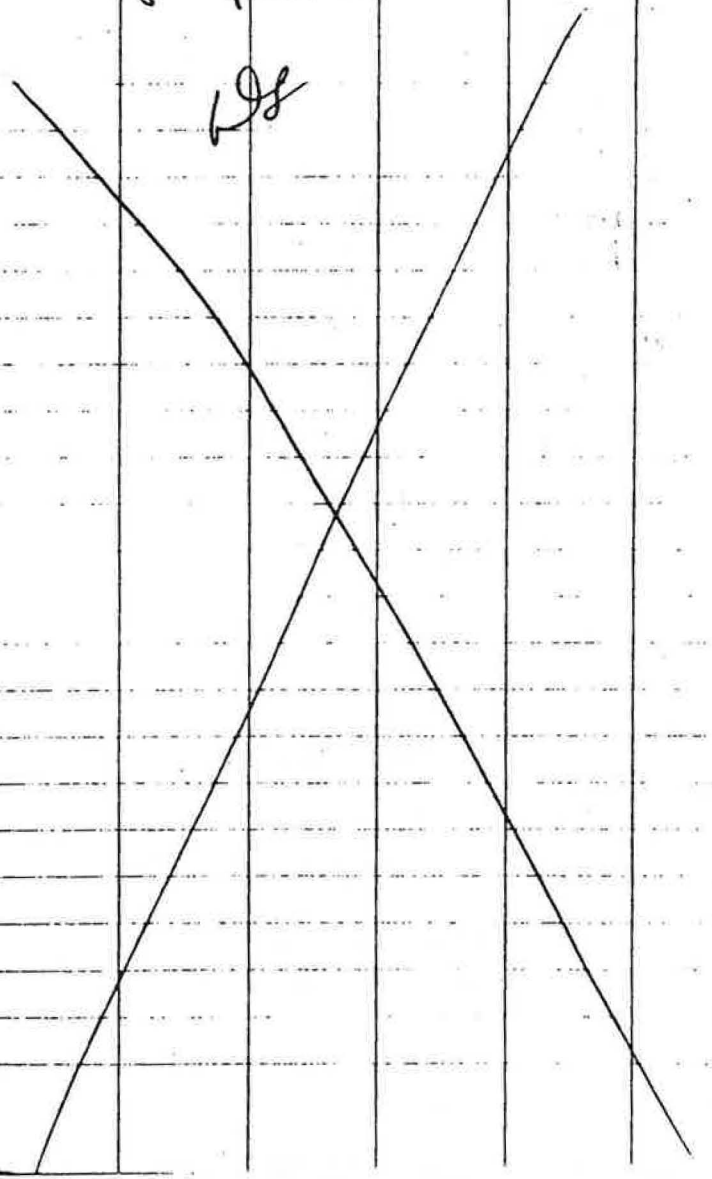
DJ

DJ

6/18 (30)

left plant at 330

DL



6/19 (31)

0830 Arrived at plant
Discussed itinerary

Weather overcast, windy, 70°F

Team Lou Knapp
Paula Goggin
Dorothy LaRusso
Bob Abate
Charlie
Mike Vogler

New batteries in camera

2-9 chrome reduction tank
0920 facing NE

2-10 facing south
0922 overhead piping

Process sludge line connector a
valve don't use it
have never used it

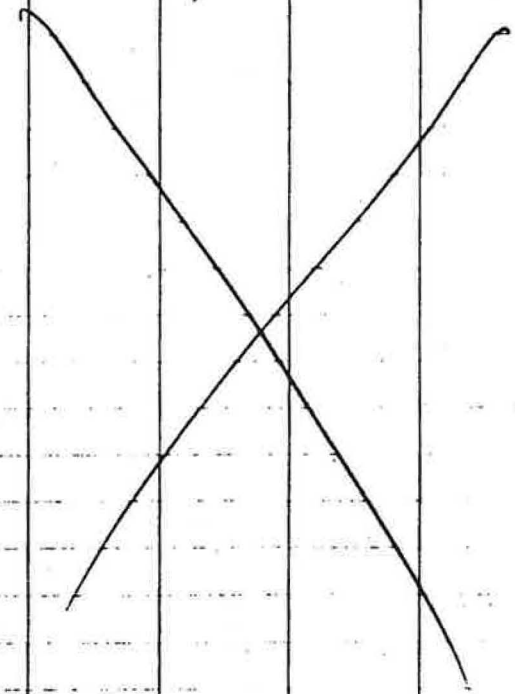
DL

6/19 (32)

2-11
0433 facing NW sand filters

~~2-12~~
~~09~~ ~~facing~~ DS
clarifier connected to sand filter

DS



6/19 (33)

overflow fr clarifiers to 4 sand filters - cleaned 6x day
dirty water to floc tank + reprocess
3 VFs on concrete pad and surrounded by gravel
500,000 gpm designed capacity
typically 150,000 - 200,000 gpm
sand filters backwash closed system

treated wastewater flows by underground pipe to the mill canal (30) to Humphrey Creek Treat

routine inspections conducted at least daily by asst foreman
Operators also EK

DS

6/18 (28)

1-28 1348	facing south discharge to Bear Creek
1-29 1349	facing east 4 pumps
1-30 1350	facing ~~west~~ northwest final aerator + monitoring point before discharge
1-31 1352	facing north dredging in central basin
1-32 1354	facing South thickners

6/18 (29)

~~or~~ two pumps high level during rain storm can reach 100,000 GPM

one pumps works all time

Dredging pumps 1000 GPM to thickners

Basins bottom + sides lined wt slags

2 thickners

Basins 300'L X 100'W X 11½-12' deep basins constructed same time basins were connected at one time in early 72-73 Closed connection

6/18 (30)

1-33 facing north
1359 centrifuge piping middle
3 pipes thickner piping
left

1-34 no photo

1-35 facing pumping for
1402 left centrifuge

1-36 facing down
#13 at sludge dumpster

Roll 8 at 1410

0-1 facing west
1431 at sludge collection
dumpster

0-2 facing NE
1424 1st lime addition

DS

6/18 (31)

3 pumps / thickner
4 centrifuges used to
dewater sludge

Polymer put in centrifuge
thicken sludge

Sludge ~ 35% solid
no sampling before
disposal at Bay's LF

80 - 200 tons / day to LF
varies

→ Sludge collected in dumpster.
Collection location on gravel
& solid Sludge spill on ground

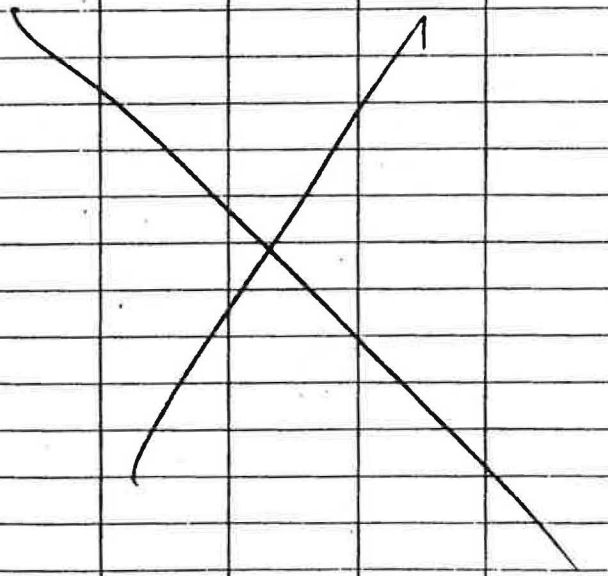
Old Alum tank
empty, not used anymore
since 75

DS

6/18 (32)

2-3 Facing ~~SW~~ DS W
1425 2nd line add old Alum tank, aerators

100 - 500 ppm
if leak can be
1000 ppm chrome
This morning 767 ppm
chromium



DS

6/18 (33)

Chrome Recovery since 87

one chrome line } fr
two halogen lines } cold to Mill

⇓

Influent surge tank
59,000 gal "

two pumps
works by level control
once 15 hrs when halogen
running

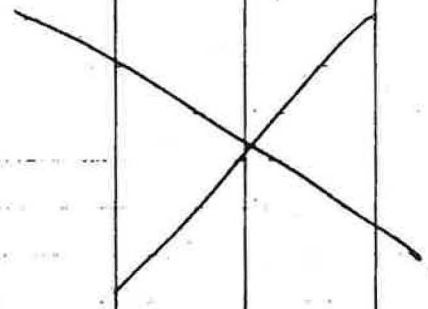
pH range 2.0 - 5.0

⇓

Reduction tank 10,000 gal
hexavalent chrome ←
- acid add to lower pH 2.0
- sulfur dioxide to reduce

DS

6/18 (34)



Alkalization 150
lime added to sludge

overflow to Thickner

Filta Pak
sand filters

overflow
Humphreys
creek

filtrate
to Floc
tank

6/18 (35)

once in Reclaim tank
leaves thru gravity feed

Neutralization tank 1000 g
lime added
raise pH to
8.2 - 8.8

Floc tank 1200 gal
add polymers
form bigger particles
of solid

Thickner 50' diam

3 pumps
16 gpm

only
one
pump
works
at time

6/19 (34)

2-12 facing
0950 sump - water added
to lime sludge keep
it moving for DJ
co

New NPDES permit application
good desc on
process sewers

~~2-13 facing east~~ DJ
~~#29 discharge~~ pt

2-13 facing south →
09059

2-14 facing N
1000 dredged matl
35' x 35'
vegetation growing
around it
DJ

6/19 (35)

#3 Rod Mill cleaning house
process water
rinsewater for pickling
operation + some
alkaline rinsewater
Clean wire prior to
application
Rinsewater usually
kept to 3
ck 5500 series (#29)

~~#27~~ DJ primary mill
side discharge
to canal
- noncontact cooling water
- process water for
caster
- run off for caster
area

DJ

6/19 (36)

2-15 1005 facing east discharge pt #29

2-16 1019 facing north spent pickler liquor storage

2-17 1022 facing ~~at~~ west piping + sewer

2/18 1024 looking in sump & wash downlines brick + pipe

Gravel yellowish color

2-19 1026 facing south stained gravel

2-20 1029 facing ~~SE~~ SW tanks

PJ

6/19 (37)

Spent Pickle Liquor Storage Tanks 60,000 gal ea
Between 10 + 15 yrs old
Aboveground tanks
cold sheet mill pickler
spent mill pickler

Back River WW Treat Plant
Blue Plains Treat

Sewage Treat POTW
use to neutralize
~~Humphreys Creek~~ Tan Mill Cove
2500,000 gal/day shipped
PJ to POTWs
Tanks elevated on
SS platform over
soil + gravel

A underground acid brick
PJ flow meter

No history of releases/
spills accord ~~to~~
Bob Abate + Mike
PJ

6/19 (38)

2-21 1031 facing NE
cracked foundation, staining

2-22 1058 facing SW
estimated location where bins + shute

2-23 1109 facing N
~~treat~~ DJ Well in treat area

2-24 1111 facing W
tanks + layout of treat area, wells

2-25 1112 facing W
genl layout of area

2-26 1116 facing E
collec tank

DJ

6/19 (39)

Steel tanks rubber lined
Tanks have some rust spots

Rod Mill

Shute transported sludge
cadmium contaminated [illegible] to b[illegible]

10 shallow wells 10' deep pump to storage tanks

Acid rain system to
30-40 pH leachate cadmium
sprays on area

pumped above ground ww to treatment plant in south end

2-60' wells pump
150 000 - 200,000 gal of shallow water/mon

DJ

6/19 (40)

Certification report on closure of bins

2-27 11 18 facing NE
Sprinkler sys on ground

2-28 11 28 facing SE
equalization tanks
aboveground piping

Red rubber hose transports water
shallow wells fr collec tank to equal basin
PVC deep wells to collec tank to equal tank

2-29 11 32 facing E
hose coming fr tank to equal tank

DJ

6/19 (41)

under storage bins
soil was excavated
5th yr operation of GW Treat

Stock certified bins were removed according to procedures
Soil samples were collected fr excavation area

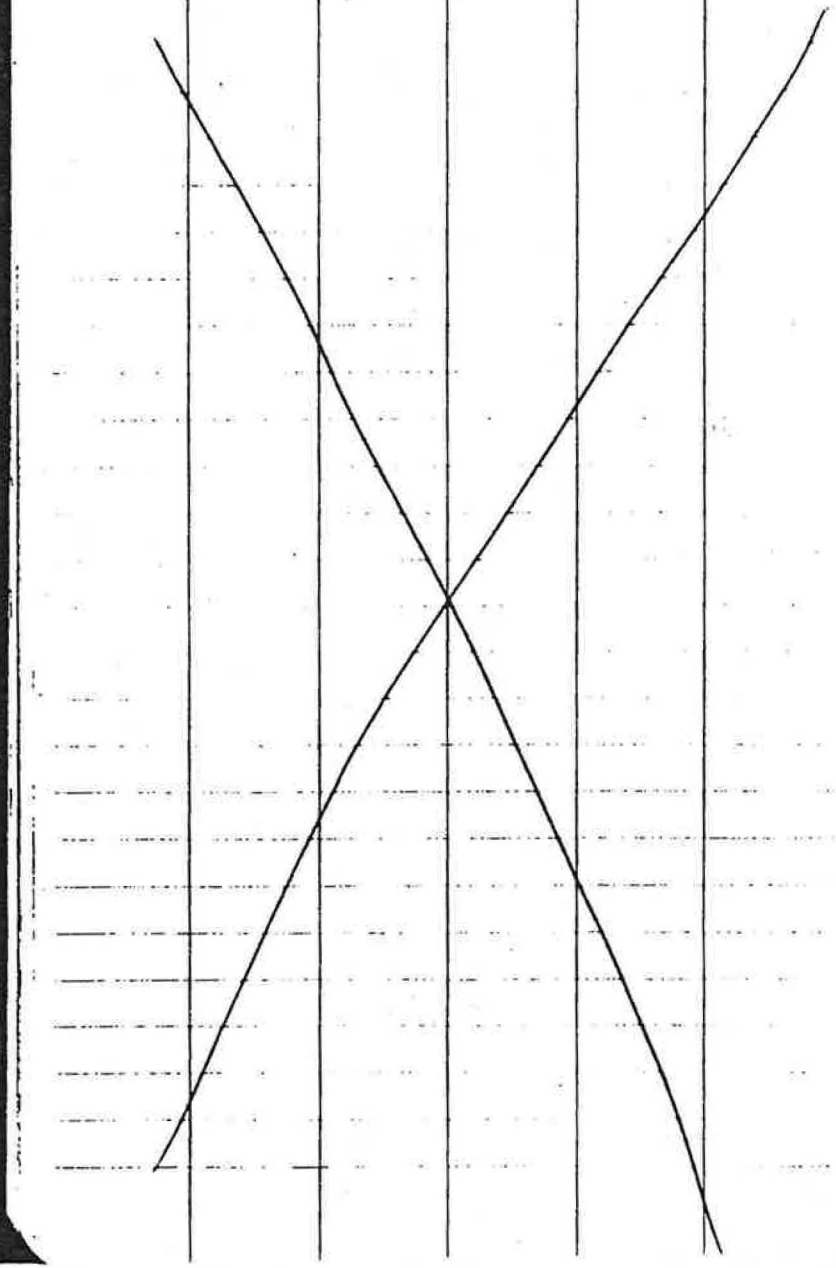
10 shallow wells abandoned
SM diameter (not used)

Wells not locked on concrete skirt
No benchmark

Horizontal tanks collects water pumps to vertical tank acid rain sys 3000 gal

2 equalization tanks in Bldg 10,000 gal ea

DJ



6/19

(42)

Equalization tank

↓

Treat Plant South end

Collection tank above grade
6000 gal

2- Equalization Tanks
4000 gal ea

used to be leach plant

break lined tanks

Fnc as a intermediate
pond before transfer to treatment
No chemicals added here
Equalize flow bet shallow
+ deeper wells

Facility reps no idea
on age of equip or age
of bldg - No idea
on shutdown (North End
of WWTP well

6/19

Reactor PH 9 → Thicker – Dyna Sand Filter → sewer line

Humphrey treat sys
outfall 27

NaOH to inc PH

Composite sampling effluent
Well samples

DJ

6/19

DJBd Building concrete surface

GW Remediation Plant

use filter press to dewater
filtrate back to sys
A Reactor
Sludge dewatered
2X / wk
Goes to NJ Zinc
8 boxes every 2-3 wks
box ~ 2½ tons

Sampling right before leaves sand filter

TCLP on filter cake

reclaims zinc + cadmium

DJ

6/19 (45)

2-30 no flash
2-~~30~~31 facing NW
1150 filter cake

2-32 facing SE
1153 filter press
+ location of
roll off

2-33 facing E
1156 secondary contain
for ~~[illegible]~~ DS storage
caustic

2-34 facing NE
1157 caustic storage

2-35 facing E
1159 trench + brick
lined floor

~~2-36 facing~~
~~treatment SYS~~

DJ

DJ

6/19 (46)

Filter cake roll off box on brick lined
building

Filter press elevated
over brick lined floor

Secondary containment
cracked through the wall
2 areas

Equal tank combined 26,000 capac.
Reactor 200 "
Alkalination 30 gal
Thickner 3
Sand Filter 1000 ~~300~~ gal
DS

Add caustic mix sludge

Polymer → thickner
recycled sludge fr
thickner + caustic
in reactor tank

DJ

6/19 (47)

GW HDS Flow chart
for Mike

Flow diagrams for treatment facilities

~~Roll 3~~ DS

MS ~~3~~ 12-36 1206 Pacific SE treatment SYS

DS ~~Boat~~ ~~3 2~~ 2-37 1207 DS treat SYS

~~3 3~~ DS ~~1209~~

Roll 3

3-1 1209 Pacific SE treatment SYS

3-2 1210 Pacific E treatment SYS

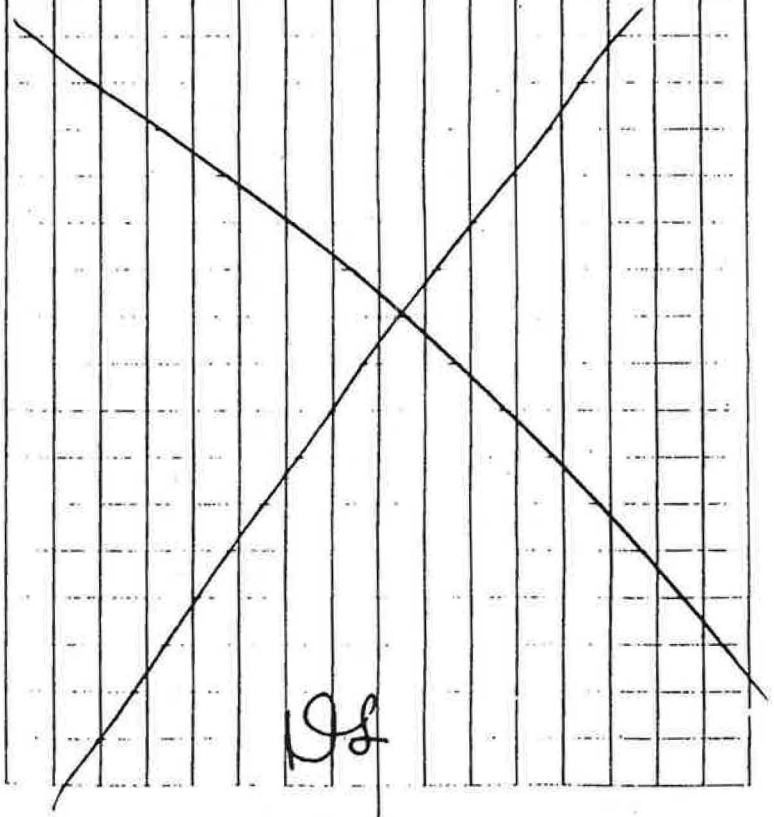
DS

6/19 (48)

NaOH + Sludge Mixed in alkalization tank

Building brick

1215 Lunch



DS

6/19 (49)

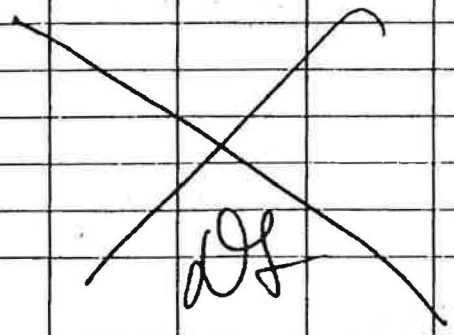
1335 back from lunch
1345 off to USI

3-3 facing N
1407 discharge 34
concrete pipe

3-4 facing W
1431 scale pit

3-5 facing W scale pit
1431

3-6 facing NE
1432 contact cooling water
off machinery + trench



DL

6/19 (50)

Resumed USI
Dorothy LaRusso
Paula Goggin

34 Discharge for
spent ~~wo~~ pickle
liquor
continuous flow
~ 15 GPM
pickles rinse waters

to right of 34 layer of
black on side

Rod Mill

Tony Sorra - Foreman

Non contact cooling water

Contact cooling water
Mill scale oxides of
steel

DL

6/19 (51)

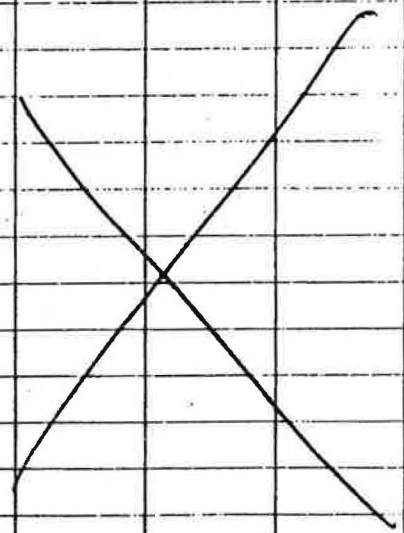
furnace

↓

non contact cooling water

↓

back to mill for reuse



DJ

6/19 (52)

contact cooling water

↓

Scale pit ~~settling area~~ DJ where scale settle

35000 gal

cooling water

Tin Mill Canal ~~Humphrey Creek~~

3500 gal

~~to~~ Back into system

7,000 gpm goes to scale pit

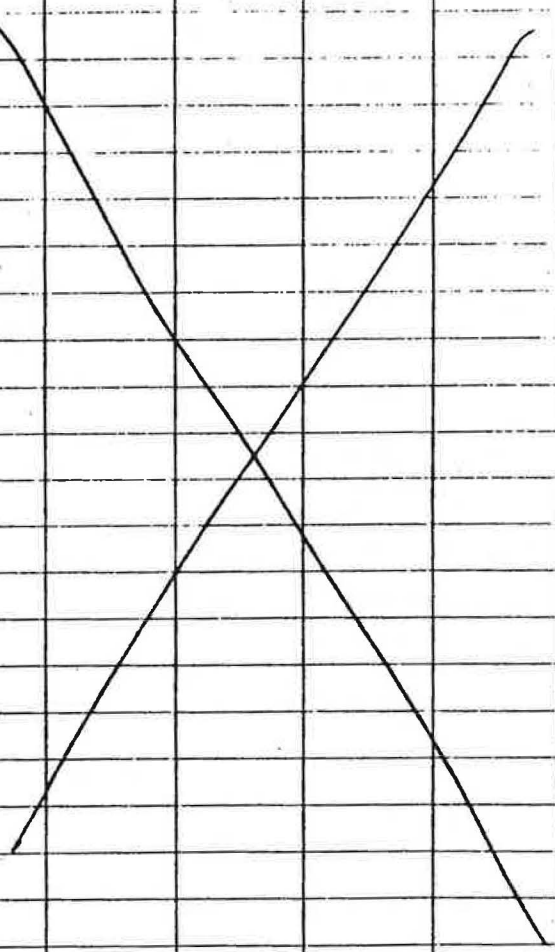
CK Mill scale to blast furnace

oil accumulates in DJ collection sec containment for ea machine

DJ

6/19 (53)

Waste
Oil pumped to a tank
Storage tank on ground 2500 gal



DJ

6/19 (54)

Joe Gallup
2 Cleaning House
1 ~~pot~~ out of use

Sulfuric acid | Painting Tank line | Dryer

coating the rod
when clear tank out
contact Env
+ pump to canal
where ds sent to
treatment
~ cleaned every 2 months
operation ~ 65 yrs old
Tank sits in brick lined
pit
Tank constructed steel

3-7 facing trench
1457 example of trench
transports WW to
Tin Mill Canal
WW Rinsewater fr
DJ

6/19 (55)

overflow in tank
Water usually
PJ ~~added to sulfuric acid~~

4 Drums
2 labelled
TPC solvent
facility plans on
sampling drums
+ then disposing
of properly

3-8 facing N
1514 Former waste TCE
storage

CK tank outside bldg

3-9 facing NW
1524 aboveground tank

DJ

6/19 (56)

Former waste TCE storage
used to wash nails
wt TCE
stopped around 83,84
monitoring
3 wells inside bldg
sampled ~~once / month~~ as

MW-16	MW 15	MW 14
60'	28'	14'

north end of building

3-10 facing NW
1535 Waste oil storage tank

DJ

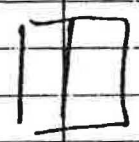
6/20 (57)

Team P Goggin
D LaRusso
B Abate
C Charlie

Tanks



Tanks



Elevated ~ 20' fr ground

PH lined wt brick over soil + gravel

gravel

3-11 facing SW
0923 at above ground tanks →

3-12 facing W
0926 aboveground tanks →

DJ

6/20

0830 Arrived at facility
Got eq up ready

~~Rod~~ Pipe Mill
Merle Smith
8 yrs Rod Mill
~~Shipping Area~~ DJ
closed 83

Sampled for sel
due to selenium
removal - joe
records

Baltimore Cnty Na
space - trade

4 aboveground tanks not in use
early 80s
Acid tanks may
used for galv
Facility Reps don
~20,000 gal ea tank
may be acid storage
Drainage to Tin Mill
29 outfall

DJ

6/20 (59)

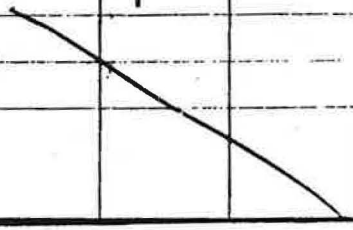
3-13 facing sump under tanks
0926 facing S

3-14 facing N
0934 55 gal drum →

3-15 facing SE
0938 →

3-16 facing E
0951 oil / water separator

DJ



6/20 (60)

Tanks may be empty
manholes were open
to odor
piping appeared corroded
+ ~~not~~ disconnected
DJ

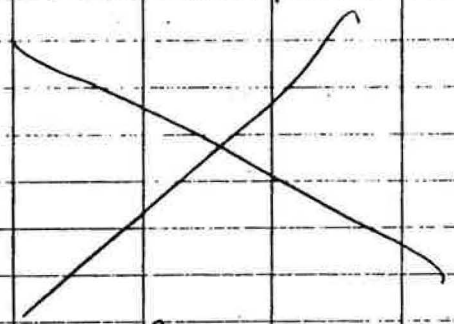
2-55 gal drums wt liquid
DJ ~~may have so~~ appear to have
something in each - no idea
what - drums corroded
+ sealed no leakage
may be hydraulic oils

1-55 gal drum liquid
near trench may be
hydraulic oil

Mill cooling water pool
contact
oil/water separator
15' x 30' unknown depth
concrete structure
oil removed by pump or vacuum

DJ

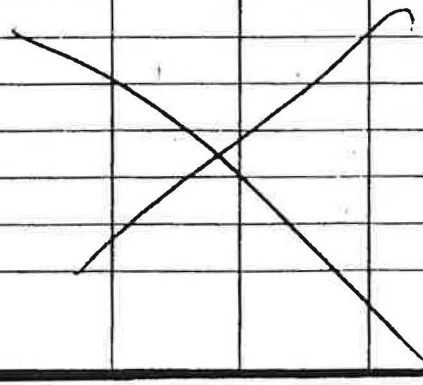
6/20 (61)



3-17 facing NW
1005 →

3-18 facing S
1011 →

DJ



6/20 (62)

- Wash tank above ground contained chlorothene to clean nails - Stopped use 83 (CE notes fr 6/19)
~5000 gal capacity
Dock 110

Hydraulic oil storage area ~20 drums
some appear to contain liquid
Drums on side + gravel vegetation all over area

Billet Prep
Waste oil storage
2000 gal capacity
operating 80 - present
65/66 operation began
Jerry Wilnecki

Scale generated fr Straightener
↓
Bedding Plant
↓
Blast Furnace

DJ

6/20 63

3-19 facing NW
1033 baghouse + box

~ 3 boxes / wt dust
full operation ~ 5 or 6

box 55

3-20 facing NE
1037 tanks for collecting rinse water + scale

3-21 facing N + down
1038 sump collecting rinse water flows toward Tin Mill canal

DJ

6/20 6

Steel quenched wt bath
water + powder, phosphorescent non fatty clings
↓
Tank
↓
Pipes
↓
Tin Mill Canal 27

for inspection
Scale filtered into a separate tank to RR car
scale pieces of fine steel

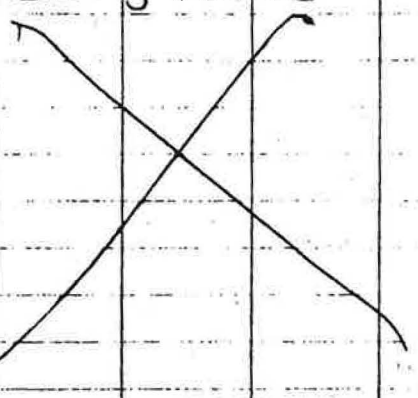
Steel dust generated in grinder sucked up through a pipe into baghouse
dust collected in boxes
↓
Sintering Plant

DJ

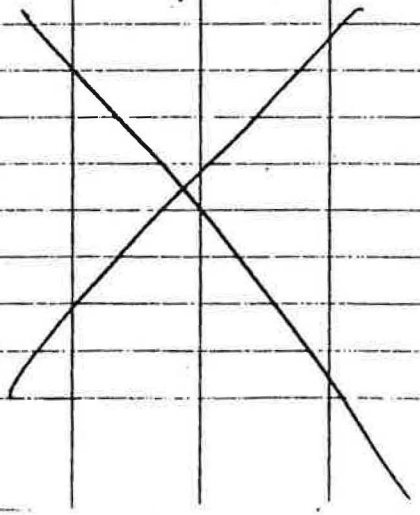
6/20

(65)

3-22 facing NW
1053 cooling tower



3-23 facing N
1101 former spent
pickle liquor tanks



DL

6/20 66

Cooling Tower for Rod Mill
scale mill accumulating
bucket of mill scale out
Contact cooling water
↓
Bedding Plant
Some cooling water to process
some to Tin Mill Canal
→ Pipe Mill also feed into
cooling tower

Former Spent Pickle Liquor
Storage Tanks (2)
inactive around 75
Truck Dock 144
Aboveground tanks
capacity 20,000 - 30,000
tuple gal ea
Tanks Mused out
CK - Should be a closure
report
gravel + soil underlying tanks

DL

6/20 67

3-24 1119 Facing E →

Ck spill reports

3-25 1122 Facing S

DS

6/20 68

Former Zinc Ammonium Chloride Sludge Storage Area

55 gal drums stored on pallets on sandy soil + gravel not routinely generated shipped off site 2 10 yrs ago Contaminated soil was removed

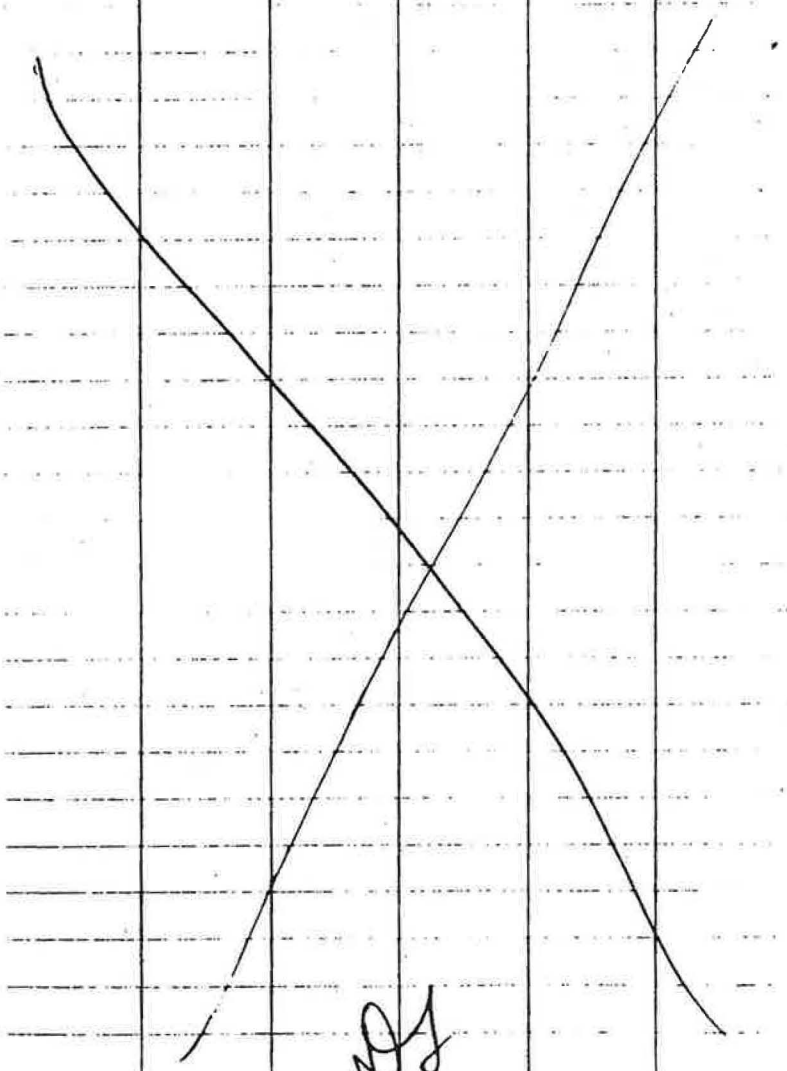
Excavated area According to Fac Mgr contam soil was removed 4½' deep

RCRA + TSCA permits Storage Area 8 drums chromic acid 2 Drums Mercury Solidwaste Mg 1 Drum antimony trichloride PCB drums, transformers, Capacitors

DS

6/20 69

3-26 Spring S
1134 of PCB + HW storage →



6/20 70

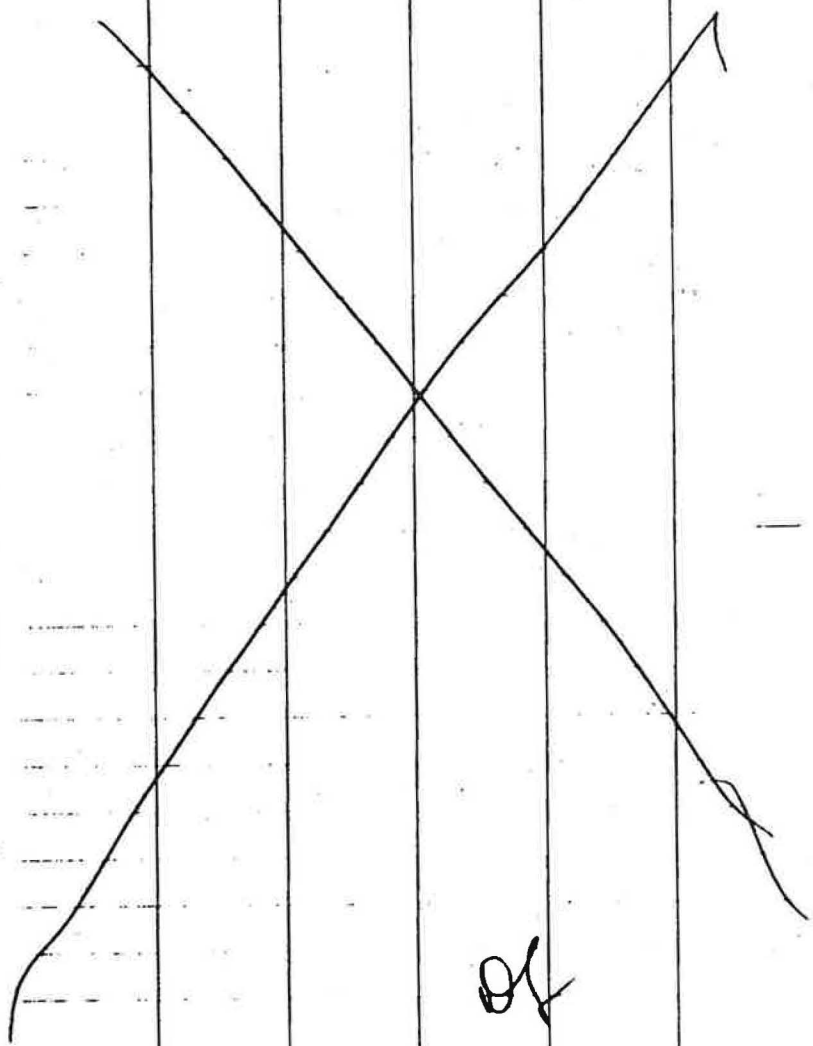
Concrete surface
Drums + walls separate
by 1 foot steel dike
Drums on pallets
brick bldg
chromic acid stored here
before transfer to
chrome reduction

Drums labelled
Bldg locked
PCB sign on door
no other signs

Waste Oil Stabilizing
& Packaging Area
waste oil contaminated
w/ spent dye, soil, dust
grease brought here
in 55 gal drums
Poured into dumpster
+ mixed w/ lime to
Stabilize

(1)

3-27 Facing NE
1151



DJ

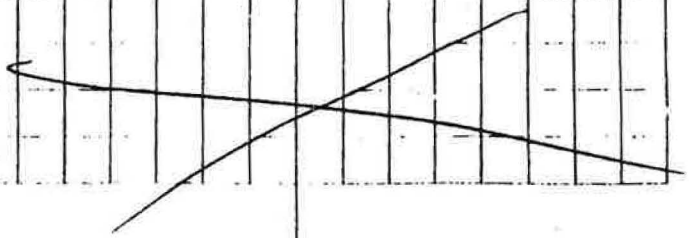
6/20

(2)

+ or contaminated soil
28 Boxes
20 Tons / box
100 drums / month
~~So~~ ~~This operation~~
~~has occurred in~~ DJ
~~different areas~~
< 1yr occurring here
Fac has had difficulty
finding vendors to accept
changed vendors frequently
Boxes on soil
cracked concrete pad
used to stage drums
stained soil fr
oil etc

1200 Lunch Break

DJ



6/20 73

3-28 facing E
1355 One time spill chromic acid
tank overflowed
sewer backed up into
#4 line cellar DS
Envirite ~~cleaned up~~ pumped
Mostly drain water
26,000 - 27000 gal spill
contained with concrete
sump spt 90-spill
DS ~~Envirite~~ cleaned up -
Remack total cleaned up
~ $12,000

DS

3-29 facing ~~SW~~ NE
1403 quencher used for
cooling

DS

6/20 74

0300
Coating Lines
Cold Sheet Mill operating since 19
Dave Baker 20 yrs at Plant
continuous galvinized

Hexavalent + trivalent
chrome spilled
Mat 1 top drummed
+ disposal
contractor picks up
blind sumps concrete
lined
changed for powder to
liquid ~ 1975

DS

~~6/20~~ ~~75~~ DJ

6/20 75 ~~76~~ DJ

John Whitsel
Ron Bendetti
~~Cool Seal Pickles~~ DJ
Pickling Lines

spent acid accumu 12" Main flows to ~~well~~ wet ~~[illegible]~~ well pit DJ

Pumped to 60,000 gal
Spent acid tank

Any spent acid spill washed into sump flows to Tar Mill canal

diesel spill last yr outside cleaned up

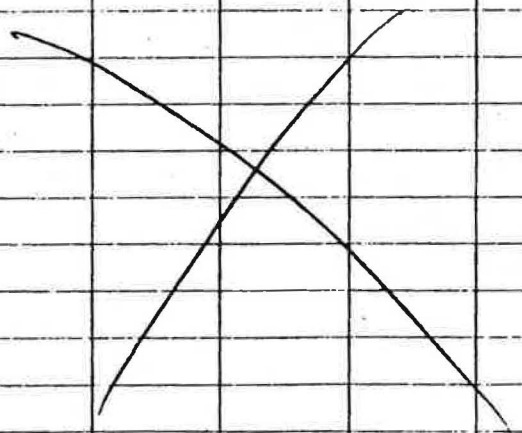
DJ

6/20 (76)

Fumes hydrogen
sulfuric gas

old lines sulfuric acid
new " hydrochloric acid
/
line more efficient

3-30 facing W
1434 wet well
water for rain
roof leak



DJ

6/20 (77)

9 3/ Scrubbers used
pick up fumes for baths
water bath
only 22% acid
contains

transmission lines
of acid above ground
replaced some of
lines

wastewater for bath
goes to Tin Mill Canal

wet well may be
greater than
30 yrs

1745 walked bath line
2 team members Paula Goggin
(ATK) John Whitsel had
an accident

DJ

3-31 0921 no flash

3-32 0929 facing north pickling line example of trench wt piping used to collect rinse waters

Weather sunny hot + humid

DJ

3-32 0946 facing N oil/water separators

3-33 0951 facing N sec contain

3-34 0954 facing SE piping

DJ

0830 Arrived at facility

Ed Wilson
Bob Abate
Dorothy LaRusso
Paula Goggin

Pickling Line

cooling water + oil goes to outdoor coolec sys

Tandem Mills dry operation oil grease, cooling water

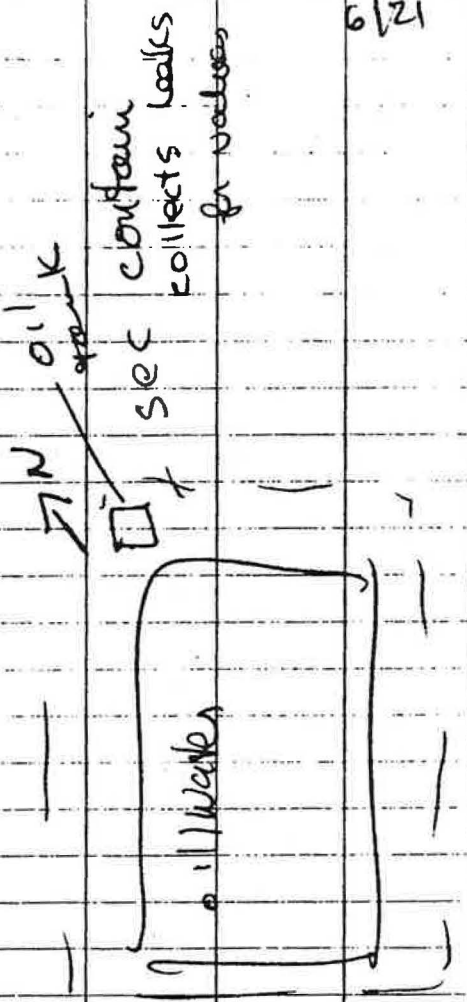
Pozi oil/water separator

capacity ?

operating dates started ~ 1970

DJ

6/21



below ground piping transports coolant & water to separator

Pumped up at separator

3-35 facing S1
0957

6/21

Sec contain concrete & couldn't see bottom at least 1 foot of concrete above water line

Accumulated liquid pumped back to sys

Silver line steam
black " wastewater

Continuous paddling pushed skims water off

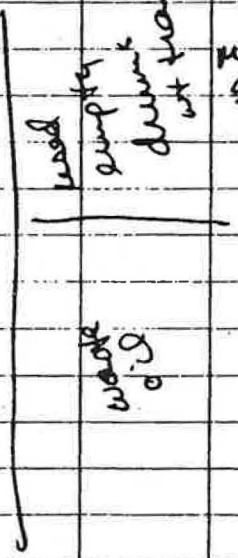
If ~~Oil Accumulation tank~~ waste oil pumped directly for oil/water separator to PORI

Oil Tank is for excess if PORI has problem, BSC hold oil

6/21

83

3-36 1001	facing discharge		NW	paint



6/21

Tank surrounded by concrete dike 2 1/2' high, on concrete pad

capacity

operating dates

PORI has own NPDES permit for discharge

Water goes to TMC

Skimmer collects oil before discharges TMC

Sides are oil stained

used empty drum storage area

concrete pad wt roof

Drums contain trash oily rags, mill scale

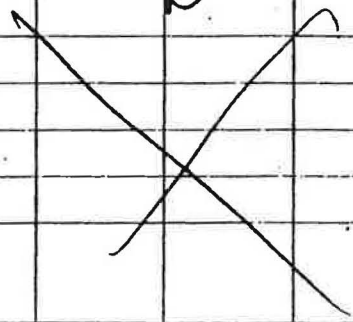
6/21

Roll 4

4-1 1009 — facing east mill scale + trash storage

4-2 1010 — facing W Dumpster

4-3 1012 — facing SW used empty drums ~~waste oil~~ DJ drums ~~to scrap yd~~ ~~in bar~~ DJ will be cleaned & taken to BOP DJ



6/21

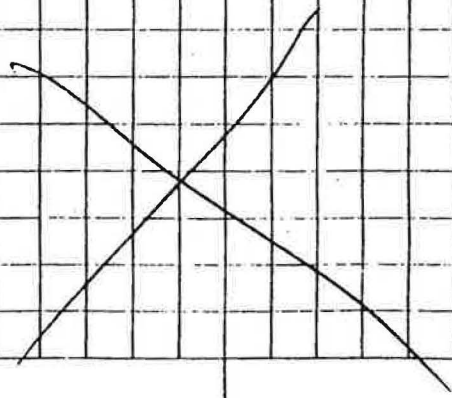
North End Work Out Staging Area
Mill scale + adsorbent shoveled into box

Box sampled 2-3 times yr for TCLP DJ

operating for at least 20 yrs
cover more needed
concrete pad

Drums on pallets
Dumpster emptied 2x week

See DJ



6/21 87

DS

4-4 1034 facing ~~two~~ SW waste oil tank

90% scale
10% dirt
480 tons/wk

4-5 1041 facing SW central basin

4-6 1042 facing W soil + concrete wall covered w/ oil

DS

6/21 88

Hot Strip Mill

Undergoing major renovation from SWAM 29 yrs

DS

generate scale fr mill -> coke oven LF

Accumulation dust sludge -> coke oven LF

DS

7500 gal aboveground tank Store waste oil

Skimmer sys for oil recovery

water -> TMC

Pori takes waste oil
80% water
12% dirt
8% oil

generate 250 gal/day

DS

6/21 89

Cracks in concrete wall

Mill since 1947
basins > 40 yrs old

Accord to fac reps
Oil covered soil will
be removed

Converting oil line to
natl gas line
Drums are collecting
oil which
will be sampled
& then recycled
by PORI

4-7 facing SW
1053 waste oil collec point

4-8 facing NW
1105 waste oil accumulation
area - sampled
& sent to Pori
DJ

6/21 90

242 tons/wk Sludge
Claiming to coke on LF

Oil/grease 200 gal/MO

Sludge consists of fine
pieces of metal treated
w/ calgon prod

Cooling tower gets
water fr basins
water → TMC
only if ~~of~~ overflow
DJ

Otherwise it
recirculates
back to process

3 basins
North smaller
Central larger
South smaller

capacity of basins
DJ

6/21 91

4-9 Location of
1109 former pickling
facing NE operation

4-10 facing SE
1116 location of
tank to
collect waste
pickling liquor

4-11 facing SE
1130 north basin where
scale is separated
fr water

Scale normally
loaded directly
on truck when
its there

4-12 facing SE
1131 Scale

DJ

~~DJ~~ 6/21 92

Pickling operation was
taken out of service
5 yrs ago
Mobil Dredging
dismanteled + removed
sludge + acid
filled in trench
north end of bldg

Alkaline cleaner
generated ~ 100 gal/mo
used by mechanical
for cleaning
drummed ~~+ etc~~ DJ
~~Samp~~ DJ Call environmental
Sampled + then
determine DJ
PORI removes
them

DJ

6/21 (93)

Renovation inc
new piping
rinsing + cleaning
tanks

1200 Lunch

1300 Meeting to
review info
for week

Bob Abate will meet
w/ D LaRusso +
P Goggin at 0830

Provide list of discharges
to Bob Abate for his
review + comment

Reviewed SWMU + AOC
list + identified
sites for Monday

PG

6/21 (94)

Facility will only provide
one Day - Mon

Review of questions

TMC Preliminary clarifier sludge
used not ammonia still

No TCLP results for waste
stream entering TMC

Ed Wilson was marked
up PRC RFA + indicated
corrections. However, there
are some major inaccuracies
need to be discussed w/ EPA

Plate Mill
CK scale pit

0930 Left facility

PG

6/24/91 (95)

Fac reps would not let us walk around PORI Oil Recovery - PORI has their own NPDES permit - Fac reps stated PORI would not let us walk around.
Viewed fr a distance

Spill Report + Sampling Results →

Sampling Results →

DJ

6/24/91 (96)

0830 Arr at facility
Disc itinerary
- Climate Sunny, 70's
- Gave B. Abate copies of Ref list & RFA + disc
- Power House
Herman Hagan
Jim Ryder

~112 active PCB transformers

Removed in 91
- Halogen Line
- 56 Hot Mill Strip
- Ferr Wharf
DJ

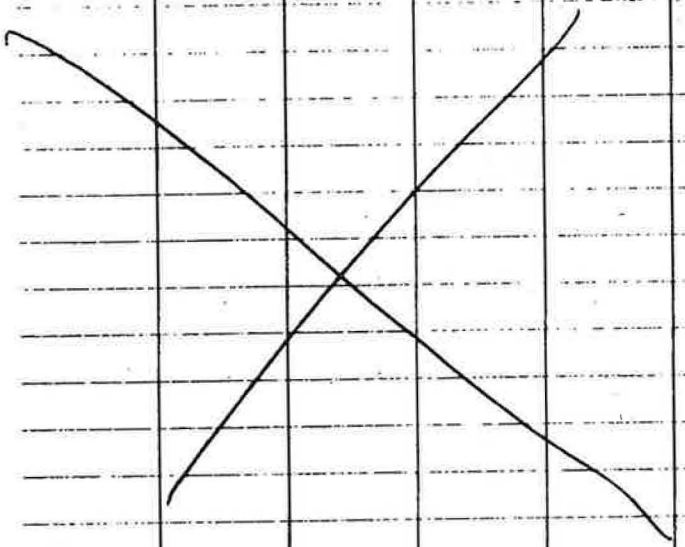
3/21/91
Crane ruptured 55 gal PCB oil near 56 Hot Mill Strip

1988 PCB Spill Tin Mill
#10 line
cleaned it & sealed wt epoxy
EPA took samples

DJ

6/24

(97)



Electrical Repair Shop (ERS

4-16 facing E
1012 former site of
PCB spill
~ 20' x 35'

DJ

6/24

(98)

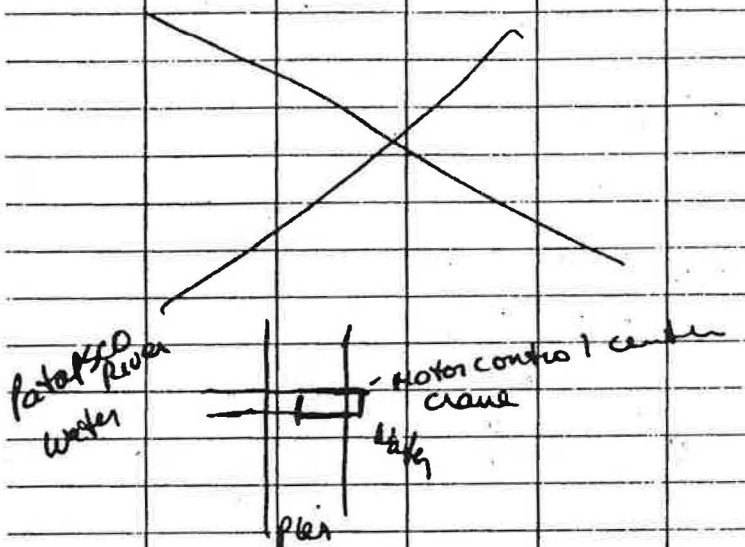
Sheet Mill PCB spill Area
Galvanizer Line 1
indoors 2 PCB transf
4" core sample showed
higher concentrations abo
surface
Rev variance fr EPA
can use line if
shut line down
dispose of it
accordingly

Kerosene or citric clean
used to clean it up
Kerosene works best

ERS Building
25-30 gal PC
585 PCB spilled
over
16 tons of contaminated
black top + soil
19 samples
filling in wt slag

DJ

6/24 (99)



4-13 facing S
0949 Motor control center
where PCB transformers
located

4-14, 4-15 facing N
1003 overview of
former green pellet area
+ thickner

DL

6/24 (100)

6 PCB transformers
by ORR Piers
~20 yrs old
Mobil on crane

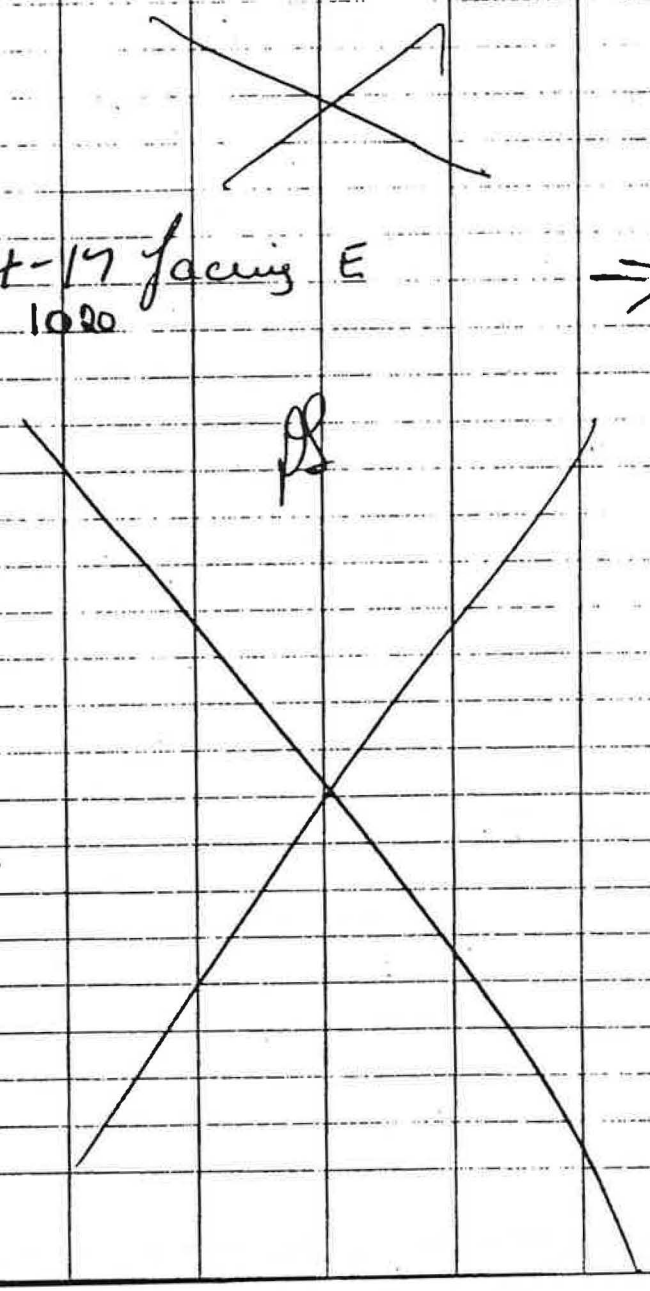
ORR ~~Field~~ of Pier
3 Overhead cranes
la crane has 2
PCB transformers
transformers located
in motor control center
on top crane

Green Pellet Plant + open hearth
No longer exists
1990 Demolished
late 1980s became inactive
early 1970s Began operating
made pellets for dust sm
furnace ~~+ BOF~~ + pellets were
added ~~removed in furnace~~
water added to dust
form slurry + ~~added~~ of
transferred to thickner

DL

6/24 (101)

4-17 facing E
1020



6/24 (102)

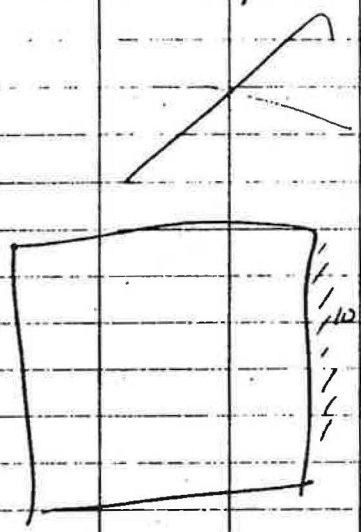
Next to thickner above ground tank stored polymer
Tank has been emptied

Open Hearth Furnace #4
Out of service - do DS
Since 1990
began operating 1955/56
added precipitators 1961/1962
scrubbers early 1970s
steel making process
lime + ore
scrap
hot metal

14 hrs 430 tons steel
oxygen early 60
reduced it by 4 hrs
6 furnaces operating all time
had to run min 3 furnaces to make money

DS

6/24 103



4-18 facing W →
1029

6/24 104

PS ~~Blast house~~ Baghouse Dust Storage Area (~~Coarse~~ baghouse)

concrete pad, roof

Bags on wooden crate

tractor trailer

waste conversion takes to PA

~ 2 1/2 - 3 tons in bag

17 loaded on truck

when 90 days shipped

17-18 bags

~ 30 tons

~35

cadmium D006

not regulated area

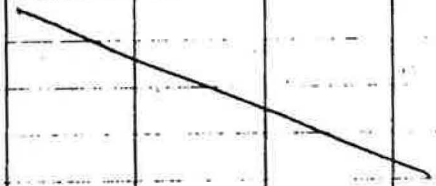
< 90 days

> 90 days Skelp Mill Area

6/24 105

4-19 facing SW →
1036

4-20 facing NE
1040 ex dumpster used
to collect dust fr →



generation depends on grade steel

uses same type
dumpster as
DeSulfidized Baghouse

4-21 facing S →
1042

DL

6/24 106

DeSulfidize Baghouse
one unit
operating early 80's -
present
Attached to BOF
Dumpster collects matl
fr baghouse
↓
Raised Bedding Plant

dust contains sulfur
+ kiche
~ 5 yd³ dumpster
generates ~ 5yd / month

Skimmer Baghouse
Skim impurities
off top of Metal
Similar op dater
early 80s - present
collects matl in
dumpster + transports
it to Center Stand
5yd / Month

DL

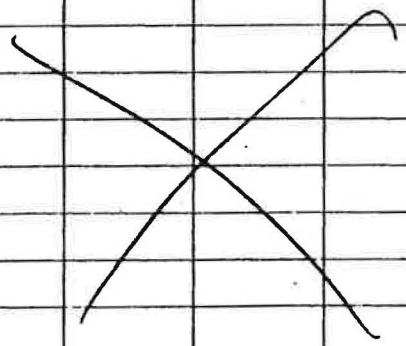
4-22 facing E
1047



4-23 facing W
1048

4-24 facing W
1050

4-25 facing NW
1055

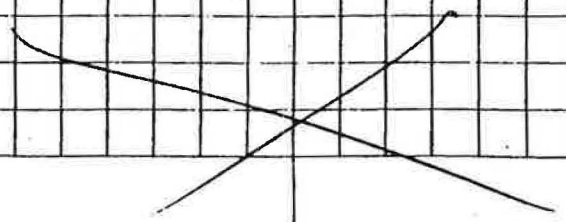


Open Hearth #3
Being removed
11 furnaces
of stationary 1970s

Open Hearth #2
had 5 furnaces
removed furnaces + hood
BOF

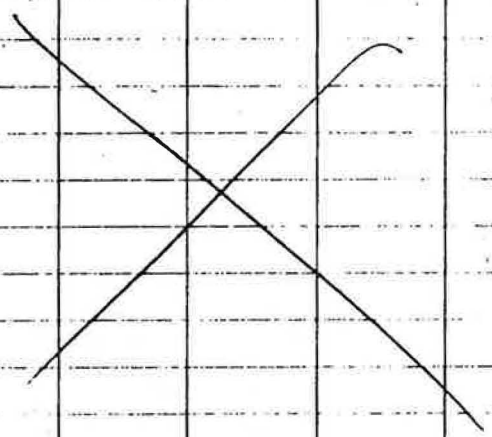
Open Hearth #1
Being removed
1959 - 1962 not sure when
shut down

#1
#2
#3
} no gas cleaning
no dust collection



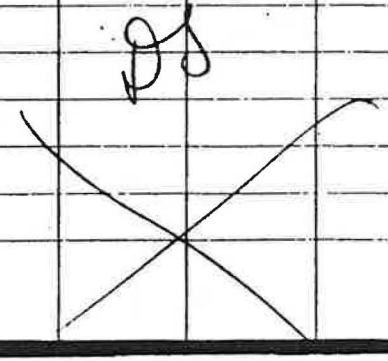
6/24 109

4-26 facing E
1104 →



4-27 facing N
1117 →

DJ



6/24 110

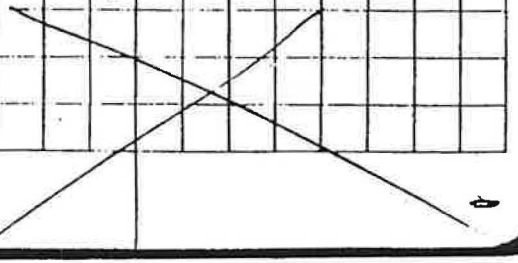
Caster Baghouse

operated mid 80s - present
collects fume fr
steel being poured in
caster
~30 tons every 90 days
cadmium D006
3 chambers
Shute inside bldg

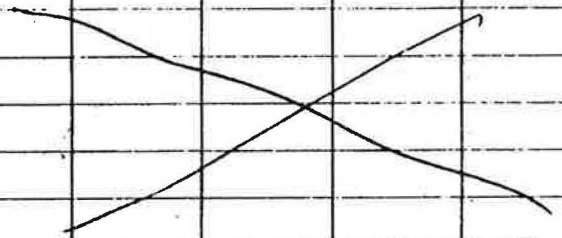
Soaking Pits
ingots are placed
in furnace + reheated

Slab Cut Hydraulic Oil Spill
Observed fr a distance

DJ

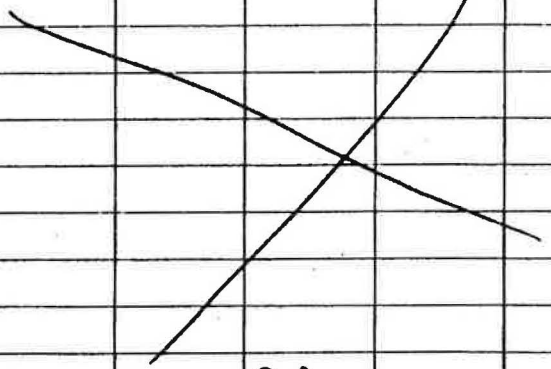


4-28
1127 facing S



4-29
1138 spill site facing NW

4-30
1138 facing N
former site UST



DS

ERS oily wastewater tank
UST for
electrical repair
1989 removed sampled
tank
only ww → TMC

UST dug up + soil excavated
diesel fuel spill
State approved cleanup
removed 89/90 DS
~~diesel fuel accumulated~~
diesel fuel spilled
over time
~ 50 tons contaminated
soil removed
found spill 1991

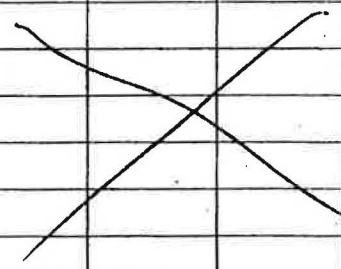
DS

4-35 } no photos
4-36 }

1320 New Roll 5

Back for lunch
A. Abate
E. Wilson
C. McClellan
D. LaRosso
P. Goggin

5-1 facing W
1337 trench



5-2 facing E
1346

DF

Tin Mill
Mike Dunn Gen Foreman
Tin Mill Pickler #3
dirty liquid overflow
to trench
to
TMC
early 50's installed
trench Brick & concrete
lined

Sulfuric Acid 72%
Mix w/ water
in tanks ~ 9%

Cleaning rust or
oxide off steel strip
Dipping steel in acid
3 to 1

91 Acid leak overflow
line feeds TMC
repaired 6/23
DF

6/24 114

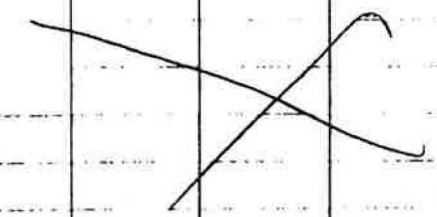
Plant Garage

2 act we UST
diesel 10,000
gas 8,000
Safety clean part cleaners

Mason's Garage
8-54 UST removed 89
DS
Gasoline 10,000
Diesel fuel 10,000
Waste oil
Gasoline 8,000
Capacity
60-80 tons soil was excavated
6 SX Pine wood, SC

4 drums waste oil
Some tag black staining
around drums +
vegetation
No odor
location of
tank removal not filled in
DS

6/24 115



4-31 1153 facing W (left to right)
4-32 former location UST
4-33

4-34 facing N →
1157

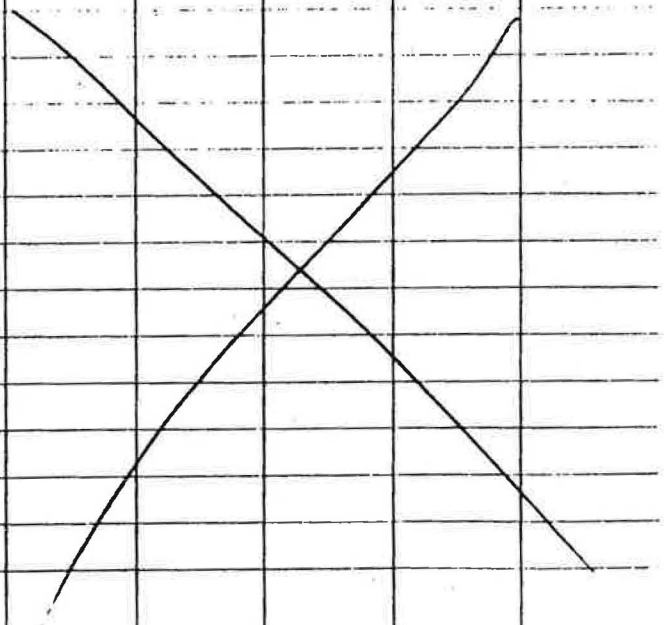
4-35 facing N
12:00 4 drums of liquid
4 dirt + rags ~~with~~ appear
to be oily waste
empty drums in
background
DS

6/24 117

If tanks are emptied, discharge to Acid Abatement Sys - 3M and residue to TMC

Tanks have been rinsed twice a last qtr.

DS



6/24 118

Tanks leaked few months ago liquid contained in trench

Shut down once/wk for maint

Overflow pipe flows to Acid Abatement Sys

If leaks then TMC

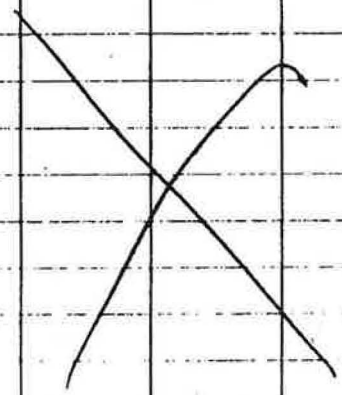
Acid Abatement Sys pumped to 60,000 gal tanks

Normal operation - discharge to Acid Abatement Sys nothing to TMC

DS

~~5/~~ DL

5-3 facing S
13 ~~14~~52
DL



brick lined sump
5-4 facing NW
1359

5-5 facing tank NW
1400 patch on tank

DL

Concrete trench
wt water flowing
continuously fr pipe
on west side of
pickling building
non contact cooling water fr
new hydraulic
sys operate
hoisting equip
4 separate hydraulic
sys in bldg

6 Acid Storage Tanks
any leak would
go to TMC

Monitoring point in
sump to TMC

Acid pumper
std proc wash
things down

DL

6/24 123

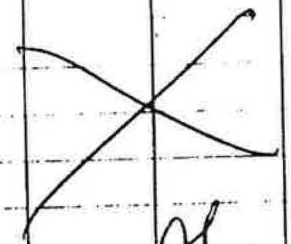
Sludge produced + removed annual basis - Contractor Ma~~nner~~ yard Metals + reclaims metals

Tin sludges 300 drums/yr
tin recovered

~~Sludge~~ High density Sludge Plants

Chrome effluent

use ~ 1000 lbs recycles sludge



DJ

6/24 124

Lou Walsh

Halogen Tanning Line (2)
1962 - present
1966 - "

Cleaners NaOH base
wetting agents
electrolytic grid
dry or oil strips

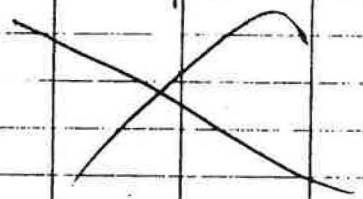
Running dry strip
no foam
After cleaning, series of rinses to
Pickling get
and off strip
scrubbed

trenches collect overflow
to TMC

Tin coating

DJ

6/24

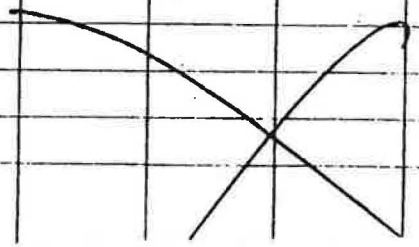


13
1

5-6 facing W
1402 →

5-7 facing NW
1404 →

5-8 facing N
1414 →



6/24

2 acid tanks out of svc
due to leaks
~30 yrs old each
1990 leak

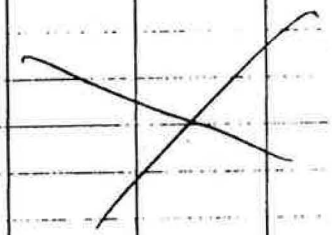
Sump
Acid
↓
Sump
↓ (Quenchers)
Acid Abatement Sys

Pump for Abatement
Sys

2-55 gal drums on
floor to collect
waste oil
drain to drums
waste oil pumped
out & transported
to PORI

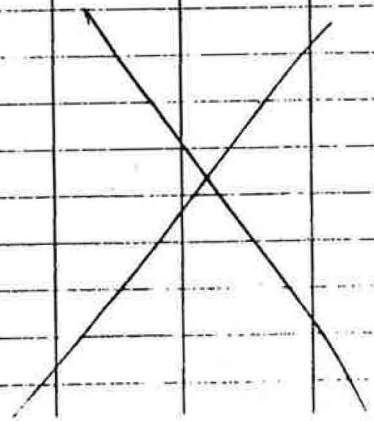
6/24 125

5-9 1449 facing down in sump E ⇒



overflow sump —
hot water recycled
back to hot spray

DL



6/24 126

Plater Sump acid brick lined
+ cement
oil skimmer recycle
oil
skimmed oil → 55gal
drums

Any spills / leaks go into
sumps

Chem Treat - chrome
dedicated sump

Sumps 1- clearing sol
1- acid sol
center line → platers
1- trion oiler

Series of scrubbers
3 rings rolls
spray strip

DL

6/24 127

#1 Scrubber

↓

Pickle tank

↓

#2 Scrubber
remove acid

↓

ready
for plating

5-10 facing NE
1512

→

6/24 128

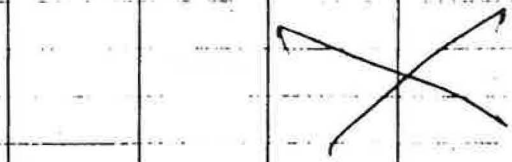
~~Chrome Line~~ 108

Above ground Waste Pickle liquor tank
metered prior to
discharge to TMC
operating dates 1963 - present
10,000 gal

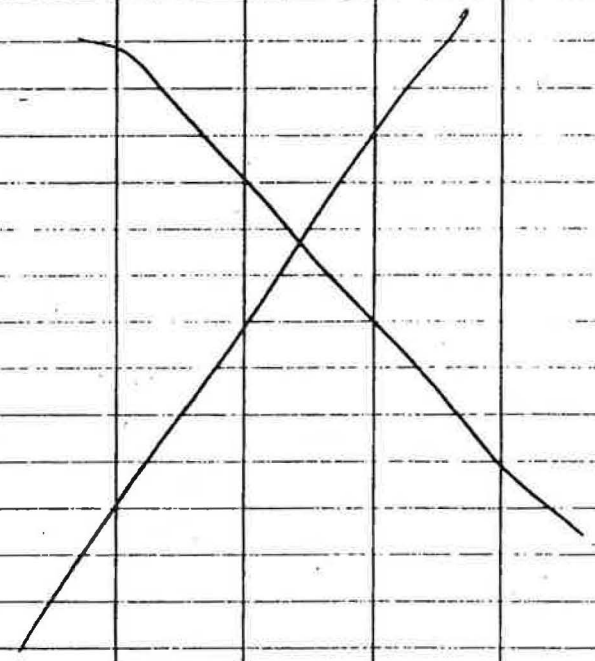
Above ground Plating Sol
Maynard picks up
every other day
operating dates 63 - present
10,000 gal

Sitting over gravel on
concrete harness
down slopes toward RR tracks

6/24 129



5-11 1534 facing S
sump →



DS

6/24 130

#8 Chrome Line
plating line used
to be here
common sump

Chrome line
1 sump
dedicated
chrome waste
↓
HDS

Cleaning out pots
+ refining at
new acid brick
↓
feed to HDS plant

alkaline + acid → TMC
1 sump

inspect lines

Annual Maint clean sumps
reline sumps if necessary

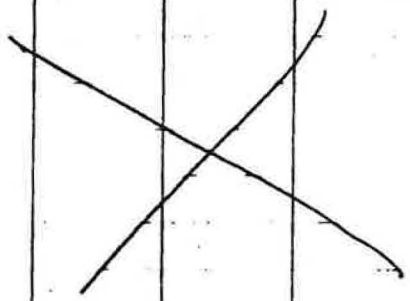
DS

6/24 131

5-10 facing S
1542 est location

Flow Chart of
Chrome Plating
~~Tin Plating~~ Halogen

5-13 facing ~~20~~ 19 E →
1604



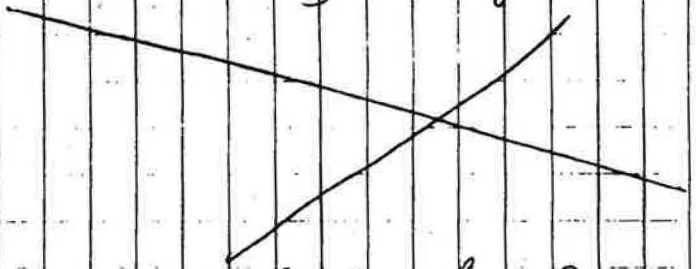
5-14 facing SE →
1614

~~5-14 facing~~ 19 →

UST & Spill
Same location

6/24 132

1988 PCB Spill in Tin Mill
removing transformer



UST Diesel fuel
10,000
late 89 early 90 removed
sampling some soil
removed
tank was leaking
10 - 20 tons soil removed
Cold Sheet Mill UST

Truck Dock #9 UST removed diesel
10,000 gal
89/90 removed not leaking

Fuel Oil Spill
pumping oil to tank
leak on line & valve

191

6/25 (137)

tanks at skimmers
#
location
capacity
age

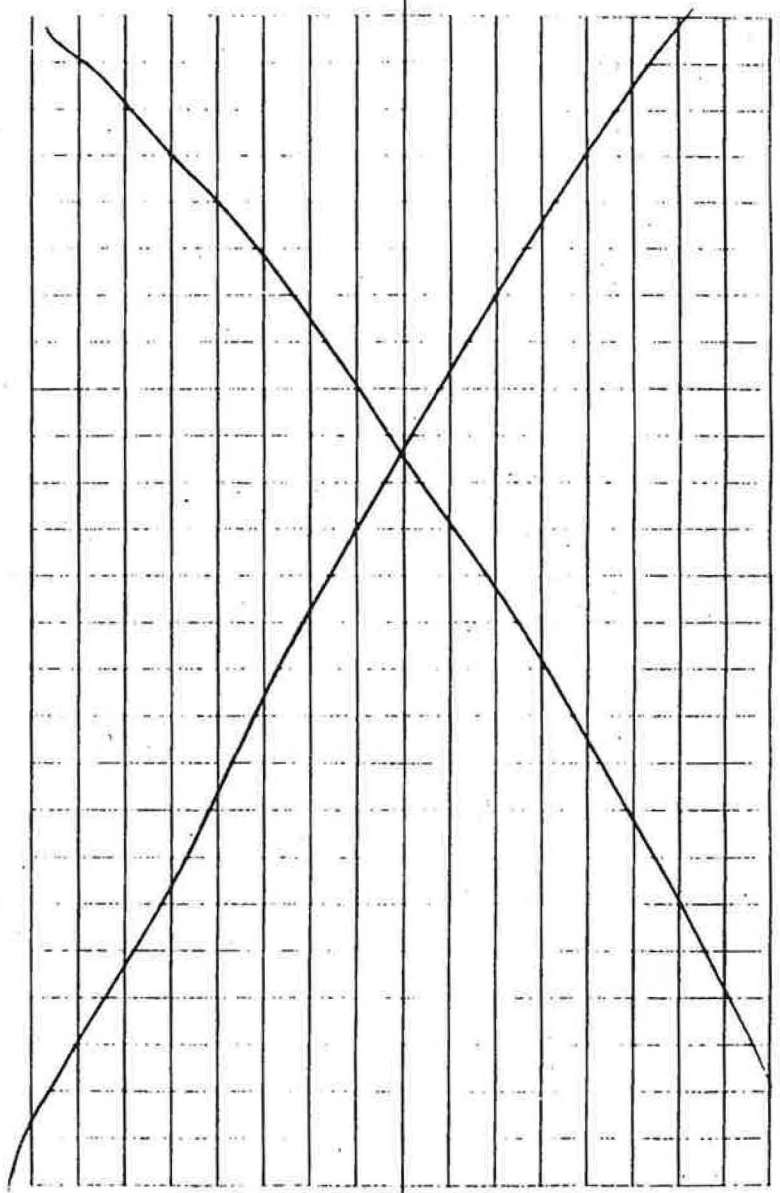
Above ground tanks not normally tested for integrity
If a tank is questionable, then sounding may be done

Bob will ck if acid tanks were tested for integrity

Photos + logs to Joe Mendelsohn
all paperwork to Joe M

Mid July start rec info

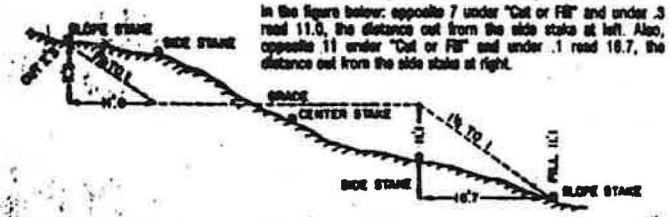
DS



DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING

Roadway of any Width. Side Slopes 1½ to 1.

In the figure below: opposite 7 under "Cut or Fill" and under .3 read 11.0, the distance out from the side stake at left. Also, opposite 11 under "Cut or Fill" and under .1 read 16.7, the distance out from the side stake at right.



Cut or Fill	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	Cut or Fill
	Distance out from Side or Shoulder Stake										
0	0.0	0.2	0.3	0.6	0.8	0.6	0.9	1.1	1.2	1.4	0
1	1.5	1.7	1.8	2.0	2.1	2.3	2.4	2.6	2.7	2.9	1
2	3.0	3.2	3.3	3.5	3.6	3.8	3.9	4.1	4.2	4.4	2
3	4.5	4.7	4.8	5.0	5.1	5.3	5.4	5.6	5.7	5.9	3
4	6.0	6.2	6.3	6.5	6.6	6.8	6.9	7.1	7.2	7.4	4
5	7.5	7.7	7.8	8.0	8.1	8.3	8.4	8.6	8.7	8.9	5
6	9.0	9.2	9.3	9.5	9.6	9.8	9.9	10.1	10.2	10.4	6
7	10.5	10.7	10.8	11.0	11.1	11.3	11.4	11.6	11.7	11.9	7
8	12.0	12.2	12.3	12.5	12.6	12.8	12.9	13.1	13.2	13.4	8
9	13.5	13.7	13.8	14.0	14.1	14.3	14.4	14.6	14.7	14.9	9
10	15.0	15.2	15.3	15.5	15.6	15.8	15.9	16.1	16.2	16.4	10
11	16.5	16.7	16.8	17.0	17.1	17.3	17.4	17.6	17.7	17.9	11
12	18.0	18.2	18.3	18.5	18.6	18.8	18.9	19.1	19.2	19.4	12
13	19.5	19.7	19.8	20.0	20.1	20.3	20.4	20.6	20.7	20.9	13
14	21.0	21.2	21.3	21.5	21.6	21.8	21.9	22.1	22.2	22.4	14
15	22.5	22.7	22.8	23.0	23.1	23.3	23.4	23.6	23.7	23.9	15
16	24.0	24.2	24.3	24.5	24.6	24.8	24.9	25.1	25.2	25.4	16
17	25.5	25.7	25.8	26.0	26.1	26.3	26.4	26.6	26.7	26.9	17
18	27.0	27.2	27.3	27.5	27.6	27.8	27.9	28.1	28.2	28.4	18
19	28.5	28.7	28.8	29.0	29.1	29.3	29.4	29.6	29.7	29.9	19
20	30.0	30.2	30.3	30.5	30.6	30.8	30.9	31.1	31.2	31.4	20
21	31.5	31.7	31.8	32.0	32.1	32.3	32.4	32.6	32.7	32.9	21
22	33.0	33.2	33.3	33.5	33.6	33.8	33.9	34.1	34.2	34.4	22
23	34.5	34.7	34.8	35.0	35.1	35.3	35.4	35.6	35.7	35.9	23
24	36.0	36.2	36.3	36.5	36.6	36.8	36.9	37.1	37.2	37.4	24
25	37.5	37.7	37.8	38.0	38.1	38.3	38.4	38.6	38.7	38.9	25
26	39.0	39.2	39.3	39.5	39.6	39.8	39.9	40.1	40.2	40.4	26
27	40.5	40.7	40.8	41.0	41.1	41.3	41.4	41.6	41.7	41.9	27
28	42.0	42.2	42.3	42.5	42.6	42.8	42.9	43.1	43.2	43.4	28
29	43.5	43.7	43.8	44.0	44.1	44.3	44.4	44.6	44.7	44.9	29
30	45.0	45.2	45.3	45.5	45.6	45.8	45.9	46.1	46.2	46.4	30
31	46.5	46.7	46.8	47.0	47.1	47.3	47.4	47.6	47.7	47.9	31
32	48.0	48.2	48.3	48.5	48.6	48.8	48.9	49.1	49.2	49.4	32
33	49.5	49.7	49.8	50.0	50.1	50.3	50.4	50.6	50.7	50.9	33
34	51.0	51.2	51.3	51.5	51.6	51.8	51.9	52.1	52.2	52.4	34
35	52.5	52.7	52.8	53.0	53.1	53.3	53.4	53.6	53.7	53.9	35
36	54.0	54.2	54.3	54.5	54.6	54.8	54.9	55.1	55.2	55.4	36
37	55.5	55.7	55.8	56.0	56.1	56.3	56.4	56.6	56.7	56.9	37
38	57.0	57.2	57.3	57.5	57.6	57.8	57.9	58.1	58.2	58.4	38
39	58.5	58.7	58.8	59.0	59.1	59.3	59.4	59.6	59.7	59.9	39
40	60.0	60.2	60.3	60.5	60.6	60.8	60.9	61.1	61.2	61.4	40

6/17/91 — 6/21/91

VSI

Bethlehem Steel

Sparrows Point, MD

Log Book #1 of 1

Susan E. French

A.T. Kearney, Inc.

The paper in this book is made of 50% high grade rag stock with a WATER RESISTING surface sizing.

6/24 (133)

Hot Strip Mill UST active
Gasoline 10,000 gal
UST
Not sure of status { Diesel 10,000
Gasoline 8,000

Mud Reservoir
contains mud
fr digging Humphry
Creek WWTP
at least 50'
Mud pumped

5-15 facing S
1632 Mud reservoir

1635 finished

DJ

6/25 (134)

0930
Close out meeting wt Bob Abate
P. Gagin
D. LaPinaso
Caster + baghouse began
operation at same time

State MD if sulfuric
acid spill neutralized
can go to non haz LF

We will rec UST
Gkenty + Miller Report → Bob Abate

NPDES results 90,91

Deneen Dabney Region III
clean water prog rec
NPDES sampling results

Reviewed info needs
File list
6/21
6/25

6/25 (135)

- Sanitary Sewer ✓
- Waste Oil Storage
- Plate Mill (scale pit) ✓

- GW Quality Assessment Report (CK to see if we have or can get fr EPA)

- Ans to 88 questions for RFA
  Mary Coe has questions

- Tidal changes + how it affects GW
  Bob will CK

Coke ~~do~~ of oven & bio plant discharge to Sanitary Sewer

Discharge fr GW Treat Plant until 1990
After 1990, discharge

6/25 (136)

to Humphrey Creek

GW Treat fails for cadmium 80 ppm goes to treatment

Caster baghouses looking at TCLP testing more frequently
Is being disposed as HW

Rolling Plate Mill Scale Pit
Similar to other scale pit
operating 1900s to present
scale mill, oily waste
concrete structure
capacity } will provide
dimensions }
scale - pieces of steel flows -> Sinter Plant

(1)

CONTENTS

PAGE NO.	REFERENCE	DATE
	SWMU NAME	
	DESCRIPTION	
	. physical dimensions	
	· material of construction	
	· What is unit designed to do	
	· Disposition of unit	
	Operational Stocks	
	Release Controls	
	Wastes Managed	
	Release History	
	SEF	

(2)

65°/70°F
overcast, lt. rain

6-18-91 BSC Tour

Headwaters of TMC

Flows from Edgemere Community

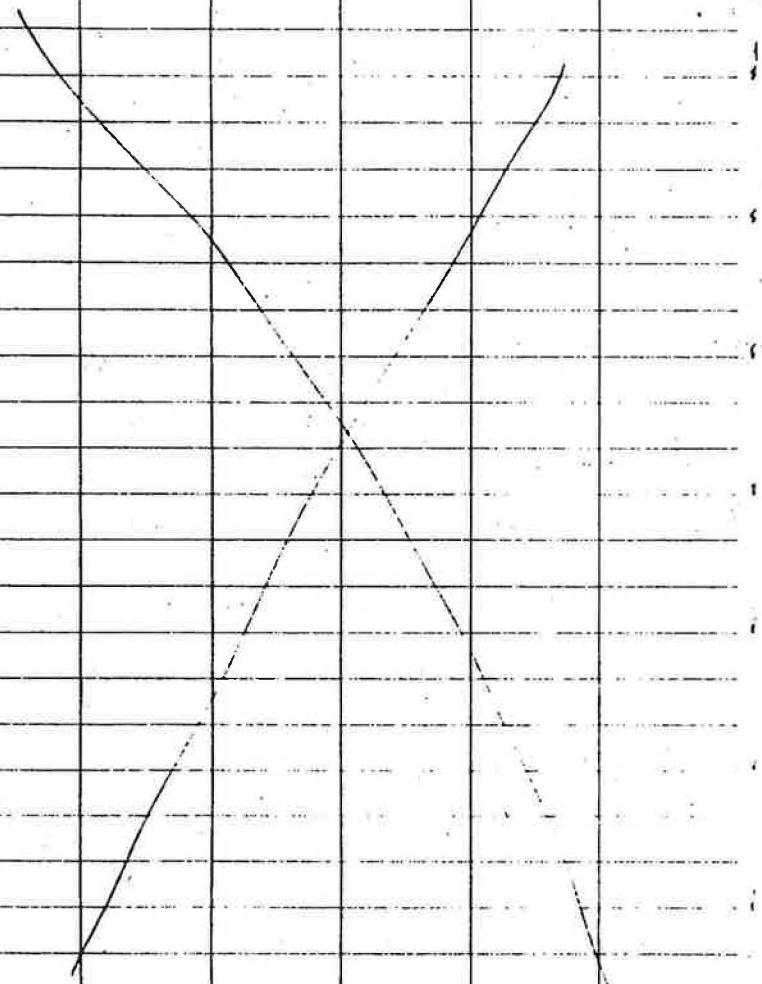
no public access
no filter/screen before using as TMC

2nd stop
Starting pt. where canal was built

lined w/ slag from BF
iron ore 30-60% iron
the rest is rock
calcium mg, carbonate
lime

fill permit from USCG
USCOE

SEF



slag may have been deposited wet or dry not sure

thickness - 10' → 50' depending on where

finished - 1970-71 built over 10 yr period

3rd stop - On map (2)
Process Outfall #
across from RR yard +
68" HS Mill

Likely Wasted: Oil - Hydraulic, Lubricating, Rolling Oil
Particulate
Mill Scale
Dirt

Sheet coils stored on both sides throughout the area (rusted)

dredging "piles" on side of canal
settled from outfall
occasionally collected
→ deposited on S. bank

Ref

Coil/sheet storage stops
at 1st mill (68" Hts Mill)
4th Stop. on Map → (3)
2nd outfall
for Cold Sheet Mill
Oils
Water
Scale
Cleaners (Alkaline)
Rinsewaters
Continuous flow when operating

lg open area W of canal
not used for anything
~~but~~ across from CS mill

5th Stop on Map #(4)
PORI - Palm Oil Recovery outfall
not sure of units + steam +
Small outlet pipe < 2" oil

just below - oily sediments
ready for dredging - still wet
+ oil rich - dimpled surface

57

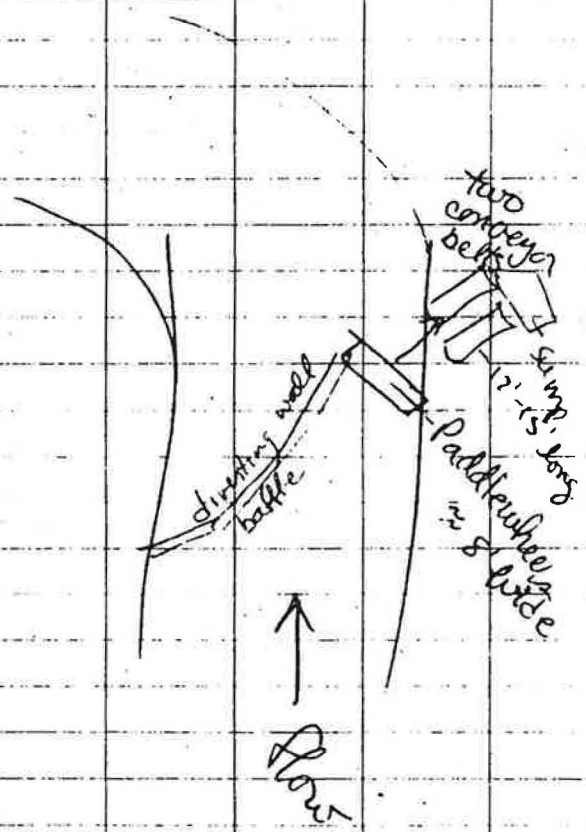
6th Stop Process outfall on map #5
more Cold Sheet Mill drainage
≈ 48" pipe, like others
oil high flow 33A
rinsewaters, etc on sign

7th Stop Tin Mill Outfall on map #6
4' pipe, w/ steam (hot)
low flows
oil + grease
pickling rinsewaters
alkaline
some scale

oily smell evident during
walking tour

8th Stop * 7 on map
Tin Mill Outfall ≈ 32?
emulsified waste
from oil/water separator

oily sediments in canal
½ way across



9th Stop –
Tin Mill Outfall
Halogen lines + others

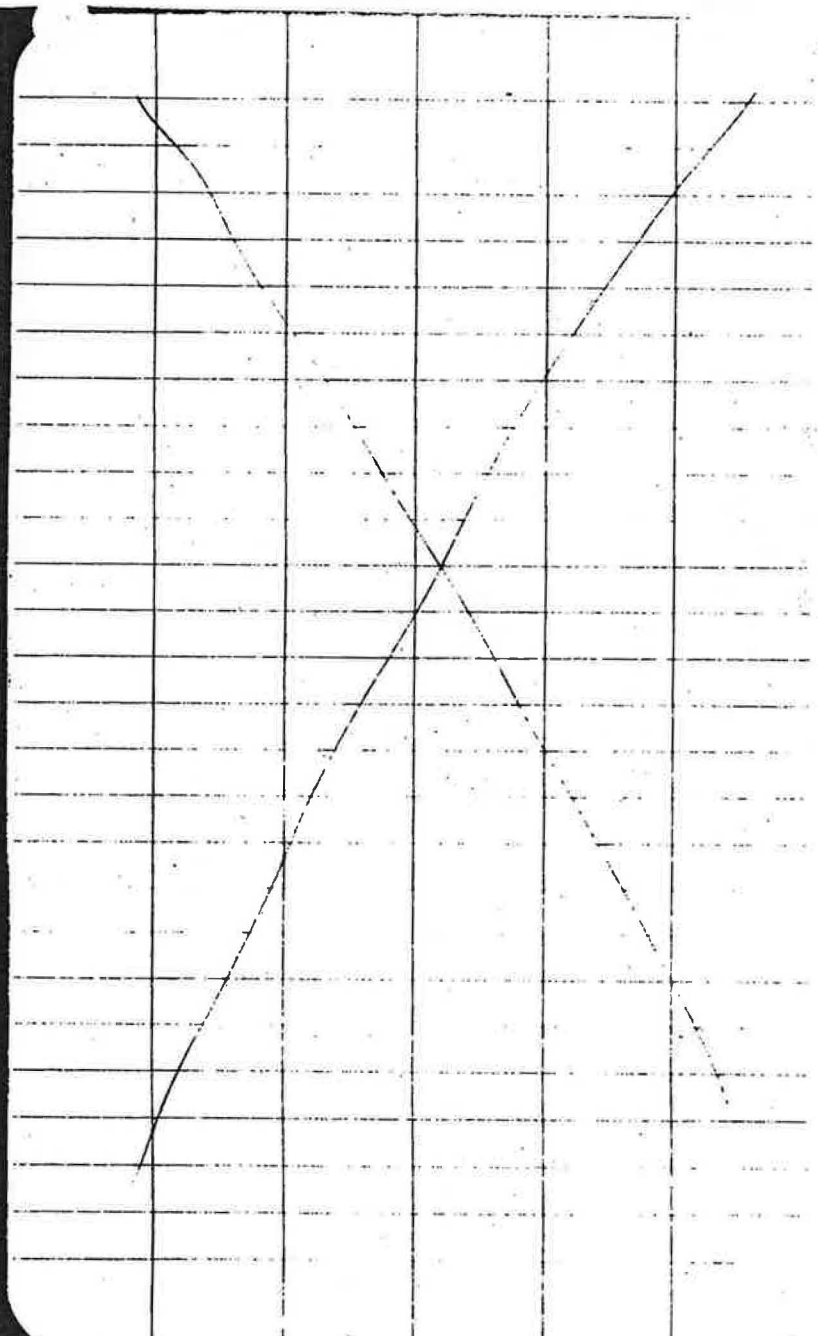
marked # 313-B on cement

10th Stop.
1st oil skimmer
at bend in canal
1st in a series of skimmers
before HCWWTP.
funneled oil goes to paddle wheels,
then conveyor belts (2)
oil is scraped off, into sump
pumped to 2 tanks x 40K gal each
trucked to PORI steel above grd.

here from at least 1975

SEJ

SEJ



(

HCWWTP

inlet - flow meter
- lime addition to adjust pH
then goes to mixing chamber
to aerate water & mix in
lime

upstream from inlet ~50-100 yds
is baffle
if it gets a lot of oil they
use sucking equipment
(took photo, marked 12:20 pm)
actually 11:20

→ outlet pipe underwater, on N
side ~30' before baffle
from Billet prep. bldg.
to North
can only see ripples in water,
moderate flow

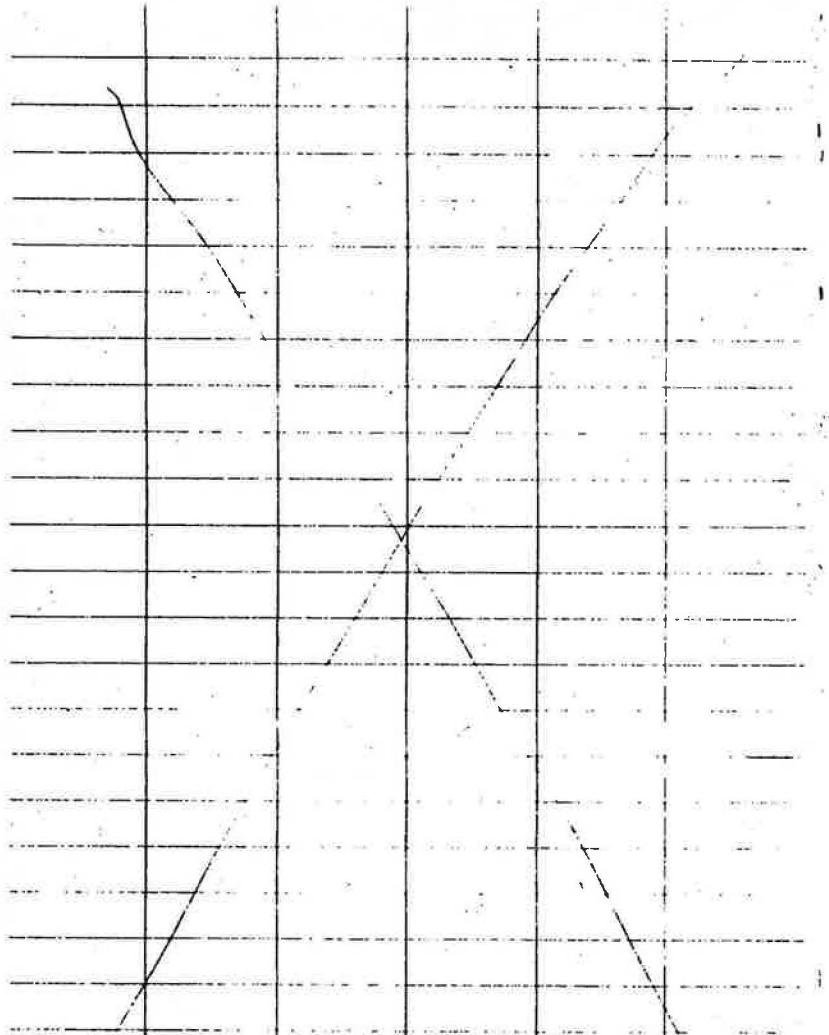
SEJ

~ 50 yds upstream - an old outlet pipe from old pipe mill, no longer in use. (closed in early 70s) may have drained the HC impoundment [on N side] (photo taken 1125)
pickling water
cooling wtr, rinse wtr
dewatering from BOF
slurry from the impoundment

impoundment used infrequently
~1/yr

outfall 42B ~150 yds upstream from baffle
(on S side) reddish water
primary mills contact wtr.
rolling & scarfing
mill scale
iron oxide
lubricating oil fr. rolling tables
4' pipe or more, high flow

C3
25



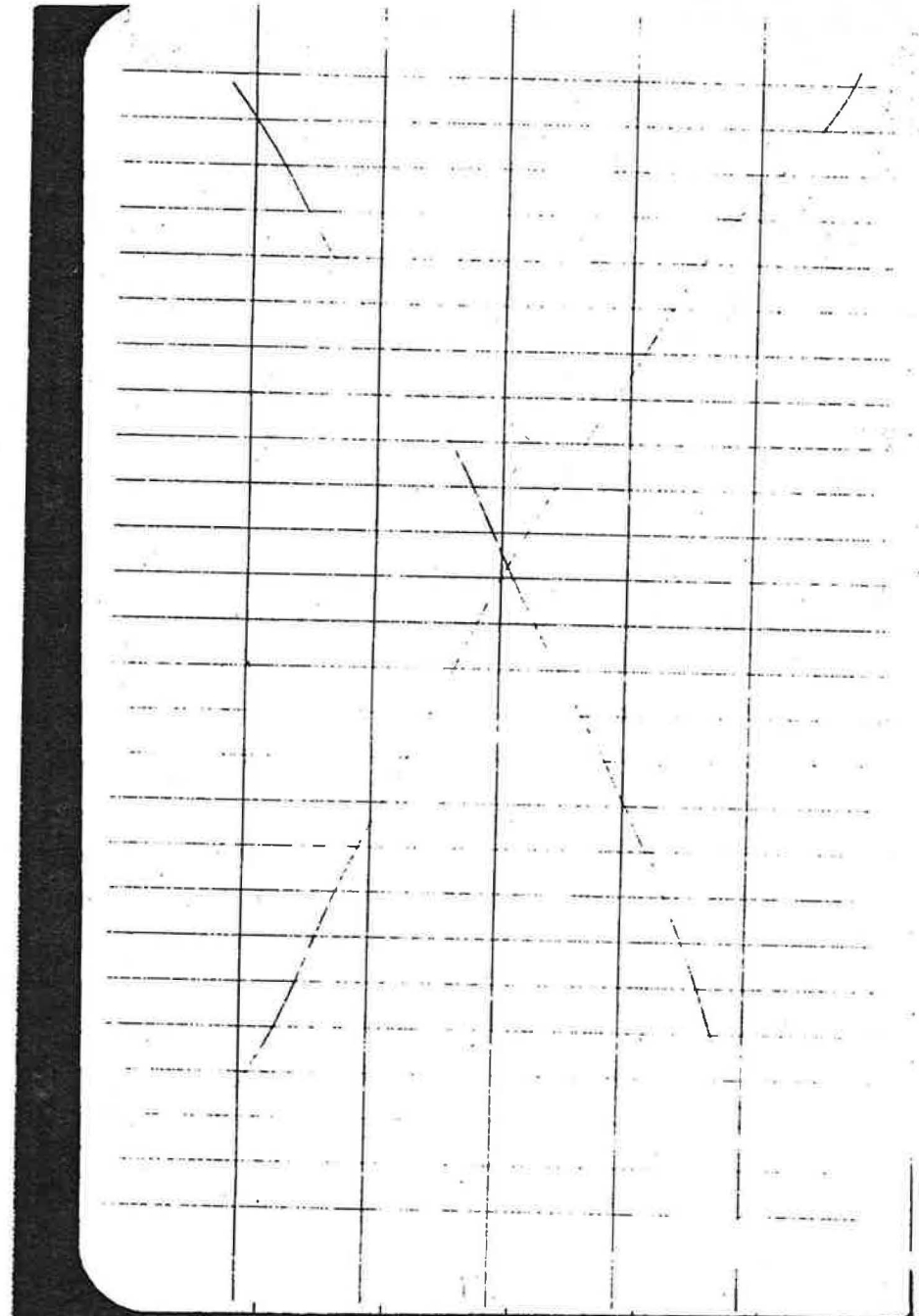
walking toward cadmium rec. unit
alot of oily sediments on S side
of canal w/ brush - dead
& oil stained

Brill skimmers - 2 operable
uses a rope on rotating
pulley
squeegie cleans it & it
goes thru a pipe (~9" line)
drains to a pit
& is periodically ~ 1/wk.
contractor Mobile Pumping & Dredging
pumps it → taken to PORI

oil pit ≈ 10,000 gal. (not sure)
relatively light oil
not #4, #6 or bunker oil
because it floats enough to
come down the TMC
≈ 200 diff. grades of oil
are used thru out the
plants

Western most set of skimmers

Sef

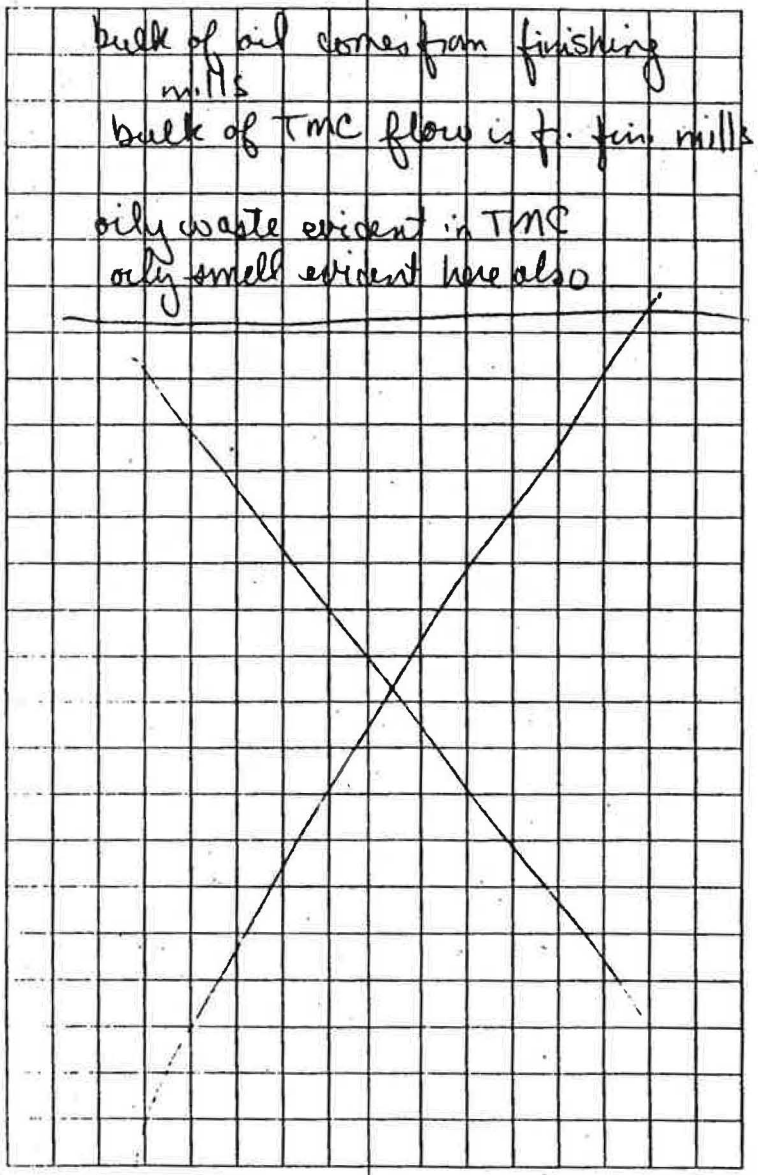


bulk of oil comes from finishing mills

bulk of TMC flow is fr. fin. mills.

oily waste evident in TMC

oily smell evident here also



SEE

6-18-91 (12)

Gray's Landfill
residual waste LF
wastes inc.
dewatered sludges from WWT
BOF
BF
"non-hazardous" LF
some rubble
asbestos
K087

Dec. '87 TC tested

to the NE is the spare parts storage yd

no run-off controls in non-haz part

---

on NE corner, closed cell (haz)
macadam cap
closed '84 - redone 1-2x since
maybe 6"-1' total thickness
most recently capped 2-3 wks ago
because there were cracks; had been patched several times
≈ 100-120 yds sq. in size

435

(1)

trash transfer station
also at NE corner
very old.
(paper, wood scrap,
cans, etc.
no process waste
just domestic trash.

(BFI operates it)

30-35' square cement
building

(1)

Some gw mon. wells here
but not in use - last sampled in 1987 (?)
≈ 20 maybe
K087 (?) Saw 1 at NE corner
Tar decanter sludge
(Bevill exempt)
D008 - lead

no compliance monitoring prog.

entrance ramp is roped off

along W boundary of LF
creek ~~runs at~~
dug in for fire fighting
water → serve the LF itself
→ Knabe's Ditch
(Five Chief)
dug > 20 yrs ago
~15-20' wide

saw 1 monitoring well (photo taken)
across the road from the ditch

Humphreys Creek Impoundment

Description THIS LANDBASED UNIT IS RECTANGULAR IN SIZE AND IS LOCATED N of HCWWTP on the other side of Tin Mill CANAL. The unit is approx. the size of 2 football fields. Heavily vegetated w/ phragmites AND CAT TAILS (WETLAND INDICATORS)
- formerly swampy area - filled with slag

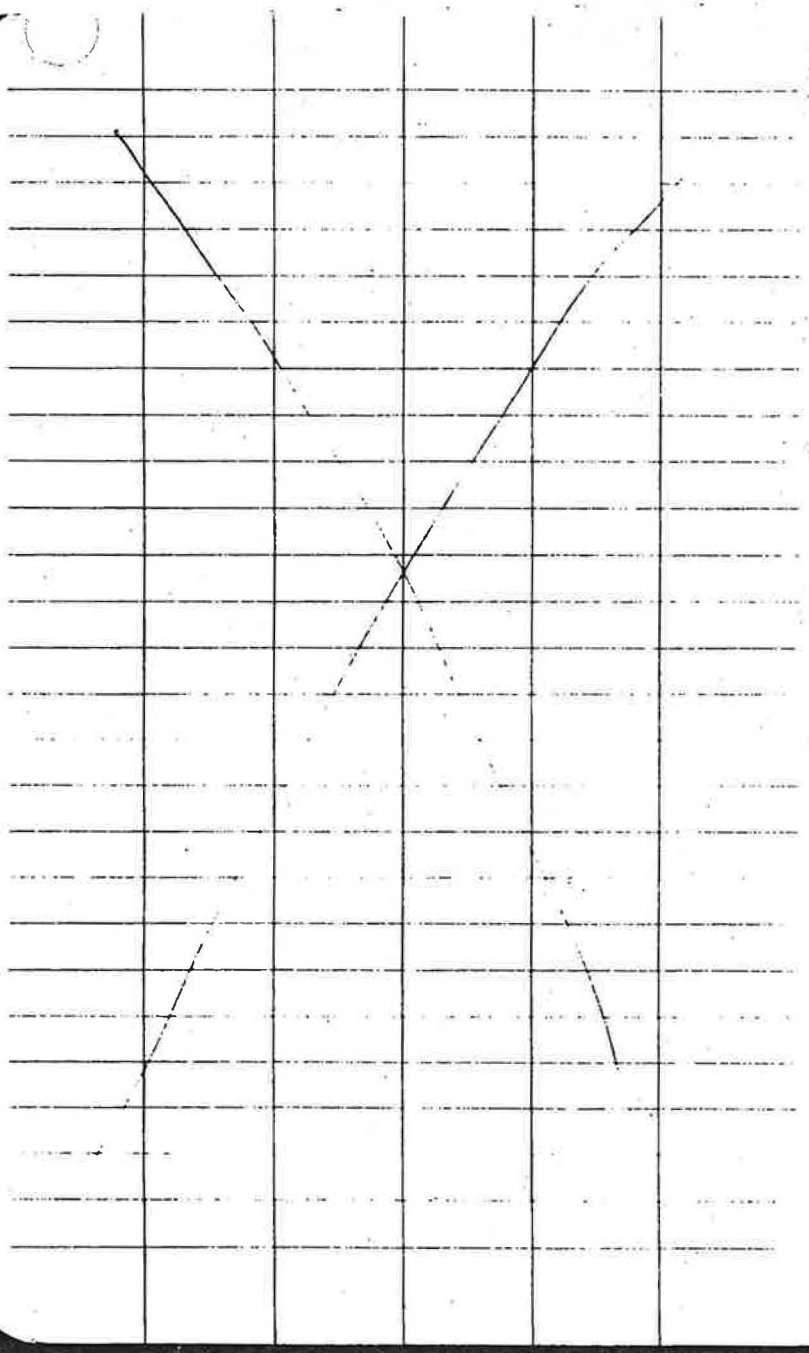
Wastes MANAGED : NON HAZARDOUS
HUMPHREYS CREEK SLUDGE / BASIN NOT TMC
BOF SLURRY
OPEN HEARTH SLURRY

Operational Status 1990's → present.
used ≈ 1x/yr when BOF thickener goes down → has free liquids in it can't go to Gay's "soupy" waste drains to TMC

Release Controls Hosking - NONE.

MAS

SEA



Other:

Approx 10-20 wells (bw) around impoundment. Not meant for monitoring - sampled once for study of area.

TMC Impoundment #1

Located ≈ 50 yds E of Baffle or N side of canal

Heavily vegetated

small mound shape designed to hold dredging from TMC so liquids will flow into canal

Wastes:

anything in the canal process sludges + oils

30 × 50 yds in size

unknown age

waste is still in place

at least 2 yrs since last use, based on veget. growth

Op. Status

SEJ

TMC Impoundment #1 (cont.)

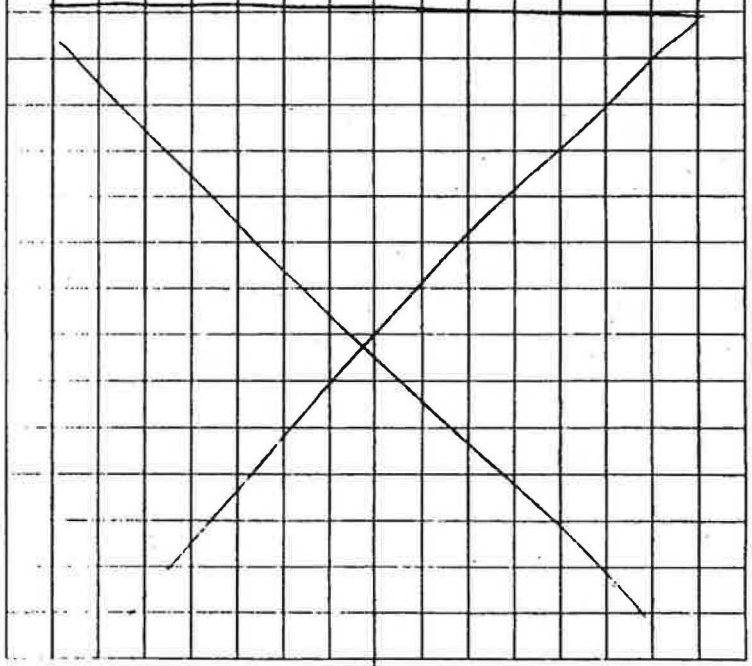
Release Controls / History

- no release controls except for canal itself

addl. dredging on land adj. to original mound, to the E (closer to HC WWTP)

4 mounds

there are 3 others



SEJ

Sinter Plant

Description

- startup date (?)

- all dusts produced are fed back into the process

- Kiln dust made also of various lower-grade mat'ls.
  - fused

- Baghouse - fed back into system

WWT System w/
2 scrubbers

2 banks of multicyclone
then 2 fans
then 2 hi-energy scrubbers

Eff

dirty water fr. scrubbers
goes in thickener

Hi-Density Sludge Tank
treated w/ acids, polymers to
precipitate out the metals
+ released thru outfall

Centrifuge cake is trucked
daily

monitoring pt. 101F water from
HDS thickener/clarifier

Former Lime Grit Box - no longer used
- changed the grade of lime
no longer any grit
was taken in wheelbarrows
to a box

WWT Process Water
Surface Plant Concrete Trenches
recirculate back into system
<20 yrs old ~1975
used floor
(gratings)

SEJ

2 SPL Tanks - steel
1 vert., white 15' tall x 10' across
1 horiz steel tanks ≈ 25' x 8' ~~long~~ dia.

used as WWT chemicals
on Simla Plant (HDS)
trucked over here, probably
from Tim Mill

white tanks sits on
slag aggregate
- have "earthen" berm

< 10 yrs old

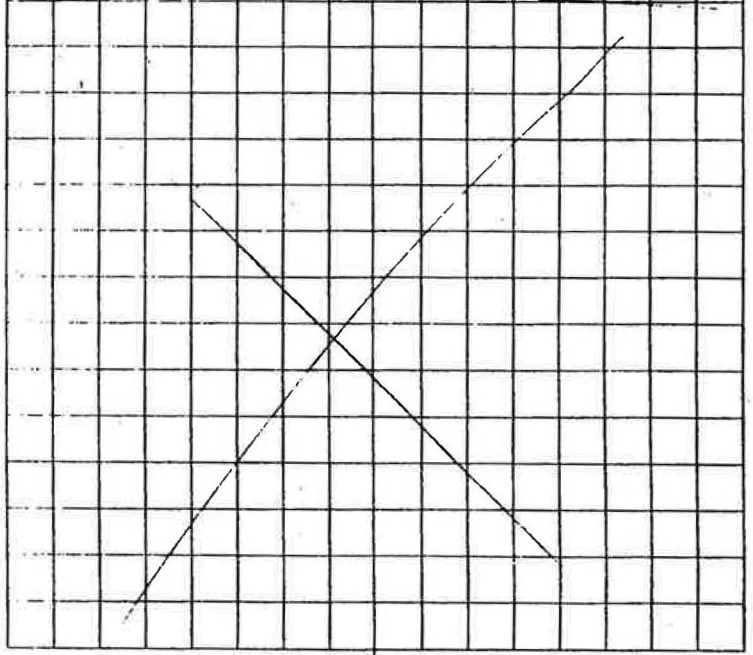
SEJ

(12)

One Yard

Maintenance Shops
Waste Oil Drums
Put outside the bldg.

Reel Storage
+ Spare parts storage outdoors
adj. to water



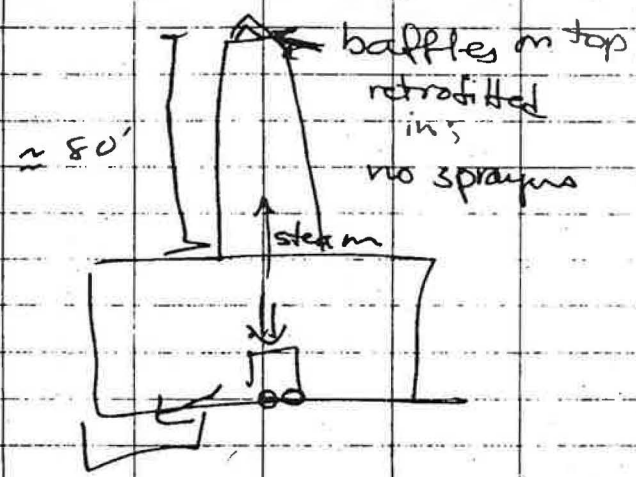
SEJ

Weds. June 19, 1991

Coal Chemicals / Coke Oven Area.

Battery 1/12

Waste Accum. Area. - N end of #12
trash swept up
consists of pipe 30' long, 2' dia.
vertical from top floor
drums + bagged chemical storage
area
mat'l. goes thru pipe to ground
covered in coal dust
picked up as needed by
payloader to a truck
- coal sweepings
- coke (100#)
- trash
taken to coal field + screened for coke by
sodium silicate. foam sealant
used to seal stand pipes
comes in 55-gal drums stored
on ground + on top level
drums are lifted by crane or
lifter on lorry car



#12 Quencher - Sprays onto hot coke (Built in late 50's w/battery) water in pit + makeup water
& goes into pit
make-up water also goes into pit
dirty scrubber water also goes in
pit OSC - One Spot Car has
scrubber - is being used; the
other, w/o scrubber, is a spare
parked off to the side.

under normal operating cond, ~every 15 min.
now, every 30-45 min.
today, 4 hr down periods

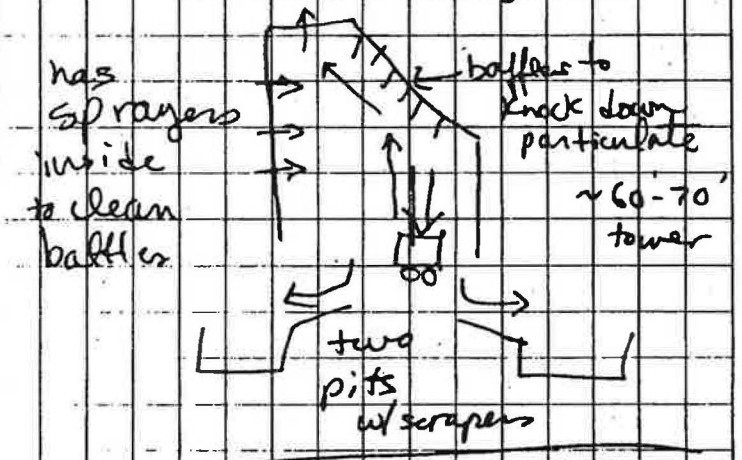
Closed system

about 20'x12'x5' wide ← pit is cleaned (by clam), mat'l. taken to
one ~~coal~~ field + screened ~~by Longenfelder~~ contractor
"coke breeze"
Mid-Continent Coke
Screen into 3 sep sizes
smallest is reused
larger 2 sizes are sold

6-19-91 10-10:15 a.m.

A Battery
- 2 quenchers w/ automatic pit scrapers
fine mat'l. coming out
wasted coal, but reused

more modern quench design
- diverted tower - angled

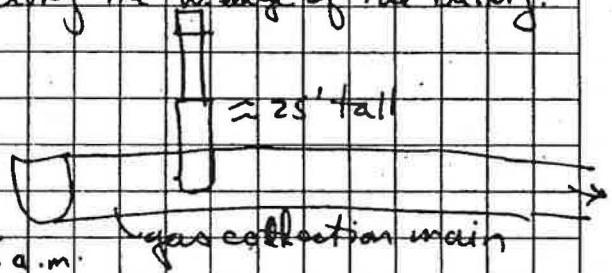


same trash disposal system on N end of A Battery
w/ pipe from top level to ground ~50' drop w/ dumpster
man dumped liquid into dumpster from a bucket on mezzanine level (2nd story level)

SEF

A Battery (cont.)

Coal Gas Collection Main has several pressure relief valves along the W edge of the battery.



10.25 a.m.

while here, a ≈30 sec. emission occurred from a P.R. valve near center of the battery - thick smoke 100% opacity

'A' Battery

West Silt Accum Area SW corner of battery

waste oil stored in drums + put into open topped dumpster

↓ pumped out w/ vacuum truck & goes to PORI

ed. drum is sampled before going ph, PCBs, chlor solvents, water if rejected goes to WWT or off-site

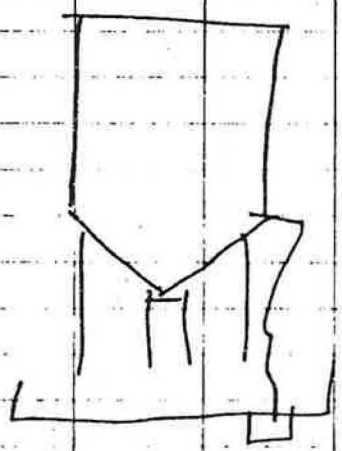
14-11 10:55 am

Waste Oil Accum. Area (cont.)
waste oil drums on old pallet
some leakage onto gravel
some drums rusty, dented

area near old fire station bldg.
(10'x15')
lg area blackened, poss. oily
by oil?
~60'x75' area
area is a depression area

AKJ Tar Sludge Decanter Area
tar is mixed w/ diluent & heated
to keep in suspension
then is sprayed onto coal before it
goes to coke ovens to improve the
bulk density of the coal/coke.

tar pot is 8'-9' tall funnel
shaped sitting over a bermed
area - subground level w/
recirc.



comes over in small dumpster
~4'x3'

(29)

near Truck Dock 328

"The Blue Room" toward SWend
outdoor drum storage area
some drums on pallets, some not;
in various stages of deterioration
contain
waste oil, waste grease,
some trash - from 11/12 battery

spot here since the 50's.
Cooper picks up drums
haven't been here lately
∴ it has more drums than normal

B Coal Chem Plant
Acid Tanks #1 & #2
bermed, w/1-2" of water (?) in them
≈ 30' x 40'
berm ≈ 8" high
if the tanks leak, the pH is tested by
operator, if outside 6-9,
either correct it or pump it
back into the system
bet. 6-9, to Outfall 021 (via storm water sewer)

Containment installed pursuant to consent order in 87
~ 1/1/88

SEE

6-19-91 2 p.m.

Tar Storage Tanks 3 & 4
containment area around
pumps
25' x 12' 8" berm concrete
installed per consent order in 87
↑ in '88
vacuumed out if needed
returned to liquor sump by
11/12 batteries (liquor pump house sump)

prior to containment, spills were
scooped up & either reused or sent to Coke Pt
4F

---

batt. 11-12 liquor pump house -
Sump - spill site + E side of bldg.
overflow from pump breakdown -
IS not recoverable, sent to
Coke Point 4F

steel collection funnel 6' x 3' x 3' high
concrete sump - 8' x 10'

EJ

B Chem Plt. Amm. Clar. Tank — 2 large to dumpers & hose
on concrete supports
pre-liner clarifier sludge comes out of tank after pH adj.
liquid goes to ammonia still
waste → ammonia liquor

2 stills installed ≈ 50's. - Steel const.
1 operating, 1 isn't.
7 stories high

Saturator Containment area ≈ 50 yds sq
concrete - brick lined walls ≈ 8" high around all process equipment for ammonium sulfate production crystallized dried & sold

→ w/ break in wall ≈ 4' wide (surge)
overflow tank on steel legs planted in concrete, brick-lined; brick has been broken off in several places

sic

6-19-91

Old Naphthalene Recovery Plt.
Inactive for ≈ 20 yrs. +
rusted out piping + framing

Containment area w/ 1'-2' of water (?) ≈ 30 x 40' area
built approx. 1943.

Wash Oil Spiral Coolers (8)

Containment Area
20' x 60'
~10' berm, concrete, w/ concrete floor
dark areas around containment areas, outside it

Wash oil is recycled all the time + is coming.

Containmt installed w/ the coolers + newer than the shell + tube coolers - much more recent than the 50's.

Wash Oil Holding Tank on concrete supports
dark areas around base -

-19-91

(33)

Spiral Coolers (cont.)
noncontact cooling water
goes to Outfall 021

Shell + Tube Cooler adj. to Spiral Coolers
dark spots under, no berms

Wash Oil Decanters (2)
Wash Oil Circulating Tank no berms
Waste Water ~~Recirc.~~ Holding Tank
↓
water decanted off wash oil

Wastewater Pumps Containment Area
10' x 12' x 1' - drains to a Sump
- oil/water separator
concrete berm
can't see floor, coated w/oil + water
+ some debris

Waste Oil Box on S side of tank
lg dumpster
collects oil that comes from
WW Holding Tank - decanted off
because it cannot go to the
bio-oxidation plant

2

Wash Oil Decanter Pumps
Containment Area 8'x25'x1'

wash oil (used) draining into
sump
concrete berm + floor

drums scattered around area
+ several more pump containment areas

Light Oil API Separator
~12' x 30' in ground, steel plate tops
WW to bio-oxid plant
oil is recirc. into plant
+ over to AKJ

B light oil
most of the ~~none~~ plant area has
been asphalted over per C.O.
same size
2nd one installed per C.O. to
handle all the extra oil/water
generated

B Light Oil Plant
Tanks - storage area, bermed,
concrete, 8" berm
soda storage +

B Plant
Klaus Sulfur Plant
shutdown ≈ 1½ yrs ago
put in 1970s (early)
on a concrete pad.
oil soaked area w/ low berm
NW corner of area H_2S compressor

new one being built near it

---

1 Mil. Gallon Weak Ammonia Liquor
Holding ~~Storage~~ Tank
SE corner of plant
across st from #6 Tar Storage Tank
from both A & B Plants
concrete base, macadam berm
"
age uncertain

Piping

underground pipe to A plant
excess ammn. liquor tank
from the 1MM Gal holding tank.
has broken in 3-6 places
along it
between A & 11/12 battery
was replaced w/ fiberglass
line ± 1 yr. ago
built parallel to old line
to keep it in svc. while new
one was being constructed.
± 8 feet underground

Bio-oxidation Plant - 2 feeds WW

① 100,000 gal. - feed is from the oil/water sep. sumps from A+B plant + benzene plant — steel

② 1MM Gal. Tank
WW fr. Amm. Stills + Depurators
steel on a paved berm

Depurators - takes WW from A/B Plant, Benzene Plant, Litol Plant
sep. oil + water
WW goes to 1MM Gal tank
oil goes to API separator
water underflow goes to 1MM Gal tank
oil is removed either by overflowing into sump over the weir
or by vacuum Truck

tank is steel on wood platforms + berm

overflow from sump, 7'x7' goes to depurator oil stor. tank
either goes back into wash. oil system or AKJ

API separator is ≈ 9'x20' in ground pit w/ concrete berm
concrete edge 3' wide sloping in to pit

6-20-91 beginning of day 8:30 (3)

Former Batteries -

7 & 8 - cleared area, no trace
Steel was scrapped, reused
bricks went to coke oven
U/F
demolished over period of sev.
yrs. in the 80's.

1 thru 6 - all were connected when operating
demolition just completed
w/in the last month
a little scrap left on site
same disposition as the 7 & 8
Batteries as far as Joe knows

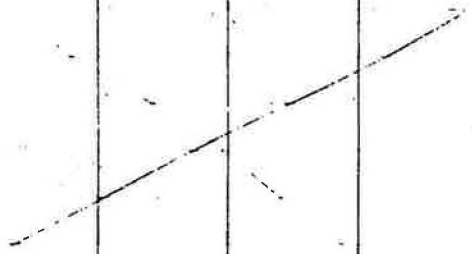
(10)

Ferric Chloride
Spill Site adj. to clarifiers
occurred because
drain was left open ←
in containment area
a few yrs ago
soil was neutralized + picked
up + went to one of the LFs

bricks stored near bio ox plant

(11)

phenol bio-ox plant - ≈ 50 x 200' long
bug pond - bio-ox (basin)
above-ground concrete tank
w/ aerators (8)
1st step - mixing chamber
- dilution of 1MM Gal. tank WW
to prevent shock to bugs
- phos. acid added for nutrient
- ferric chloride added as flocculator
2nd step -
enters the basin
is mixed, residence time a few hrs.
then constant overflow to clarifier
purpose is to eat the phenol.
2 Clarifiers ea x 70' diameter
w/ skimmers on top
water goes to
~~outfall~~ outfall 021
the discharge here is monitoring pt
0121 (overflow)
thickened underflow either goes back to
the basin or to the Back River
WWTP - Balt. County permit
via sanitary sewer; Balt. Co.
doesn't want it in there anymore
under consent order



Activities at L/F:
scrap processing
separation
slag processing

Wastes disposed of:
baghouse dust
rubble from entire plant
BF, coke oven, any
refractory brick

BOF desulfurization station
lances

Eastern Clarifier has product drum storage area at the base to the South
6 drums all on pallets,
sodium silicate, etc.

Coke Oven L/F area

sweepings, housekeeping debris in area across the street from the clarifiers to the south
"temp. staging area"
L/F is farther S ~ 1/4 - 1/2 mi.
need acreage + slag data

A Batten Baghouse

Particulate collects on bags
+ air flow is reversed
+ particulate goes thru hose to dumpster
taken to coke point L/F

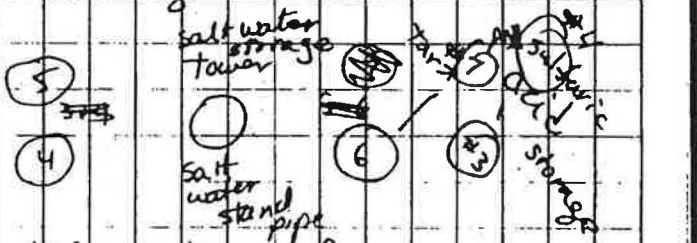
Baghouse has 6 funnel shaped units

A Battery Wharf - NE end of A
operators spray coke before
it goes onto conveyor belt
to cool it
spray water goes to Sump
pumped to Outfall 021

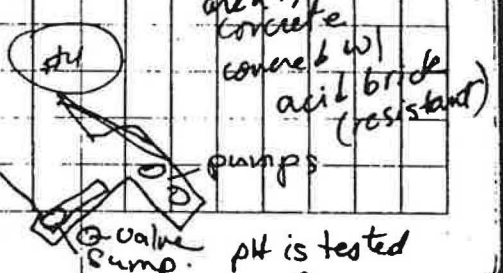
A Coal Chemical Plant

Tar Storage 3-4 in pairs
5-6

Acid Storage Tanks 3 & 4



Containment area for pumps & piping



pH is tested 6-9

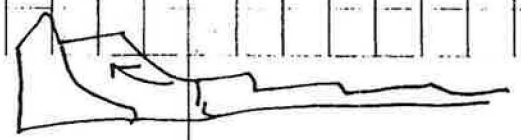
Hydrogen Cyanide Stripper Tower
is near A battery

A Plant O/W Separator Sump

similar to B Plant's
cement structure w/ metal
gratings
in service - drains the concrete pad
from scrubber mat
containment area
whole area has several leaky spots,
pooled liquids, poor housekeeping
plant was built in 30s-40s
separator probably that old -

water goes to bio plant
oil goes reused into the
wash oil system

Former Tar Decanters -
3 of them - cut away except
for skimmer ends



A Plant Saturators (2)

2-story high funnel shaped
crystallized sulfuric acid
coating piping + equipment

ammonia gas is bubbled thru
3-4% Sulf. acid
to make ammonium sulfate

whole area is bermed - concrete

saturator overflow tank — a flow thru tank

skimmer box 4'x5' steel box

when filled, moved by forklift to AKJ

System will go down in Sept-Oct.

A Plant Desulfurization

carbonate solution used to strip H_2S from clean gas that went thru A+B Coal Chem Plt.

Vacuum Carbonate Process
to strip H_2S out of coke oven gas

4 towers ≅ 4 stories high

#1 is down

H_2S is removed + sent to Klaus plant (when oper.) - now being sent to coke oven

need to keep sulfur at 1% avg. for fuel purposes

Fuel Station (Fuel Tar) (Clean) was used as fuel in plant

recently - in last 6 mos. fuel no longer stored here tar bottoms taken out then dismantled or sold as tar product + steel tanks

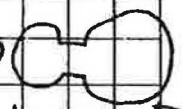
Fuel Oil Station

5 tanks no longer in serv. will be demolished soon some held tar, some fuel oil product

E.O. Pumping Station - not used much now had dumpster of tar buckets outside

Ball Mill

used for tar decanter sludge processing before AKJ was on-site shut down in the 80s.



2 round brick bldgs interconnected like a rotating kiln w/ steel balls - liquify like a blender would. (but no heat)
put into a tank at end of bldg.
+ sprayed on coal - taken by tanker truck
serviced 1-6 batteries
+ the other side near AKJ

Benzene Plant

not in service
takes secondary light oil
+ cracks it into fractions

benzene	70%
toluene	20%
xylene	4%
diphenol	1%

went out as product

6-20 1:35 pm ~85° Sunny

Walking Tour of Benzene Plant

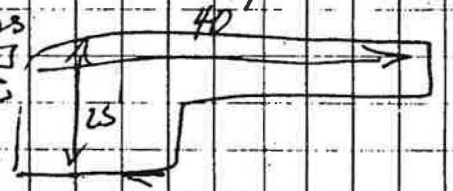
#3 S.L. Oil Storage Tank -
product storage
on concrete base
steel, sl. rusted.

Containment Area — Secondary Light Oil (≡)

18" concrete berm around
3 white steel tanks
w/ interconnecting piping
~ 50' x 40'
2 photos taken, 1 at ea. end

Recovery Sump

WW to bio-ox Plant
oil to reuse.
wastes from containment area for whole
emergency overflow to Outfall 021 plant

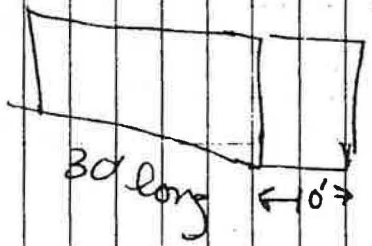


Benzene Plt. Sewer Box

cooling waters (once-thru)
for coolers (shell + tube)
cement in ground structure
~ 10'x20' ½ covered by concrete
any overflows from O/W sep.
would show up here as red or
rainbow in water - operator
checks every 1-2 hrs.

AOC 2.

Tank 40 - ~~sq~~ black box



spill site
still oil here today
maybe a newer spill

50 sq. yd. area also stained
adj. to Tank 40, 43
(E of)

SC.1

Drum Staging area
South Central portion of plant
for muck taken out of any
tanks in the plant
tank bottoms
taken by T+T - as haz waste
disp. of off. site
w/in last 6 mos.

Citol Plant Sewer Box NW side of plant
if there were a spill, it would
show here
can take grab sample
if needed, if suspect a problem
otherwise not sampled

Former Waste Oil Drum Storage Area
from Benzene / Citol Plant
W side of plant
~ 20 yds x 15 feet.
pallets here but not being
used
ea drum is sampled then sent
to PORI if acceptable
if not, either go offsite or to

dates of use unk, still used some ART

Litol Plant

Former Catalyst Removal / Staging Area

- used 1x/5 yrs when plant was operating
- forklift used to take bins into plant then transferred to drums
(2ndary Lt. oil made here) drums were dumped out
- if not haz. sent to L/F (Gray) ↓ tested for 4 charact. under RCRA + metals
- if haz., went off-site
- catalyst pellets

drums stored < 4 wks on avg
involved ≈ 20 drums at a time

Former Tar Decanter Sludge Roll-Off Boxes

were filled from the Buggies from atop a ramped area
RO Boxes were tarped + moved across the st to staging area
hauler took them off-site to a HW L/F (?)

done ≈ 10 yrs ago
(see RKJ)
Litol Plt. mechanic Shop adj to this area still in use ↑

6-20-91 3 pm.

Coke Oven Door Repair Shop
services doors for all
batteries
Baghouse - Sand blasting the
doors -
2 cells

BLAST FURNACES

H Furnace has not oper. since last summer when L went down
Dust Catcher
BF gas produced needs to be
cleaned - goes thru D.C. - like
a cyclone - Knocks out
lg. & med. particles
Then gas is sprayed w/water
to knock out more particles
~~(sprayers/scrubbers)~~ washers
Then gas goes to collecting 96"
main to BFs for use

used to use RR car - used steam
to clump the dust when it was
dumped (dust baller)
not sure of where it went - maybe
to ore yds for reuse (?)

shut down
late 70's
built in 40's

operated last yr ≈ 5 mos.

pre-RIW system:
water went to thickener #3 adj. to building - cement ~80' dia.
now: water goes to RIW
(recir. indust. water system)

RIW serves J + K

J Furnace is also down; it was used last summer along w/ H when L was being relined (took ~~5 mos.~~ ~100 days)

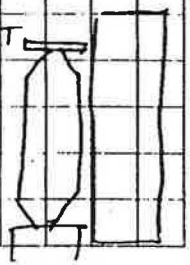
K torn down

J Furnace

J & K Precipitators dismantled what remains are two painted red disks where they were fed off

J Furnace Dust Catcher

Looks like H Furnace's but has gas washer & scrubber (on L) (on Rt.) of steel, 4-5 stories high.



as seen from pkg lot in front

Slag Handling in general

Slag produced in furnaces was removed to pits to cool — oper. by Md. Slag
- crushed + sold as road fill/ road bed mat'l.
- operated near the sinter plant

J, like H, was shut down when L came on line + has oper. only occasionally.

K Furnace was located next to J in open area
it + a clarifier were torn down ~1989

#14 RIW Sump

dirty water fr. furnaces goes here + is then pumped to RIW system
feed pt to #6 thickener; 20x30' concrete

Former E, F, G Furnace Area

all furnaces gone, currently rented to dealers in $pot mkt. quarry mat'ls.

gypsum + other mat'ls.

steel cut up, melted for scrap

brick to Coke point L/F

Former A, B, C, D Furnaces Site

Space now rented to Langenfelder

Slag-Away operations

BOF slag - grinds it into aggregate for road beds, etc.

(cooled 1st) recirc. water's shut down ~ time L started up

A → built ~ 1898

D → in 30's & 40's

alot smaller than J + K - e.g. ≈ ½ the capacity

pH runoff was a problem - causing BSC to have noncompliance problems

Langen. now has its own NPDES permit & RIW system

do pH adjustment

use BSC sewer to outfall 012

Langen. operating 5-8 yrs now

A-D Furnaces were demolished 10-15 yrs ago roughly

6-21-91

(5)

4 Blast Furnace

w/ Charlie McClellan

RIW System - noncontact water (doesn't see gas)

≈ 90% potable water

2 feeds leave here
1 slurry
2 Decadowns

3 tuyere closed loops to cool water

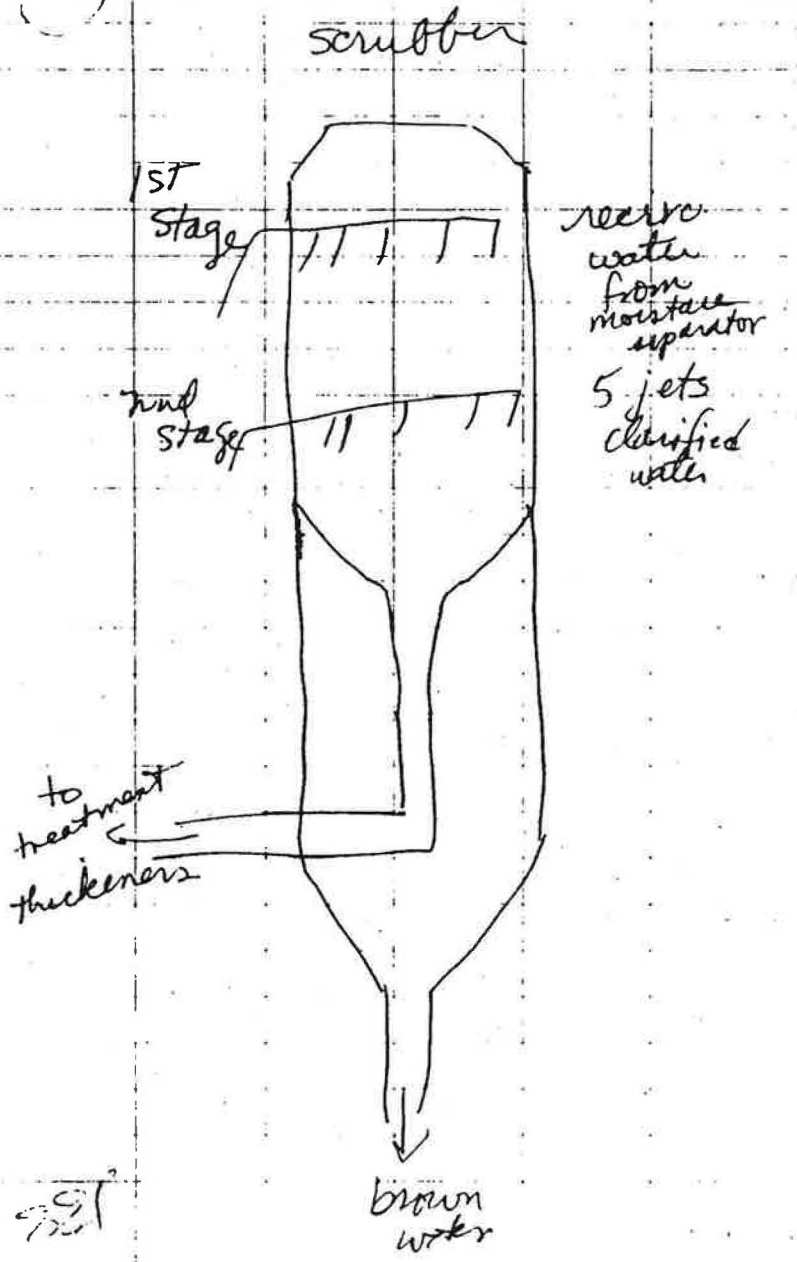
gas scrubber system - 260K cu ft/min

dust catcher - dry device
change of direction / drop in pressure / velocity
heavy particles fall onto

from there → to 2 stage Bishoff scrubber

1st Stage 5 sprays "dirty water"
5 sprays "clarified water"

5C1



8,000 gpm ww. to two thickeners

Overflows go to overflow tank
solids have been removed
but still hot
goes to second stage cooling towers, is cooled & is recirc. to the furnace

Slurry from bottom of clarifier goes to #7 sinter plant
(not a primary feed, sinter plant is)

off gas is used as low BTU fuel

L Furnace Dust Catcher
(Baghouse) - "Casthouse Baghouse"

5 cells
dumpsters are taken to bedding plant to use as a feedstock to the sinter plant

H & J Furnace RIW System

Joe Fitzpatrick + Charlie McClellan

part of #7 sinter plant system

#6 Thickener ≈ 1.6 mil. Gal. cap.
steel on concrete base
solids go to #7 sinter plant
cool well pumps pump to system + return it there
#3 sump
#4 sump
startup Sept. 90
not in svc. at this time
shutdown down early June
was used when #7 sinter plt. clarifier was down

cold well - recirculates treated water
cement sq. basin

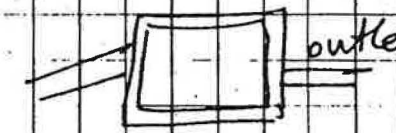
H+J likely to be inactive for next 5-6 yrs

system appears to be in very good condition

#3 Sump - WW from H Furnace
pumps to #6 thickener
~20'x20' rectangular cement
has overflowed a few times

Holding Pit - screens out debris before sump
15-17' sq. concrete
flow is westerly depth unknown

water has lumber floating in it + green algae growth



for loop seals on fuel main that runs thru the furnace area - kept on even tho the furnace is down

Pilot Plant for BF Hydrocyclone Facility

└ Furnace Metals Recovery (Research)

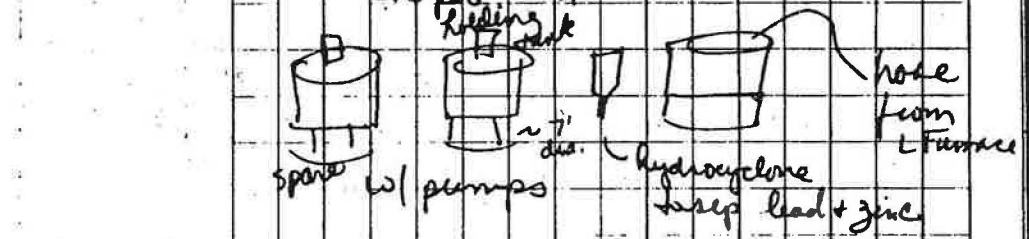
of the slurry

located on W side on #7 thickener

3 small tanks numbered

3, 5 + 6 plus one on funnel

shaped unit



slurry from └ furnace

steel + carbon left over goes to

sump to #7 thickener

runs periodically - was here last fall

mat'l. was compressed, mixed w/ lime + taken to Bethlehem for analysis

cap. ~2,000 gal.

A Plant

Cyanide Stripper Unit

take WW + strips it

effluent goes to bio-oxidation plant

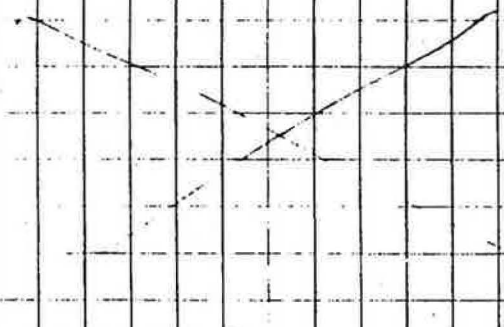
vapors w/ the cyanide discharged (very low) thru stack adj to A Battery

source of WW:

- Condensate waters off oil contact
- sump
- water fraction from O/W separation (steam) held in horiz. tank on E end of complex

slag berm ~ 3' high

pooled liquids in contained area



BOF Water Treatment System

WW comes from Scrubbers
from Venturis (has a recycle tank)
drops into separators
part is recycled
part goes to thickener
contact water

thickener sludge is dewatered
+ goes to Gray's LF

Doorcyclone - takes dirty scrubber water
heavy sands drop down a chute
+ are collected + taken to bedding plant
outlet water goes to thickener

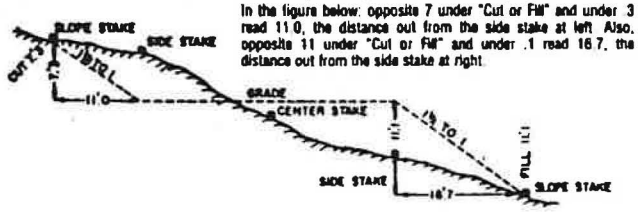
polymer is added to waters in thickener

belt press used to dewater sludge before disposal
water fr belt press goes back to thickener

DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING

Roadway of any Width. Side Slopes 1½ to 1.

In the figure below: opposite 7 under "Cut or Fill" and under .3 read 11.0, the distance out from the side stake at left. Also, opposite 11 under "Cut or Fill" and under .1 read 16.7, the distance out from the side stake at right.



Cut or Fill	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	Cut or Fill
	Distance out from Side or Shoulder Stake										
0	0.0	0.2	0.3	0.5	0.6	0.8	0.9	1.1	1.2	1.4	0
1	1.5	1.7	1.8	2.0	2.1	2.3	2.4	2.6	2.7	2.9	1
2	3.0	3.2	3.3	3.5	3.6	3.8	3.9	4.1	4.2	4.4	2
3	4.5	4.7	4.8	5.0	5.1	5.3	5.4	5.6	5.7	5.9	3
4	6.0	6.2	6.3	6.5	6.6	6.8	6.9	7.1	7.2	7.4	4
5	7.5	7.7	7.8	8.0	8.1	8.3	8.4	8.6	8.7	8.9	5
6	9.0	9.2	9.3	9.5	9.6	9.8	9.9	10.1	10.2	10.4	6
7	10.5	10.7	10.8	11.0	11.1	11.3	11.4	11.6	11.7	11.9	7
8	12.0	12.2	12.3	12.5	12.6	12.8	12.9	13.1	13.2	13.4	8
9	13.5	13.7	13.8	14.0	14.1	14.3	14.4	14.6	14.7	14.9	9
10	15.0	15.2	15.3	15.5	15.6	15.8	15.9	16.1	16.2	16.4	10
11	16.5	16.7	16.8	17.0	17.1	17.3	17.4	17.6	17.7	17.9	11
12	18.0	18.2	18.3	18.5	18.6	18.8	18.9	19.1	19.2	19.4	12
13	19.5	19.7	19.8	20.0	20.1	20.3	20.4	20.6	20.7	20.9	13
14	21.0	21.2	21.3	21.5	21.6	21.8	21.9	22.1	22.2	22.4	14
15	22.5	22.7	22.8	23.0	23.1	23.3	23.4	23.6	23.7	23.9	15
16	24.0	24.2	24.3	24.5	24.6	24.8	24.9	25.1	25.2	25.4	16
17	25.5	25.7	25.8	26.0	26.1	26.3	26.4	26.6	26.7	26.9	17
18	27.0	27.2	27.3	27.5	27.6	27.8	27.9	28.1	28.2	28.4	18
19	28.5	28.7	28.8	29.0	29.1	29.3	29.4	29.6	29.7	29.9	19
20	30.0	30.2	30.3	30.5	30.6	30.8	30.9	31.1	31.2	31.4	20
21	31.5	31.7	31.8	32.0	32.1	32.3	32.4	32.6	32.7	32.9	21
22	33.0	33.2	33.3	33.5	33.6	33.8	33.9	34.1	34.2	34.4	22
23	34.5	34.7	34.8	35.0	35.1	35.3	35.4	35.6	35.7	35.9	23
24	36.0	36.2	36.3	36.5	36.6	36.8	36.9	37.1	37.2	37.4	24
25	37.5	37.7	37.8	38.0	38.1	38.3	38.4	38.6	38.7	38.9	25
26	39.0	39.2	39.3	39.5	39.6	39.8	39.9	40.1	40.2	40.4	26
27	40.5	40.7	40.8	41.0	41.1	41.3	41.4	41.6	41.7	41.9	27
28	42.0	42.2	42.3	42.5	42.6	42.8	42.9	43.1	43.2	43.4	28
29	43.5	43.7	43.8	44.0	44.1	44.3	44.4	44.6	44.7	44.9	29
30	45.0	45.2	45.3	45.5	45.6	45.8	45.9	46.1	46.2	46.4	30
31	46.5	46.7	46.8	47.0	47.1	47.3	47.4	47.6	47.7	47.9	31
32	48.0	48.2	48.3	48.5	48.6	48.8	48.9	49.1	49.2	49.4	32
33	49.5	49.7	49.8	50.0	50.1	50.3	50.4	50.6	50.7	50.9	33
34	51.0	51.2	51.3	51.5	51.6	51.8	51.9	52.1	52.2	52.4	34
35	52.5	52.7	52.8	53.0	53.1	53.3	53.4	53.6	53.7	53.9	35
36	54.0	54.2	54.3	54.5	54.6	54.8	54.9	55.1	55.2	55.4	36
37	55.5	55.7	55.8	56.0	56.1	56.3	56.4	56.6	56.7	56.9	37
38	57.0	57.2	57.3	57.5	57.6	57.8	57.9	58.1	58.2	58.4	38
39	58.5	58.7	58.8	59.0	59.1	59.3	59.4	59.6	59.7	59.9	39
40	60.0	60.2	60.3	60.5	60.6	60.8	60.9	61.1	61.2	61.4	40

Trench

BETH. STEEL

SPARROWS POINT

EPA ID MDD053945432

VSI

June 17, 1991 – June 21, 1991

Molly O'NEILL

ATK - Alexandria

The paper in this book is made of 50% high grade rag stock with a WATER RESISTING surface sizing.

discharges to
reclaim tank steel ~30' diam. 20-25' high
from here to recycle tank
about 25 yrs. old.
mixture of reclaim tank + filter
plt goes to HC WWTP

mix tank → from WW
BOF + Filter Plant → to HC WWTP
built in '70s

operational when BOF is up.

Re Ladle Bag House + Desulfurizer + Skimmer
where pig iron is transferred from
sub car to ladle

Recycle Tank steel ~ 3 stories
hi, 10' diameter

Separator - 6 stories hi
steel 25' diameter

LAST PAGE
BOOK 1 OF 1

CONTENTS

PAGE NO.	REFERENCE	DATE

6/17 (1)

The inspection team arrived at 10:20 am.

Attendees:

D. LaRusso - ATK
P. Goggin - ATK
M. O'Neill - ATK
S. French - ATK
D. Lenkhoff - EPA - Reg III
J. Mendelson - Beth Steel
J. Dolan - Beth Steel
E. Wilson - Beth Steel Home Office
B. Abate - Beth Steel
T.C. McClellan - Beth Steel

Intro Meeting

- Dominique from EPA Region III, explains why RFA is being conducted. 1988 Report has not been finished.

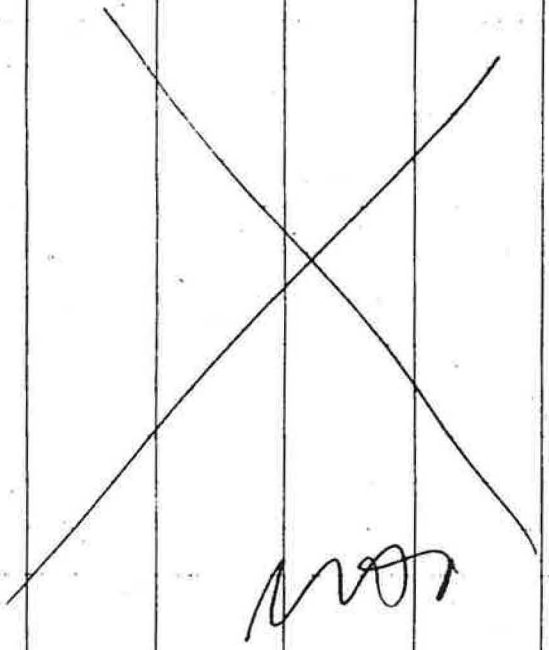
- The Beth Steel reps indicated that the State should have been present, because there is a communication problem between the facility, State and Region.

NAD

6/17 (2A)

Joseph DOLAN
Engineer, Environmental Control
Bett Steel. (301)388-6623

Joseph T. Mendelson
Supervisor, Environmental Control
Bethlehem Steel Corp.
(301)388-6623



6/17 (2)

D. LaRausso requested that the facility give an overview of the facility operations.

2,300 Acres to Sparrows Point.
Coke Ovens on South end. (2 which are still Active) - This includes Coke Ovens 1+2 (Boyertown) and A.

Synthetic Iron made at Sinter Plant

Blast Furnaces - Pig Iron

Open Hearth - no longer operating since no more INGOTS manufacturing.

Pig IRON → steel → Castings → mills

The shipyard is separately managed.

11:40 (3)

6/17

Cadmium now goes to Humphreys Creek (discharge effluent from treatment system). Use to go to POTW.

Groundwater treatment system now runs 24 hrs day/7 days a week.

100 million/gal. day treated effluent from WWT systems.

Sinter plant - 12,000 day

"L" Blast Furnace - 8,000 day

Sludges (dewatered) are ultimately disposed of into Grays (ac watering in Humphreys Creek)

Groundwater monitoring begun - specific locations are available in file material "Annual Report" which has already been sent to Kearney.

MJO

MJO

6/17

Joe Meadows indicated that the 190 SWMUs identified in 1985, included process units.

Dorothy goes over over list of SWMUs

Break for Lunch

2:00 Arrive back at Plant

2:20 Begin General Site Tour

STOP 1

OUTFALL #0

DIVIDER/STEEL FOR OUTCHARGE AND INTAKE

DISCHARGE INTO JONES CREEK

99% NON-CONTACT COOLING WATER

- most from Pennwood Power
- other from Steel side

Releases - Approximately 1 spill per year. Last year oil spill from boiler - but cleaned up

NAD

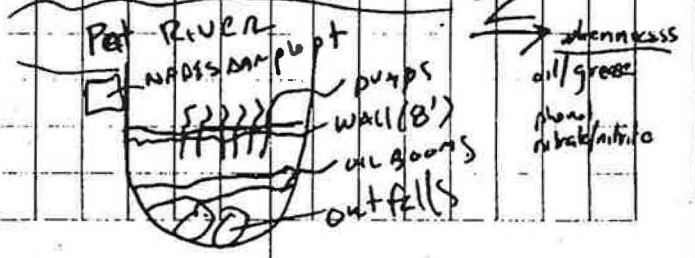
6/17 (G)

Stop 6
Coke Ovens
11+12 and A

Stop 7
Outfall 21 - Coke Oven Area
6 marks are installed on effluent pump system to isolate water from tidal changes. On other side of pump are oil booms to hold all spills.

Wastes
NON CONTACT
BIO-OXIDATION PLANT DISCHARGE

SAMPLE station for NPDES permit conditions. pH flow, temp } continuous



140

6/17 (5)

STOP 2

Bedding Plant - prepare mixture for Sinter Plant. Coke Piles to the east. Approximately 300 yards from water.

STOP 3

OFF LOADING SHIP - ORES.

CAPABLE OF USING CONVEYOR BELT TO FEED TO ~~coke ovens~~ furnaces or to piles (stockpiling until needed)

THIS PIER WAS BUILT IN 1970's.

STOP 4

BLAST FURNACE/SINTER PLANT WITH

STOP 5

L Blast Furnace

MAP

6/17-18 (7)

STOP 8

BOF

8:30 - ~~Mr~~ June 18, 1991

Arrive on-site - RAINY.

9:20 Begin tour

Humphries Creek

Empties into Tin Mill CANAL VIA piping culverts.

~~Can~~ Creek RECEIVES DISCHARGES FROM STORM WATER

Area flow from community to Tin Mill CANAL. The ~~American~~ National CAN Company use to occupy the land on other side.

MPO

6/18 (8)

Photo 2-1

Tin Mill Canal
Culvert at start of
canal where Humphries
creek empties into TMC.

View facing East

Photo 2-2
Tin Mill Canal View facing
South of puddle area
Within 5ks near process outlet.
Puddle water is brown/black
does not appear to be oil.
(Hot Strip Mill outlet)

Photo 2-3

Photo facing north of inlet
between process outfall 1+2.
Oil sheen.

6/18 (9)

Photo 2.1-4 (10:08 A)
View facing NE of TMK dredging piles from Hot Mill Wastewaters.

Photo 2.1-5 (10:13 A)

View facing S of TMK outlet #2. (Cold sheet Mill) Yellow collor which seems to separate from other stream flow

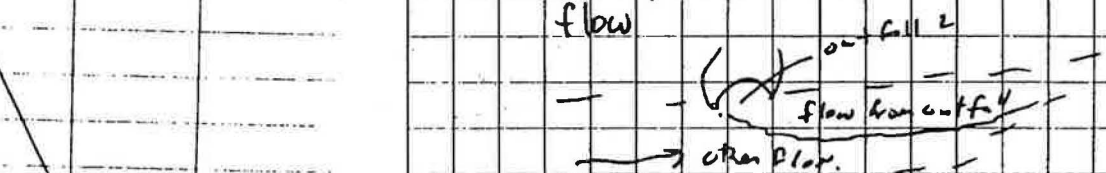


Photo 2.1-6 (10:22) DOWN

Outfall from oil Recovery Station (PORT). Note: Oily Sheen is coming out.

1110

6/18 (18)

Photo 2.1-7 (10:28A)

View facing NE of Caked dredging on bottom ON TMC. Oily sheen on top layer

Photo 2.1-8 (10:29A)

View facing of N TMC outfall #3 Cold Sheet Mill (STANDING ON TOP OF OUTFALL)

Photo 2.1-9 (10:32)

View facing of WTN M.11 outfall. Note Steam coming off top

Photo 2.1-10 (10:36)

View facing W of TIN M.11 (NA) Yello/white liquid coming out

140

6/24 1610 10

Truck Dock #9
Diesel UST &

Fuel Oil Spill Area

UST - removed - 89-90
10,000 gal
install - unk
smpl'd - O.K.

Spill - pumping out of ~~indoor tank~~ AUG
line broke => spill

Hot Strip Mill UST

① Gas UST 10000 gal
install - unk.
still here

② Gas UST 8000 gal
not sure if removed
or not

③ 10000 gal Diesel UST
not sure if removed or not

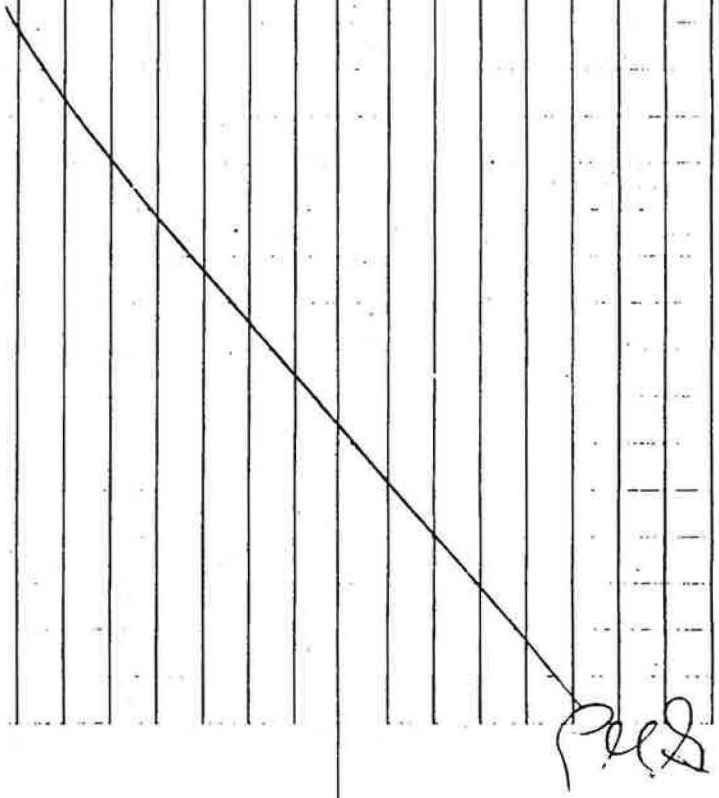
[illegible]

6/24 1630 11

Mud Res

HC impoundment used to be a channel / lake

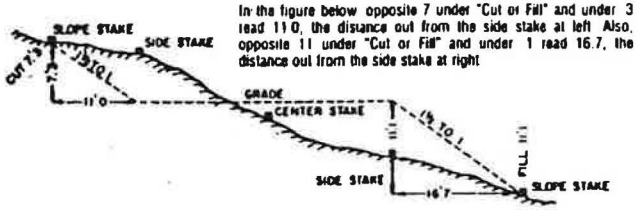
Pumped mud out of HC channel / lake to Mud Res



DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING

Roadway of any Width. Side Slopes 1½ to 1.

In the figure below opposite 7 under "Cut or Fill" and under 3 read 11.0, the distance out from the side stake at left. Also, opposite 11 under "Cut or Fill" and under 1 read 16.7, the distance out from the side stake at right



Cut or Fill	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	Cut or Fill
	Distance out from Side or Shoulder Stake										
0	0.0	0.2	0.3	0.5	0.6	0.8	0.9	1.1	1.2	1.4	0
1	1.5	1.7	1.8	2.0	2.1	2.3	2.4	2.6	2.7	2.9	1
2	3.0	3.2	3.3	3.5	3.6	3.8	3.9	4.1	4.2	4.4	2
3	4.5	4.7	4.8	5.0	5.1	5.3	5.4	5.6	5.7	5.9	3
4	6.0	6.2	6.3	6.5	6.6	6.8	6.9	7.1	7.2	7.4	4
5	7.5	7.7	7.8	8.0	8.1	8.3	8.4	8.6	8.7	8.9	5
6	9.0	9.2	9.3	9.5	9.6	9.8	9.9	10.1	10.2	10.4	6
7	10.5	10.7	10.8	11.0	11.1	11.3	11.4	11.6	11.7	11.9	7
8	12.0	12.2	12.3	12.5	12.6	12.8	12.9	13.1	13.2	13.4	8
9	13.5	13.7	13.8	14.0	14.1	14.3	14.4	14.6	14.7	14.9	9
10	15.0	15.2	15.3	15.5	15.6	15.8	15.9	16.1	16.2	16.4	10
11	16.5	16.7	16.8	17.0	17.1	17.3	17.4	17.6	17.7	17.9	11
12	18.0	18.2	18.3	18.5	18.6	18.8	18.9	19.1	19.2	19.4	12
13	19.5	19.7	19.8	20.0	20.1	20.3	20.4	20.6	20.7	20.9	13
14	21.0	21.2	21.3	21.5	21.6	21.8	21.9	22.1	22.2	22.4	14
15	22.5	22.7	22.8	23.0	23.1	23.3	23.4	23.6	23.7	23.9	15
16	24.0	24.2	24.3	24.5	24.6	24.8	24.9	25.1	25.2	25.4	16
17	25.5	25.7	25.8	26.0	26.1	26.3	26.4	26.6	26.7	26.9	17
18	27.0	27.2	27.3	27.5	27.6	27.8	27.9	28.1	28.2	28.4	18
19	28.5	28.7	28.8	29.0	29.1	29.3	29.4	29.6	29.7	29.9	19
20	30.0	30.2	30.3	30.5	30.6	30.8	30.9	31.1	31.2	31.4	20
21	31.5	31.7	31.8	32.0	32.1	32.3	32.4	32.6	32.7	32.9	21
22	33.0	33.2	33.3	33.5	33.6	33.8	33.9	34.1	34.2	34.4	22
23	34.5	34.7	34.8	35.0	35.1	35.3	35.4	35.6	35.7	35.9	23
24	36.0	36.2	36.3	36.5	36.6	36.8	36.9	37.1	37.2	37.4	24
25	37.5	37.7	37.8	38.0	38.1	38.3	38.4	38.6	38.7	38.9	25
26	39.0	39.2	39.3	39.5	39.6	39.8	39.9	40.1	40.2	40.4	26
27	40.5	40.7	40.8	41.0	41.1	41.3	41.4	41.6	41.7	41.9	27
28	42.0	42.2	42.3	42.5	42.6	42.8	42.9	43.1	43.2	43.4	28
29	43.5	43.7	43.8	44.0	44.1	44.3	44.4	44.6	44.7	44.9	29
30	45.0	45.2	45.3	45.5	45.6	45.8	45.9	46.1	46.2	46.4	30
31	46.5	46.7	46.8	47.0	47.1	47.3	47.4	47.6	47.7	47.9	31
32	48.0	48.2	48.3	48.5	48.6	48.8	48.9	49.1	49.2	49.4	32
33	49.5	49.7	49.8	50.0	50.1	50.3	50.4	50.6	50.7	50.9	33
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36	54.0	54.2	54.3	54.5	54.6	54.8	54.9	55.1	55.2	55.4	36
37	55.5	55.7	55.8	56.0	56.1	56.3	56.4	56.6	56.7	56.9	37
38	57.0	57.2	57.3	57.5	57.6	57.8	57.9	58.1	58.2	58.4	38
39	58.5	58.7	58.8	59.0	59.1	59.3	59.4	59.6	59.7	59.9	39
40	60.0	60.2	60.3	60.5	60.6	60.8	60.9	61.1	61.2	61.4	40

log #2

Bethlehem Steel

Sparrows Pt, MD

The paper in this book is made of 50% high grade rag stock with a WATER RESISTING surface sizing.

CONTENTS

PAGE NO.	REFERENCE	DATE

6/24 13:29 1.

Tin Mill
Bob Abale
Ed Wilson
Charlie McLellan
Mike Duna

Anything under tanks
→ trench → sewer
→ TMC → HC

50's
2 pickling lines
72% sulfuric acid / water
tanks 4% sulfuric a.

cleaning mat / oxide
from steel

leak in overflow line
underneath tanks
→ sewer → TMC → HC

regarded yesterday

a few months ago [illegible] leak →
sewer → TMC → HC [illegible]

6/24 1344 2.

Acid Abatement System
→ sump → tanks
→ sold

- leaked out of pipe → HC
  unit depended on leak
- normally
- tank overflow → Acid Abate Syst.
  unit of gen - unk

Cleaning out - tanks 1 yr →
Acid Abate System
washout residue → HC

- non-contact
Cooling water to sewer → HC
for hydraulic system (4)
indoors
part of modernization
for hoist to move coils
up + down

6 Sulfuric A. Tanks
no way to catch leaks
empty tank when leak
found
sewer drain underneath

[illegible]

4/24 1357 3.

it is uncovered
BS is doing a study on
what goes in there

2 lanes out of service
D-(1) leaks (<90)
patched
30 yrs old

Sump for Acid Abate Sys
under grating

Pump for sump

Unknown USTs
- past or
- present

Oil sprays onto strip of steel
if falls on floor →
drums → pump
out of drums → labor
dept removes w/ pump
wagon → RRI

(RR.)

4/24 1413 4

gen 55 gal/wk

2 drums set in concrete
grated floor above

Lou Walsh

Halogen Tanning Lines (2)

strip looping tower/accumulator
like elevator
Line #1) used for cans
Line #2) used for heavy cans

lines are same

after roll
cleaner - NaOH
electrolytic strips
oil or dry (no foam in chem)
↳ (foam in chem)

to rinse tank
to pickling (11-12% H_2SO_4)

MC

6/24 1432 5

after picking wash again
w/ scrubber

- trenches collect overflow,
rinsewaters → HC

- Tin coating put on next

Chemical H mat
Na bicromate ⇒
prolongs shelf life

coil it!

Plating process ⇒ Tin
removed semi-annually
300 barrels/yr contractor removes it
sells to contract reclaim
55 gal drum Maynard Metal

Chrome effluent → H & Spl.
1000 lbs
Trts / Renders inert

also known as passivation
Dillo

6/24 1448 6.

acid brick-lined
cement is lined w/

Dedicated Plater sump
Oil skimmer recycle
whats in sump
in spray
Oil skimmed into barrels
→ oil house → PORI.

Sometimes upper tanks (2 rows)
overflow - squeeze into
sump

Dedicated Chrome Treat Sump
→ HDS PH

Sumps thru out process
- clnr
- acid
→ plater sump

Sump for hot water
pumps back into sept

6/24 1500 7

Ringer Rolls = Scrubbers

Pickling — removes outer ~~iron~~ oxide

in order to add Tin

other scrubber to remove acid → ready for plating

Upper Tank

Spent Pickle Liq. Collection Tank

Tin Plating Solution → HC (metered out)

~~Chrome~~ over Effluent Collection Tank

→ Maynard metals

Lower Tank

picks up every few days

ops since '63

Upper Tank ≅ 10,000 gal

Lower Tank ≅ 10,000 gal

4 ft above gravel

→ 10 ft above gravel

[illegible]

8/24 15278

#8 Chrome Line

Steps: uncoil
accum
clean
rinse
pickle
plate
rinse
chem tot
rinse
dry
coil
wrap

Reline sumps — acid brick

Duplicated Cr — Sumps → HDS PH

Sump — alkaline/acide/rinses → HC

Reline acid brick
Repair concrete
1/yr

PMS

e/24 1542 9.

PCB Spill In Cr Line
BCdg

removing a transformer
Cable broke on Crane
'88 late

floor washed
cleaned accord to variance
need to clean again if
close down line

Need Flow Chart for Cr + Tin (Hdgs)
Plating Lines

Cold Sheet mill Diesel Fuel UST
10000 gal
install - unk
removed - late '89
early '90
sampling - O.K.
removed some soil (10-20 tons)
had just started to leaked

PLH

6/25 9:31 12

Close-out meeting w/ Bob Abate

(1) went over ?s/info needs from 6/21 + 24.
(2) went over attach III

Bob suggested the 88?'s report will help us tremendously.

Sanitary Sewer – Baltimore Co has lots of info.

out sanitary sewer:
- sanitary wood
- Bio Pit
- coke oven
- remedia (until last yr)
  ↳ now process sewer

Custer baghouse bags
- They are thinking about testing each bag for TCLP
  1 of 4 was haz
  all bags trtd as haz

PMK

6/25 9:58 13.

Plate Mill exact same as in Rod Mill

Scale Pit

approx 40s began ops
Cap. - unk
dimens - unk

Scale off of steel plate

other wsts gen:
wst oil/grease
trt'd. same as other wsts 54

Oil Tanks

at skimmers along TMC
need capacities

Tanks
need integrity testing results

PMR

6/18 (11)

2-1-11 1035

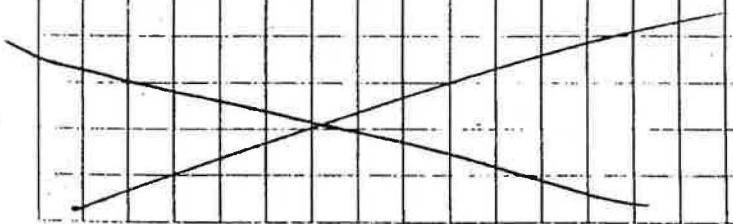
View facing N of Tin Mill outfall at Tin Mill CANAL.
Note: steam coming off top and dredgeable material to North.

2-1-12 (1043A)

View facing NW of Oil Skimmer #1
- Water directed by boundary to skimmer - adheres to conveyor belt - soaked and into pit, sump pumps into tanks

2-1-13 (1043B)

View facing N of Waste Oil Tanks - oil is collected from skimmers.



2.1-14 (11:17)

View facing N of Baffle #1 (TMC)
Oil accumulated in this area will be vacuumed out. Baffle #1 runs across the creek nearest to HCWWT.

2.1-15 (11:22)

Outfall (TMC) from former Pipe Mill
View facing N. Also formerly drained from Humphreys Impoundment (also pictured far north)

Pipe Mill shut down early 70's

2.1-16 (11:28)

View facing Down (North) of Primary Mills OUTLET. (TMC)
Red discharge coming out.

MO

6/14 (13)

2.1-17 (11:29)

View facing down(N) of TMC sludge tote discoloring (yellow, green, cream))

2.1-18 (11:42) Down

DF Bell Skimmer

2.1-19 (11:43)

View facing North of Bell Skimming a.1 P.T #1

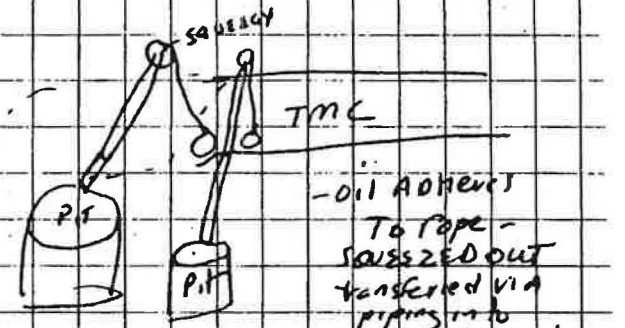
2.1-20 (11:43) East

View of Bell Skimmer #2 (2nd apparatus) in same location. Note active at time of VSI.

NAD

6/18 (14)

Brine Skimmer Flow Diagram



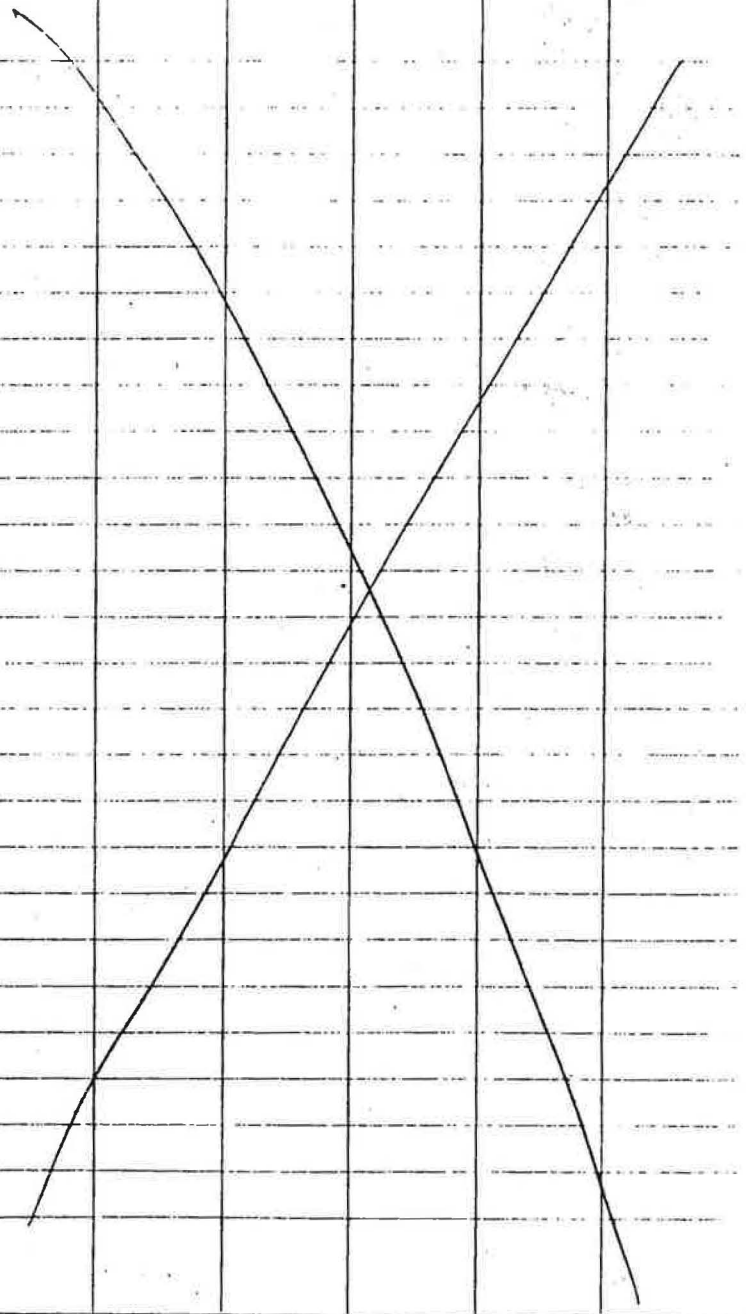
12:00 - 1:00 Lunch

1:30

GREYS LANDFILL

7.1-21

View facing S of Greys Landfill



2.1-22 (13:50)

View facing NW of Grays LANDFILL (HAZARDOUS)

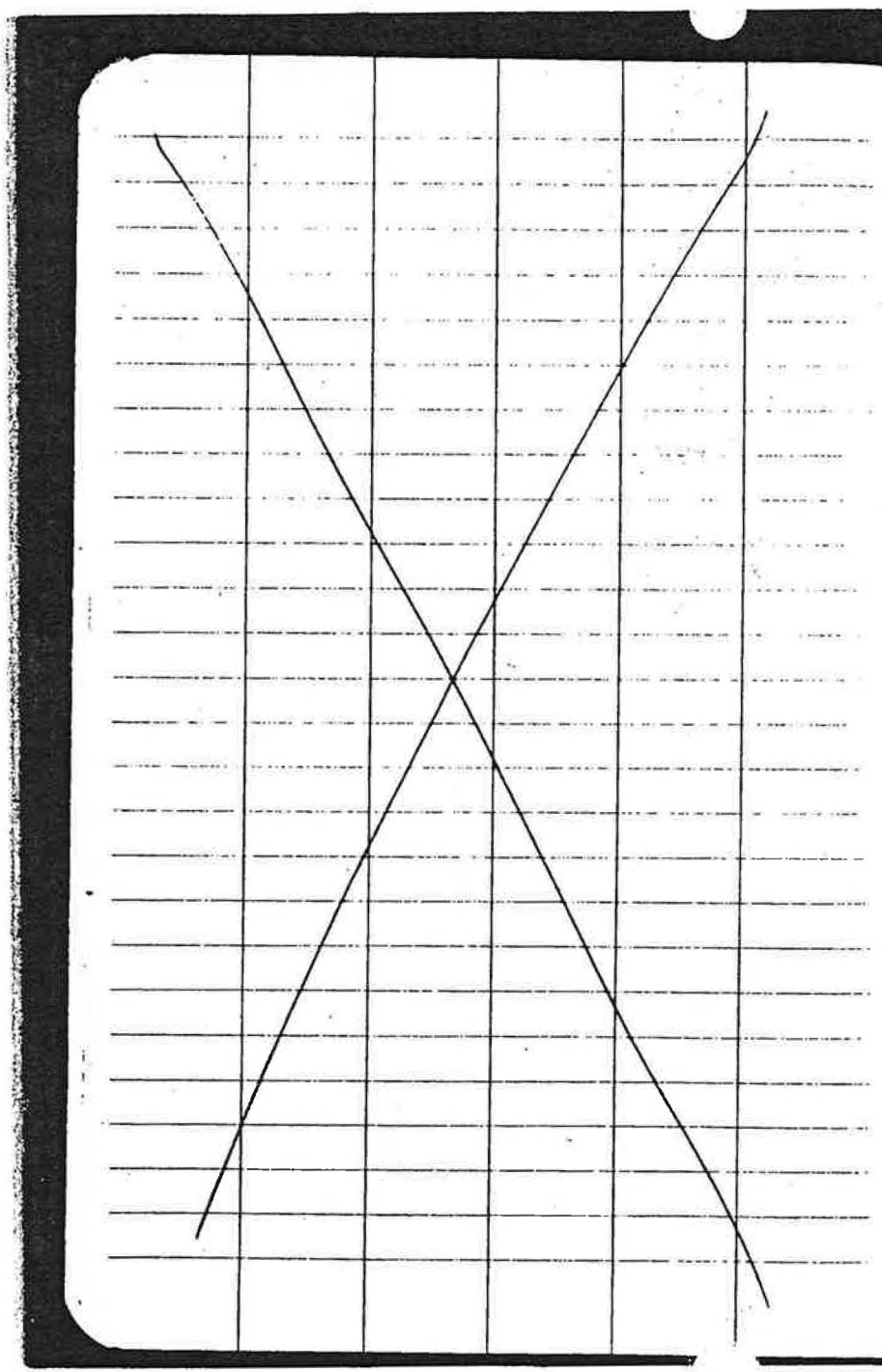
2.1-23 (13:50)

View facing NE of GRAYS LANDFILL (HAZARDOUS CELL) of top of cap.

Cap is asphalt. Cell closed down 1984. Landfill is approx size of football field.

2.1-24 (13:52)

View facing NE of Grays Landfill CAP (close-up of layers)



6/18 (16)

2.1-25 TRASH TRANSFER Station (13:54)

Operated By BFI / MAINTAINED BY Beth Steel.

2.1-26 (14:09)

Groundwater Well around GREY LANDFILL FACING WEST Rusted casing - Locked - Concrete base

2.1-27 (14:17)

View facing N of from top of LANDFILL down. Bear Creek can be seen.

2.1-28 (14:49)

View facing N of Humphries Creek Impoundment. Note vegetation.

6/18 (17)

21-29

View facing NW of TMC Impoundment #1 (top of impoundment)

Sinter WWTP

2 scrubbers (parallel)

~~Scrubber Fan~~ high energy

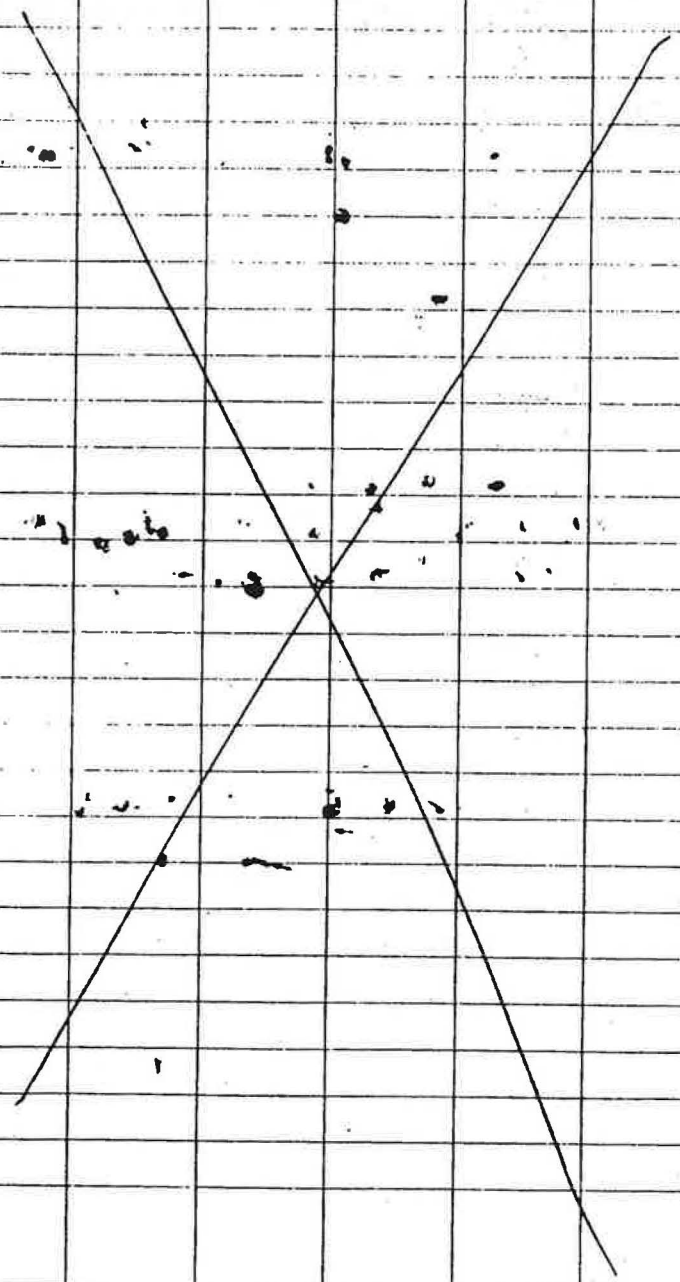
Into thickener

Blowdown from thickener into High Density Sludge treated w/ Acid/polymers to precipitate out heavier metals.

~~Ma~~ Centrifuge — cake onto conveyor belt — into pile outside → Landfill

Water is recycled back into scrubber process

MAO



6/18 (18)

2.1-30
View of sinter plant WWTP centrifuge
Conveyor belt

Facing E.

2.1-31
View facing N of
Sinter Plant WWTP centrifuge pipe.
(Removed to Grey Dairy)

2.1-32
View facing E of High Density
Sludge Treatment
Tank.

2.1-33
View facing East of
Thickener Tank at Sinter Plant NWTP

MAP

6/14

(19)

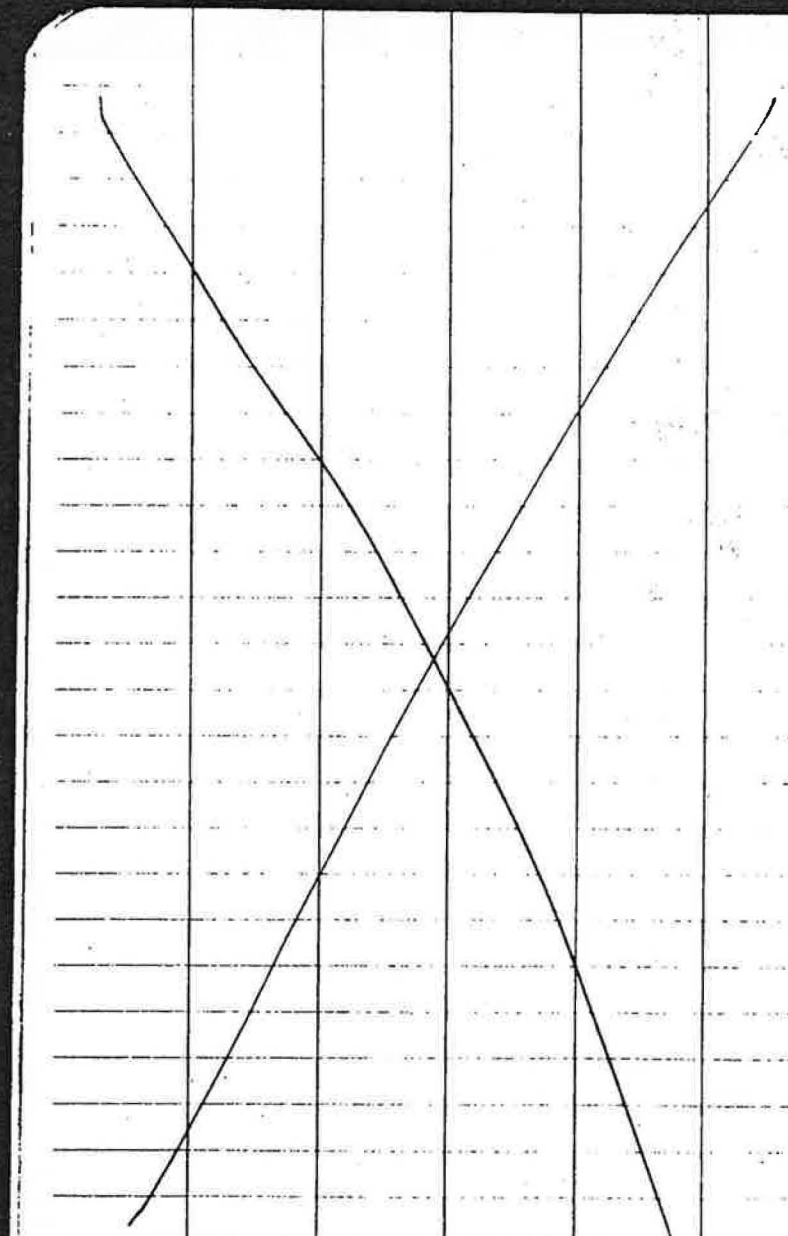
2.1-34 View facing E of the area where DRUMS WERE USED IN PLACE OF CENTRIFUGE TO SEPARATE SOLIDS FROM SINTER PLANT SCRUBBER

2.1-35 Former location of (15:41) Limestone Box Facing West

2.1-36 Spent Pickle liquor Tank At Sinter Plant (vertical-white) Note insulation cracking.

2.1-37 Spent Pickle Liquor Tank #2 At Sinter Plant (horizontal)

MAD



6/19 (20)

Wednesday, June 19, 1991

Cloudy, approx 70°F.

Arrive on-site 8:30

2.2-1 (9:41 a.)
View facing North of Battery 12 Trash Collection Apparatus

Battery One Quench 11+12
Quenching WATER INTO P.I.T AND MAKEUP H2O. and DIRTY SCRUBBER WATER. (from One Spot CAR)
From P.I.T - pumped back into Quenching.
Closed system. Never pump water out.

2.2-2 (9:50) facing EAST
Battery 11+12 Quenching P.I.T.
Deterioration in the concrete + steam generated

MBB

6/19 (21)

2.2-3 (10:00a)

View facing N of the A Battery Quenching Pit Note that dredging occurs automatically. Concrete P.t with signs of deterioration.

2.2-4 (10:02)

View facing N at A Battery Quenching P.t #2. Note the stack of dredged particles ready to be picked up.

2.2-5 (10:06)

View facing up at Battery A Quenchen in operation

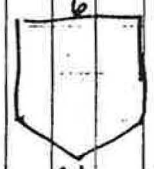
140

6/19 (22)

2.2-6

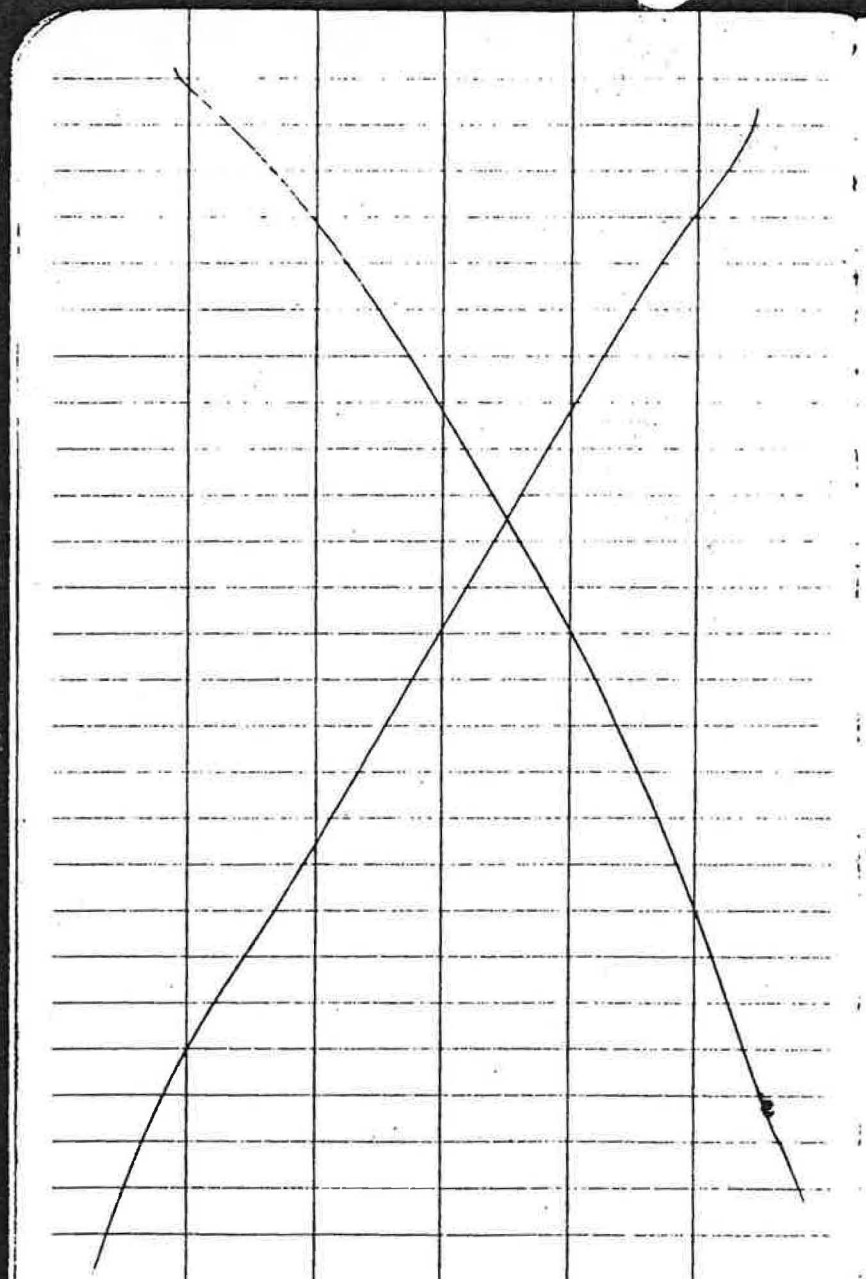
BATTERY A ~~trash~~ trash sweepings area facing NW. Dumpster placed to collect some waste. (Not always there) other pile on ground sweepings from coke battery also

A BATTERY - (1930's - start-up)
Cooling WATER Pits → to outfall 21.
Visually checked for oil/discolor several times a day (2 pits)
Pits left open for inspection.
- Several DOCUMENTED RELEASES TO OUTFALL WHICH MAY HAVE ORIGINATED AT PITS
PITS A concrete and are approx. 6' x 6' x 6' x 9' and approx 15' deep



Cracks in concrete noted during VSI.

MDD



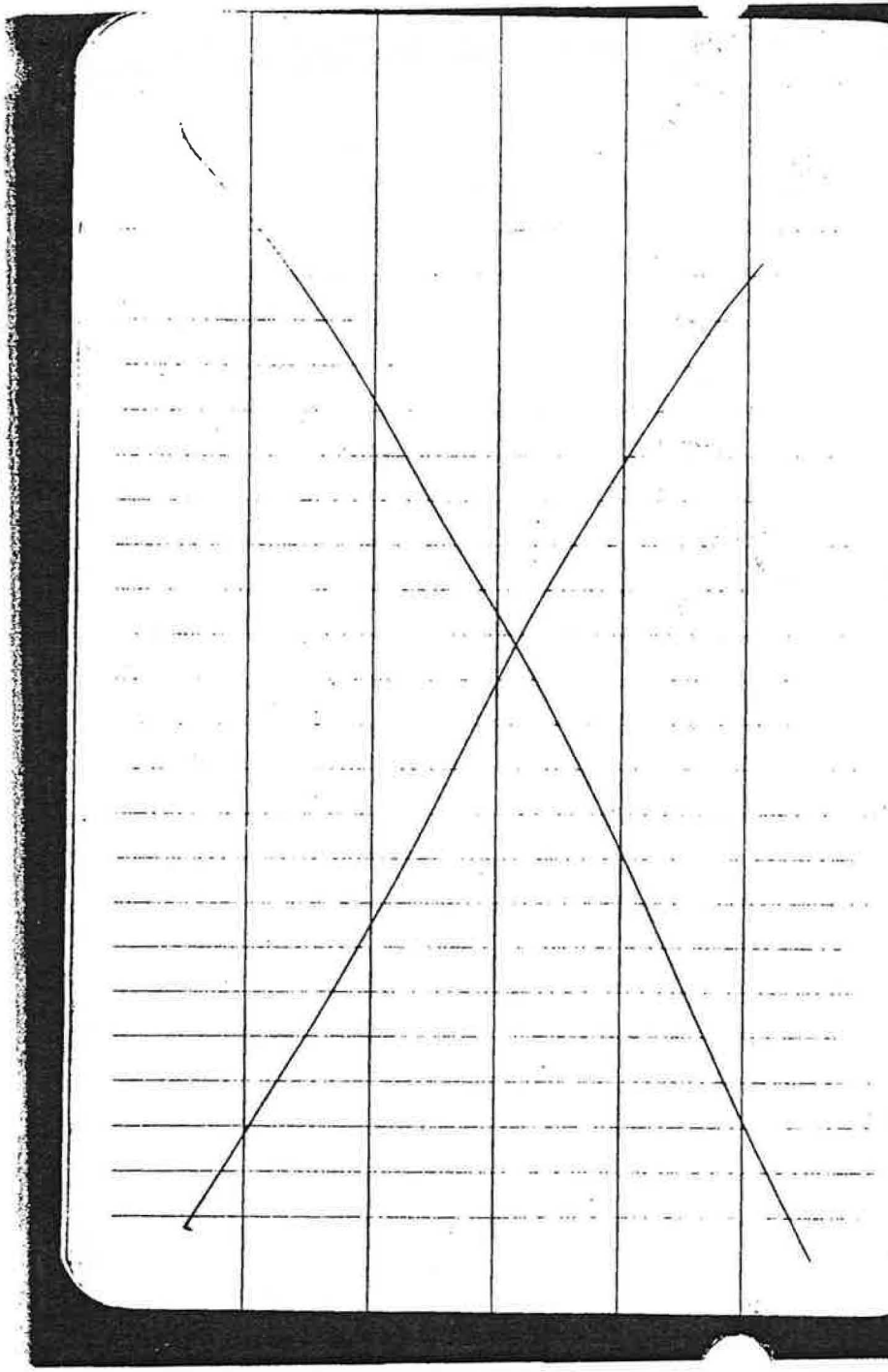
2.2-7 View facing W of Battery A Cooling Water Pits (2)

2.2-8 View facing down of Batter A Cooling Water Pits. STAINING AROUND INLET PIPE INTO PIT VISIBLE.

Battery A Waste Oil Storage Area

Description: Area approx. 100' x 80' w/both product + waste oil storage. Drums stored on wooden pallets over gravel. Dumpster - open-topped collects bulk oil waste - pumped out and sent to OIL RECLAMATION.

MAD



6/19 (24)

2.2-9 View of Waste Oil Storage Area at Battery A facing NE. Note Dumpster in Right hand corner.

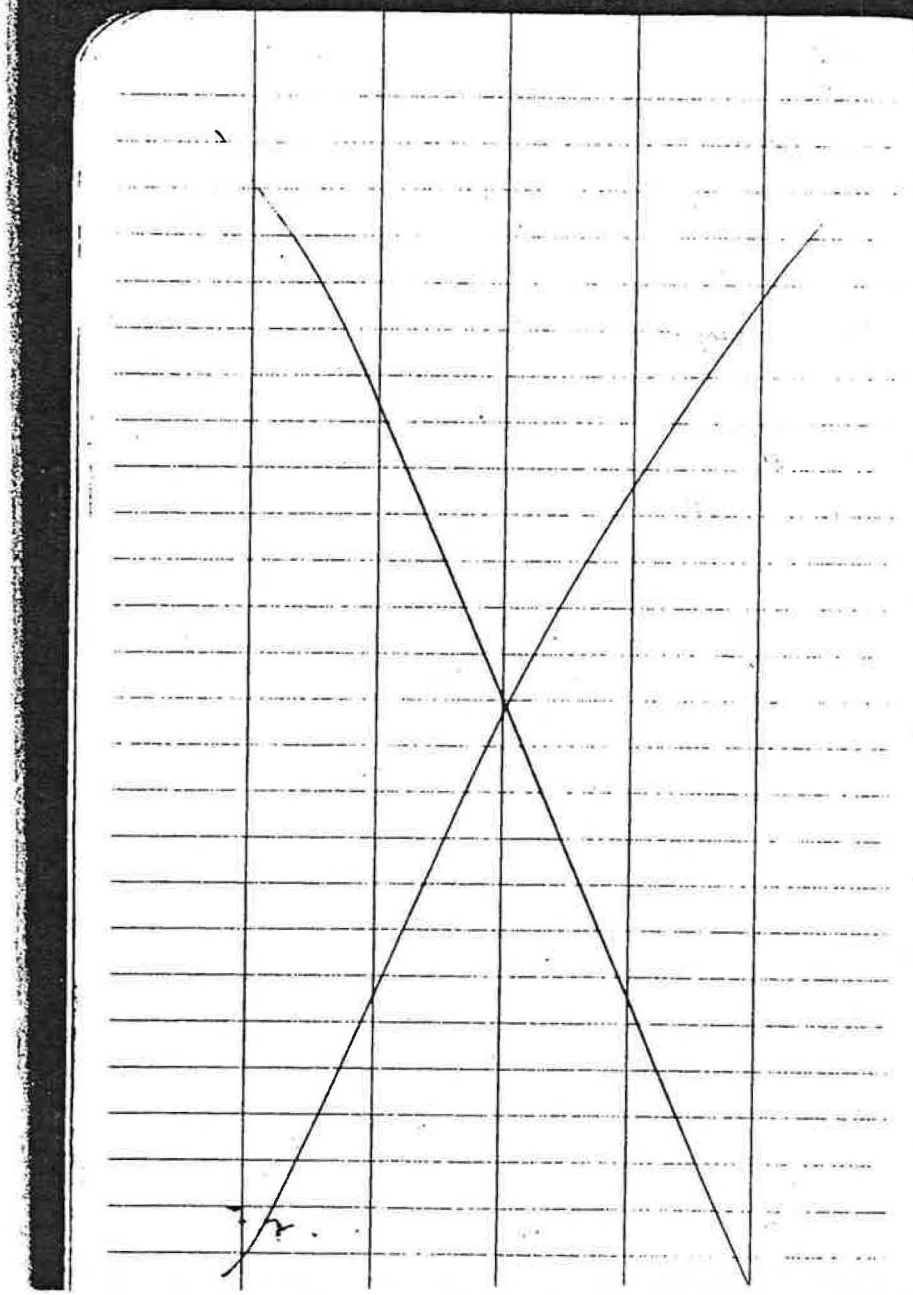
2.2-10 (10:45)
One Spot Car Diesel Fuel Tank 1975/6 - 1989 - monitoring results NADs available by facility already

View facing S of former tank area

2.2-11 (10:47)

View facing SE of former Battery 9+10 location. VACANT LOT.

JAD



6/19

(25)

2.2-12 (10:50A)

View facing roof of Coke Oven Gas MAIN leading to Coal Chemical for treatment. (BLACK PIPING).

2.2-13 (10:58)

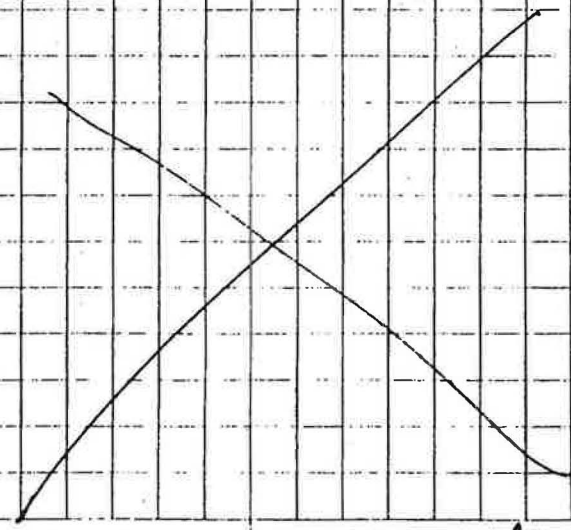
View facing SW of Area beyond (N) Battery A Waste Oil Accum. Area. Area base appears wet, darkened (no oil smell) Battery secs and oil filter in area. FACility thought staining was from yesterdays rain.

AKJ (private) collects tar decanter sludge into bins Transported to AKJ, emptied into tank. Tank → add diluent to keep in suspension → Put

6/19 (26)

BACK ON COAL BELT → BACK TO OVEN
ANY SPILLS TO BATCH steel TANK (3,000) (18 heat coil)
is used for mixing. A sump collects
any spills into concrete containment
pad. sloped into concrete pit.
Any spillage goes back into
tank. Concrete pad is approx 25' x
12' w/an 8" berm.

2.2-14 View facing NW (11:15 A)
of AKJ BATCH TANK



MAD

6/19 (27)

"BLUE ROOM"
MECHANICAL SHOP WASTE OIL SAA
- WASTES FROM MECH. SHOP AND COKE OVENS

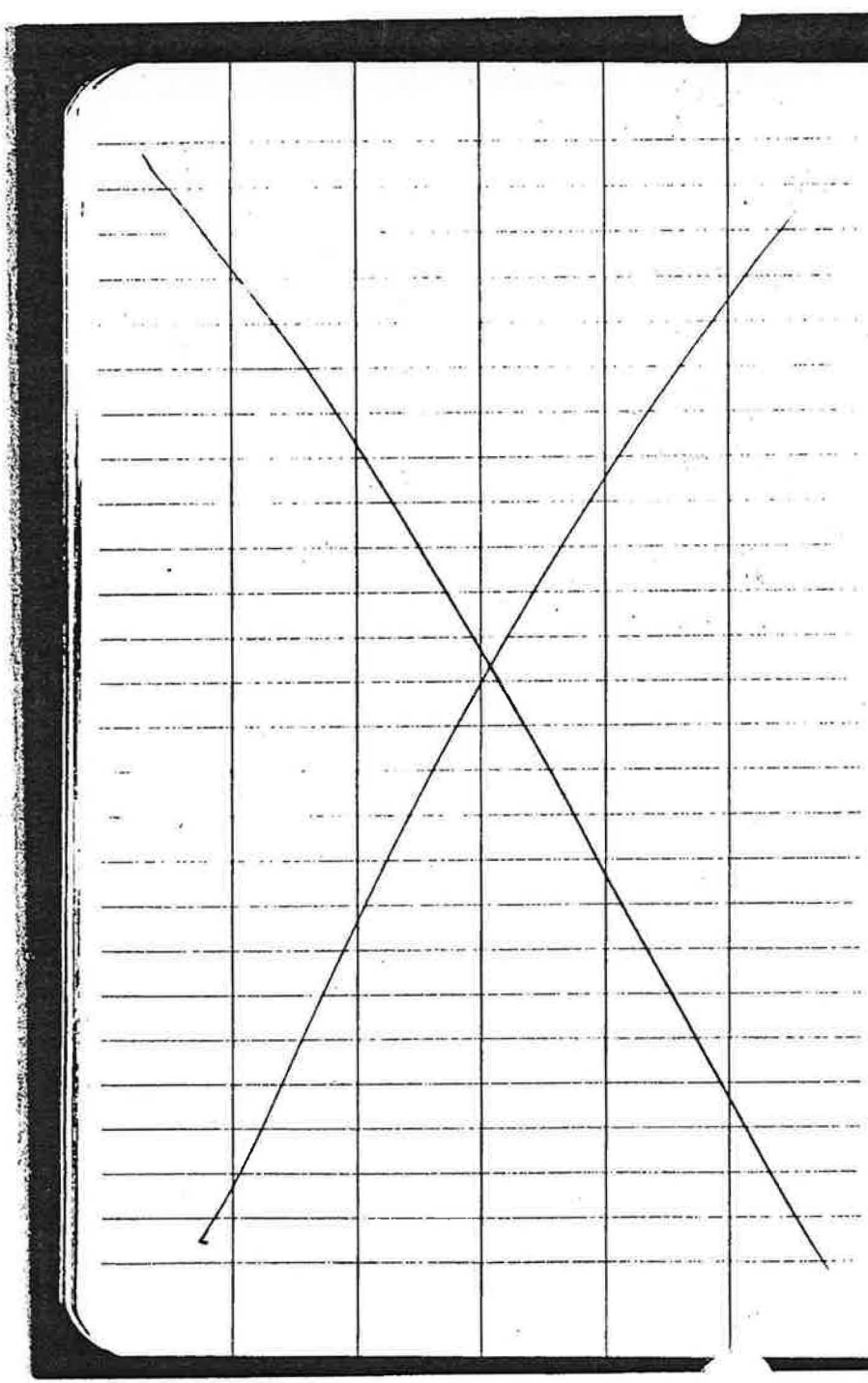
2-2-15 (11:21 AM)

View facing S of BLUE ROOM WASTE OIL SAA

Unit is Approx 60' x 30' and is designed to accumulate waste oil from Coke Oven and Blue Room Maintenance Shop Activities
Drums stored on wooden pallets (many) and on ground which is covered with coal ash.
Some oil staining visible.
Most of the drums visible are empty.

1950's - present

MAD



6/19 (28)

2.2-16 (11:31AM)

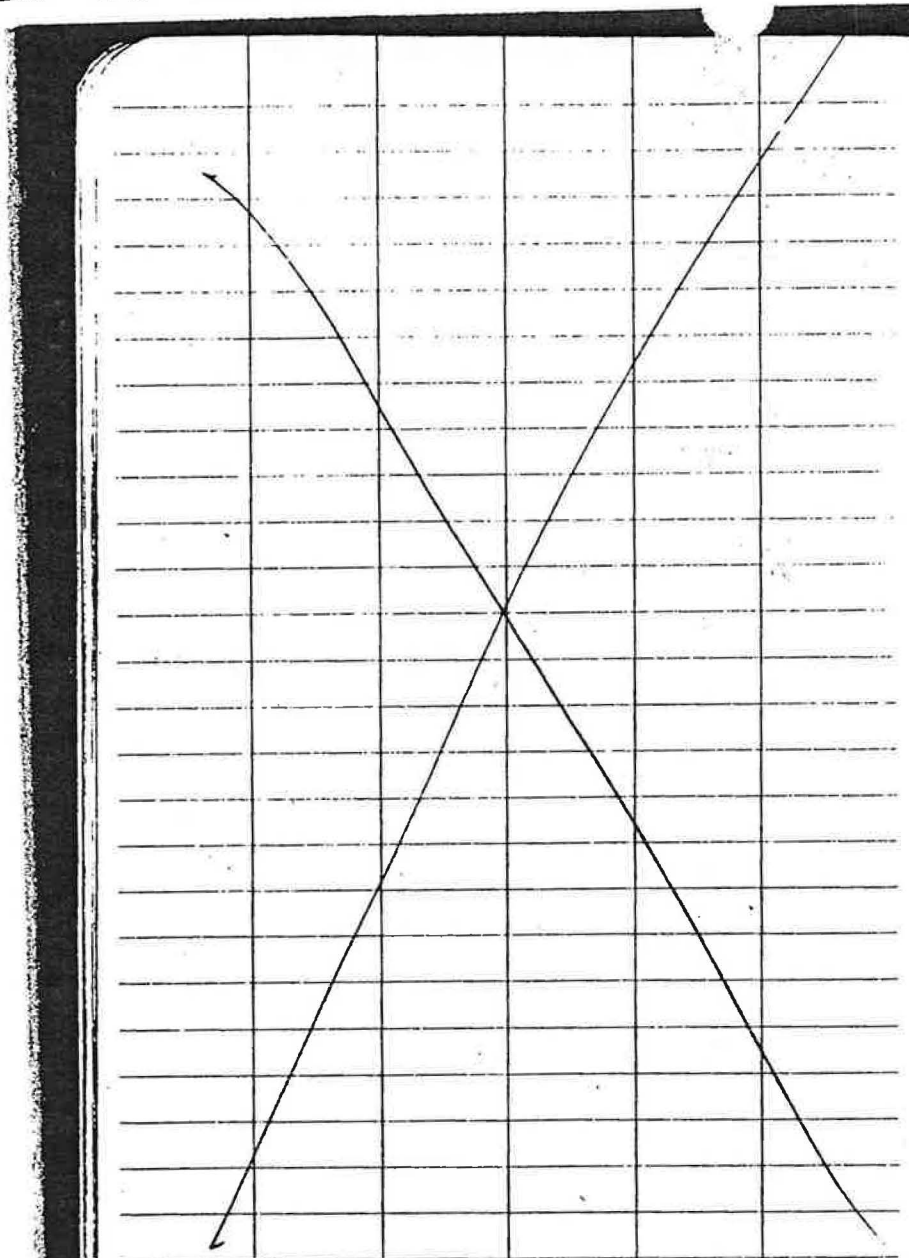
View facing N of Tar Decanter and AKI Tar Collection Bucket. ((2) Decanters) From here tar sludge is transferred by AKI To ~~Tar~~ Asphalt Plant and sent back to coke line.

2.2-17 (11:38AM)

View facing E of Tar Storage Tank Containment Area. Unit holds wastes from spills from pumps. Mixes w/ rainwater - vacuumed out and put back for refining to use again. Concrete w/ 8" berm. And is Approx 15'x15'. (1987 - present) Currently holding rainwater.

Containment put in under Consent Order. Tanks put in 1950's.

MAZ



6/19 (29)

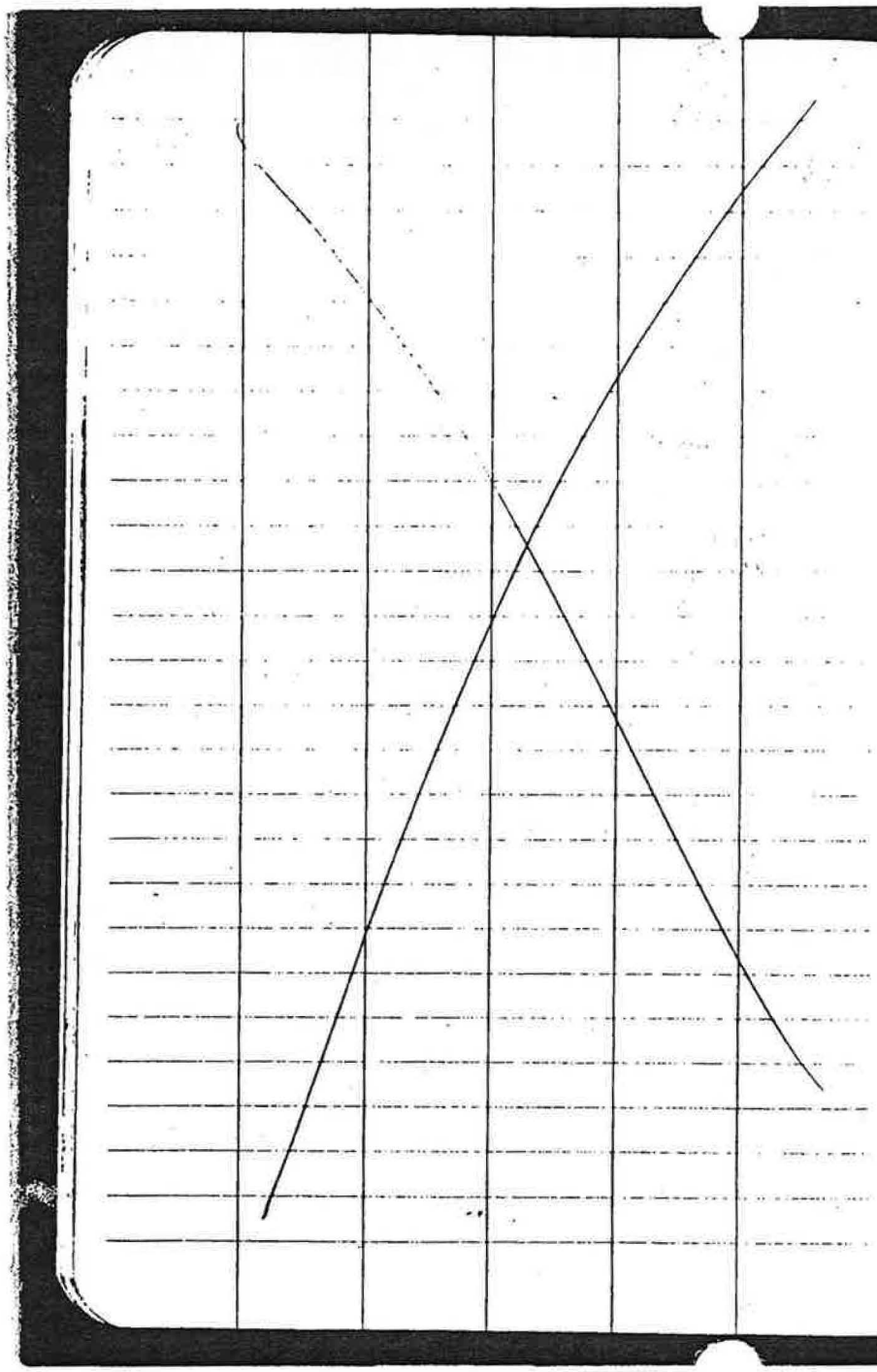
2.2-18 (11:48a) View facing down of Acid Tank Containment System Sump.

2.2-19 (11:49a) View facing E of Acid Tank Containment System Note that rainwater is in containment presently

2.2-20 (14:01) View facing West IAR Storage Tanks (344) Containment System. Spillage on pad

2.2-21 View facing down of IAR Storage Tanks (344) Containment System. Outlet to release rainwater. Very rarely used.

MW



6/19

(30)

Pump House 11+12 (Liquor) Spill Site

2.2-22 (14:15)

View facing NW of Pump collection point which overflows.

2.2-23 (14:17)

B Chemical Plant Ammonia Clarifier Tank facing West
- treatment of liquor with Lime

Lime is pumped out (solids) into a steel bin and taken to Humphreys ~~Impoundment~~ Creek

2.2-24 (14:19)

Lime collection BIN FACING DOWN

Purpose of Clarifier tank
Ammonia clarifier to level off pH and strip off ammonia.

Adjust pH ~ taken to Ammonia Still - Stilled off.

Ammonia Stills (2)
One Active ~~Still~~ currently

Stills Operational Status - 1950's - present

Construction - steel materials

Purpose - Distill Ammonia for reuse

Photo 22-25 (14:29)
View facing up at Ammonia Stills

NAV

6/15

32

Ammonia Saturator (1950's - present)
- steel tank
(brick)
Saturator Containment area is around the base of the saturator.

GAS → 2-3% Sulfuric Acid Solution → Ammonia Sulfate Cryst. from gas

Ammonia Salt → dryer → SALT → sold as product
Southern States fertilizer

GAS then goes to coolers - then out

2.2-26 View facing up of the Ammonia Saturator (14:34)

2.2-27 View facing down of the Ammonia Saturator Containment Pad (14:35)

MAD

6/15

33

2.2-28 14:38

View facing down of Saturator Concrete Cont. Pad - break in pad. Dark hole is full of liquid - (rain yesterday)

2.2-29 14:41

View facing E of Saturator Acid Surge Tank.

OLD NAPTHALENE RECOVERY PLANT

Inactive since 1973. Unit consists of 1 abandoned tank and a 25' x 25' pit - depth unknown - deterioration of concrete pit

MAP

2.2-30 (14:26) View facing W of former Napthalene Recovery Pit

2.2-31 (14:27)

View facing down (close-up) of former Napthalene Recovery Pit within pit concrete steel

---

Wash Oil Coolers (Spiral)
(From Backend of Process)
- Cool WASH OIL → Light Oil Recovery

Coolers



- oil goes thru tubes
- industrial water around tubes

Industrial waters to cool

NAO

6/15

35

2.2-32 (14:53)

WASH OIL Containment Structure facing down.

2.2-33 (14:53)

WASH OIL COOLERS FACING South.

2.2-34 (14:55) SE

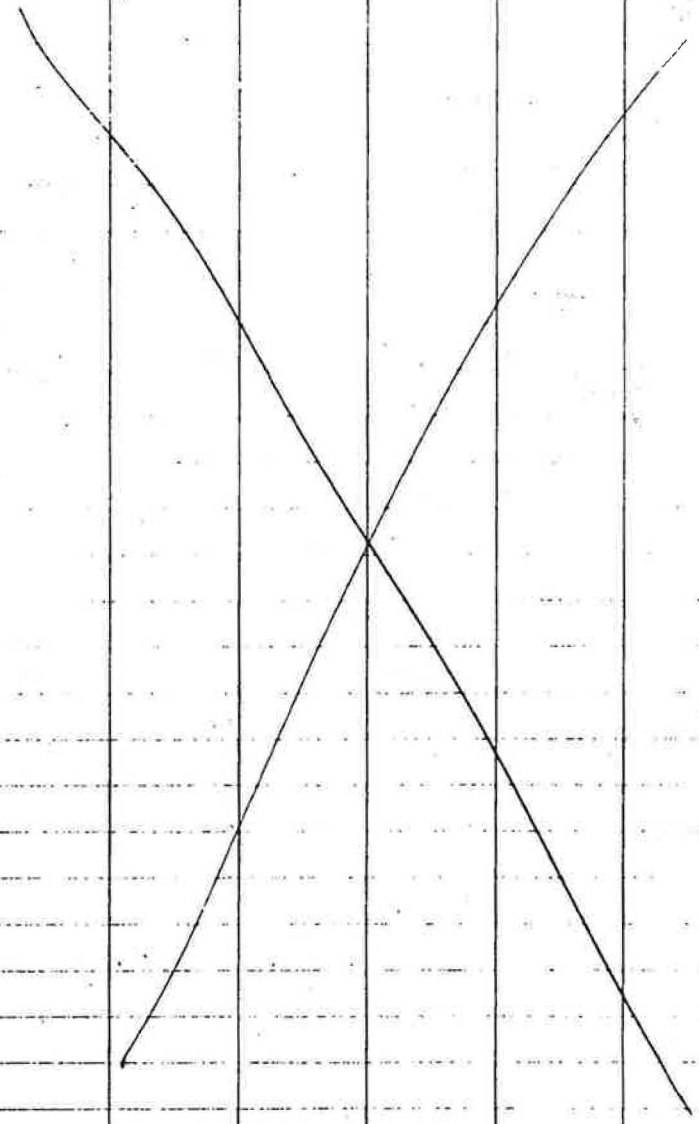
Shell + Tube Wash Oil Cooler
- steel approx 18' Length & 4' in diameter (1950's)



2.2-35 (14:58)

WASH OIL Decanters - Separate wash oil view facing South.

BPD



2.2-36 VIEW FACING W of Wastewater Holding TANK - holds water from wash 0.1 Decanters

2.2-37 (15:04)
Wash 0.1 Circulating Tank - ~~waste~~ water awaiting circulating (wash 0.1 Decanters).

2.2-38 Scrubbers (4)
Light Oil out of GAS → benzene, toluene, xylene naphl - small amount of Dye chemicals. (8)

and containment (concrete)

MA

5/19 (37)

2.3-1 (15:08) Wastewater pump Containment PAD.

- View of pump contain pad looking down. Note brown liquid. (could be rust in pad)

2.3-2 (15:12) Wastewater Oil Bin
- Note connecting hose from wastewater tank

2.3-3 View facing NE of pump. Yellow/brown liquid coming out (washoil)
Washoil Decanter Pump — Containment area to oil/water separator in B Light Oil Plant.

MD

6/19

38

"B" LIGHT OIL PLANT

Light Oil API SEPARATORS

Wastewater to BIO-OXIDATION Trench

Oil → recirculated into plant

& over to AKJ.

(2) ① LATE 50's - present

② 1988/89 - pres

Asphalt over slag surrounding

O/W seps

-EACH SEP IS Approx 40' x 20'

- Concrete containment around

OIL/WATER

2.3-4 (15'25)

O/W SEPS FACING S.

(1950)

MAD

"B-LIGHT OIL PLANT"

ABOVE GROUND TANK CONTAIN PAD

"MUCK TANK" TAKEN TO AKS (?)
from primary Light Oil
purifyce.

2.3-5 MUCK OIL TANK & CONT. PAD
FACING W.

2.3-6 (15:35) Former SULFUR RECOVERY PLANT
LOCATED AT B ~~from~~ LIGHT
OIL PLANT. VIEW facing E

2.3-7 (15:32) Former Sulfur Recovery Plant
W View of Containment pad
Note staining. Containment pad
only surrounds 3 small tanks)

6/19

(40)

Million Gal Weak Ammonia Tank

Holding Tank which feeds the still. Steel Tank.
Wastes from B plant (A+B)
Concrete base. Tank is as old as plant.

2.3-8 View of 1 mil Gal Tank facing SW.

Underground Pipesystem to A Plant Excess Ammonia Liquor Plant

-3 or 4 spills-
nearing A Battery #11 #12
replaced w/ fiberglass line 1 yr ago

2.3-9 Area of Undergoing Weak Ammonia Liquor Line FACING North.

6/20

(41)

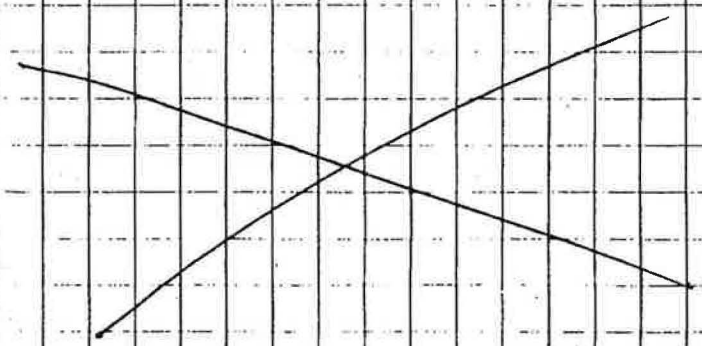
6/20/91 Arrive on-site 8:35
Sunny 75°

Photo 2.8-10

View facing N
of Former location of
Coke Batteries 7+8
- Demolished 1980's over a period of
time

Photo 2.8-11 (9:20 A)

View Facing East of Former
Coke Oven Batteries 1-6



6/20 (42)

Photo 2.3-12 (9:28)

View facing SE of 100,000 wastewater Tank of BIO-OXIDATION

Photo 2.3-13 (9:31)

BIO-OXIDATION 1 million gallon WASTEWATER TANK

photo 2.3-14 (9:34)

BIO-OX PLANT DEPARTURE facing N.

Photo 2.3-15 (9:37)

BIO-OX API OIL SEP FACING NW.

6/20 (43)

BIO-OXIDATION PLANT

100,000 gal TANK
- receives wastewaters from all O/W sep sumps A+B PLANTS AND BENZENE plant
- concrete base
- steel tank

Depurators (2)

Wastewaters from 100,000 gal wastewater tank mixes w/ polymers from here → ~~water~~ to O/W Separator for more separation → water to 1 million gal holding tank. Oil is VACUUMED OUT BY TRUCK → back into washoil system or to AKJ.

All BIO-OXIDATION WASTEWATERS FROM COKE OVENS

X 1AD

6/20

Photo 2.3-16 (9:38a)

View facing down of gunk around BIO-OXIDATION API O/W SEPARATOR

Photo 2.3-17 (9:39a)

View facing West of BIO OXIDATION DEPRATOR OIL STORAGE TANK.

Photo 2.3-18 (9:46)

View facing W of phenol Oxidation Basin

Photo 2.3-19 (9:47)
View facing SW of top of Phenol Oxidation Basin

NRO

6/20

BIO-OXIDATION BUG POND
(Phenol oxidation)

Wastewaters from 1 mill op Wastewater Tank go to Phenol Oxidation.

- into mixing chamber + dilution water + phosphoric acid (nutrient for bugs) + ferric chloride (flocculating agent)
- into basin (contact w/ bugs) aerated (couple hrs)
- overflow to clarifiers (2)

BIO - Clarifiers (2) - concrete
(750 gal/minute)
Overflow Thickeners → water discharged thru outfall 21 (NPDES monitored)
Underflow - back to basin or to SANITARY Sewer (Back River WWTP) - Baltimore County permit

NRO

6/20 (46)

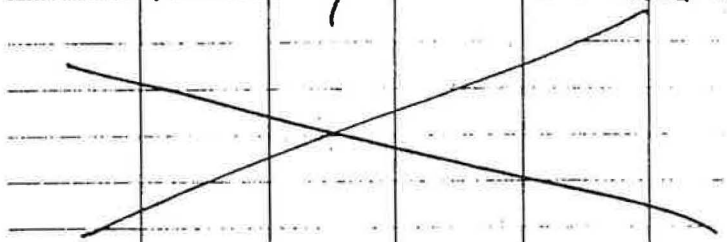
Photo 2.3-20 (9:54)

View facing E of Clarifier
At BIOX PLANT

Photo 2.3-22 (10:00A)

View facing S of Coke Point
Landfill - Trash Pile at Top.

Photo 2.3-21 (9:59)
View facing S of Trash Piles



MAP

6/20 (47)

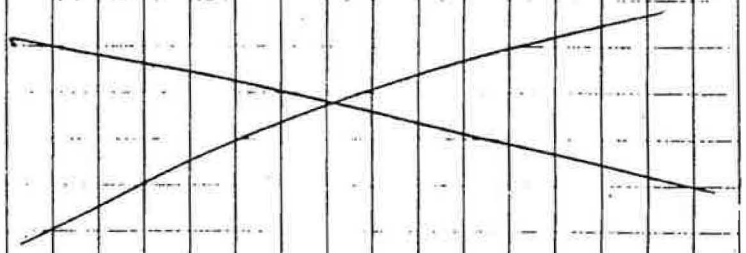
BALT. COUNTY NO LONGER WANTS
UNDERFLOW GOING TO SANITARY
- Under a consent order.
- Sludge has not been TC Tested
yet - one year down the road

Coke Oven landfill

Catch all from Coke Oven
processes

TRASH PILES

From Coke Oven Housekeeping
Located behind 2 BIO-OXIDO
Clarifiers.



MAP

6/20 (48)

Photo 2.3-23 (10:15A)

View facing up and W of Battery A Baghouse

Photo 2.3-24 (10:18A)

Battery A Baghouse Dumpster facing W.

Photo 2.3-25 (10:21A)

View facing down of Battery A WARP

NAD

10:15A 6/20 (49)

Battery A Baghouse

Collects Coal Dust from Ovens by way of duct-vacuumed into Baghouse-funnels to dumpster-Dumpster emptied at Coke Point Landfill

200,000

A Battery / Coke Oven Wash

Final Quench by hose-Wastewaters go via concrete trench to outfall 21.

NAD

6/20 (50)

Photo 2.3-26 (10:25)
View facing W of
A Plant Cyanide Stripper

Photo 2.3-27 (10:27)

View facing NW of
Tar Storage Tank (A Plant) 3+4

Photo 2.3-28 (10:32)

View facing N of Sulfuric
Acid Containment System
and Sump. Note discoloration
area.

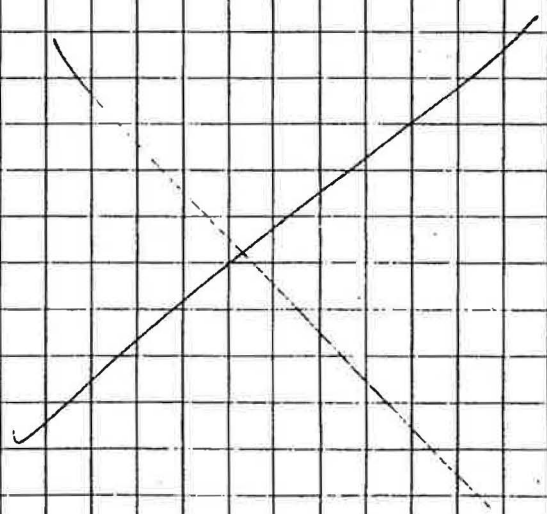
Photo 2.3-29 (10:34)
View facing NE of Sulfuric
Acid Tanks (A Plant)

MDV

A Coal Chemicals Plant 6/20 (51)

2 Sulfuric Acid Tanks (3+4)

Brick containment for
pumps and piping. Any release
pH tested. Neutralized and
if between 6-9 released
to Patapsco River
(LITMUS TEST)



MDV

6/20 (52)

Photo 2.3-30 (10:37)
View facing N of
Wash Oil Spill around A
PLANT DECANTERS

Photo 2.3-31 (10:~~3~~41)

A Plant o/w separator.
View facing W and Former
Tar Decanters (2 of 3
cells shown)

Photo 2.3-32 (10:51)

View facing up of Acid
Saturator Tank - Note
Crystalized acid around
piping

Photo 2.3-33 (10:53)
View facing S of
saturator containment pad.
Note staining. Pad is approx 8" (bermed)

10:41 (53) 6/20

A PLANT - BEGAN OPERATING 30's

O/W SEPS
SCRUBBER AREA water to O/W
SEPS. Surrounded by

WATER TO BIO-OXIDATION PLANT
OIL IS RECYCLED BACK
TO WASH OIL SYSTEM.

A PLANT SATURATORS (2)

1930's - Sept/oct 91
Concrete Containment (8" Bermed)

DIFFERENCE BETWEEN A & B Plants -
NO LIGHT OIL PLANT IN A

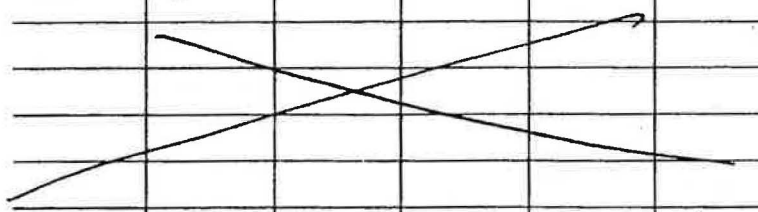
6/20 (54)

Photo - 2.3-34 (10:55A)
Facing North
A Plant Overflow &
Skimmer Box

Photo - 2.3-35 (11:13A)
Facing N of Coke Oven/Point
LANDFILL

Photo 2.3-36 (11:19A)
Facing W of Coke Oven
LANDFILL

Photo 2.4-1 (11:27)
View facing West of top
of Desulf. PLANT.



MAO

6/20 (55)

Skimmer Box to AKJ
VIA FORKLIFT.

Coke Oven LANDFILL
BAGHOUSE DUST FROM
~~of~~ A Battery

11:20 Desulfurization Plant
(4)
Coal Chemical Plant A&B
GAS (clean) to Desulf Plant
to undergo vacuum CARBONATE
PROCESS. (STRIPS H_2S)

BLACKTOP BASE SUPPORTS
4 STACKS (vac.)

NON-contact Cooling Water to OIL OUTFALL

H_2S to Claus Plant
Carbonate is recycled to system.
→ Non entraining ejected back into Coke
oven battery

MAO

6/20 (56)

Photo 2.4.2 (11:40a)

View facing S of
TAR TANKS AT FUEL STATION.

Photo 2.4.3
2.4.4 } Panaroma of
2.4.5 } Fuel Oil Station

Photo 2.4.5

FACING W of BALL MILL
and Tank

Photo 2.4.7 11:52

FACING NE of DUMPSTER full of
Buckets catching from leaking pumps or
valves. (No 6 oil or Tar)
MO

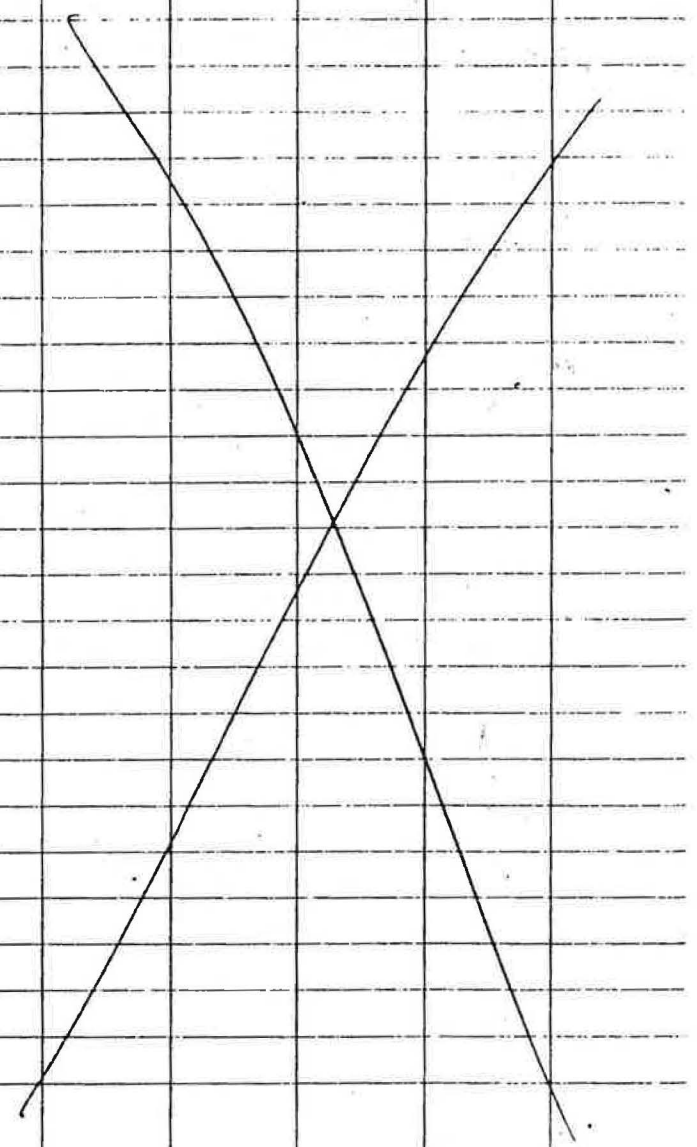
6/20 (5

CANNOT send to MILLS.
BUILDING NEW DeSulf PLANT
BECAUSE OF CONSENT order.

Fuel Station - Product storage Tanks -
TAR TANKS (TAR BOTTOM)
OLD - 1991 (6 months ago)
Contract w/ 7+7 for cleaning
and tearing down 4 tanks
(Kimins - will tear down)
MO USED AS FUEL IN PLANT
OR SOLD TO BUYER

Former
BALL MILL
Unknown - 1980's.

Use to take tar decanter sludge
and put thru barrel with
balls (rotating kiln) to
liquify (not heated). → Then into
tank - then sprayed on coal.
↳ Fed to Batt 1-6 or
trucked to tank near
AKS B SERVE OTHER BATTERY



Benzene Plant 6/20 58

1:30

Benzene Recovery Plant

~~Benzene~~ cracks secondary light oil ~~and cracks~~ into Benzene, Toluene, Xylene (4%) and di-phenol (1%)

- Saleable fore product

Operational Status - 1940/1950s - 1986

- closed/shut down because they could not compete w/others because couldn't produce quantities others could!

- Primary light Oil Storage
- 2nd ary light oil storage

still active

These are sold as product (transf by train OR truck)

AAO

6/20 (59)

Photo 2.4-8 (13:43)
View facing SW of 2nd any Light Oil Tank in Benzene Plant

Photo 2.4-9 (13:46)
View facing SE of Benzene Plant Containment Pad (Light Oil Tanks) which leads to sump

Photo 2.4-10 (13:47)
View facing W of Light Oil Concrete Pad corroding

Photo 2.4-11 (13:52)
View facing West of Benzene Separator

MD

6/21 (60)

Recovery Sump

2nd any Light Oil Tanks are sold as product on concrete (1ft) surrounded by earthen/coke silt base.

Recovery o/w Sump (1)

Wastewater to BIO-OXD PLANT
OIL IS RECIRCULATED

- Can overflow to 21 Outfall.

Washes are from containment pads for product storage Tanks and when tank contents are released.

1950's - present

Surrounded by coal silt

MD

6/20 (61)

Photo 2.4-12 (13:56)

View facing S of Benzene Plant - cooling towers

Photo 2.4-13 (13:58p)

View facing down of Benzene Plant Cooling Water & o/w SEP overflow point of Connection between to Storm Water (OUTFALL 21)

Photo 2.4-14 (14:01)

FACING N of OIL AROUND #44A TANK and #43 (recirculated oil)

Photo 2.4-15 (14:03)

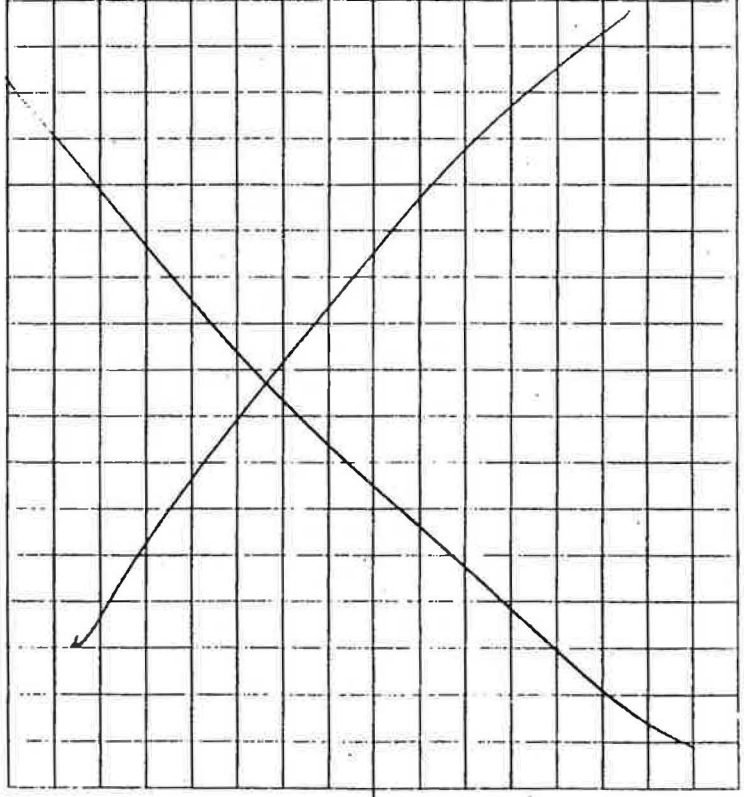
FACING NW of #44 0.1 Spill on GRAVEL

MD

6/20 (62)

Benzene Cooler Leaks into OUTFALL 21

#40 TANK - WASHOIL HOLDING TANK SPILL SITE - OVERFILLED



MD

Photo 2.4-16 (14:06)

View facing N of Oil Spill Site at Benzene Plant and Recirculating Oil Tank

Photo 2.4-17 (14:07p)

View facing S of Temporary Drum Storage Area for when Muck was cleaned out of Tanks (2nd ary, Benzene, Toluene Tanks)

Photo 2.4-18 (14:13p)

View facing S of Waste Oil (Benzene/Litol) SAA.

Photo 2.4-19 (14:18p)

View facing E of Litol Plant Catalyst ~~Collect~~ Drum Station

Hopper collected - released into drums - drums placed in another area for sampling.

MAO

Litol Plant Sewer Box

Sample water for oil - when suspicious from ↑ levels of oil found in 21

Benzene/Litol Waste Oil SAA

On gravel base w/ vegetation growing.

Each drum sampled - PORI or AKJ or OFFSITE DEPENDING ON ANALYSIS RESULTS

Unknown - Active

MAO

6/20 (65)

Photo 2.4-20 (14:18)p

View facing South of Staging area where LTDL DRUMS were stored. Samples were analyzed. Haz - off-site NON-HAZ - GREYS LANDFILL (4 weeks stored)
- Operation occured once every 5 years. Upto 20 drums.

Photo 2.4-21 (14:23)p

View facing NW of Tar Decanter Buggy (No Longer Used) found by Benzene Plant.

Photo 2.4-22 (14:24)

View facing N of Tar Decanter Storage Box Location (Former)

MO

6/20

Photo 2.4-23 (14:26)

View Looking down of where Tar Decanter Roll off Storage Boxes were formerly located

Photo 2.4-24 (14:27)

View facing NW on top of Tar Decanter Buggie / Roll-off Box exchange. Note ~~wheel~~ wear + tear & concrete loss

Photo 2.4-25 (14:33)

View facing N of Unknown drum storage area by Benzene Truck Loading ~~Shop~~ Area

Photo 2.4-26 (14:37)

View facing S of Coke ~~Oven~~ Battery Repair Shop Baghouse

MO

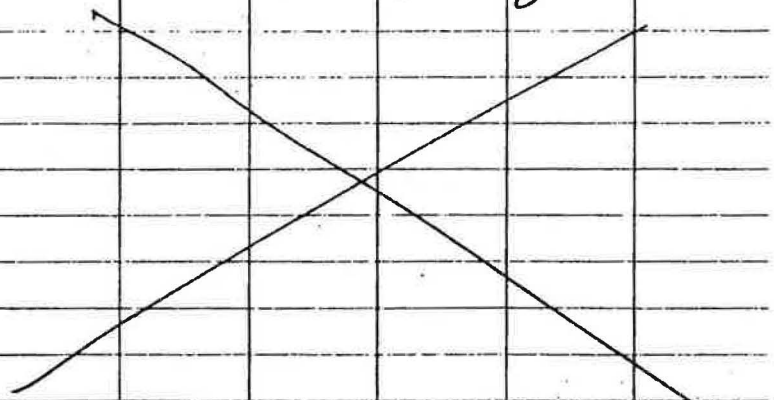
6/20 (67)

Photo 2.4-28 (14:50)

W View of gravel area which received Ferric Chloride Spill in Bio-oxidation Plant

Photo 2.4-29 (14:52)

View facing NE of Ferric Chloride Containment outlet which discharged to gravel & soil.



MAD

6/20 (68)

2.4-27 (14:38)

View facing SW of DUMPSTER which is emptied in Grey's Landfill from MAINT. SHOP COKE OVEN BASEMENT

Ferric Chloride Spill from Product Tank Line Spill into Containment → discharge Valve left open → spilled outside containment.

H Furnace

Dust Collector - BLAST FURNACE GAS NEEDS TO BE CLEANED - CATCHER ACTS AS A CYCLONE TO SEPARATE PARTICLES FROM GAS. (PARTICLES STAY IN CATCHER) GAS goes into scrubbers where sprayed then into GAS MAIN (96') to be used as in blast furnace

MAD

? Disposition of #10 BLAST FURNACE DUST (H)

Photo 2.4-30
View facing SW of #3 Furnace Dust Collector/Catcher. Area beneath is where railcar collected dust from catcher.

Photo 2.4-31
View facing West of Waste Water Thickener Tank.

Photo 2.4-32 (15:16)
View facing W of Former Blast Furnace J Precipitators location.

To collect particulate - water sprayed up into it to clump. Hopper/railroad car would collect dust → Dumped daily into car → ore field to be reused (?)

- Water used to spray water into thickener

Late 60's - Late 70's, since then only a couple time periods including 100 days last year

Photo 2.4-33 (15:18)
View facing West of Gas Washer and Scrubber. Left cone is washer, scrubber to right - Blast furnace J

Photo 2.4-34 (15:18)
View facing West of J Blast Furnace Dust Catcher. Area underneath was used to fill railcars.

6/20 (71)

Photo 2.4-35 (15:26)

View facing S of former K Blast Furnace area and where Thickener Tank for K+J was located

Photo 2.4-36 (15:26)

View facing E
Sump RIW (collected dirty water from scrubber)

Photo 2.4-37 (15:30)
View facing SE of E, F, + G Former Blast Furnace locations. Piles are of gypsum and raw materials storage area reused to outside people.

MAD

6/20 (72)

3:00
J Blast Furnace - built early to mid 1950's → late 70's. Operate only a couple times since then. Last operation summer of 1990.

Photo 2.5-1

A, B, C, D OLD BLAST FURNACE LOCATION FACING S. Note SLAG PROCESSING NOW LOCATED HERE.

Photo 2.5-2

A, B, C, D OLD BLAST FURNACE LOCATION FACING W. Note old gas main to right

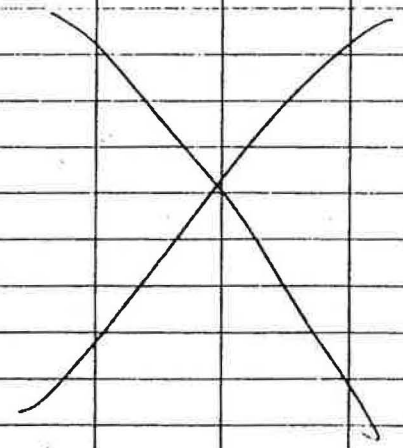
MAD

6/20

73

Photo 2.5-3 (15:40)
View facing S of
Langerfeld Wastewater Treatment Tank.
(Recirculating of Water)
discharge to 12 under our NPDES
permit.

Photo 2.5-4 (9:09) } Panorama of
2.5-5 (9:09a) } L BLAST
2.5-6 (9:09a) } FURNACE



MDO

6/21

74

8:35 Arrive on-site Friday 21 June

L BLAST FURNACE

BFW - heat transfer non-contact
cooling (FURNACE COOLING
90% potable water
- pumped to remove heat thru
into cooling towers
(closed system)

GAS CLEANING

Wind blowing into furnace X1.3
Is amount of gas coming off stack

Top of furnace → dust catcher
(heavy particles fall to dustcatcher)
GAS CLEANING DEVICE -
(2 stage bishoff scrubber
purpose of scrubber - clean gas
and control furnace pres
1st stage
Five sprayers hit filthy gases
(5 dirty, 5 clean sprays)
3 more sprays (plug)

2nd stage from plugged sprays

MDO

6/21 (75)

Photo 2.5-7 (9:37)

Photo of L BLAST FURNACE
Process Flow Diagram

Photo 2.5-8 (9:47)

Photo facing S of
Furnace where emissions are
entering baghouse above

Photo 2.5-9 (9:56)

View of L Furnace
Baghouse facing SW.
Note dumpsters collecting dust

MAO

6/21 (76)

To THICKENERS (2) 4,000 gall min at
each thickener
- overflows int o ~~Ov~~ Thickener
Overflow Tank
Water to Cooler - back to
gas cleaner

SLURRY FROM THICKENERS →
SLURRY NO. 7 SINTER PLANT

- SOME OF BLAST FURNACE GAS TO
STOVES
- SOME TO 120' MAIN

BAGHOUSE WASTE USED AS
A FEED TO SINTER PLANT.
Area approx 60' x 50 x 60' high
Dumpsters are 6 x 5 x 5 high
closed.

MAO

Photo 2.5-10

View facing W of Bishoff GAS SCRUBBER AT L BLAST FURNACE.

Photo 2.5-11

View facing W of L BLAST FURNACE THICKENERS.

Photo 2.5-12 (10:04)

View facing W of slag deposit station from L BLAST FURNACE

Photo 2.5-13 (10:05)

View facing W of slag coming out of L BLAST FURNACE. THIS is transfered to Larger Slag Reclamation area by Former Blast Furnaces A-D.

NAD

H+J Furnace RIW System (also part of 6+7 Project) Sinter Plant

1.6 Million steel + concrete bottom casing gal capacity Clarifier

1st STEP - Process WATER TO COAL WELL PUMPS to
#6 Clarifier →
HOT WELL PUMPS →
COOLING TOWERS →
COLD WELL - (BACK TO FURNACE
SOLIDS FROM #6 clarifier to #7 Clarifier at Sinter Plant (when #7 down → directly to centrifuge)

Photo 2.5-14 (10:17)

View facing NW of 1.6 mill Clarifying tank at H+J RIW Syst

NAD

10:21 6/21 (79)

Photo 2.5-15 (10:21)

H+J Furnace R W Syst

View facing NE of Cold Well holding area 50x60 before water goes back to furnace and some of 12 cooling towers in background

Photo 2.5-16 (10:35)

View facing N of #3 Sump from ~~West~~ H Furnace Pumps water from furnace into #6 Thickener.

Photo 2.5-17 (10:38)

View facing S of Holding Tank at H furnace ~ ~~gas~~ loop seal water goes back into #3 Sump.

6/21 (80)

H+J R/W built in 1970's.

Pilot Plant near Sinter Plant

L FURNACE SLURRY TO GET OUT ZINC + METALS RECOVERY → BACK FOR RECHARGE

Hydrocyclone - Sep. LEAD + zinc Bottom is steel + carbon for reprocessing.

Operational Status
Fall 1990 - present

Zinc + lead pumped into trailer - chamber pressed - Bethlehem 1996

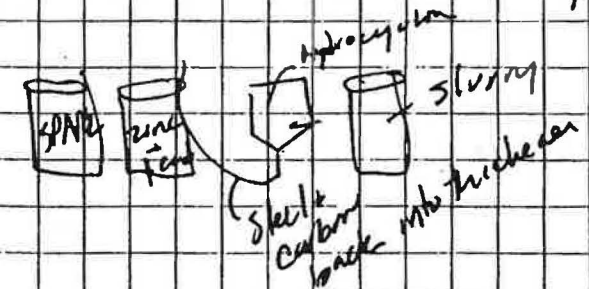


Photo 2.5-18 (11:00)

Sinter Plant Pilot project facing SE. Sinter plant clarifier in background

Photo 2.5-19 (11:24)

View facing down and N of Cyanide Sump at A plant. Sump carries Wastewater to stripper.

Photos 2.5-20, 21, 22 } Panorama of ~~S~~ cyanide stripper at A plant facing N

MAD

A Plant Cyanide Stripper

~~Cyanide~~ EFFLUENT ~~Stripped off~~ goes to ~~St~~ Biooxidation Plant

Cyanide vapors discharged through stack. Low levels of Cyanide

Wastewaters

- Contact waters from cooling or any oil contact at plant

BOF Treatment System

WASTEWATERS ~~to~~ from SCRUBBERS pumped to venturi floats → bottom of separators → part to recycle t → part to thickener

Clean gas thru stacks

THICKEN SLUDGE IS DEWATERED (Belt press) AND SENT TO GREYS LANDFILL

MAD

6/21 (83)

2.5-23 (11:41)

View facing E of BOF TP Thickener (steel tank)

2.5-24 (11:44)

View facing SE of SAND collection area → GO TO BEDDING PLANT

2.5-25 (11:49)

View facing S of Reclaimed Tank and Re Mixing Tank at BOF Treatment Plant

2.5-26 (11:52)

View facing upstream of above ground piping going from BOF Treatment Plant to HCWWTP

6/21 (84)

- WATER FROM THICKENER TO RECLAIMED TANK → EXCESS TO RECYCLED TANK FROM MIX TANK PUMPED TO HUMPHREYS CLEARWELL
- EXCESS RECLAIMED TANK → MIXING TANK (FROM FILTER PLANT AND BOF)

Water Pumped from Mixing Tank to HCWWTP VIA Above ground piping.

2.5-27 (11:57)

View facing N of Reladel Baghouse

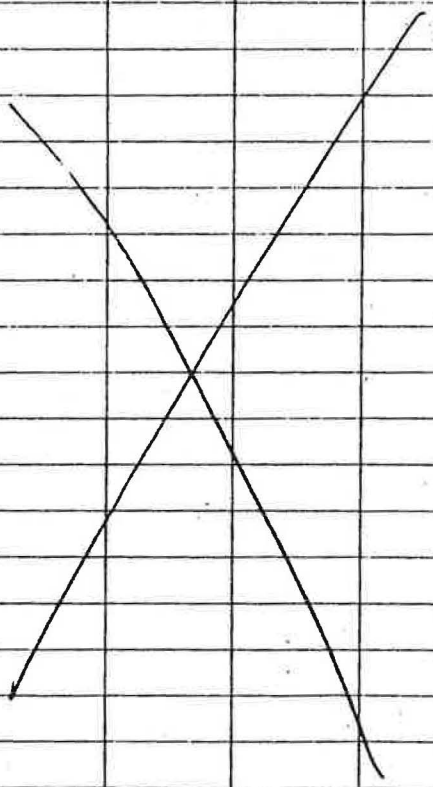
2.6-28 (11:59)

View facing W of BOF TP Recycle Tank Steel

6/21 (85)

2.5 - 29

View facing up of BOF SEPERATOR

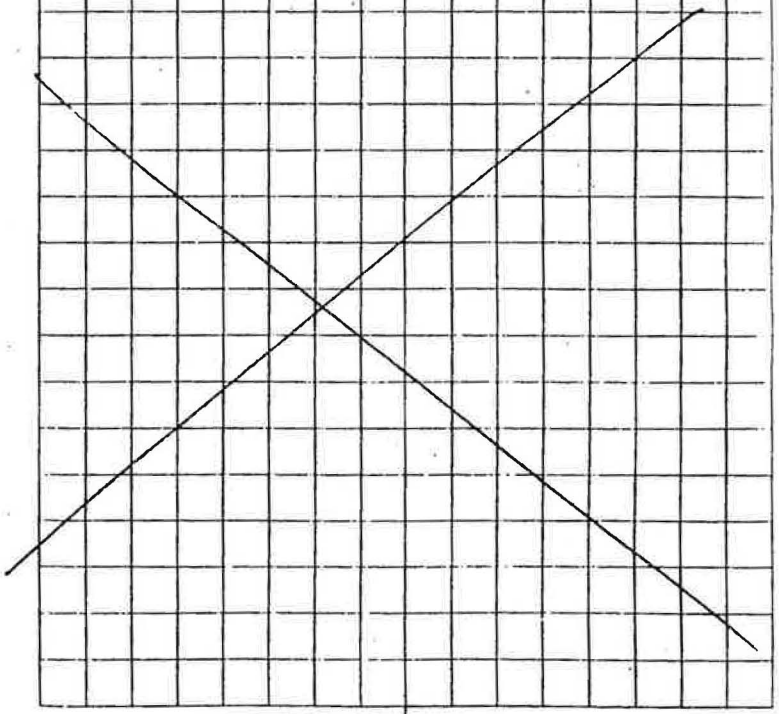


MAD

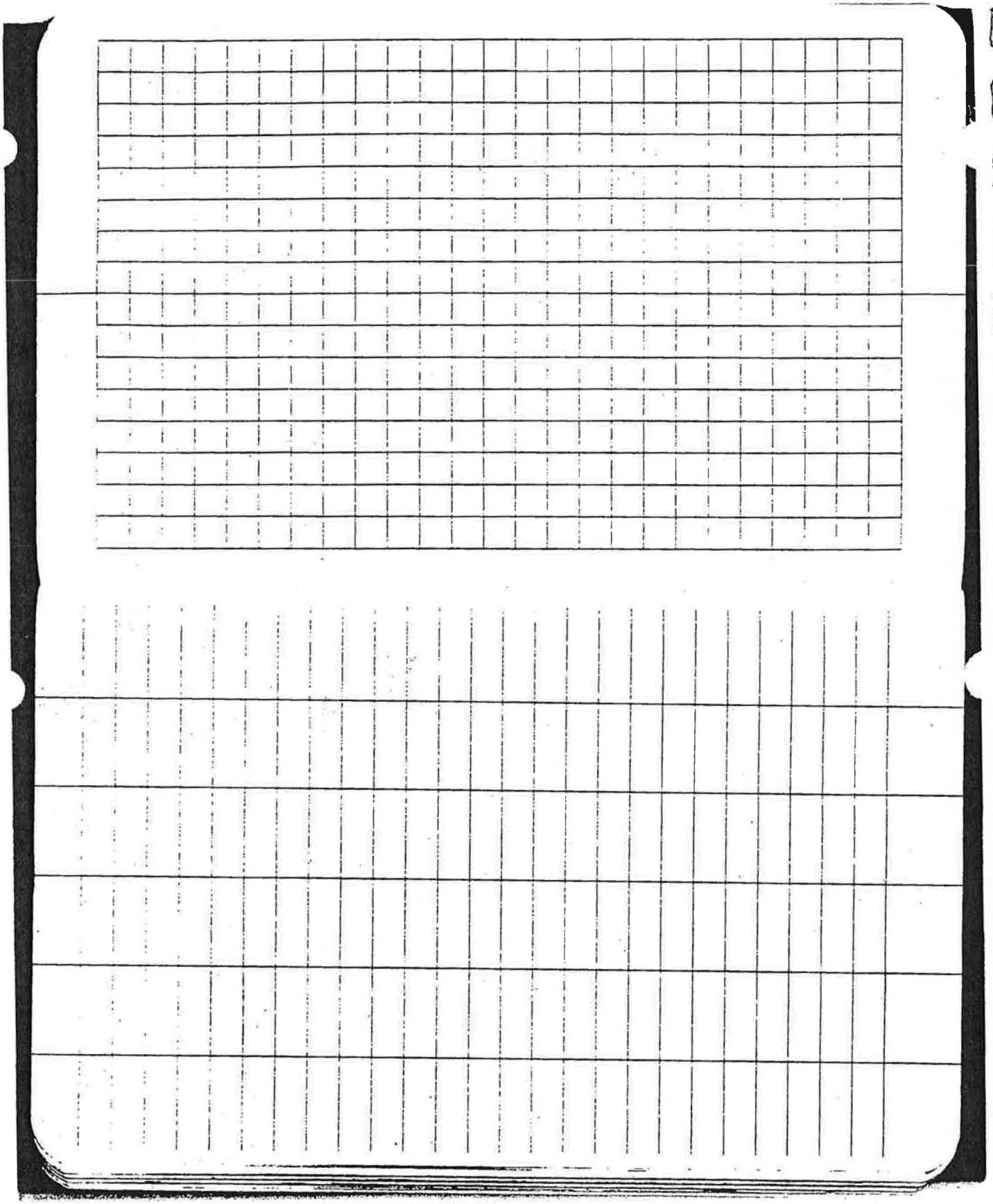
6/21 (86)

1:30 Preliminary close-out meeting for week

IDENTIFICATION OF SWALLS left to do on Monday. Dorothy and Paula will return on Monday to finish VSI. ATK provides a list of questions to be answered by the facility from this past weeks inspection.



MAD



6/25 10:14 14

Outside Office

fuel oil tanks
not used in
20 yrs

Send stuff to Joe
Mendelson for
Bob Abate

stuff possibly receive in
mid July

end of Close int meeting

[illegible]

ATTACHMENT B

SWMU AND AOC LOCATION MAP

ATTACHMENT C

PHOTOGRAPH LOG

ATTACHMENT C

PHOTOGRAPH LOG

Please note the photograph numbering system which was used for tracking all photographs taken during the VSI at Bethlehem Steel.

Ex. 2.4-11

2 = VSI Team Number
4 = Film Roll Number
11 = Sequential photo number

Original photos are available.

Contact Bethlehem Steel (Russ Becker 410-388-6622).

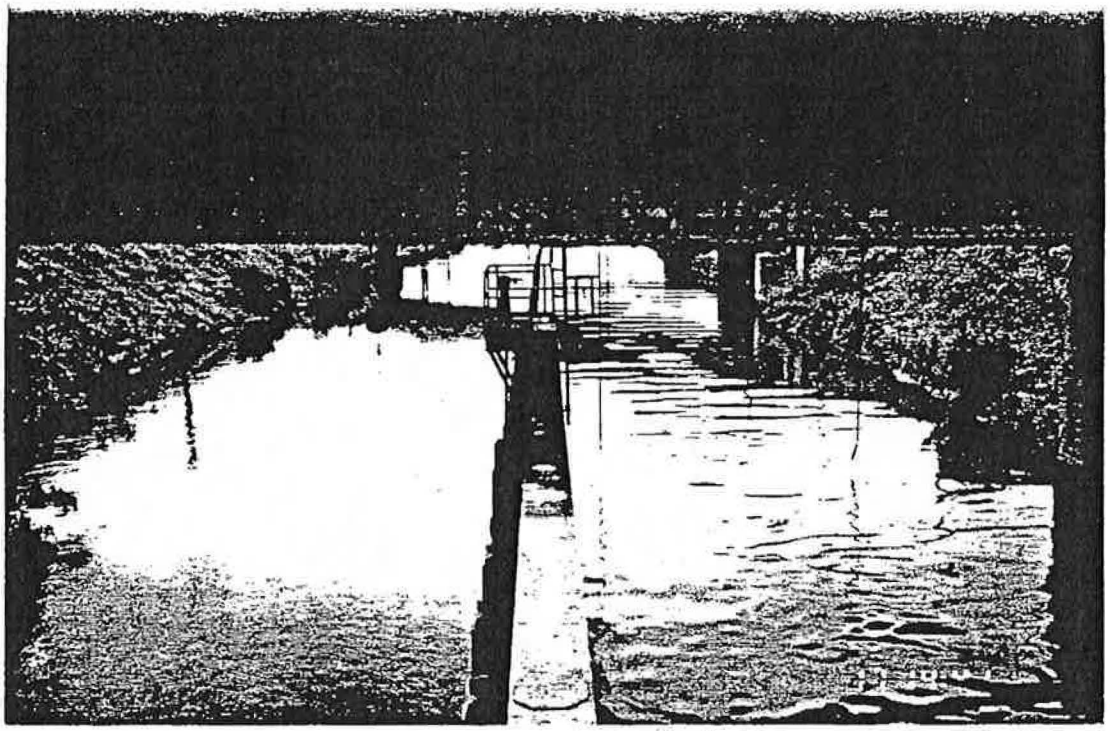


Photo 1.1-1 June 17, 1991

Facing west, of water intake/outtake system. Intake is shown on the left of the photo. Outtake is shown on the right of the photo.

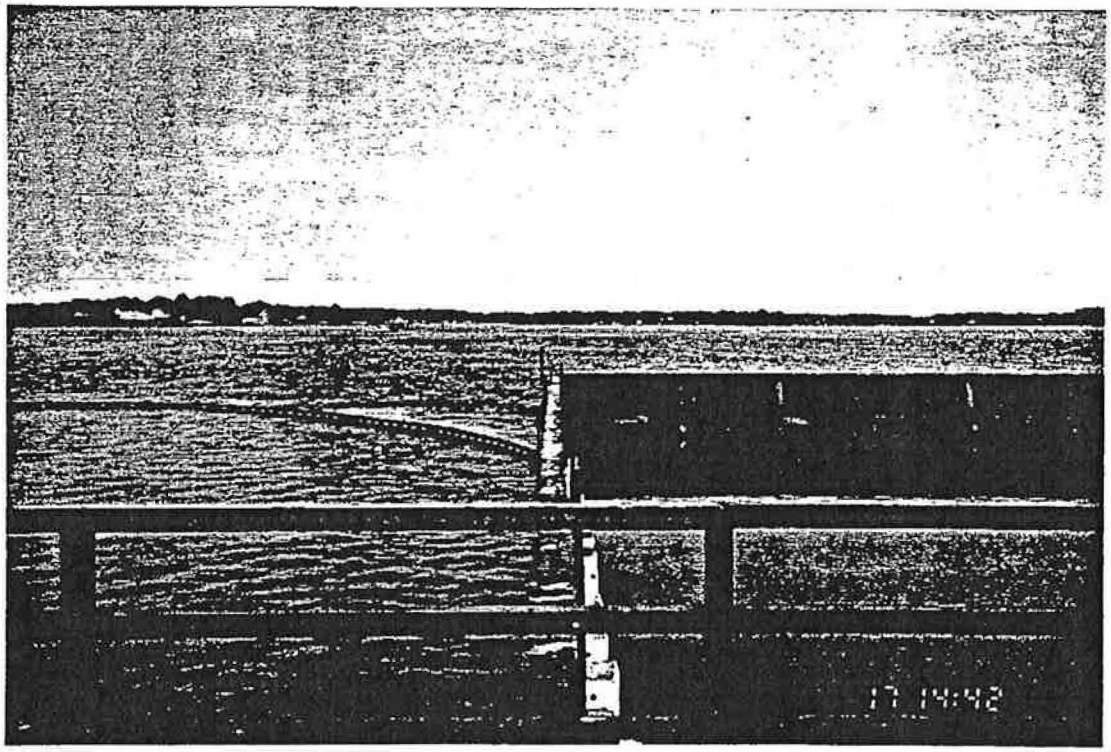


Photo 1.1-2 June 17, 1991

Facing east, of water intake/outtake system. Intake is shown on the right of the photo. Outtake is shown on the left of the photo.

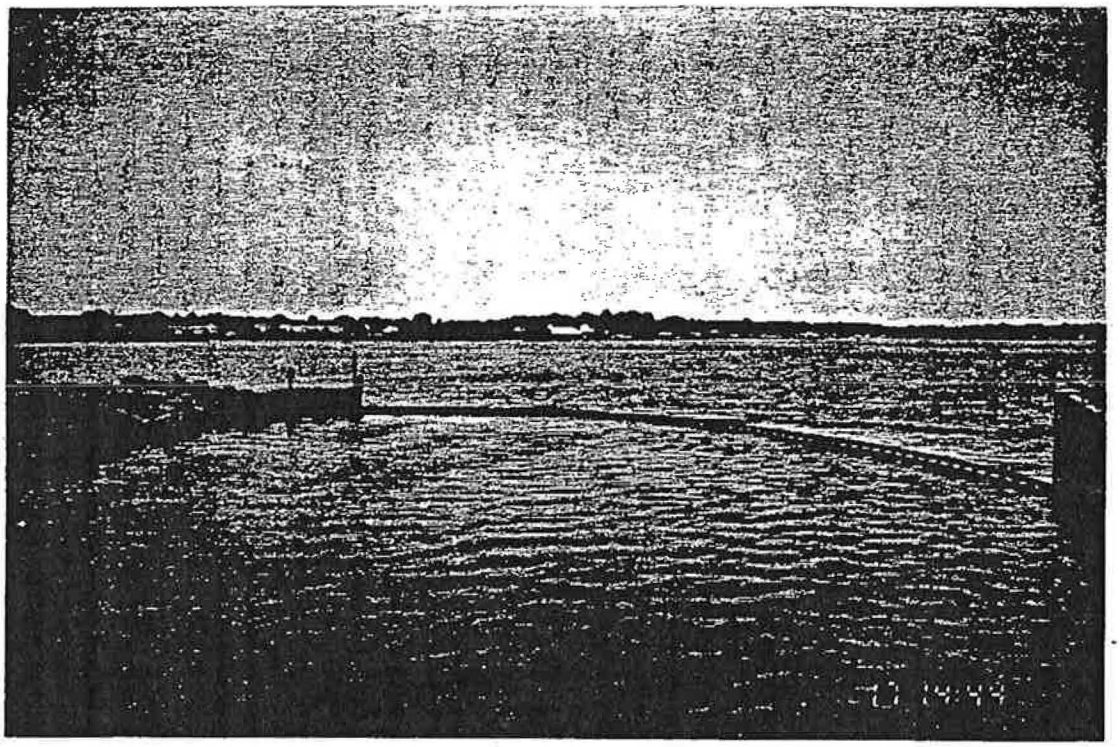


Photo 1.1-3 June 17, 1991

Facing east, of the water outtake system's baffle.

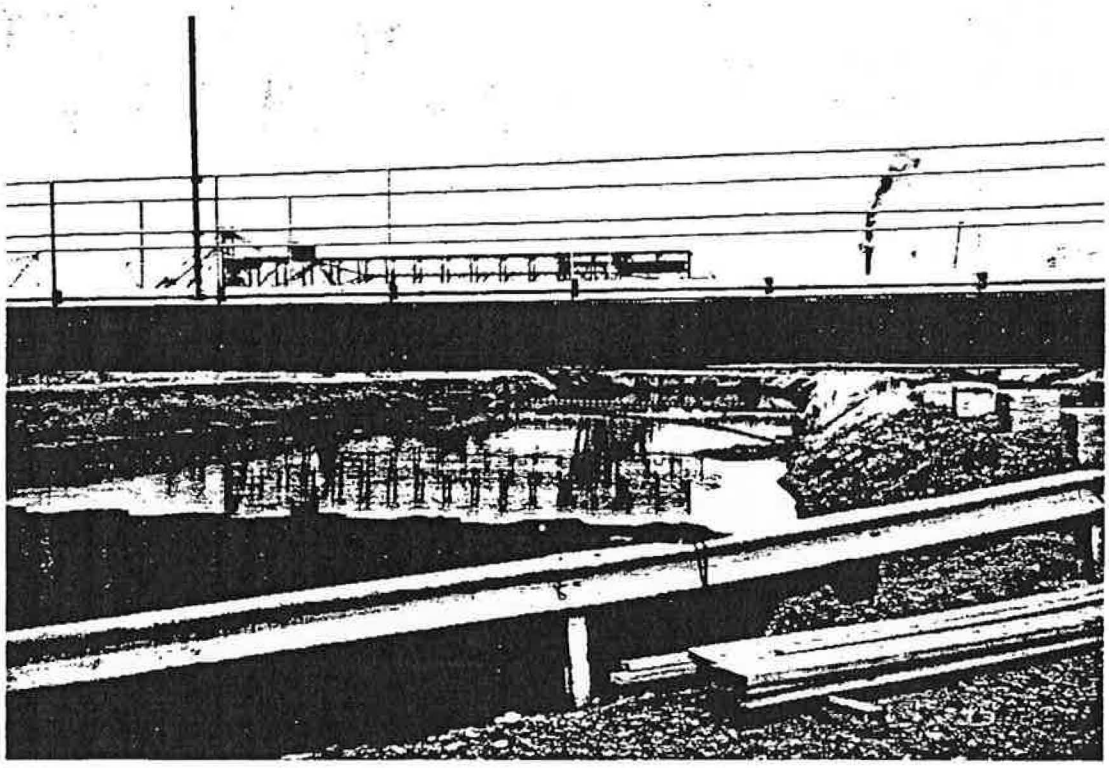


Photo 1.1-4 June 17, 1991

Facing east, of Outfall 021 of the Storm Water Sewer System (SWMU 196). Note the oil baffle in the back, and the partition in the foreground.

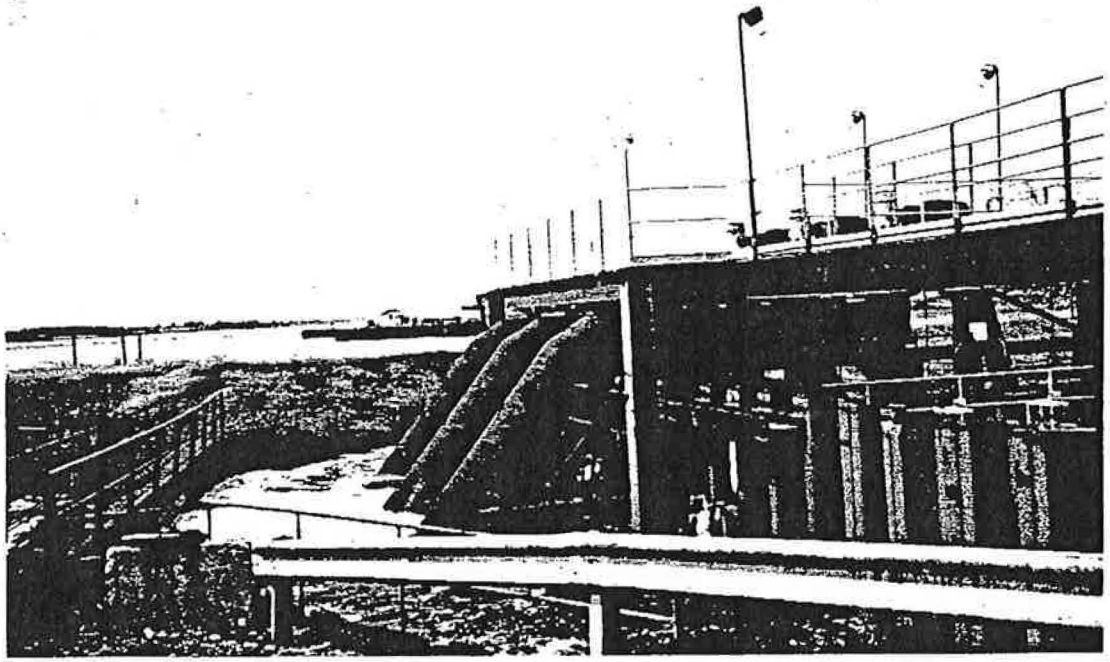
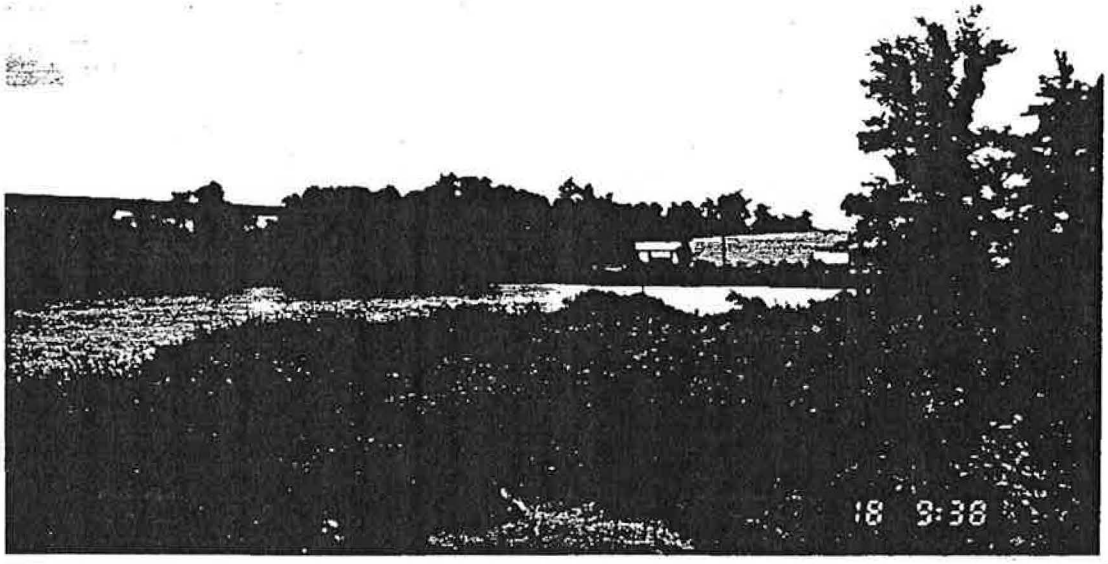


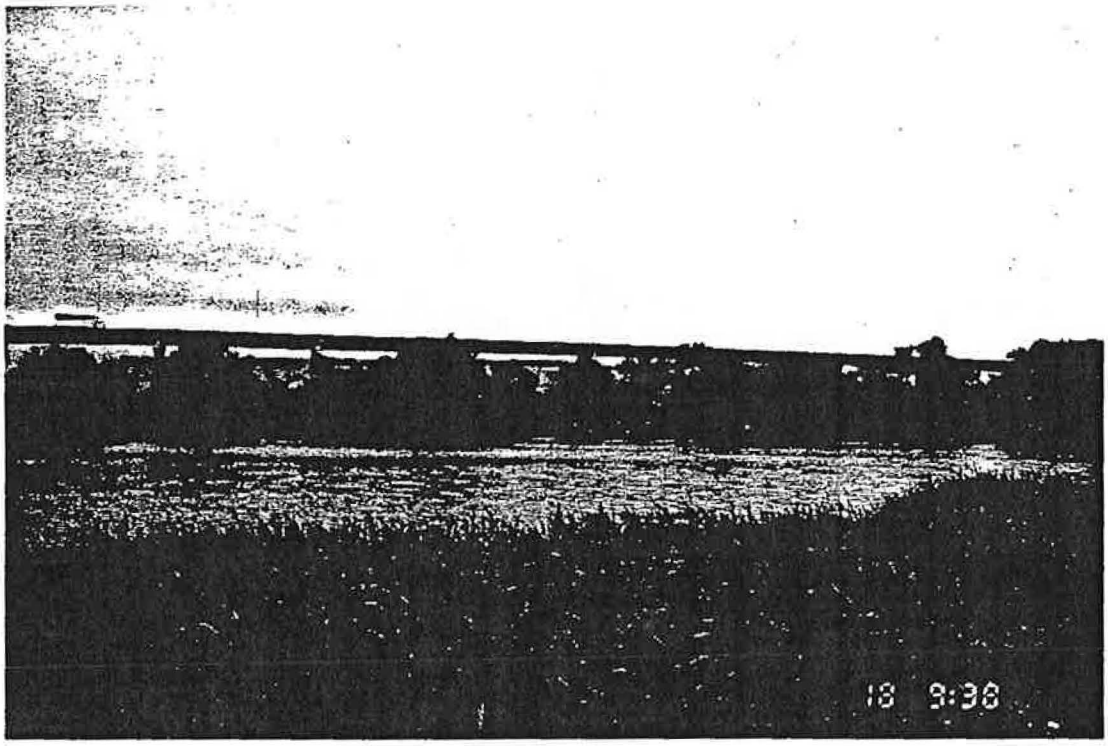
Photo 1.1-5 June 17, 1991

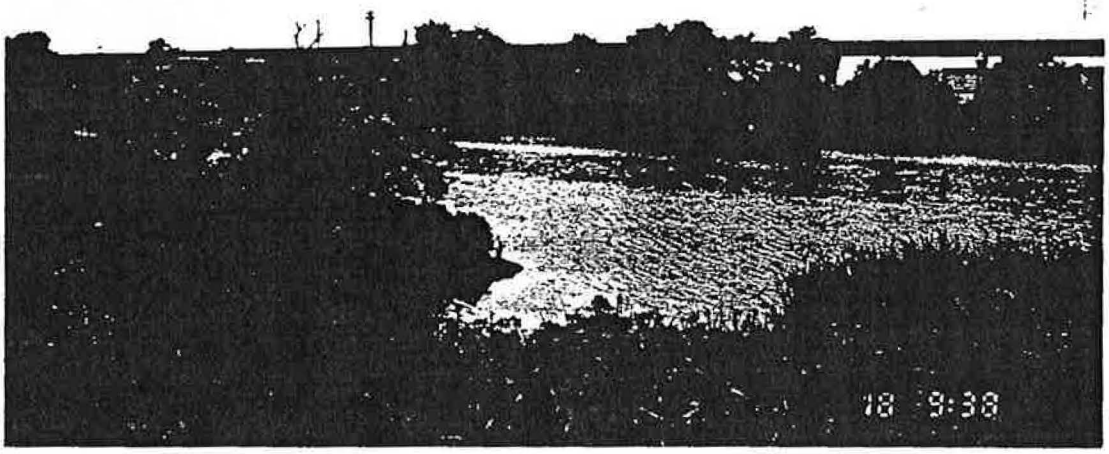
Facing north, of Outfall 021's sampling point and discharge point of the Storm Water Sewer System (SWMU 196).



Photos 1.1-6 to 1.1-9 June 18, 1991

Facing (next page 3A) east to west, of a panorama of the Tin Mill Canal's (TMC) (SWMU 1) headwaters.





Photos 1.1-7, 1.1-8

June 18, 1991

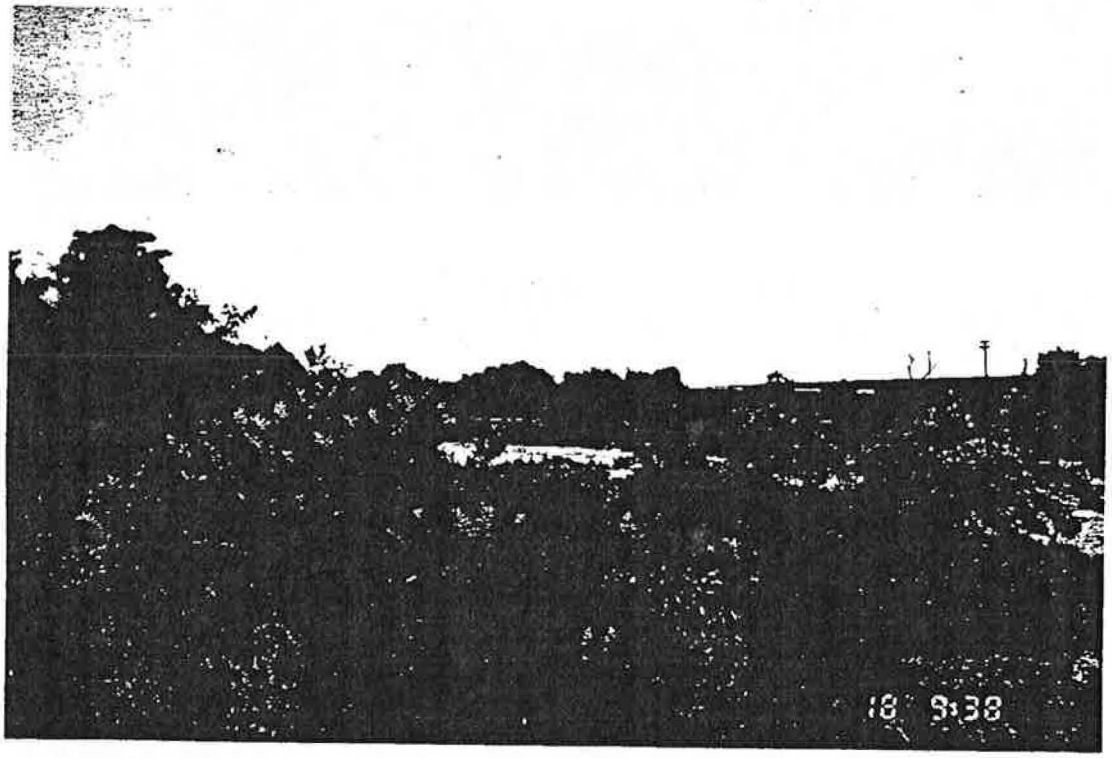


Photo 1.1-9

June 18, 1991

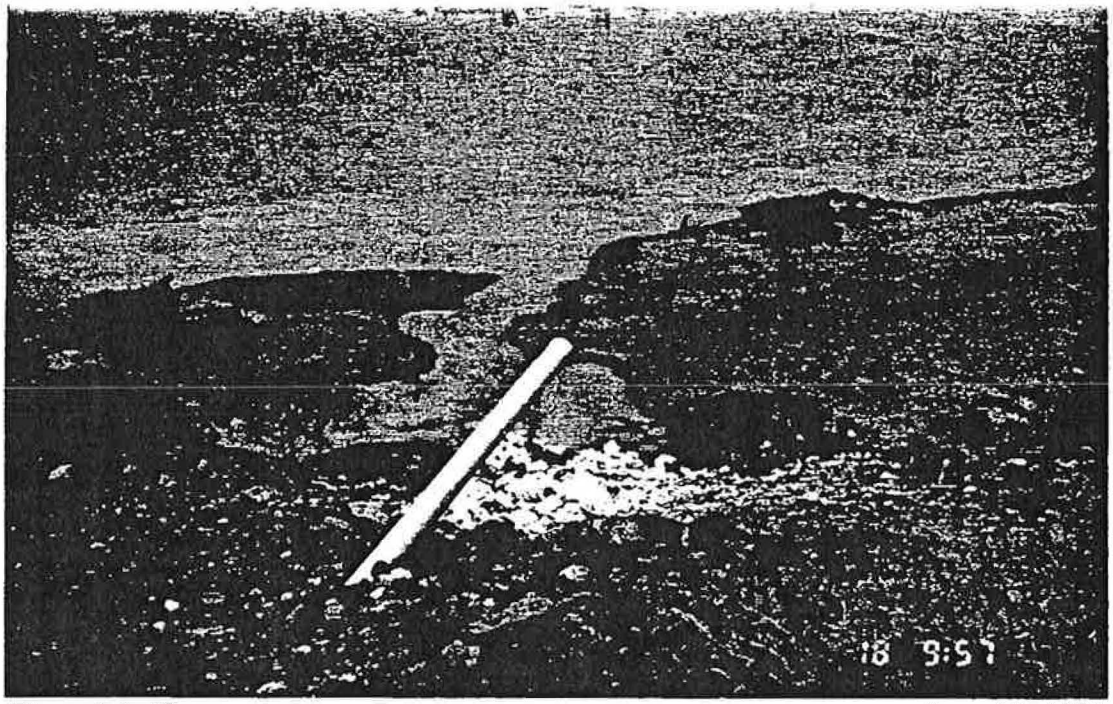


Photo 1.1-10 June 18, 1991

Facing north, of the Chrome Recovery Plant's TMC Discharge Pipe (SWMU 2) to TMC (SWMU 1). Note the oily skim on, and tar-like material along the edge of TMC (SWMU 1).



Photo 1.1-11 June 18, 1991

Facing west, of an oil boom, TMC Oil Skimming Device (SWMU 3) and TMC Waste Oil Storage Tank (SWMU 5). Note the tar-like material along the edge of TMC (SWMU 1).



Photo 1.1-12 June 18, 1991

Facing east, of the Cold Sheet Mill's Run-off TMC Discharge Pipe (SWMU 2). Note the tar-like material along the edge of TMC (SWMU 1).

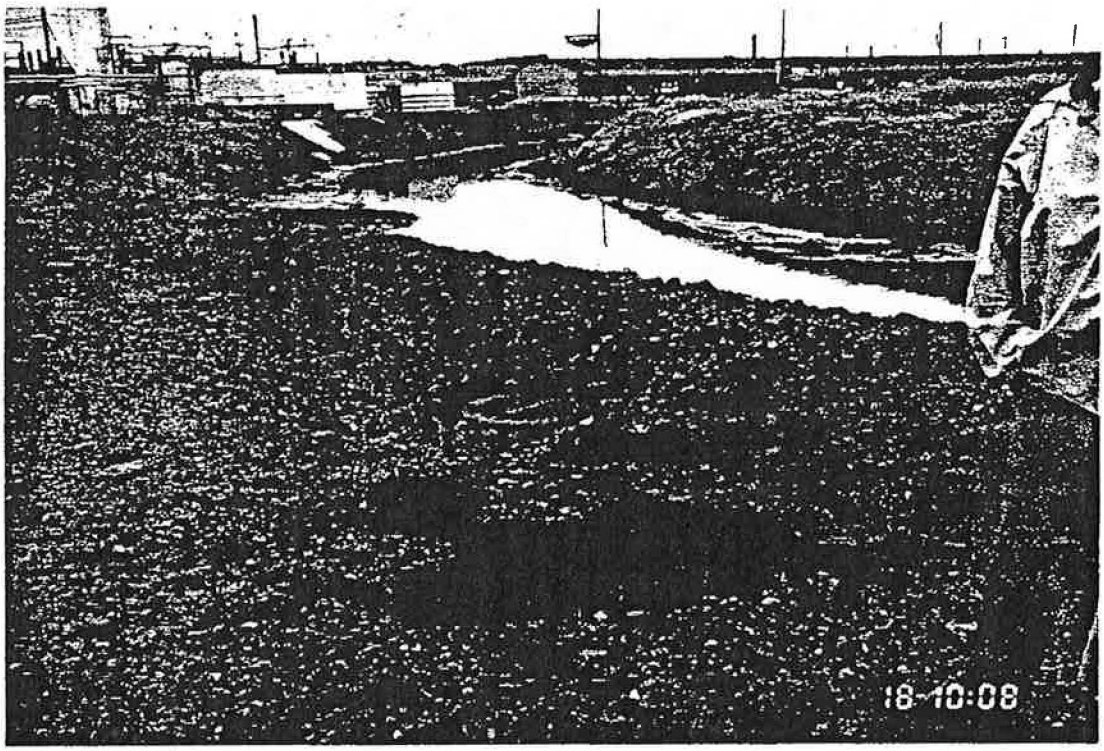


Photo 1.1-13 June 18, 1991

Facing south, of TMC's Recent Embankment Dredgings (SWMU 7). Note the manhole cover located west of the dredged material.

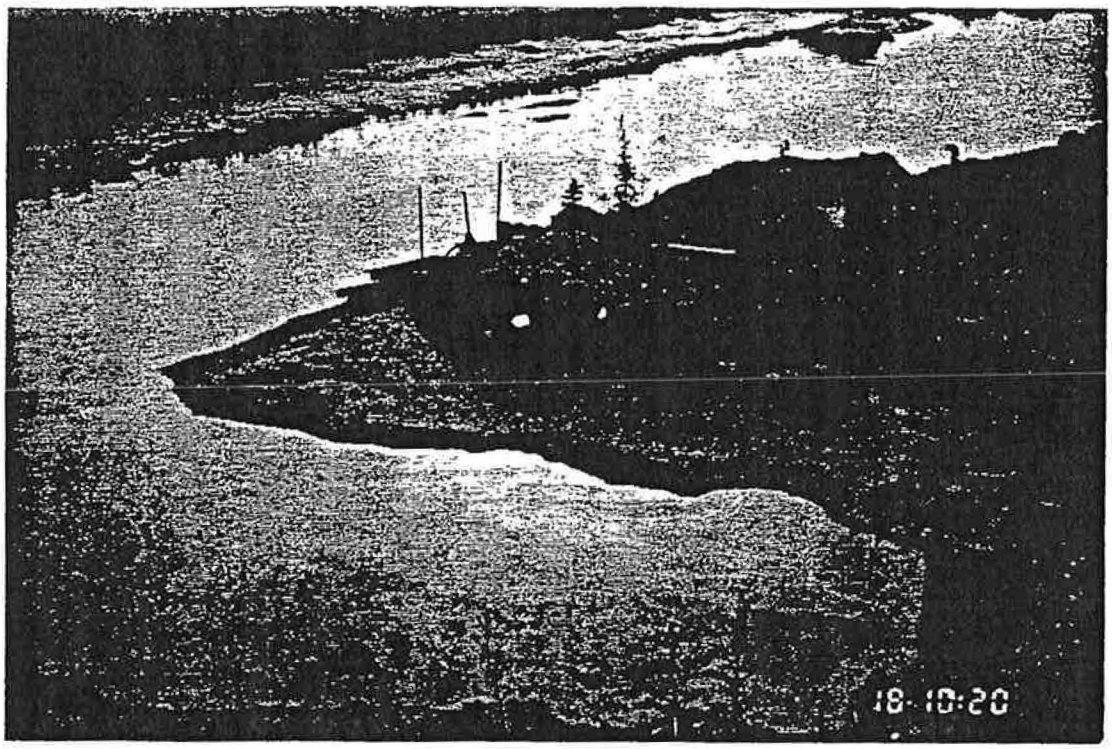


Photo 1.1-14 June 18, 1991

Facing west, of the Cold Sheet Mill and Hot Strip Mills' TMC Discharge Pipe (SWMU 2). Note the oily sheen on, and the pallets on the tar-like edge of TMC (SWMU 1).

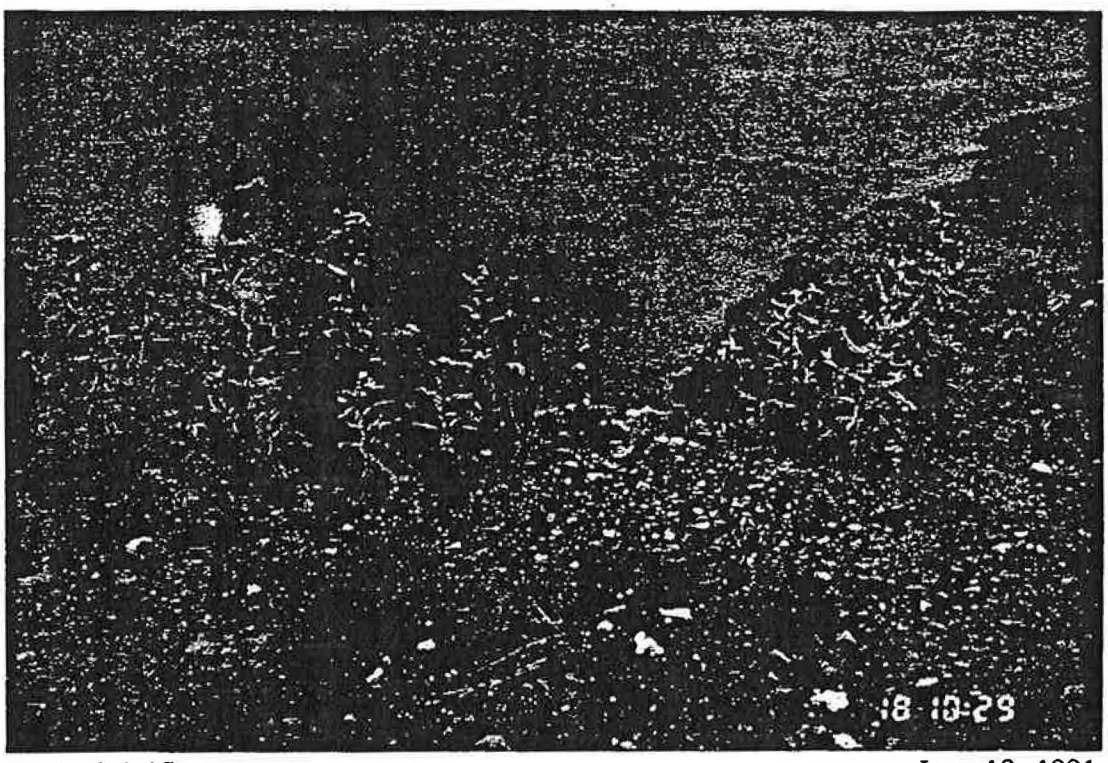


Photo 1.1-15 June 18, 1991

Facing west, of TMC Discharge Pipe (SWMU 2) Number 31A. Note the tar-like material on the right side of the photo.

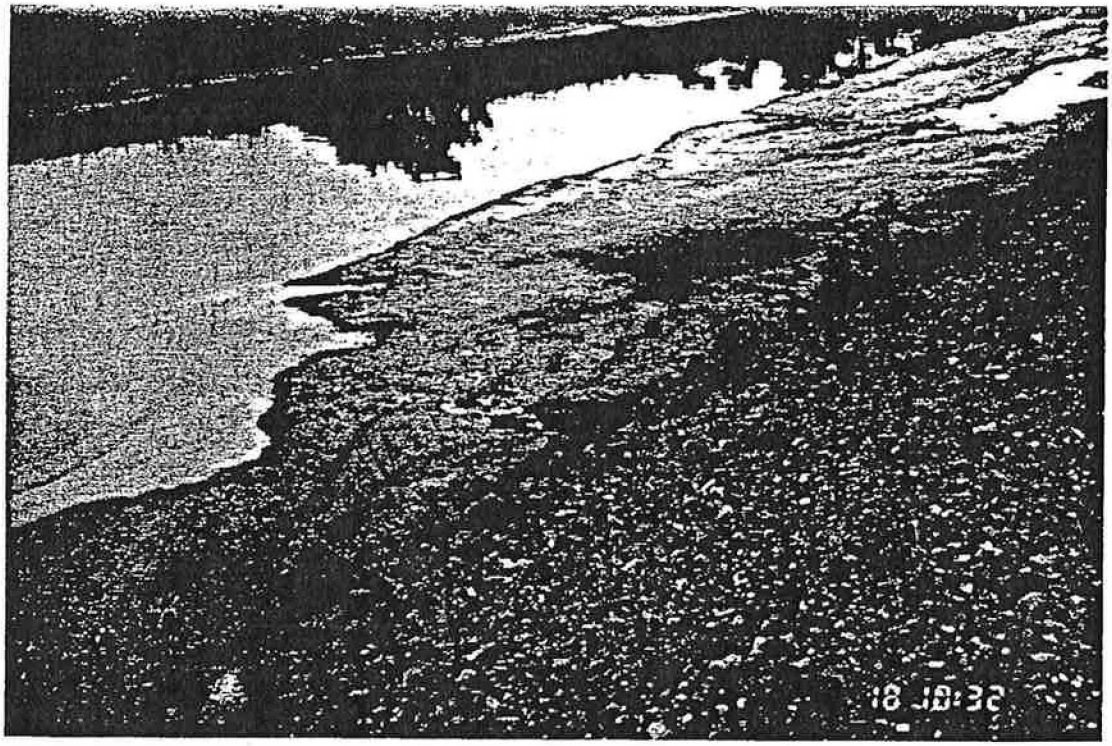


Photo 1.1-16 June 18, 1991

Facing northwest, of TMC (SWMU 1). Note the tar-like material along edge of TMC (SWMU 1).

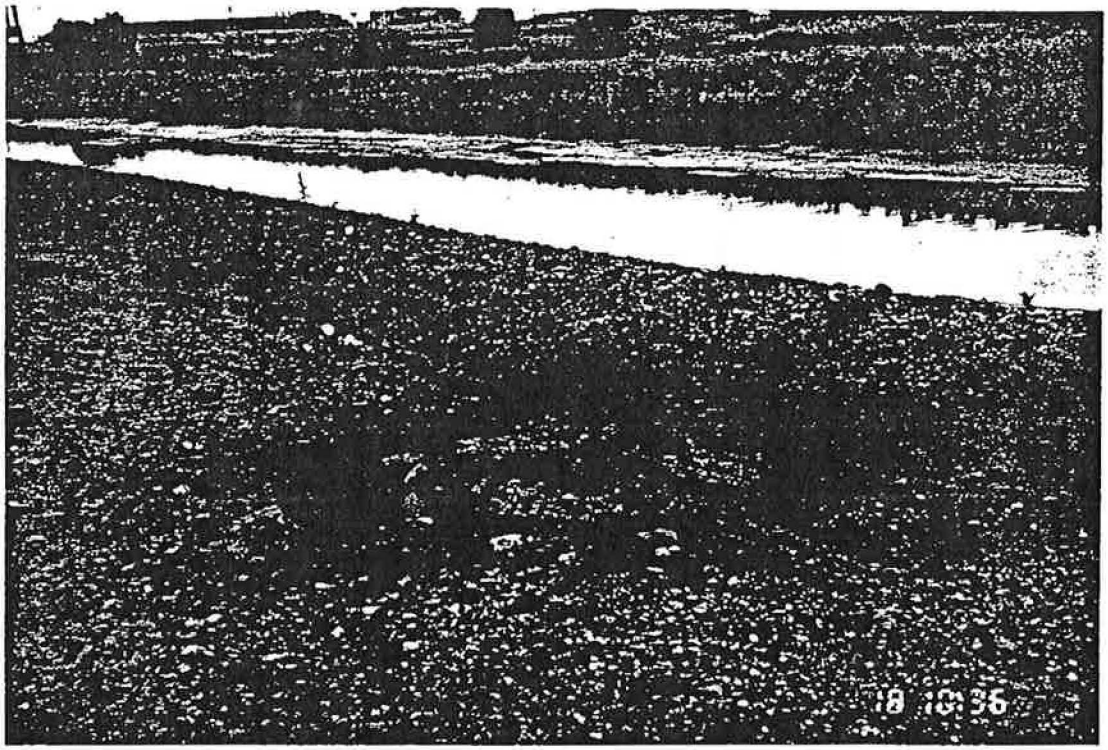


Photo 1.1-17 June 18, 1991

Facing southwest, of TMC's Recent Embankment Dredgings (SWMU 7). Note what appears to be the imprint of three 55-gallon drums.

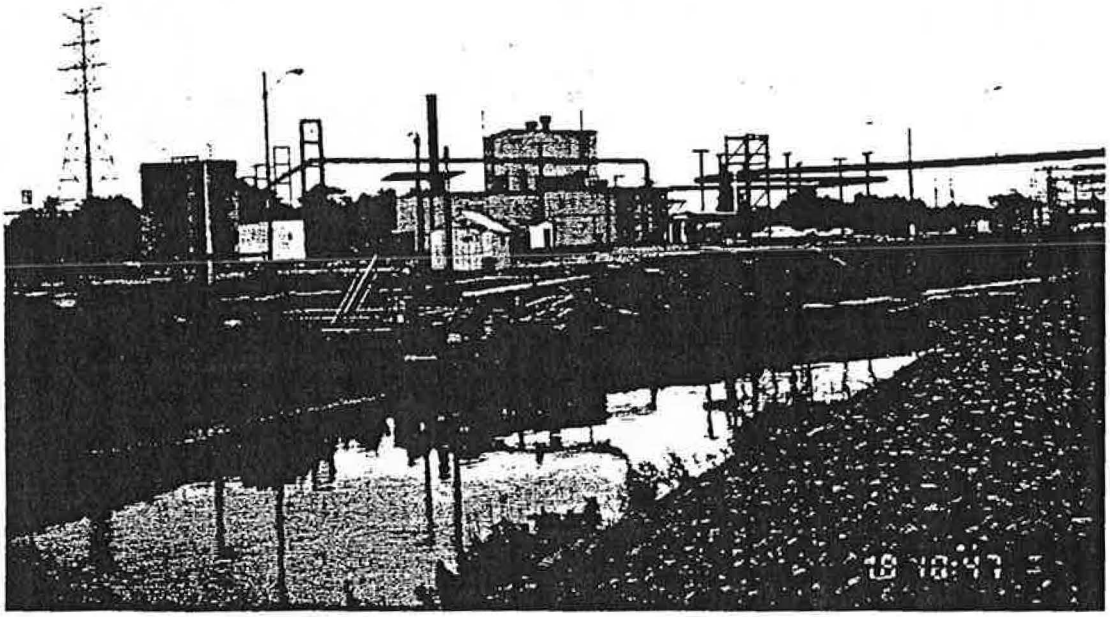


Photo 1.1-18 June 18, 1991

Facing northwest, of an TMC Oil Skimming Device (SWMU 3), and TMC Waste Oil Storage Tanks (SWMU 5).

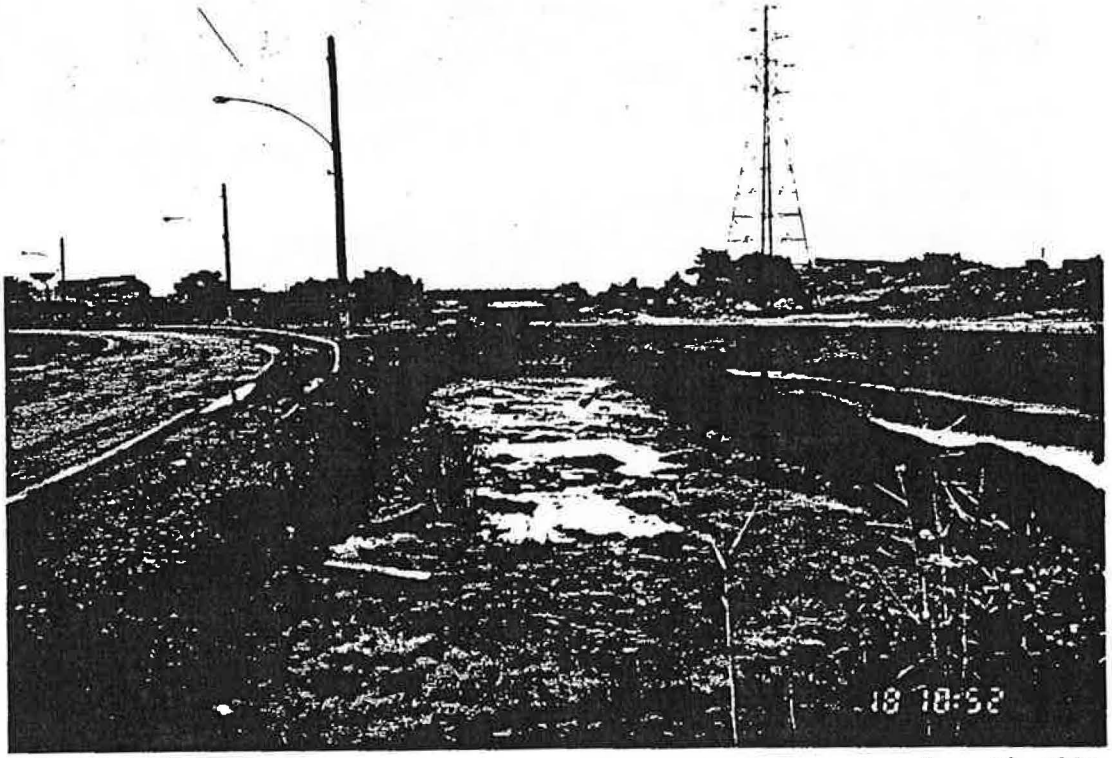


Photo 1.1-19 June 18, 1991

Facing south, of a TMC Dredging Containment Area (SWMU 4).

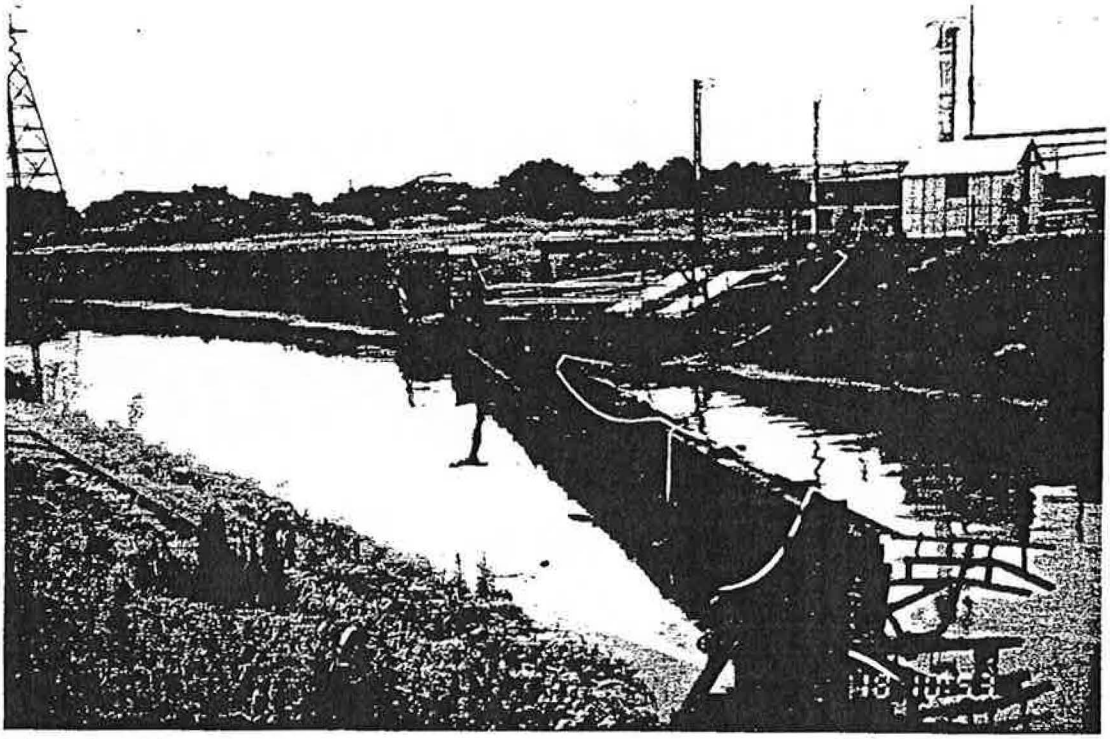


Photo 1.1-20 June 18, 1991

Facing southwest, of a leaking pipe (in the foreground), and TMC Oil Skimming Device (SWMU 3).

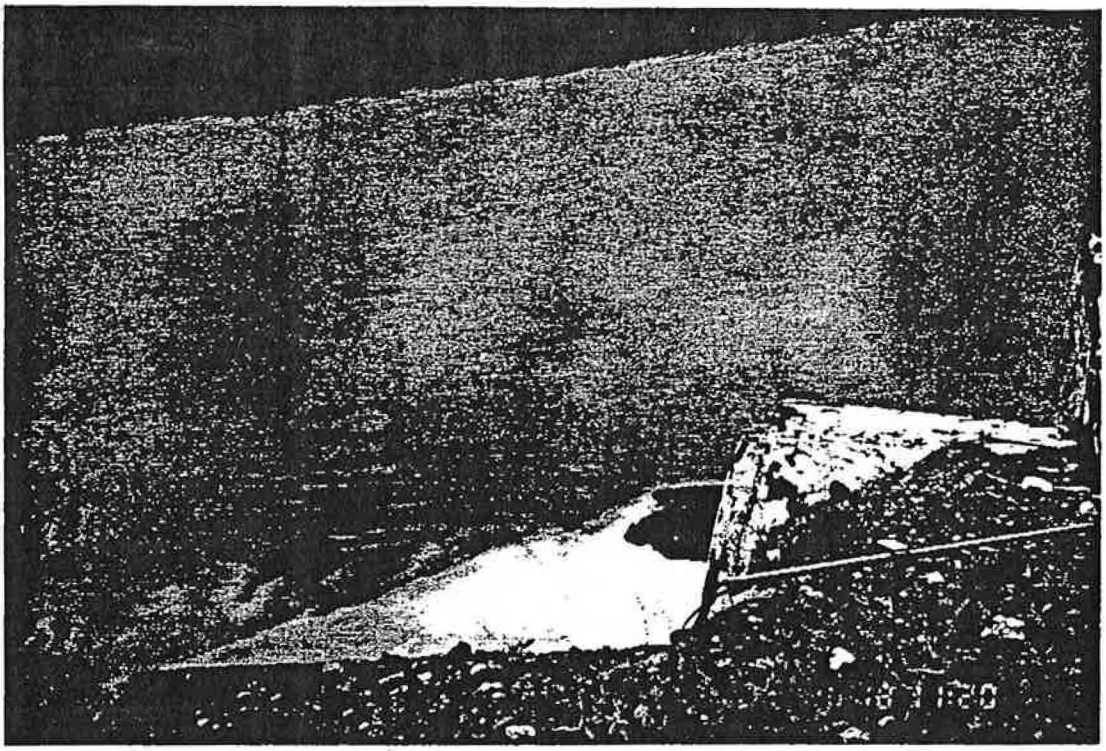


Photo 1.1-21 June 18, 1991

Facing north, of a milky-green discharge (reportedly, Tin Mill Alkalization Area washdown) to the Tin Mill Canal (SWMU 1) from TMC Discharge Pipe (SWMU 2) Number 30.

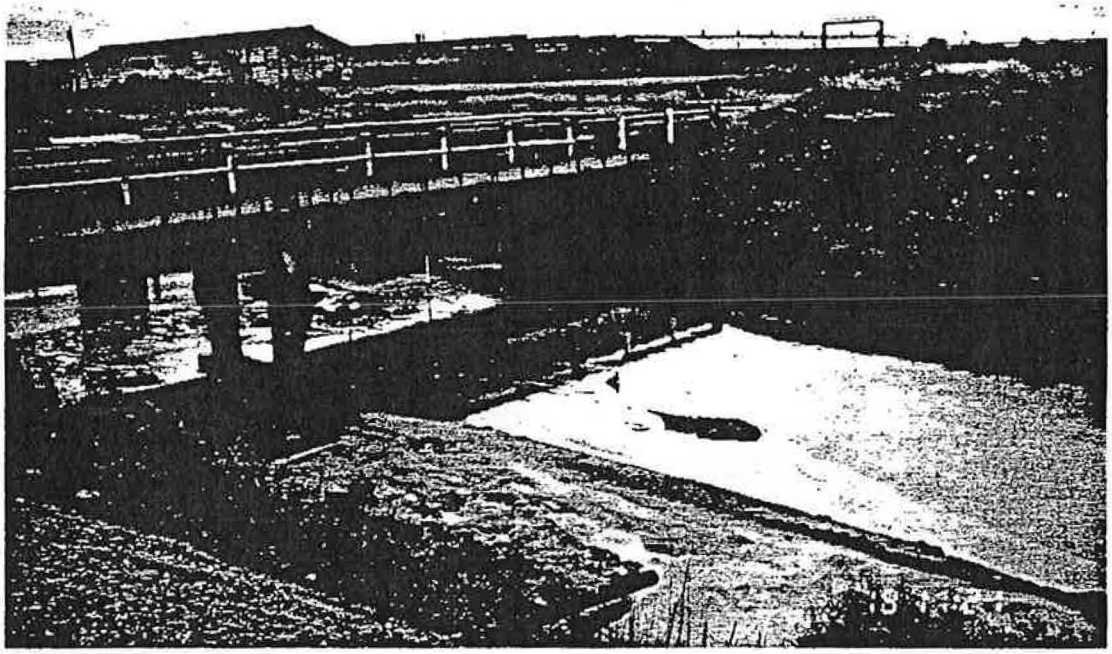


Photo 1.1-22 June 18, 1991

Facing northwest, of acid application (vertical pipes along bridge) to TMC (SWMU 1) for treatment. Note a TMC Discharge Pipe (SWMU 2) in the foreground.

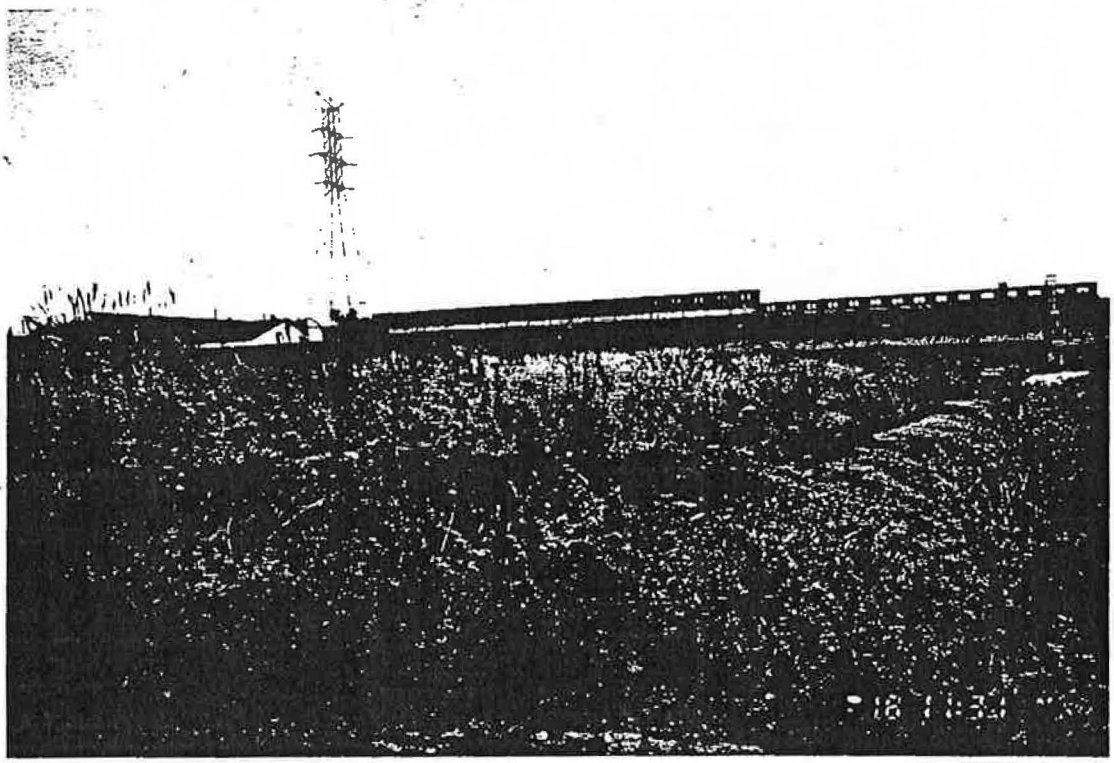


Photo 1.1-23 June 18, 1991

Facing northeast, of a TMC Dredging Containment Area (SWMU 4).

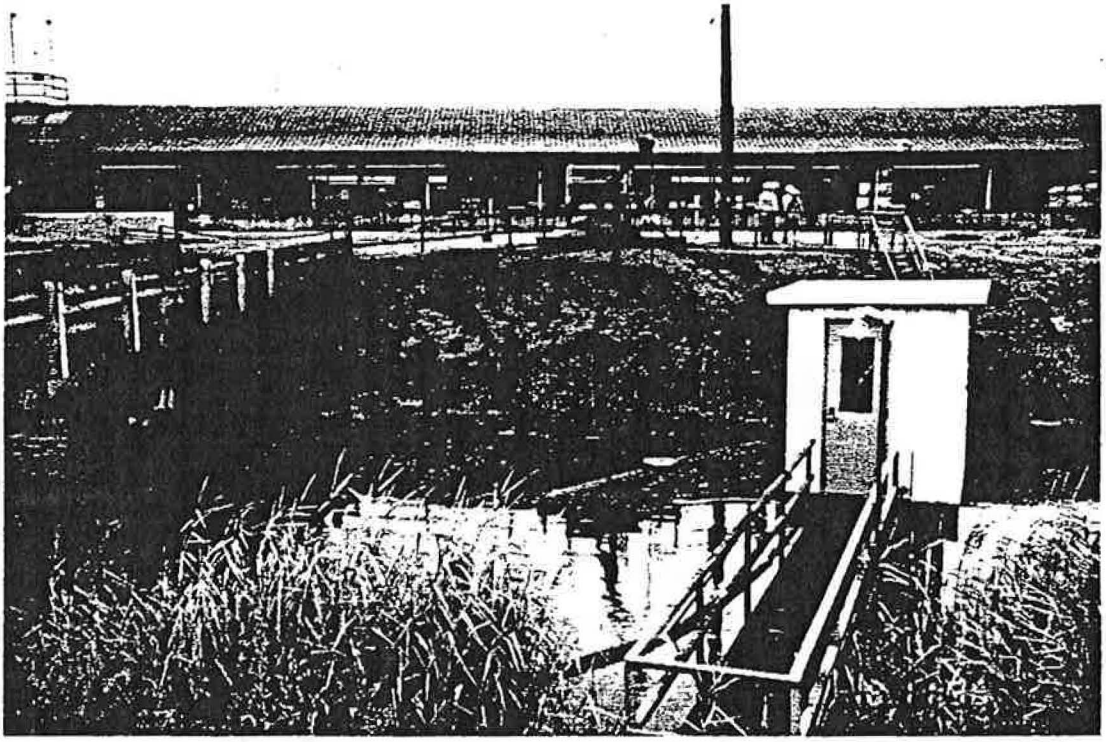


Photo 1.1-24 June 18, 1991

Facing south, of a TMC Oil Skimming Device (SWMU 3), and TMC Waste Oil Storage Tank (SWMU 5). Note the black staining along the south side of TMC (SWMU 1).

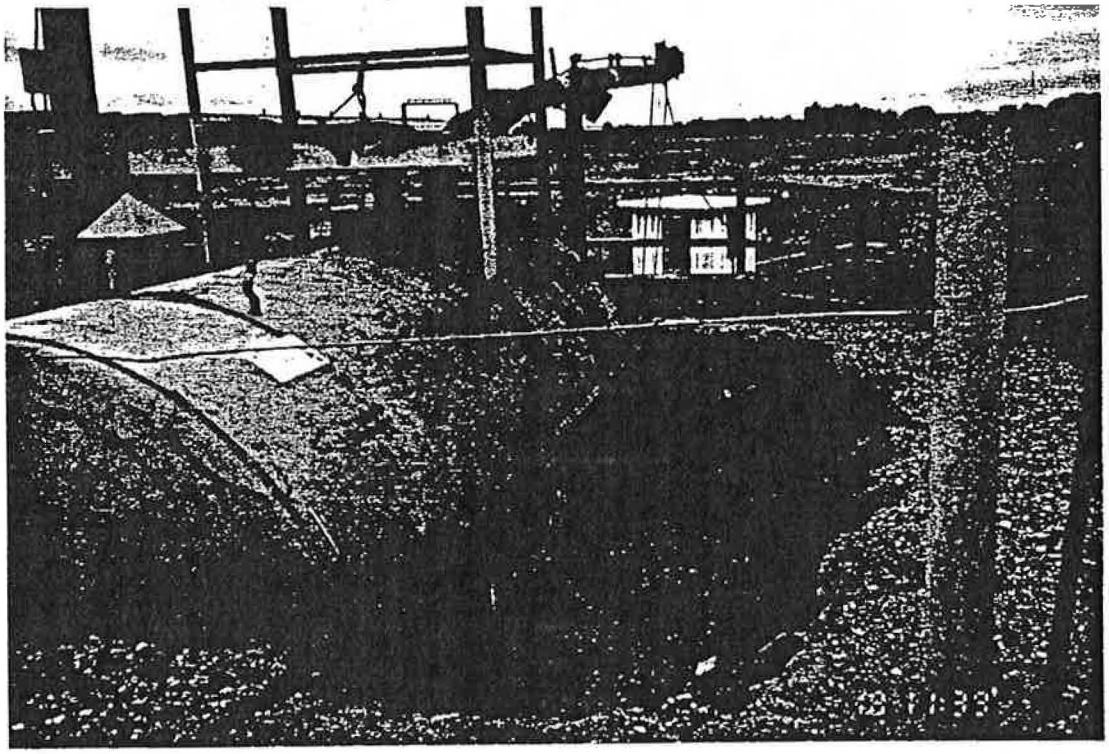


Photo 1.1-25 June 18, 1991

Facing north, of a TMC Waste Oil Storage Tank (SWMU 5).

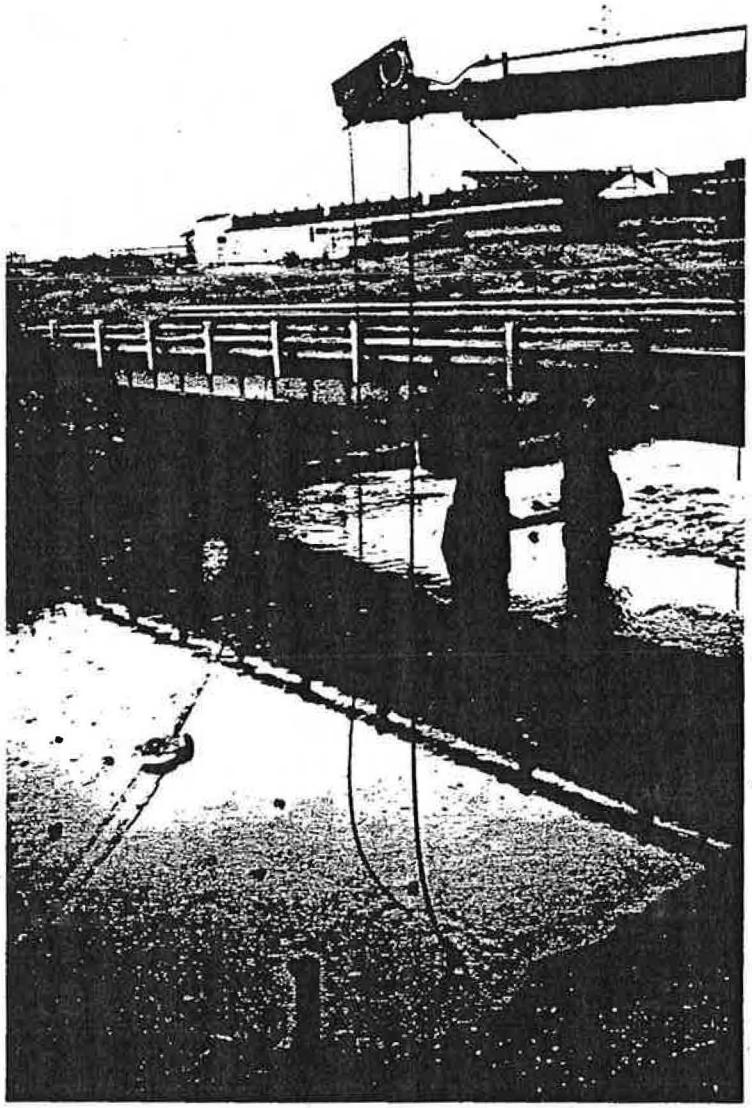


Photo 1.1-26 June 18, 1991

Facing northeast, of a TMC Oil Skimming Device (a hose) (SWMU 3).

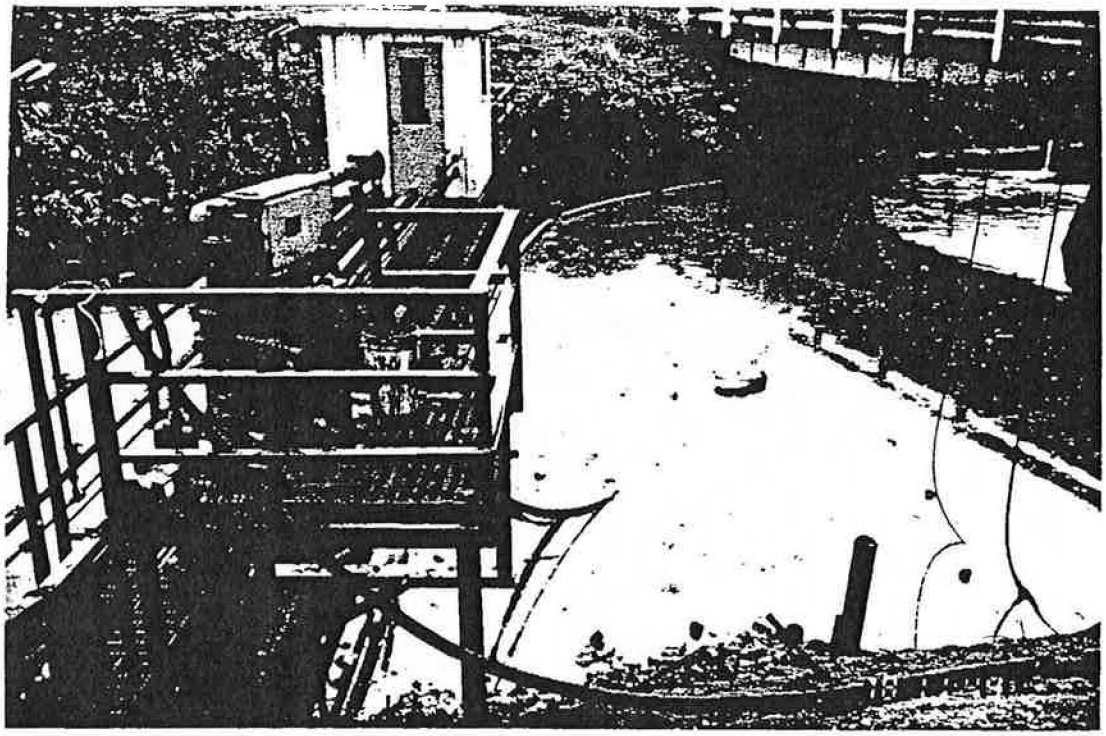


Photo 1.1-27 June 18, 1991

Facing northeast, of TMC's Oil Skimming Device (mop and oil collection box) (SWMU 3).

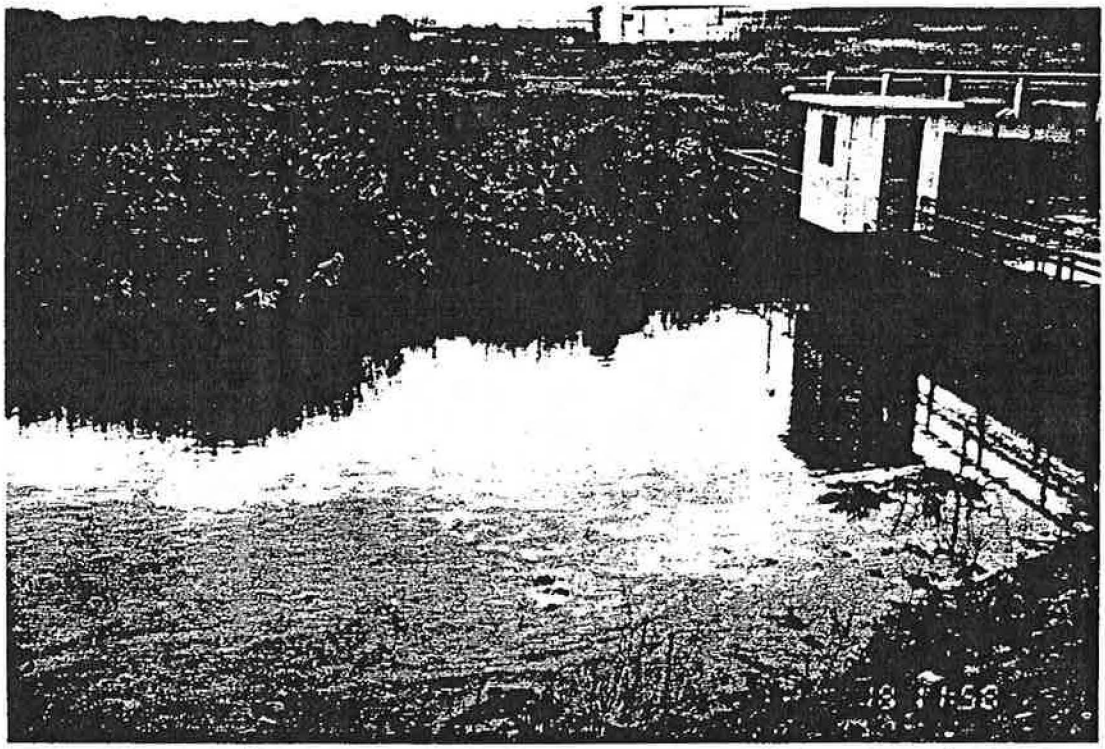


Photo 1.1-28 June 18, 1991

Facing northeast, of an oily sheen floating on TMC (SWMU 1) after an oil collection point.

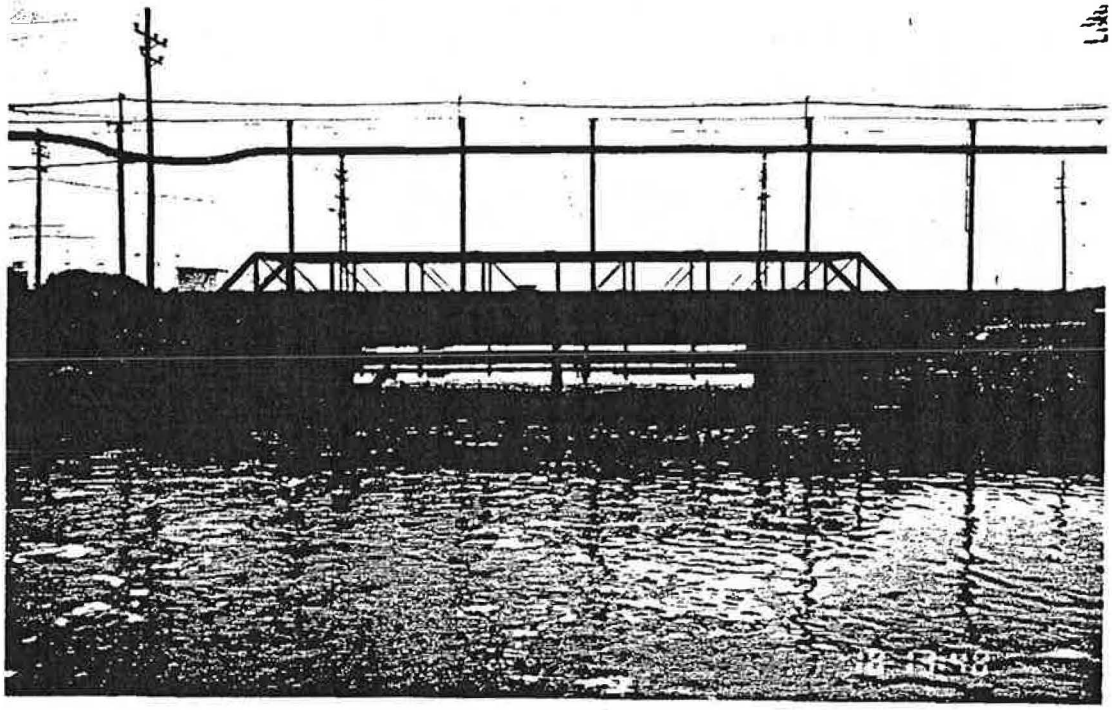


Photo 1.1-29 June 18, 1991

Facing south, of TMC (SWMU 1) discharge to Bear Creek after treatment at the Humphrey's Creek Wastewater Treatment Plant (HCWWTP).

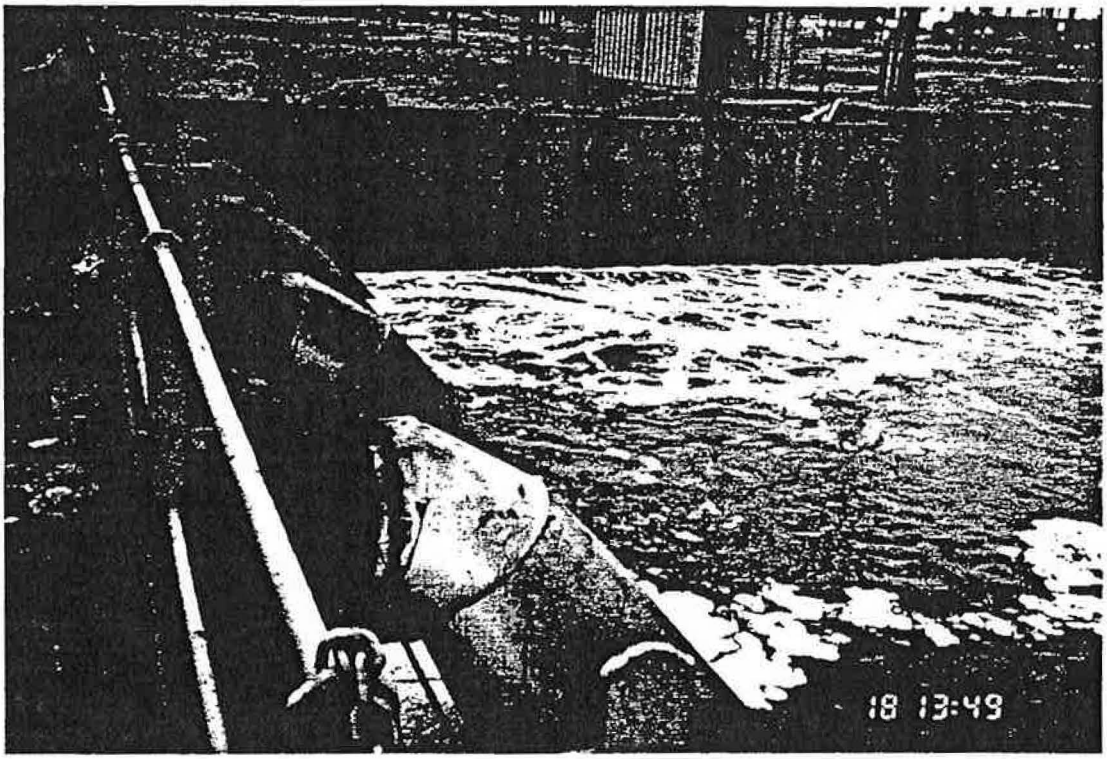


Photo 1.1-30 June 18, 1991

Facing east, of four pumps at HCWWTP.

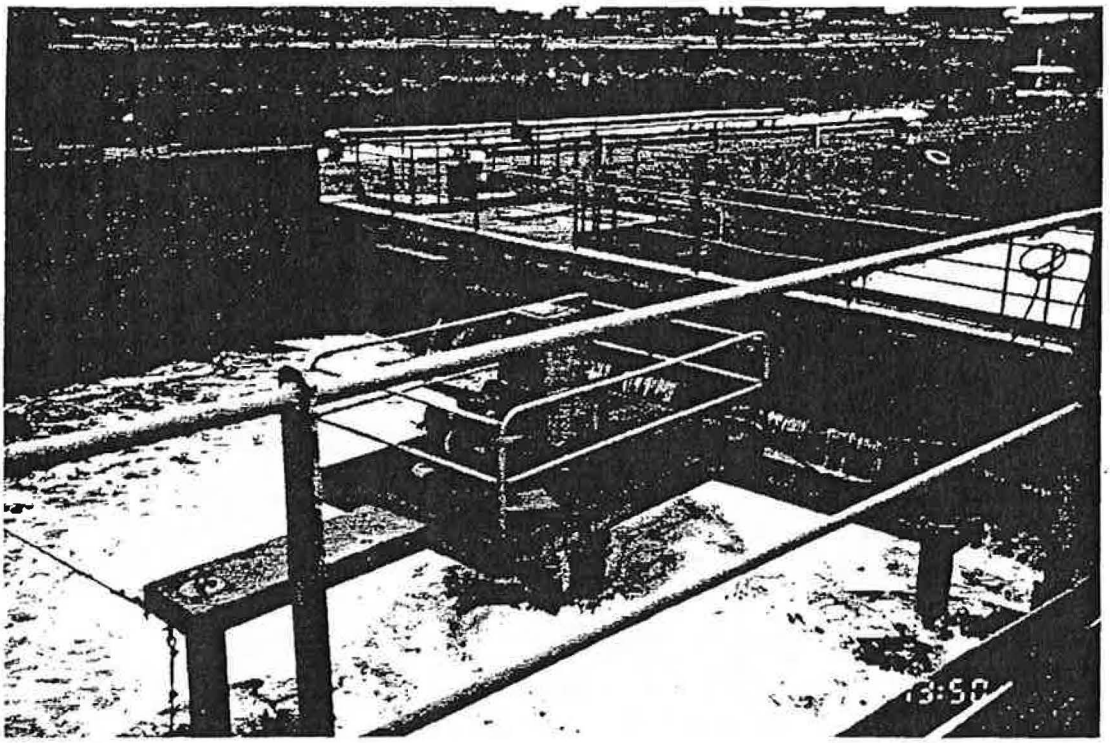


Photo 1.1-31 June 18, 1991

Facing northwest, of HCWWTP Aerator (SWMU 12) and monitoring point before discharging to Bear Creek.

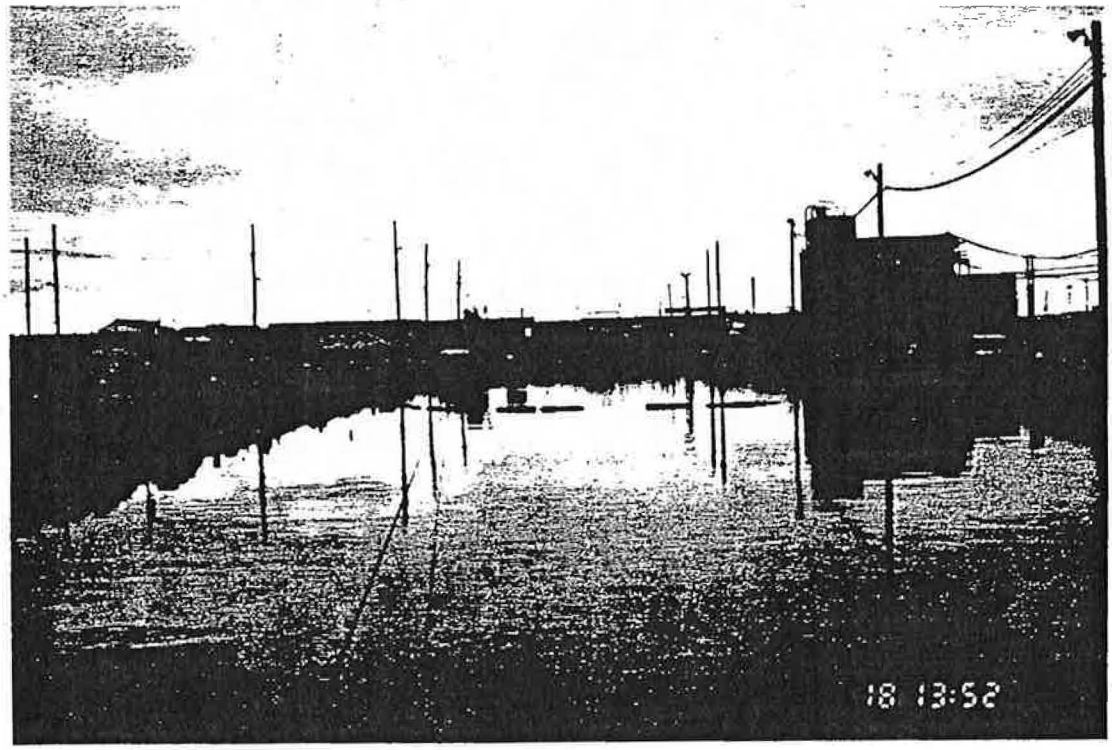


Photo 1.1-32 June 18, 1991

Facing north, of dredging of HCWWTP Settling Basin (Number 2) (SWMU 10).

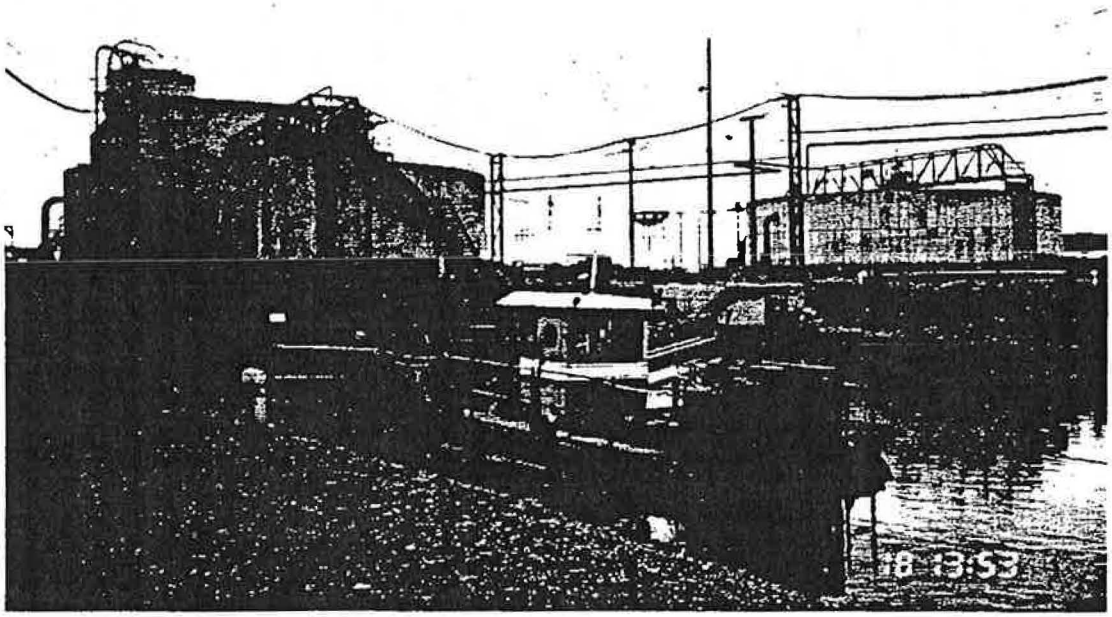


Photo 1.11-33 June 18, 1991

Facing south, of the HCWWTP Thickeners (SWMU 11). Note HCWWTP Settling Basin (Number 1) (SWMU 10) in the foreground.

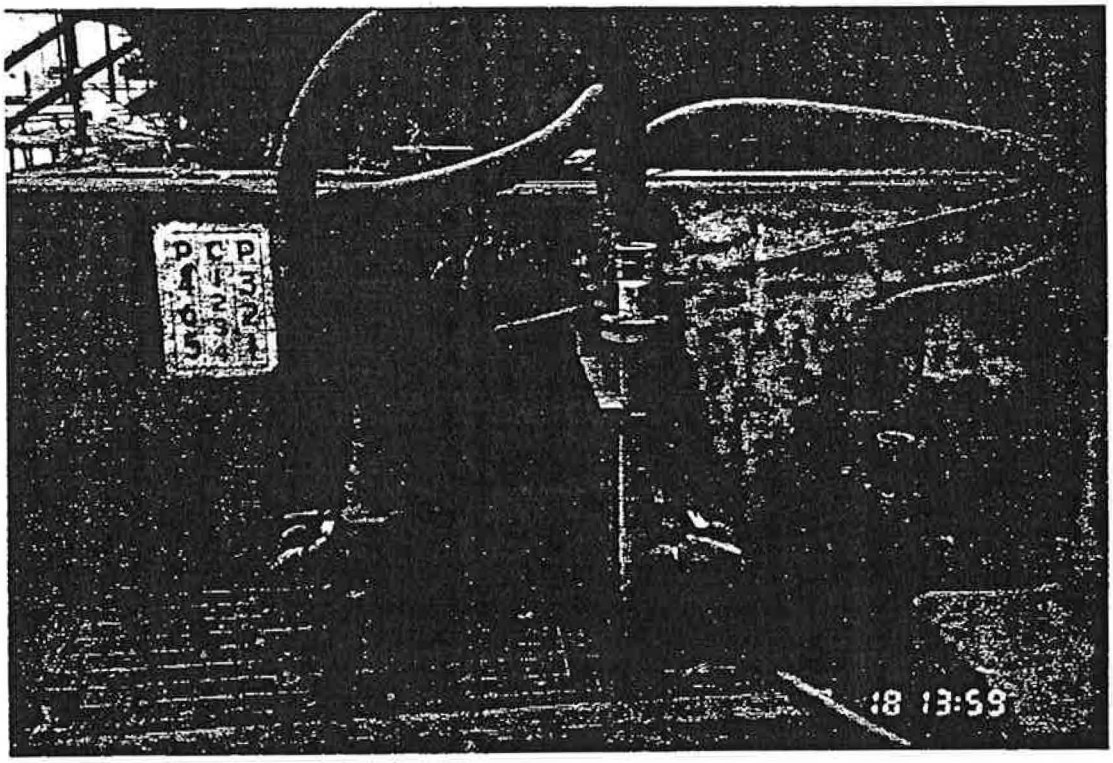


Photo 1.1-34 June 18, 1991

Facing north, of HCWWTP Centrifuge (SWMU 15) and Thickener (SWMU 11) piping.

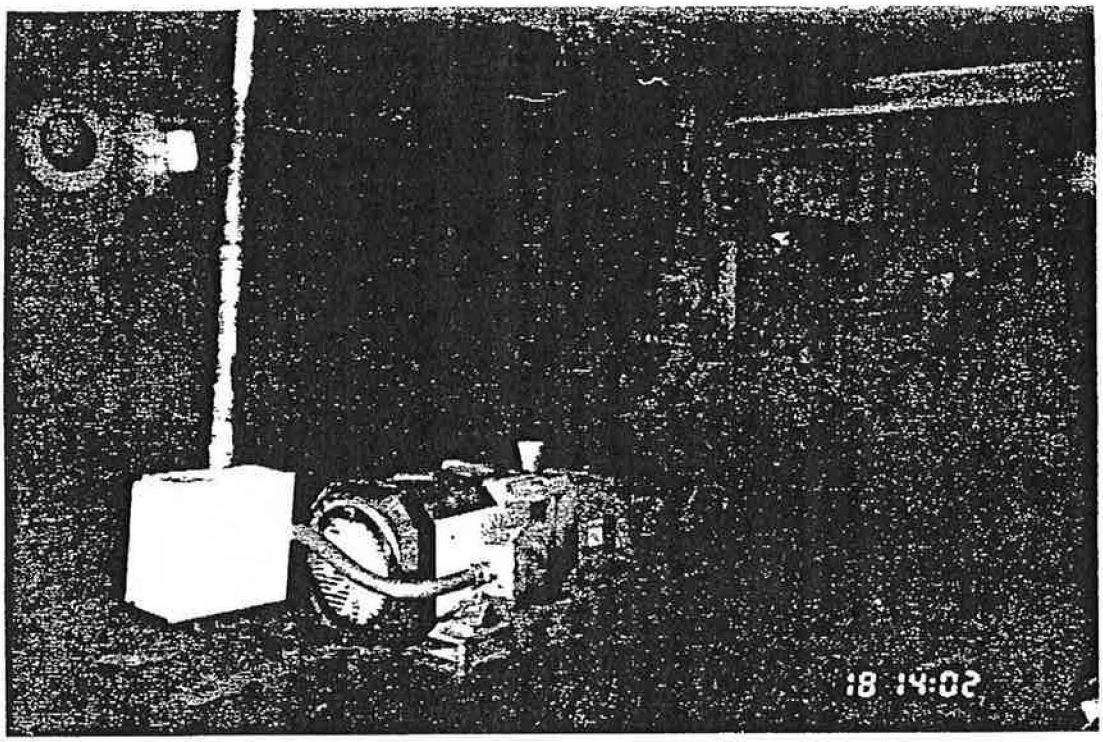


Photo 1.1-35 June 18, 1991

Facing east, of HCWWTP Centrifuge (SWMU 15) pumps.

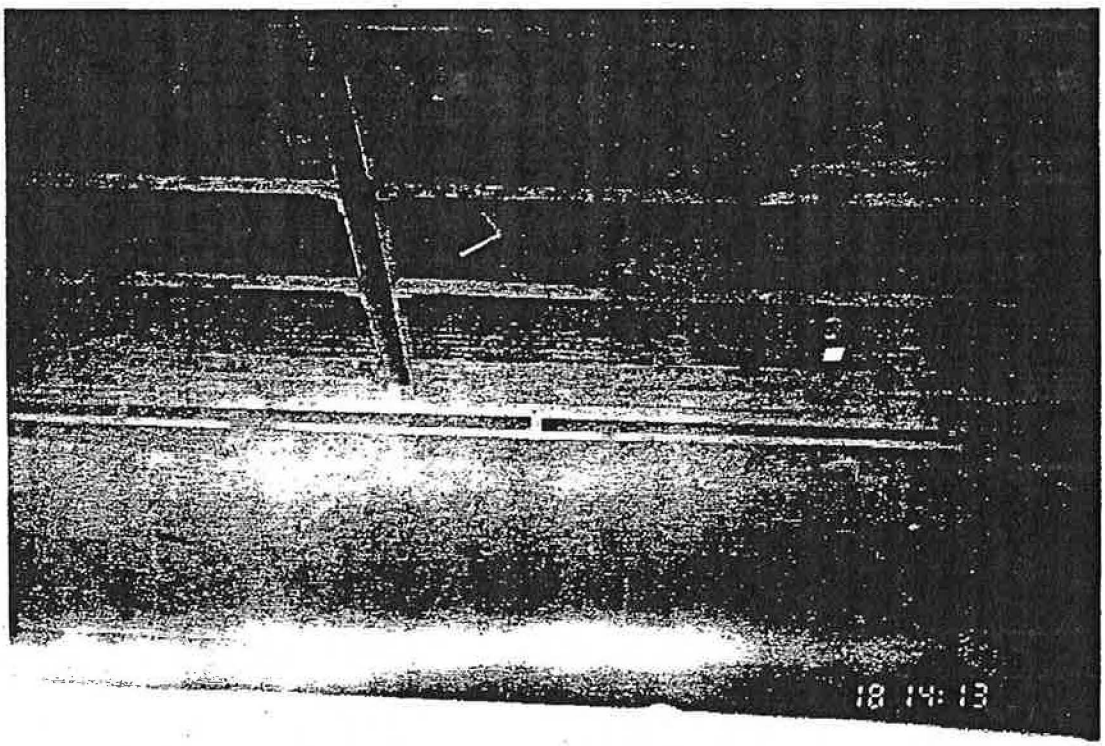


Photo 1.1-36 June 18, 1991

Facing down, of HCWWTP Sludge Collection Box (SWMU 16).

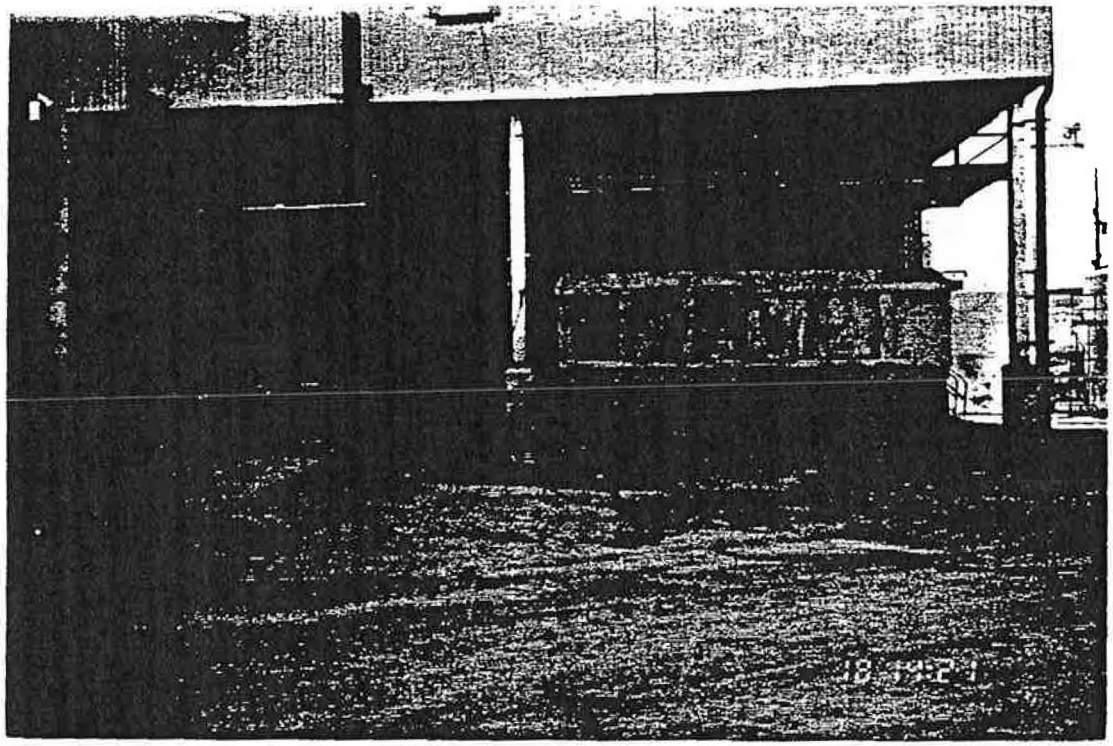


Photo 1.2-1 June 18, 1991

Facing west, of HCWWTP Sludge Collection Box (SWMU 16). Note the sludge on the ground.

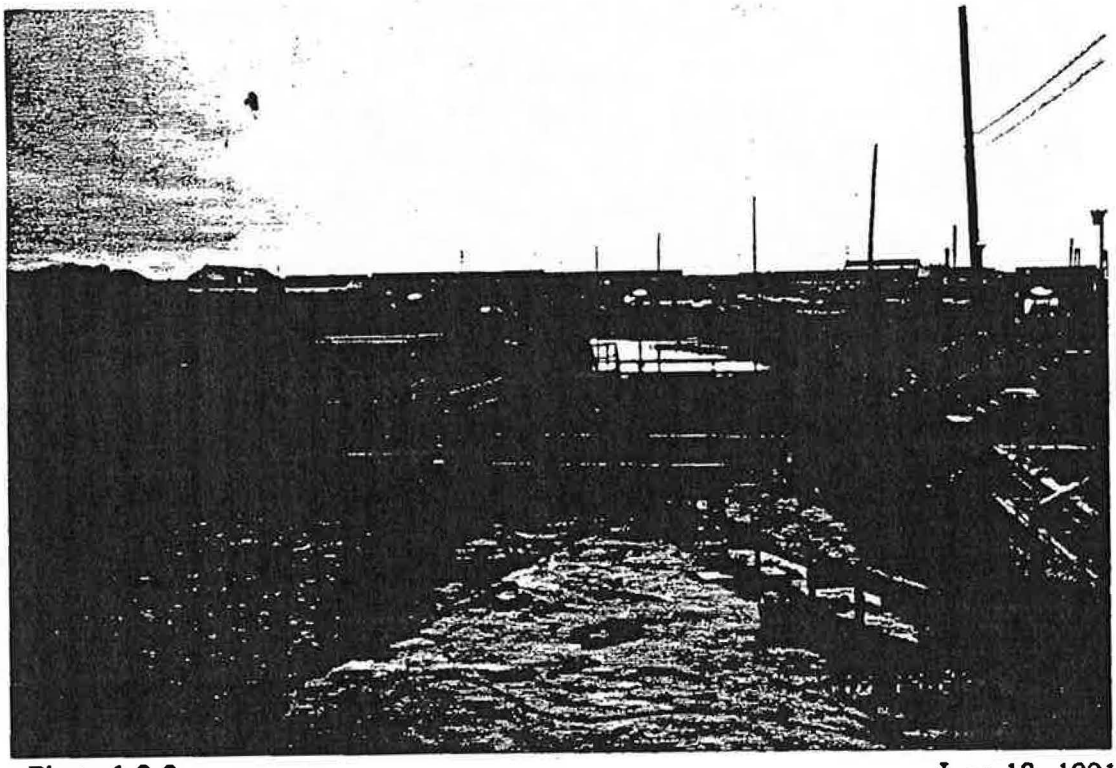


Photo 1.2-2 June 18, 1991

Facing northeast, of HCWWTP's first lime addition point.

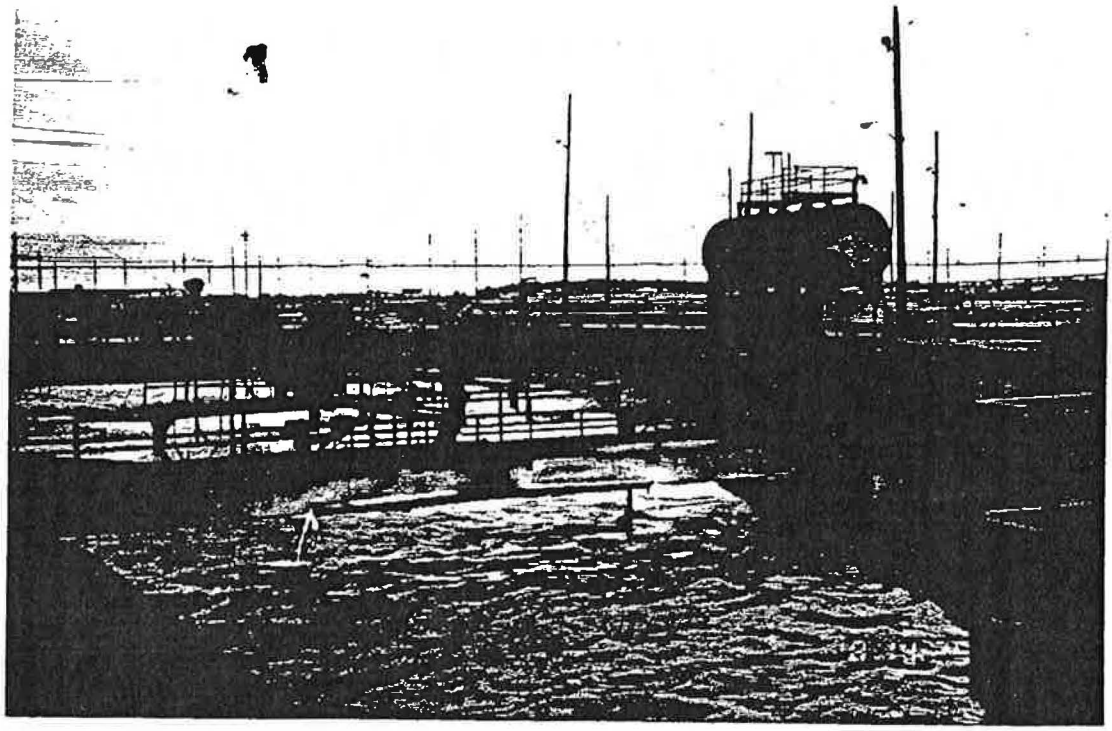


Photo 1.2-3 June 18, 1991

Facing west, of the HCWWTP Old Alum Tank (SWMU 17). Note the HCWWTP's second lime addition point and the HCWWTP Aerators (SWMU 12).

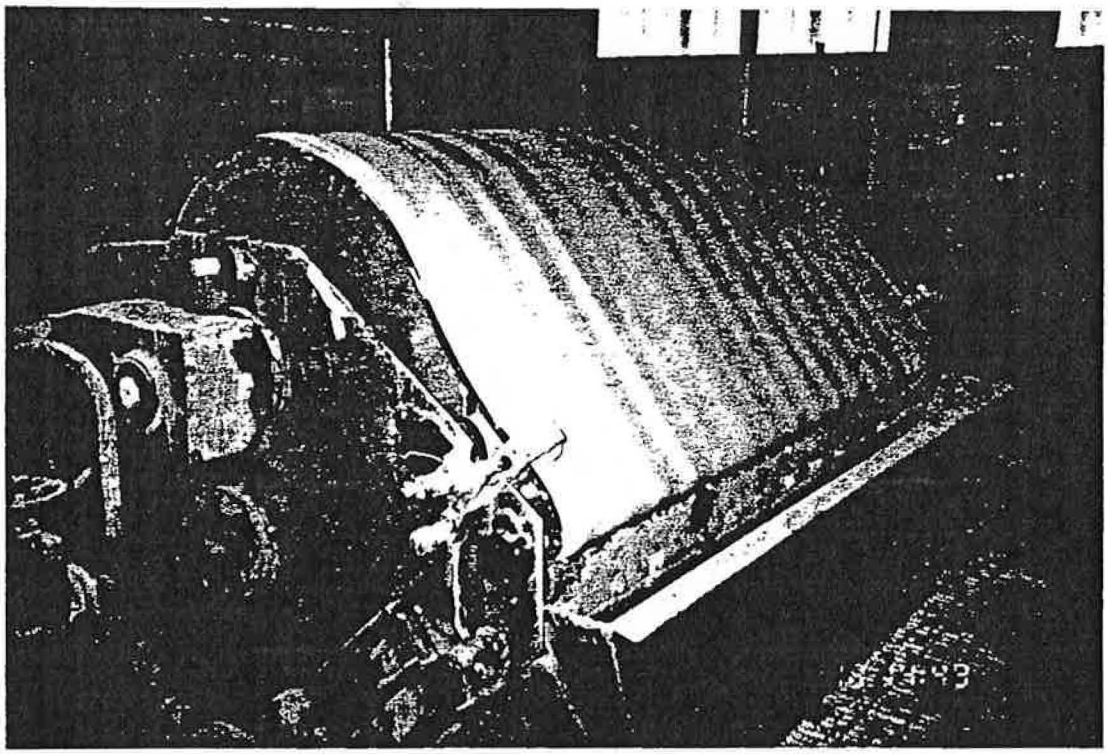
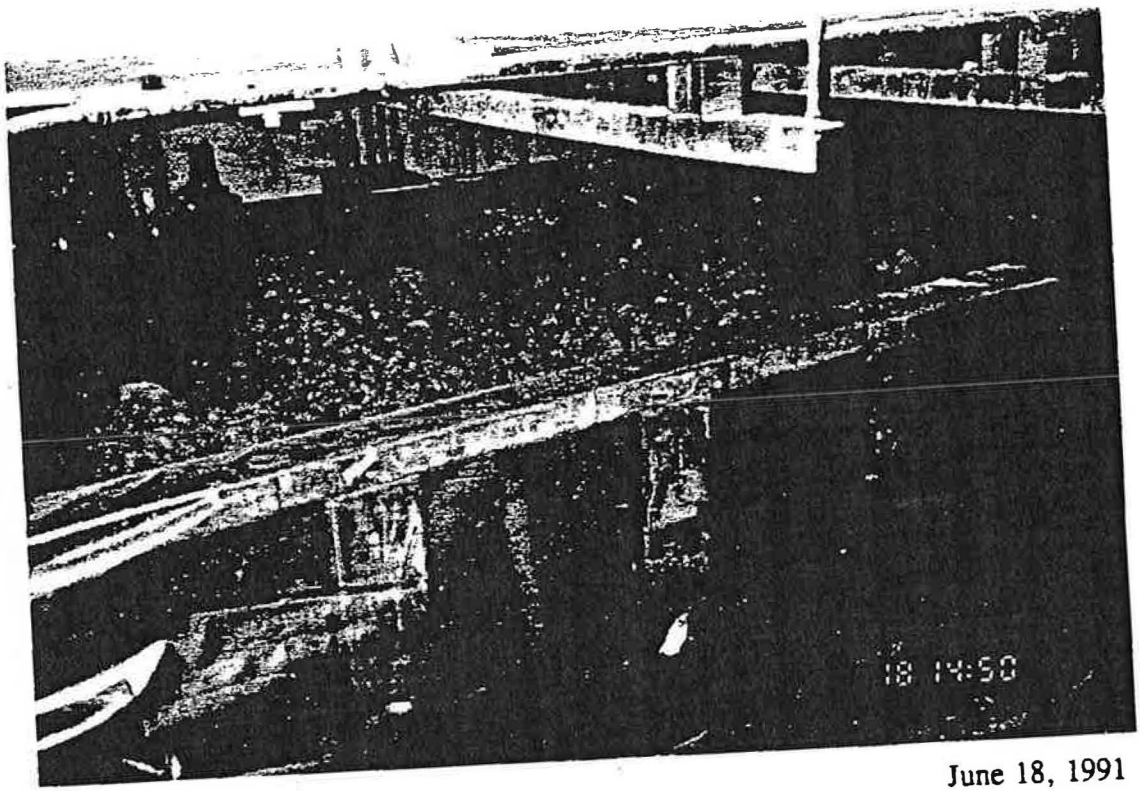


Photo 1.2-4 June 18, 1991

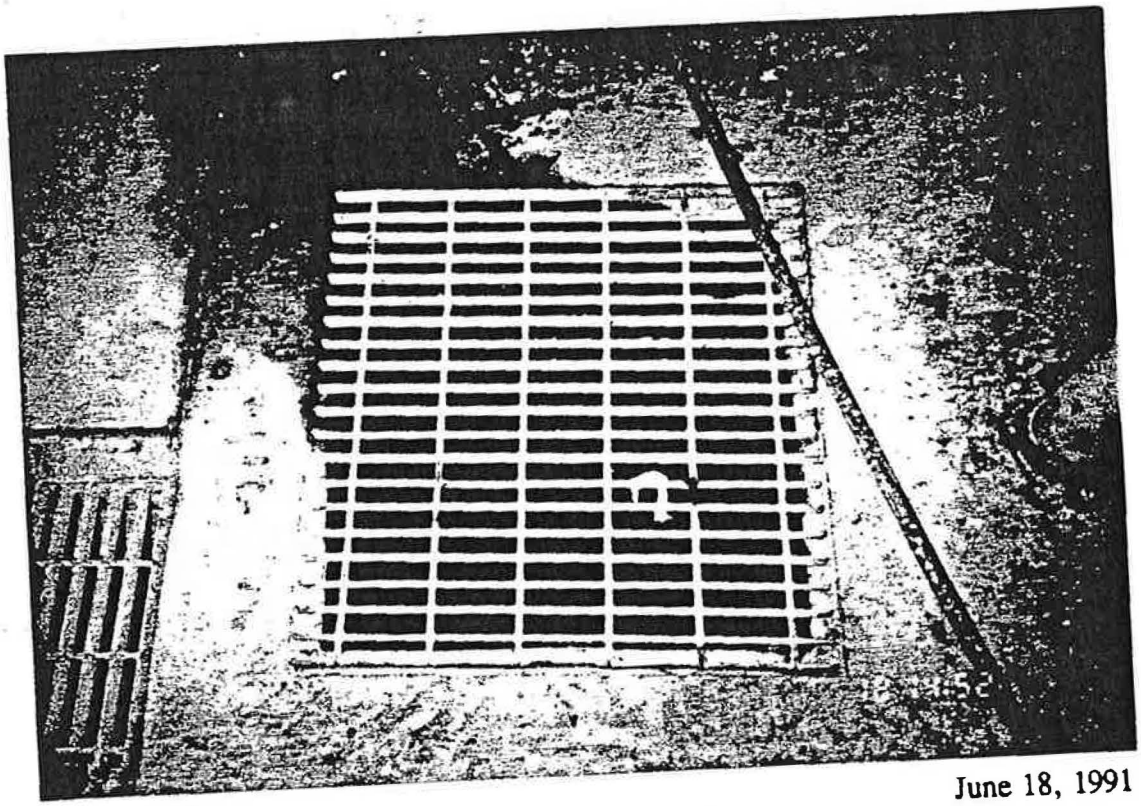
Facing west, of the Chrome Recovery Rotary Filter Press (SWMU 23).



June 18, 1991

Photo 1.2-5

Facing south, of Chrome Recovery Sludge Box (SWMU 24).



June 18, 1991

Photo 1.2-6

Facing down, of Chrome Recovery Filtrate Sump (SWMU 26).

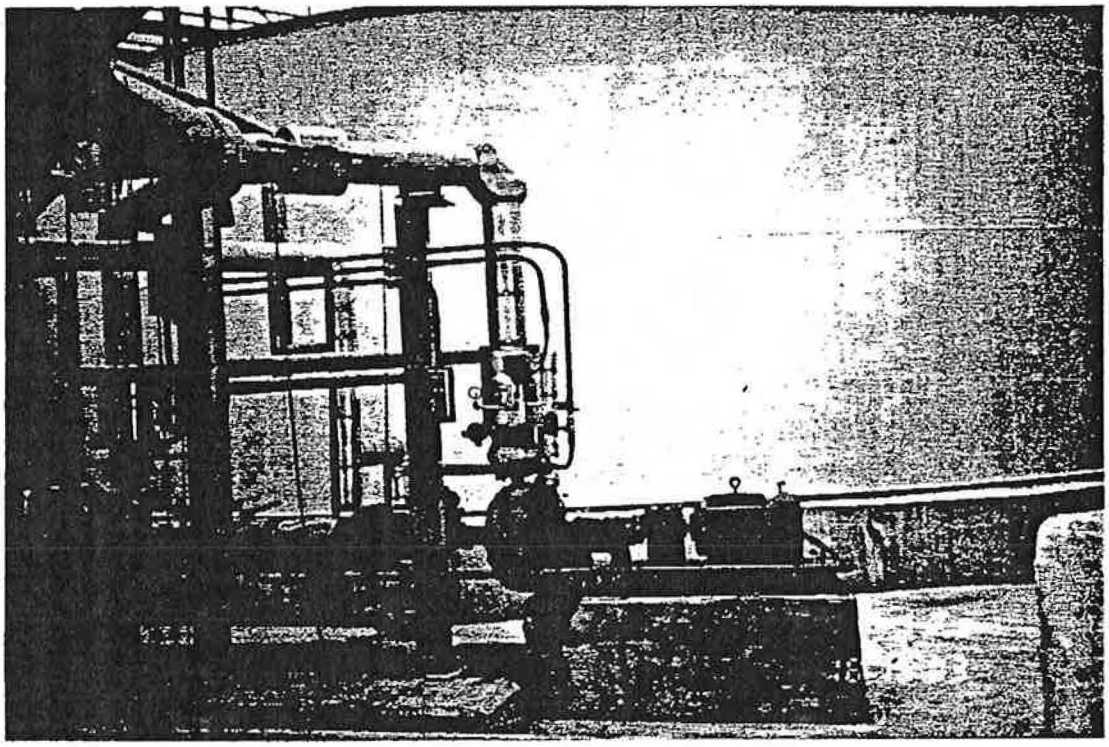


Photo 1.2-7 June 18, 1991

Facing northwest, of Chrome Recovery Floc Tank (SWMU 20) with associated pumps and secondary containment.

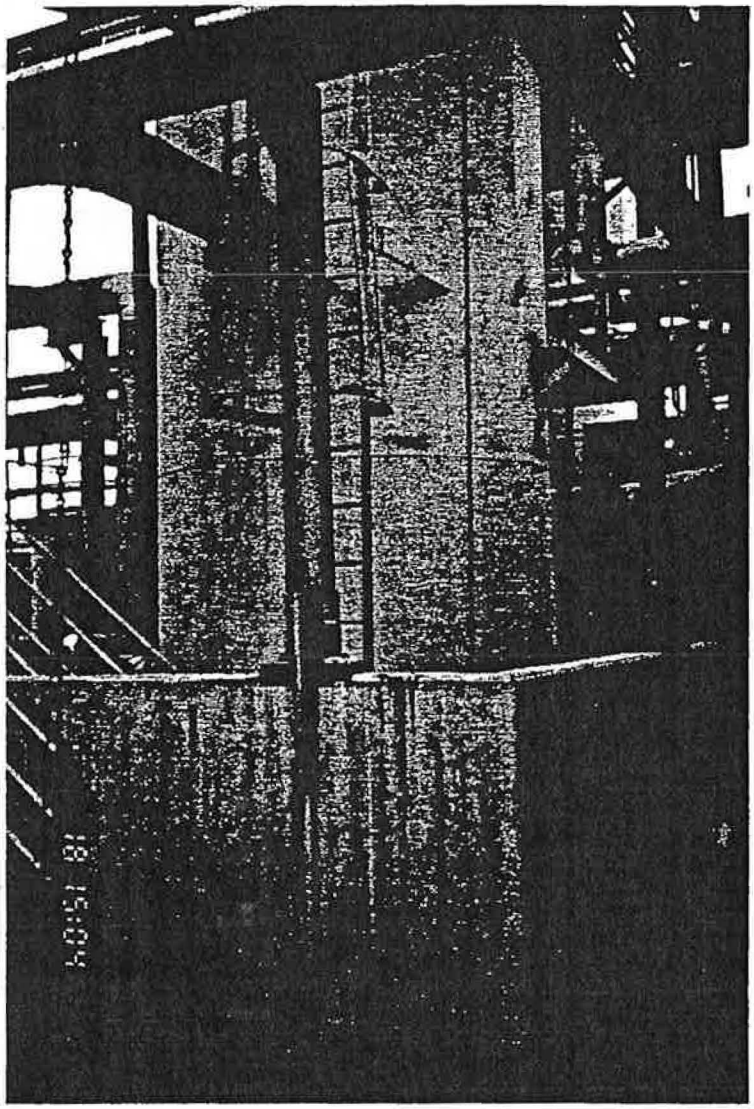


Photo 1.2-8 June 18, 1991

Facing northeast, of Chrome Recovery Neutralization Tank (SWMU 19).

Photo 1.2-9 June 19, 1991

Void — Camera batteries went dead. When replacing batteries, camera went off by accident.

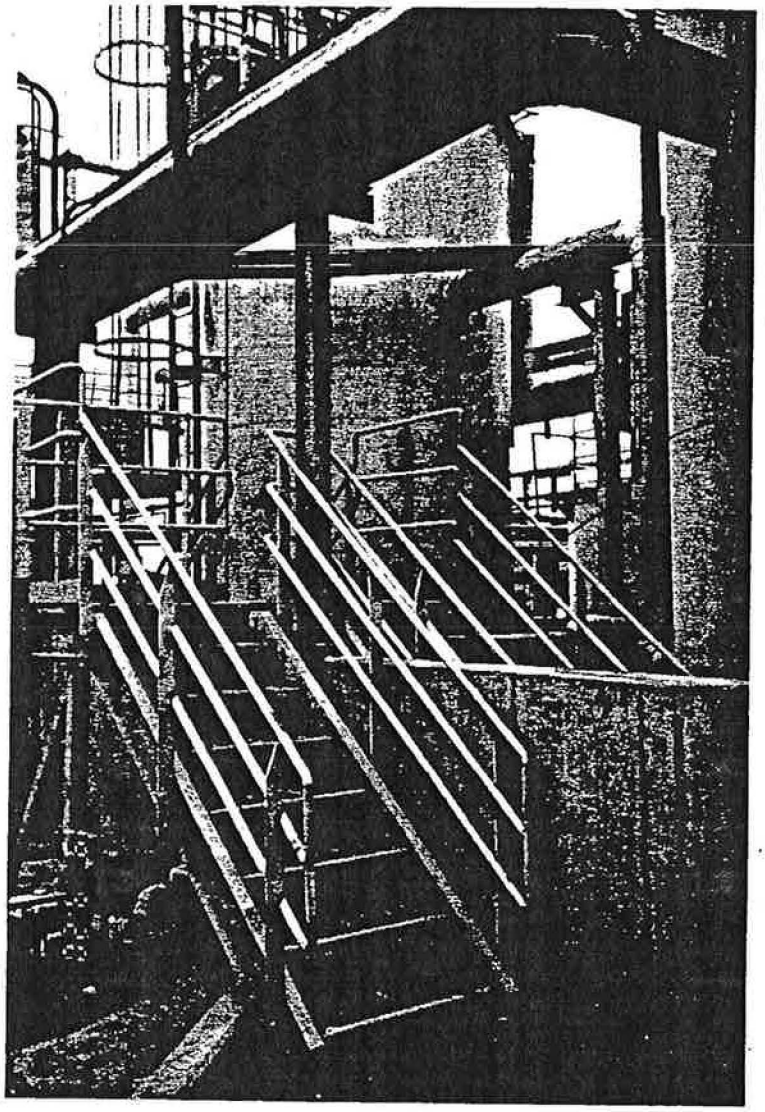


Photo 1.2-10 June 19, 1991

Facing northeast, of Chrome Recovery Reduction Tank (SWMU 18).

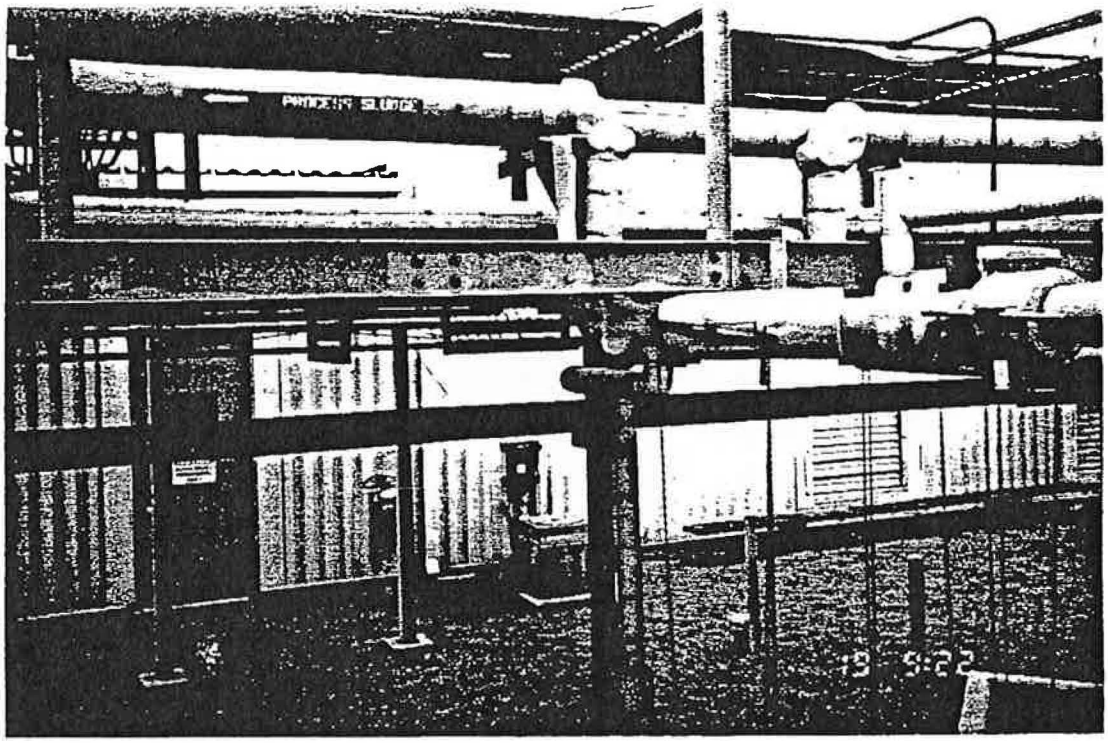


Photo 1.2-11 June 19, 1991

Facing south, of Chrome Recovery Overhead Piping (SWMU 25).

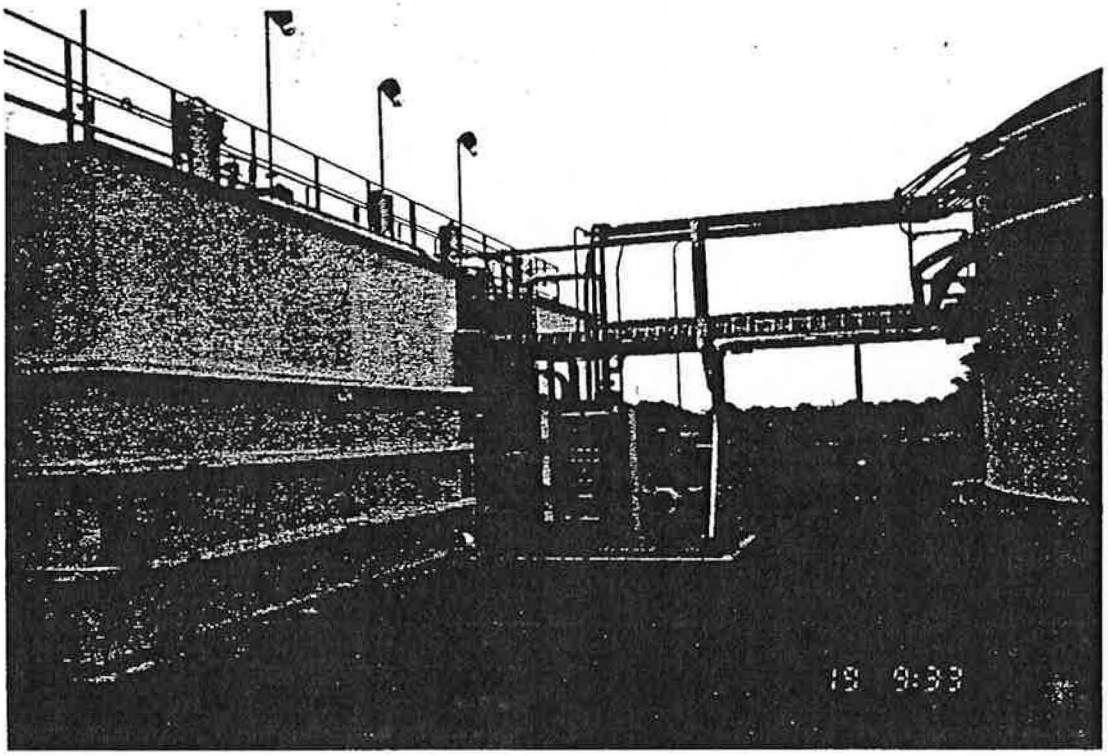


Photo 1.2-12 June 19, 1991

Facing northwest, of Chrome Recovery Sand Filters and Clarifier (SWMU 22).

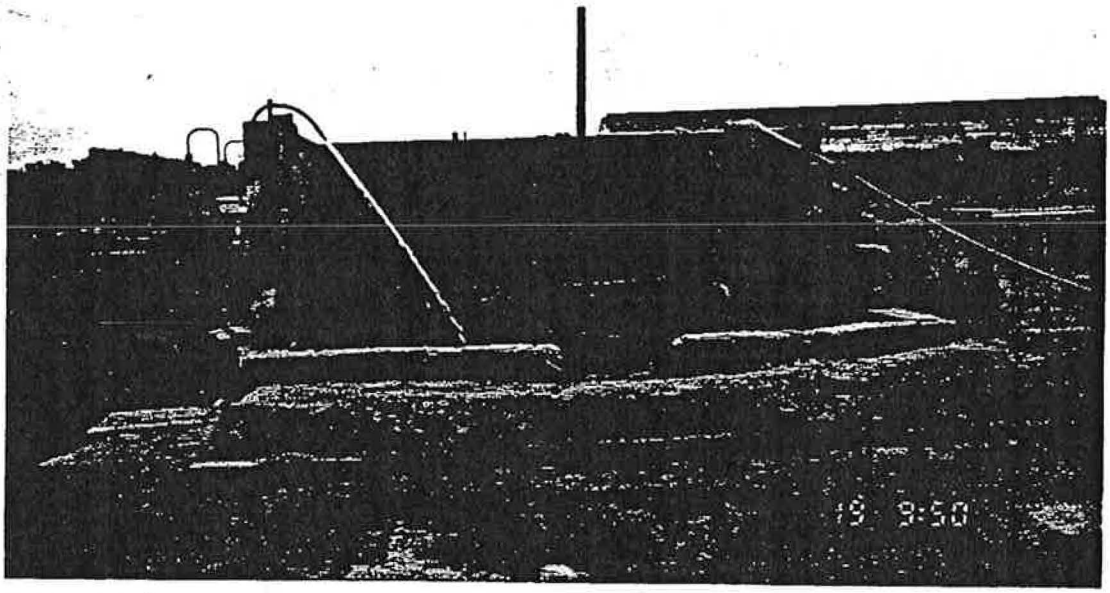


Photo 1.2-13 June 19, 1991

Facing north, of HCWWTP Spent Pickle Liquor Discharge Point (SWMU 14).

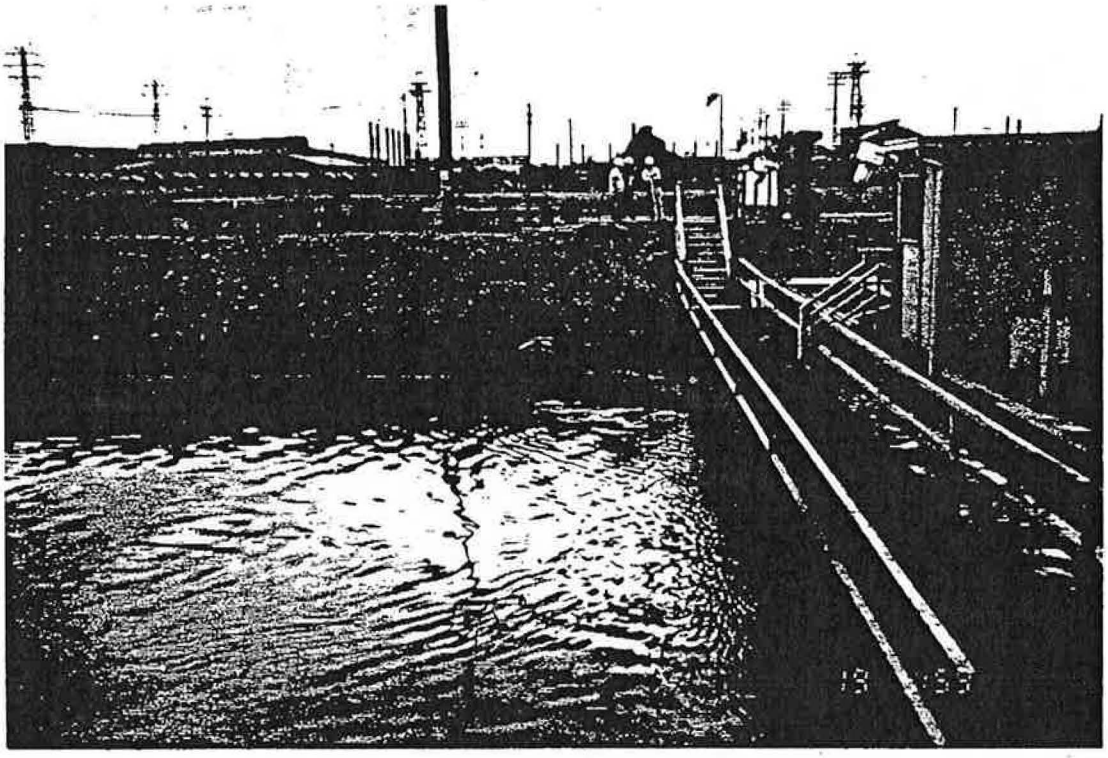


Photo 1.2-14 06/19/19

Facing south, of Primary Mill's TMC Discharge Pipe (SWMU 2) from the Primary Mill to TMC (SWMU 1).

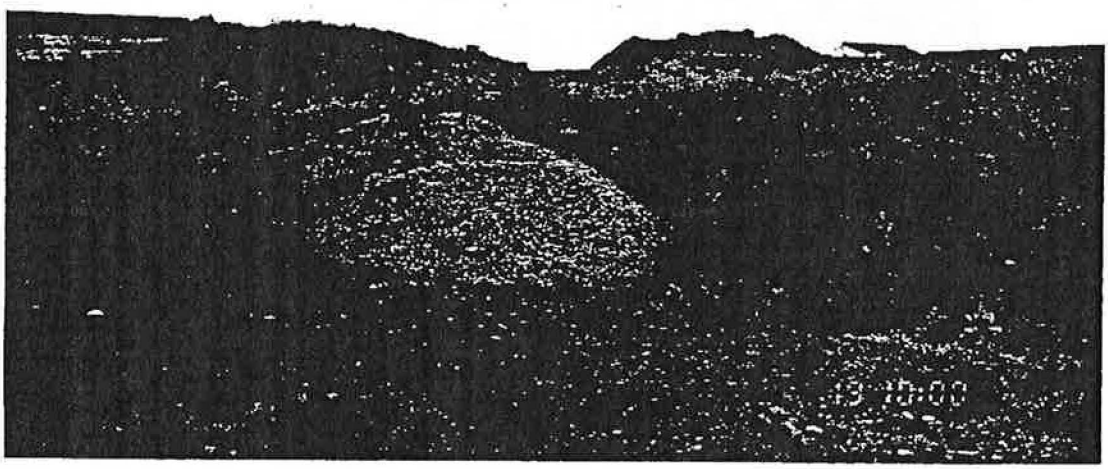


Photo 1.2-15 06/19/19

Facing north, of a TMC Impoundment (SWMU 6).

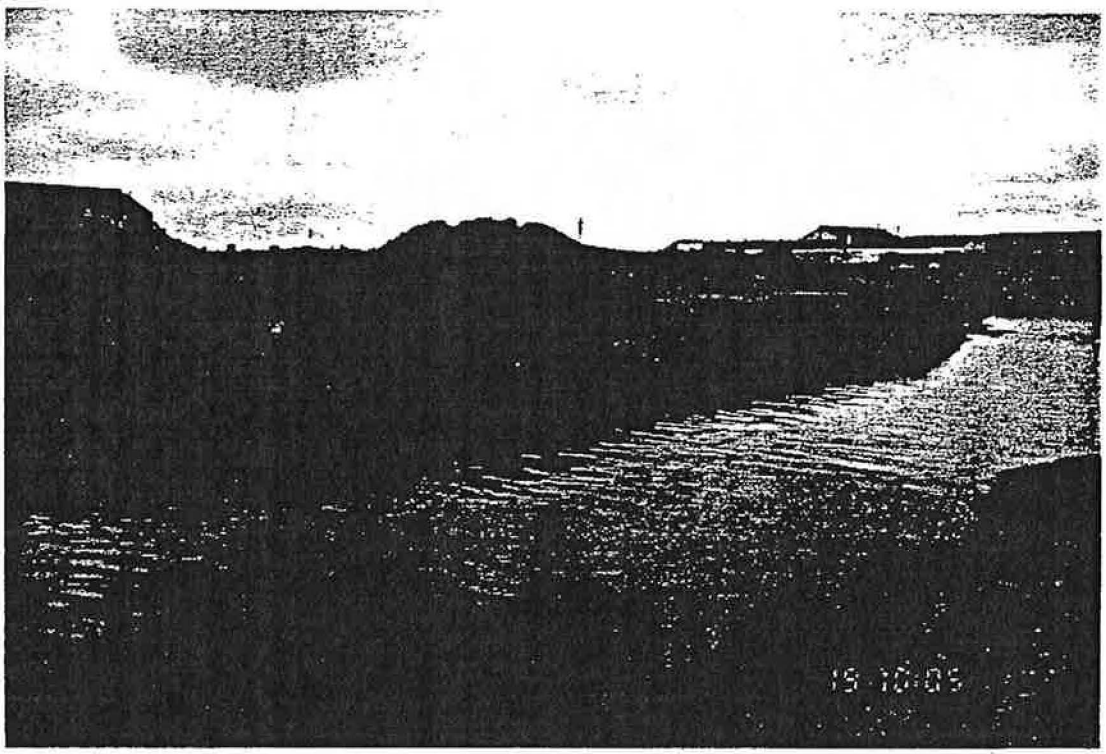


Photo 1.2-16 June 19, 1991

Facing east, of TMC's Discharge Pipe (SWMU 2) Number 29 and TMC (SWMU 1). The pipe was unable to be seen, but the flow from the pipe is shown in the left side of the photograph.

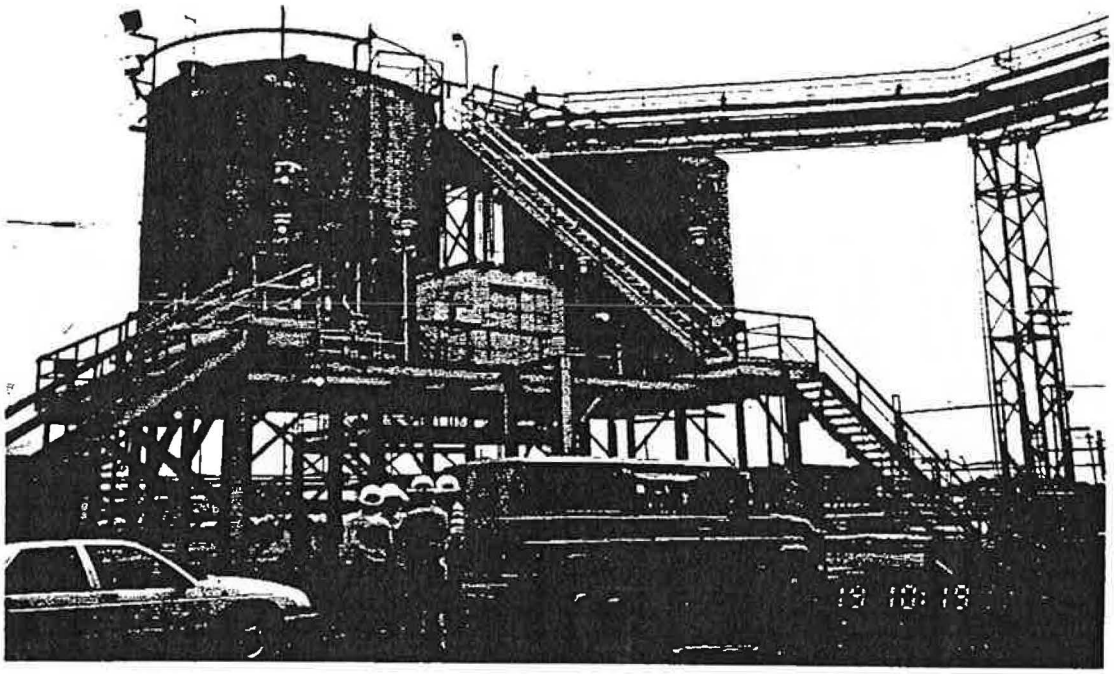


Photo 1.2-17 June 19, 1991

Facing north, of two Spent Pickle Liquor Tanks (AOC W). Note the bulges in the tanks.

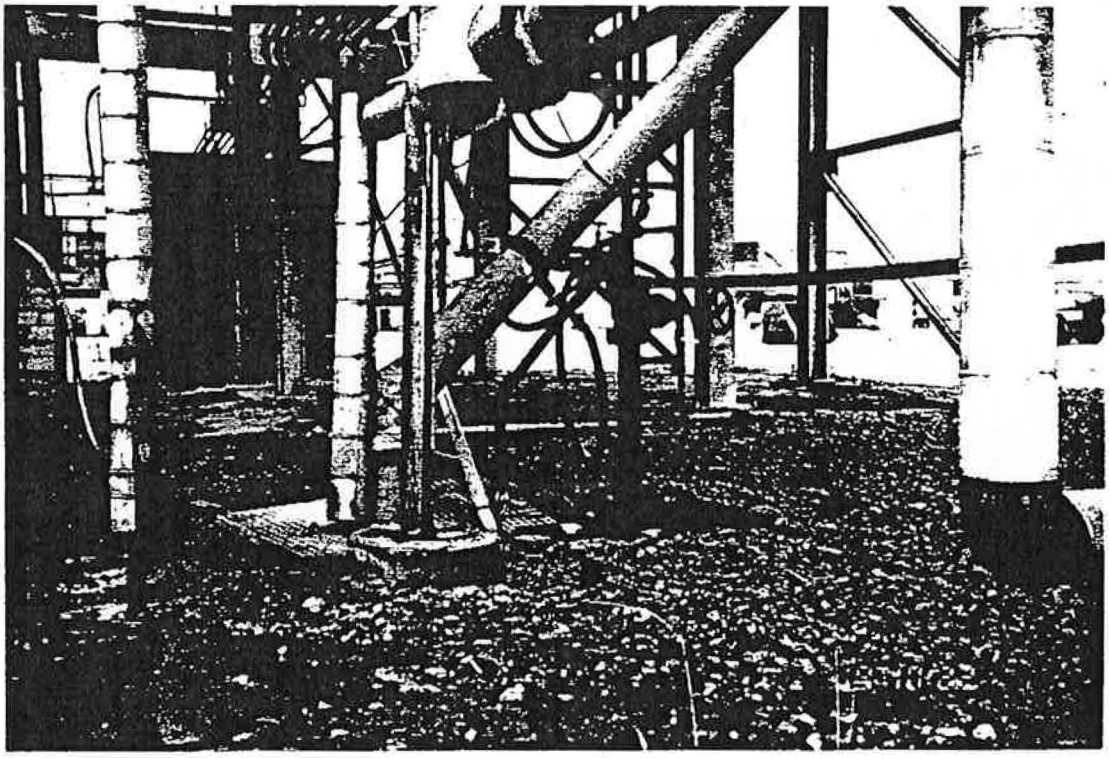


Photo 1.2-18 June 19, 1991

Facing west, of Spent Pickle Liquor Sump and Trench System (SWMU 198) located underneath the two Spent Pickle Liquor Tanks (AOC W).

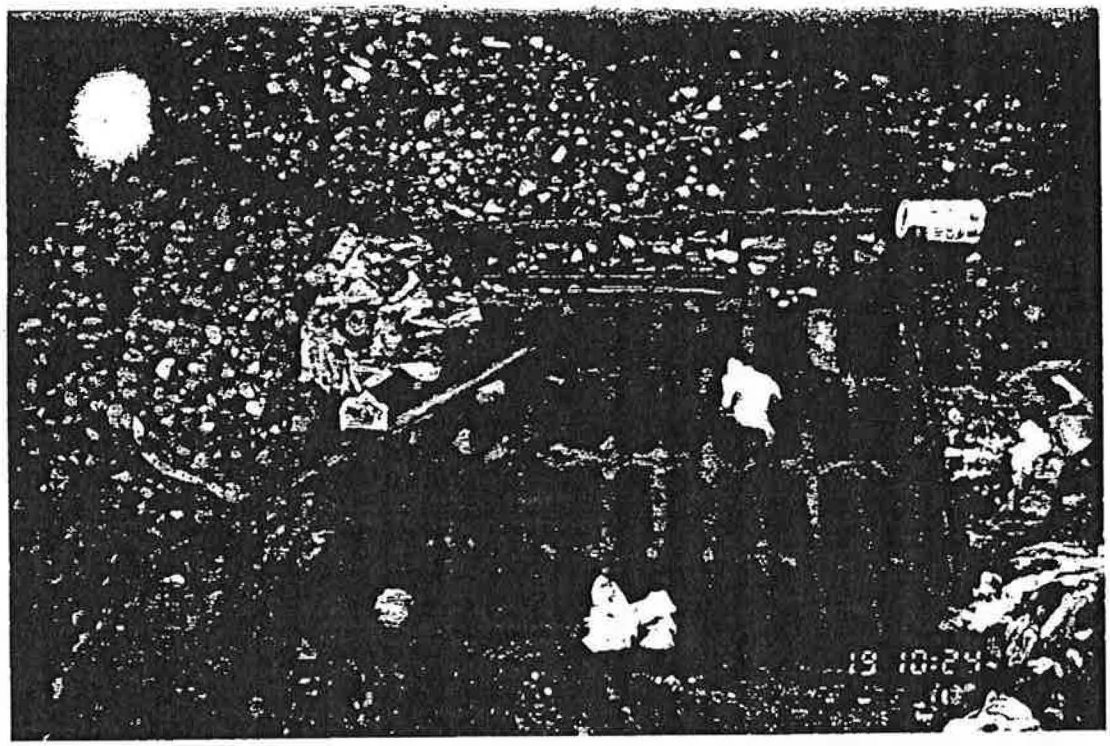


Photo 1.2-19 June 19, 1991

Facing down, of Spent Pickle Liquor Sump and Trench System (SWMU 198) located underneath the two Spent Pickle Liquor Tanks (AOC W). Note the stained gravel.

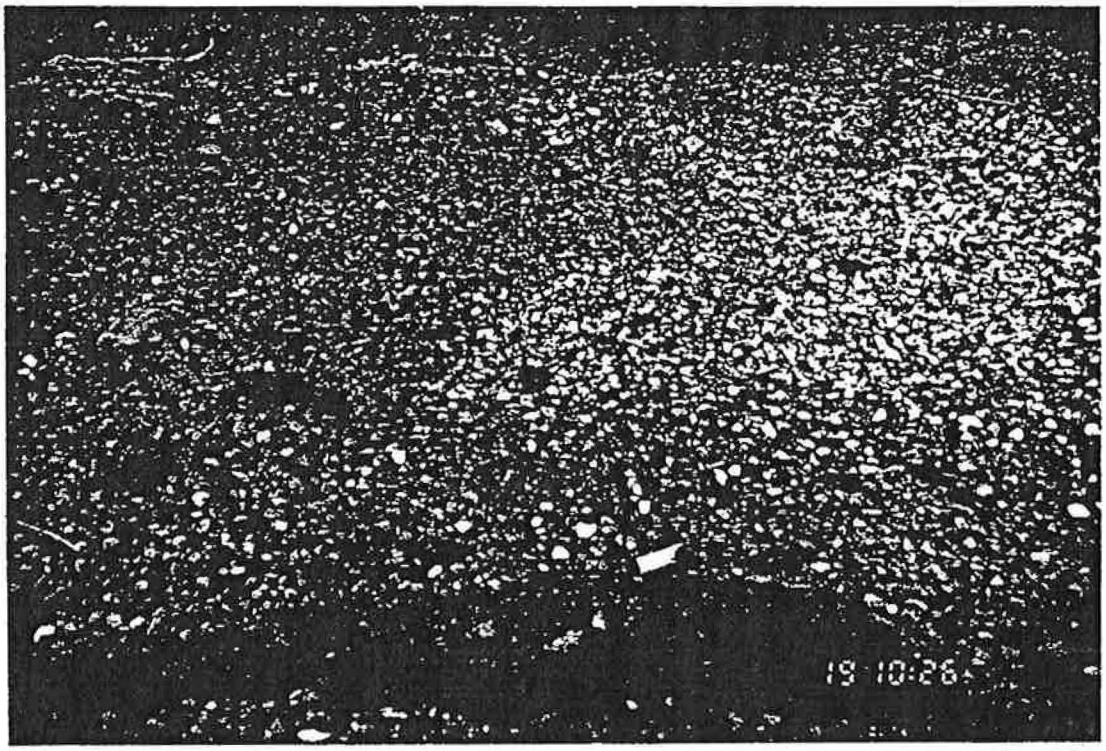


Photo 1.2-20 June 19, 1991

Facing south, of stained gravel located underneath the two Spent Pickle Liquor Tanks (AOC W).

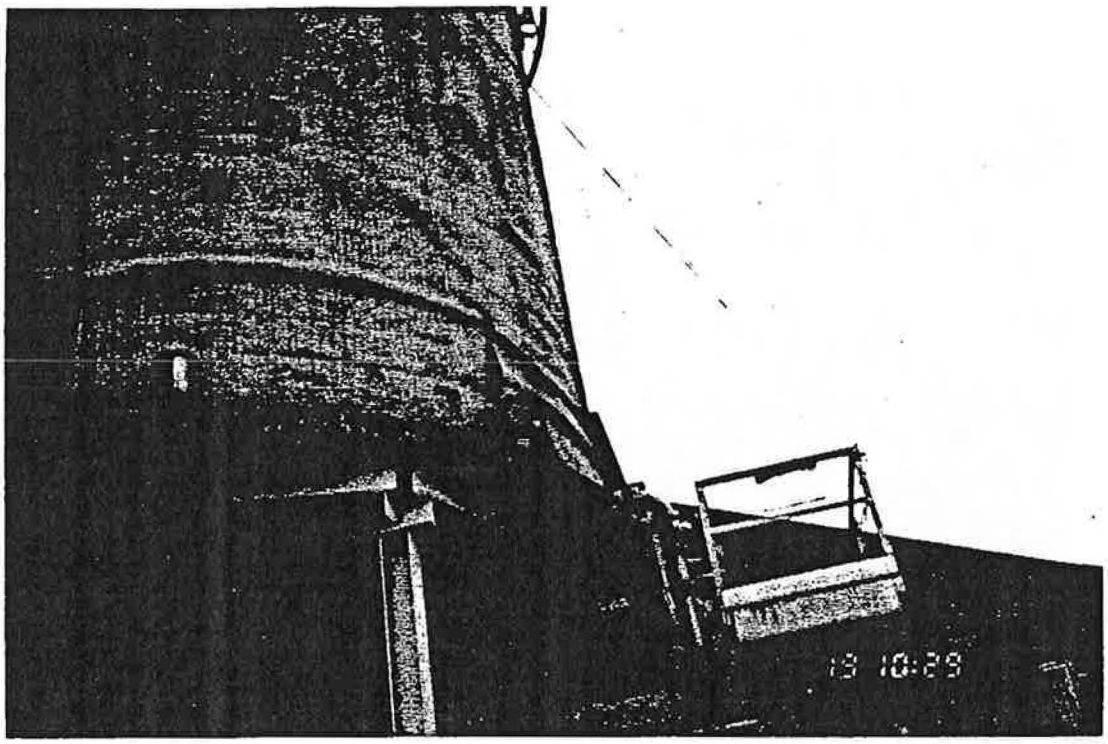


Photo 1.2-21 June 19, 1991

Facing southwest, of bulges in the north Spent Pickle Liquor Tank (AOC W).

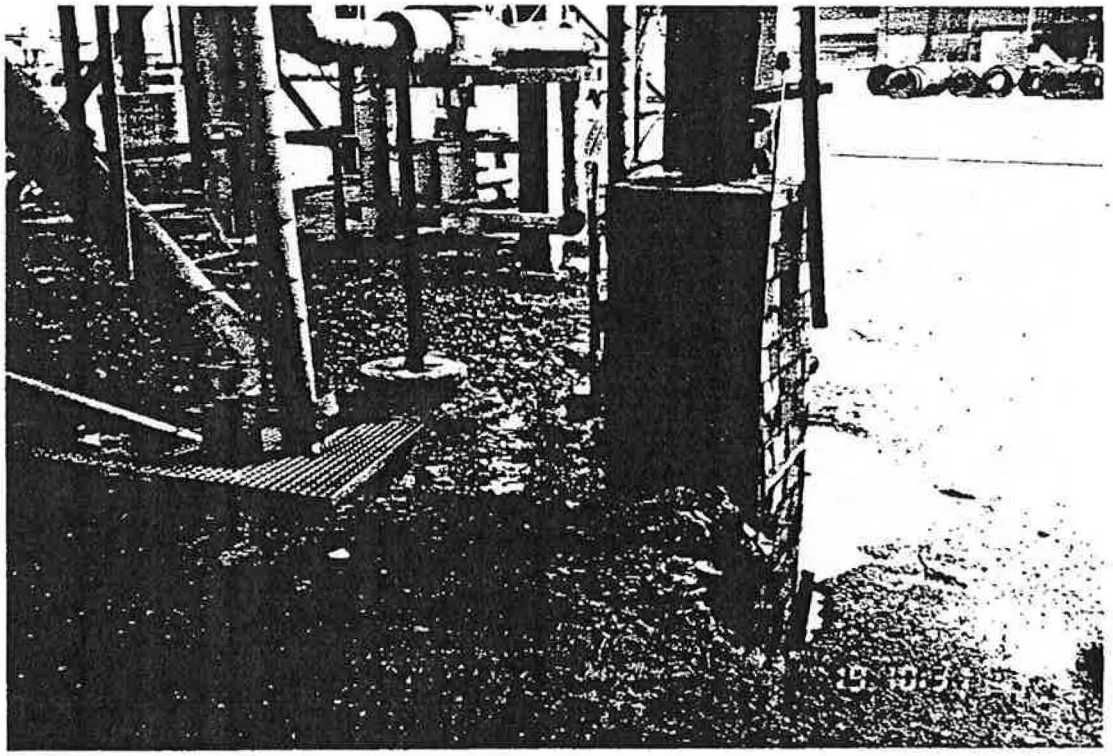


Photo 1.2-22 June 19, 1991

Facing northeast, of cracked foundation and staining located under the two Spent Pickle Liquor Tanks (AOC W). The Sump and Trench System (SWMU 198) is shown on the left side of the photograph.

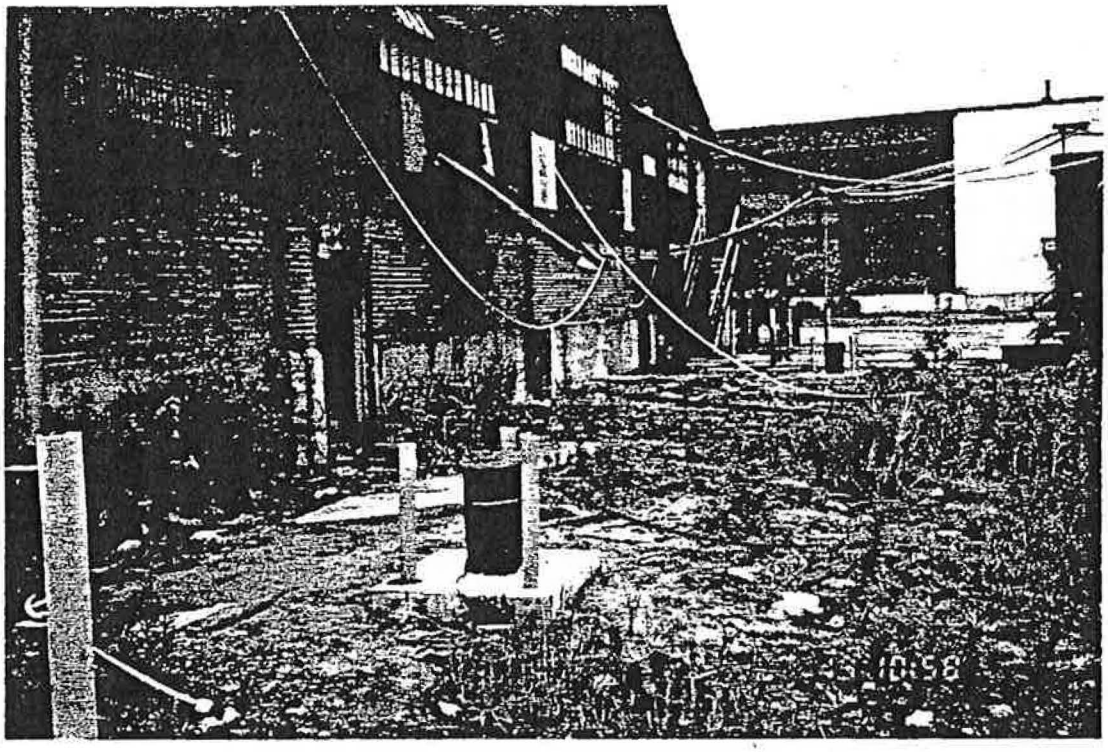


Photo 1.2-23 June 19, 1991

Facing southwest, of Rod Mill Remediation Area (SWMU 27) where sludge collection bins and chutes were located.

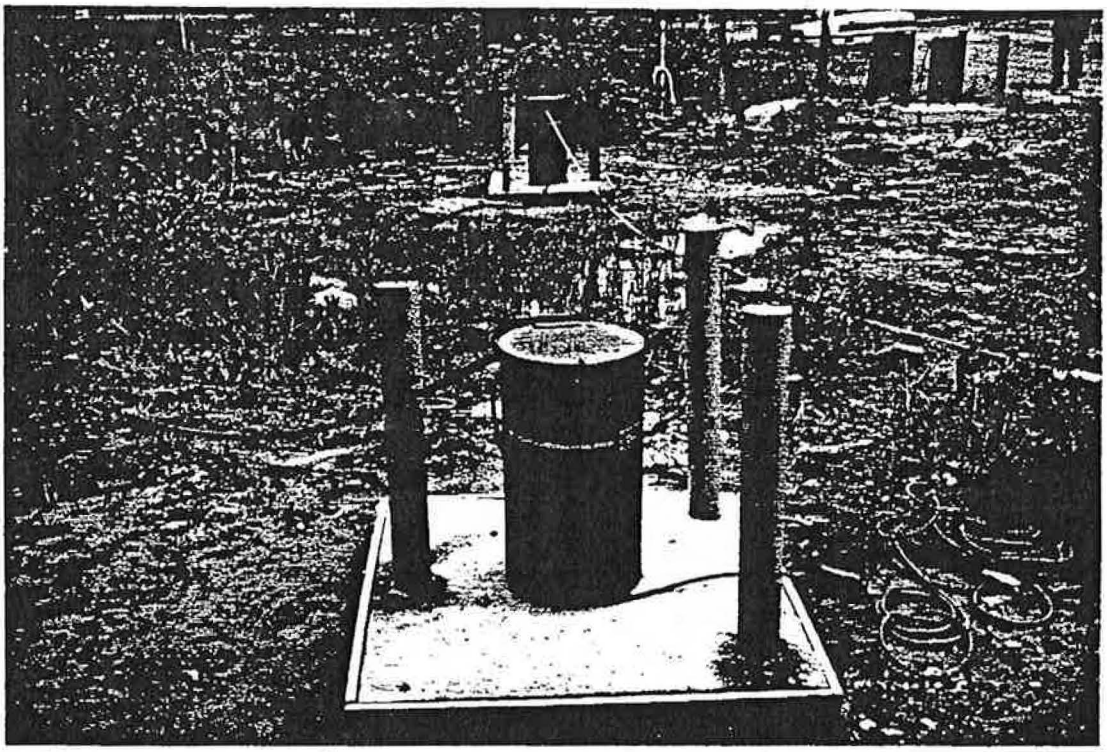


Photo 1.2-24 June 19, 1991

Facing north, of a shallow well located in the Rod Mill Remediation Area (SWMU 27).

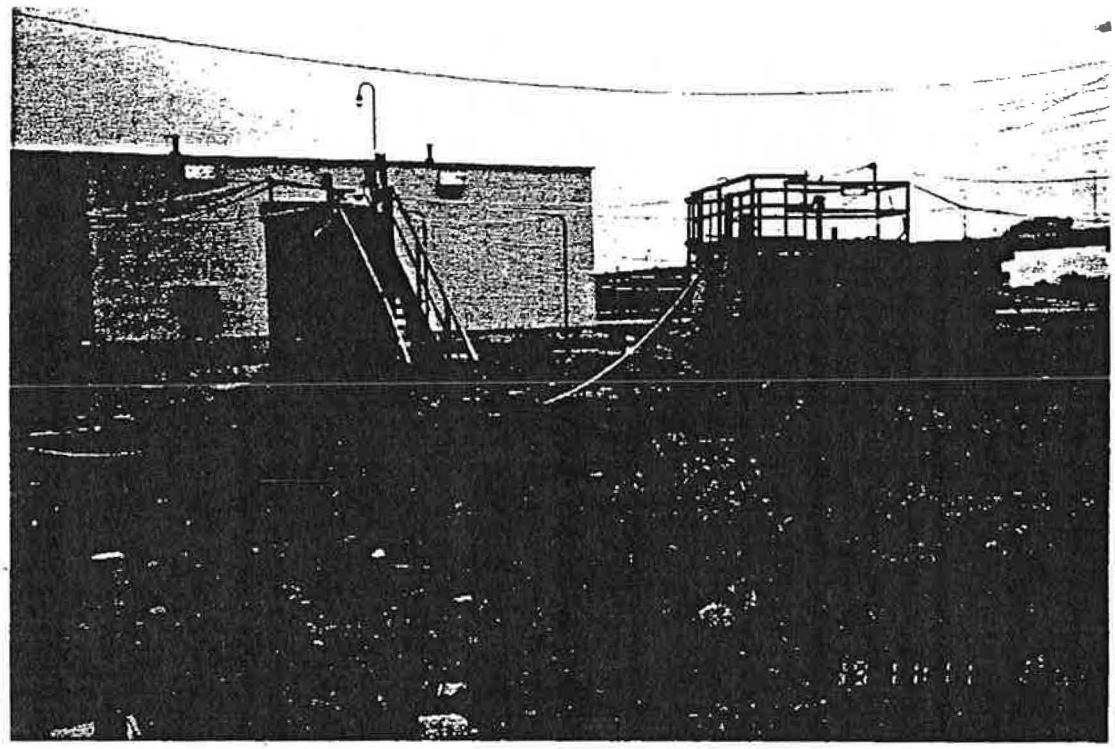


Photo 1.2-25 June 19, 1991

Facing west, of the wells, acid storage (vertical) tank and wastewater collection (horizontal) tank in Rod Mill Remediation Area (SWMU 27).

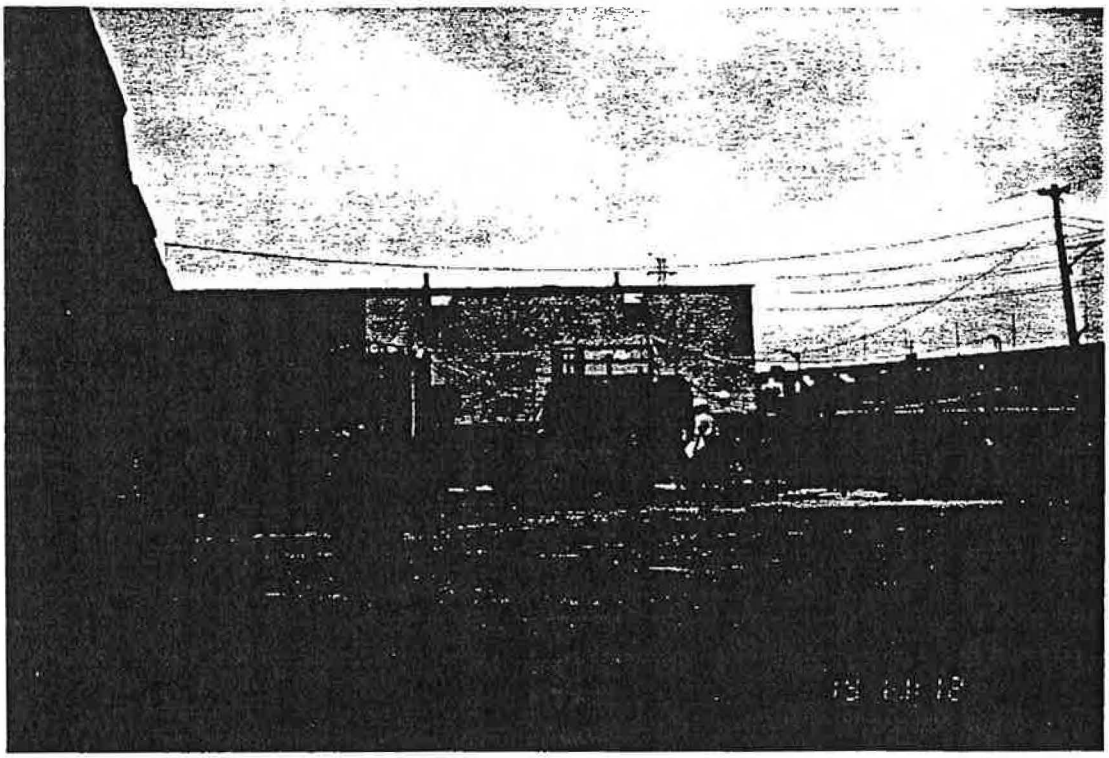


Photo 1.2-26 June 19, 1991

Facing west, of general layout of Rod Mill Remediation Area (SWMU 27).

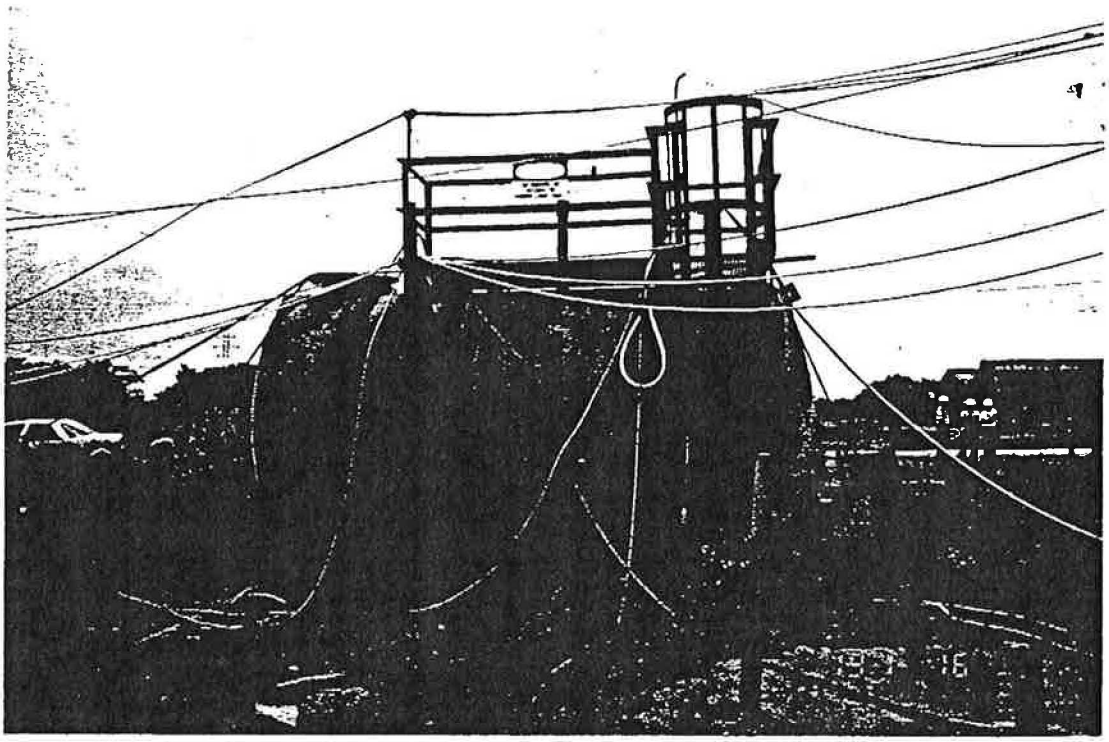


Photo 1.2-27 June 19, 1991

Facing east, of Rod Mill Remediation Area (SWMU 27) wastewater collection tank.

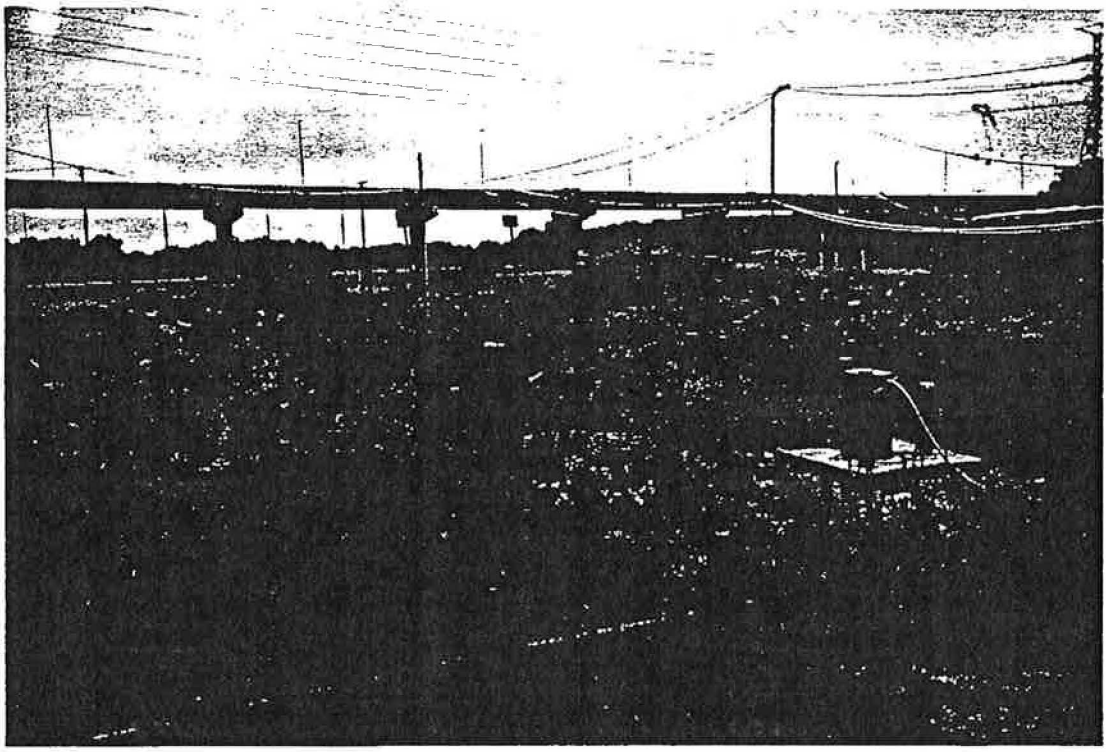


Photo 1.2-28 June 19, 1991

Facing northeast, of acid sprinkler system at the Rod Mill Remediation Area (SWMU 27).

Photo 1.2-29 June 19, 1991

Void --- photo did not develop properly.

Photo 1.2-30 June 19, 1991

Void --- photo did not develop properly.

Photo 1.2-31 June 19, 1991

Void --- photo did not develop properly.

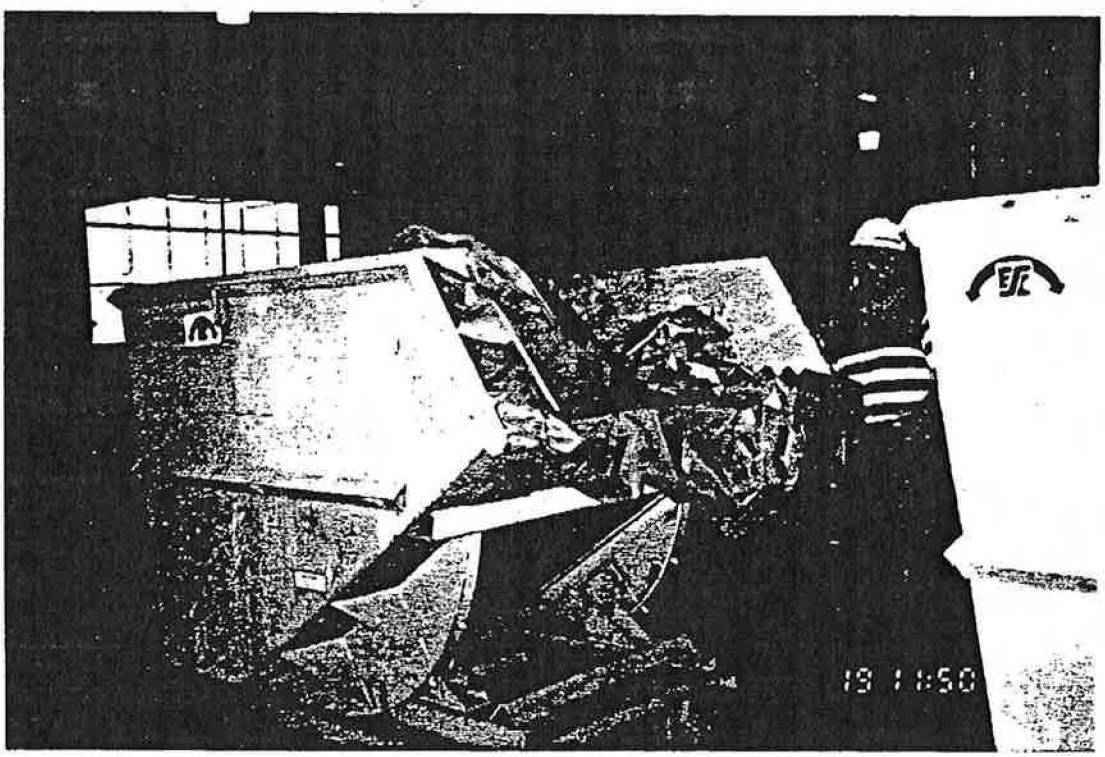


Photo 1.2-32 June 19, 1991

Facing northwest, of Cadmium Treatment Sludge Collection Box (SWMU 37).

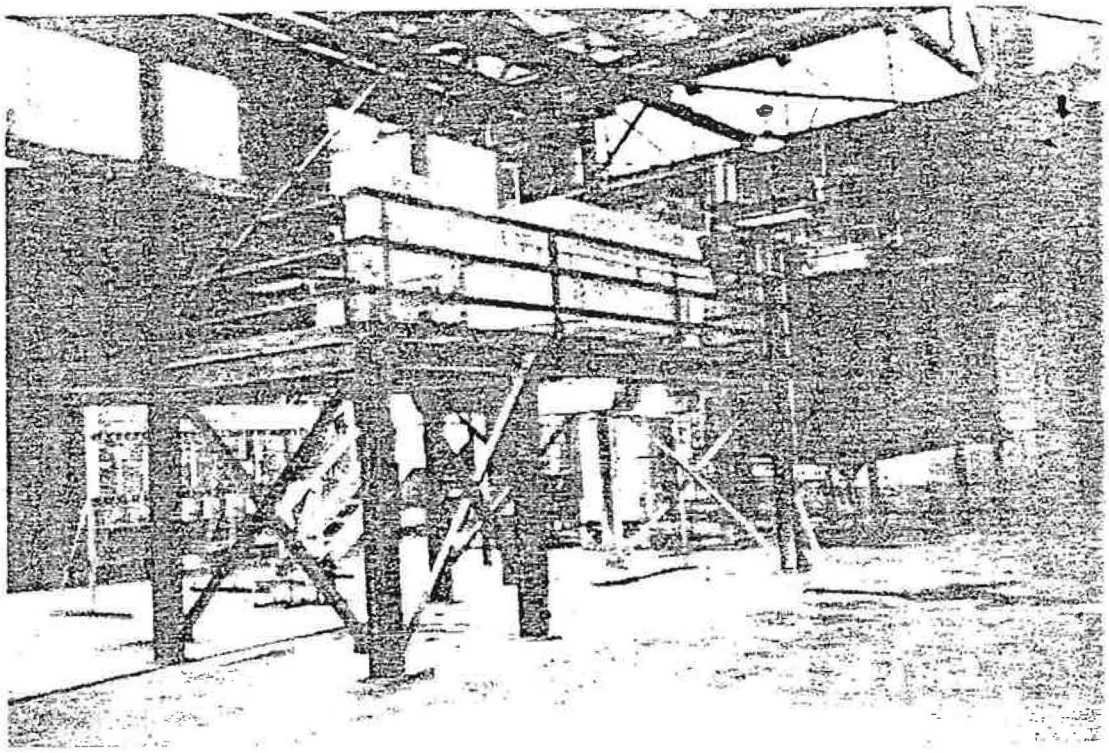


Photo 1.2-33 June 19, 1991

Facing southeast, of Cadmium Treatment Filter Press (SWMU 36) with Sludge Collection Box (SWMU 37) area located underneath.

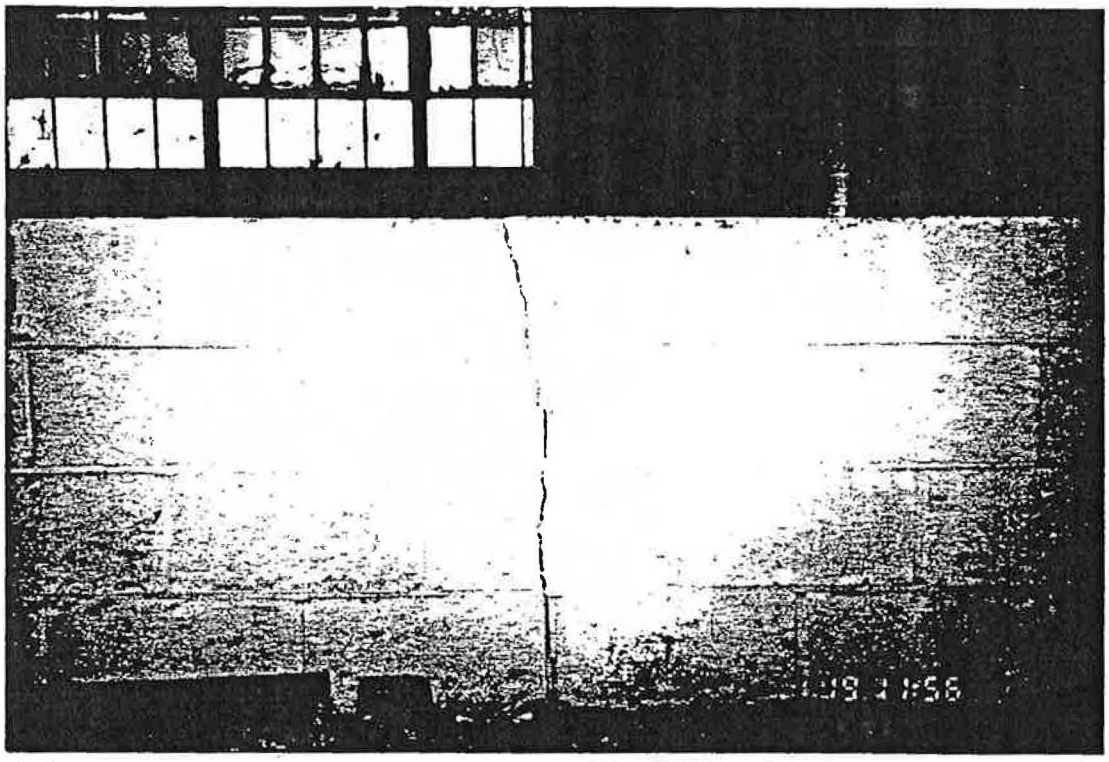


Photo 1.2-34 June 19, 1991

Facing east, of crack in secondary containment for caustic storage tank located near the Cadmium Treatment (SWMUs 31-38).

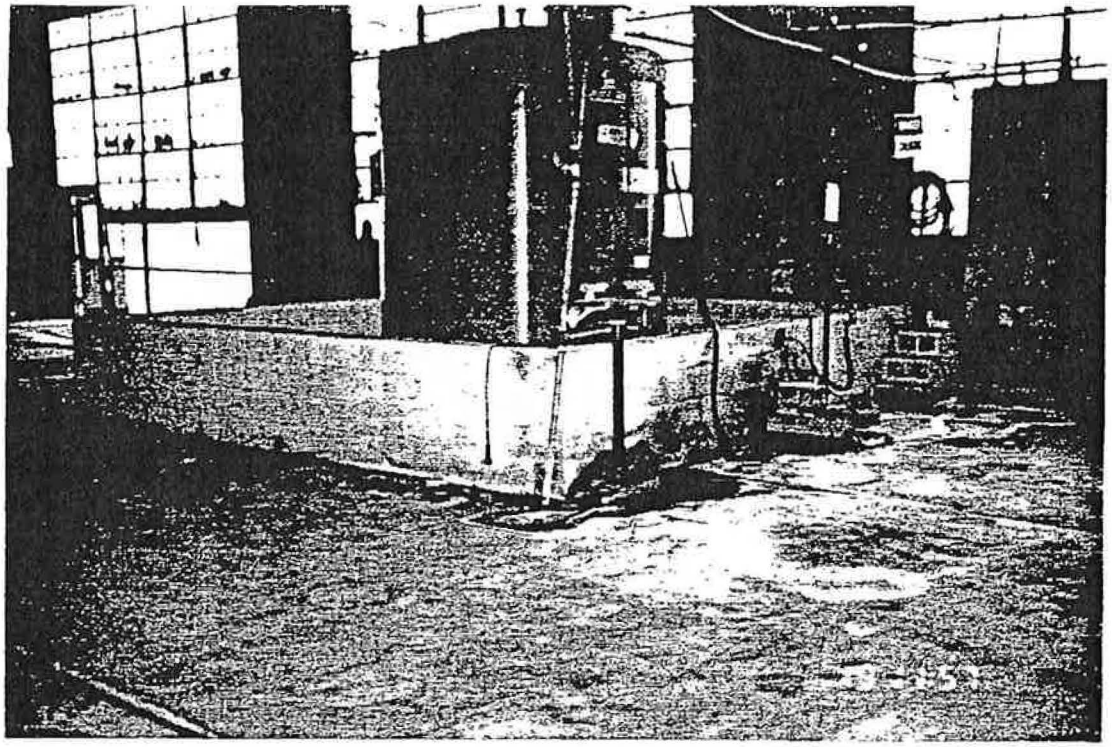


Photo 1.2-35 June 19, 1991

Facing northeast, of caustic storage tank and its secondary containment located near the Cadmium Treatment (SWMUs 31-38).

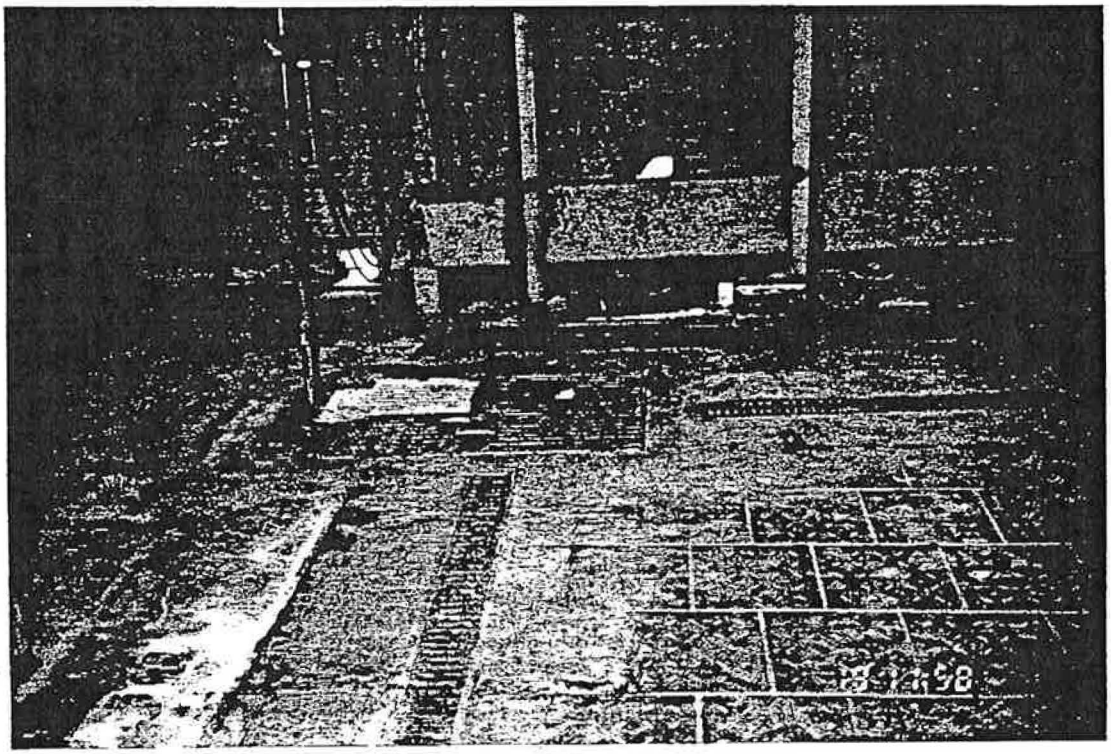


Photo 1.2-36 June 19, 1991

Facing east, of Cadmium Treatment Trench (SWMU 38) in the brick lined floor.

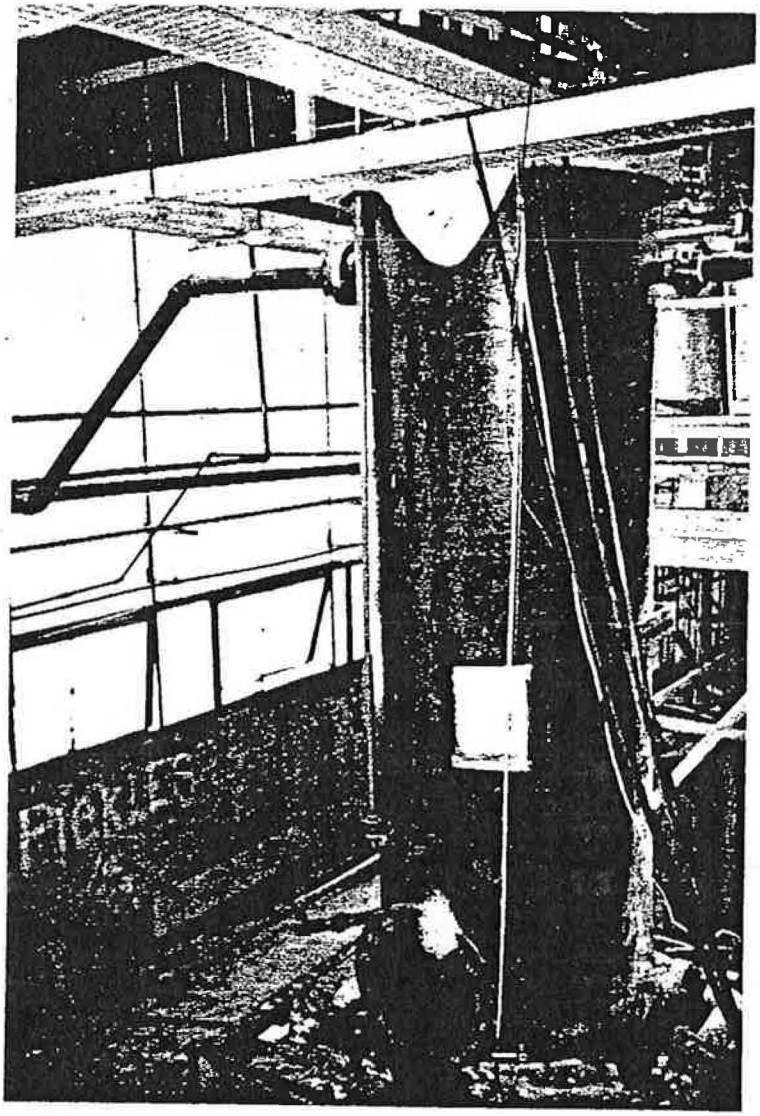


Photo 1.2-37 June 19, 1991

Facing southeast, of Cadmium Treatment Reactor A Tank (SWMU 31).

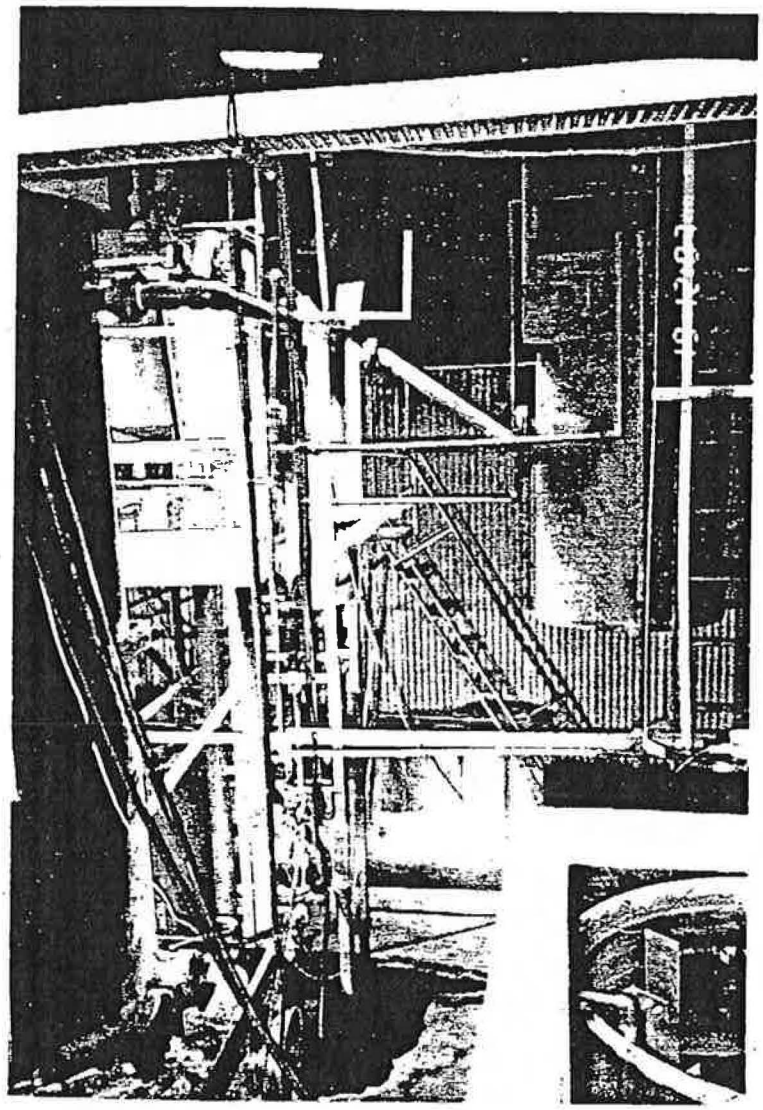


Photo 1.2-38 June 19, 1991

Facing southeast, of Cadmium Treatment Alkalination Tank (SWMU 32).

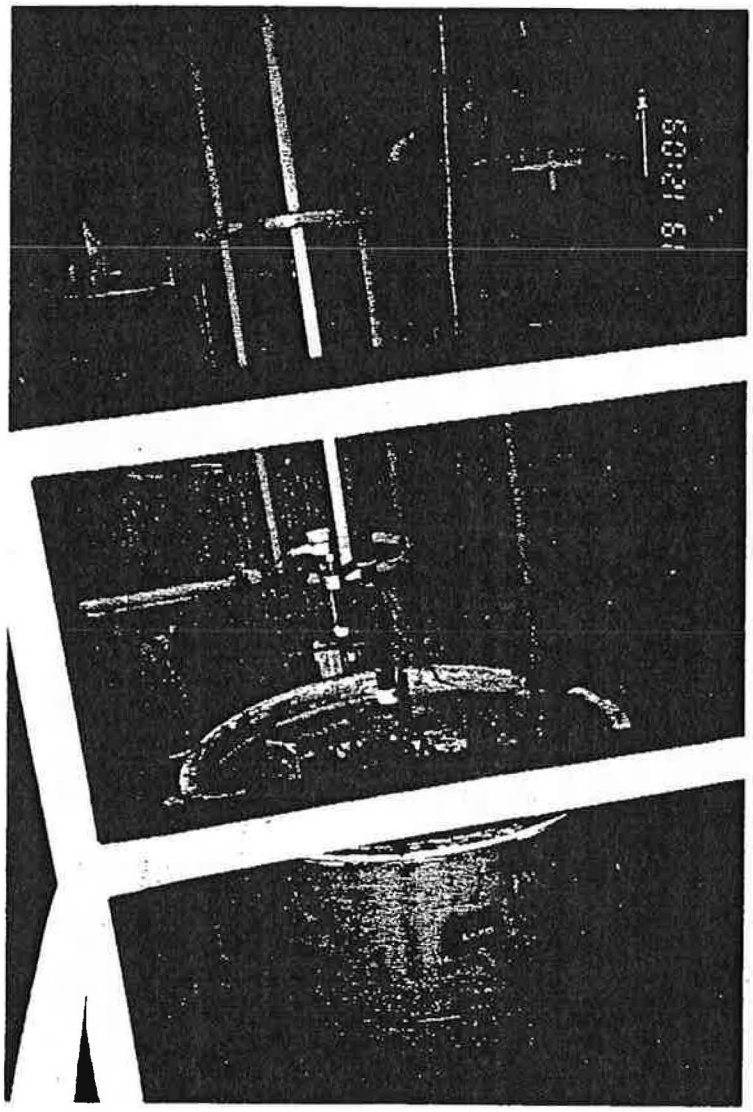


Photo 1.3-1 June 19, 1991

Facing southeast, of Cadmium Treatment Alkalination Tank (SWMU 32) and Thickener (SWMU 33).

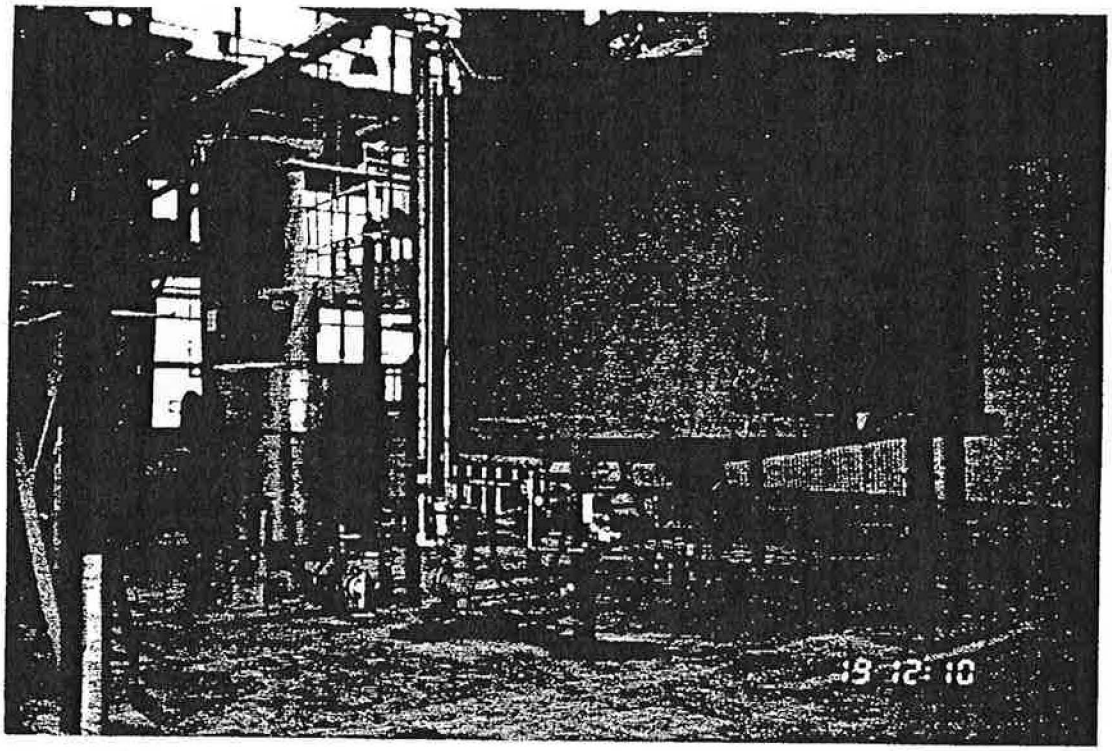


Photo 1.3-2 June 19, 1991

Facing east, of general view of Cadmium Treatment Facility (SWMUs 31 through 38).

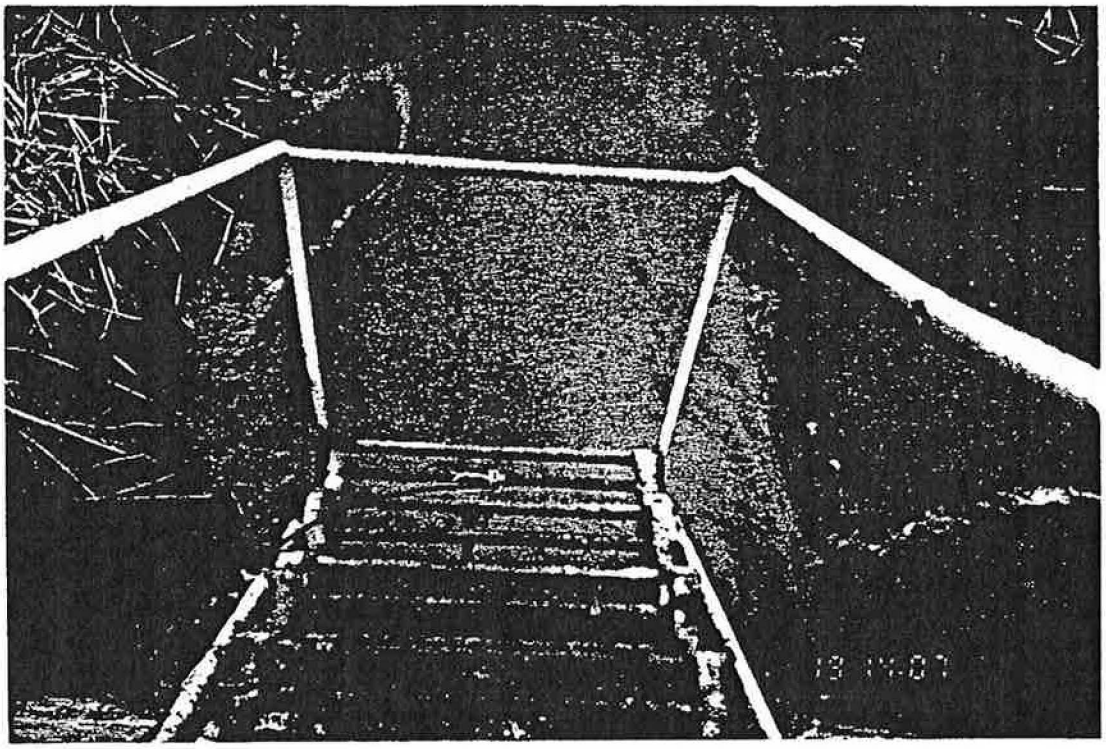


Photo 1.3-3 June 19, 1991

Facing north, of TMC's Discharge Pipe (SWMU 2) Number 34 of spent pickle liquor. Note the tar-like material along the sides of TMC (SWMU 1).

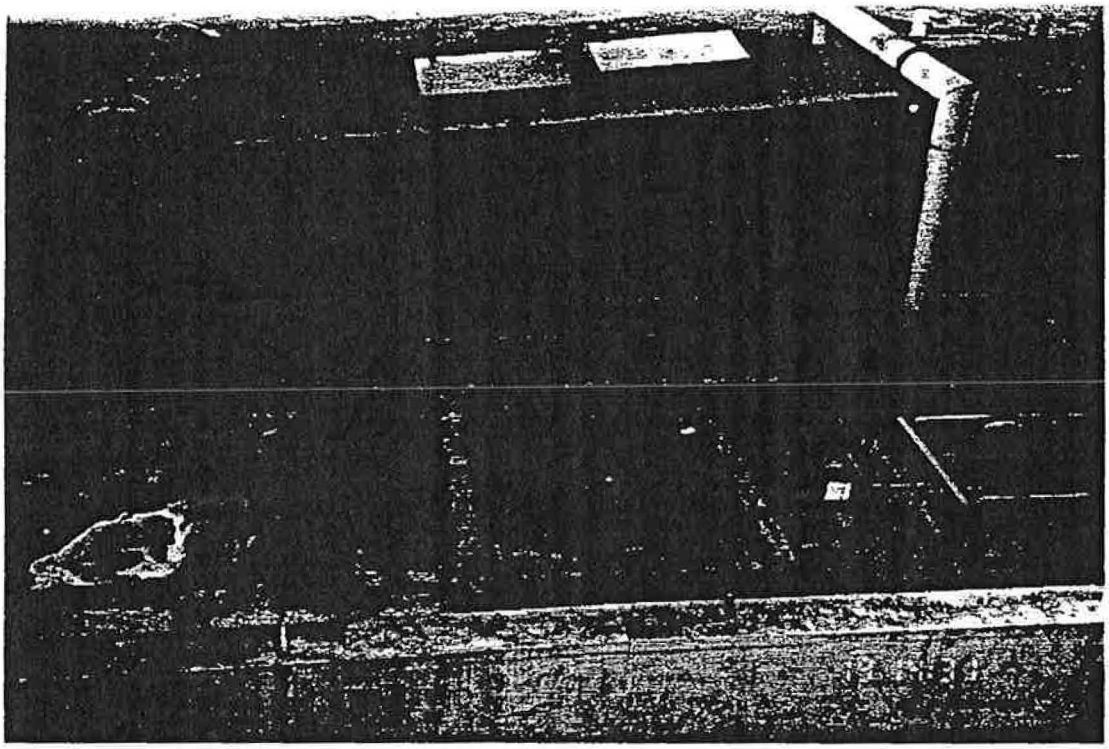


Photo 1.3-4 June 19, 1991

Facing west, of right side of Rod Mill Scale Pits (SWMU 39).

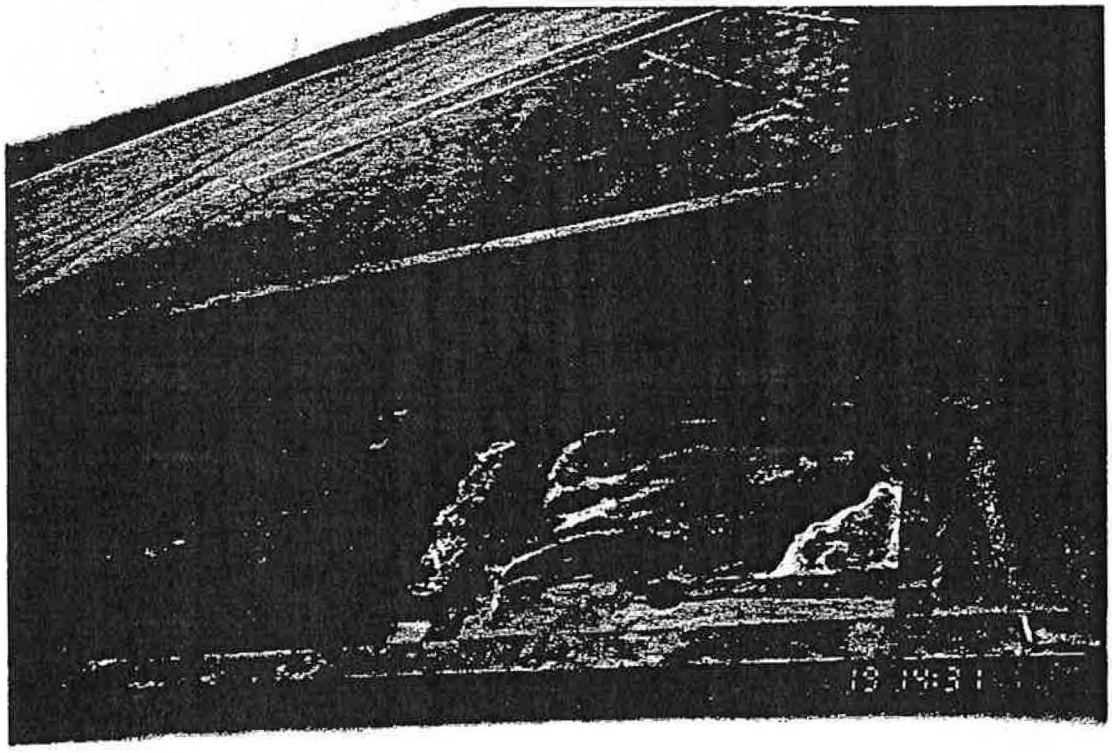


Photo 1.3-5 June 19, 1991

Facing west, of left side of Rod Mill Scale Pits (SWMU 39).

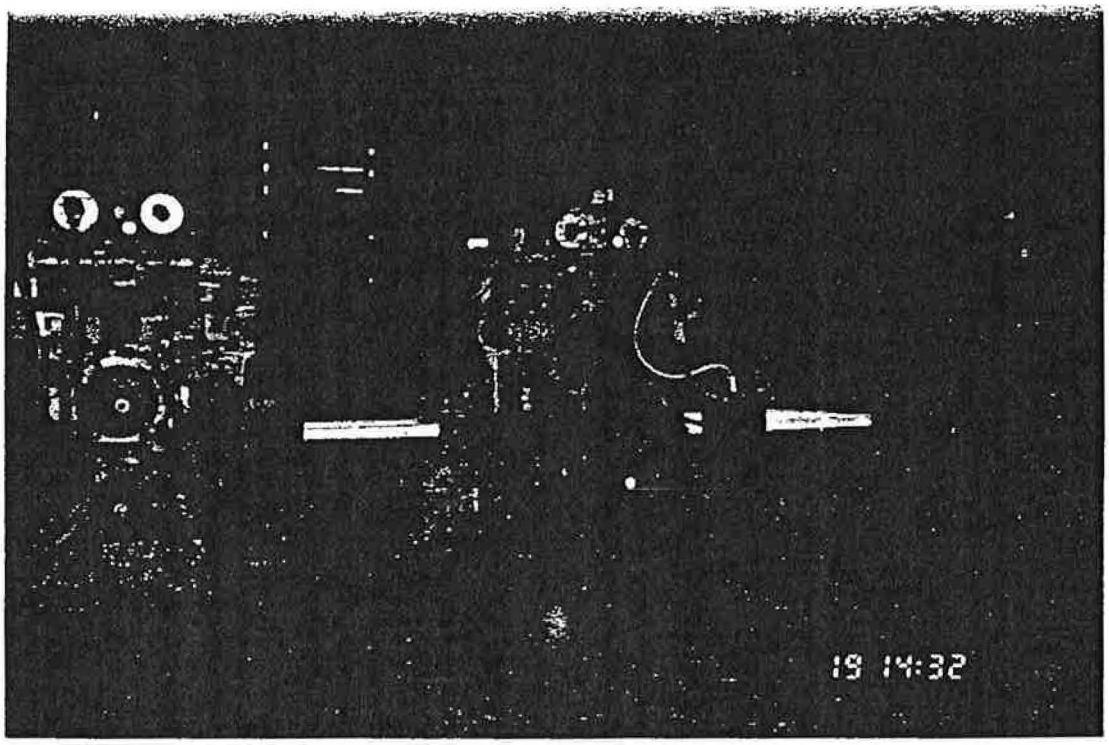


Photo 1.3-6 June 19, 1991

Facing northeast, of machinery contact cooling water discharging into a Rod Mill Trench (SWMU 45).

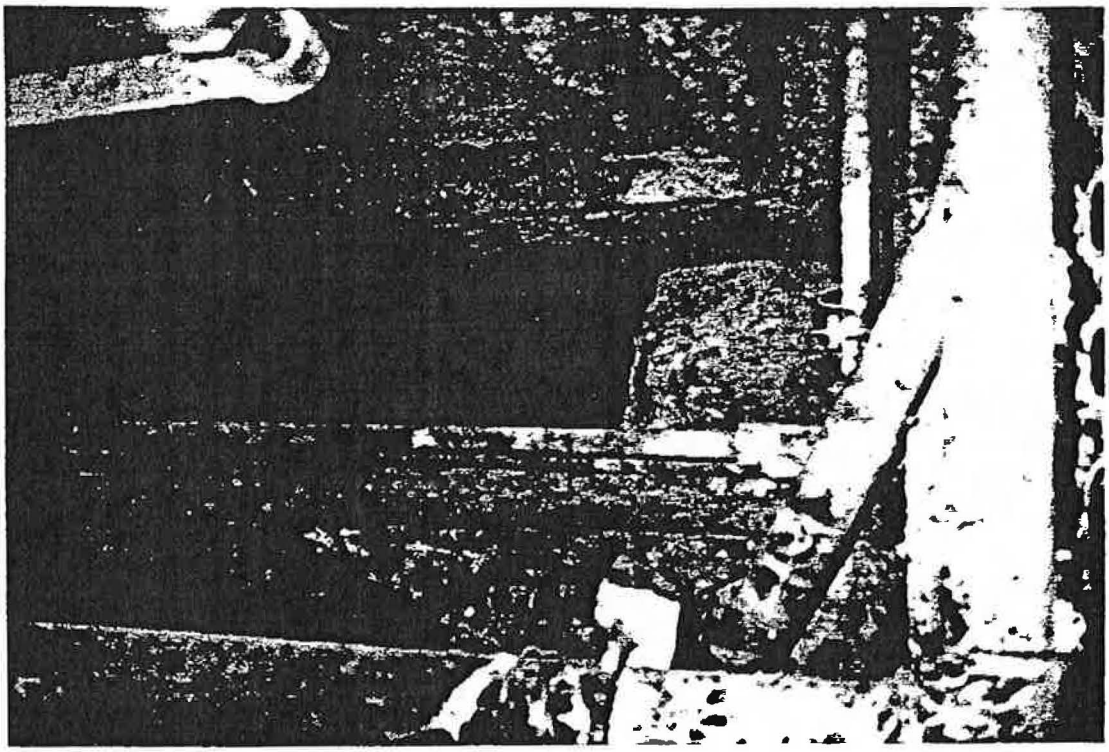


Photo 1.3-7 June 19, 1991

Facing down, of Rod Mill Trench (SWMU 45) which transports waste rinsewater to TMC (SWMU 1). Note the corrosion.

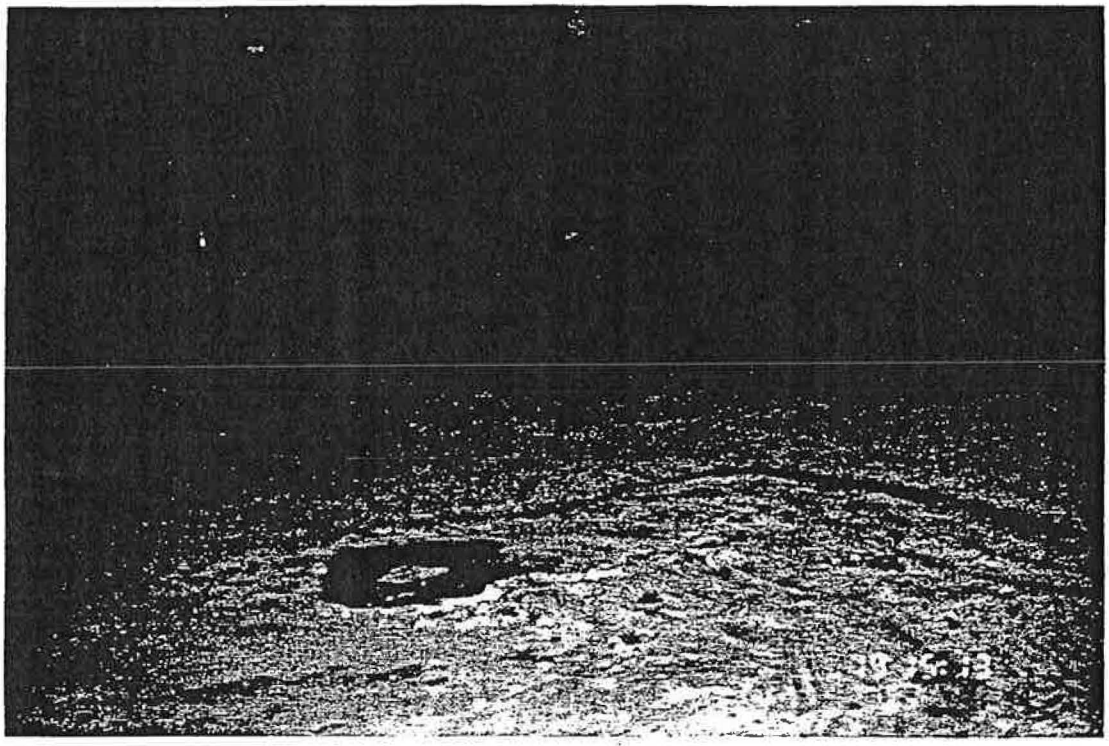


Photo 1.3-8 June 19, 1991

Facing north, of Rod Mill Former Waste TCE Storage Area (SWMU 41).

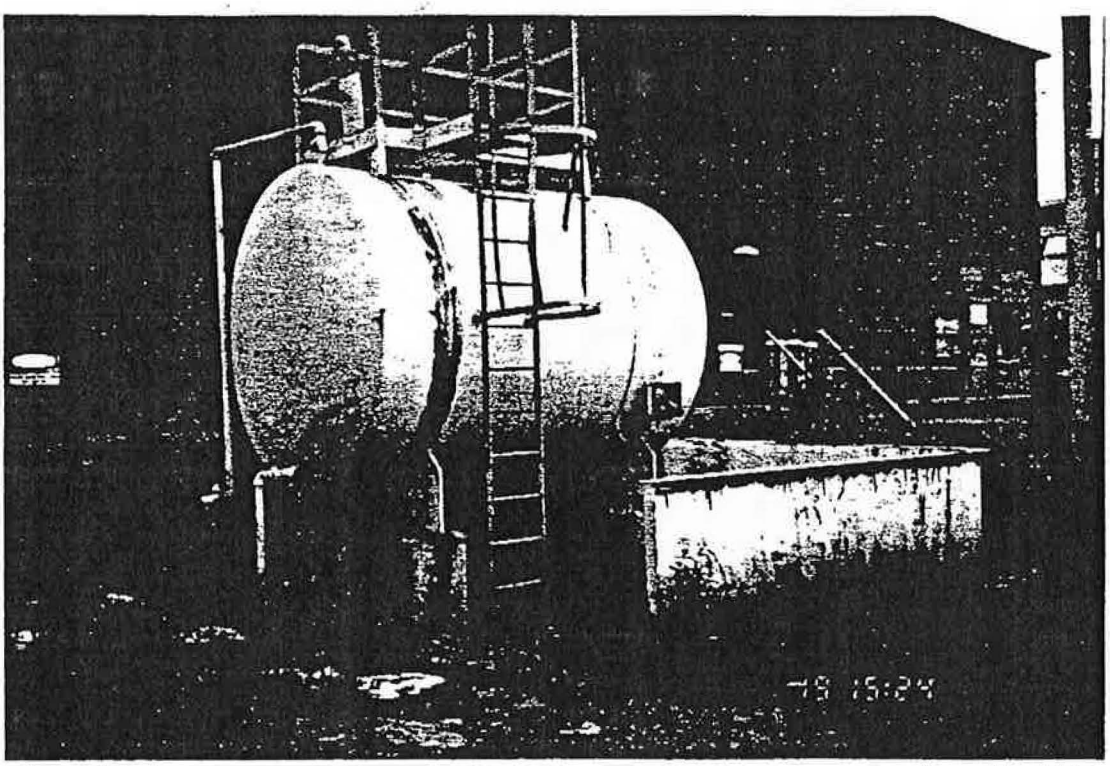


Photo 1.3-9 June 19, 1991

Facing northwest, of Unknown Aboveground Tank (AOC X) located outside of Rod Mill.

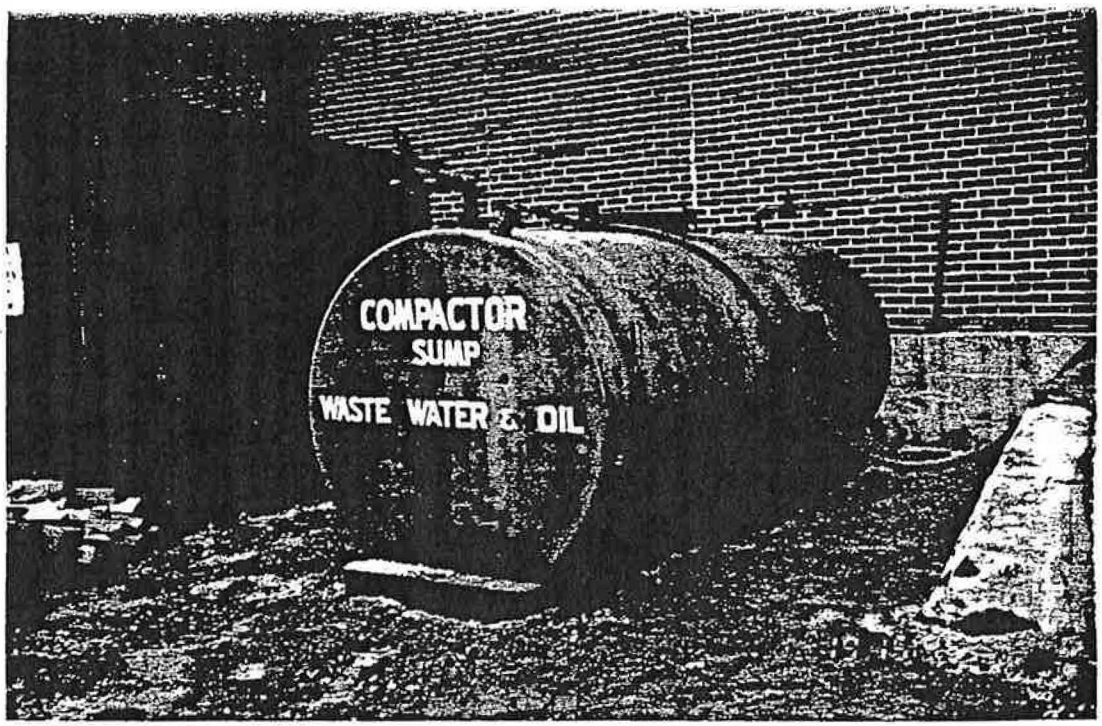


Photo 1.3-10 June 19, 1991

Facing northwest, of Rod Mill Waste Oil Storage Tank (SWMU 42) located outside.

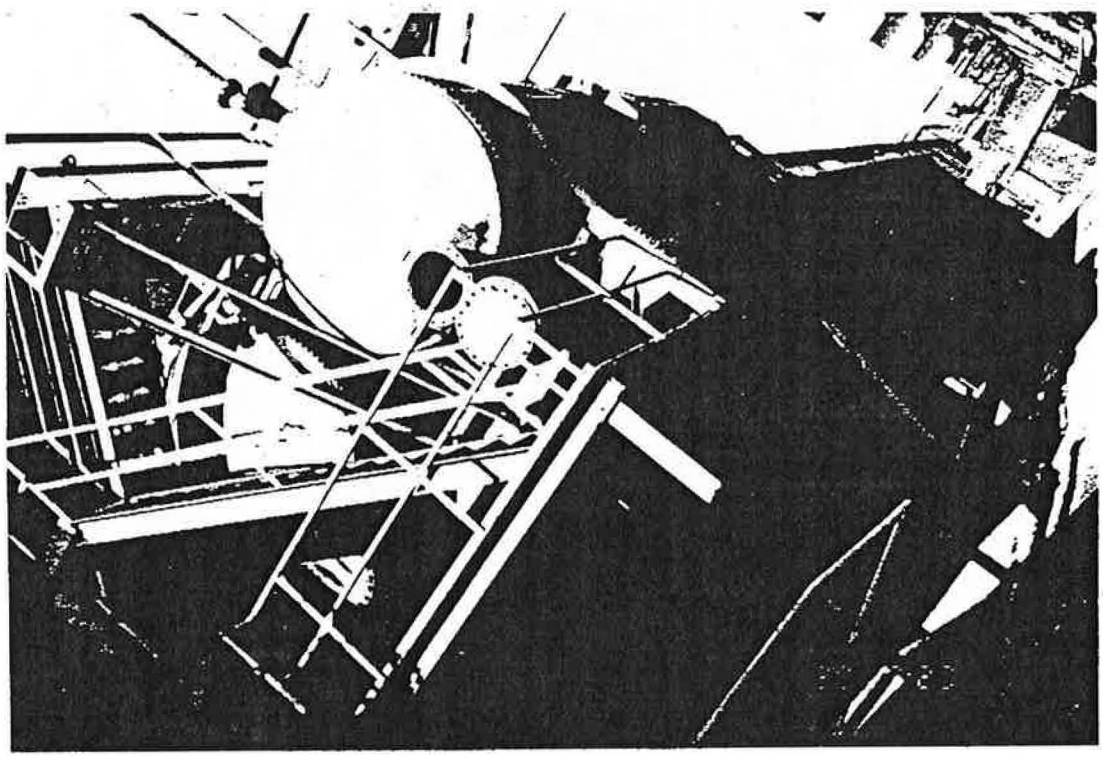


Photo 1.3-11 June 20, 1991

Facing southwest, of Pipe Mill Acid Tanks (AOC Z) located outside.

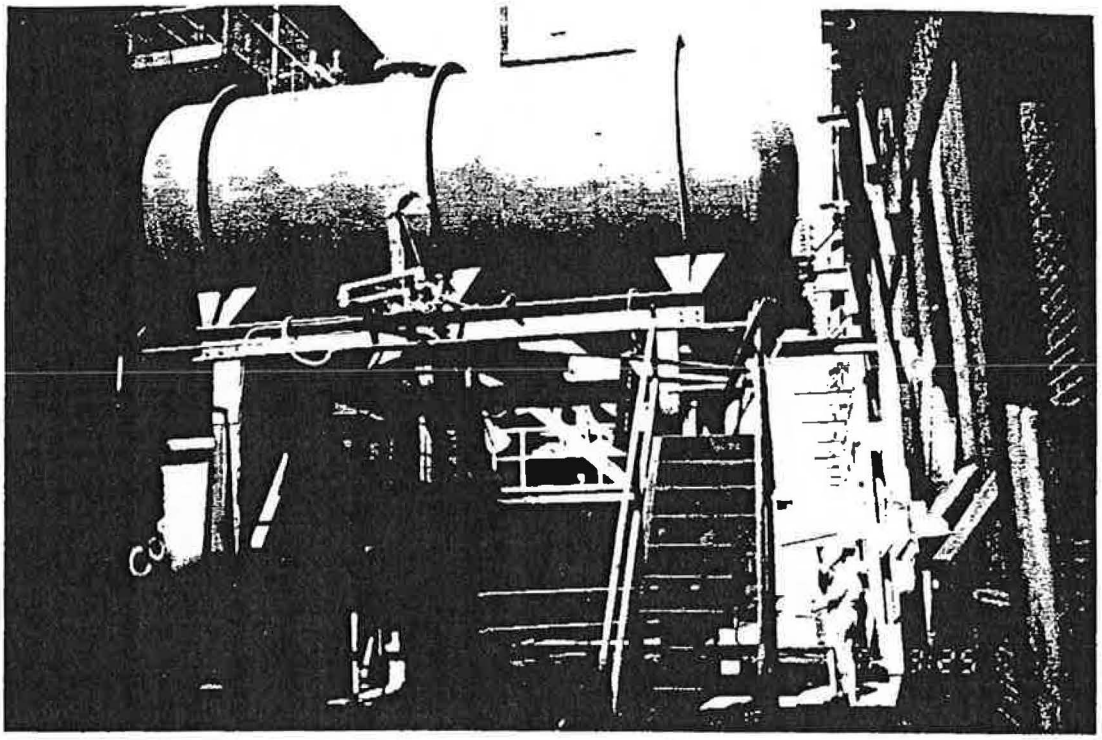


Photo 1.3-12 June 20, 1991

Facing west, of Pipe Mill Acid Tanks (AOC Z) located outside.

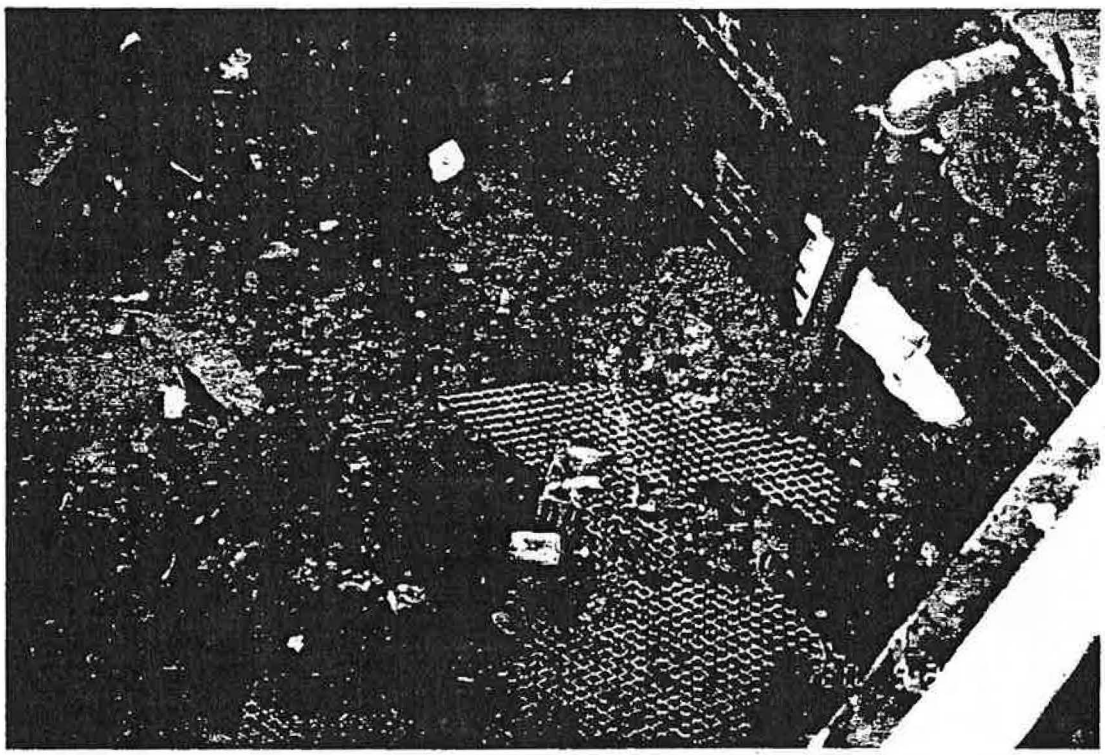


Photo 1.3-13 June 20, 1991

Facing south, of Pipe Mill Sump (SWMU 49) located underneath Pipe Mill Acid Tanks (AOC Z) located outside.

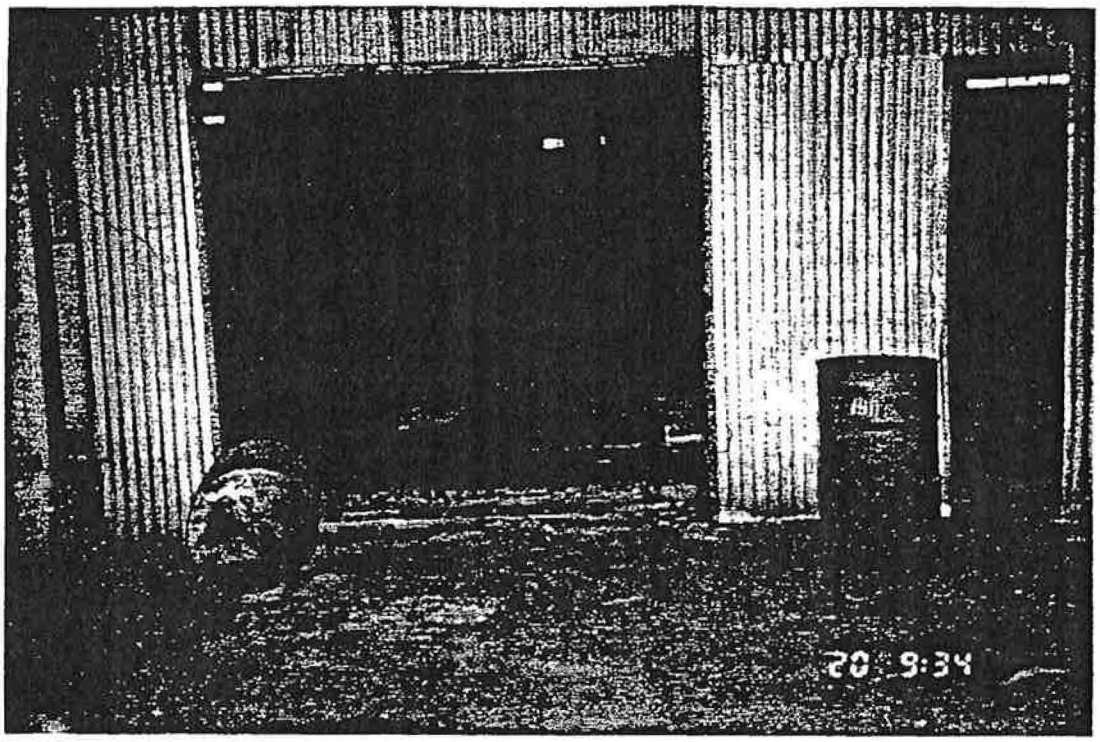


Photo 1.3-14 June 20, 1991

Facing north, of Pipe Mill Various 55-gallon Drums (SWMU 46) containing an unknown liquid.

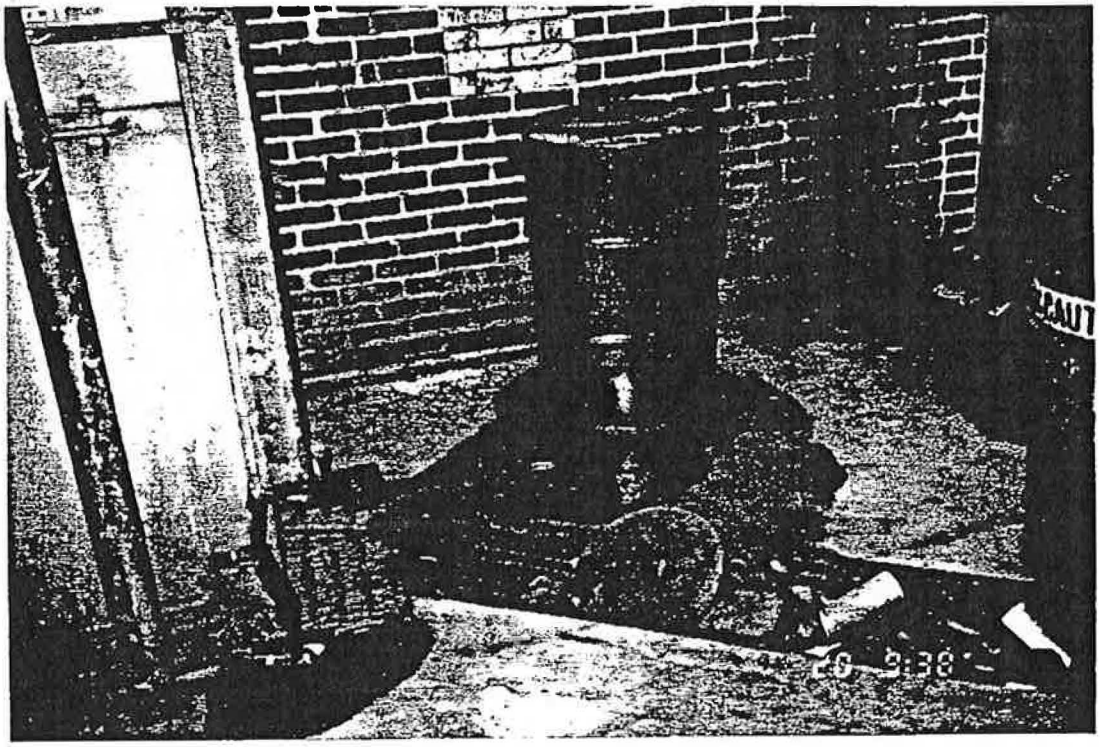


Photo 1.3-15 June 20, 1991

Facing southeast, of a Pipe Mill Various 55-gallon Drum (SWMU 46) possibly containing hydraulic oil. Note the debris in the Paper Mill Trench (SWMU 49) and the staining on the concrete.

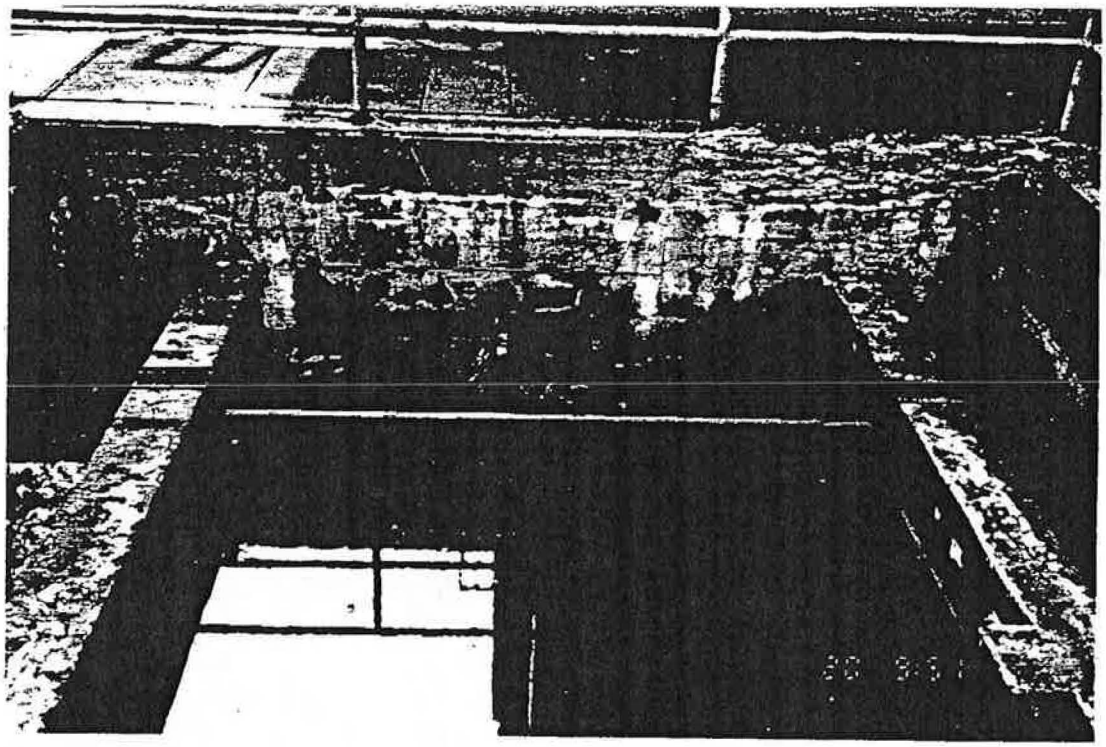


Photo 1.3-16 June 20, 1991

Facing east, of Pipe Mill Oil/Water Separator (SWMU 47) located outside.

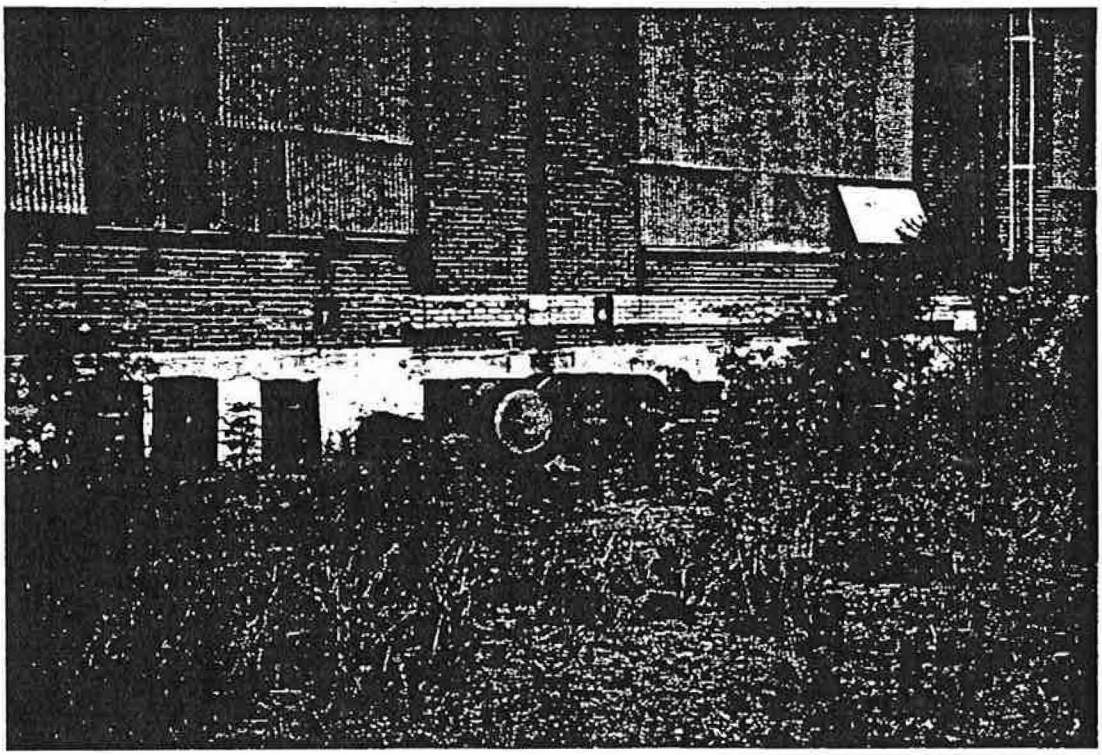


Photo 1.3-17 June 20, 1991

Facing northwest, of Hydraulic Oil Storage Area (AOC A).

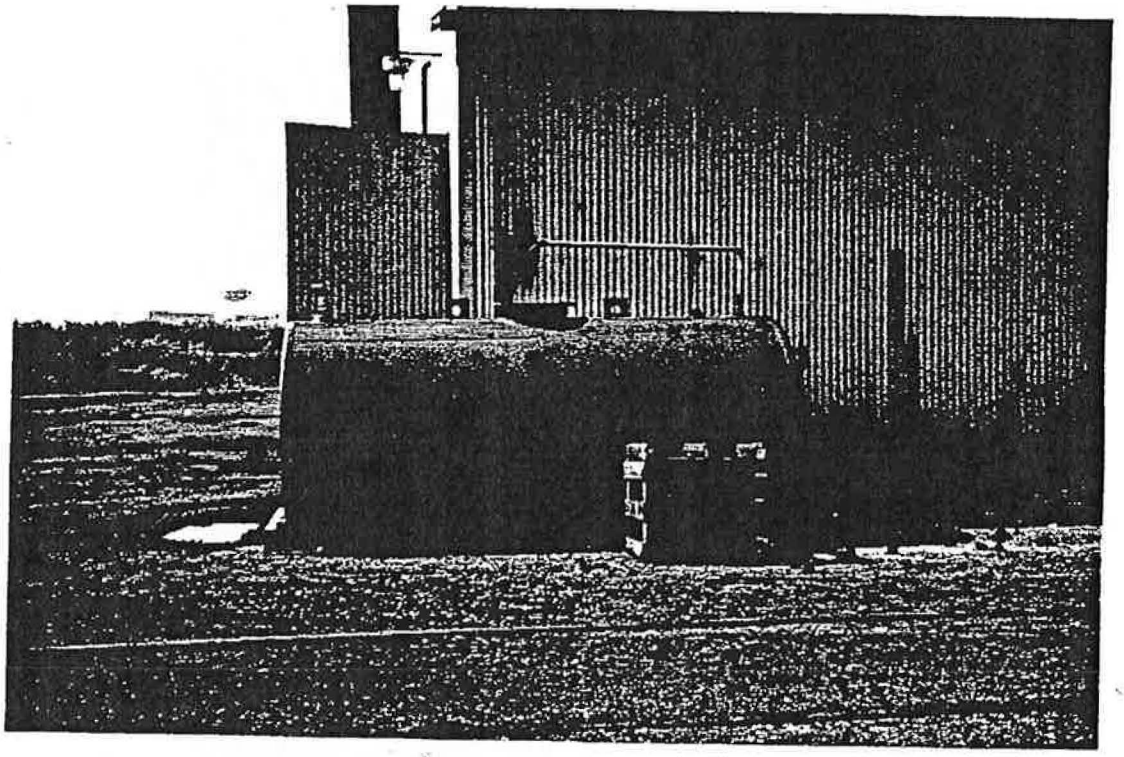


Photo 1.3-18 June 20, 1991

Facing south, of Billet Prep Waste Oil Storage Tank (SWMU 50) located outside.

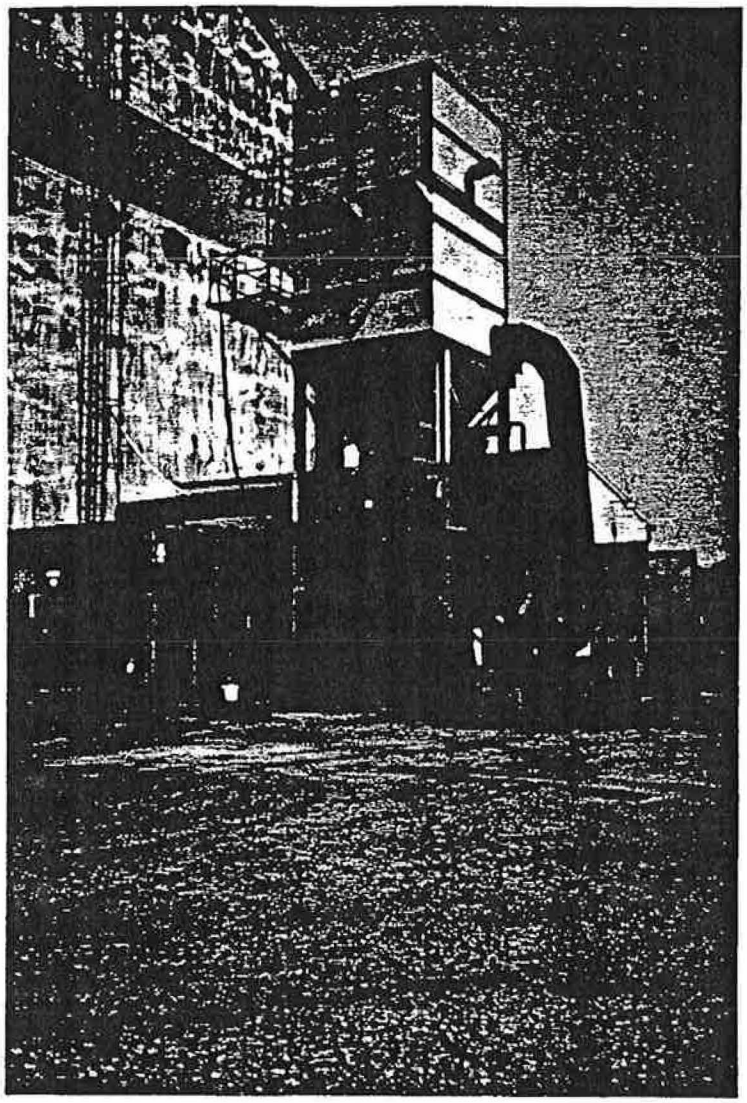


Photo 1.3-19 June 20, 1991

Facing northwest, of Billet Prep Baghouse Collectors (SWMU 52).

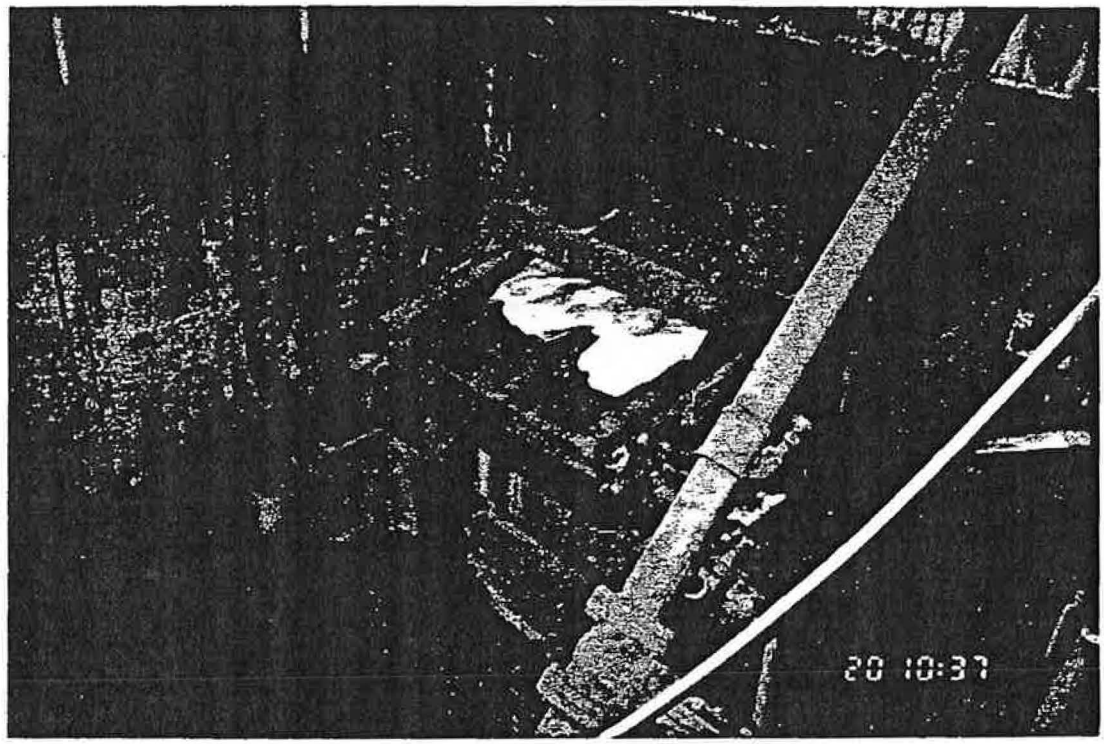


Photo 1.3-20 June 20, 1991

Facing northeast, of Billet Prep Rinsewater Collection Tank (SWMU 51).

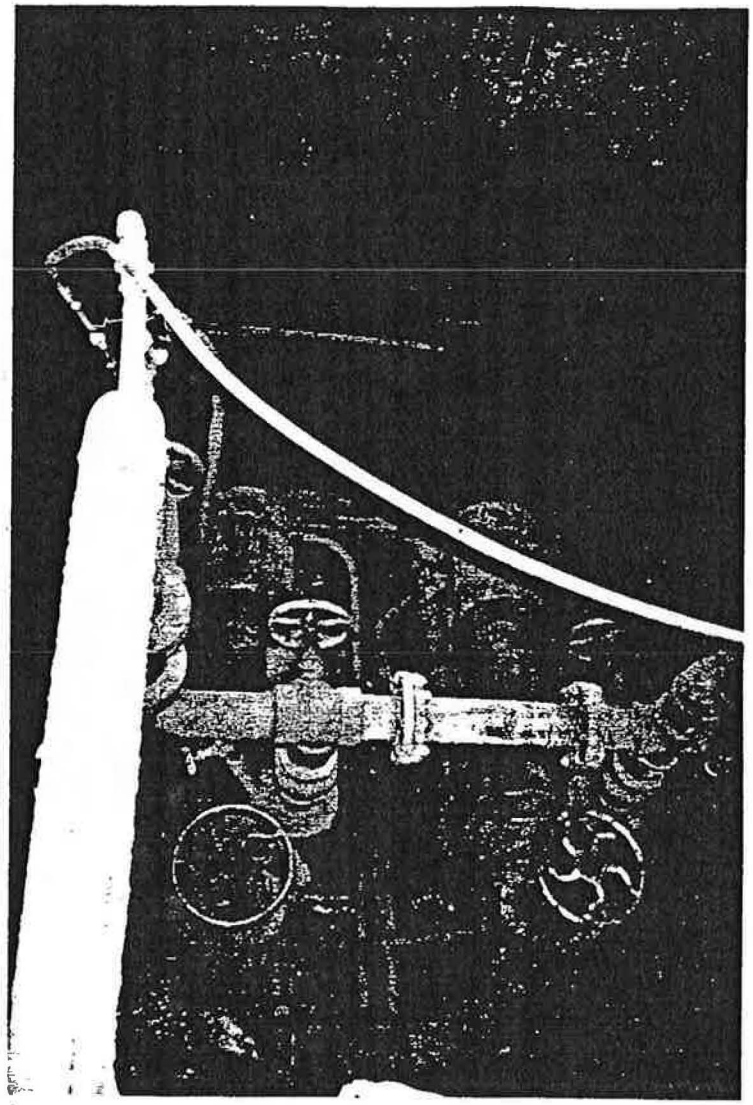


Photo 1.3-21 June 20, 1991

Facing down, of Billet Prep Sump (SWMU 53) for collecting rinsewater which is discharged to TMC (SWMU 1).

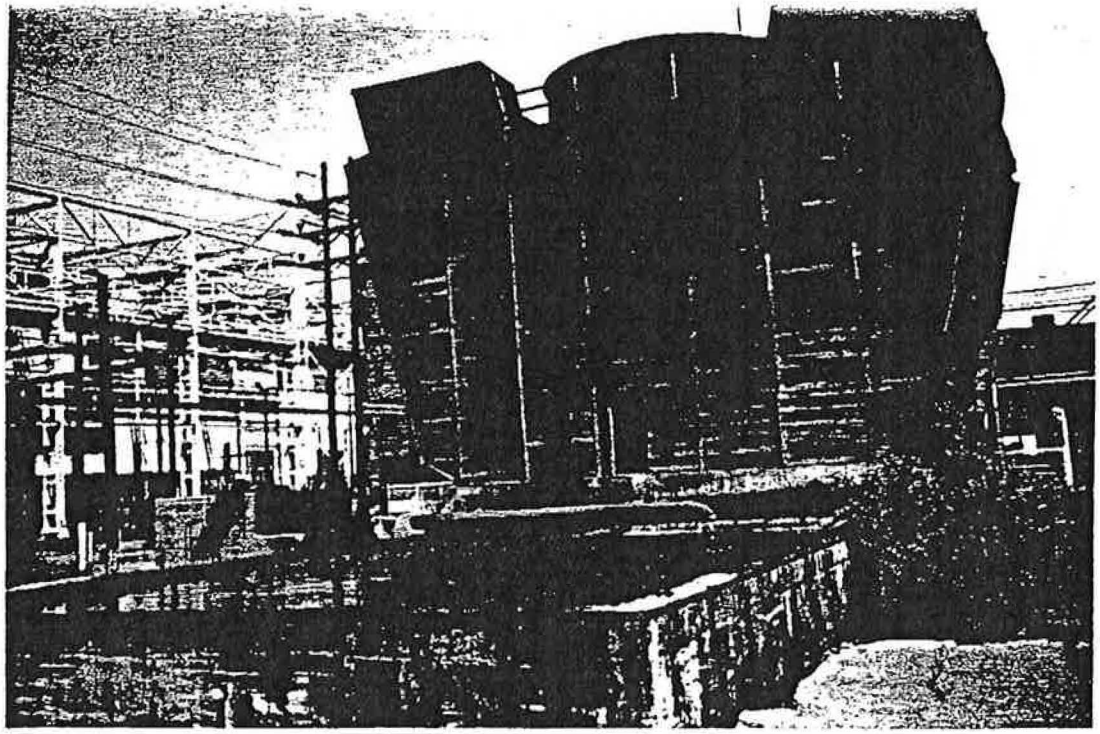


Photo 1.3-22 June 20, 1991

Facing northwest, of Rod Mill Cooling Tower (SWMU 44).

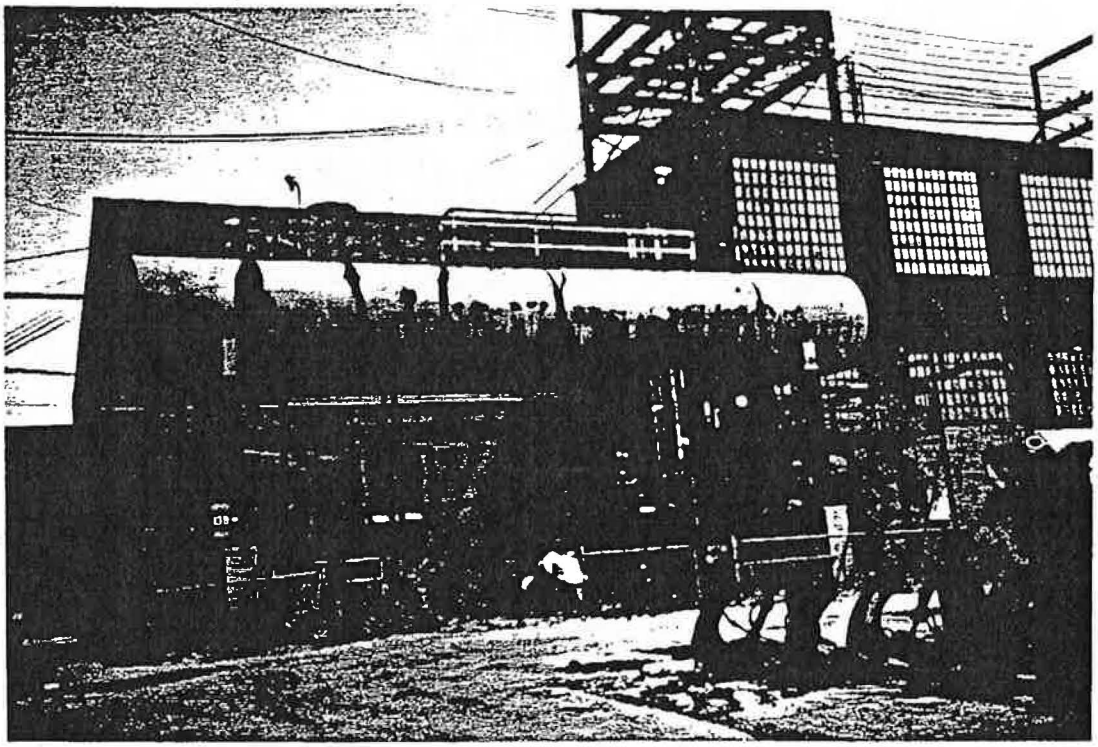


Photo 1.3-23 June 20, 1991

Facing north, of Former Spent Pickle Liquor Tanks (AOC V).

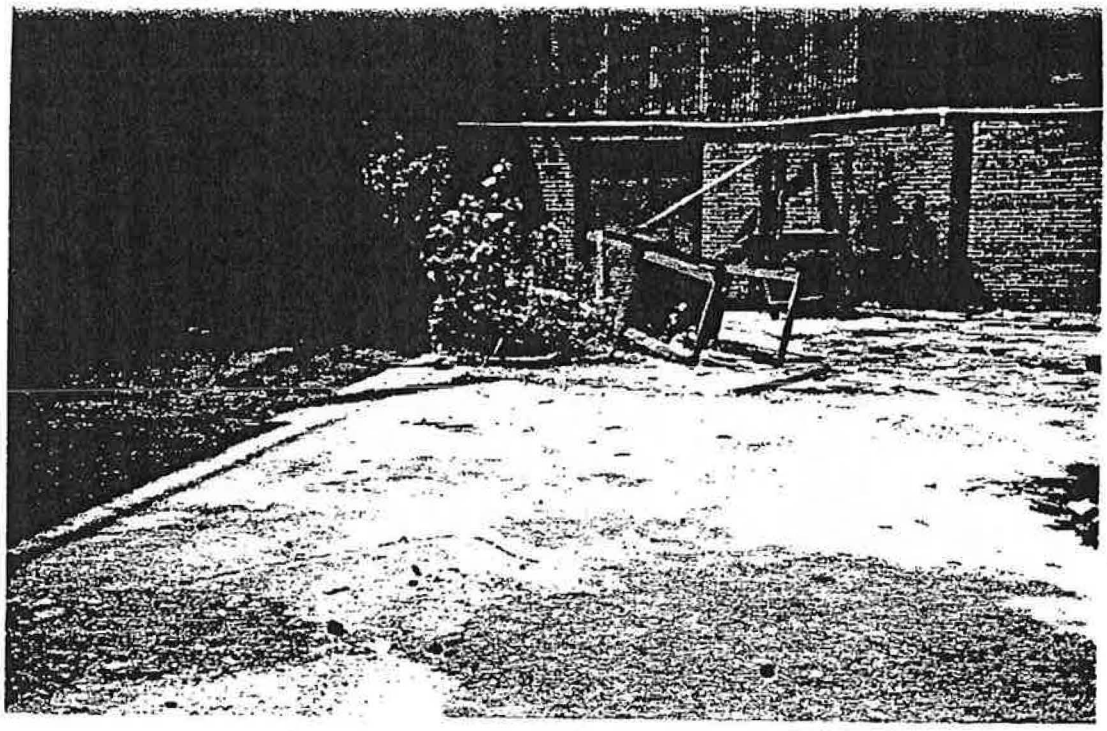


Photo 1.3-24 June 20, 1991

Facing east, of Pipe Mill Former Zinc Ammonium Chloride Sludge Storage Area (SWMU 48).

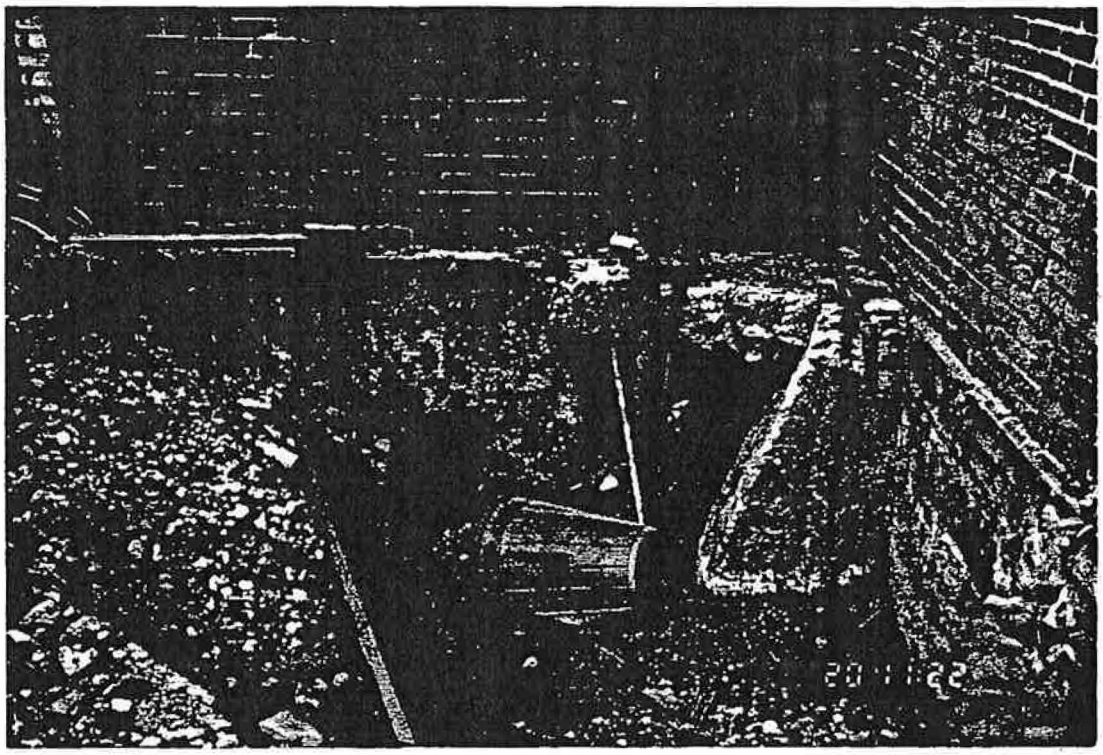


Photo 1.3-25 June 20, 1991

Facing south, of Pipe Mill Former Zinc Ammonium Chloride Sludge Storage Area (SWMU 48). Note the excavated area.

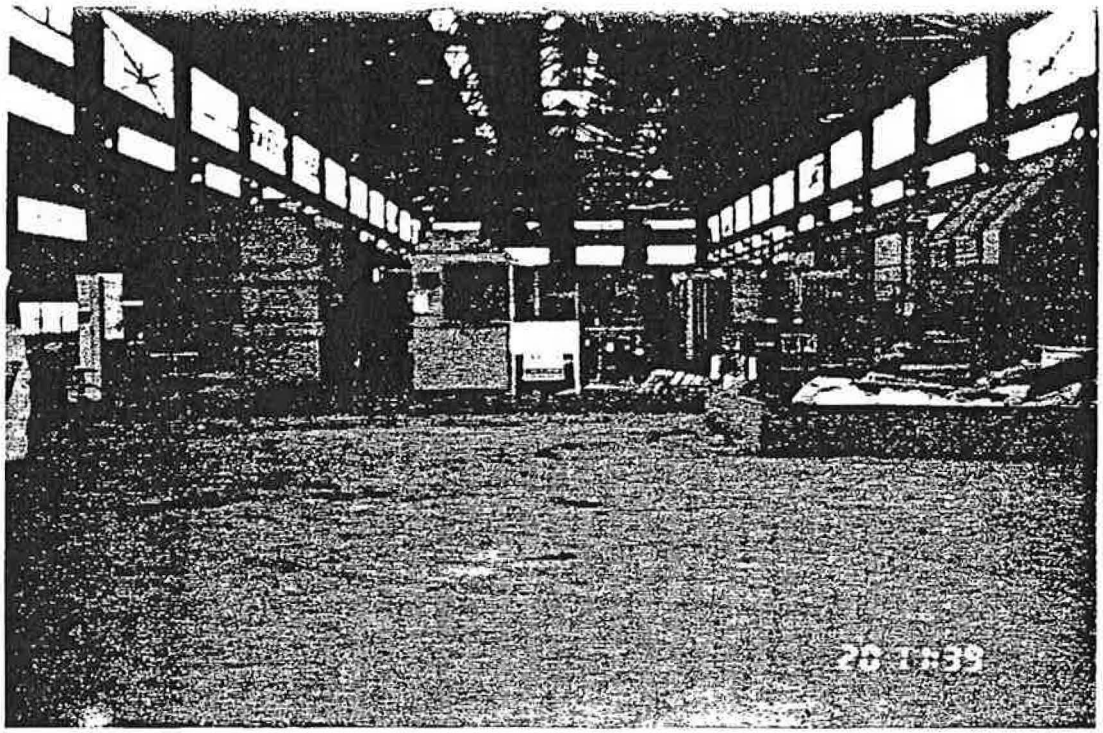


Photo 1.3-26 June 20, 1991

Facing south, of TSCA (on left side of photo) and RCRA (on right side of photo) Regulated Storage Area (SWMU 193).

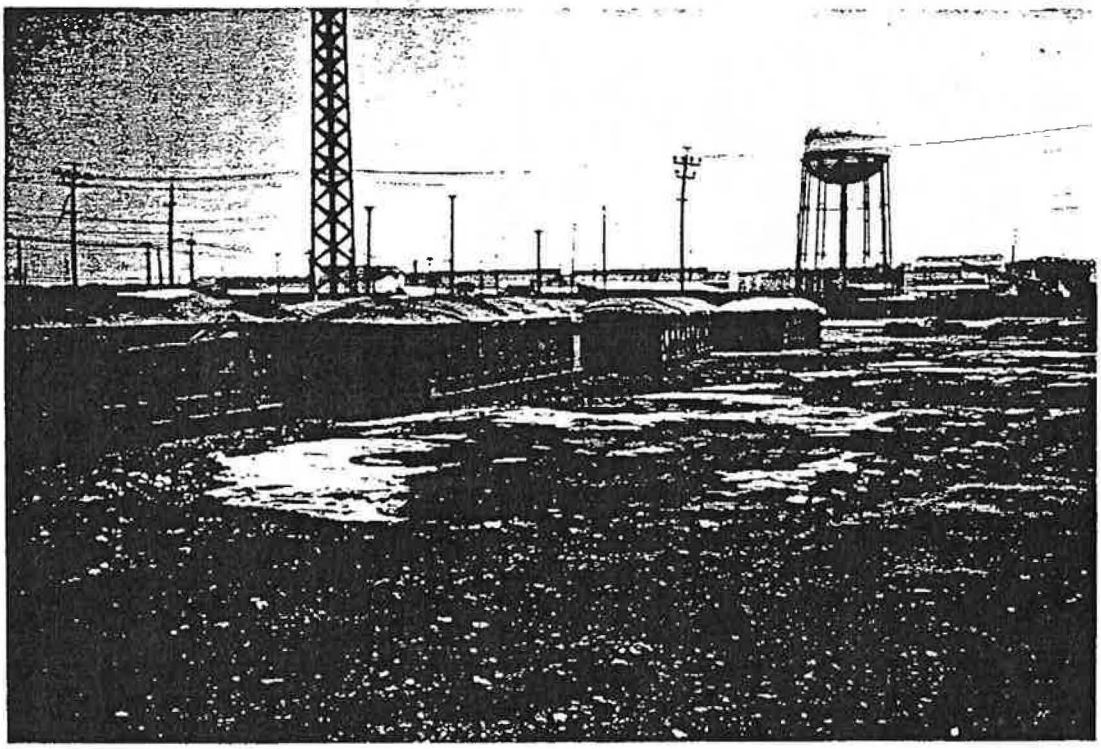


Photo 1.3-27 June 20, 1991

Facing northeast, of Waste Oil Stabilizing and Packing Area (SWMU 194).

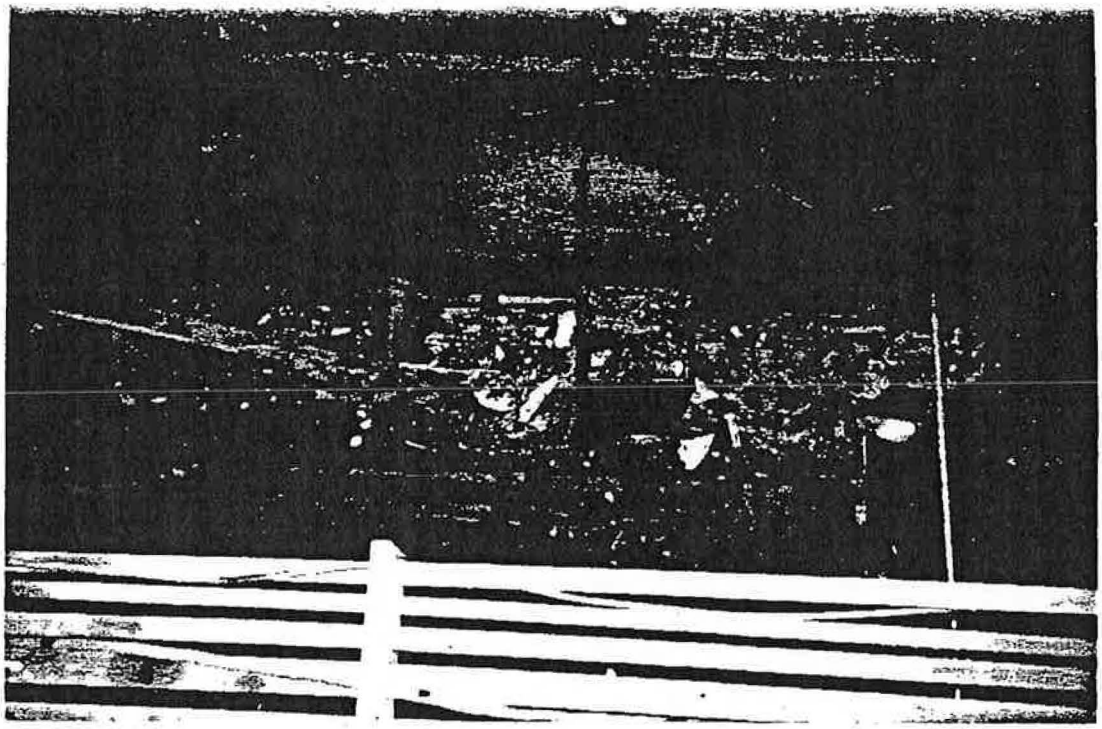


Photo 1.3-28 June 20, 1991

Facing east, of Chromic Acid Spill Area (AOC S) located in the Cold Sheet Mill Coating Lines.

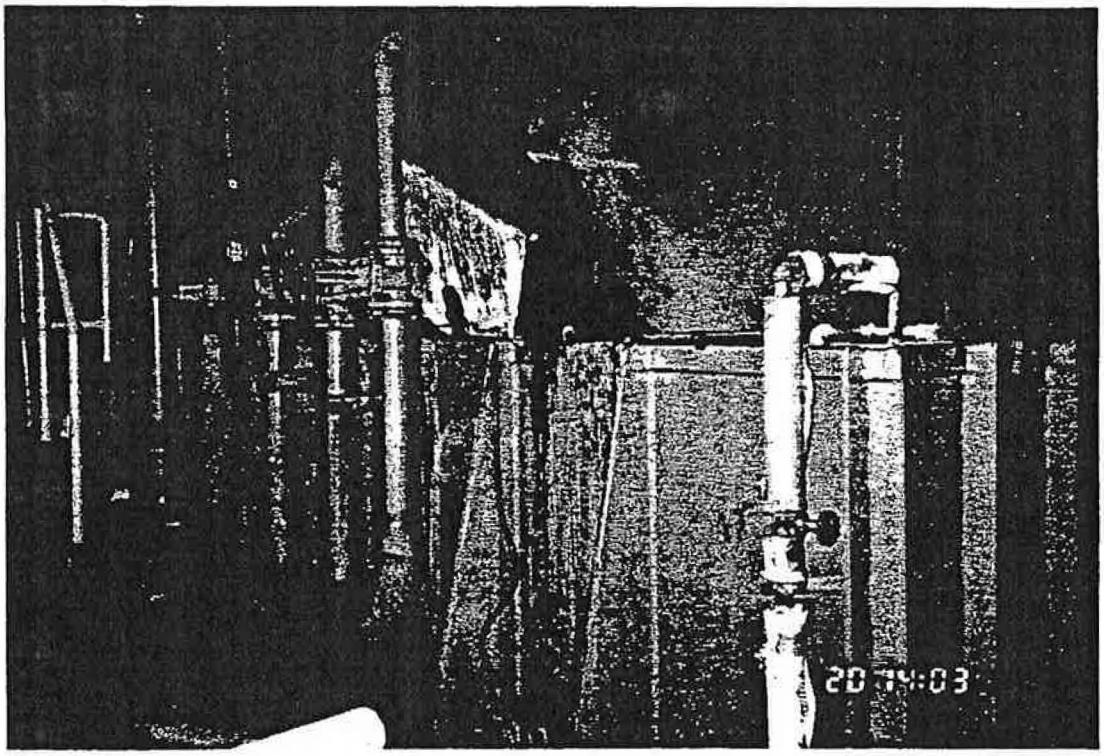


Photo 1.3-29 June 20, 1991

Facing northeast, of Cold Sheet Mill Quencher (cooling) (SWMU 55) located in the Coating Lines area.

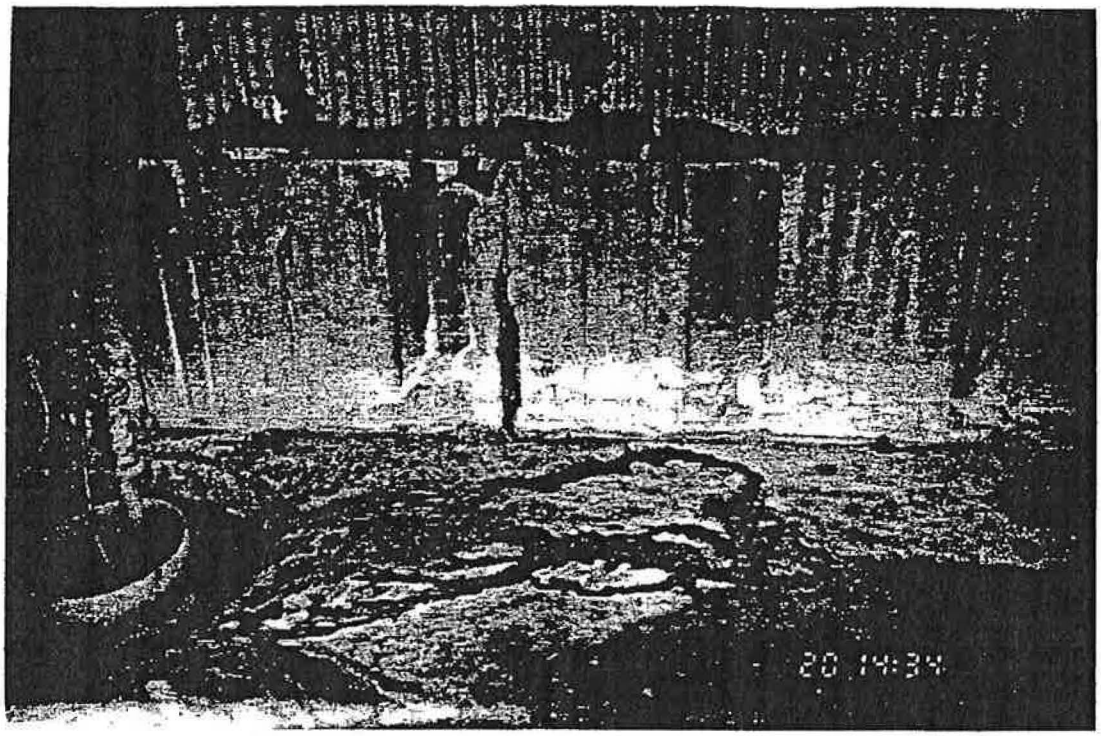


Photo 1.3-30 June 20, 1991

Facing west, of the Cold Sheet Mill Wet Well (SWMU 57) of the Pickling Lines.

Photo 1.3-31 June 21, 1991

Void --- photo did not develop because flash did not activate.

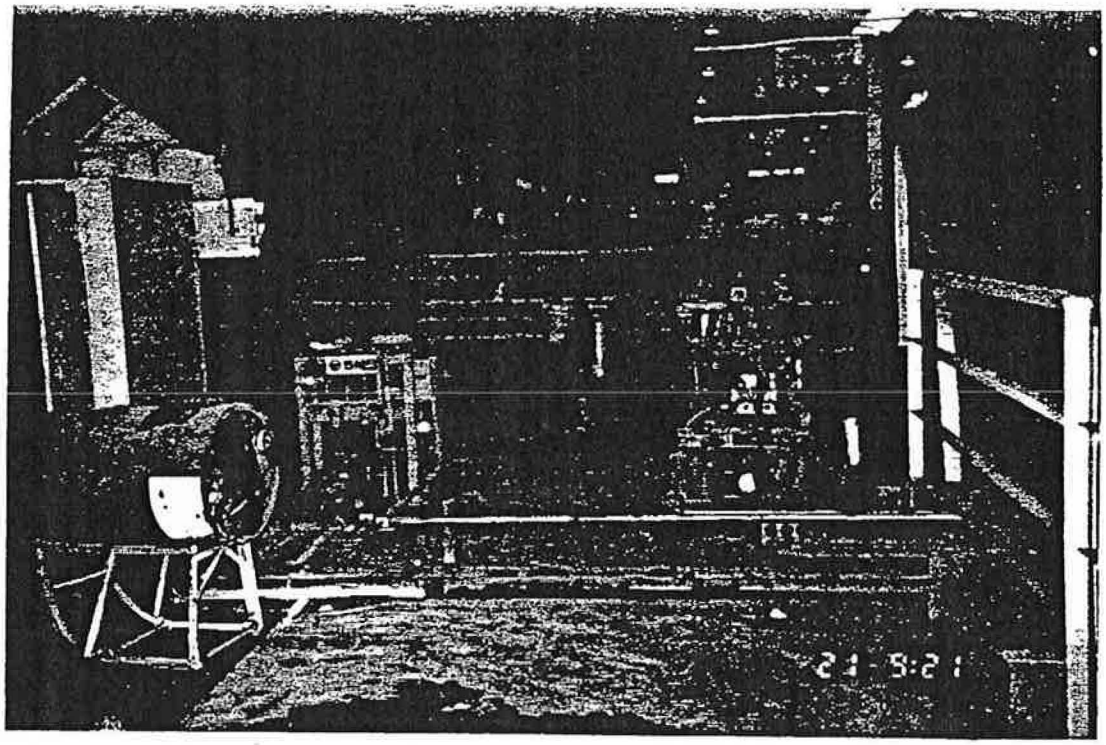


Photo 1.3-32 June 21, 1991

Facing north, general view of Cold Sheet Mill Pickling Lines.

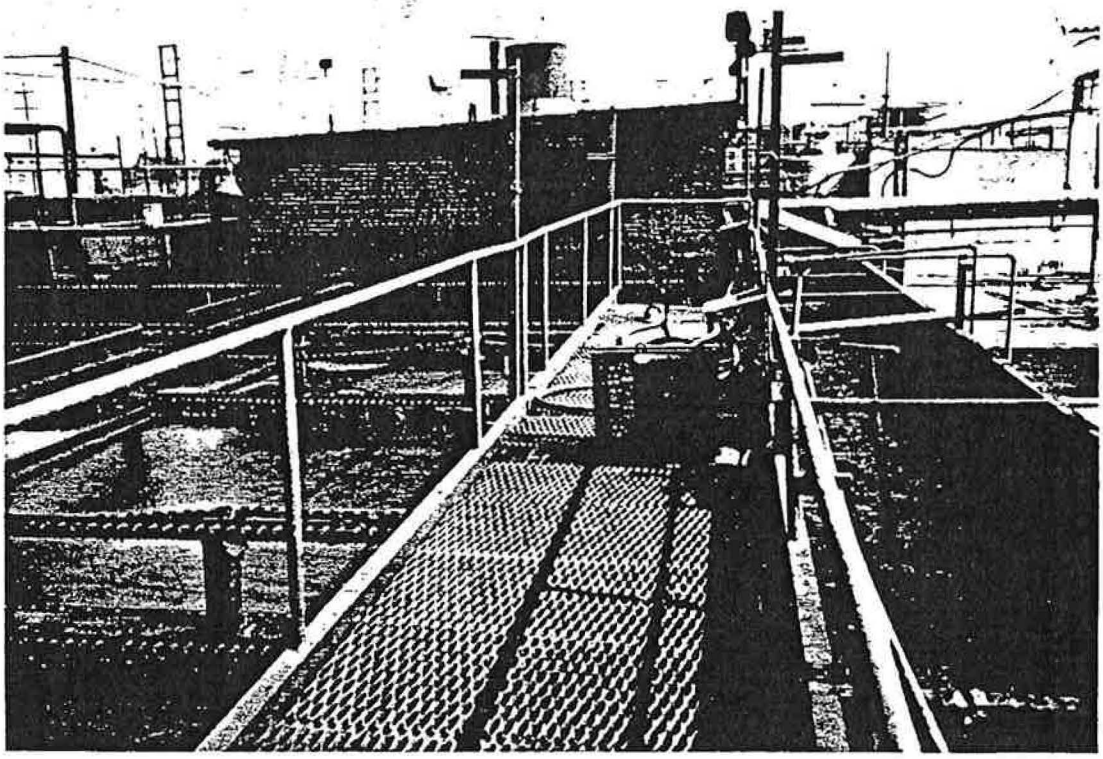


Photo 1.3-33 June 21, 1991

Facing north, of PORI's Oil/Water Separator (SWMU 71).

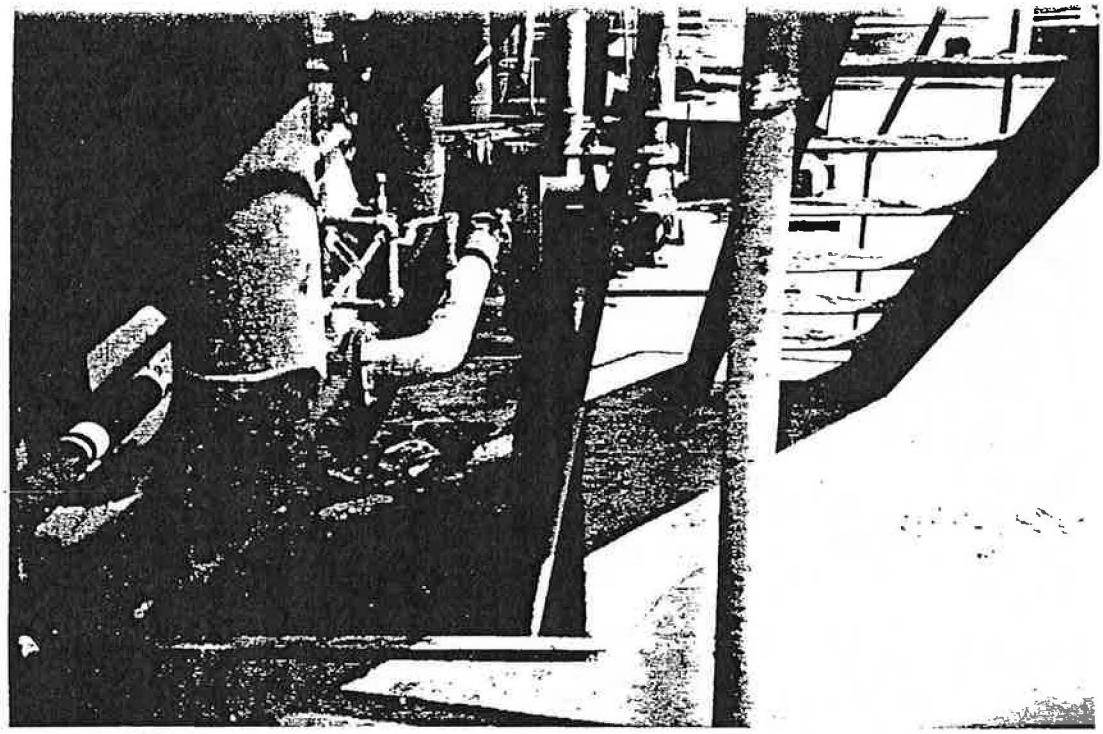


Photo 1.3-34 June 21, 1991

Facing north, of PORI Oil/Water Separator's (SWMU 71) secondary containment.

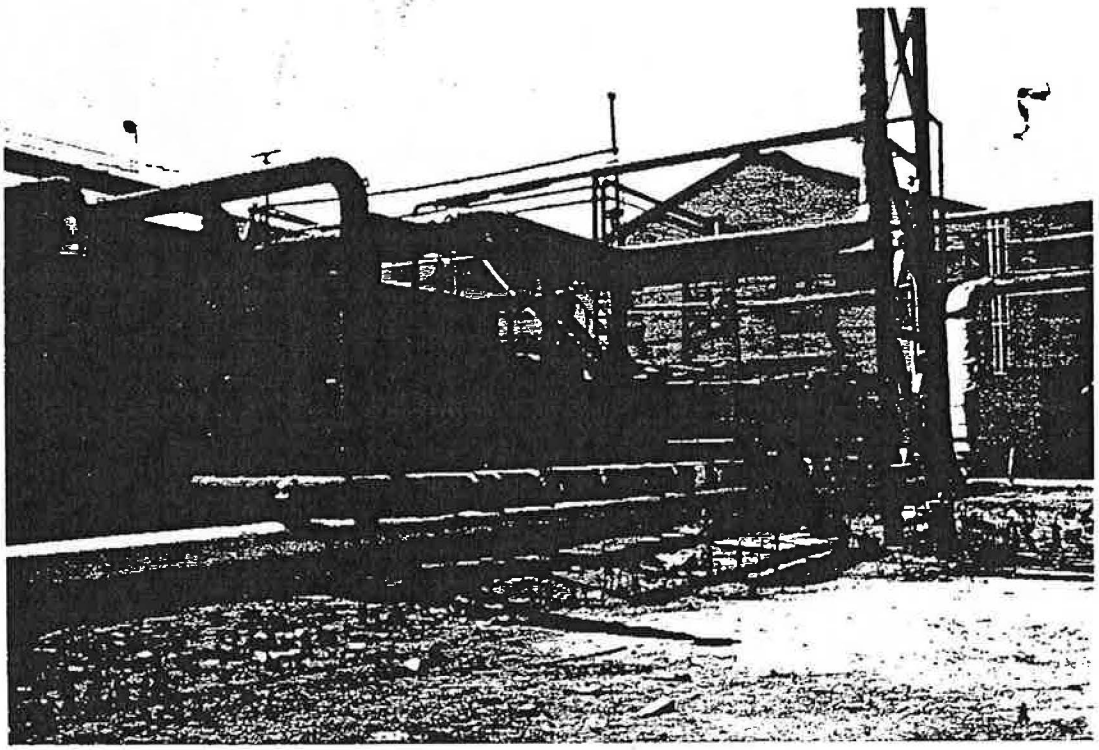


Photo 1.3-35 June 21, 1991

Facing southeast, of PORI Oil/Water Separator's (SWMU 71) piping.

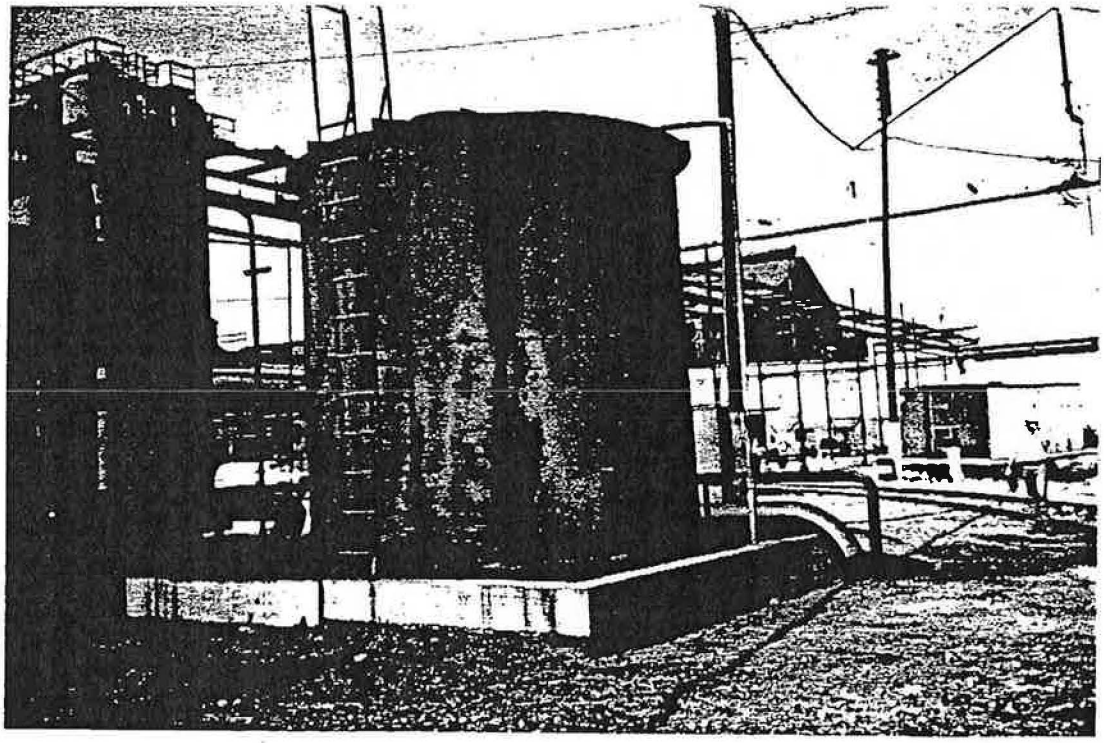


Photo 1.3-36 June 21, 1991

Facing south, of PORI's Holding Tank (SWMU 72).

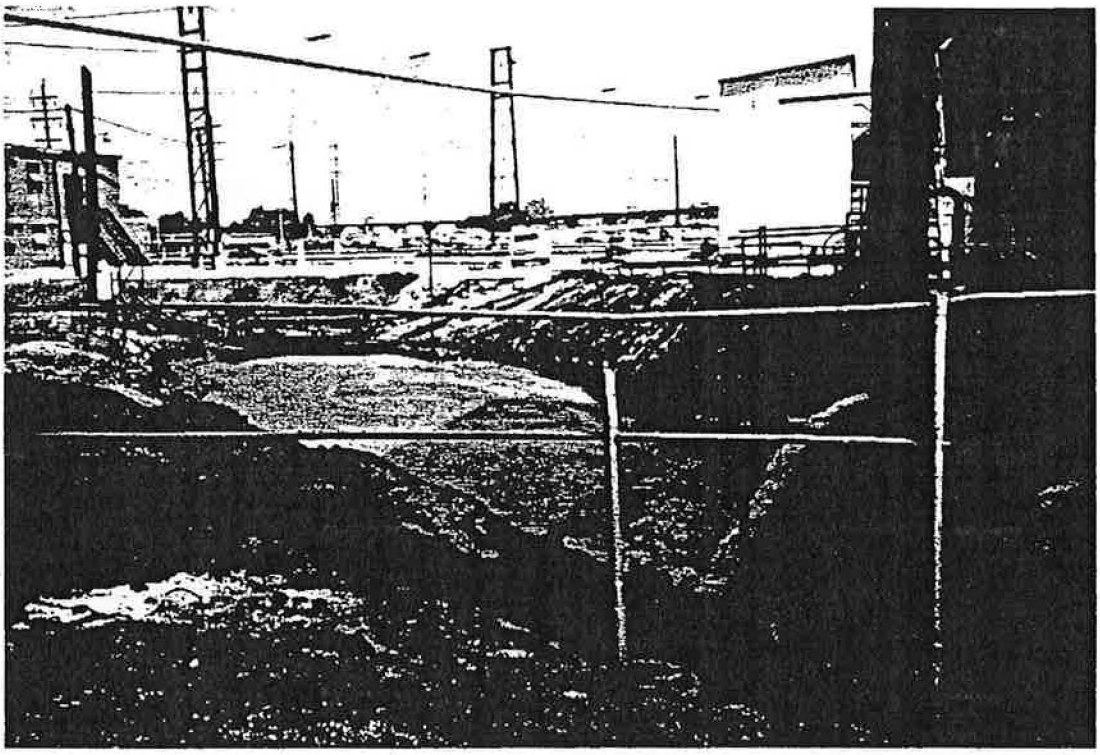


Photo 1.3-37 June 21, 1991

Facing northwest, of PORI's oily water discharge to earthen PORI Lagoon (SWMU 73) which eventually discharges to TMC (SWMU 1). Note the staining of the soil in the foreground, and note the oily sheen on the PORI Lagoon (SWMU 73).

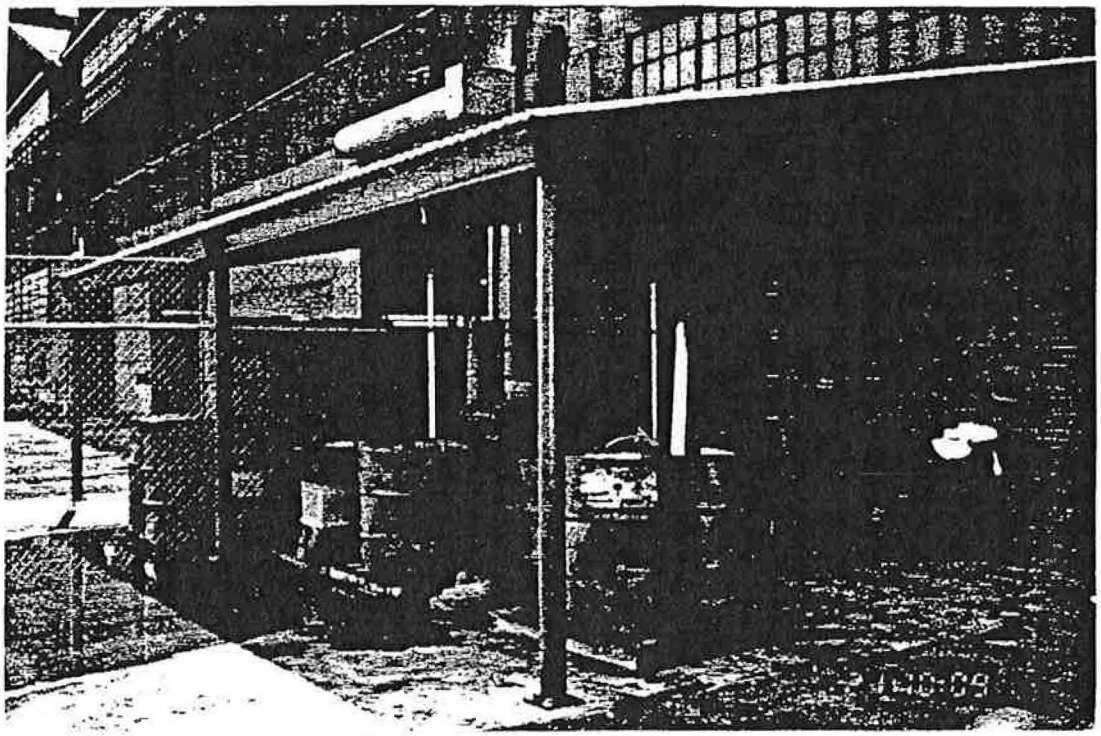


Photo 1.4-1 June 21, 1991

Facing east, of Cold Sheet Mill Used Empty Drum Storage Area (SWMU 60) located at the north end of the building.

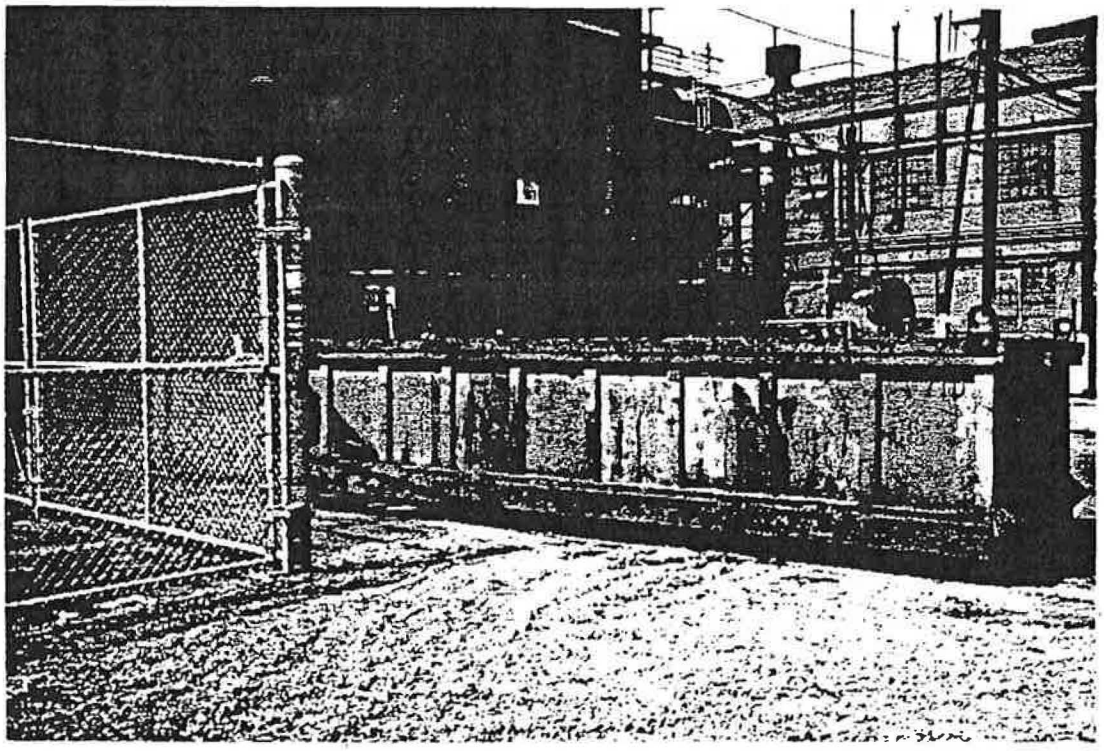


Photo 1.4-2 June 21, 1991

Facing west, of Cold Sheet Mill Waste Oil Staging Area (SWMU 61) located at the north end of the building.

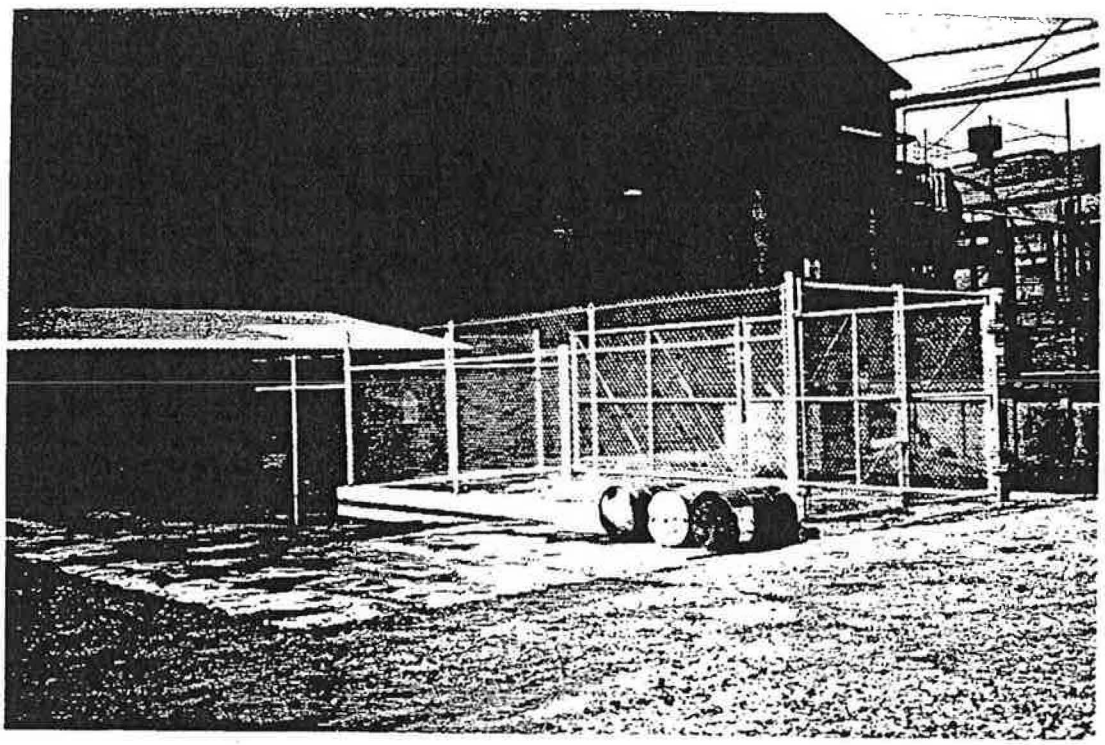


Photo 1.4-3 June 21, 1991

Facing southwest, of Cold Sheet Mill Used Empty Drum Storage Area (SWMU 60) located at the north end of the building.

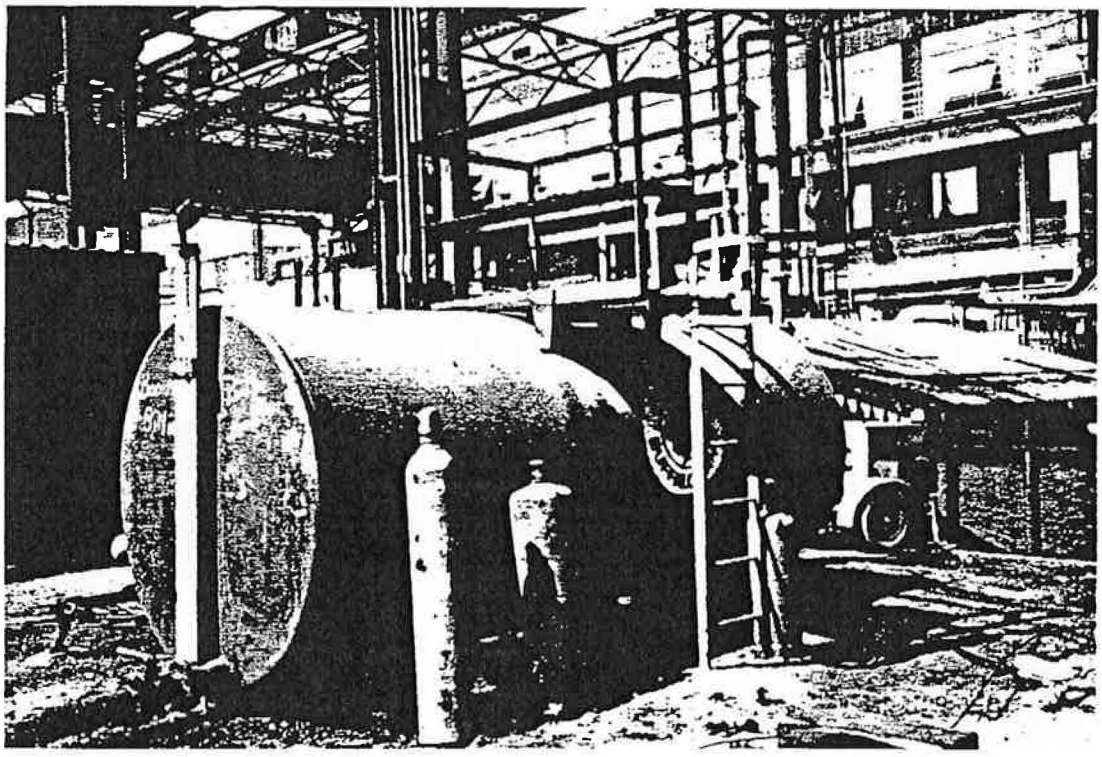


Photo 1.4-4 June 21, 1991

Facing southwest, of Hot Strip Mill Waste Oil Tank (SWMU 63) located outside. Note the staining on the ground.

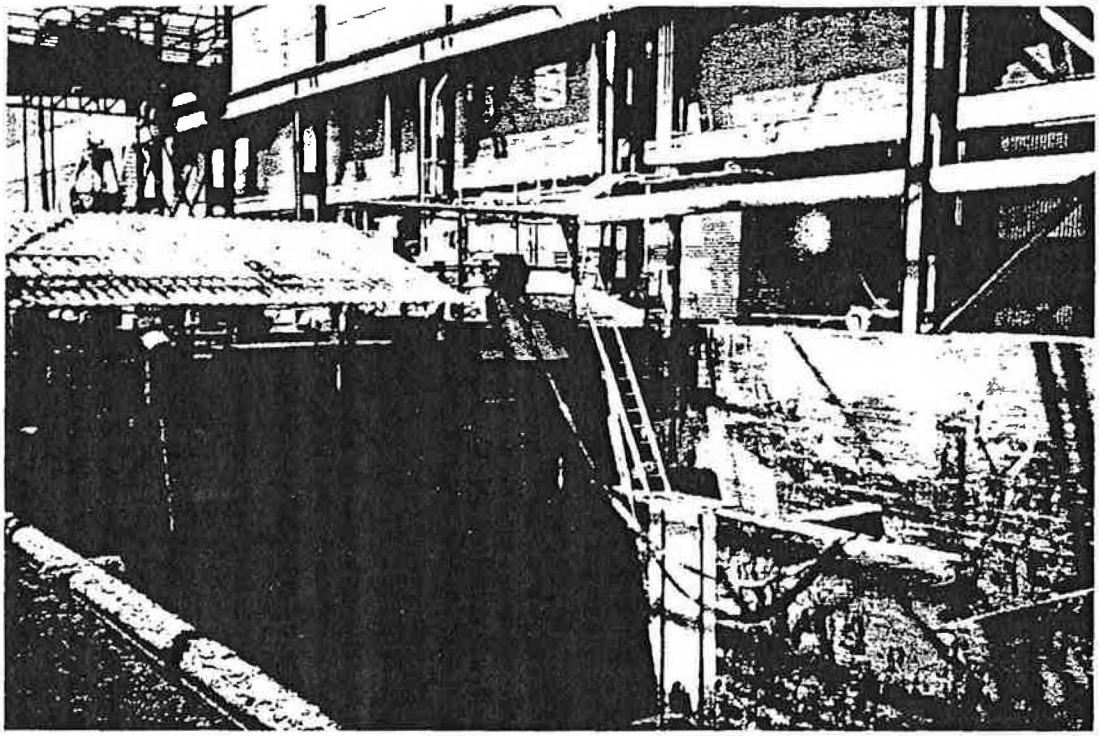


Photo 1.4-5 June 21, 1991

Facing southwest, of Hot Strip Mill (Central) Basin (SWMU 62).

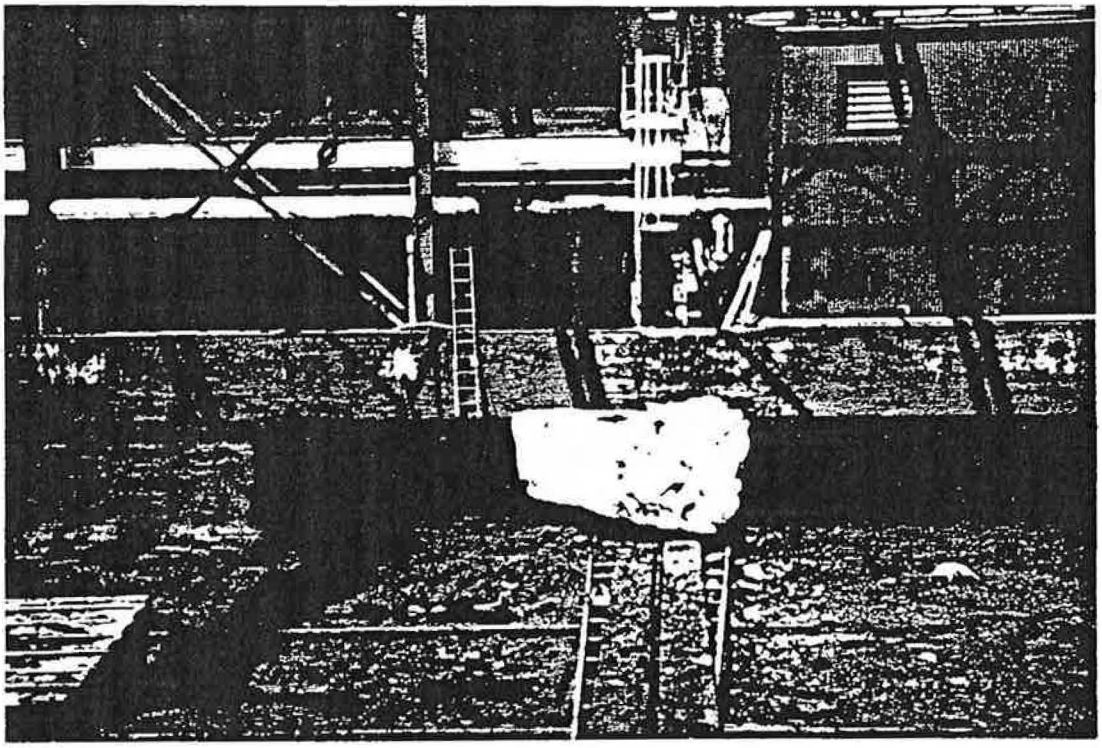


Photo 1.4-6 June 21, 1991

Facing west, of oil covered concrete wall and soil located at the Hot Strip Mill (Central) Basin (SWMU 62).

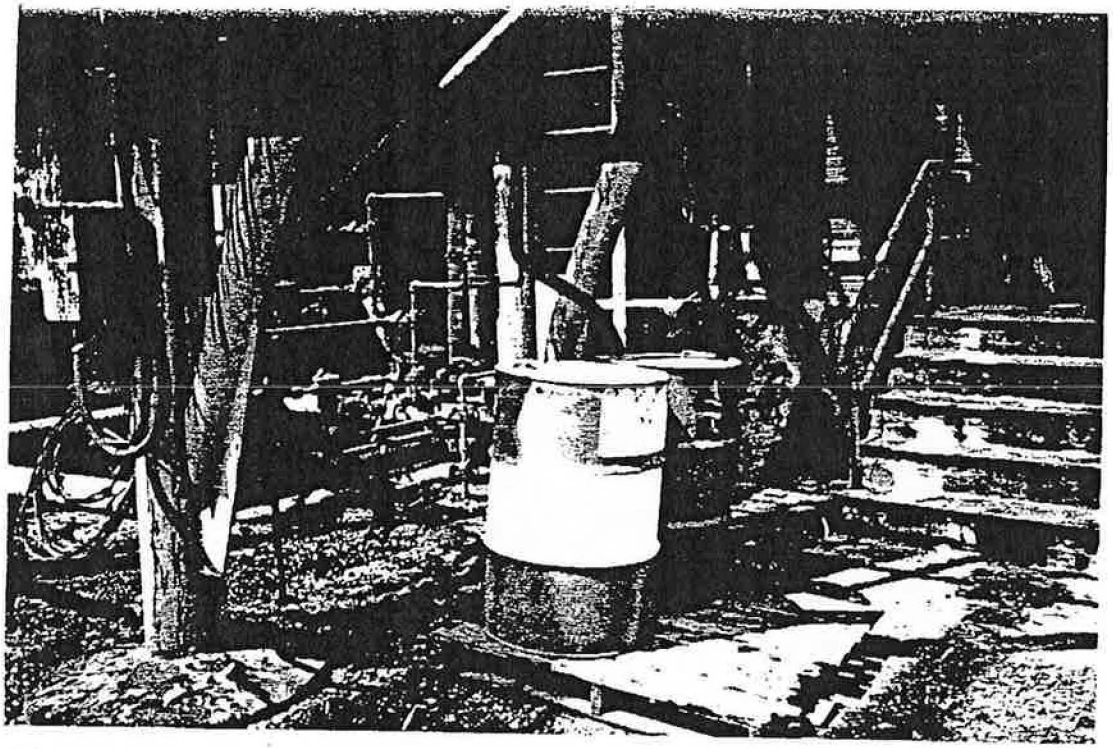


Photo 1.4-7 June 21, 1991

Facing southwest, of Hot Strip Mill Waste Oil Collection Point (SWMU 66).

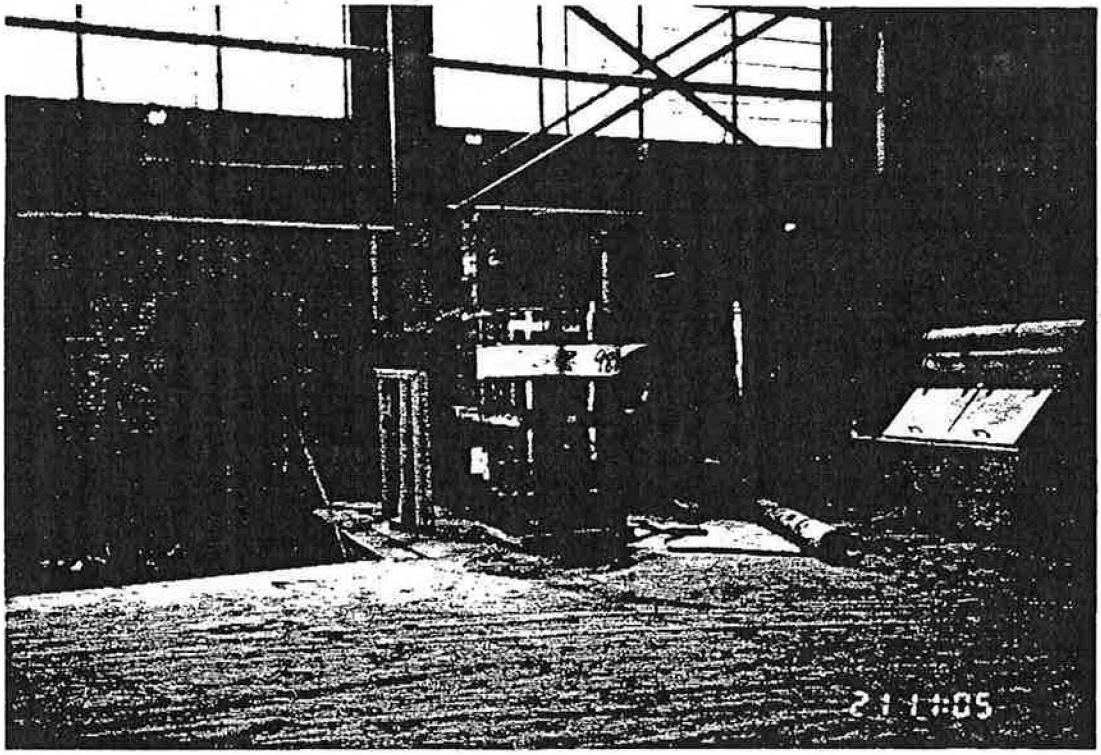


Photo 1.4-8 June 21, 1991

Facing northwest, of Hot Strip Mill Waste Oil Accumulation Area (SWMU 67).

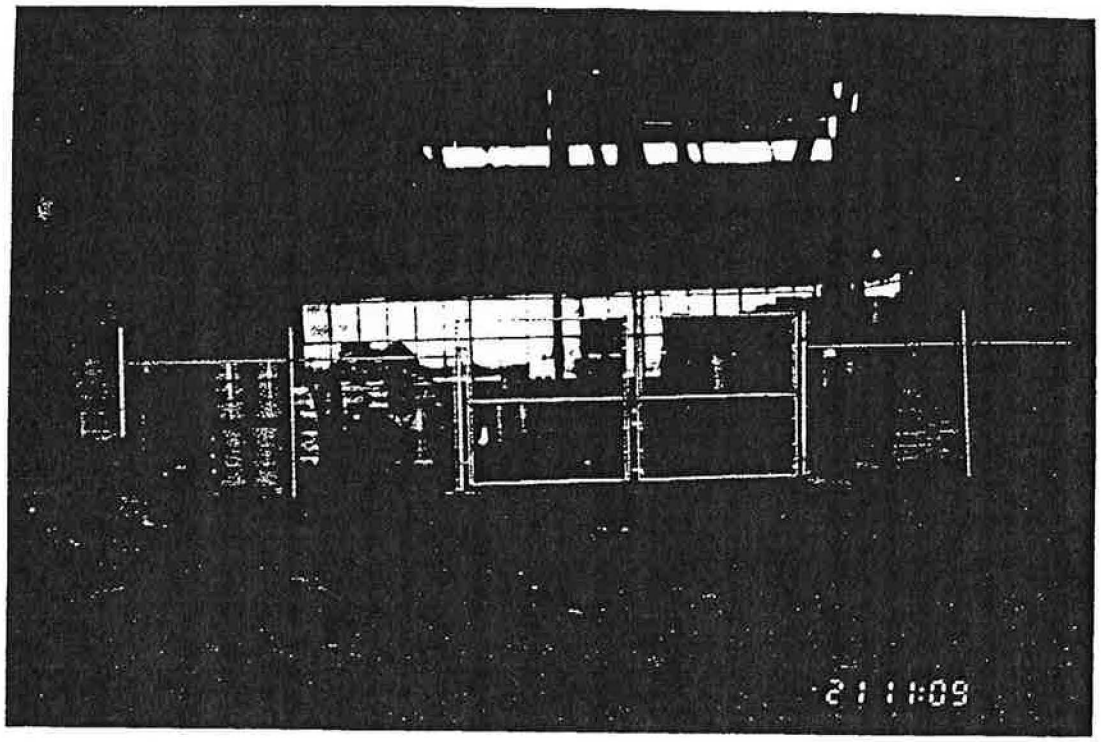


Photo 1.4-9 June 21, 1991

Facing northeast, of Hot Strip Mill Former Pickling Area (SWMU 68).

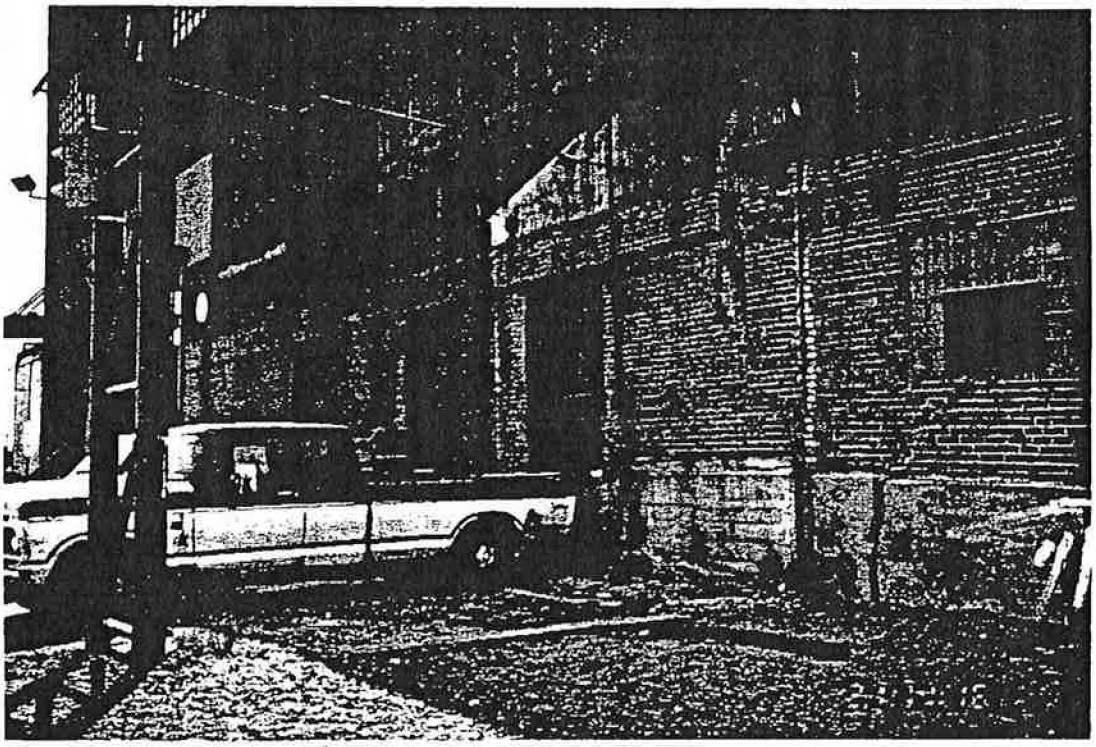


Photo 1.4-10 June 21, 1991

Facing southeast, of Hot Strip Mill Former Spent Pickling Liquor Tank Site (SWMU 70).

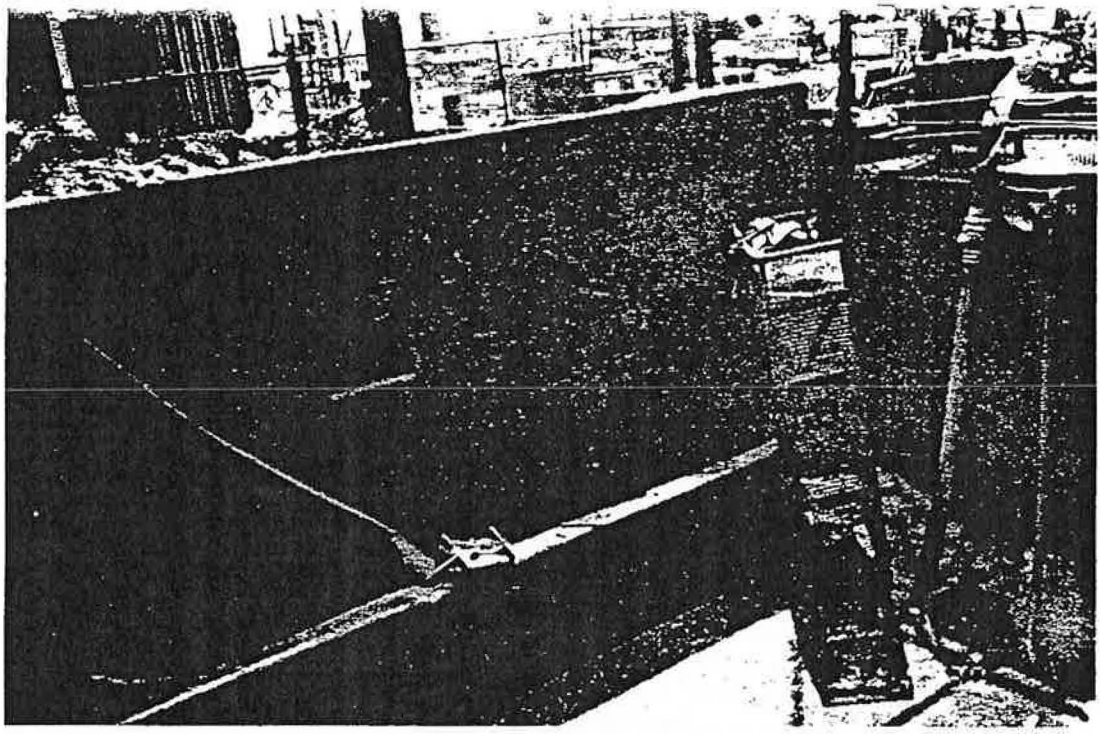


Photo 1.4-11 June 21, 1991

Facing southeast, of the Hot Strip Mill's (North) Basin (SWMU 62).

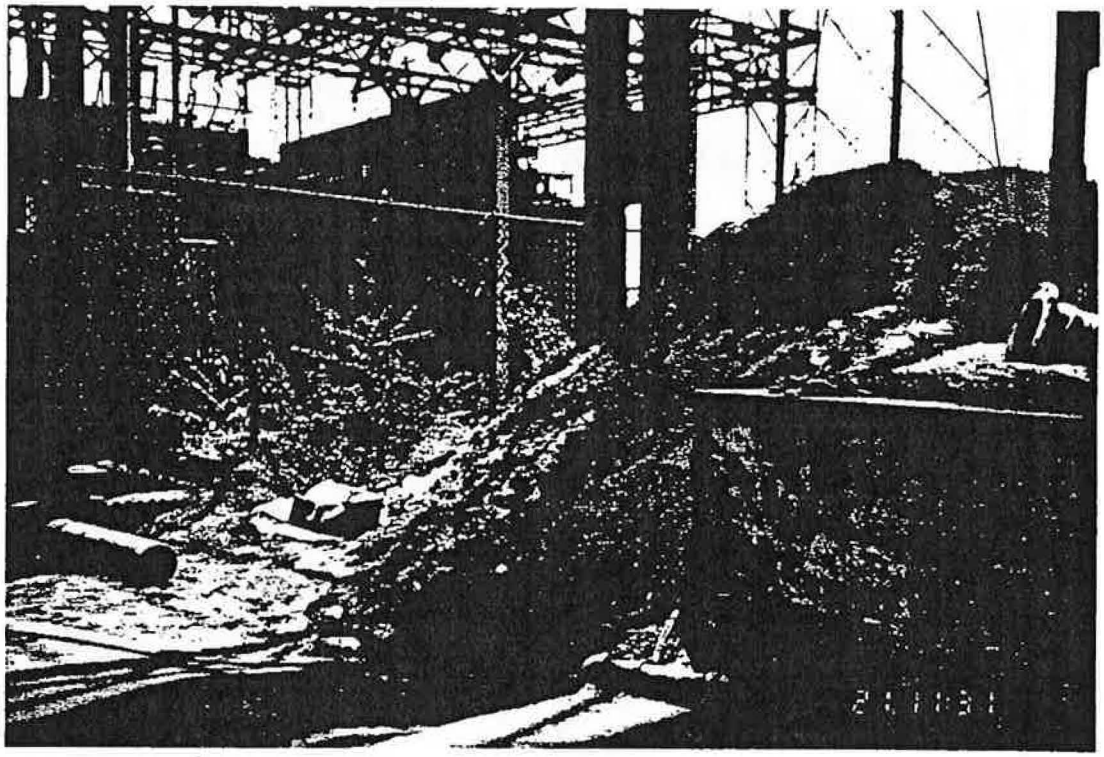


Photo 1.4-12 June 21, 1991

Facing southeast, of the mill scale pile on the ground next to the Hot Strip Mill's (North) Basin (SWMU 62).



Photo 1.4-13 June 24, 1991

Facing south, of Ore Pier cranes' motor control centers which contain Six PCB Transformers (AOC E) located over the Patapsco River.

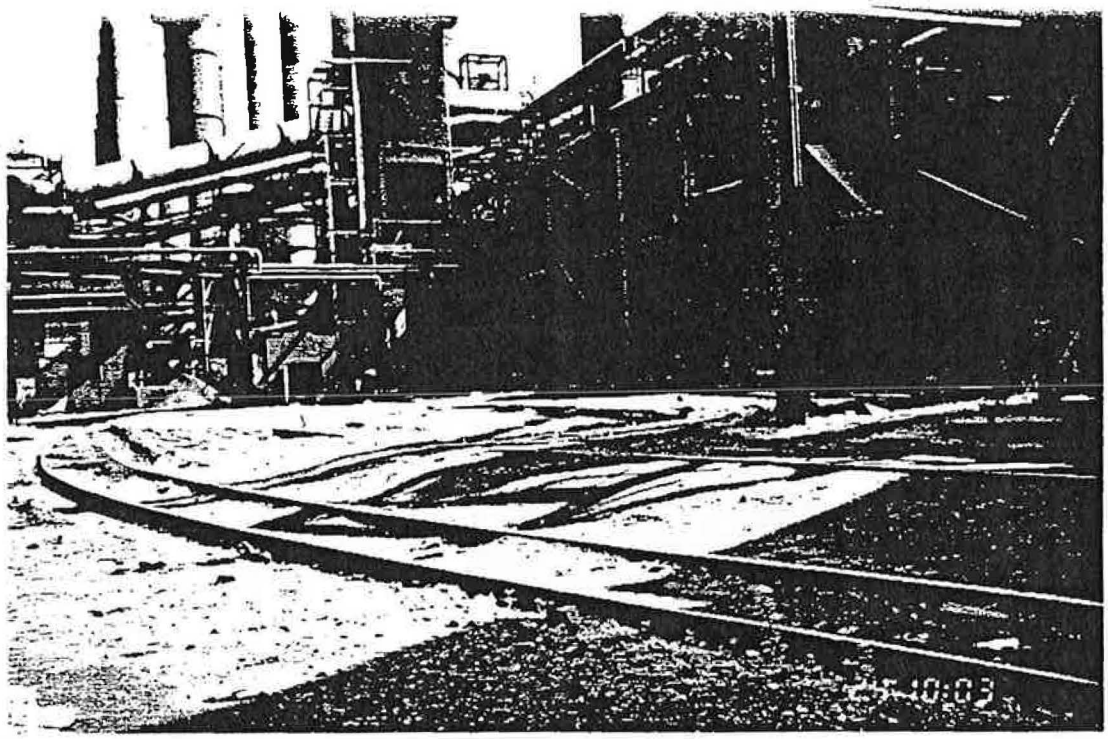


Photo 1.4-14 and 1.4-15 June 24, 1991

Facing north, panorama (next page B-68A) of Former Green Pellet Plant and Thickener (SWMU 74).

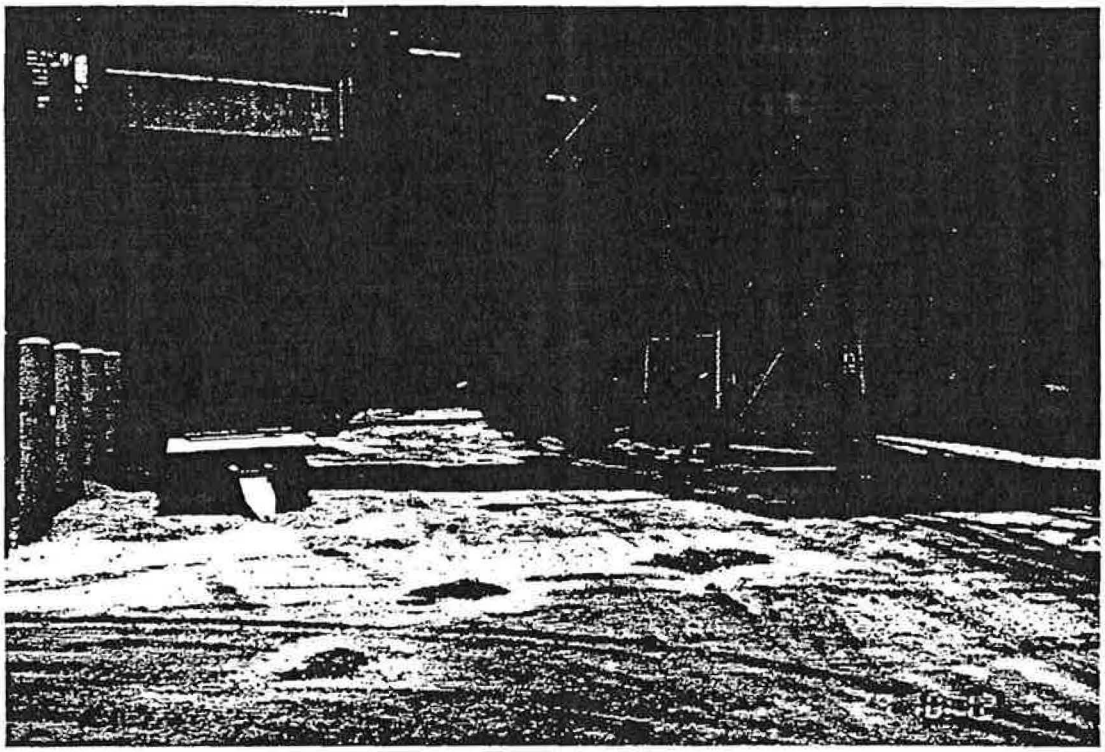


Photo 1.4-16 June 24, 1991

Facing east, of ERS PCB Spill (AOC C) located outside of the ERS Building.

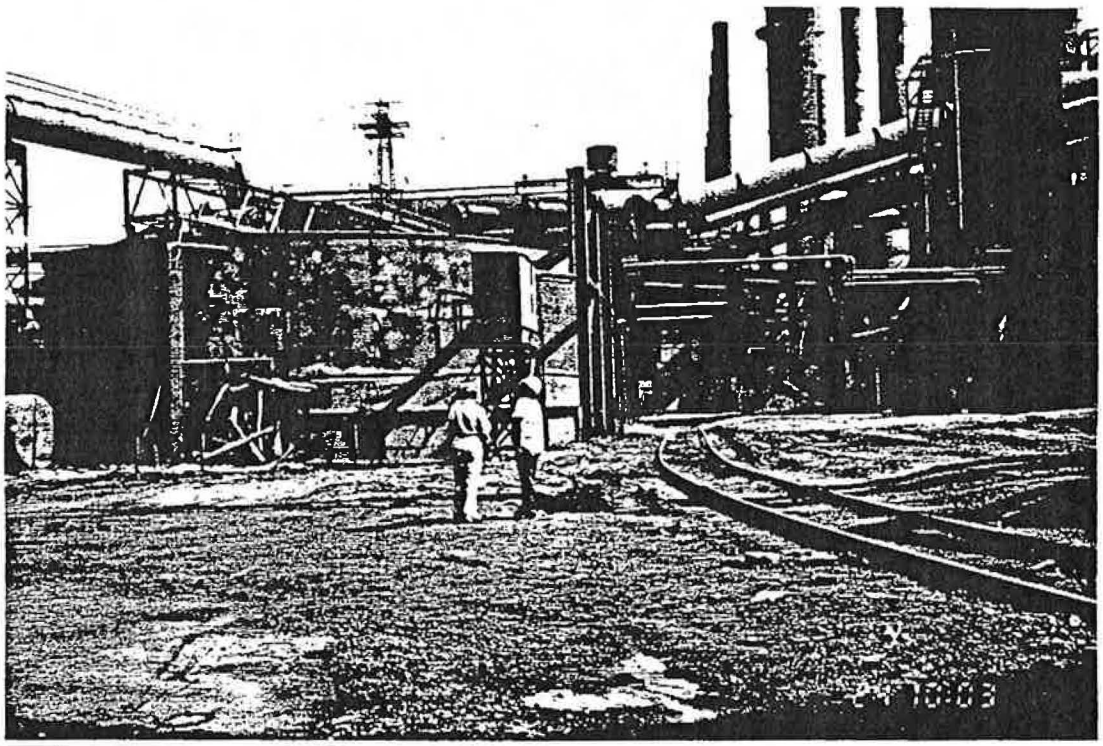


Photo 1.4-15

June 24, 1991

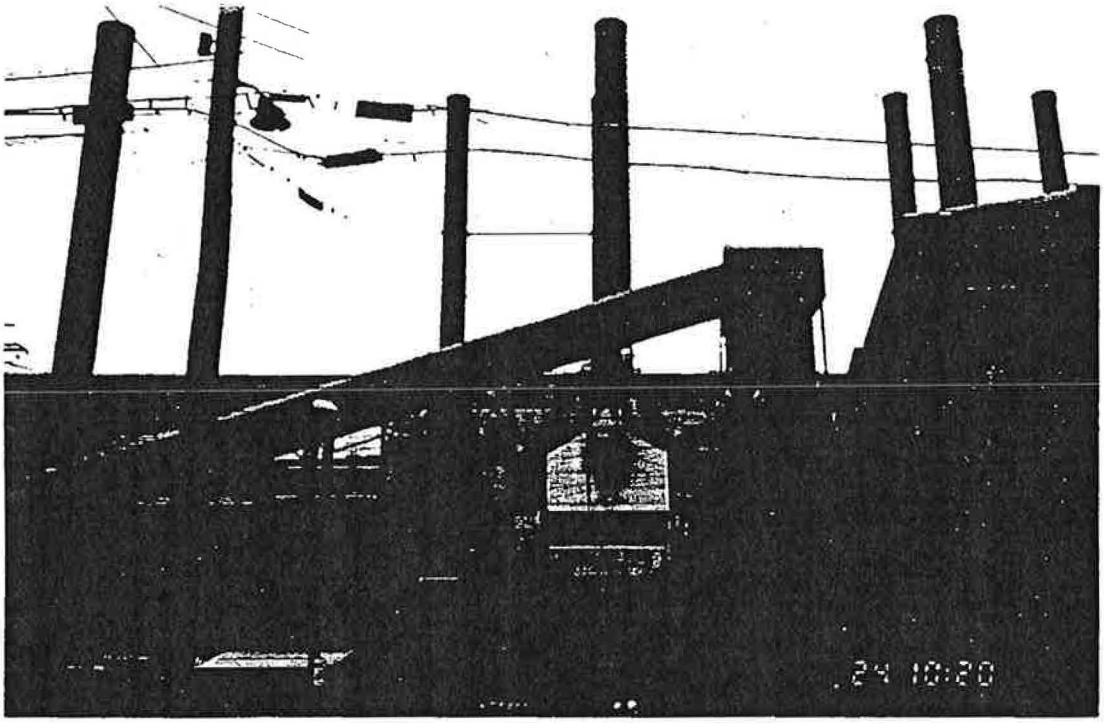


Photo 1.4-17 June 24, 1991

Facing east, of Scrubbers Open Hearth Furnace #4 (inactive).

Photo 1.4-18 June 24, 1991

Void — photo did not develop properly.

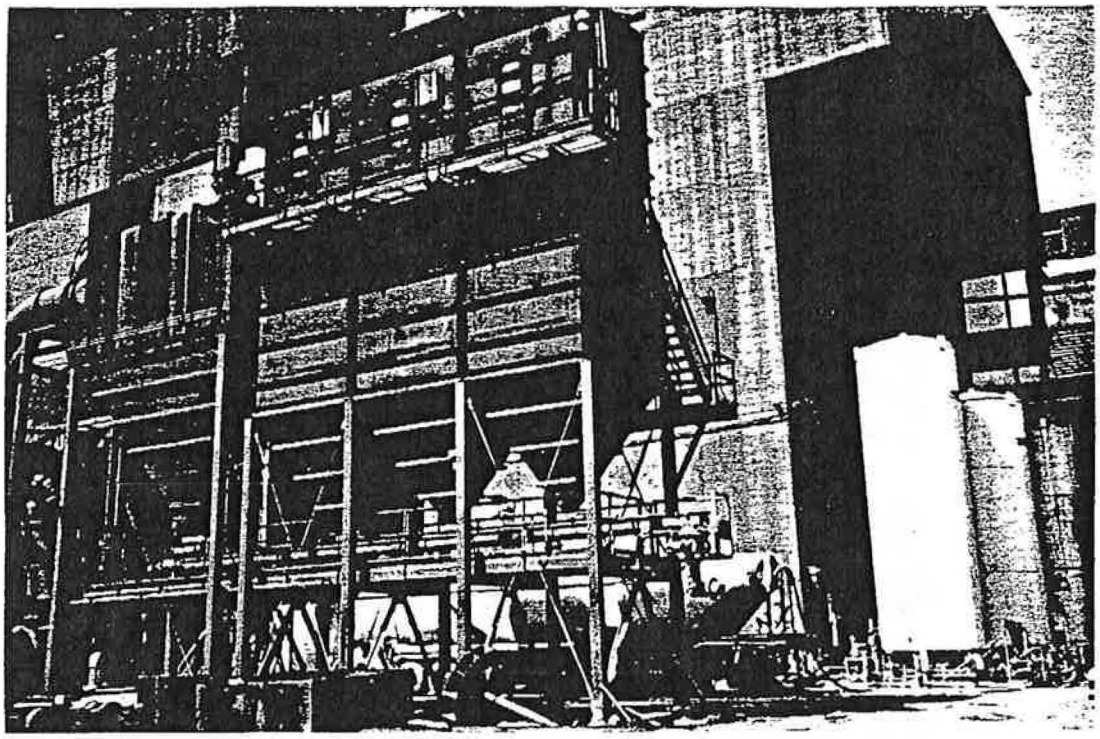


Photo 1.4-19 June 24, 1991

Facing southwest, of Desulfurizer Baghouse (SWMU 77) located next to BOF.

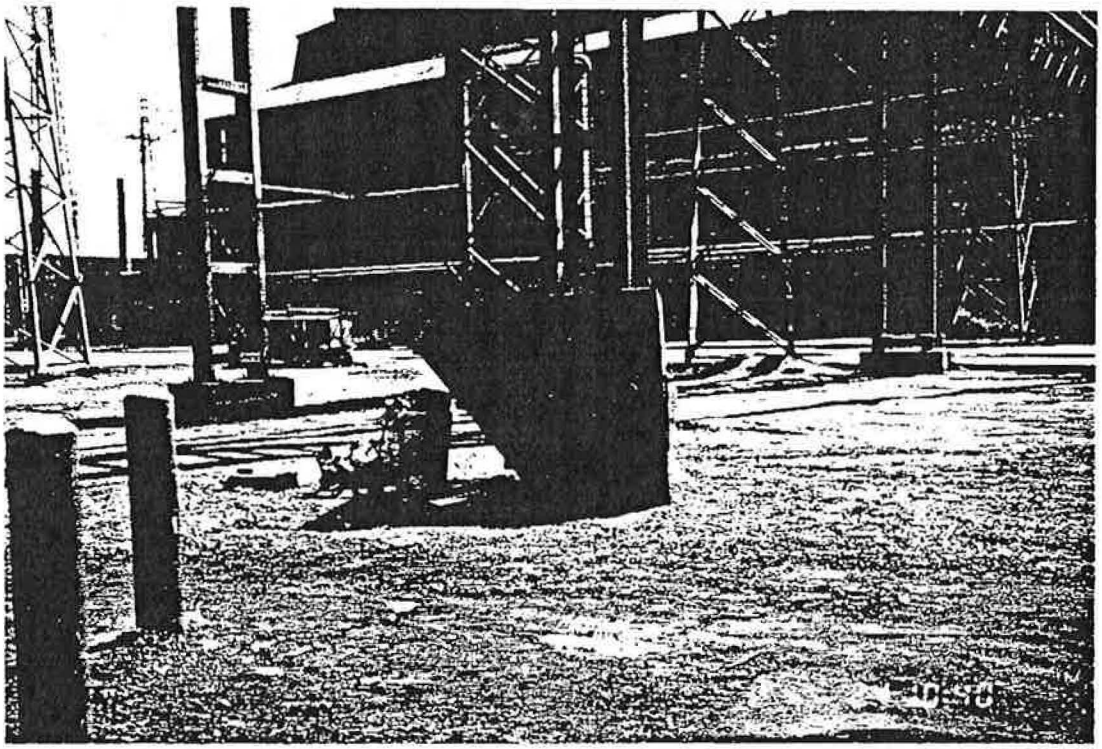


Photo 1.4-20 June 24, 1991

Facing northeast, of Desulfurizer Baghouse Dust Collection Dumpster (SWMU 78) located next to BOF.

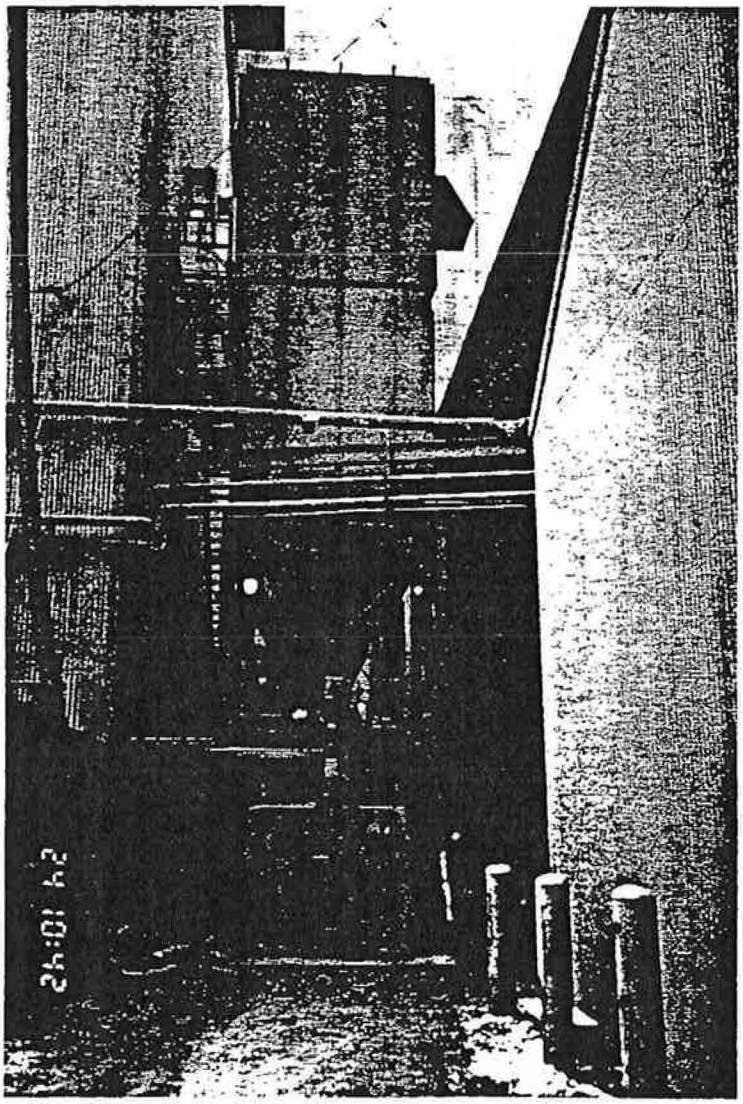


Photo 1.4-21 June 24, 1991

Facing south, of Skimmer Baghouse (SWMU 79) and Skimmer Baghouse Collection Dumpster (SWMU 80) located next to BOF.

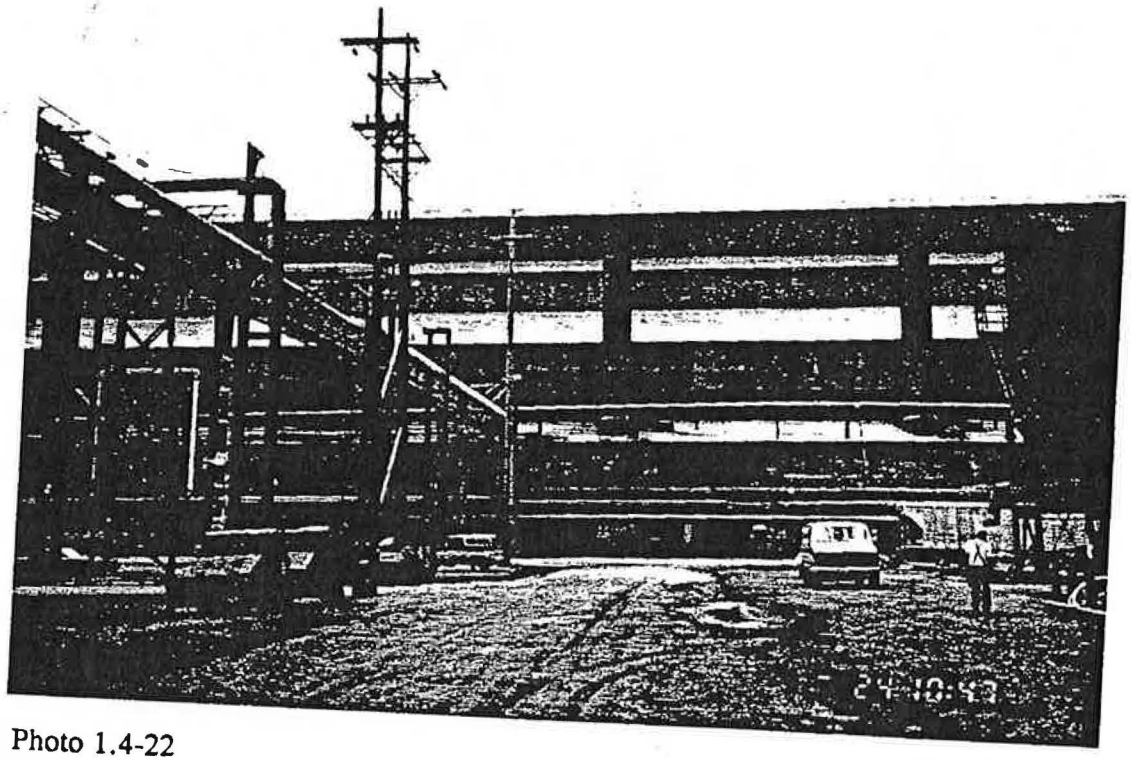


Photo 1.4-22

June 24, 1991

Facing east, of Open Hearth Number Three Site (SWMU 81).

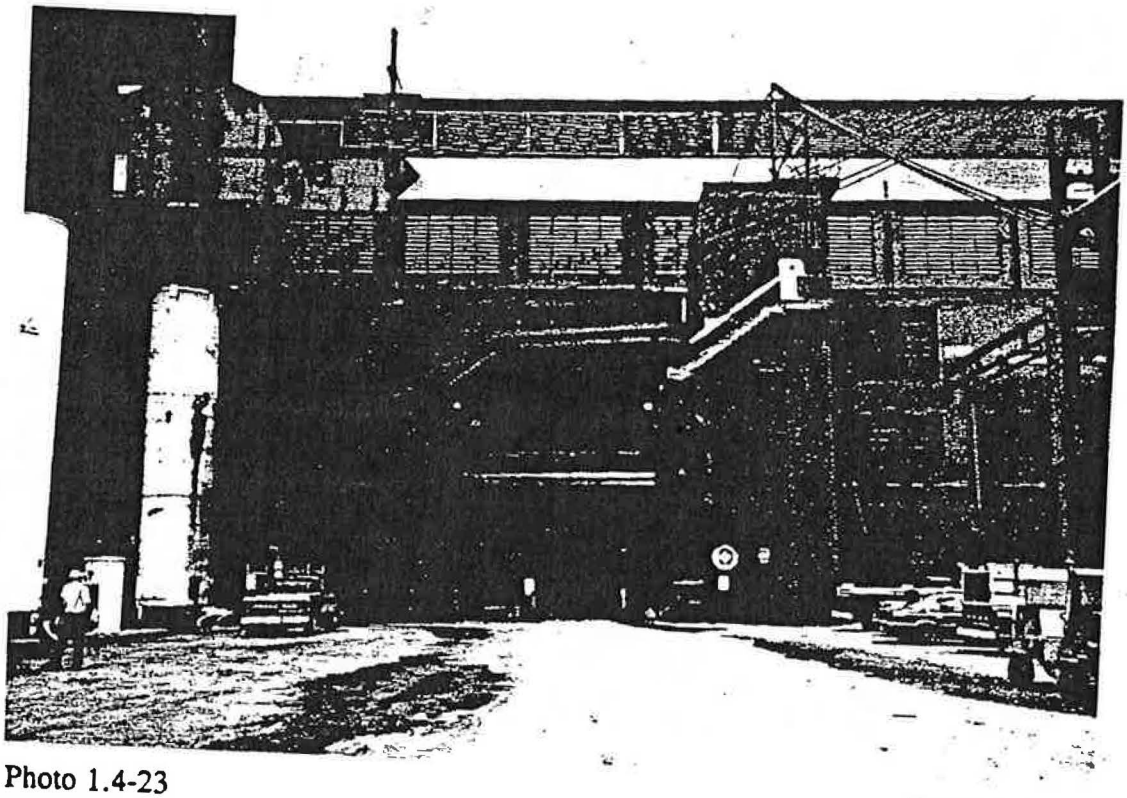


Photo 1.4-23

June 24, 1991

Facing west of Former Site of Open Hearth Number Two, now site of BOF.

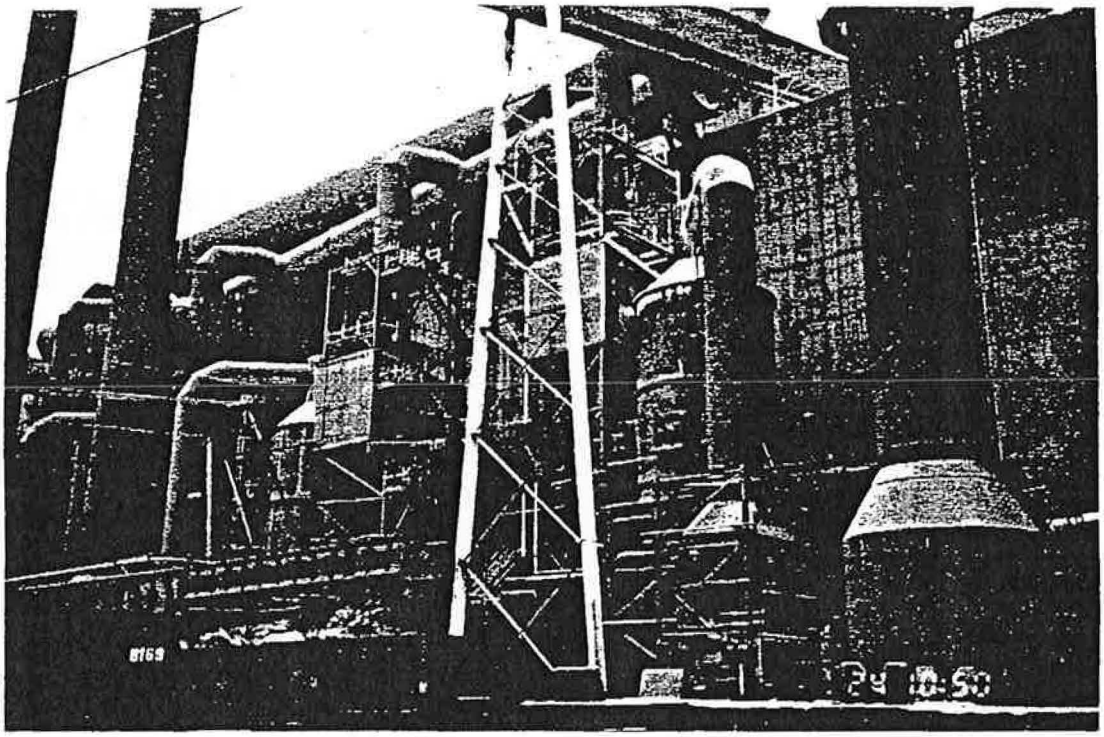


Photo 1.4-24 June 24, 1991

Facing west, of Former Site of Open Hearth Number Two, now site of BOF.

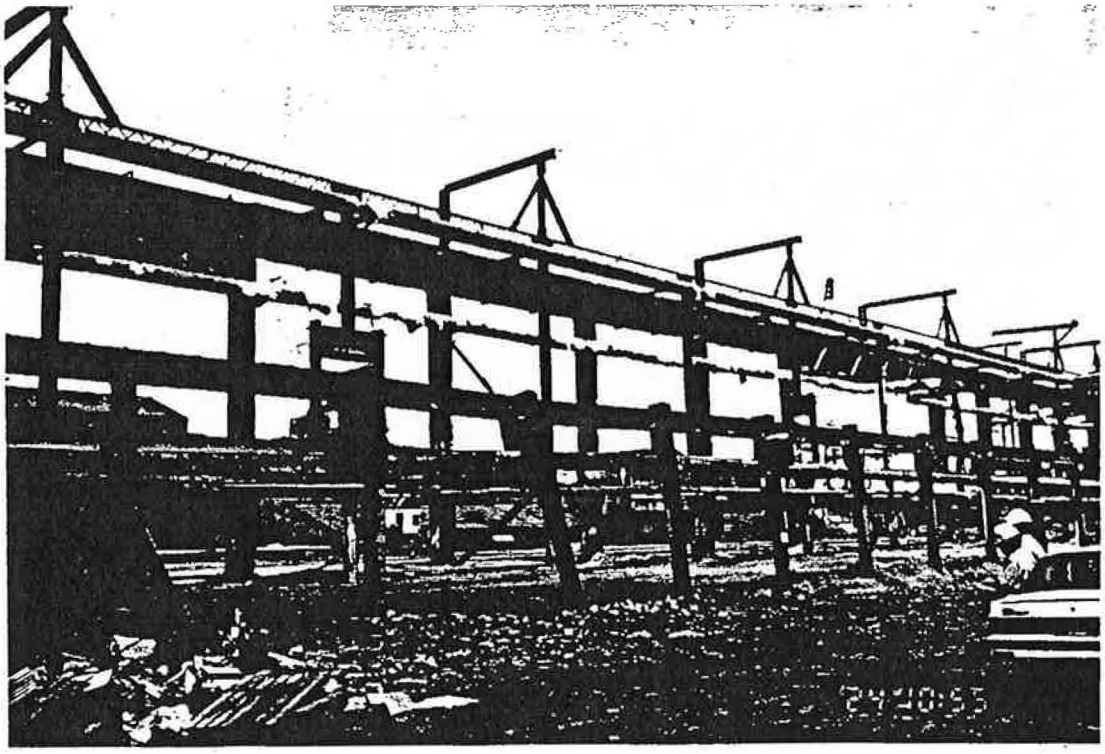


Photo 1.4-25 June 24, 1991

Facing northwest, of Open Hearth Number One Site (SWMU 82) which is being demolished.

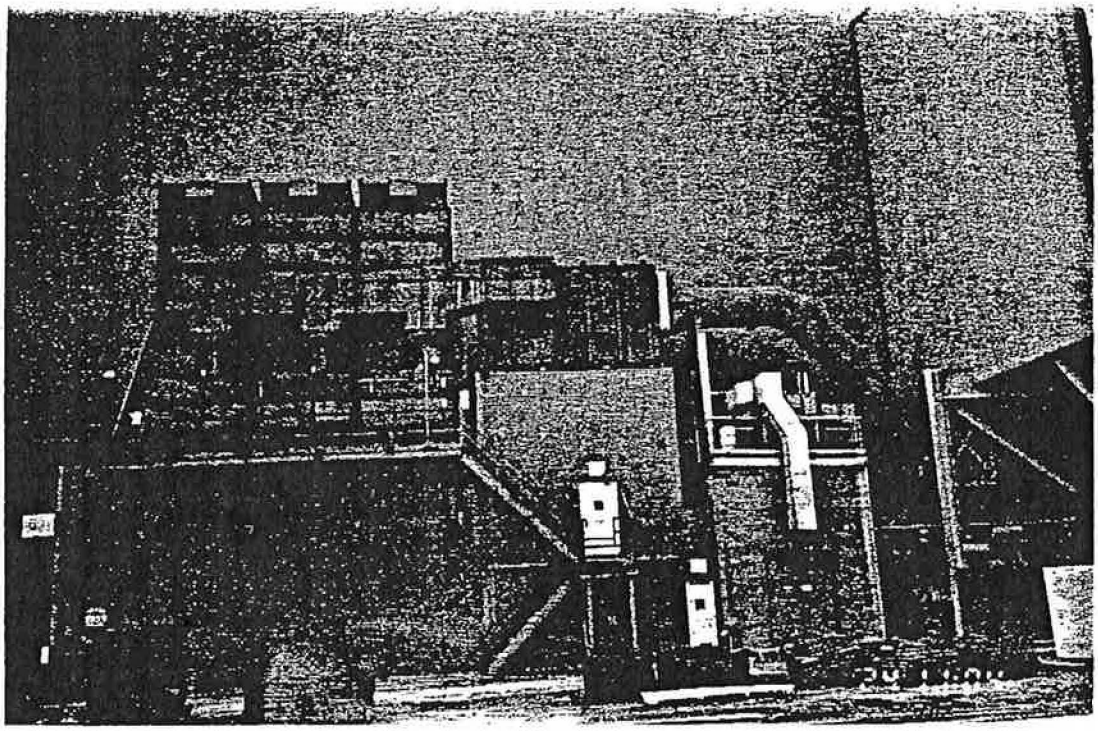


Photo 1.4-26 June 24, 1991

Facing east, of Caster Baghouse (SWMU 83).

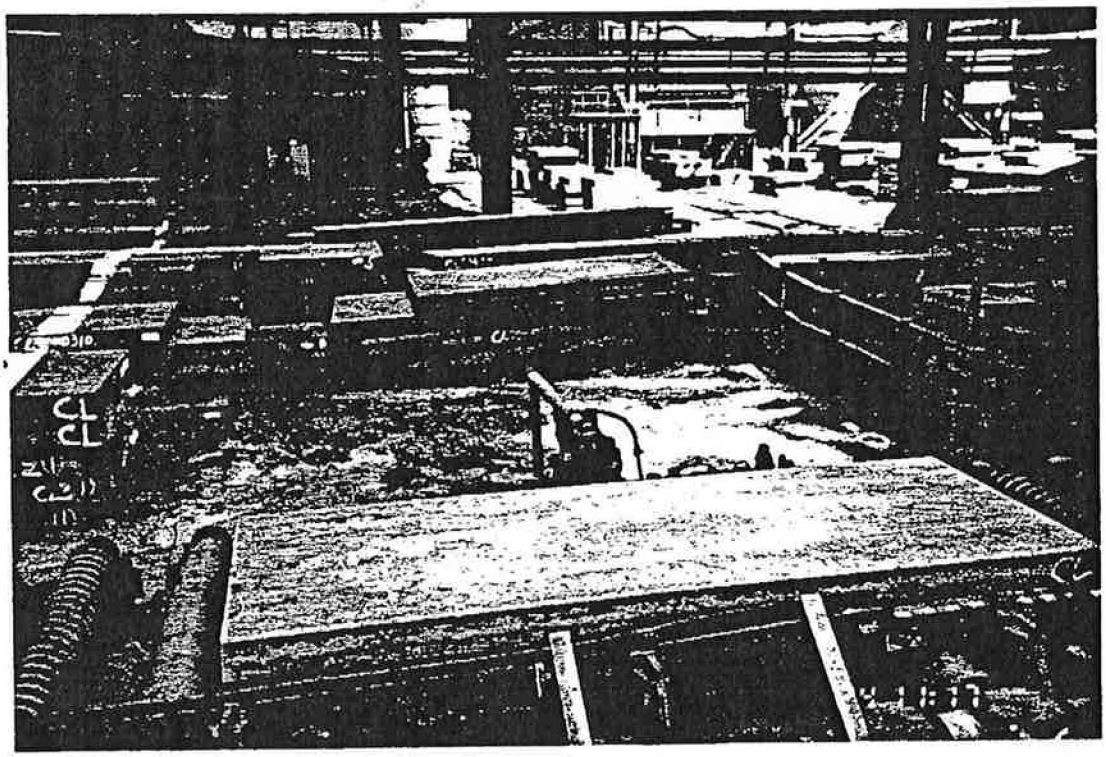


Photo 1.4-27 June 24, 1991

Facing north, of Slab Cut Off Spill (AOC F).

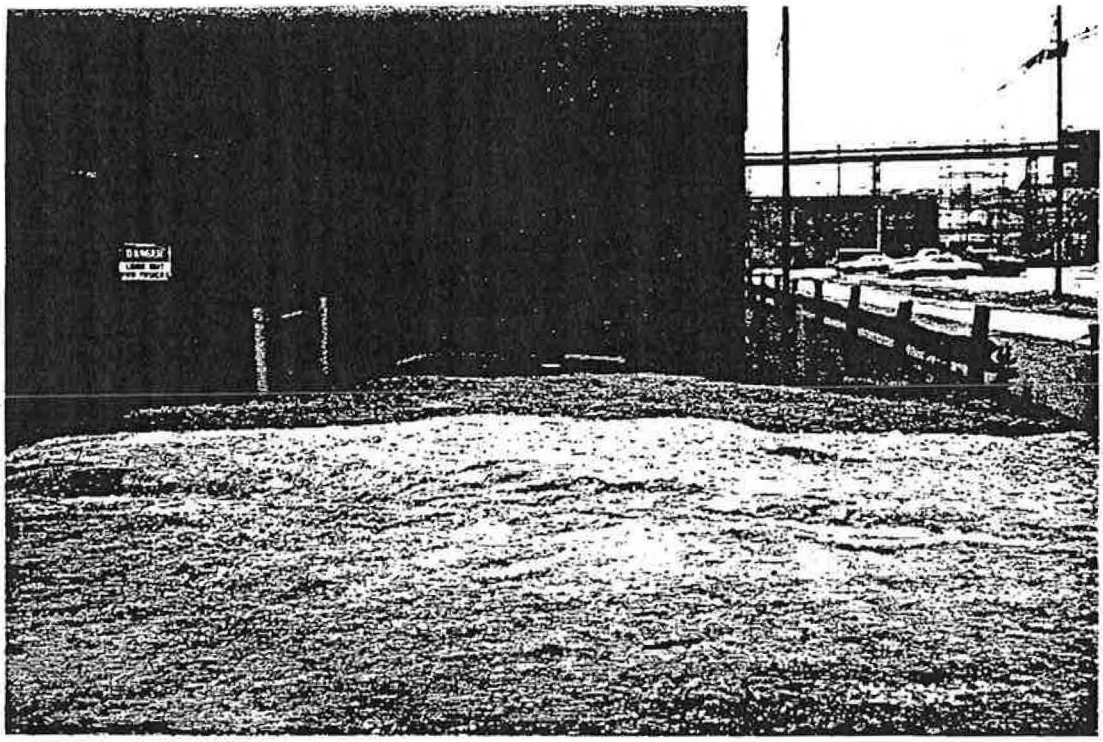


Photo 1.4-28 June 24, 1991

Facing south, of site of Former ERS Oily Wastewater UST (SWMU 195).

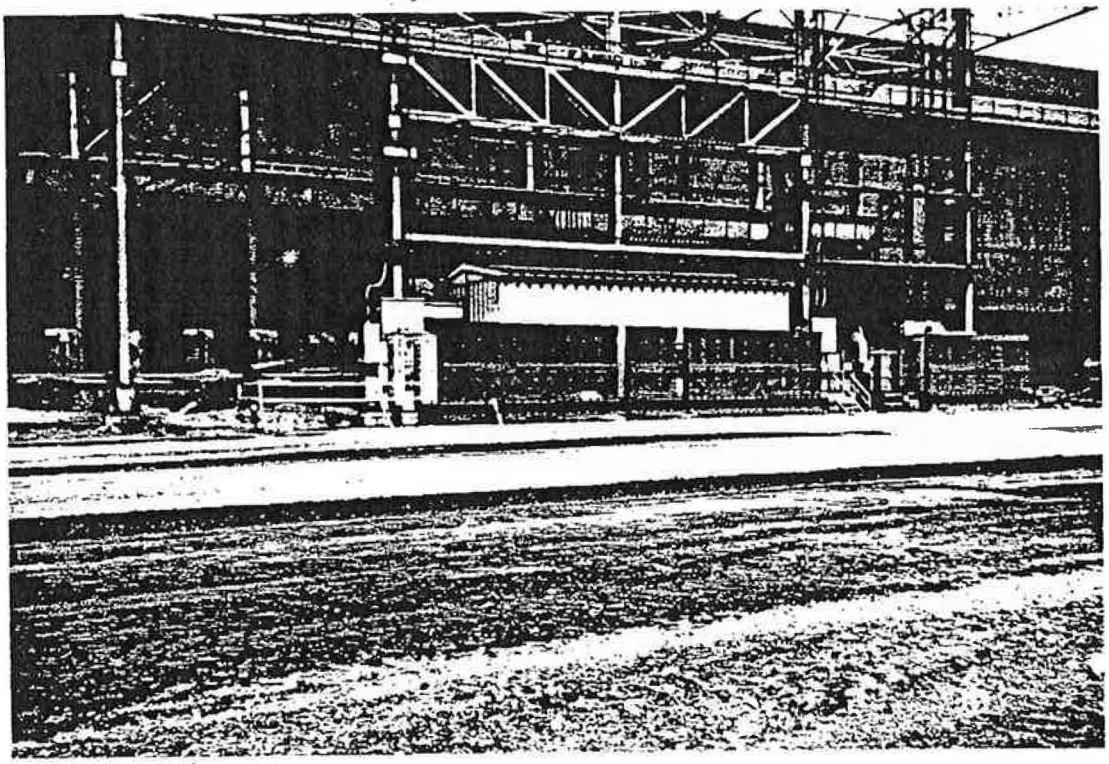


Photo 1.4-29 June 24, 1991

Facing northwest, of Diesel Fuel Spill (AOC G).

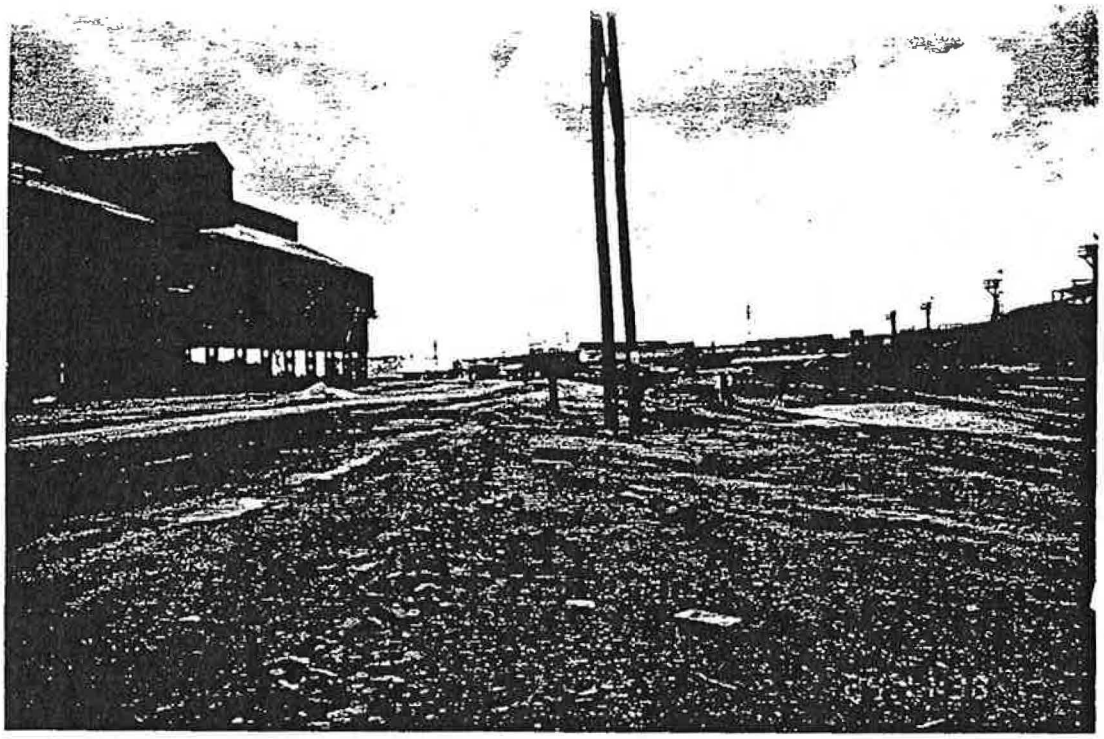


Photo 1.4-30 June 24, 1991

Facing north, of Diesel Fuel UST (AOC G).

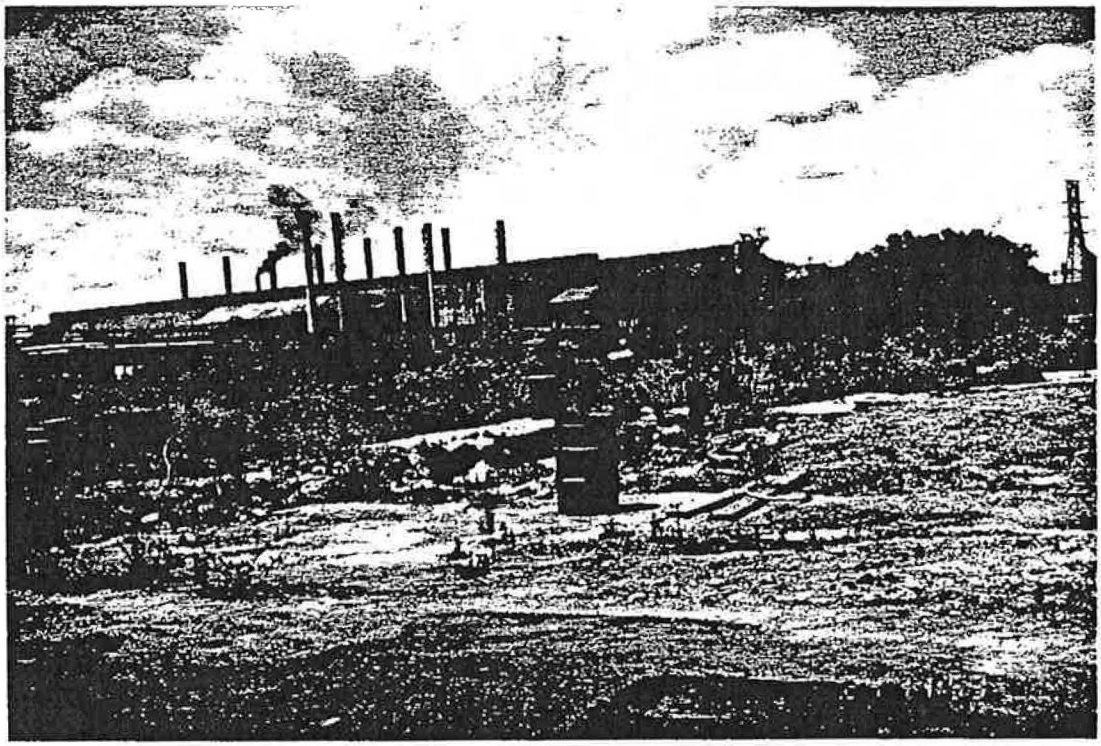


Photo 1.4-31 to 1.4-33 June 24, 1991

Facing west, panorama (next page B-76A) of Mason's Garage (AOC H).



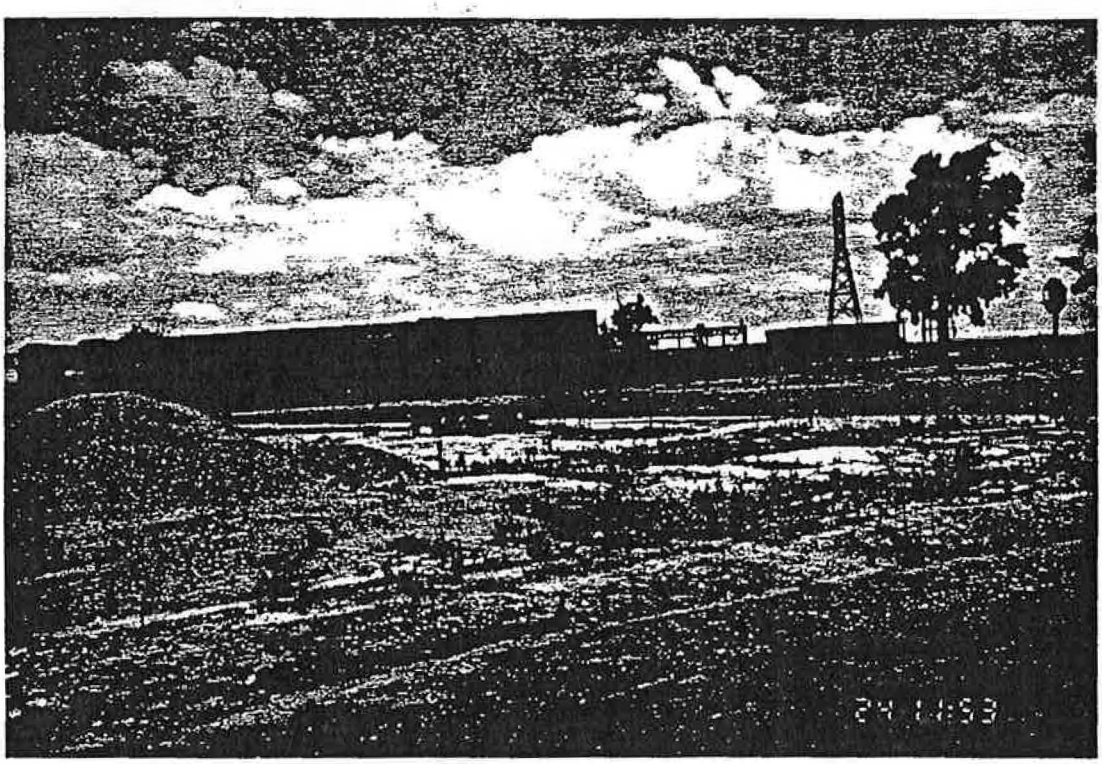


Photo 1.4-32, 1.4-33

June 24, 1991

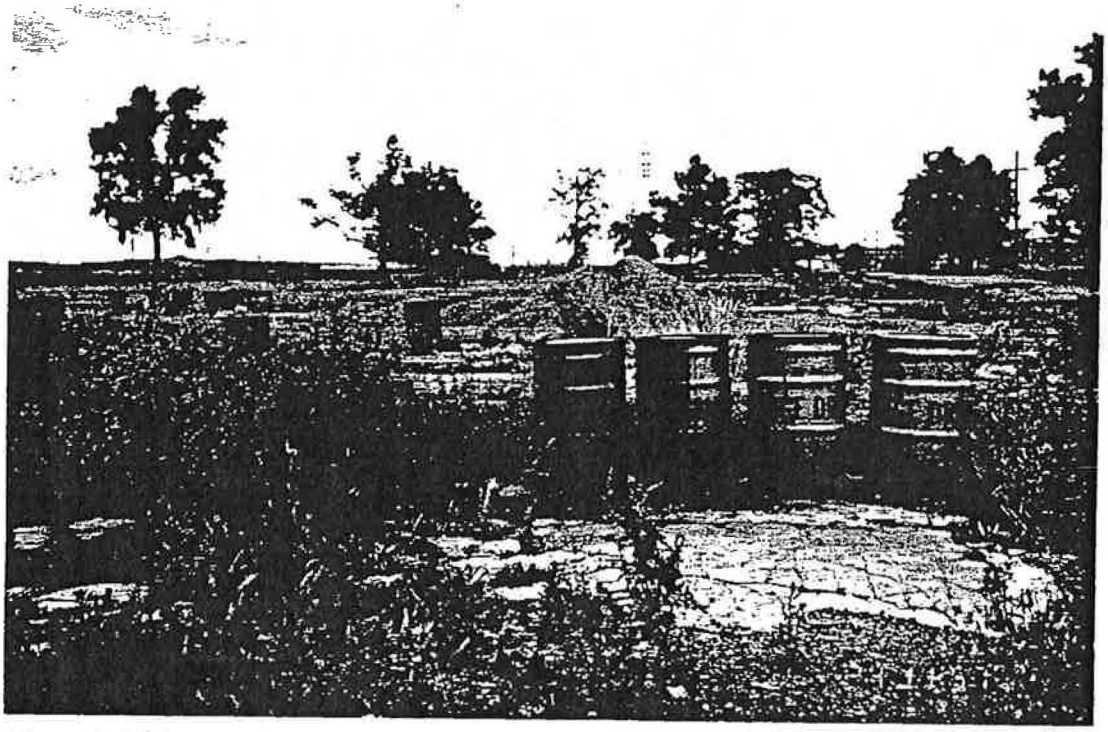


Photo 1.4-34 June 24, 1991

Facing north, of waste oil drums at Mason's Garage (AOC H).



Photo 1.4-35 June 24, 1991

Facing north, drums of oily fluid, dirt and rags at Mason's Garage (AOC H).

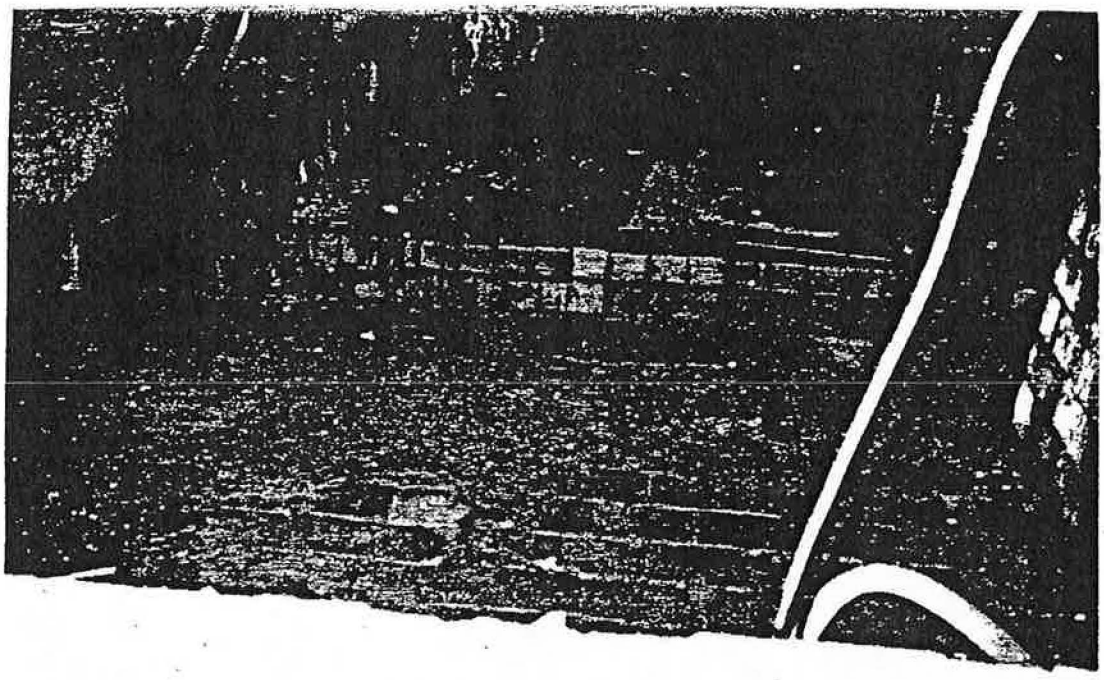


Photo 1.5-1 June 24, 1991

Facing west, of Pickler Number Three's Tin Mill Trench (SWMU 84).

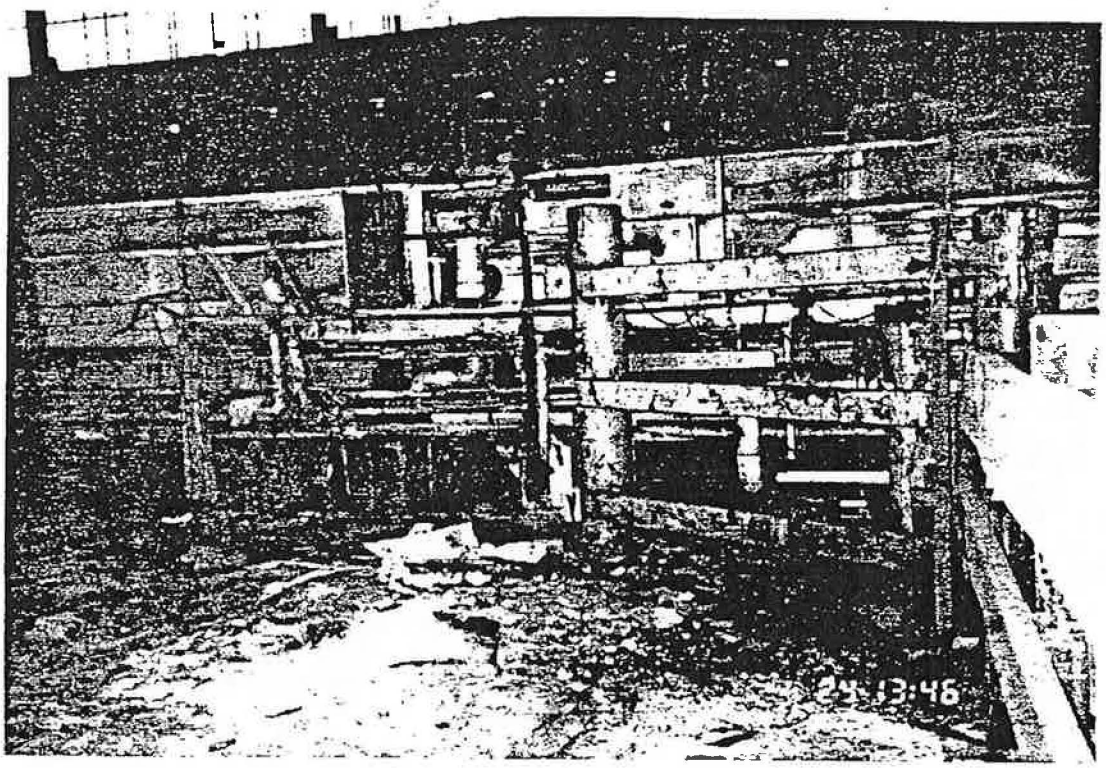


Photo 1.5-2 June 24, 1991

Facing east, of Tin Mill Pickler Number Three 1991 Acid Leak (AOC I).

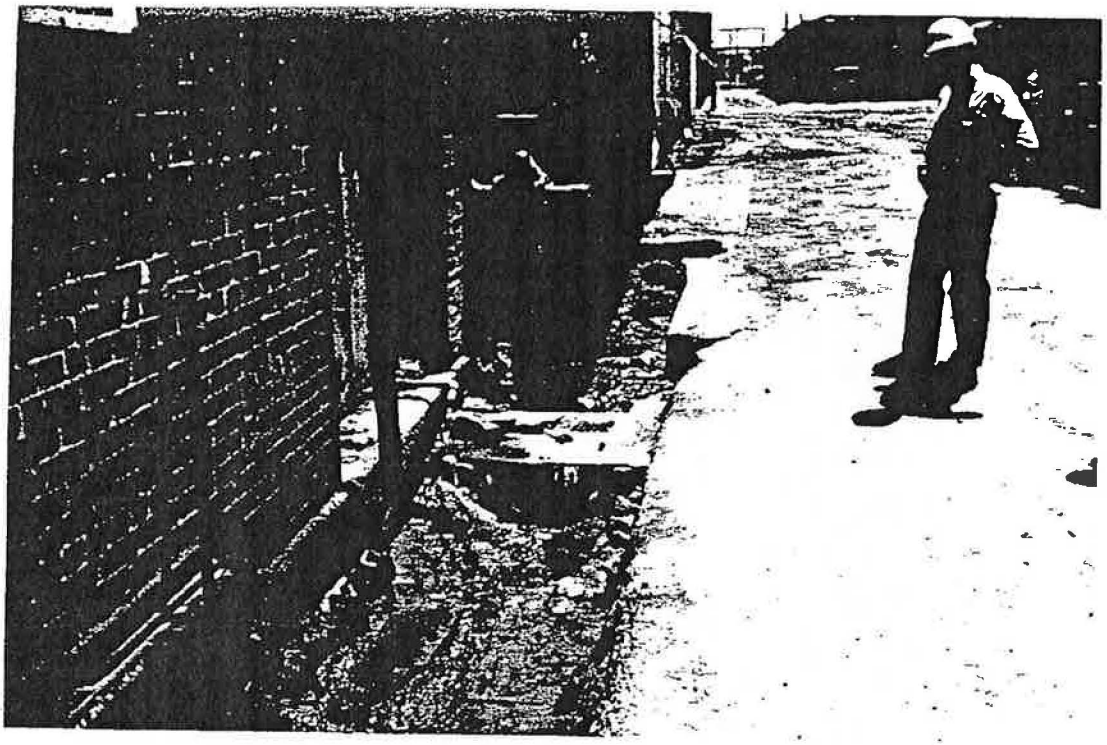


Photo 1.5-3 June 24, 1991

Facing south, of outdoor Tin Mill Trench (SWMU 84) of Pickling Building.

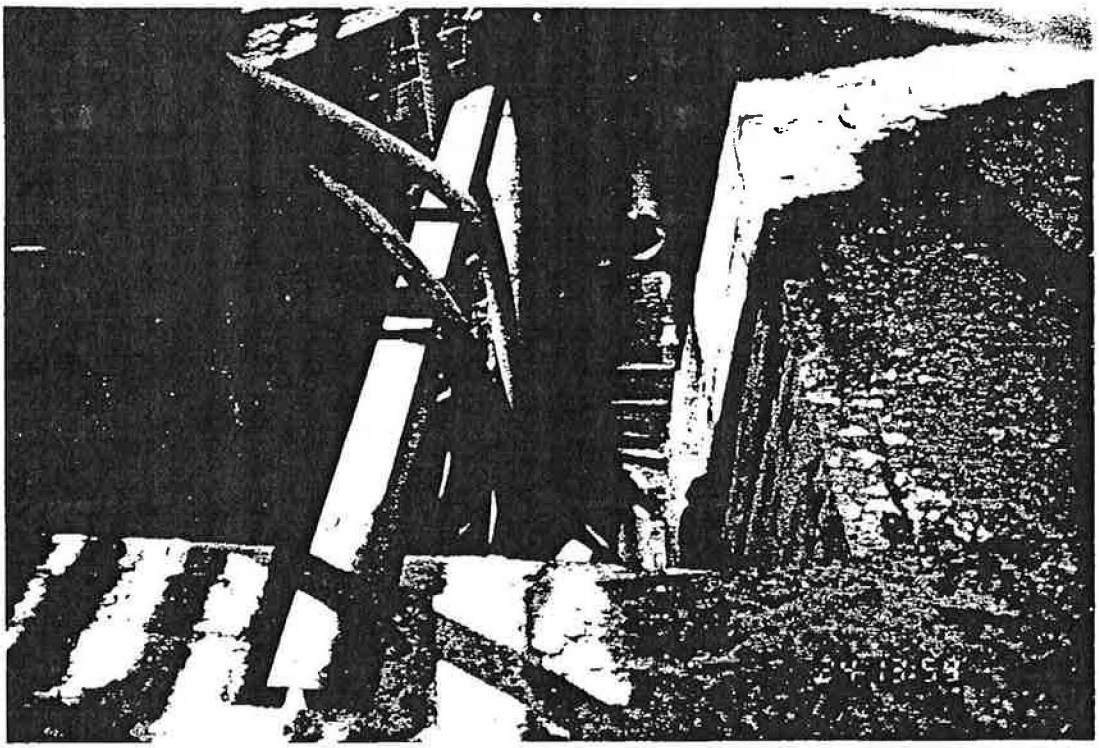


Photo 1.5-4 June 24, 1991

Facing northwest, of brick-lined Halogen Lines Sump (SWMU 88) located under Acid Tanks (AOC J) next to the Tin Mill Pickling Building.

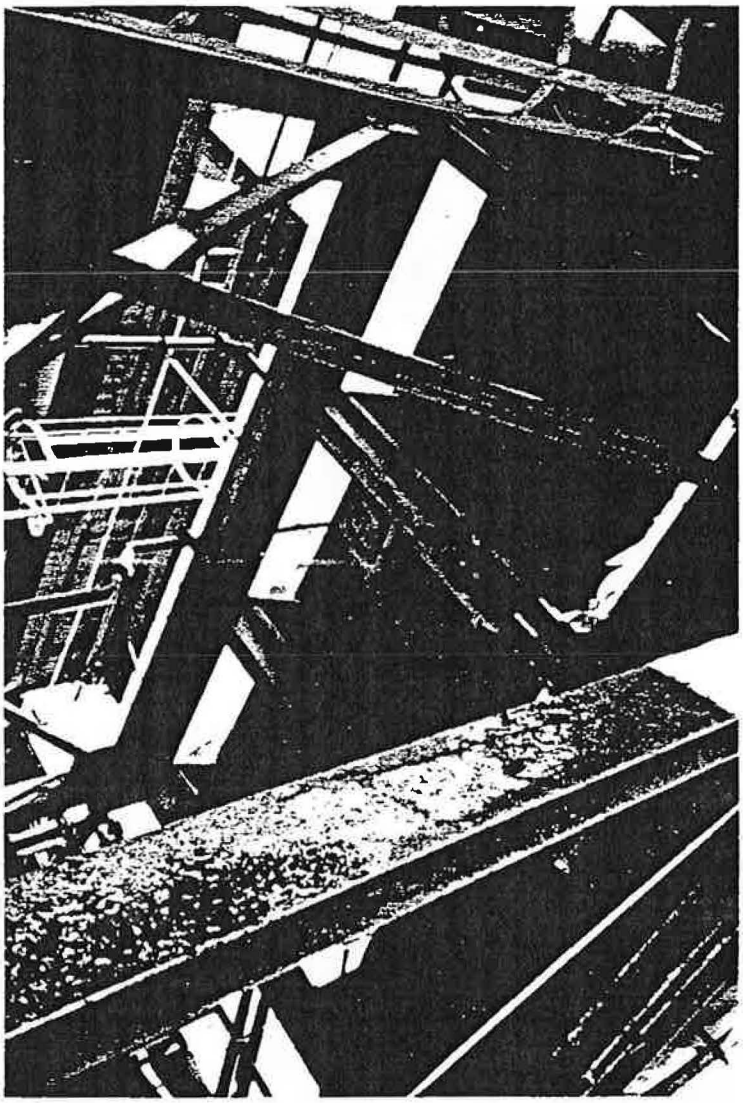


Photo 1.5-5 June 24, 1991

Facing northwest, of two of the six Acid Tanks (AOC J) located next to the Tin Mill Pickling Building. Note the patch on the bottom of the left tank.

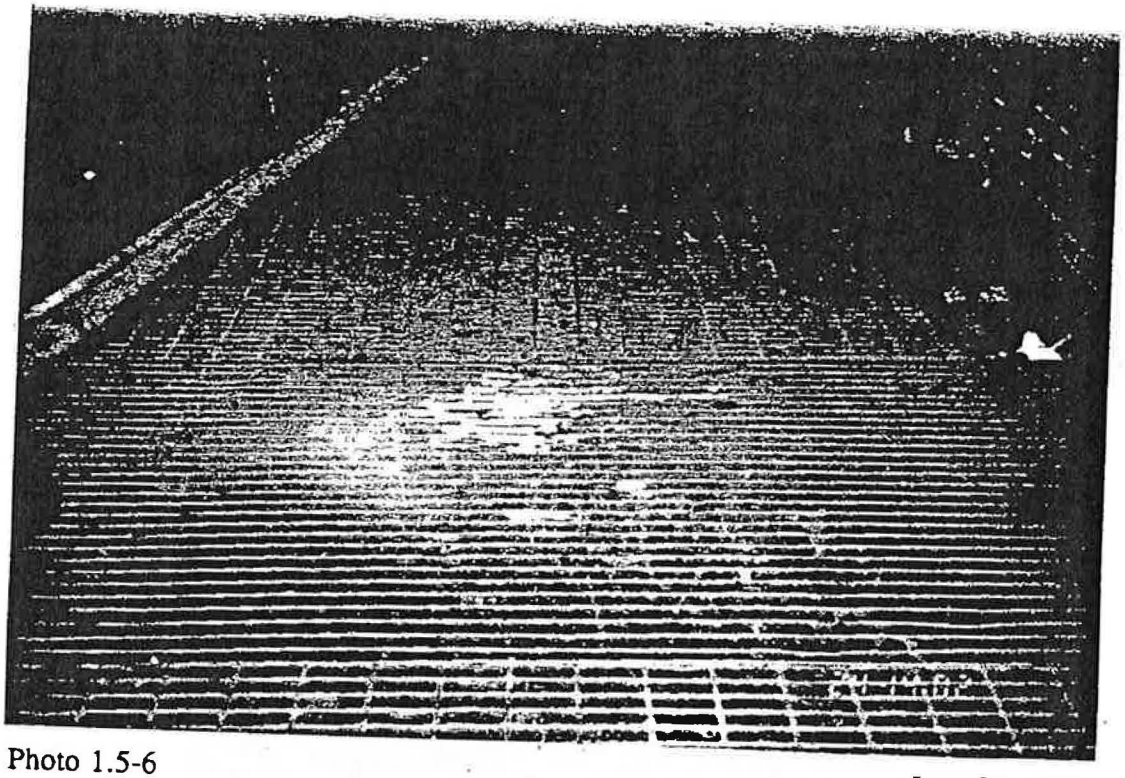


Photo 1.5-6

June 24, 1991

Facing west, of Tin Mill Sump (acid area monitoring) (SWMU 86) in Pickling Building.

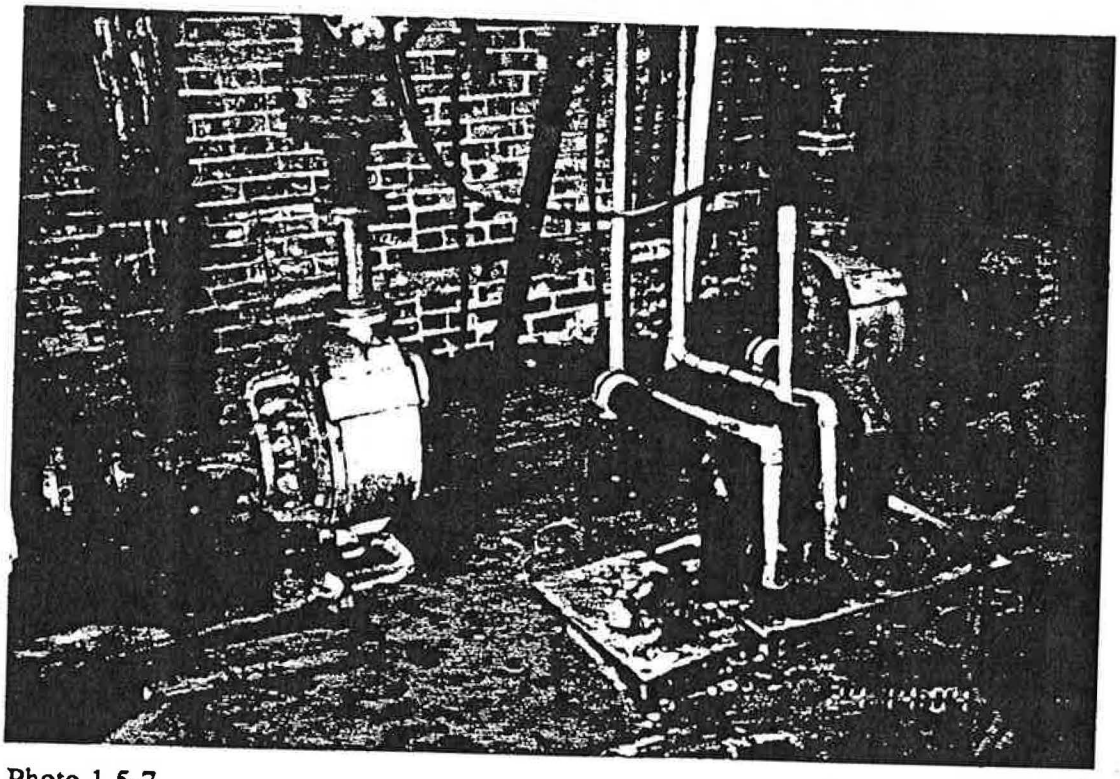


Photo 1.5-7

June 24, 1991

Facing northwest, of Tin Mill Acid Abatement System (SWMU 85) pump located in the Pickling Building.

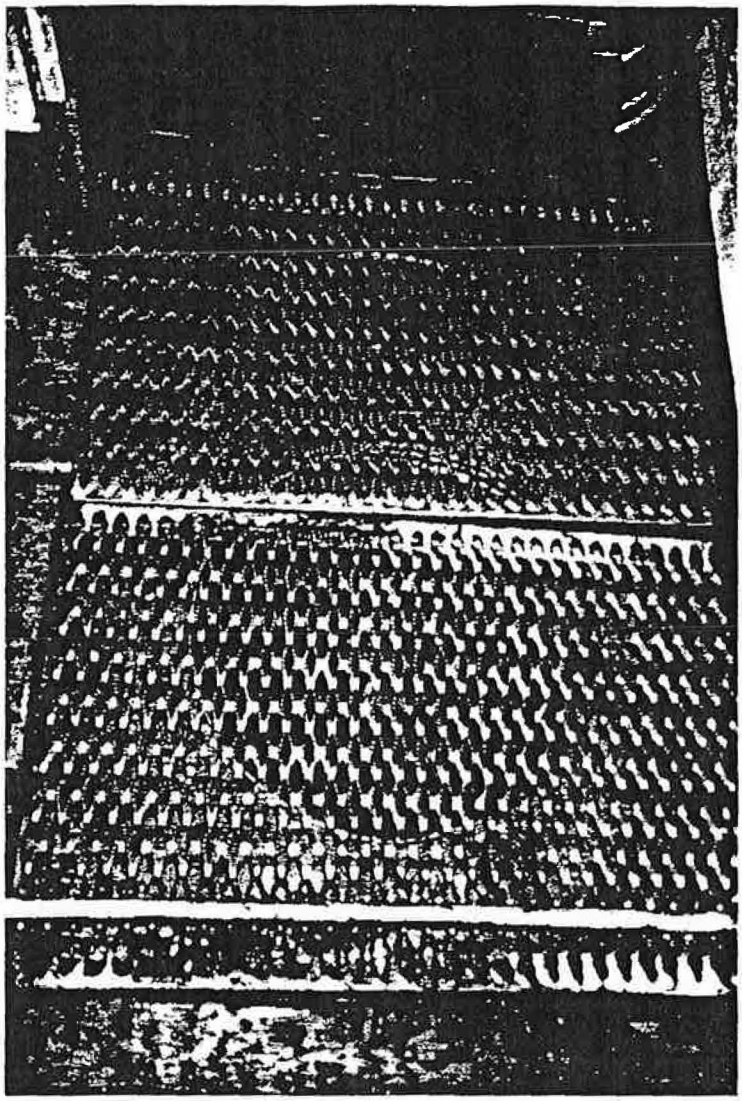


Photo 1.5-8 June 24, 1991

Facing north, of Tin Mill Satellite Oil Accumulation Area (SWMU 87) located in the floor of the Pickling Building.

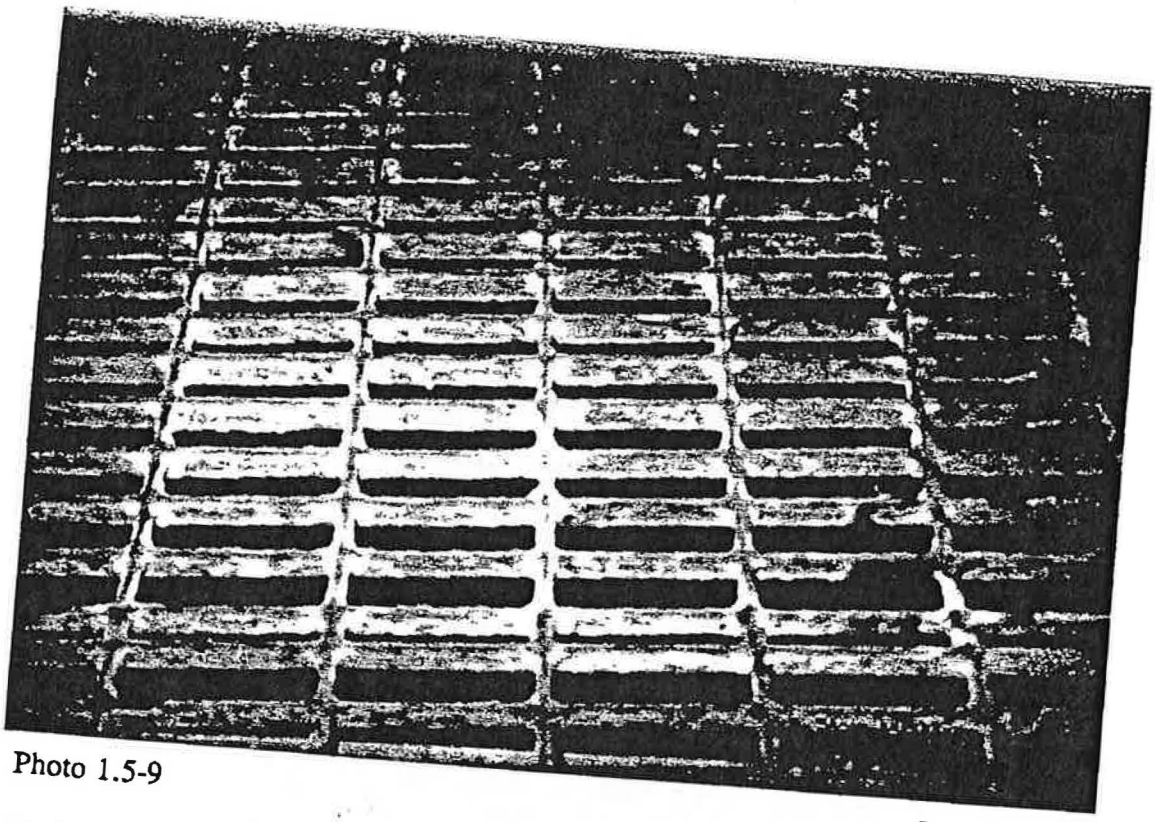


Photo 1.5-9

June 24, 1991

Facing down, of Halogen Lines Sump (SWMU 88) located along the Halogen Tanning Line.

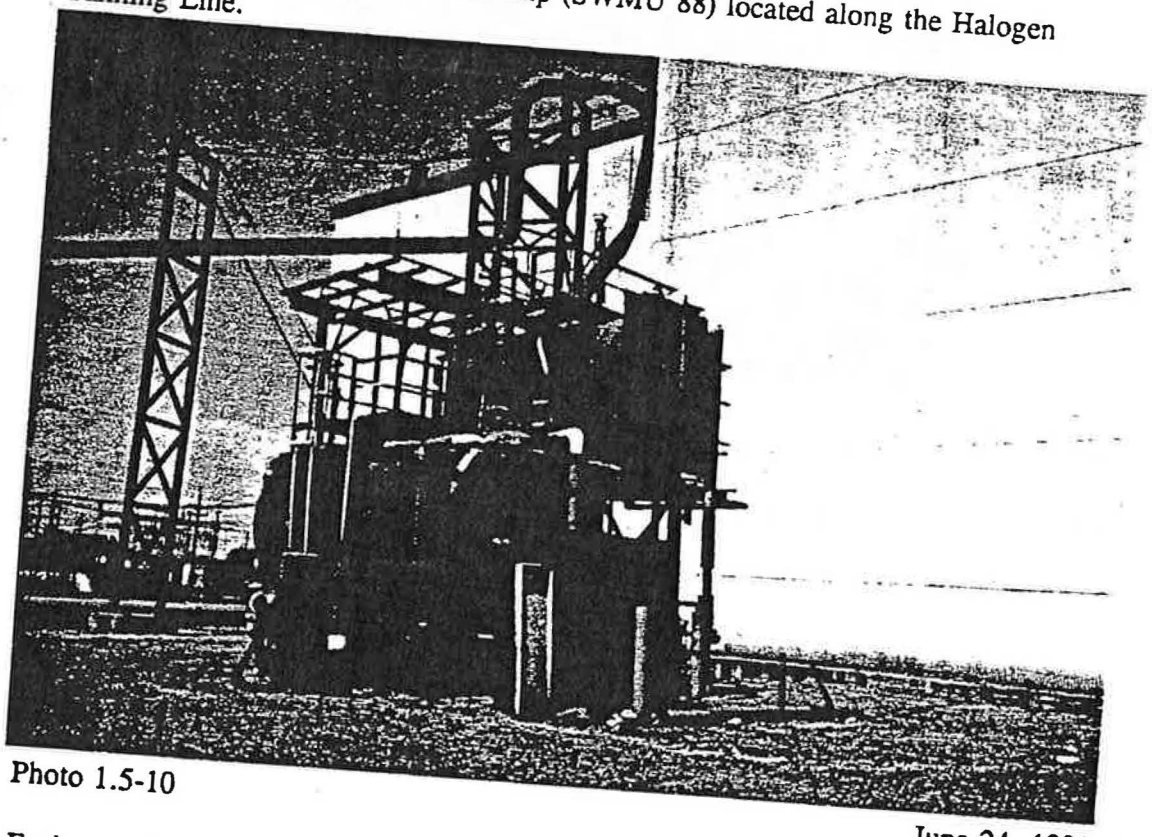


Photo 1.5-10

June 24, 1991

Facing northeast, of Halogen Lines Waste Pickle Liquor (upper) Tank (SWMU 90) and Waste Plating Solution (lower) Tank (SWMU 91) located next to the Halogen Tanning Line Building.

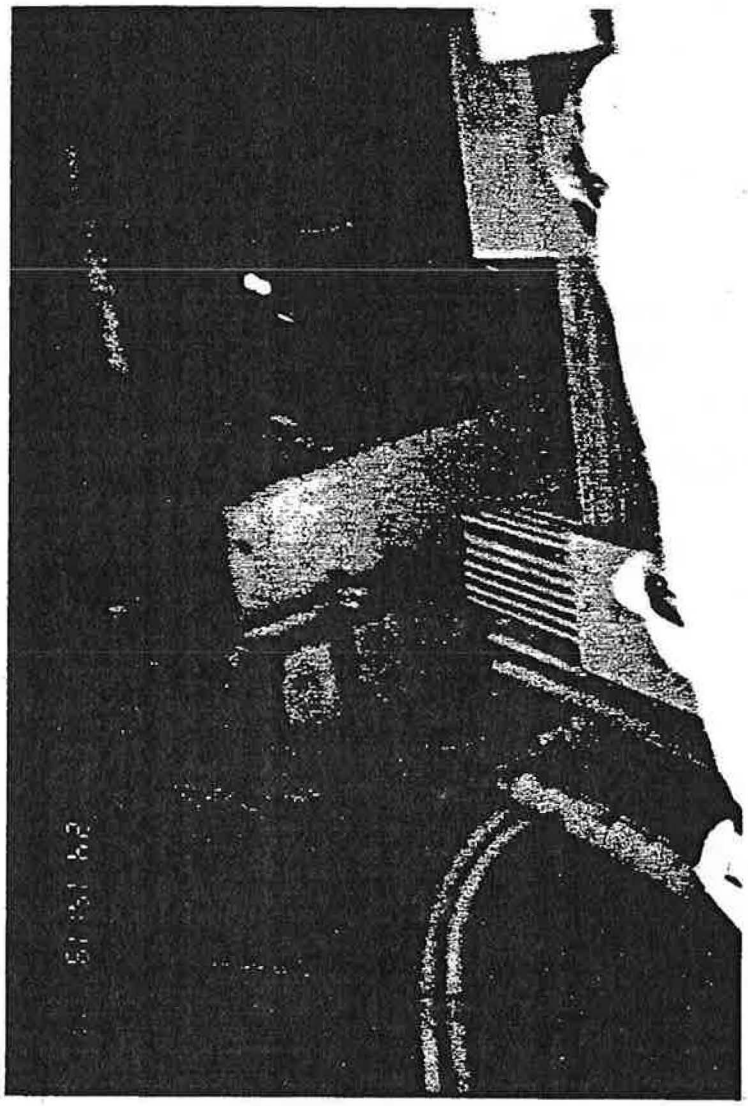


Photo 1.5-11

June 24, 1991

Void --- photo was taken by mistake.

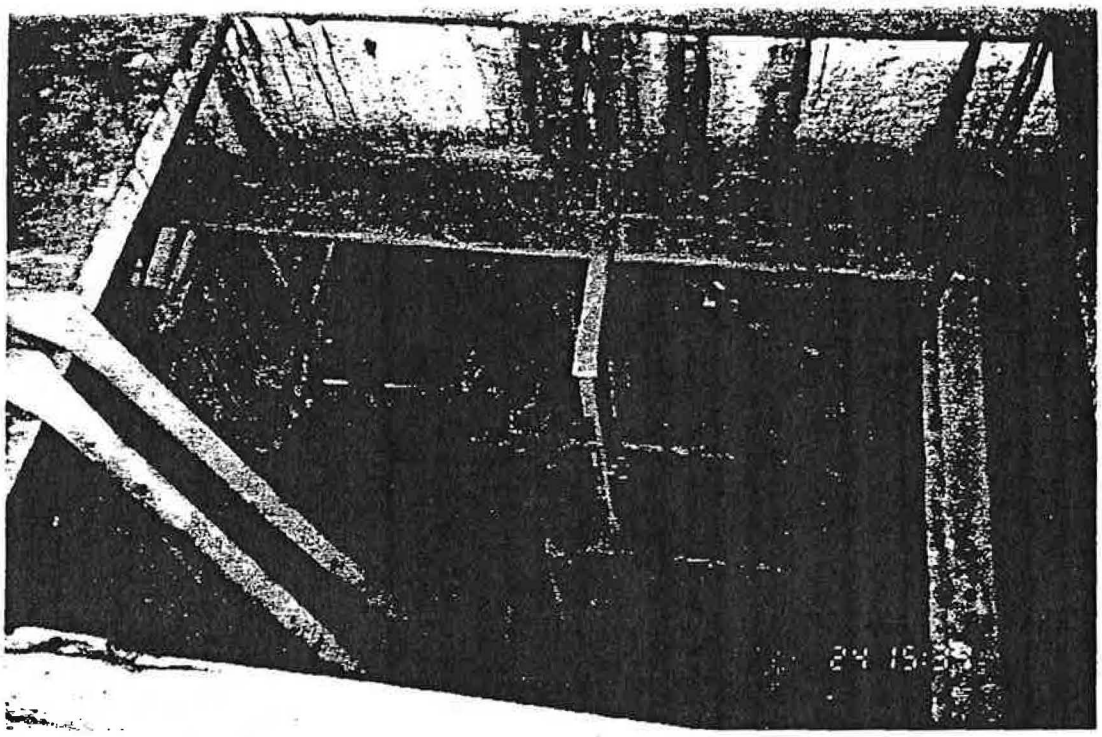


Photo 1.5-12 June 24, 1991

Facing south, of Chrome Line Number Eight's Halogen Line Sump (SWMU 88).

Photo 1.5-13 June 24, 1991

Void --- photo did not develop properly.

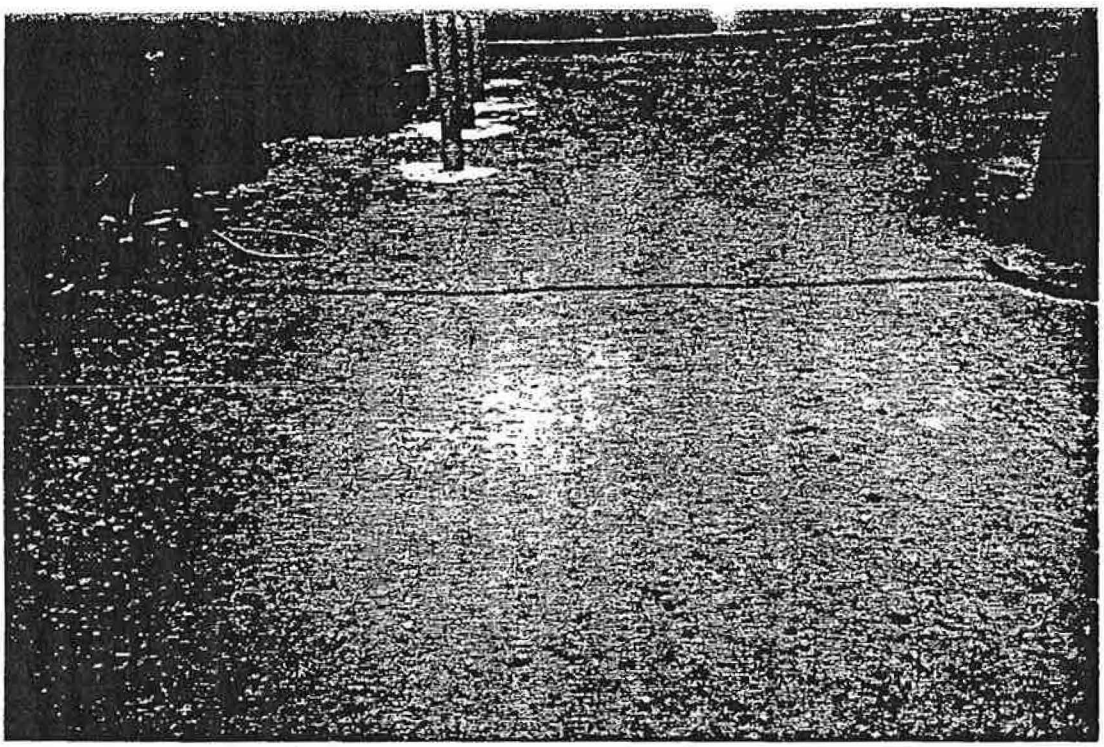


Photo 1.5-14 June 24, 1991

Facing east, of the Cold Sheet Mill Diesel Fuel UST (AOC T).

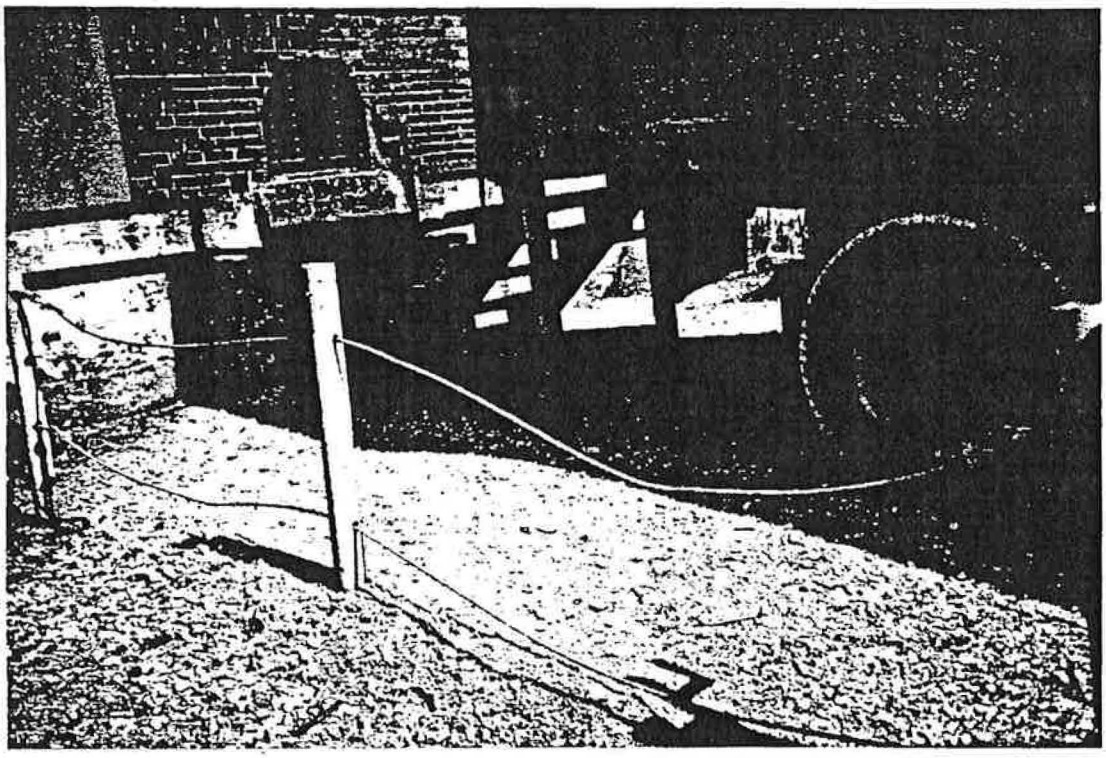


Photo 1.5-15 June 24, 1991

Facing southeast, of Truck Dock Number Nine Fuel Oil Spill and Diesel UST (AOC K) located at.

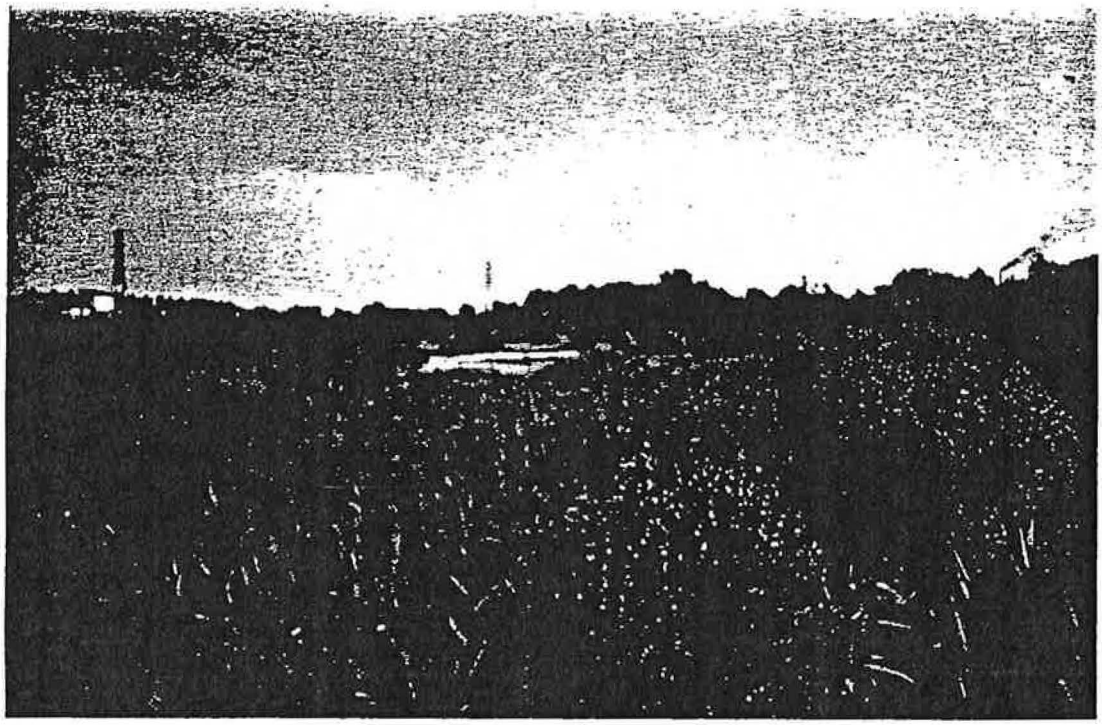


Photo 1.5-16 June 24, 1991

Facing south, of the Mud Reservoir.



Photo 2.1-1 June 18, 1991

View facing east of the culvert which leads to the beginning of Tin Mill Canal (SWMU 1). Note the vegetation growing up through the slag.

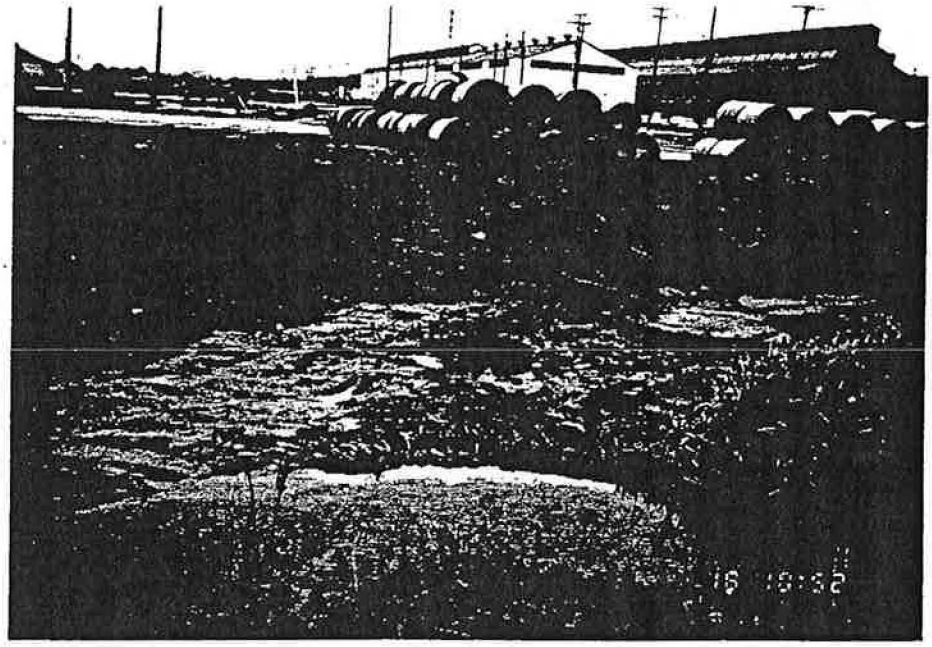


Photo 2.1-2 June 18, 1991

View facing south of a Tin Mill Canal (SWMU 1). Note the brown layer of liquid in the puddled water.

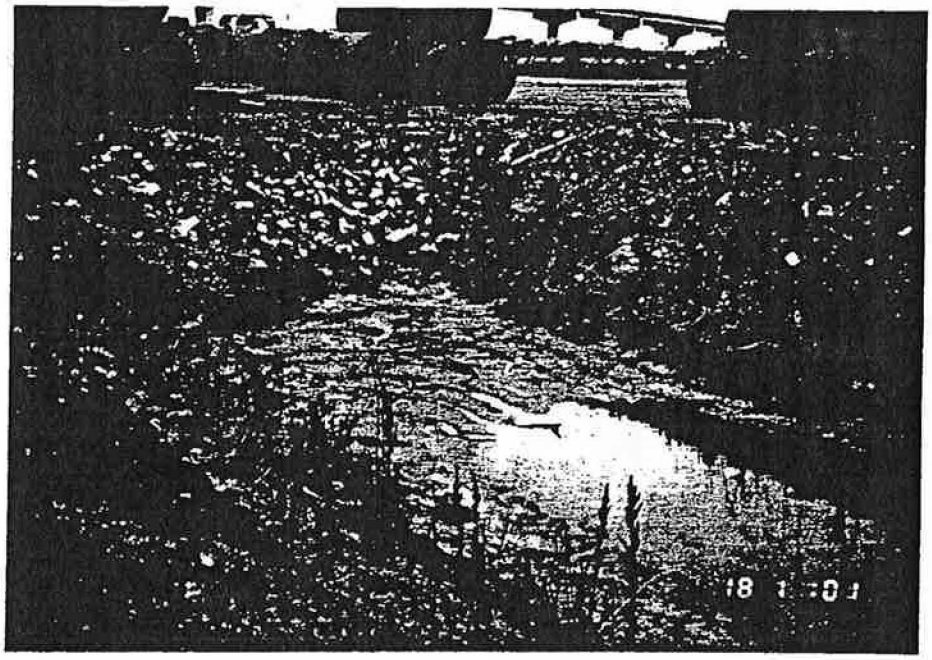


Photo 2.1-3 June 18, 1991

View facing north of an flow outshoot from Tin Mill Canal(SWMU 1). The actual canal runs perpendicular to this area.

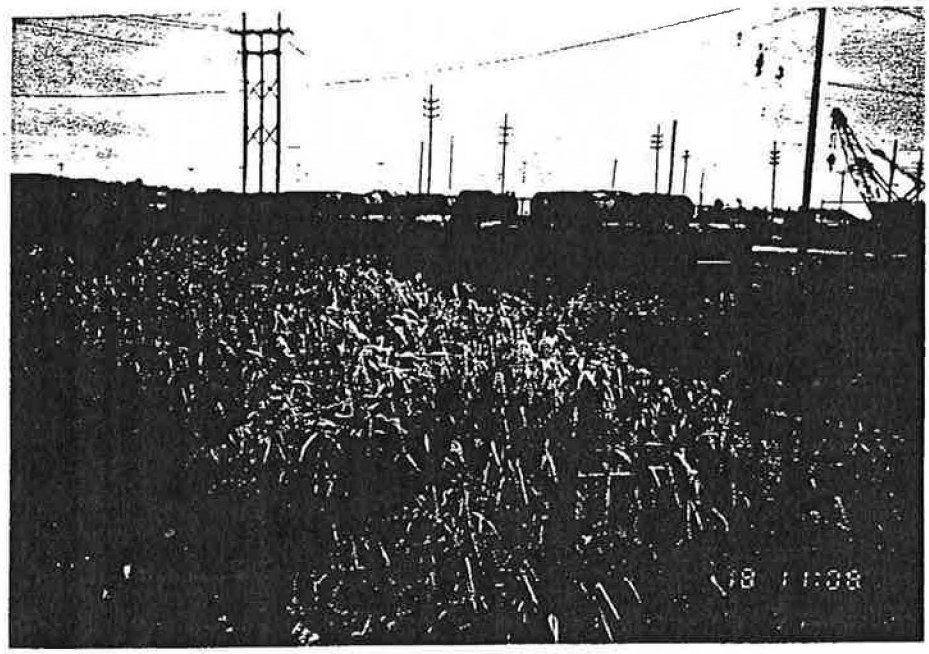


Photo 2.1-4 June 18, 1991

View facing northeast of Tin Mill Canal (SWMU 1). Dredging piles along the bank of the canal can be seen beneath the rolls of steel.

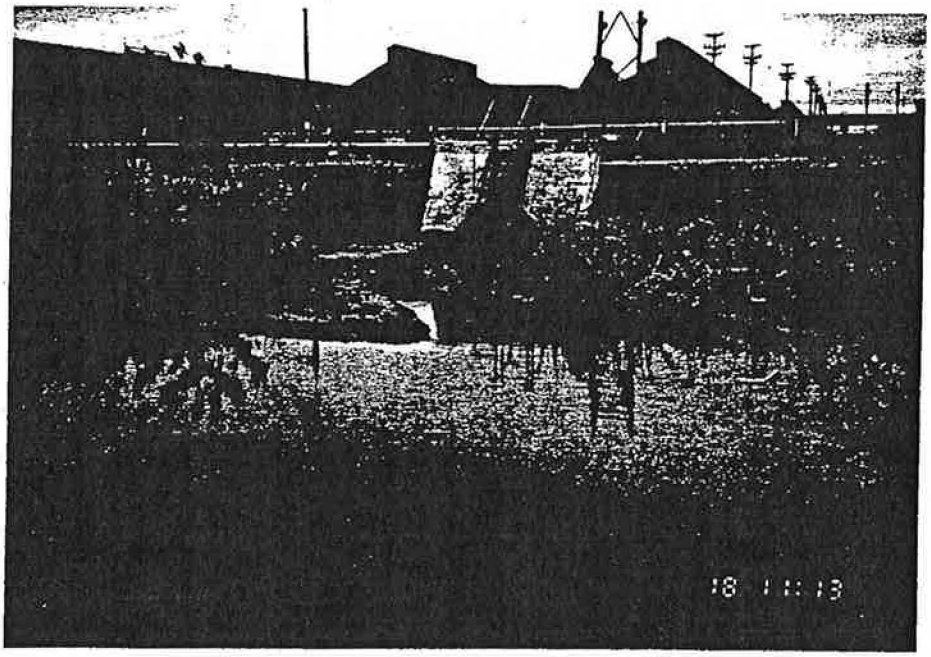


Photo 2.1-5 June 18, 1991

View facing south of a Cold Sheet Mill discharge point (SWMU 2) into Tin Mill Canal (SWMU 1). Note that the discharge is a shade of yellow/brown.

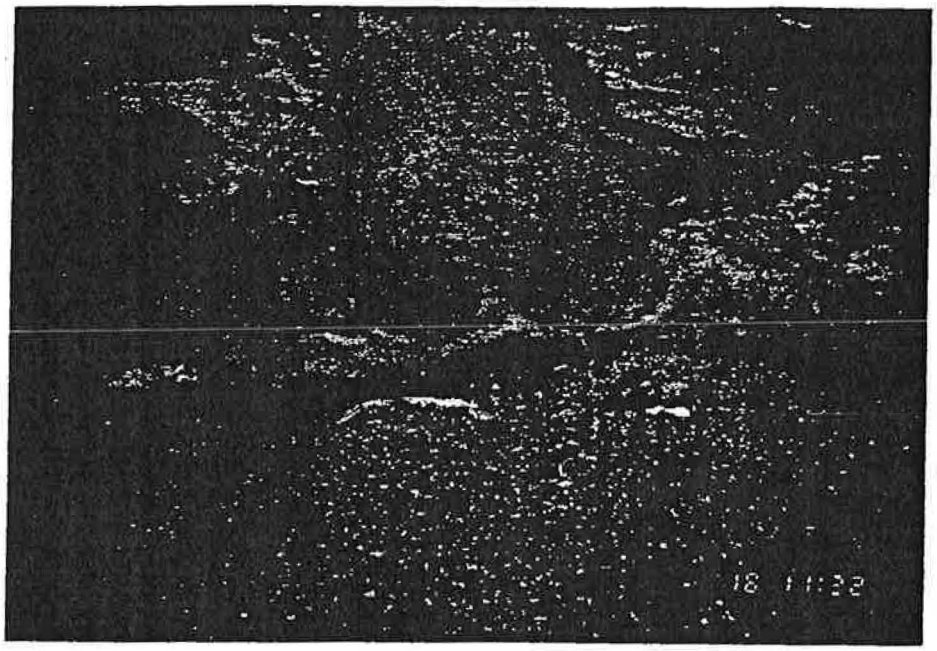


Photo 2.1-6 June 18, 1991

View facing down of a discharge (SWMU 2) from the Oil Recovery Station, PORI, into Tin Mill Canal (SWMU 1). Note the oil sheen on top of the water.



Photo 2.1-7 June 18, 1991

View facing northeast of the caked dredgings on the bottom of Tin Mill Canal(SWMU 1). An oily sheen is on top of the sediment.

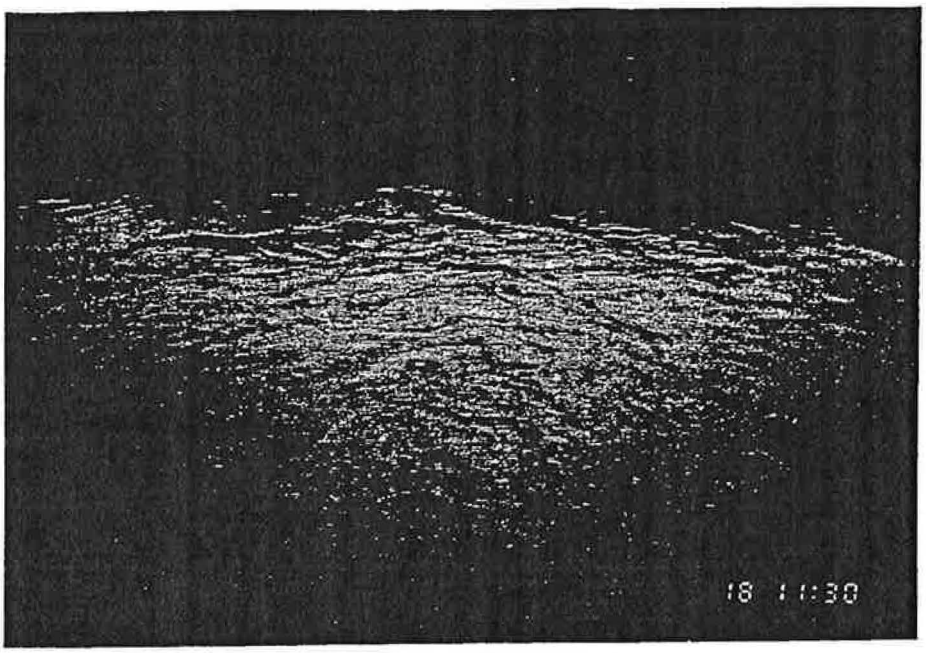


Photo 2.1-8 June 18, 1991

View facing north of a discharge (SWMU 2) from the Cold Sheet Mill into Tin Mill Canal (SWMU 1).

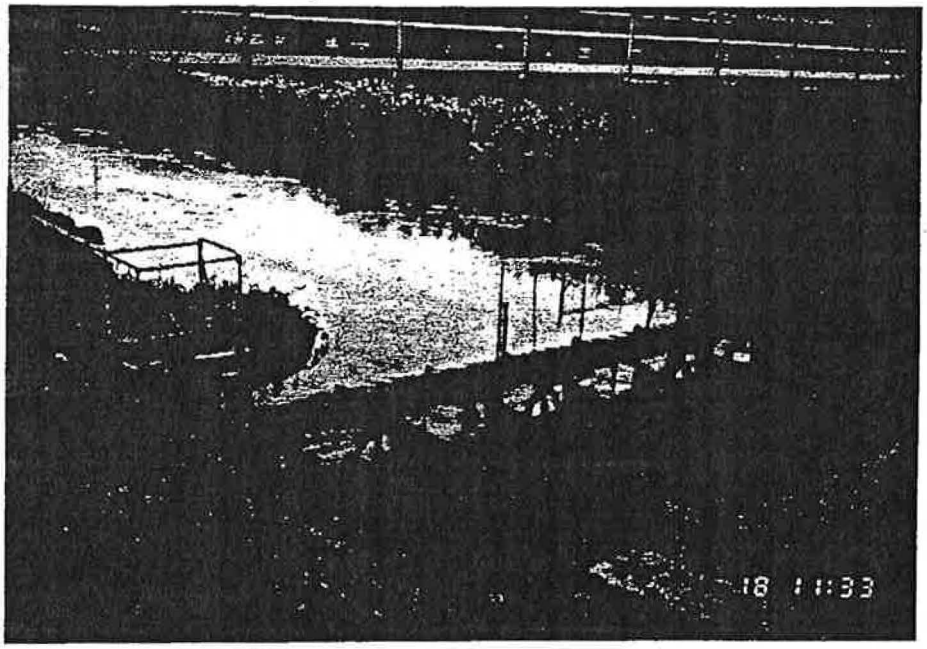


Photo 2.1-9 June 18, 1991

View facing west of Tin Mill Canal (SWMU 1). Steam was viewed coming from the discharge sewer.

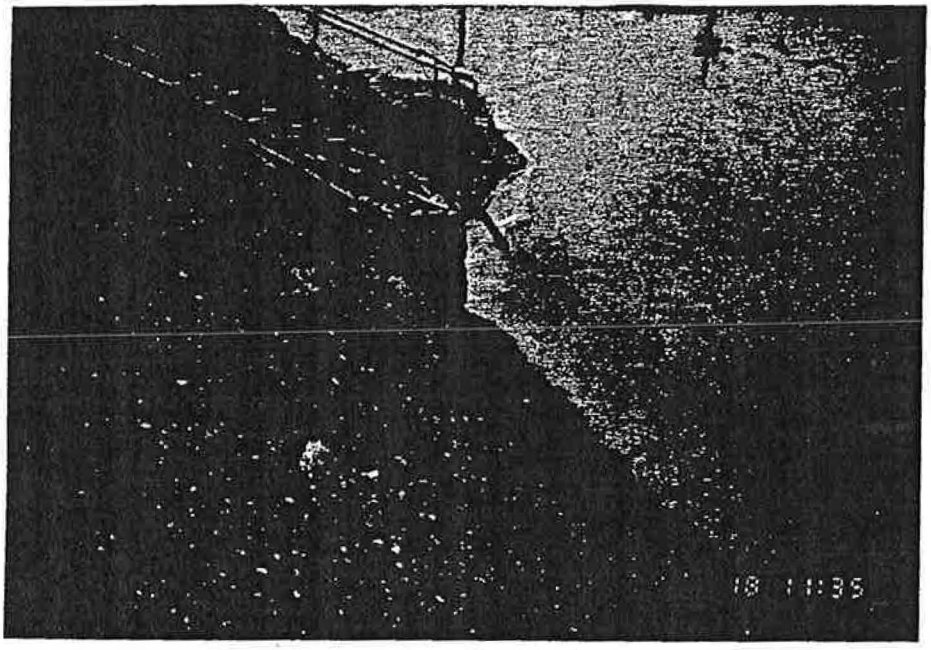


Photo 2.1-10 June 18, 1991

View facing west of Tin Mill Canal discharge point (SWMU 2). Note the yellow/white discharge for the mills into the canal.

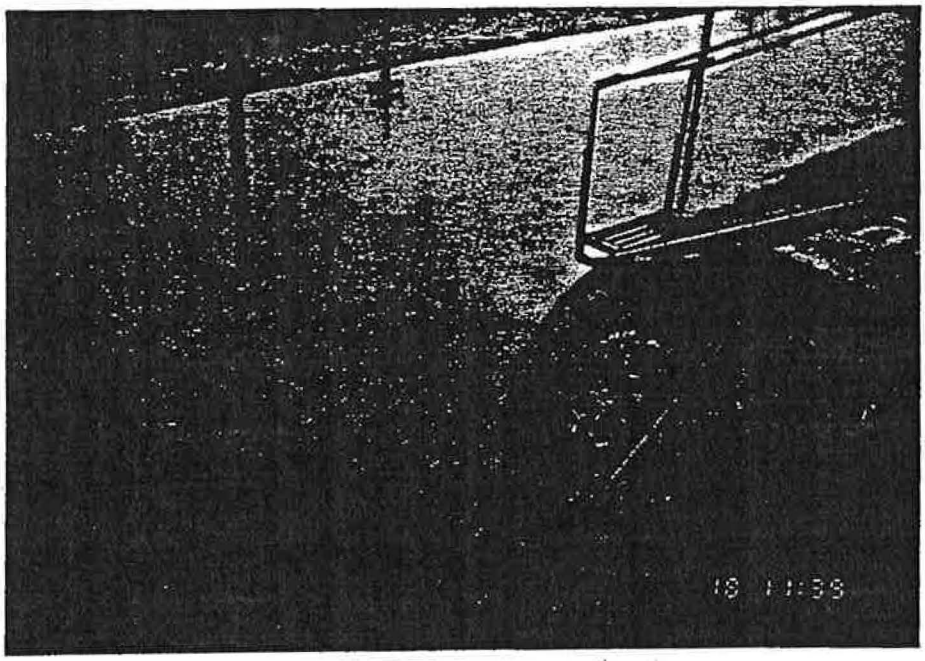


Photo 2.1-11 June 18, 1991

View facing north of Tin Mill Canal (SWMU 1) where the Tin Mill discharge pipe (SWMU 2) is located.

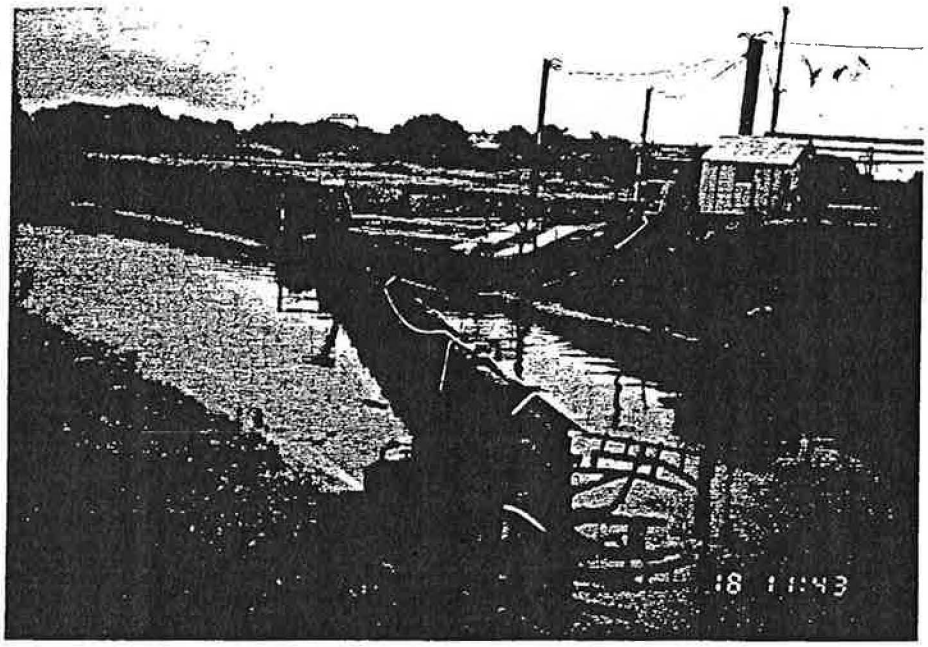


Photo 2.1-12 June 18, 1991

View facing northwest of Oil Skimmer #1 (SWMU 3) located in Tin Mill Canal.

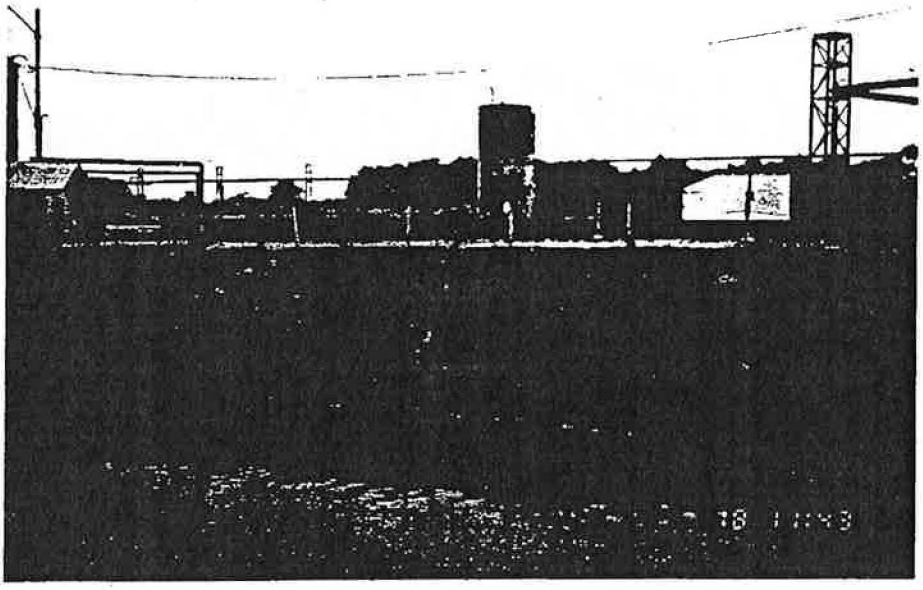


Photo 2.1-13 June 18, 1991

View facing north of the waste oil tanks (SWMU 5) which collects waste oil from Oil Skimmer #1 (SWMU 3) in Tin Mill Canal (SWMU 1).

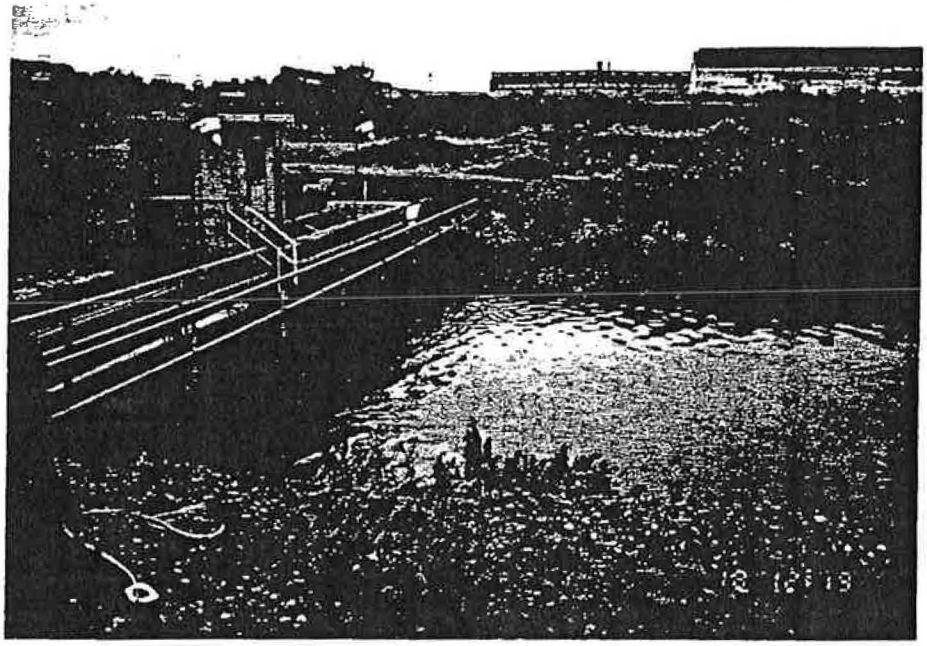


Photo 2.1-14 June 18, 1991

View facing north of Oil Baffle #1 (SWMU 3) located in Tin Mill Canal (SWMU 1) near Humphreys Creek Wastewater Treatment Plant.

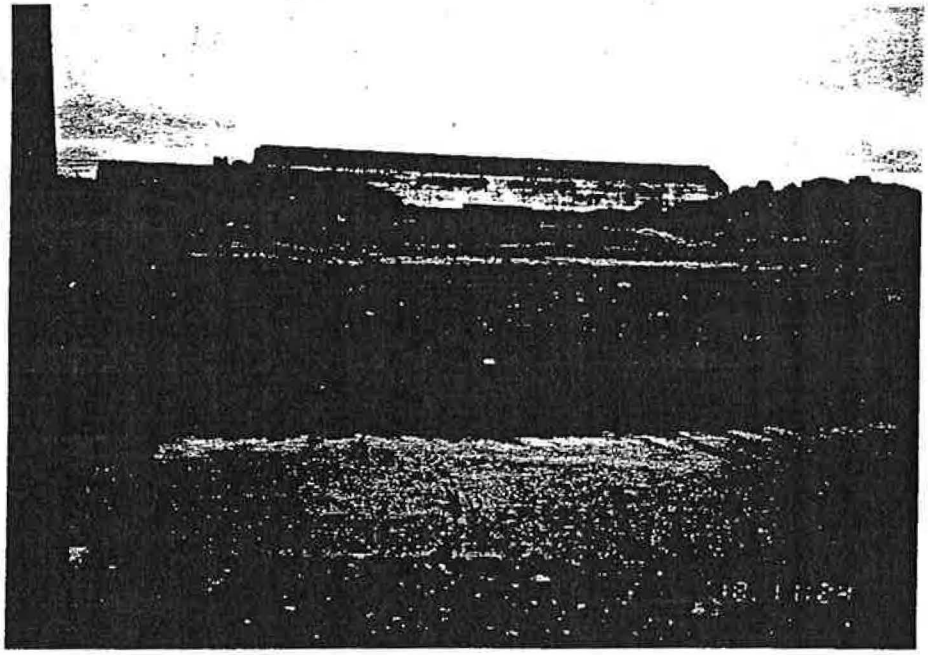


Photo 2.1-15 June 18, 1991

View facing north of the Pipe Mill discharge point (SWMU 3) into Tin Mill Canal (SWMU 1). Directly behind the discharge pipe is Humphrey's Impoundment (SWMU 190).

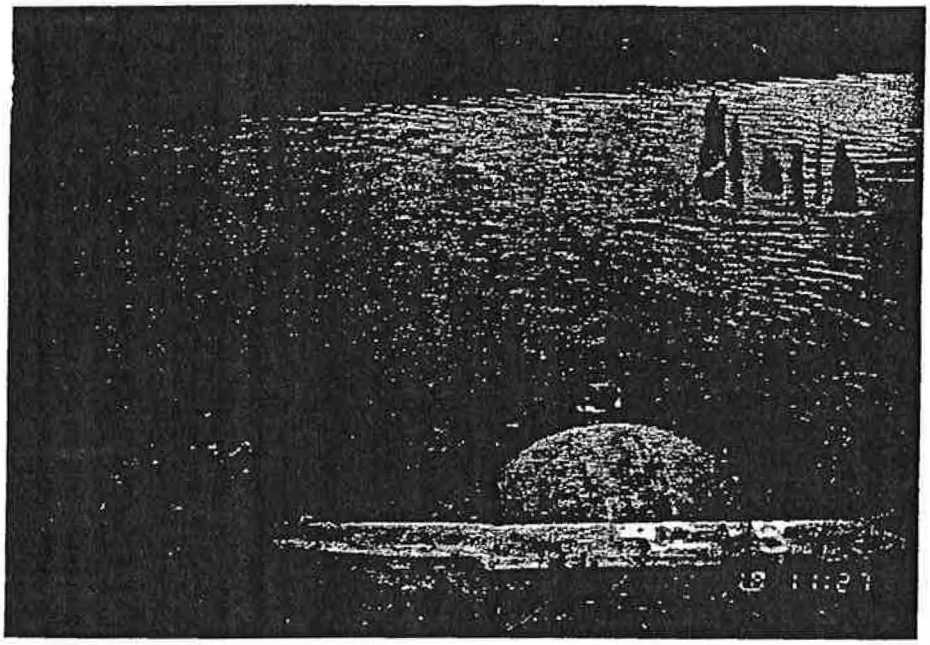


Photo 2.1-16 June 18, 1991

View facing down of the red discharge from the Primary Mills into Tin Mill Canal (SWMU 1).



Photo 2.1-17 June 18, 1991

View facing down and north of discolored sedimentation located in Tin Mill Canal (SWMU 1).

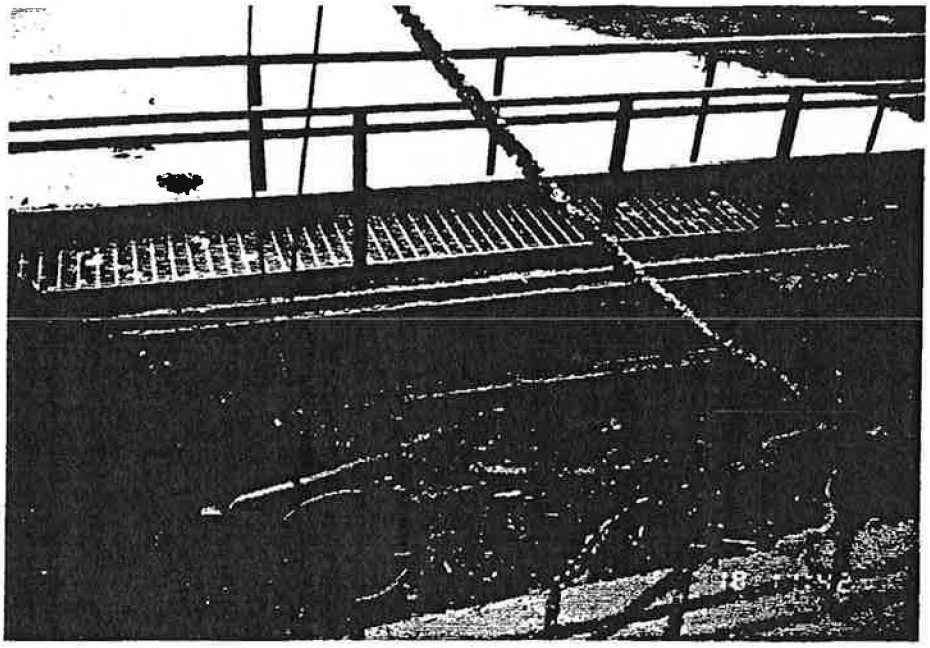


Photo 2.1-18 June 18, 1991

View facing down of a Brill Oil Skimmer (SWMU 3) located in Tin Mill Canal (SWMU 1).

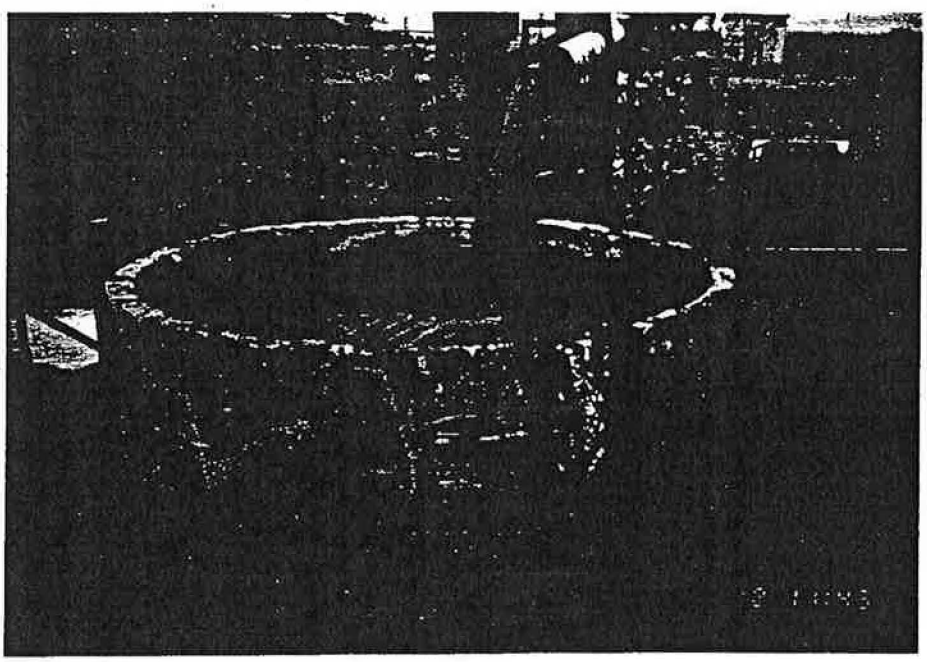


Photo 2.1-19 June 18, 1991

View facing north of the Brill Oil Pit #1 (SWMU 3) which is used to collect waste oil from the Brill Skimmer (SWMU 3) located in Tin Mill Canal (SWMU 1).

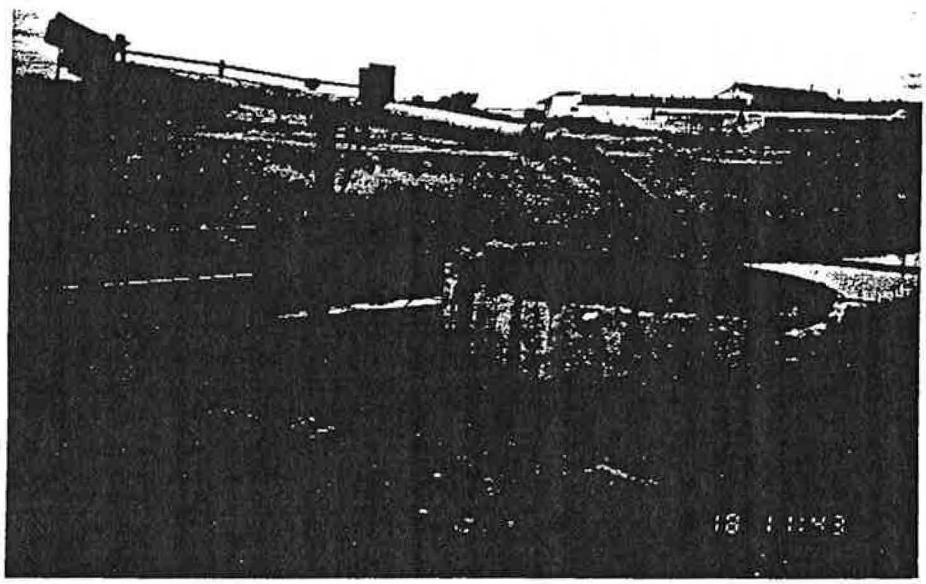


Photo 2.1-20 June 18, 1991

View facing east of Brill Oil Pit #2 (SWMU 3) which is used to collect waste oil from a Brill Skimmer (SWMU 3) located in Tin Mill Canal (SWMU 1).

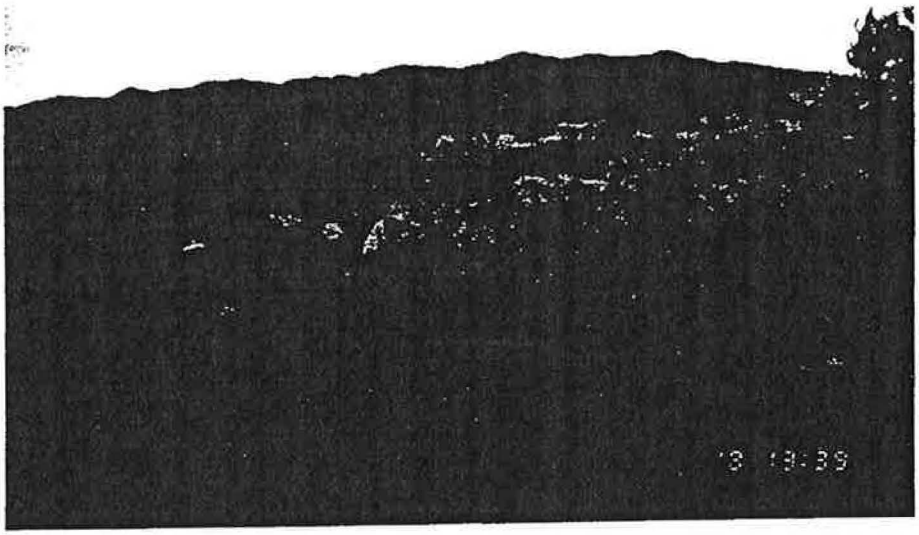


Photo 2.1-21 June 18, 1991

View facing south of Gray's Landfill (SWMU 93). Note the piles of sludge from the wastewater treatment plants toward the back.



Photo 2.1-22 June 18, 1991

View facing northwest of Gray's landfill Tar Decanter Cell (SWMU 94). Note the vegetation growing up the side of the cell.

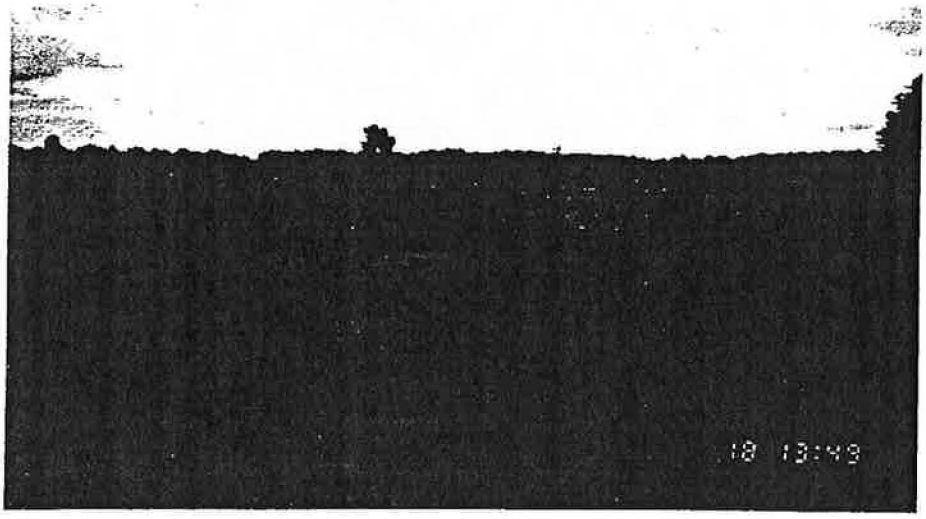


Photo 2.1-23 June 18, 1991

View facing northeast of Gray's Landfill Tar Decanter Cell (SWMU 94) cap on top of the landfill. Note that the cap is asphalt.

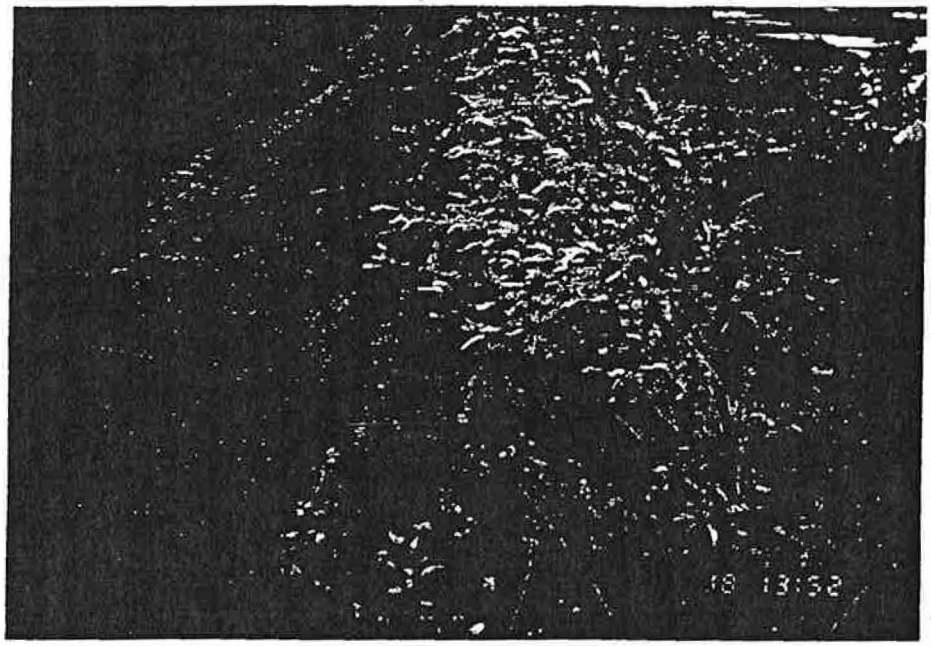


Photo 2.1-24 June 18, 1991

Close-up view facing northeast of Gray's Landfill Tar Decanter Cell (SWMU 94) cap. Note the thickness of the new cap over older one.

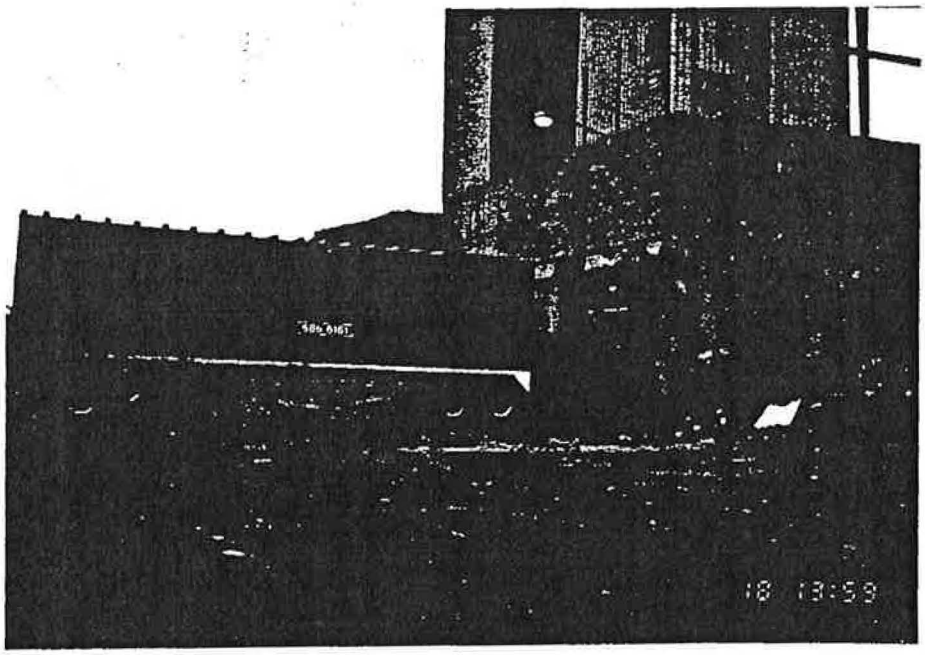


Photo 2.1-25 June 18, 1991

View of the Trash Transfer Station (SWMU 95) located near Gray's Landfill (SWMU 93), across from the Tar Decanter Cell (SWMU 94). The station is operated by BFI.

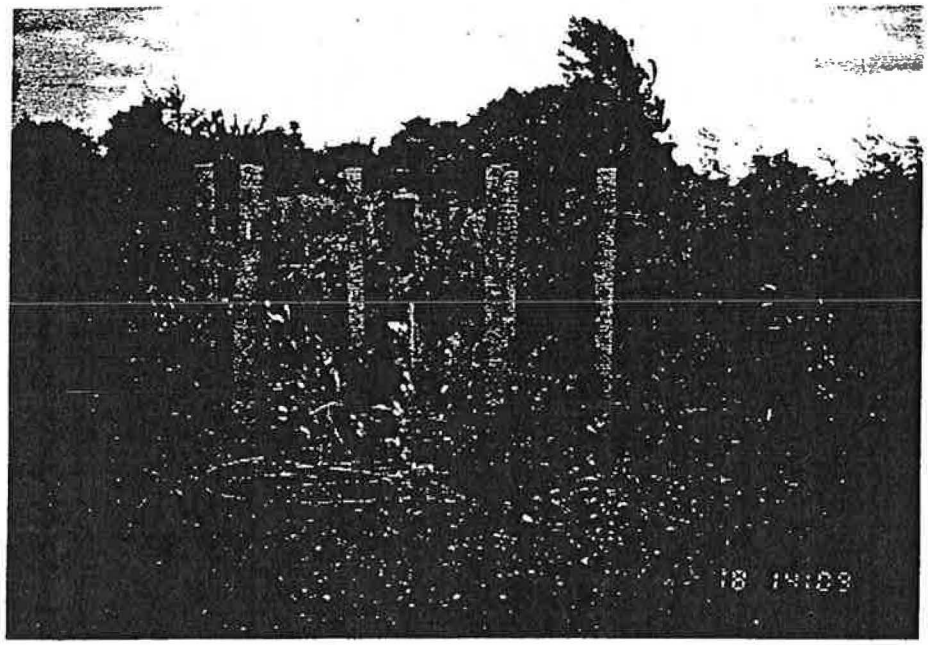


Photo 2.1-26 June 18, 1991

View facing west of a groundwater well located in Gray's Landfill (SWMU 93). The well casing is rusting, and locked.



Photo 2.1-27 June 18, 1991

View facing north from the the top of Gray's Landfill (SWMU 93) overlooking Bear Creek.

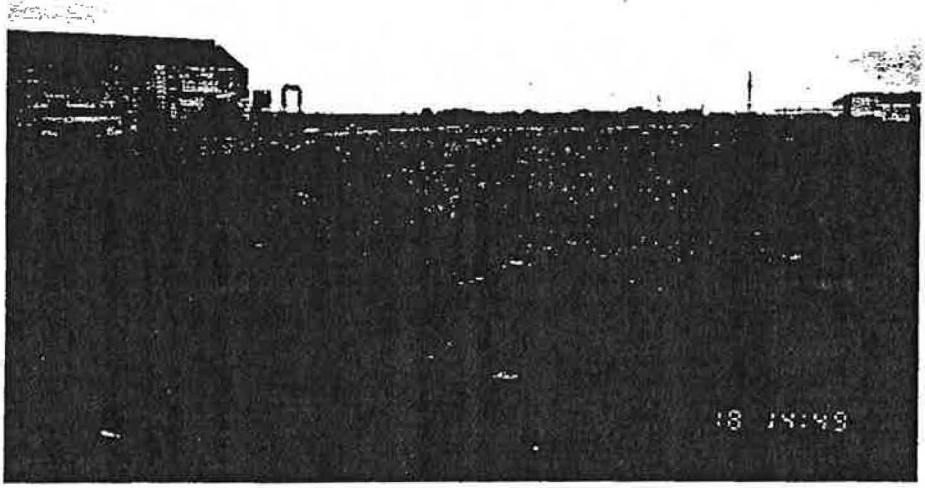


Photo 2.1-28 June 18, 1991

View facin north of Humphrey's Impoundment (SWMU 190). The majority of the area is heavily vegetated. The small darkened area up front is still used to dry sludges.

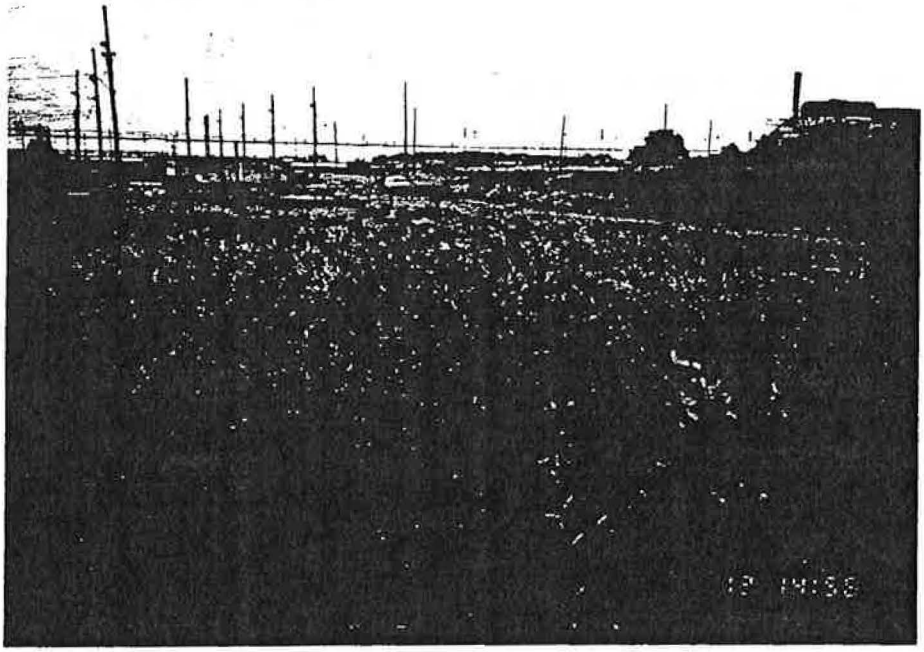


Photo 2.1-29 June 18, 1991

View facing northwest of the top of an old Tin Mill Canal Impoundment (SWMU 6). Tin Mill Canal (SWMU 1), although not present in this photograph, would be located to the left.

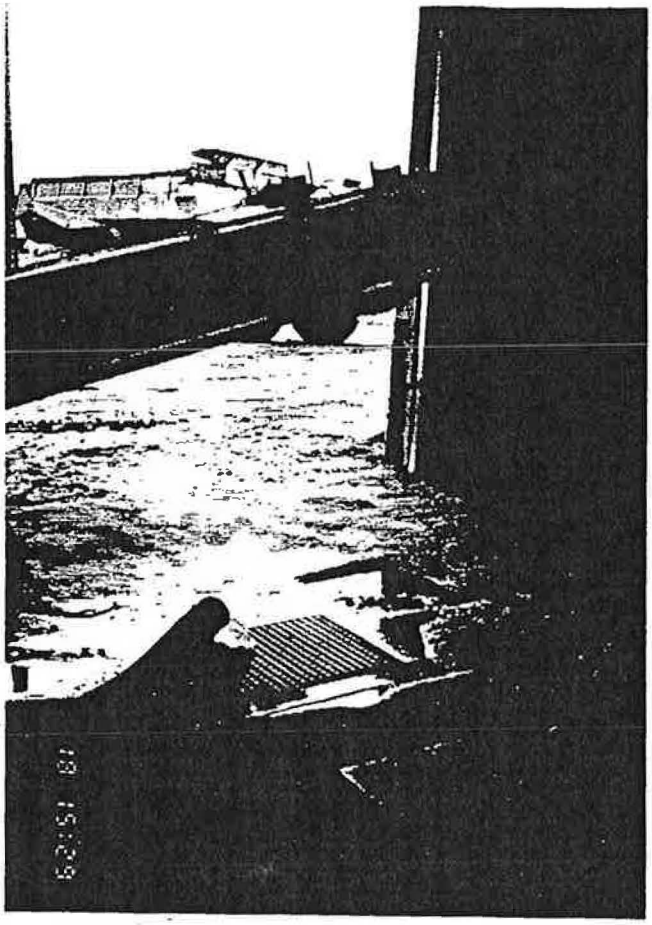


Photo 2.1-30 June 18, 1991

View facing east of the Sinter Plant Wastewater Treatment Plant centrifuge conveyor belt which carries waste from the centrifuge to an outdoor pile (SWMU 98).

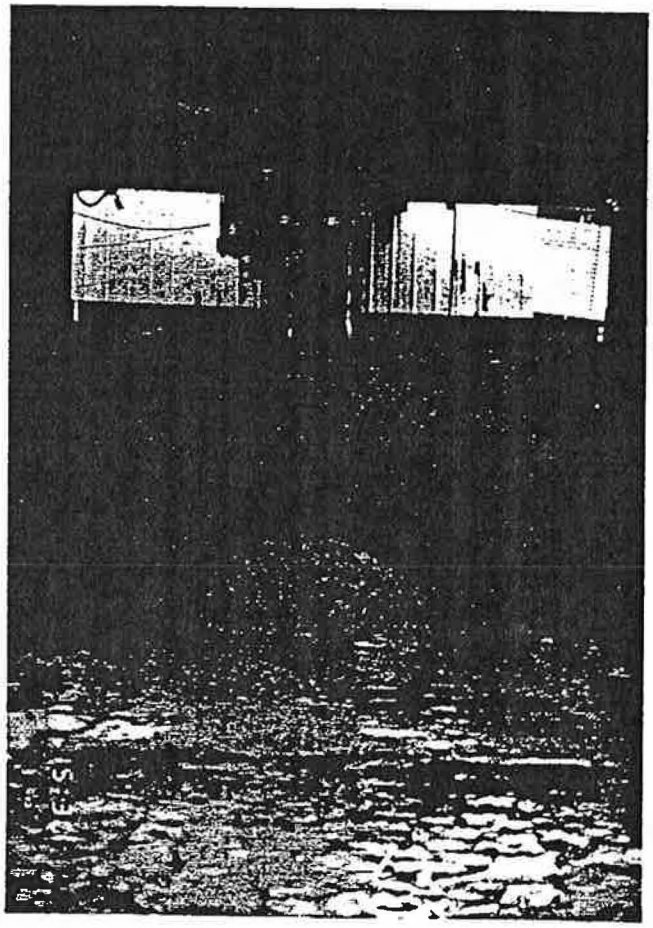


Photo 2.1-31 June 18, 1991

View facing north of the Sinter Plant Wastewater Treatment Plant Centrifuge Waste Pile (SWMU 98). This pile is moved to Gray's Landfill (SWMU 93) daily.

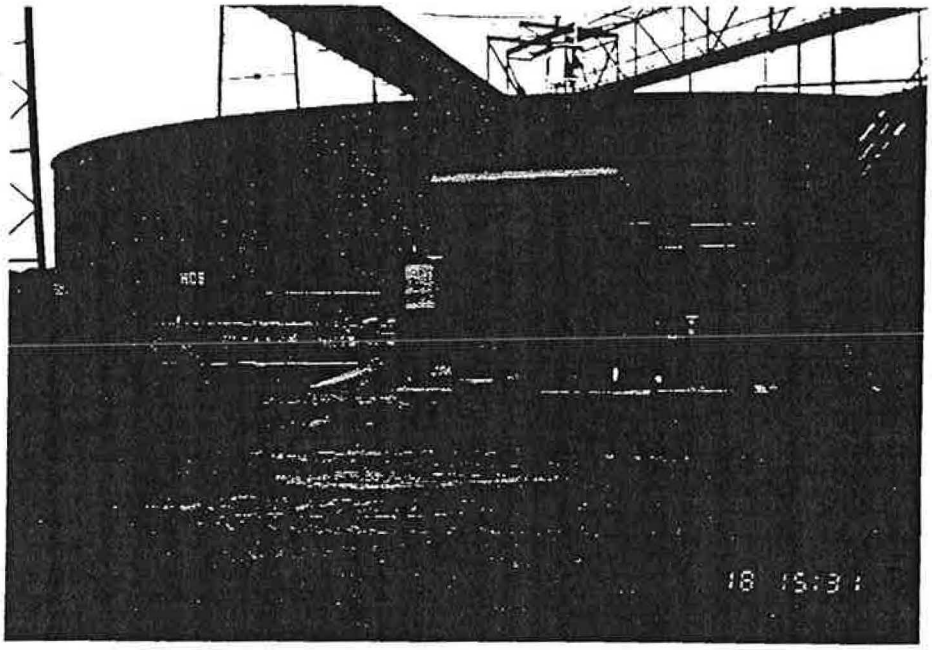


Photo 2.1-32 June 18, 1991

View facing east of the High Density Sludge Tank (SWMU 98) located at the Sinter Plant Wastewater Treatment Plant.

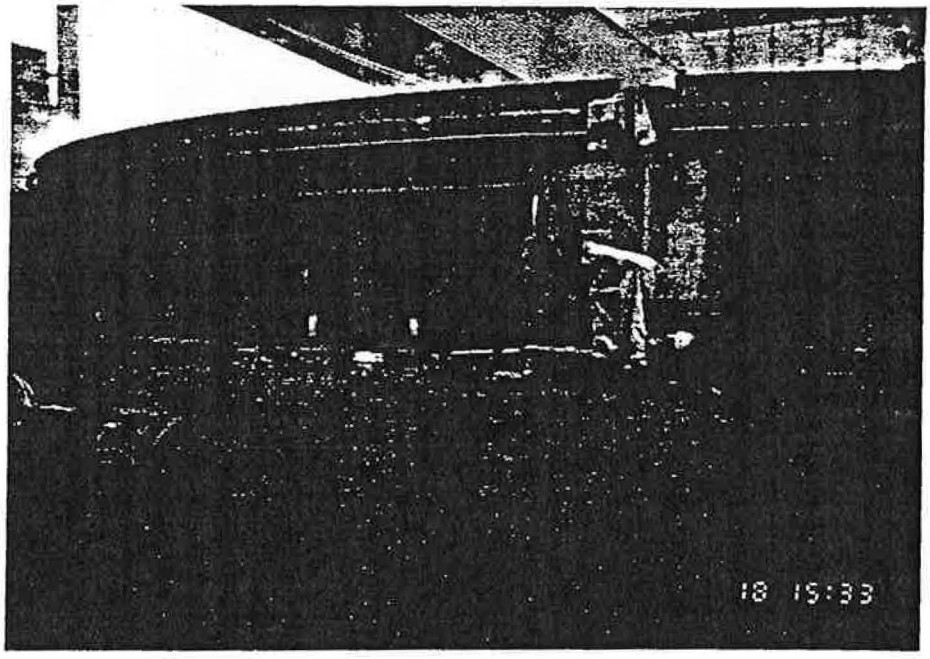


Photo 2.1-33 June 18, 1991

View facing east of the Thickener (SWMU 96) tank located at the Sinter Plant Wastewater Treatment Plant.

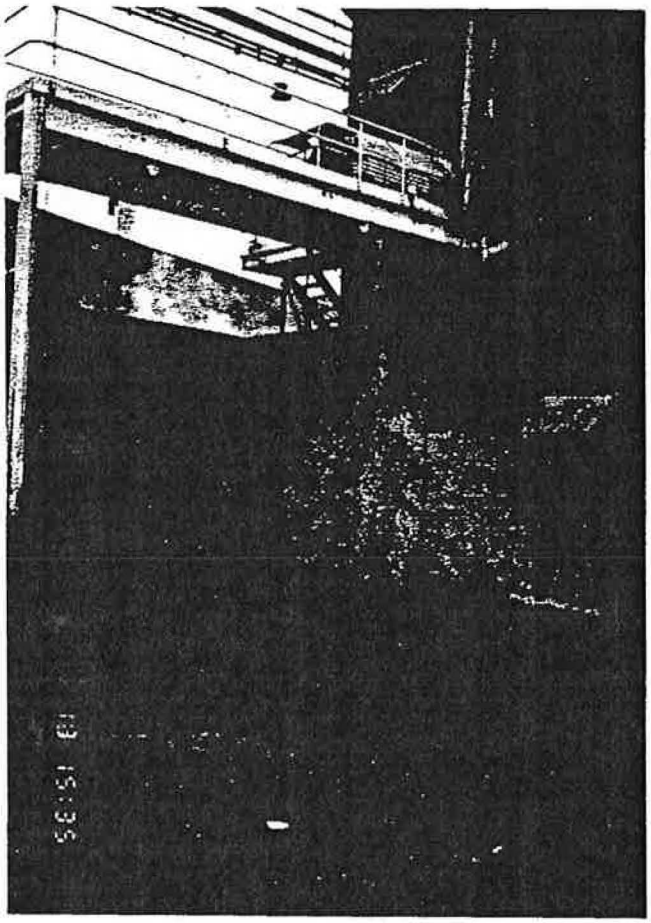


Photo 2.1-34 June 18, 1991

View facing east of the area where drums were used to separate solids in the Sinter Plant Wastewater Treatment Plant. The drums were located indoors, and the solids were conveyor belted to an outdoor waste pile (SWMU 99) in the puddled area.

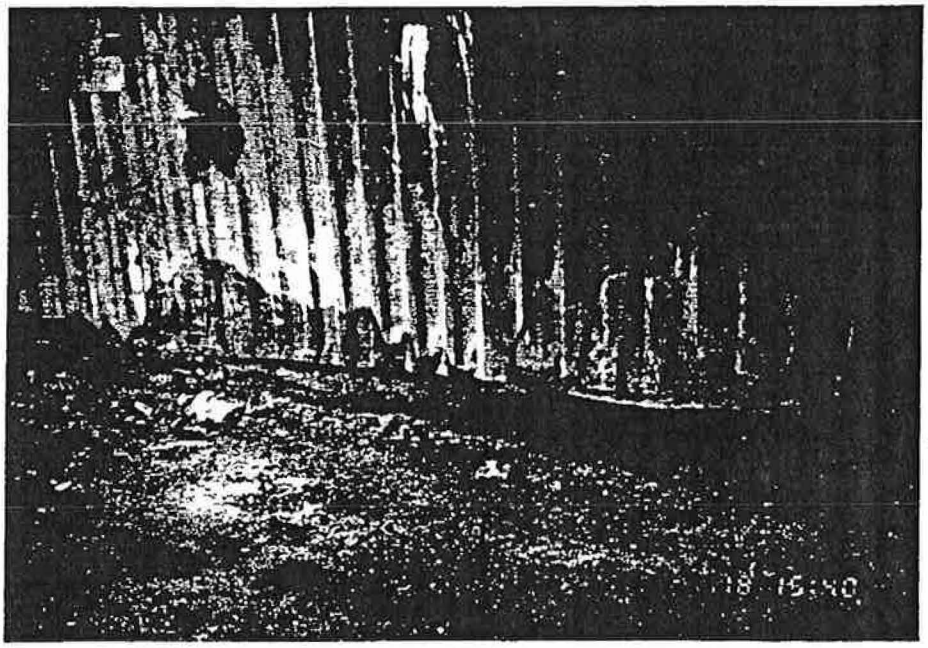


Photo 2.1-35 June 18, 1991

View facing west of the area which formerly held the Lime Grit Box (SWMU 100) at the Sinter Plant Wastewater Treatment Plant.

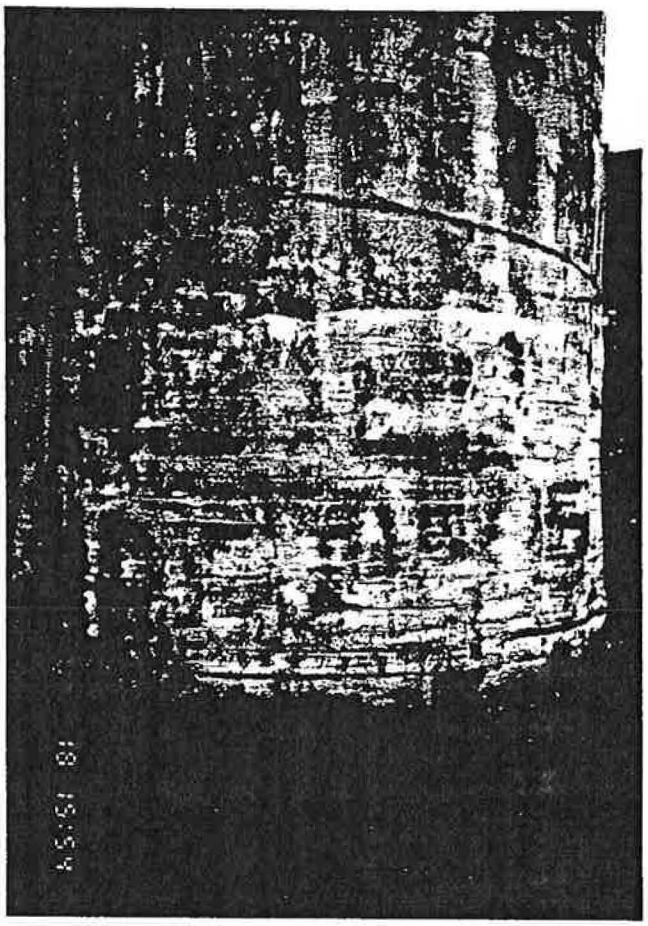


Photo 2.1-36 June 18, 1991

View of a Spent Pickle Liquor Tank (SWMU 101) located at the Sinter Plant Wastewater Treatment Plant. Note the deterioration of the insulation around the tank.

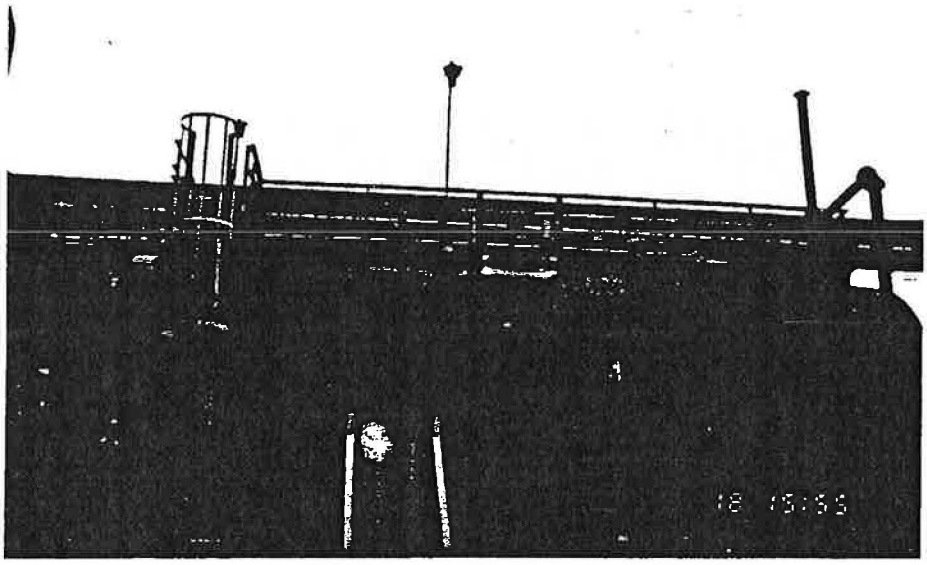


Photo 2.1-37 June 18, 1991

View of another Spent Pickle Liquor Tank (SWMU 101) located at the Sinter Plant Wastewater Treatment Plant.

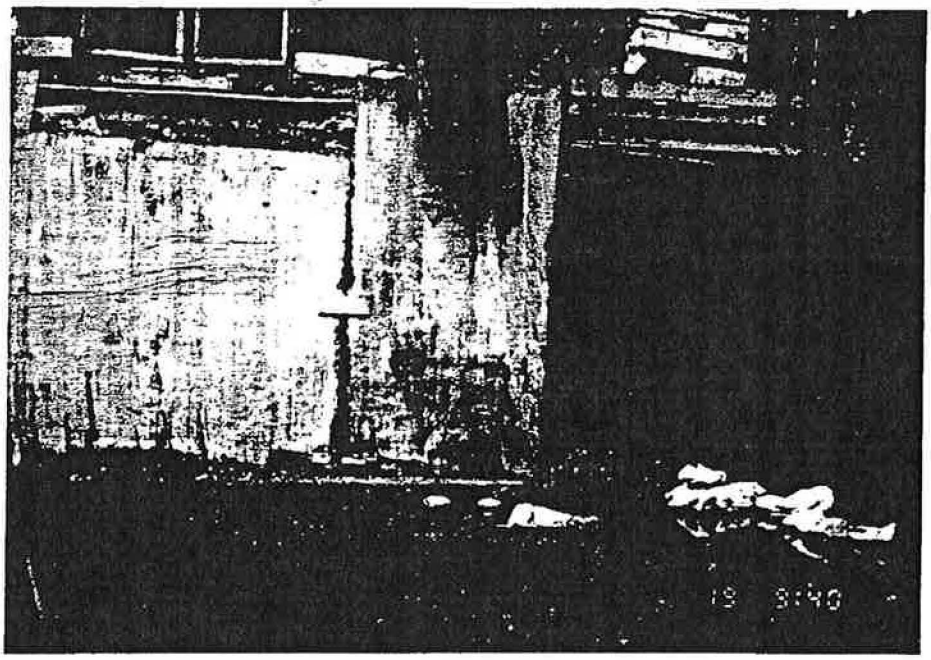


Photo 2.2-1 June 19, 1991

View facing north of Battery 12 Trash Collection Area (SWMU 102). Sweeping from the top of the battery are sent throught the chute and accumulate in a pile on the ground before being transported to the Coke Oven Sweepings Waste Pile (SWMU 192) near the Coke Oven Landfill (SMWU 191).

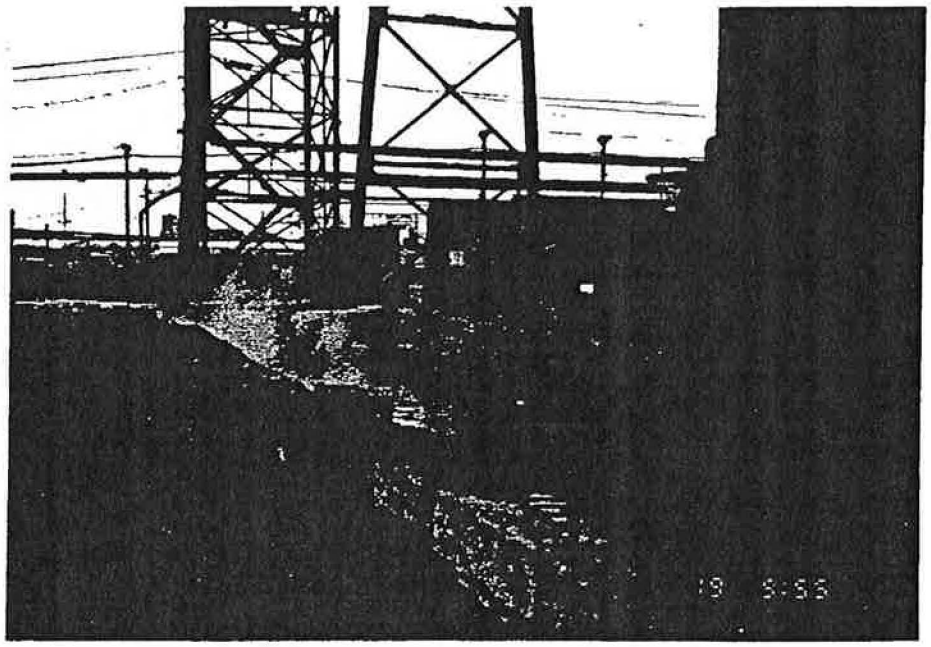


Photo 2.2-2 June 19, 1991

View facing east of Battery 11 and 12 Coke Oven Quenching Pit (SWMU 103). Note the cracking in the concrete.

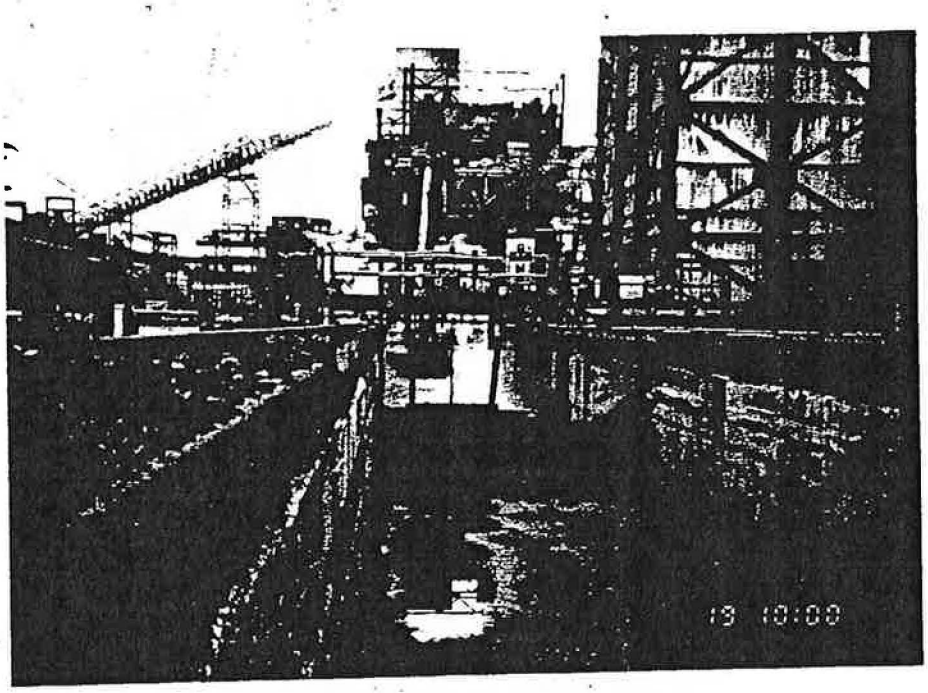


Photo 2.2-3 June 19, 1991

View facing north of the A Battery Coke Oven Quenching Pit (SWMU 103). The concrete pit showed signs of deterioration.

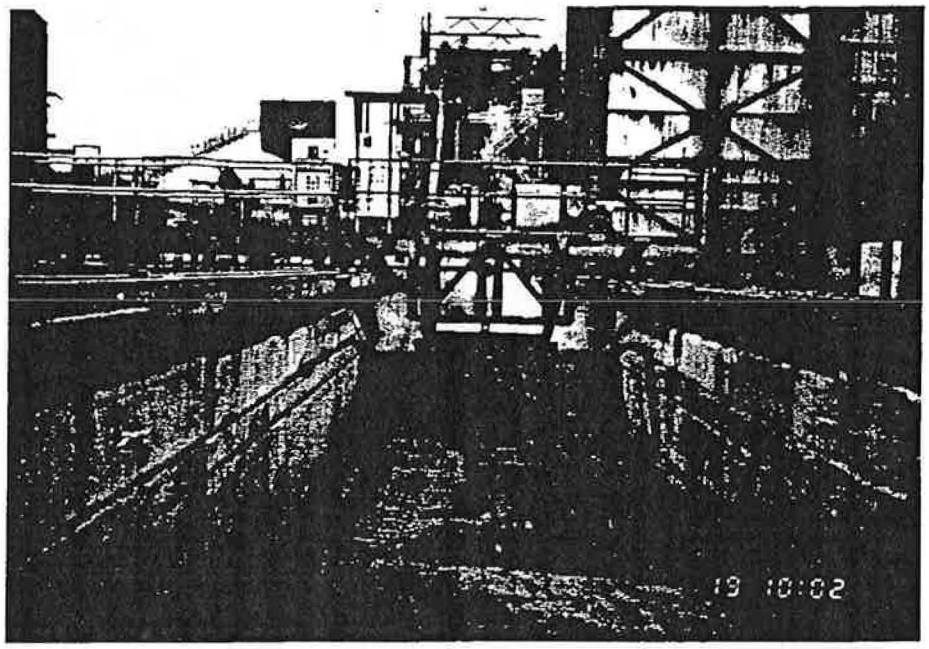


Photo 2.2-4 June 19, 1991

View facing north of A Battery Coke Oven Quenching Pit #2 (SWMU 103).

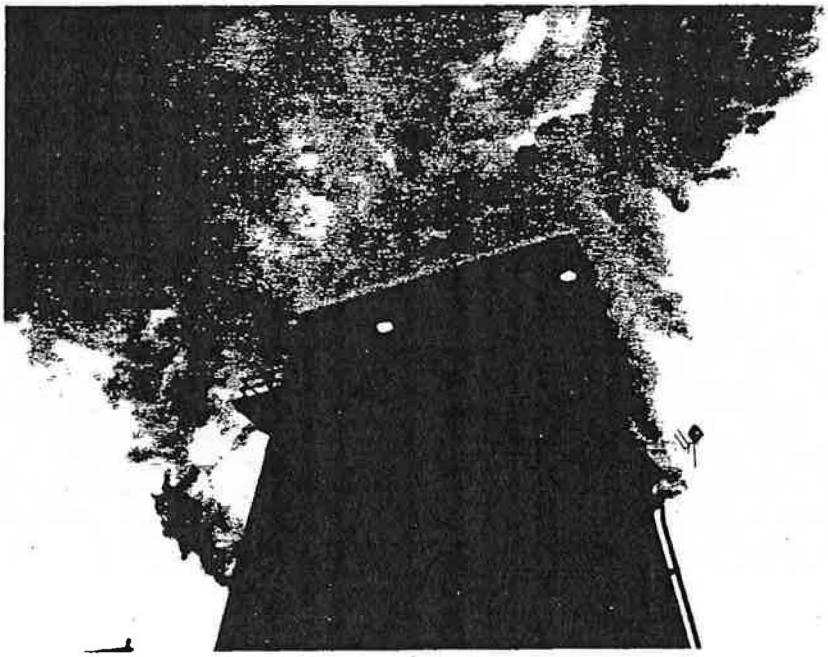


Photo 2.2-5 June 19, 1991

View facing up of the A Battery Coke Oven Quencher (SWMU 103) emission stack.

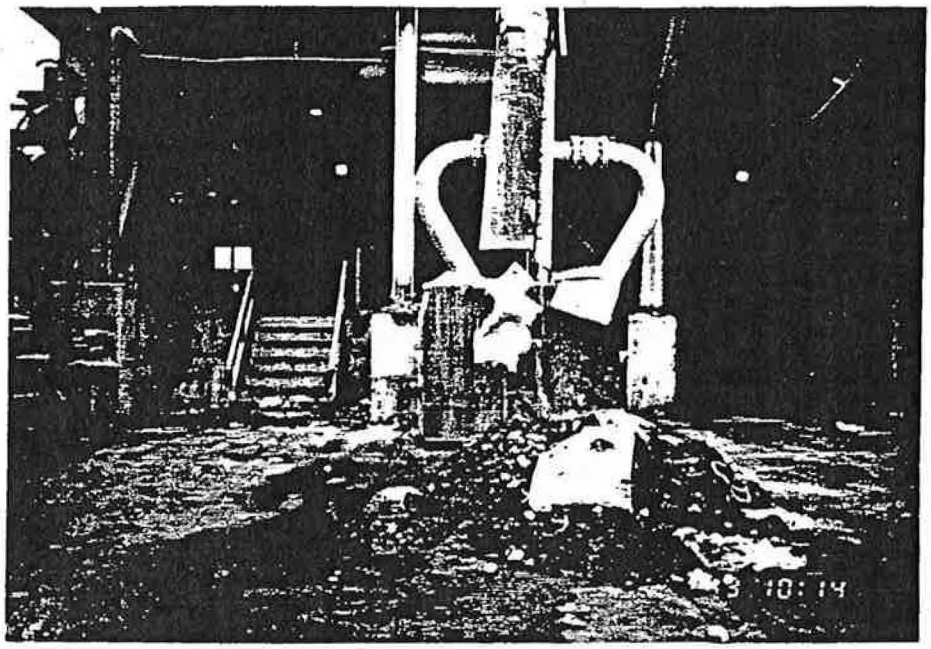


Photo 2.2-6 June 19, 1991

View facing northwest of the Trash Collection Area (SWMU 104) from Battery A. Note that the sweepings originate from the top of the battery.

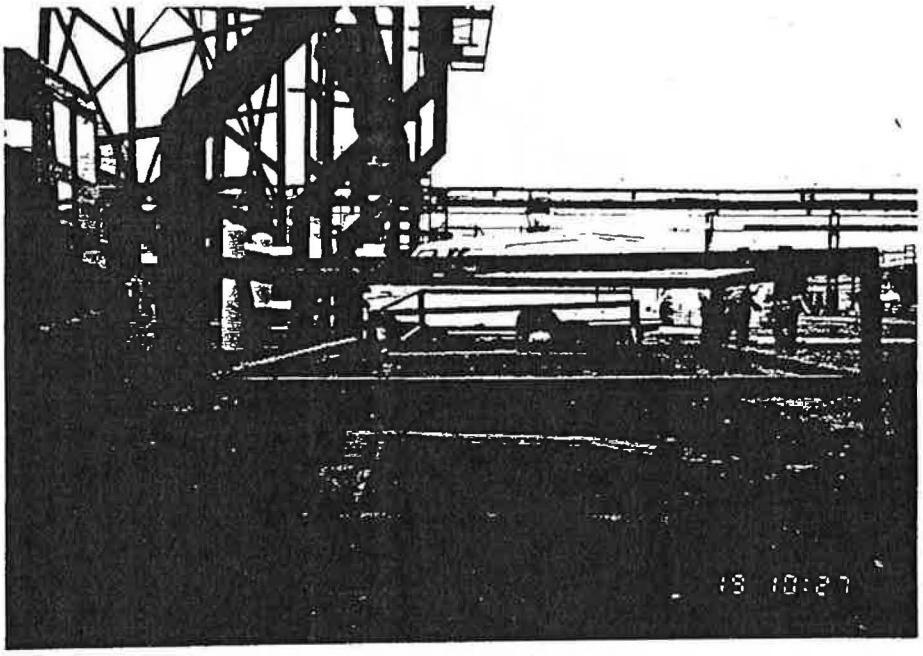


Photo 2.2-7 June 19, 1991

View facing west of A Battery Cooling Water Pits which empty into Outfall #21 of the Storm Water Sewer System (SWMU 196).

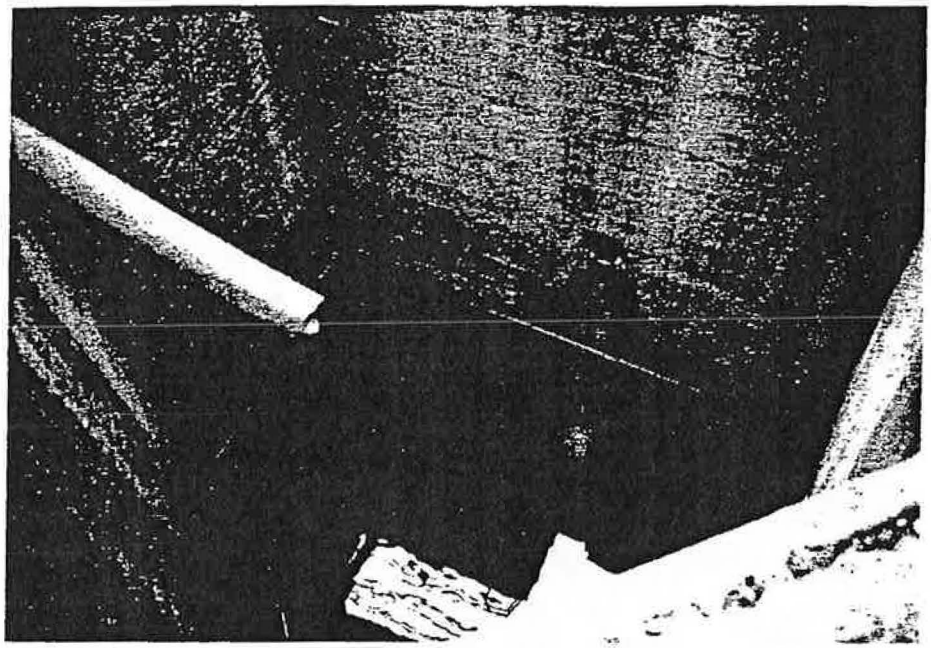


Photo 2.2-8 June 19, 1991

View facing down of A Battery Cooling Water Pits. Note the staining around the inlet pipe into the pit.

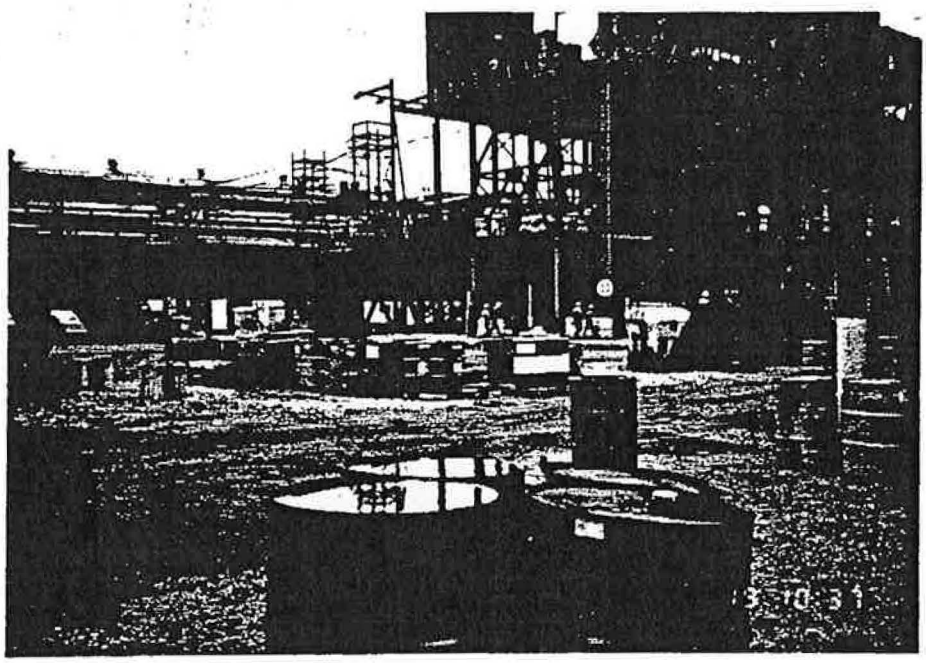


Photo 2.2-9 June 19, 1991

View facing northeast of A Battery Waste Oil Storage Area (SWMU 105). The open-topped dumpster in the right hand corner collects waste oil.

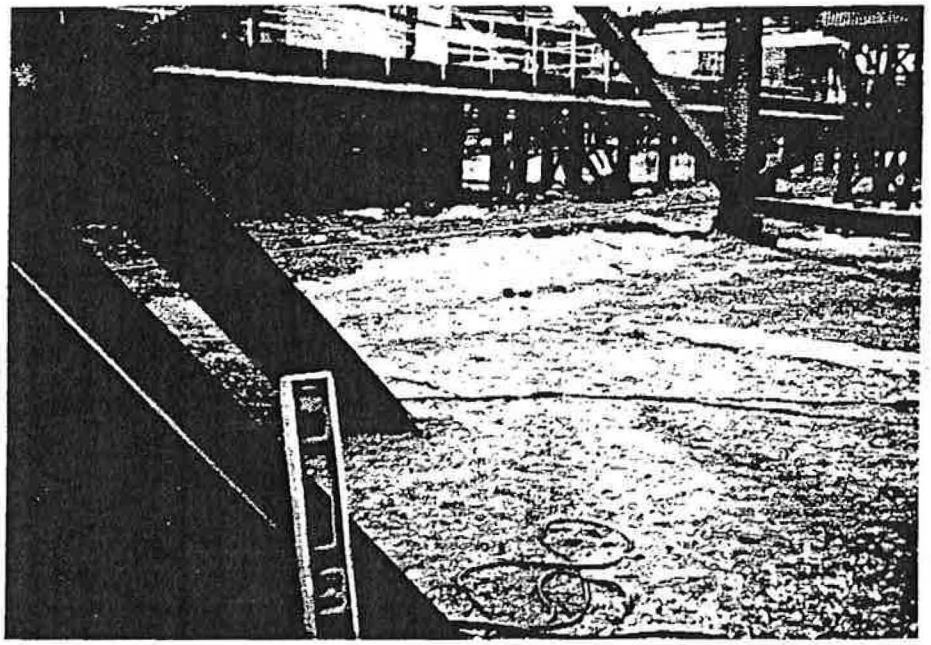


Photo 2.2-10 June 19, 1991

View facing south of the former location of the One Spot Car Diesel Fuel Tank.

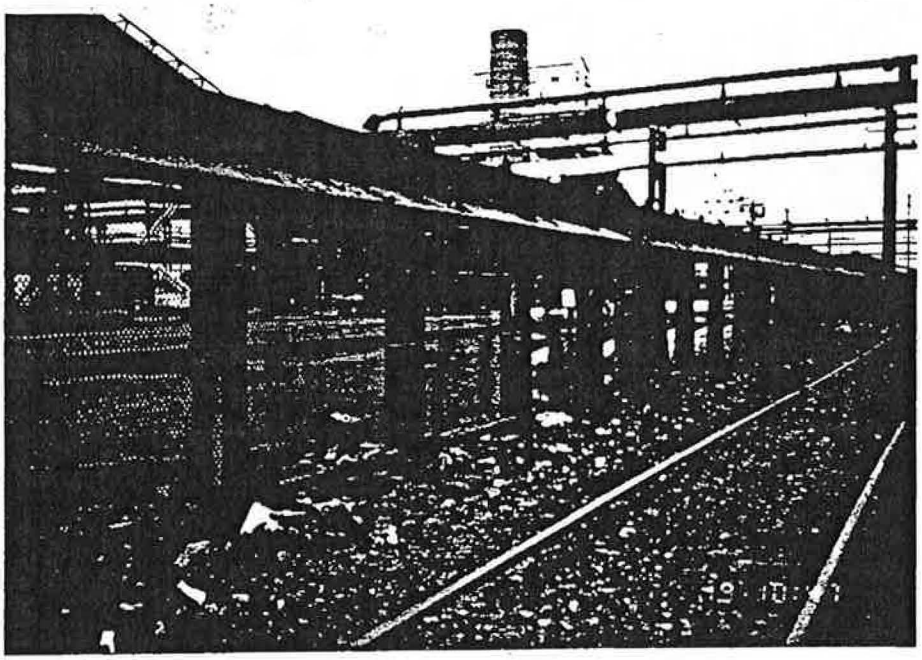


Photo 2.2-11 June 19, 1991

View facing southeast of the former location of Batteries 9 and 10 (SWMU 106). This area behind the fence is now vacant.

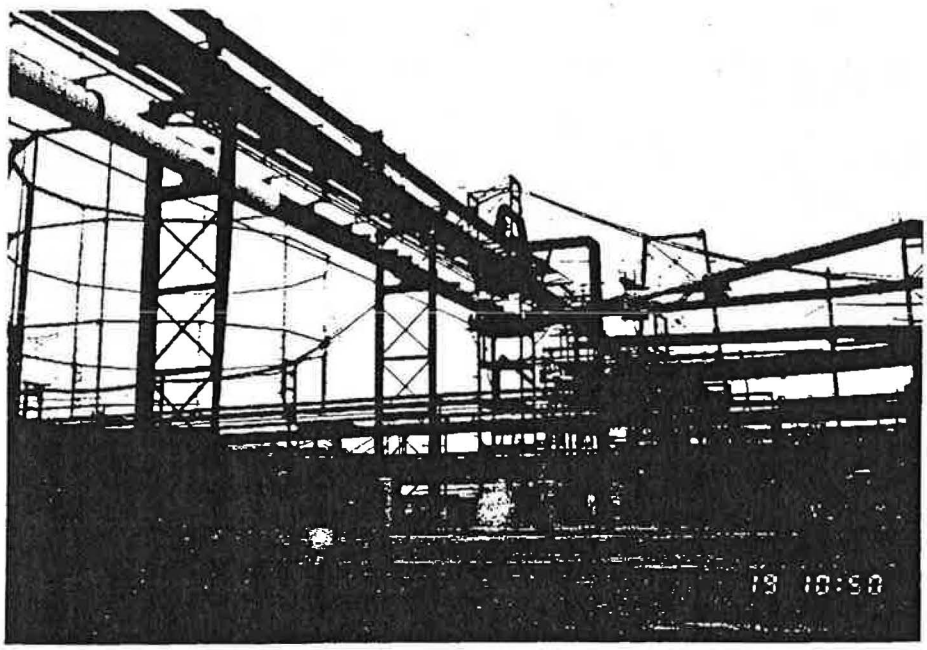


Photo 2.2-12 June 19, 1991

View facing up of the Coke Oven Gas Main (SWMU 107) leading to the Coal Chemicals Plant for treatment. The gas main is the black piping.

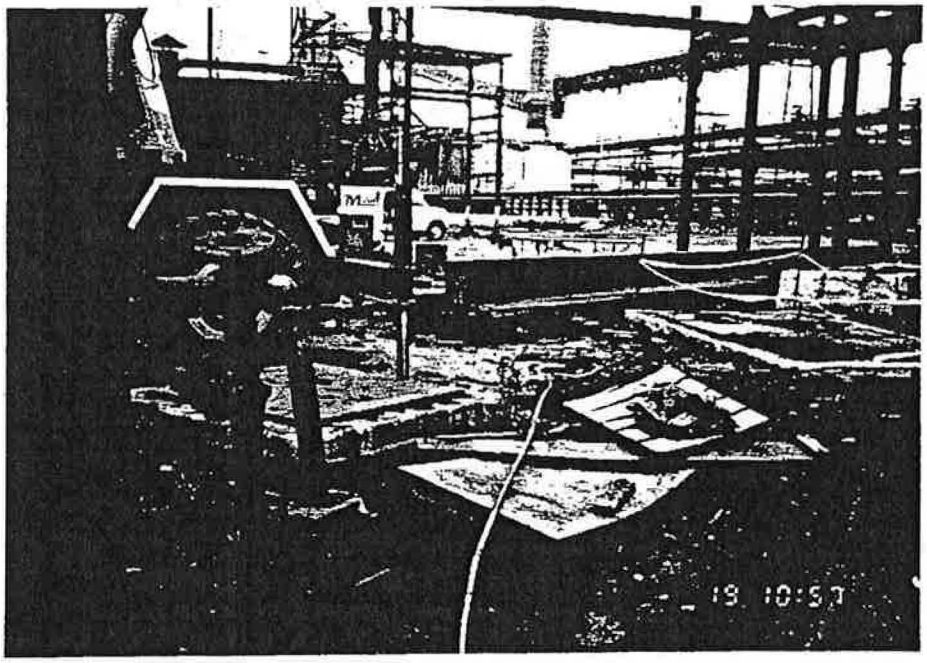


Photo 2.2-13 June 19, 1991

View facing southwest of the area beyond A Battery Waste Oil Accumulation Area (SWMU 105). The surrounding area soil was darkened and wet. A battery and oil filter were found in the area.

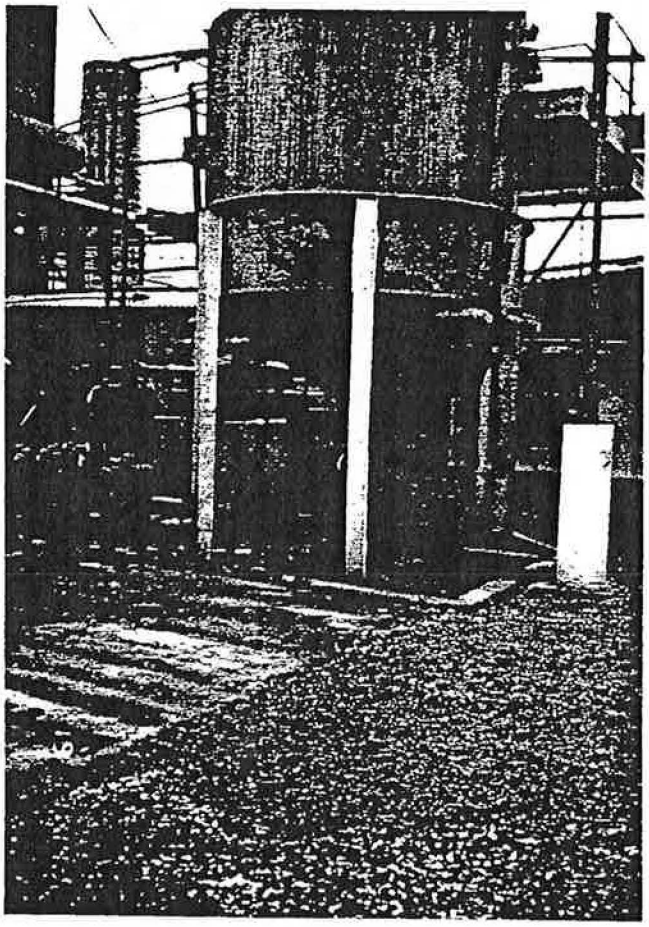


Photo 2.2-14 June 19, 1991

View facing northwest of the AKJ Tar Decanter Batch Tank (SWMU 109). The tank is used to mix tar decanter sludge.

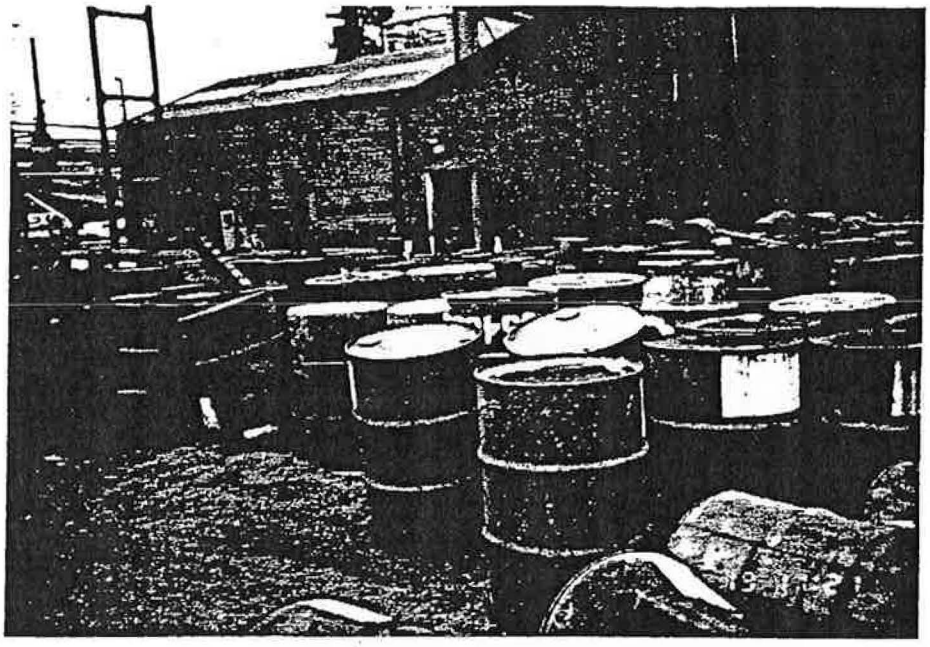


Photo 2.2-15 June 19, 1991

View facing south of the Mechanical Shop Waste Oil Satellite Accumulation Area (SWMU 108). Note the drums are stored directly on the ground. Many of these drums were empty at the time of the VSI.

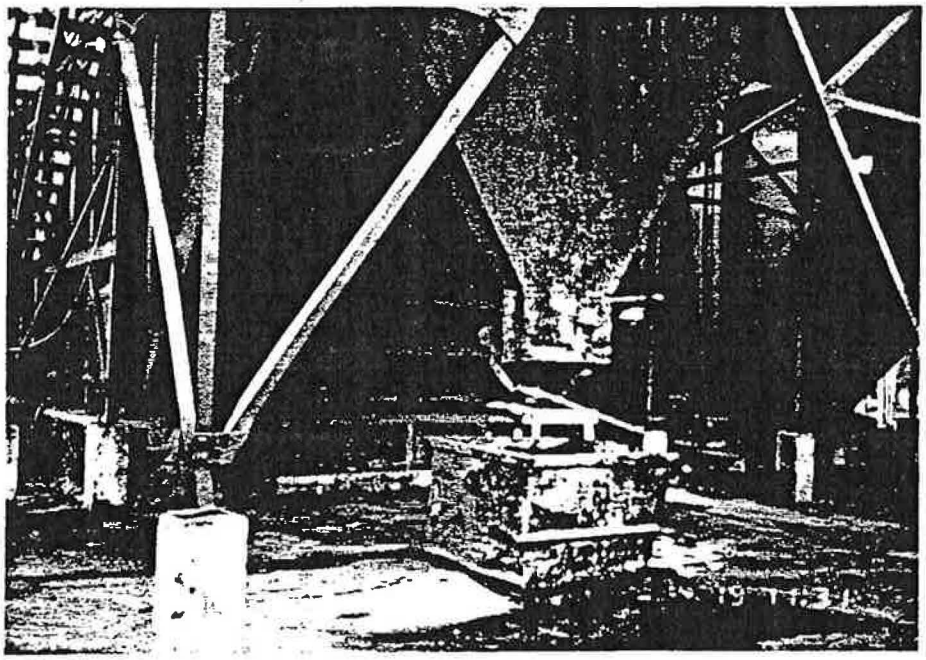


Photo 2.2-16 June 19, 1991

View facing north of AKJ Tar Collection Bucket (SWMU 110) which collects the tar decanter sludge from the decanters. The box, when full, is transferred via a forklift and emptied into the AKJ Batch Tank (SWMU 109).

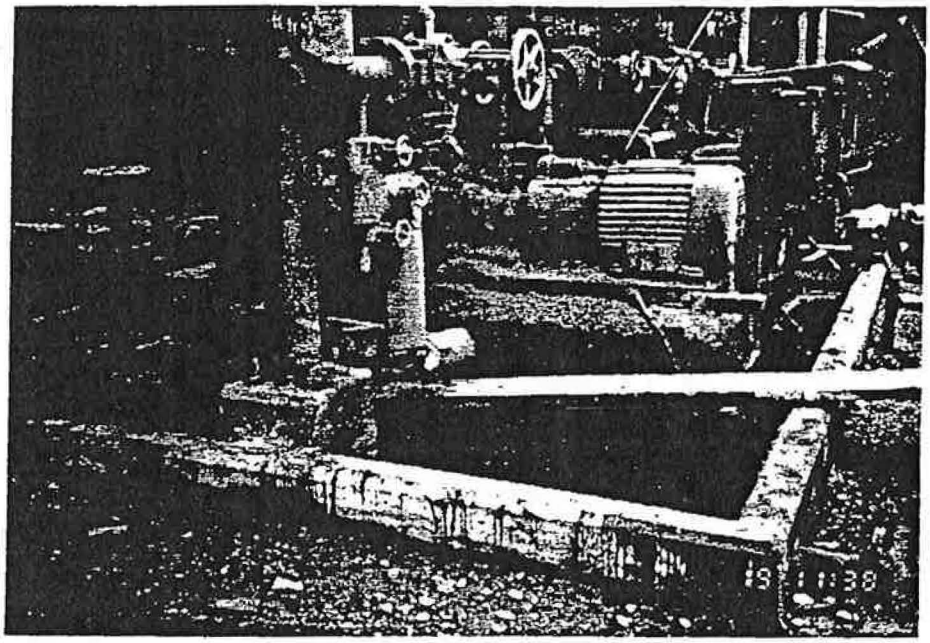


Photo 2.2-17 June 19, 1991

View facing east of the Tar Storage Tank Containment Area around the pumps.

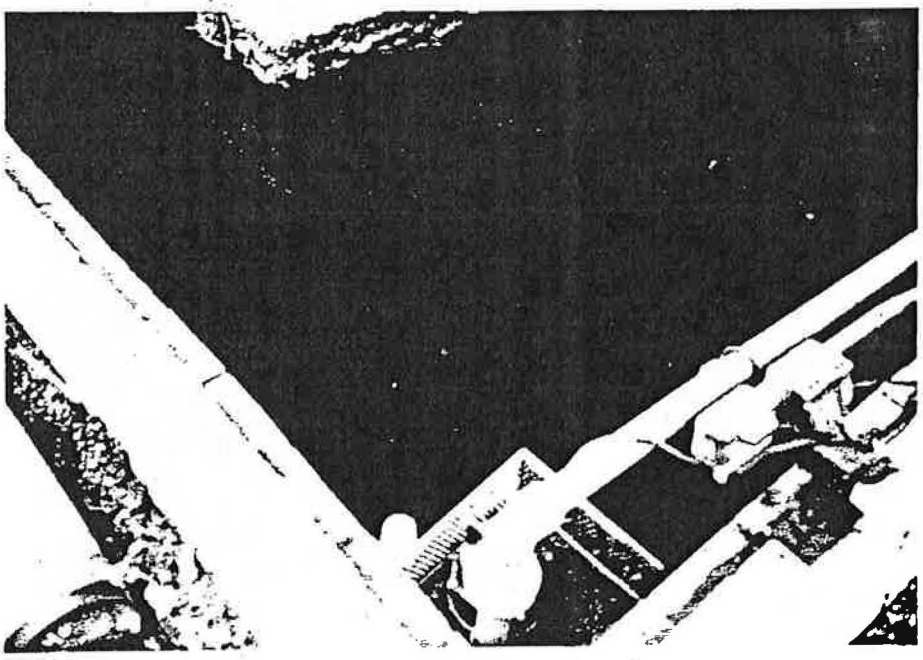


Photo 2.2-18 June 19, 1991

View facing down of the Acid Tank Containment Pad (SWMU 114) located in "B" Coal Chemicals Plant. Note the brick lining of the containment pad.

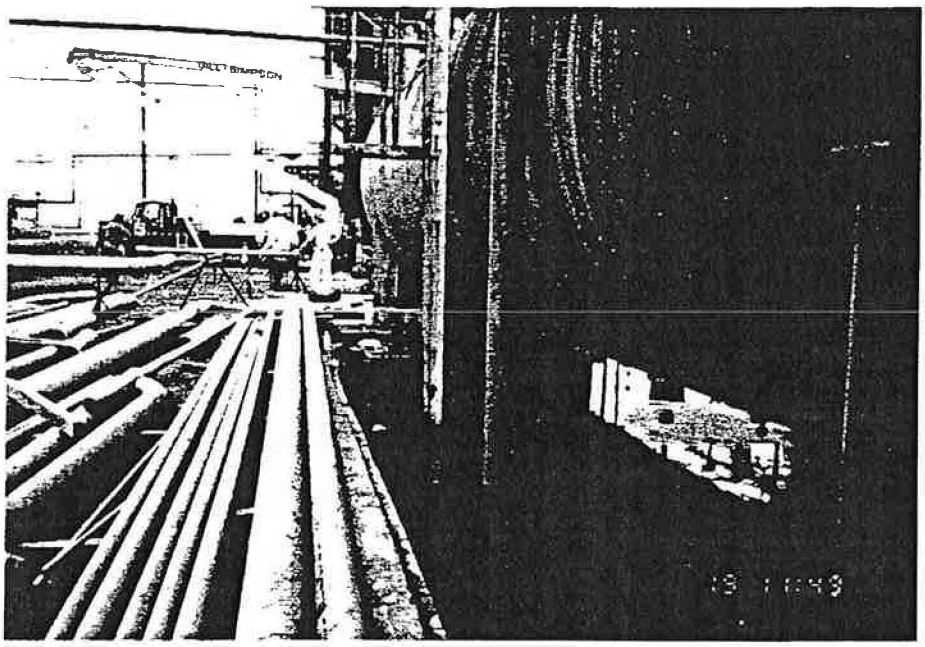


Photo 2.2-19 June 19, 1991

View facing east of the Acid Tank Containment Pad (SWMU 114). The pad was holding rainwater at the time of the VSI.

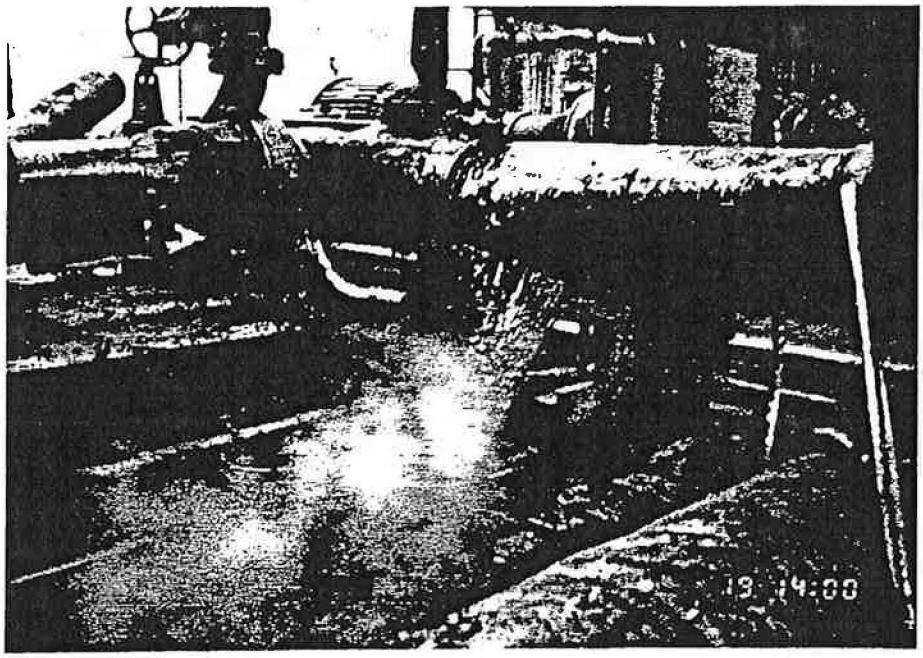


Photo 2.2-20 June 19, 1991

View facing west of the Tar Storage Tank Containment Area. The containment is beneath the pumps. Note the tar spillage all over the area.

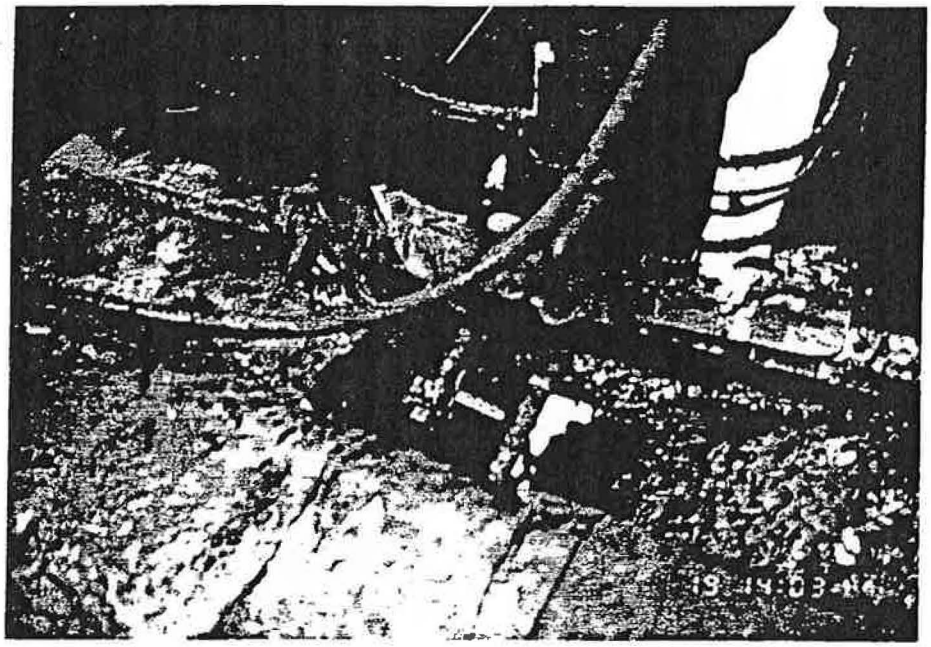


Photo 2.2-21 June 19, 1991

View facing down of the Tar Storage Tanks Containment Pad for the pump unit. The outlet is to release rainwater.

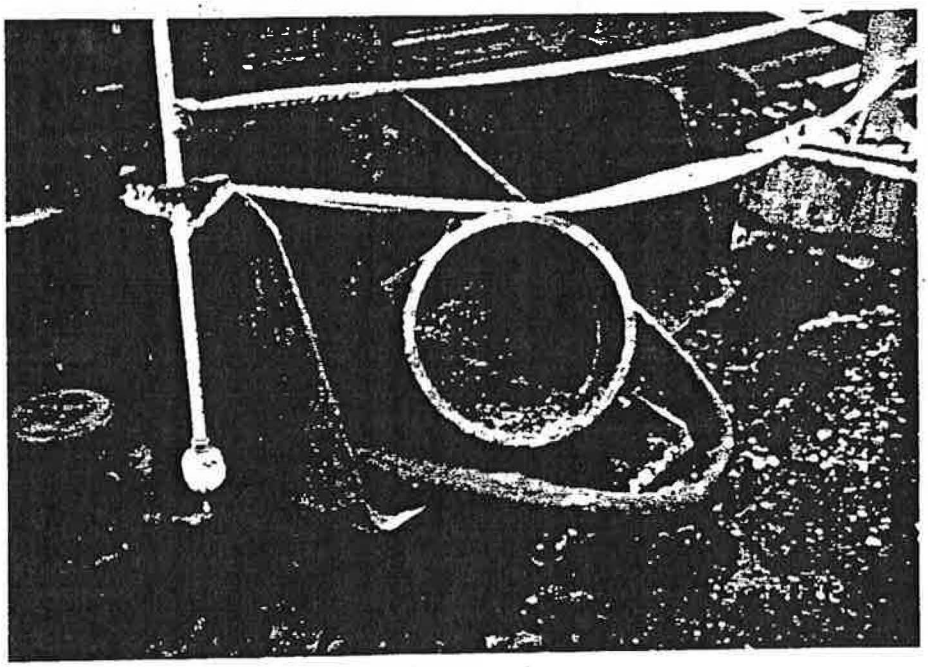


Photo 2.2-22 June 19, 1991

View facing northwest of the pump collection point where a Pump House 11 and 12 Tar Spill Site was located.

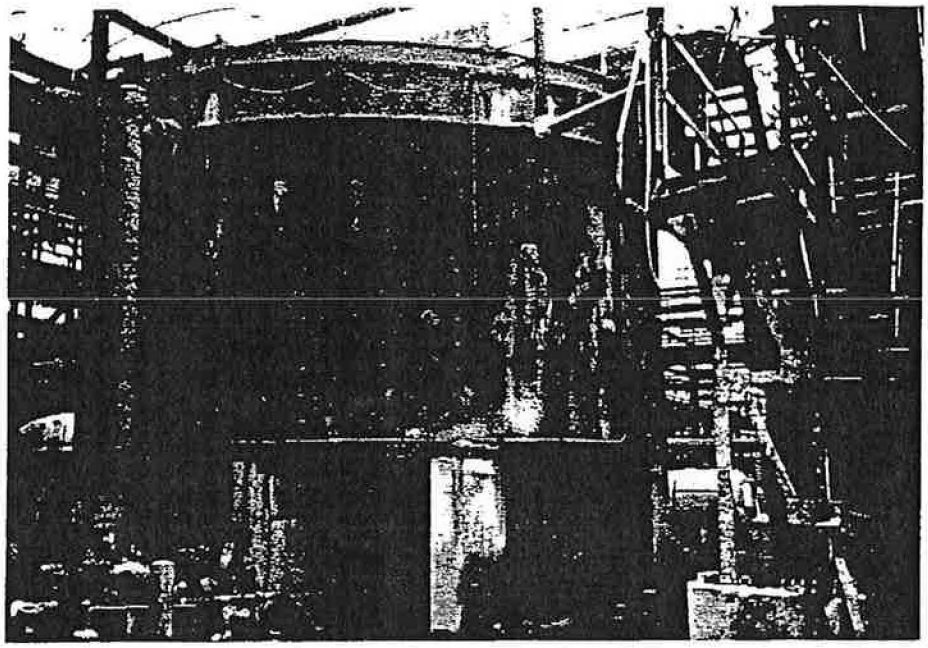


Photo 2.2-23 June 19, 1991

View facing west of the "B" Coal Chemicals Plant Ammonia Charifier Tank (SWMU 116). The tank treats the liquor with lime.

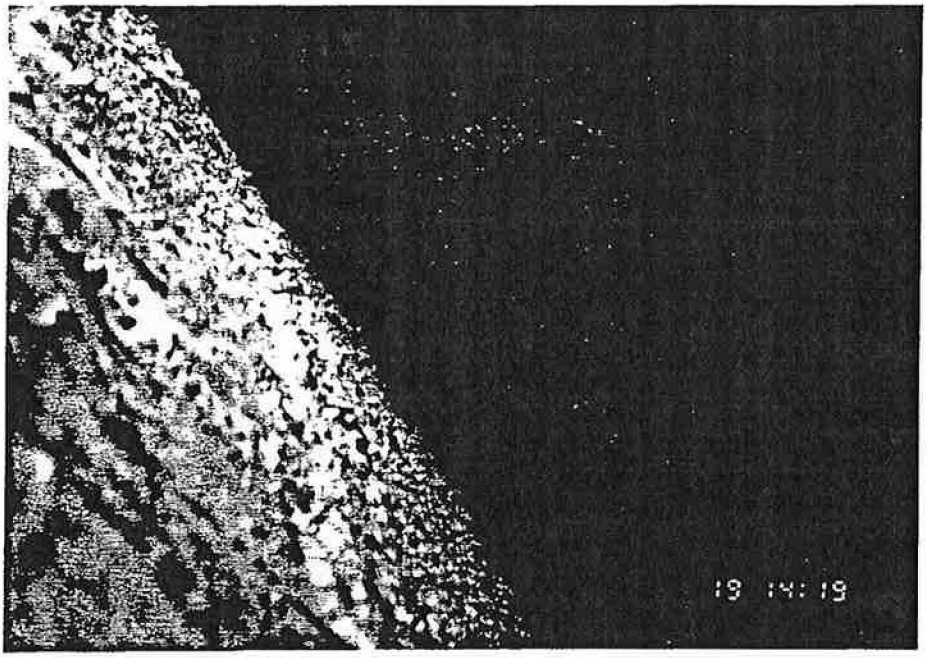


Photo 2.2-24 June 19, 1991

View facing down of the Lime Collection Bin (SWMU 117) which accumulates spent lime from the Ammonia Clarifier Tanks. The bin is essentially an open-top dumpster.

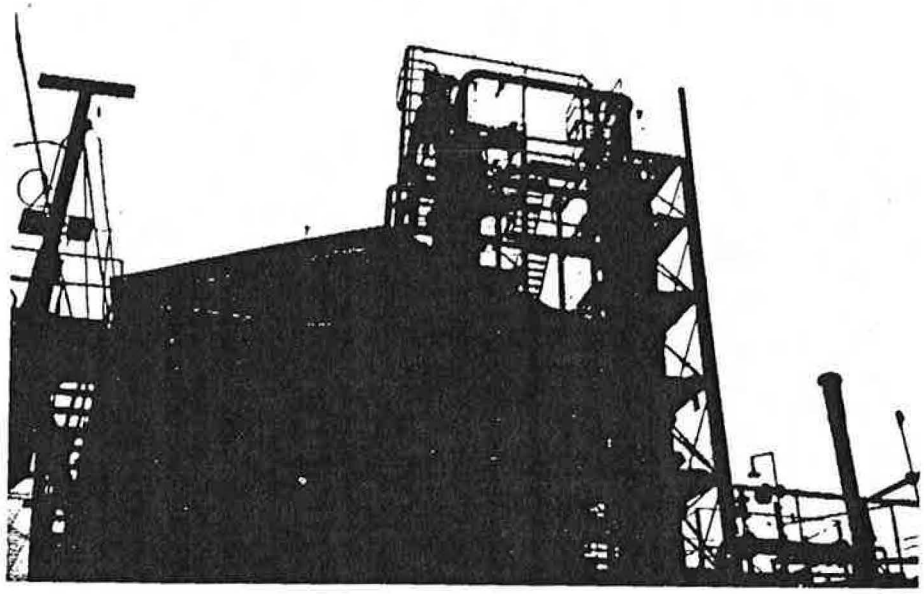


Photo 2.2-25 June 19, 1991

View facing up of the Ammonia Stills (2) (SWMU 118) located at the "B" Coal Chemicals Plant.

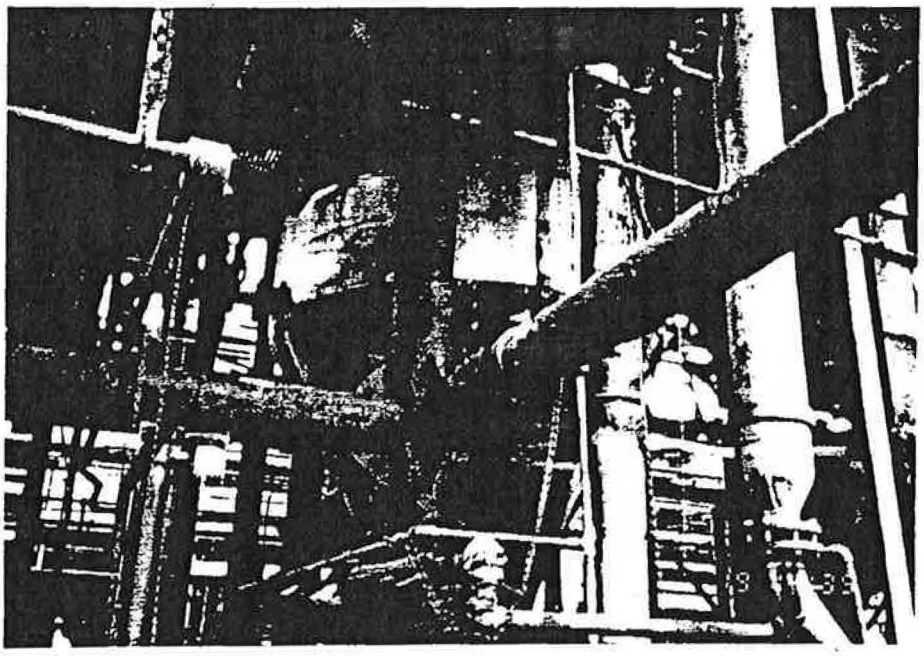


Photo 2.2-26 June 19, 1991

View facing up of the Ammonia Saturator (SWMU 119) located at the "B" Coal Chemicals Plant.

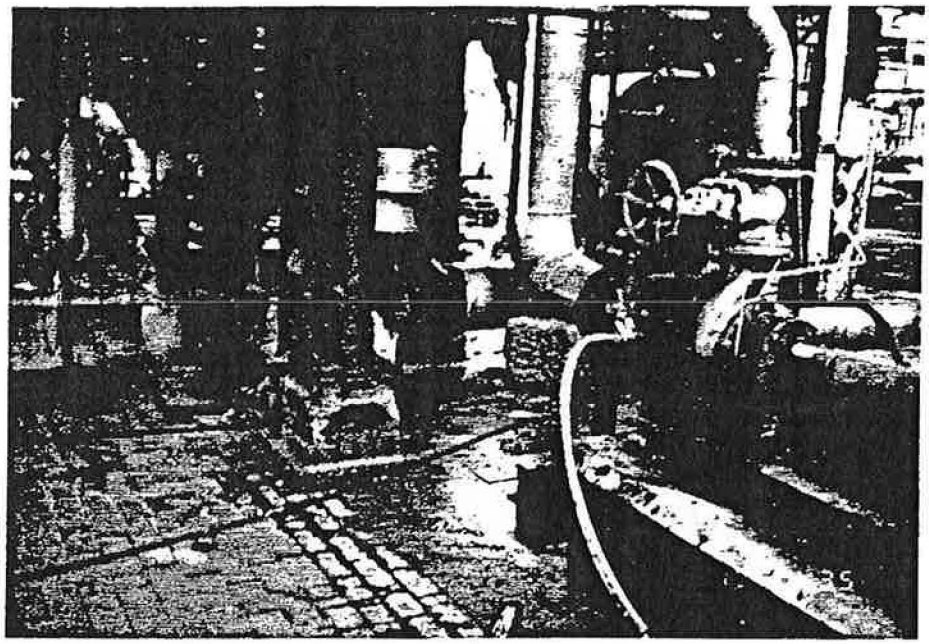


Photo 2.2-27 June 19, 1991

View facing down of the Ammonia Saturator Containment Pad located at the "B" Coal Chemicals Plant. Note that it is constructed of brick.

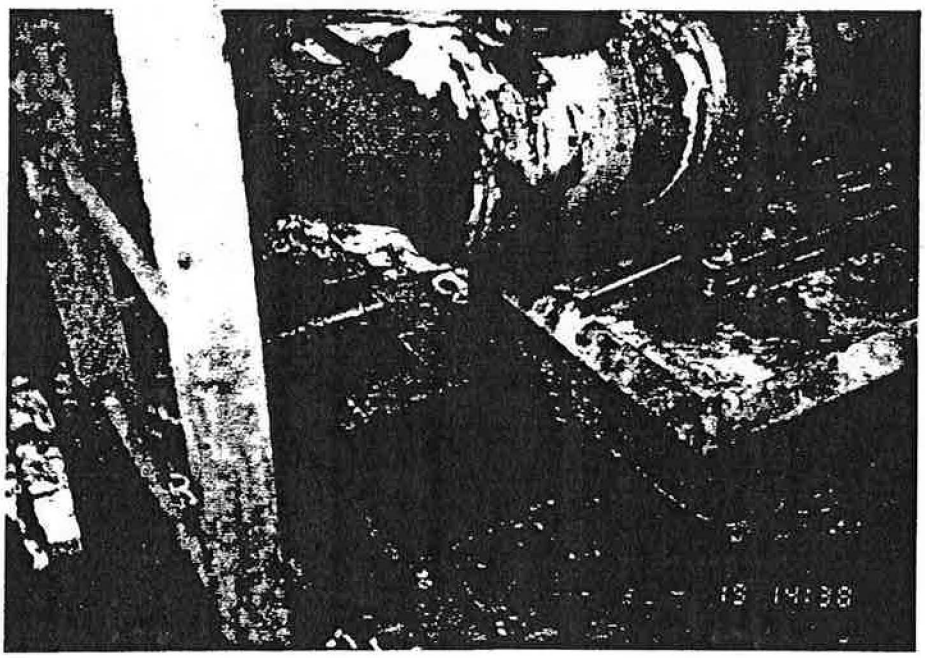


Photo 2.2-28 June 19, 1991

View facing down of the Saturator Containment Pad located in "B" Coal Chemicals Plant. Note the break in the pad (square shaped) is filled with liquid.

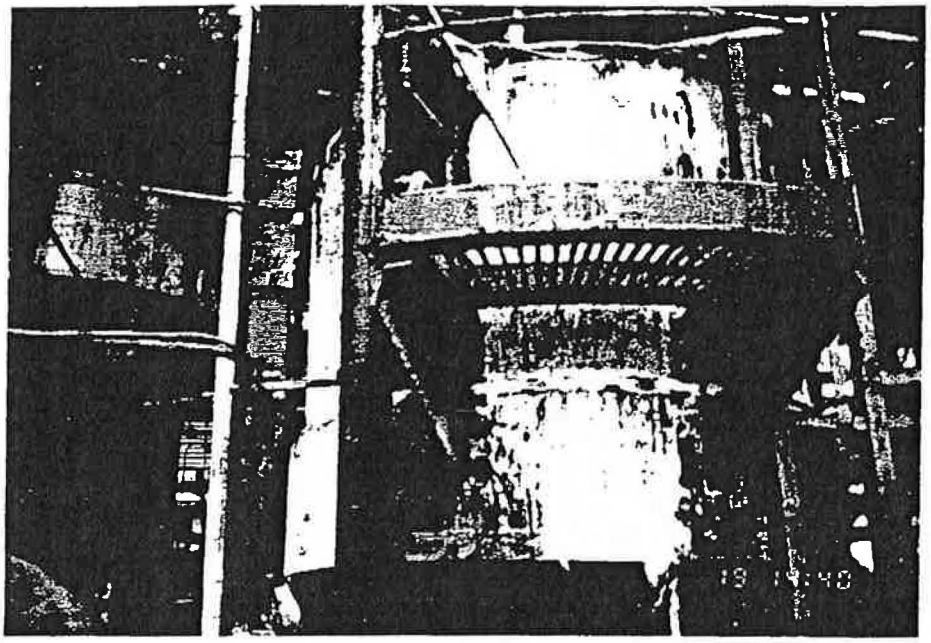


Photo 2.2-29 June 19, 1991

View facing east of the Saturator Acid Surge Tank (SWMU 120) located in the "B" Coal Chemicals Plant.

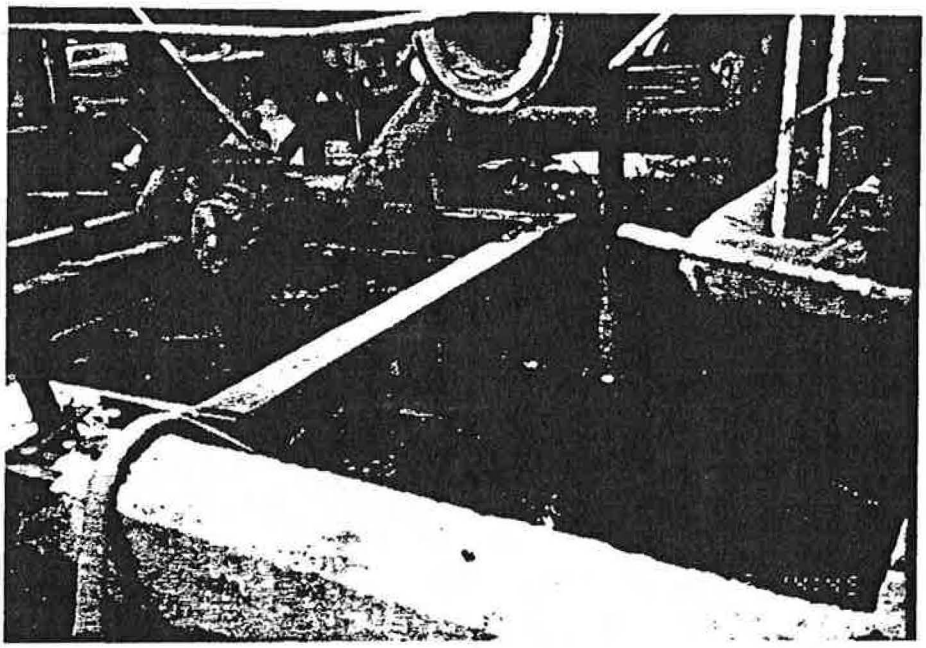


Photo 2.2-30 June 19, 1991

View facing west of the former Naphthalene Recovery Plant (AOC P) pit. Note the pit is nearly completely full of liquid.

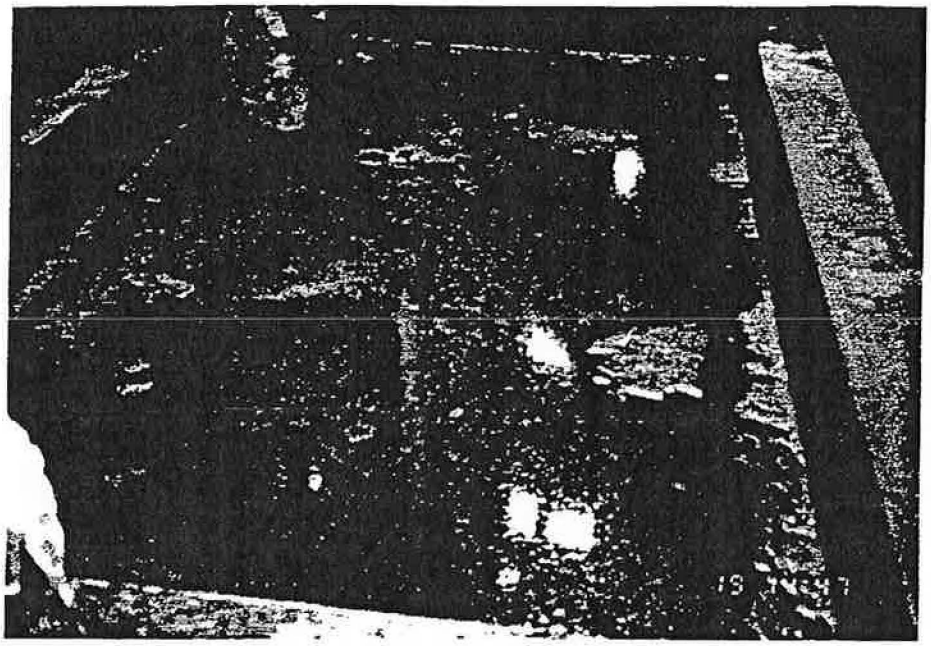


Photo 2.2-31 June 19, 1991

View facing down of the Former Naphthalene Recovery Plant (AOC P) pit. This steel lined section sits within the larger concret pit.

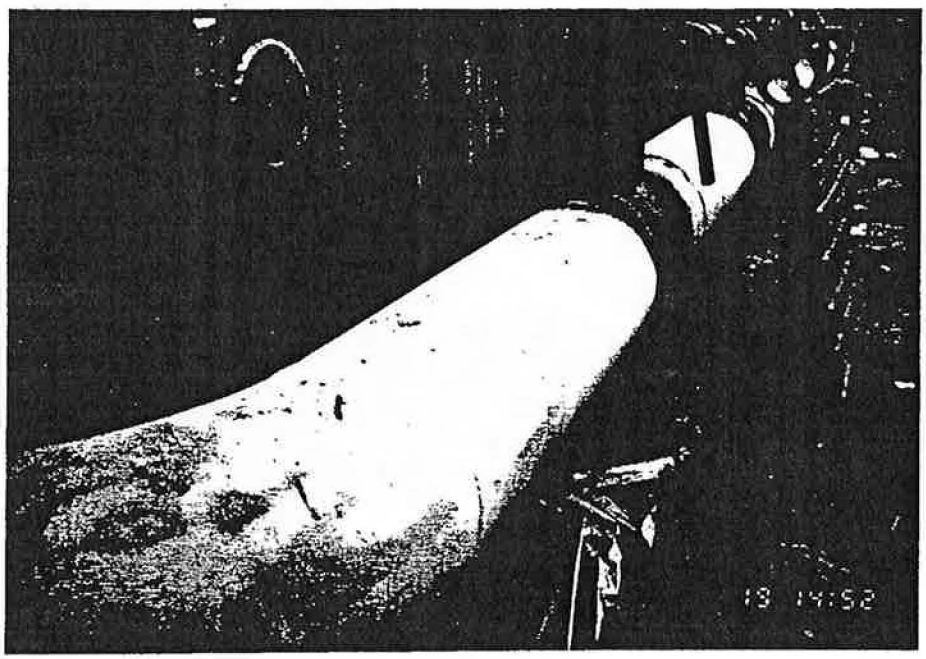


Photo 2.2-32 June 19, 1991

View facing down of the "B" Coal Chemicals Plant Wash Oil Containment Pad.

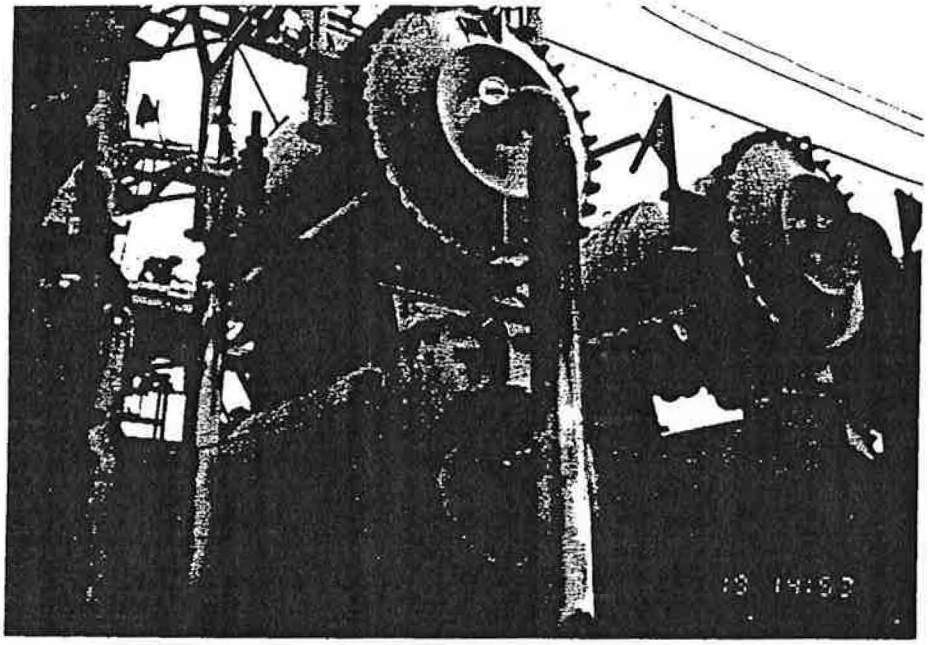


Photo 2.2-33 June 19, 1991

View facing south of the "B" Coal Chemicals Plant Wash Oil Coolers (SWMU 121).

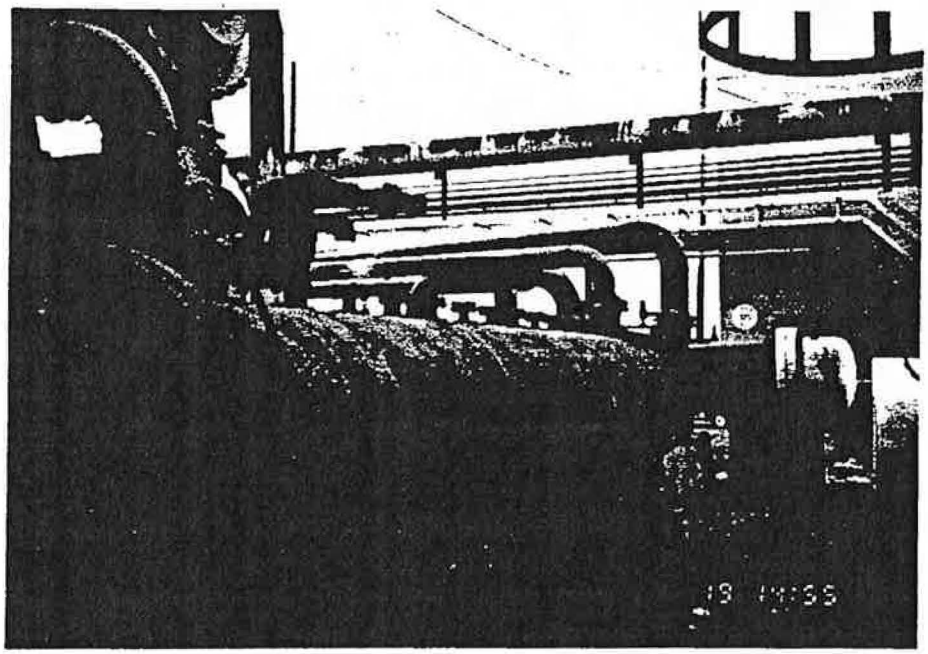


Photo 2.2-34 June 19, 1991

View facing southeast of the Shell and Tube Wash Oil Cooler (SWMU 122) in the "B" Coal Chemicals Plant.

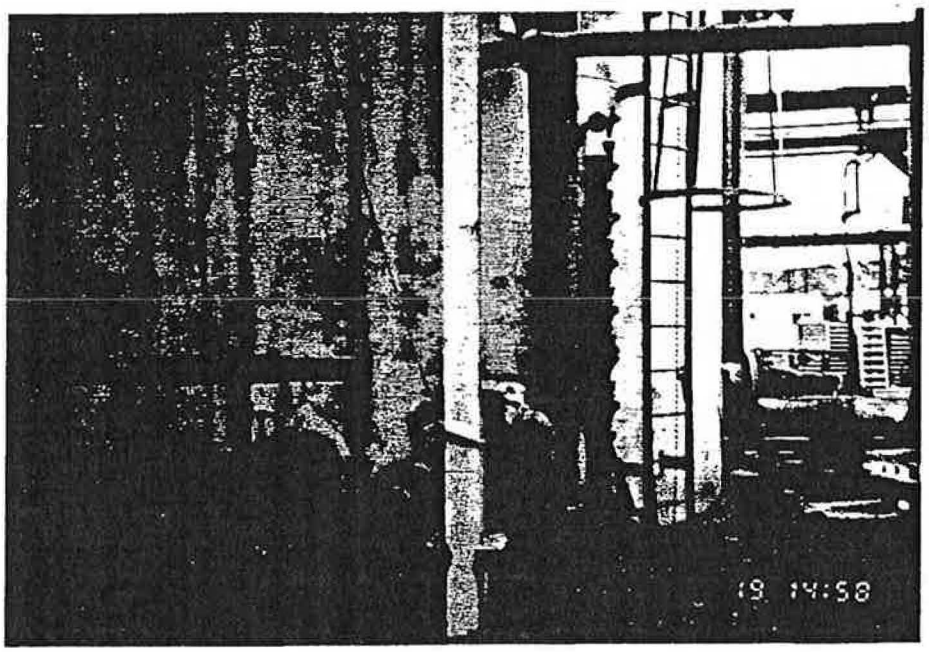


Photo 2.2-35 June 19, 1991

View facing south of the Wash Oil Decanters (SWMU 123) located in the "B" Coal Chemicals Plant.

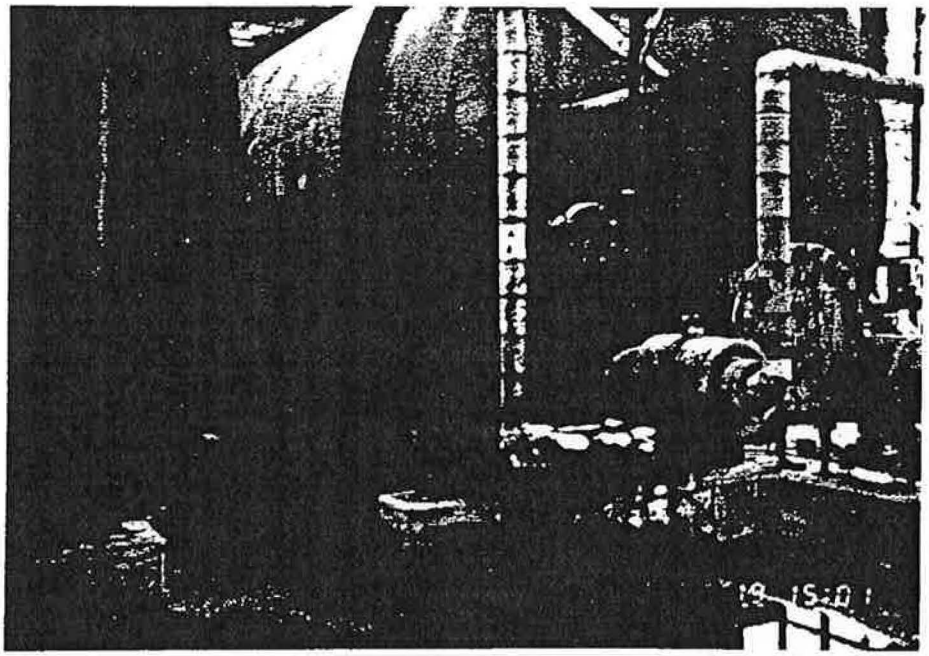


Photo 2.2-36 June 19, 1991

View facing west of the "B" Coal Chemicals Plant Wastewater Holding Tank (SWMU 124). This tank holds the water from the Wash Oil Decanters (SWMU 123).

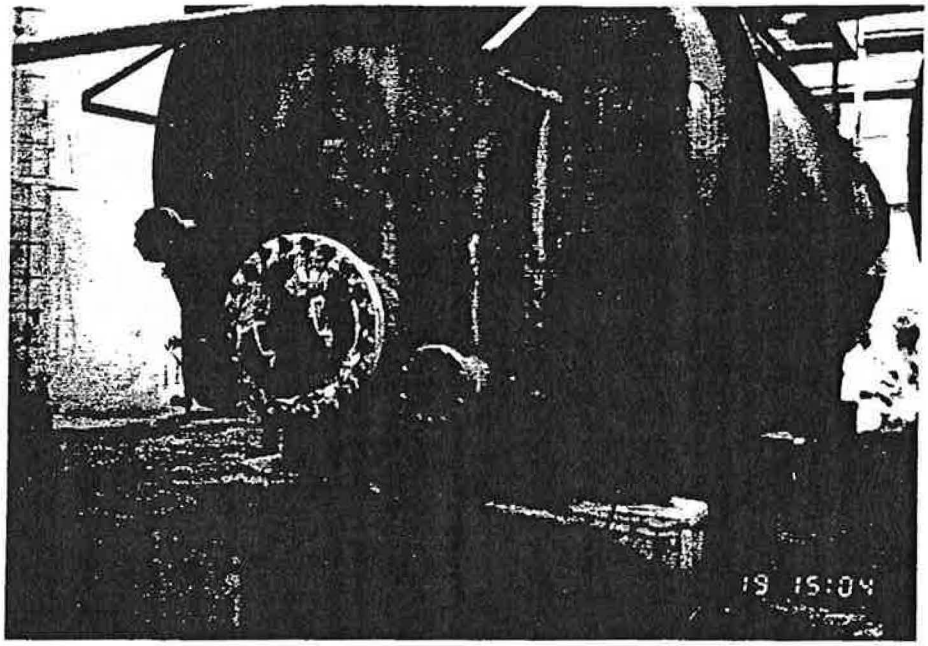


Photo 2.2-37 June 19, 1991

View of the "B" Coal Chemicals Plant Wash Oil Circulating Tank (SWMU 125).

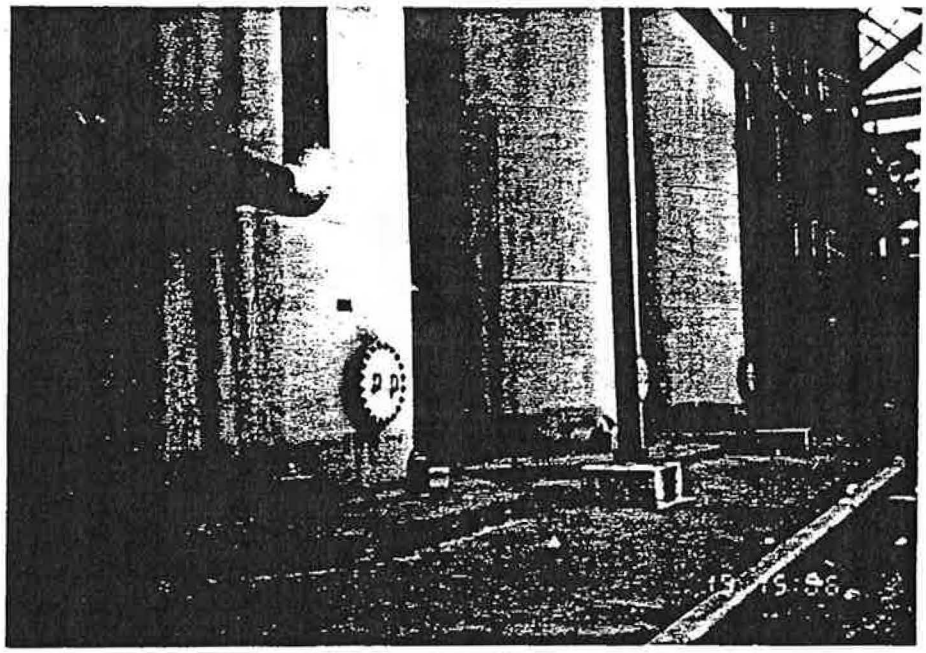


Photo 2.2-38 June 19, 1991

View of the "B" Coal Chemicals Plant Scrubbers (SWMU 126) and concrete containment.

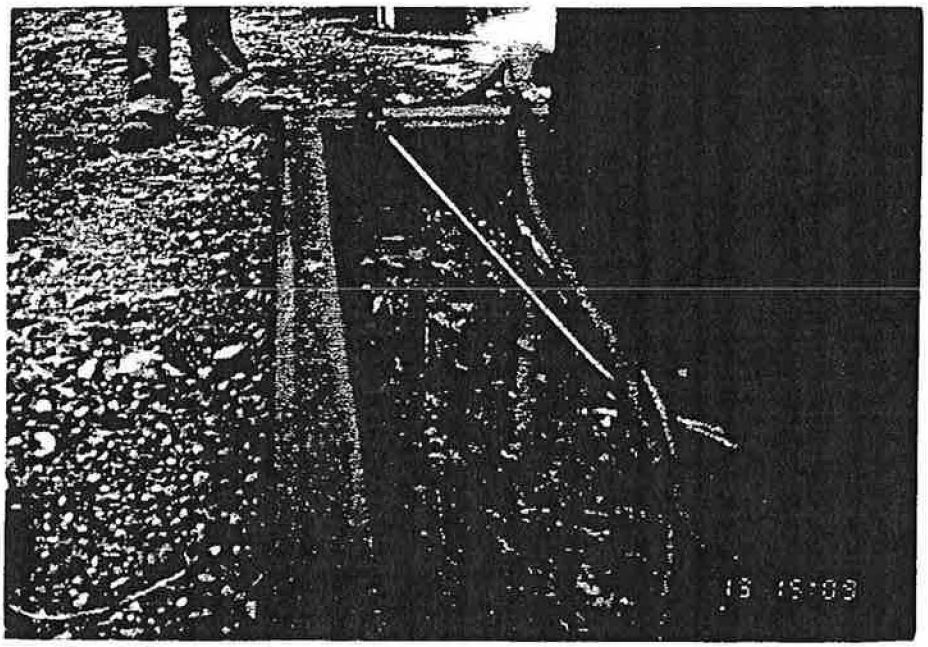


Photo 2.3-1 June 19, 1991

View facing down of the concrete containment pad around the wastewater pump located at the "B" Coal Chemcials Plant. Note the yellow/brown liquid inside the pad.

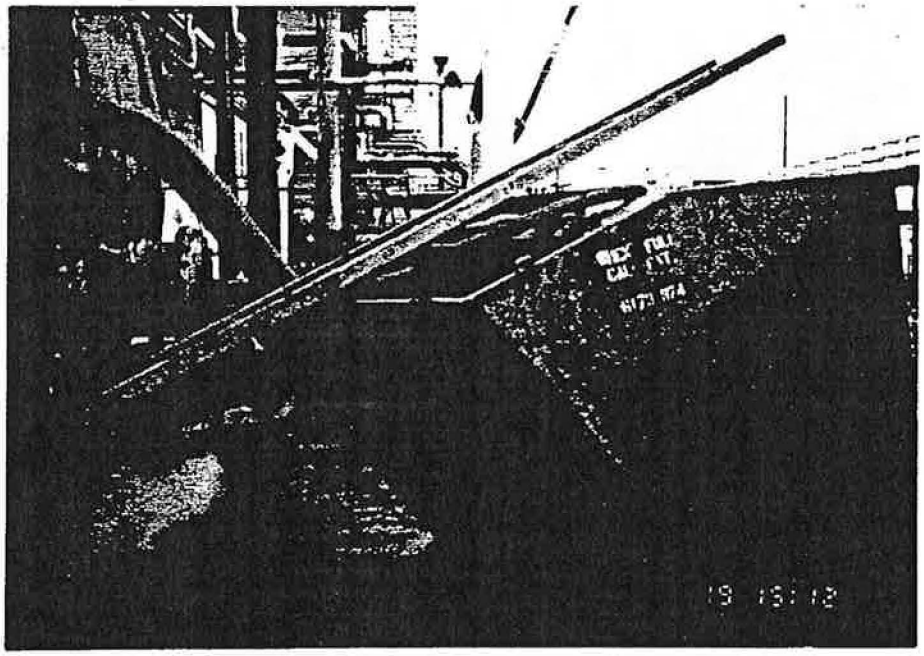


Photo 2.3-2 June 19, 1991

View of the Wastewater Oil Bin (SWMU 127) located in the "B" Coal Chemicals Plant. Note that spent oil is accumulated in this dumpster by a corragated hose.

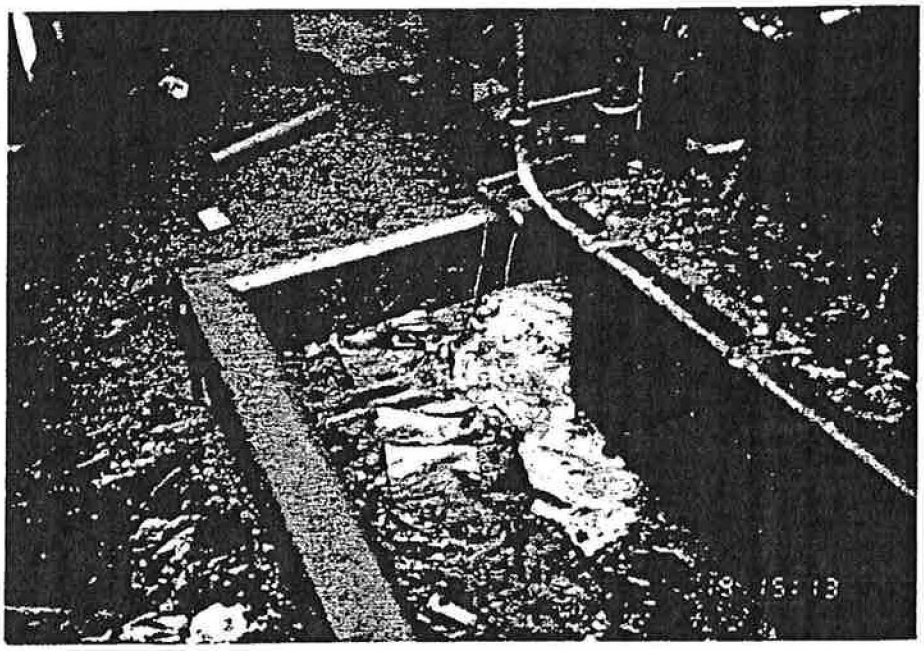


Photo 2.3-3 June 19, 1991

View facing northeast of "B" Coal Chemicals Plant wastewater pump. The yellow liquid draining into the concrete pad is reportedly washoil.

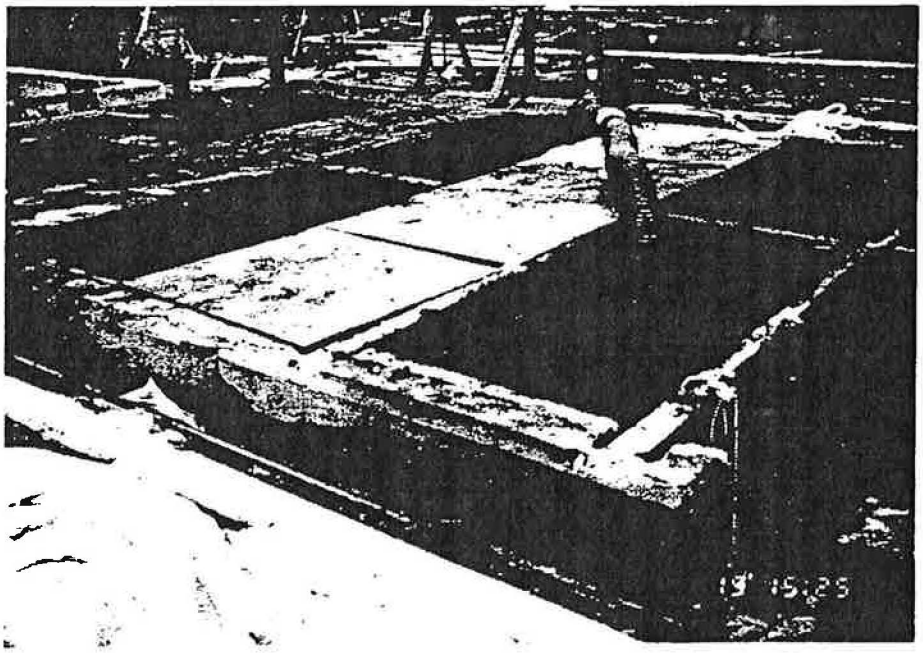


Photo 2.3-4 June 19, 1991

View facing south of one of the two "B" Coal Chemicals Plant Oil Water Separators (SWMU 128). This oil/water was installed in the late 1950's.

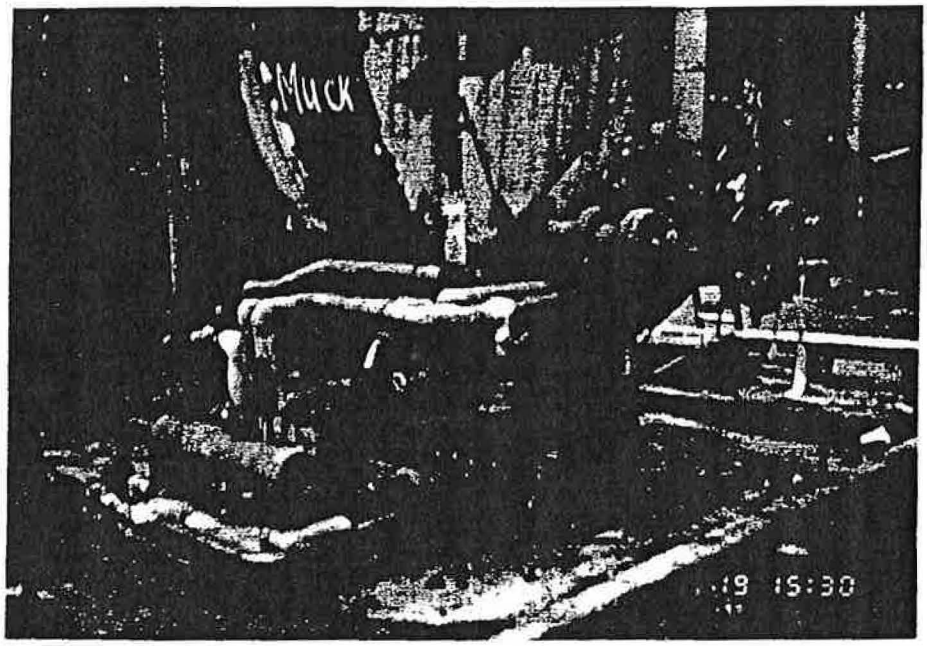


Photo 2.3-5 June 19, 1991

View facing west of a tank labelled "muck" (SWMU 129) in the "B" Light Oil Plant. Note the staining inside the containment and the deterioration of the tank.

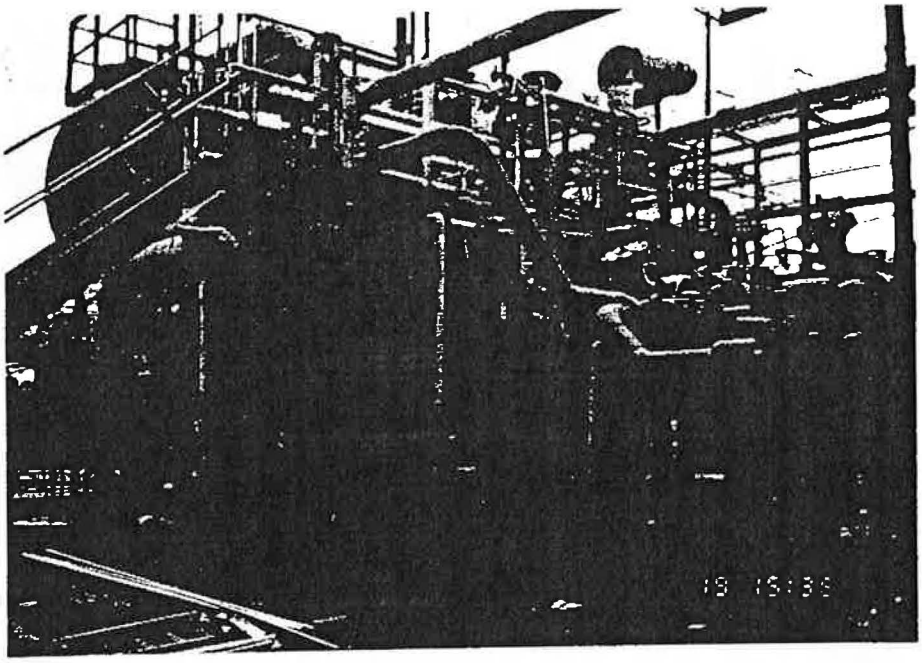


Photo 2.3-6 June 19, 1991

View faing east of the Former Sulfer Recovery Plant (SWMU 188) located in the "B" Light Oil Plant.

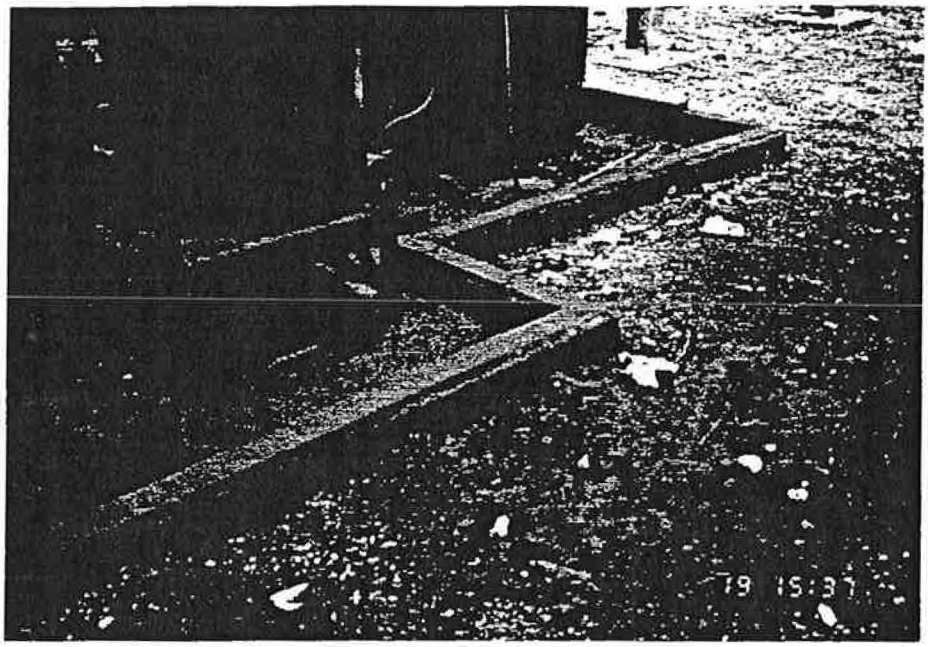


Photo 2.3-7 June 19, 1991

View facing west of the containment pad around the Former Sulfur Recovery Plant (SWMU 188). The containment pad surrounds three tanks.

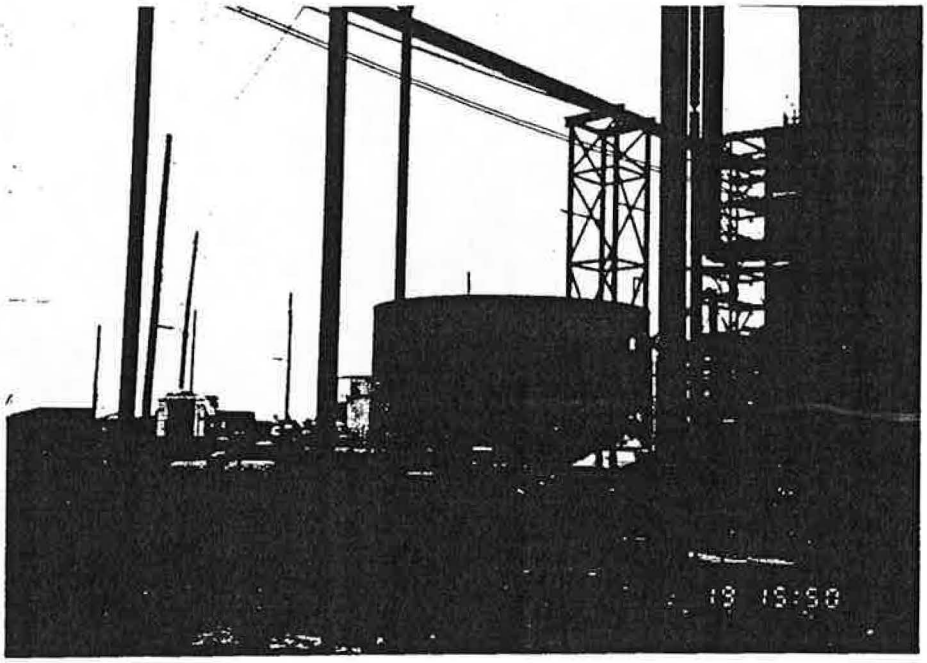


Photo 2.3-8 June 19, 1991

View facing southwest of the Million Gallon Weak Ammonia Tank (SWMU 130) which feeds into the ammonia still at the "B" Coal Chemicals Plant.

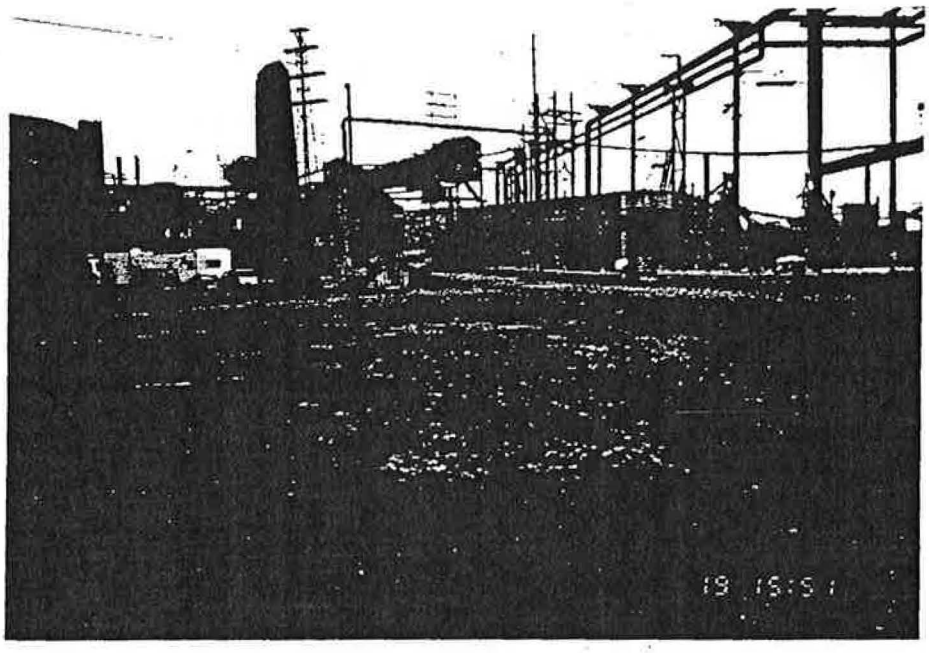


Photo 2.3-9 June 19, 1991

View facing north of the area where the weak ammonia liquor line was leaking underground (AOC R). This underground pipeline leads from the "A" Coal Chemicals Plant to the Million Gallon Weak Ammonia Tank (SWMU 130).

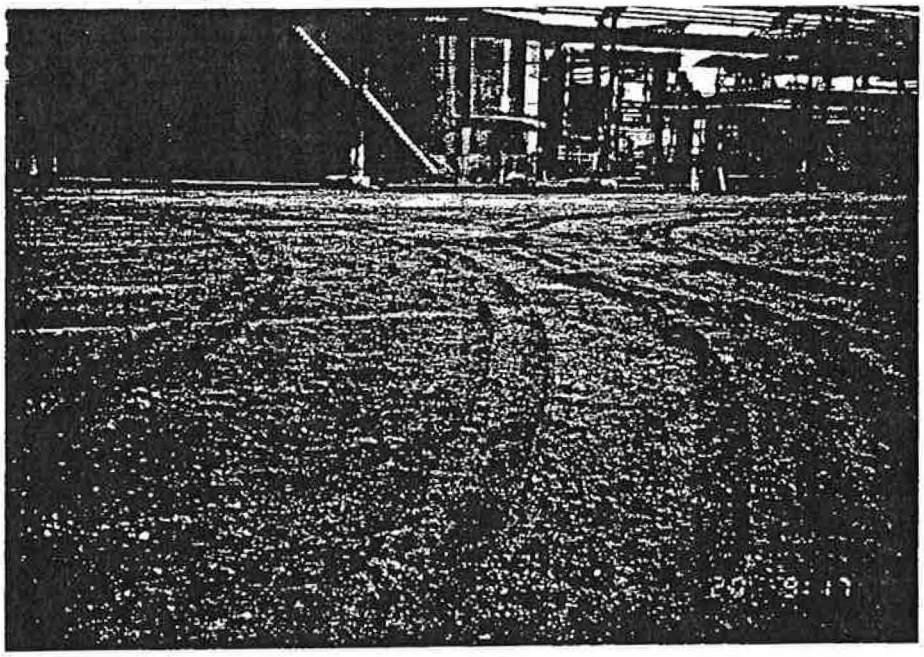


Photo 2.3-10 June 20, 1991

View facing north of the gravel area which formerly held Coke Batteries 7 and 8 (SWMU 106).

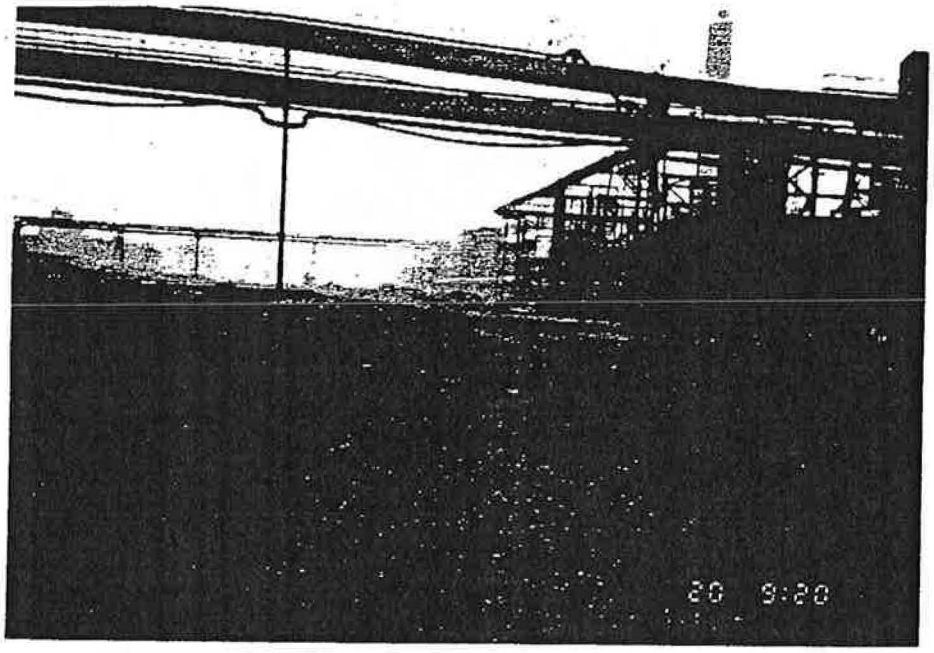


Photo 2.3-11 June 20, 1991

View facing east of the gravel area which formerly occupied Coke Batteries 1-6 (SWMU 106).

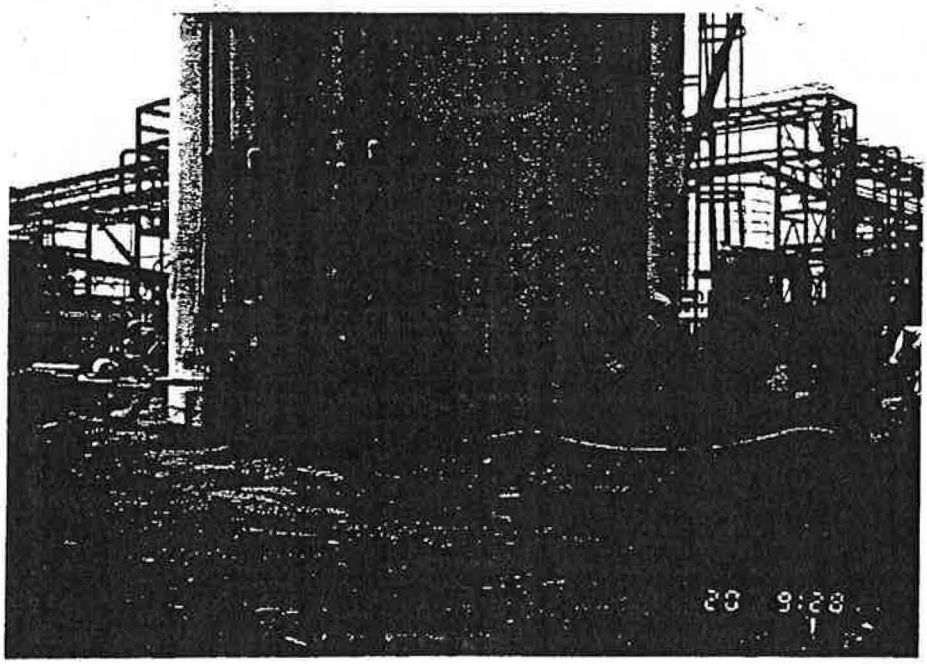


Photo 2.3-12 June 20, 1991

View facing southeast of the 100,000 gallon Wastewater Tank (SWMU 132) at the Bio-oxidation Plant. Note that there is no secondary containment.

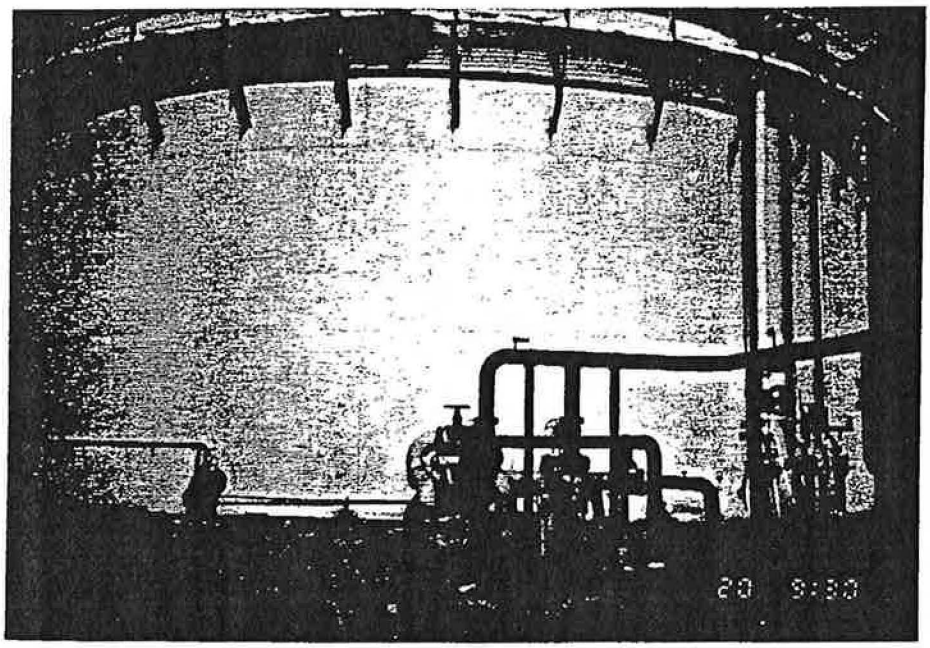


Photo 2.3-13 June 20, 1991

View of the Million Gallon Wastwater Tank (SWMU 132) at the Bio-oxidation Plant.

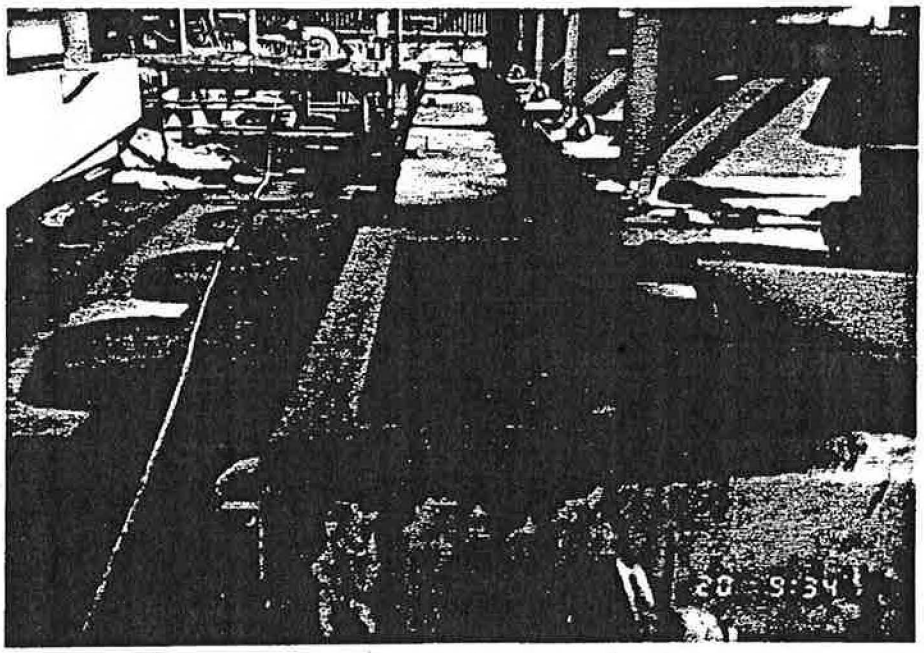


Photo 2.3-14 June 20, 1991

View facing north of the Bio-oxidation Plant Deparator (SWMU 132). The deparators receive wastewaters from the 100,000 gallon Wastewater Tank (SWMU 131).

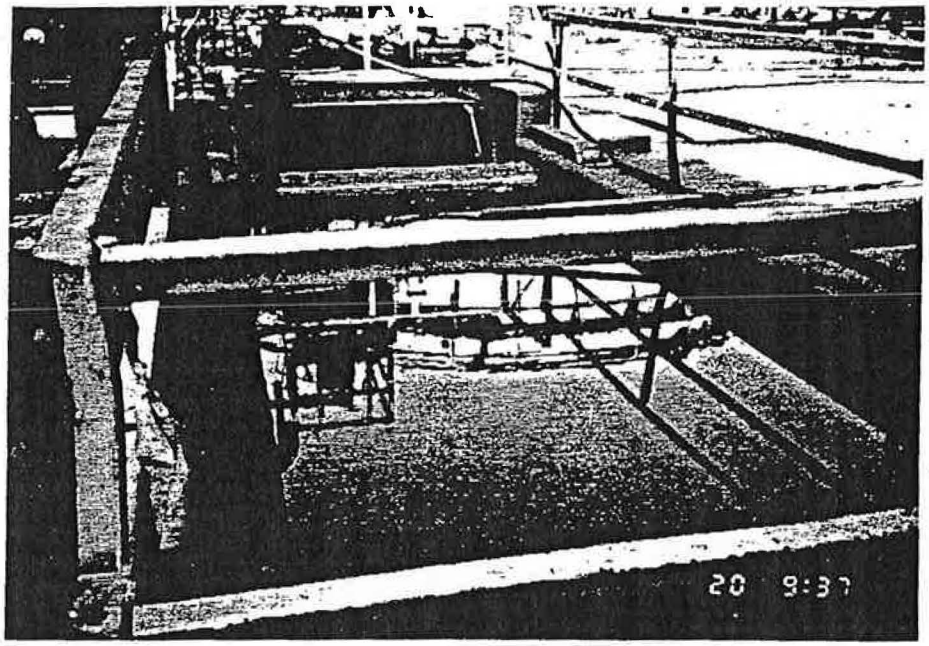


Photo 2.3-15 June 20, 1991

View facing northwest of the Bio-oxidation oil/water separator. The separator receives wastewater from the deparators (SWMU 133).

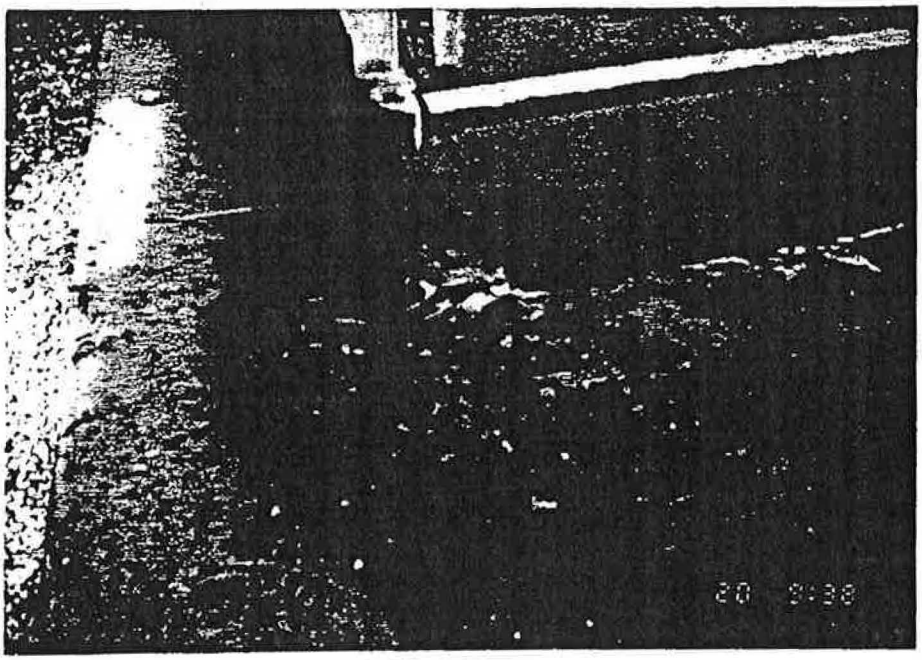


Photo 2.3-16 June 20, 1991

Close-up view of the concrete surrounding the Bio-oxidation Plant Oil/Water Separator (SWMU 199). Note the residual waste and staining.

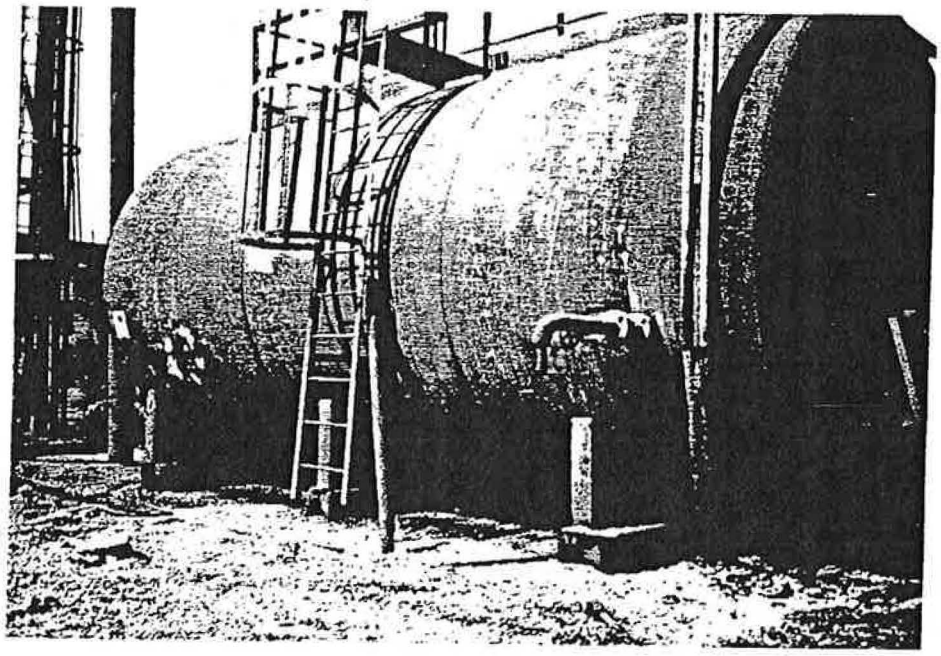


Photo 2.3-17 June 20, 1991

View facing west of the Bio-oxidation Plant Deparator Oil Storage Tank (SWMU 200). Note there is no secondary containment for the tank.

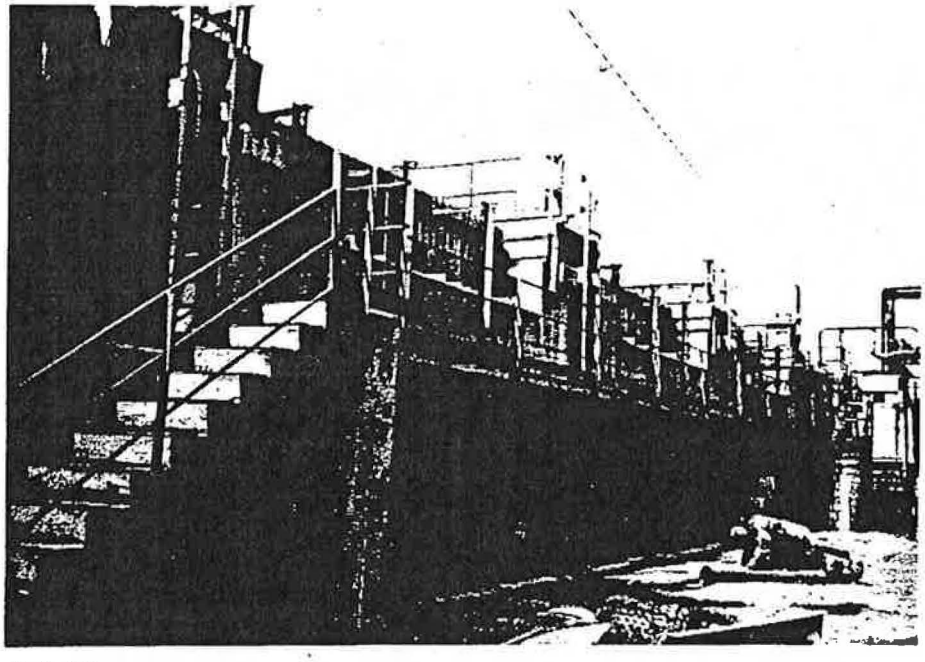


Photo 2.3-18 June 20, 1991

View facing west of the Phenol Oxidation Basin (SWMU 134) at the Bio-oxidation Plant. The basin receives wastewaters from the Million Gallon Wastewater Tank (SWMU 132).

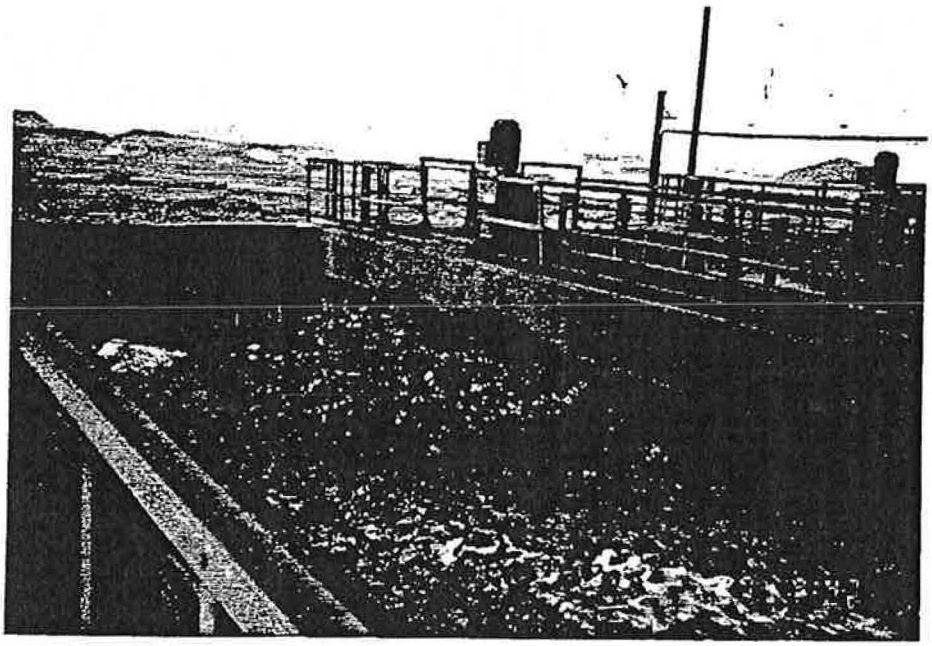


Photo 2.3-19 June 20, 1991

View facing southwest of the inside of the Phenol Oxidation Basin (SWMU 134).

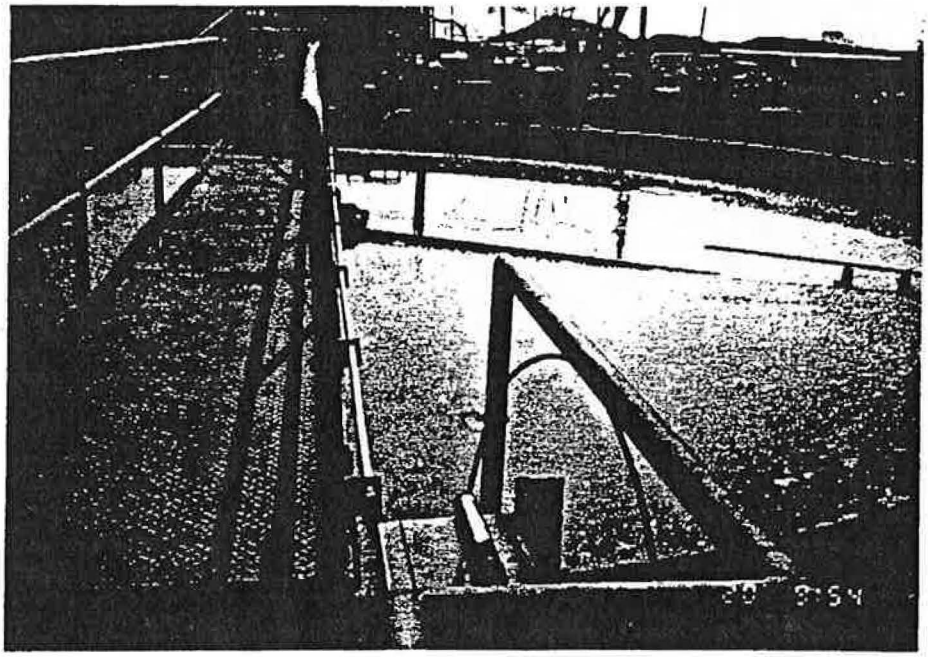


Photo 2.3-20 June 20, 1991

View facing east of a Bio-oxidation clarifier (SWMU 135).

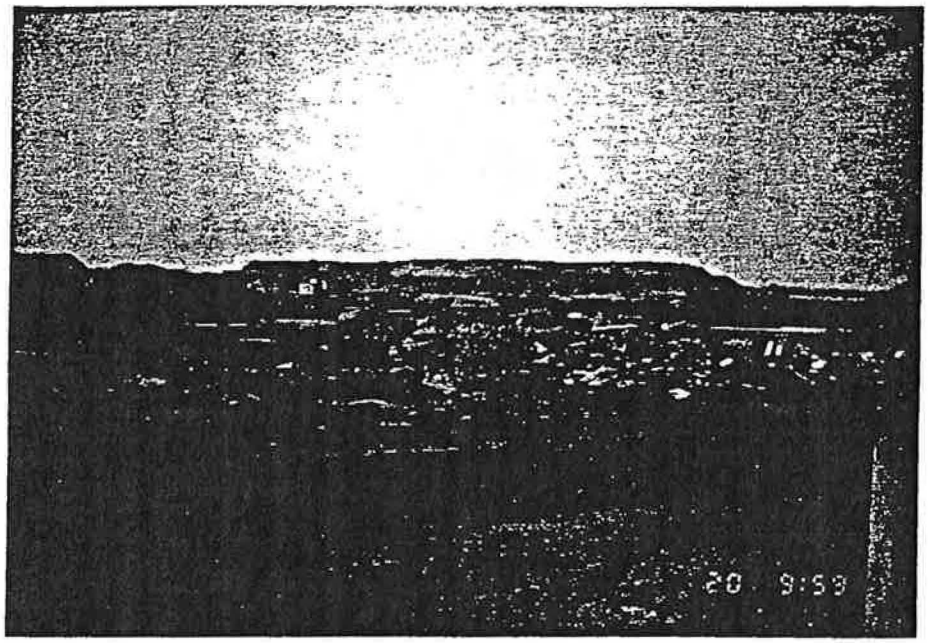


Photo 2.3-21 June 20, 1991

View facing south of Coke Oven Landfill (SWMU 191). In the forefront are small trash piles (SWMU 191) from the coke battery sweepings.

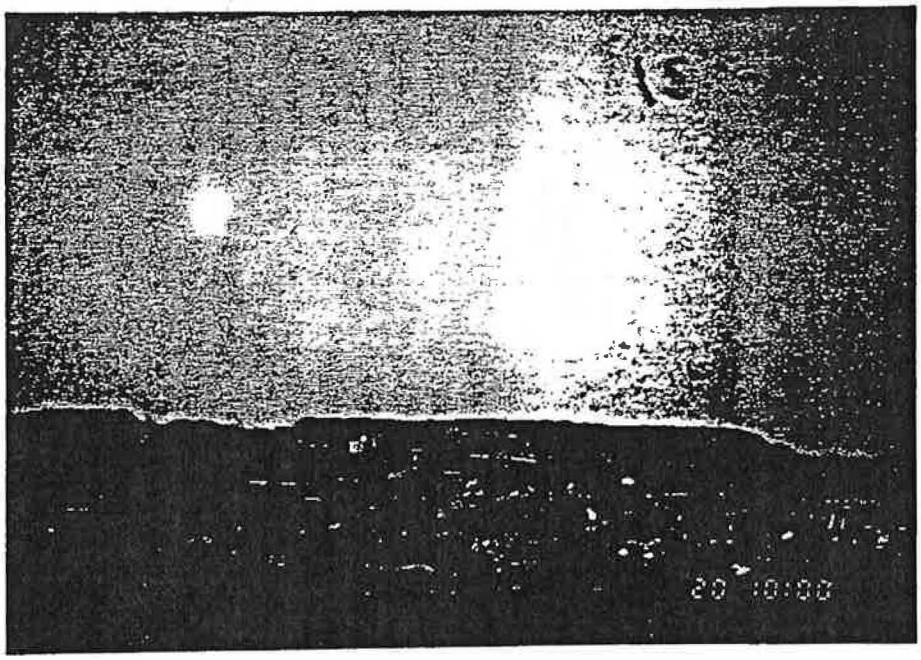


Photo 2.3-22 June 20, 1991

View facing south of Coke Oven Sweepings Waste Pile (SWMU 192) located behind the Bio-oxidation plant.

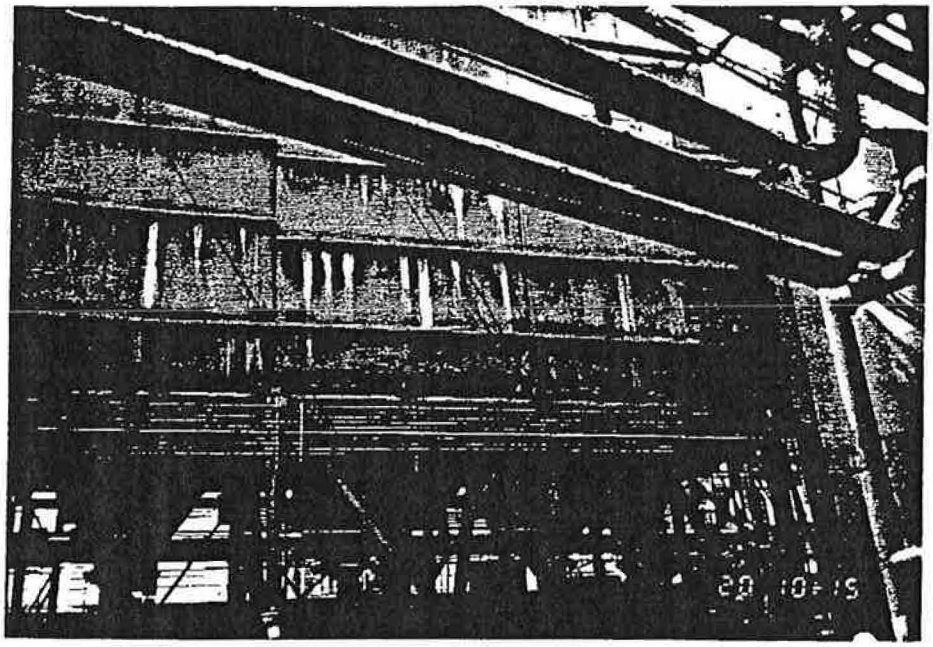


Photo 2.3-23 June 20, 1991

View facing up and north of "A" Battery Baghouse (SWMU 111).

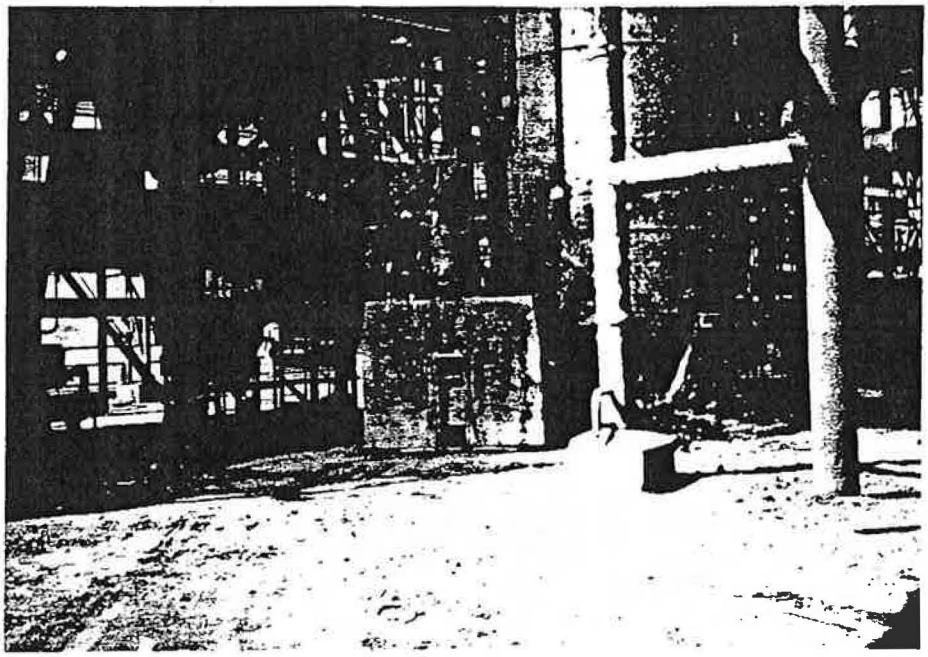


Photo 2.3-24 June 20, 1991

View facing west of "A" Battery Baghouse Dumpster (SWMU 111). The dumpster is emptied into Coke Oven Landfill (SWMU 191).

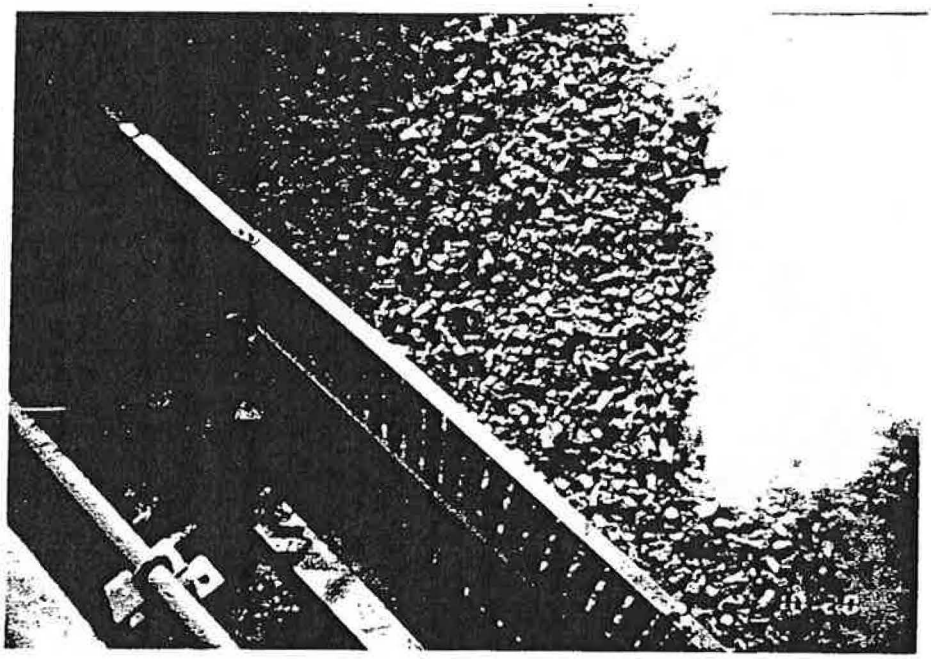


Photo 2.3-25 June 20, 1991

View facing down of "A" Battery WARF. Coke is being quenched by a hose. The wastewaters enter the pictured trench to Outfall #21 (SWMU 196).

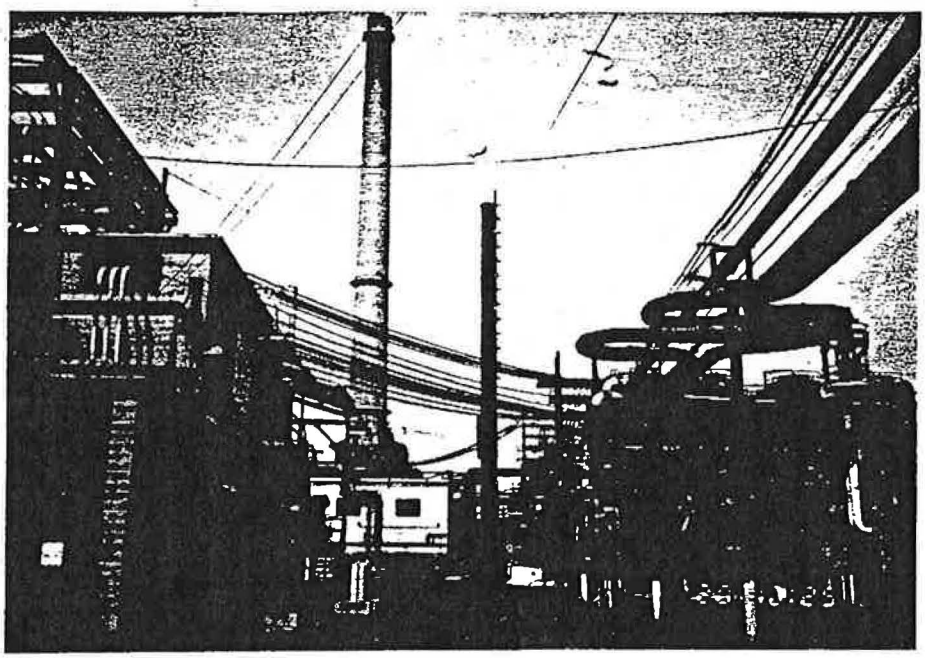


Photo 2.3-26 June 20, 1991

View facing west of the "A" Coal Chemicals Plant Cyanide Stripper Stack (SWMU 137).

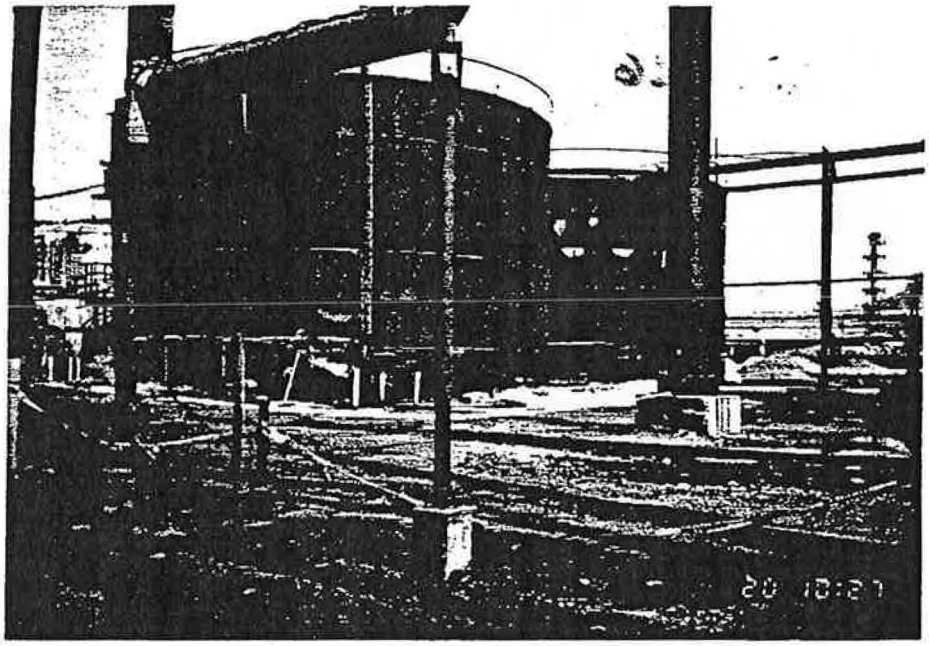


Photo 2.3-27 June 20, 1991

View facing northwest of two "A" Coal Chemicals Plant Tar Storage Tanks.

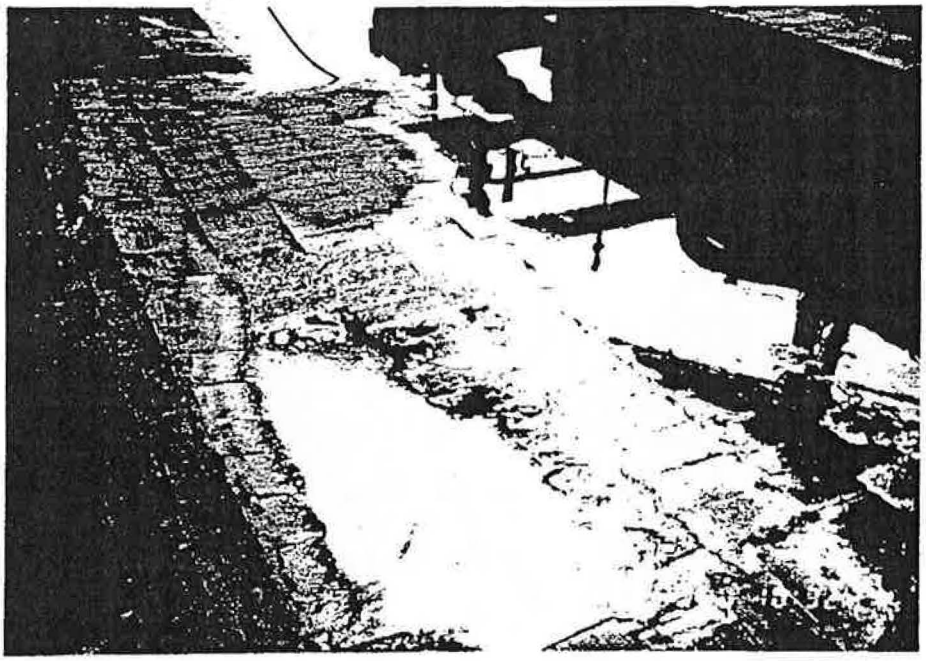


Photo 2.3-28 June 20, 1991

View facing north of the Sulfuric Acid Continment Pad (SWMU 136) around the pump at the "A" Coal Chemicals Plant. Note that it is lined with brick.

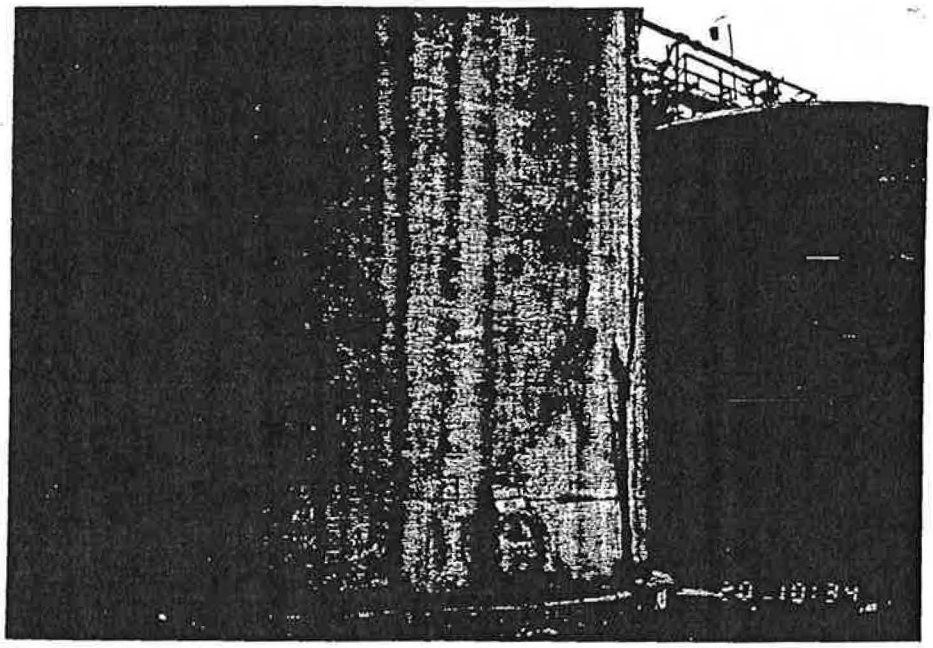


Photo 2.3-29 June 20, 1991

View facing northeast of the Sulfuric Acid Tanks at "A" Coal Chemicals Plant. There is no secondary containment for the tanks.

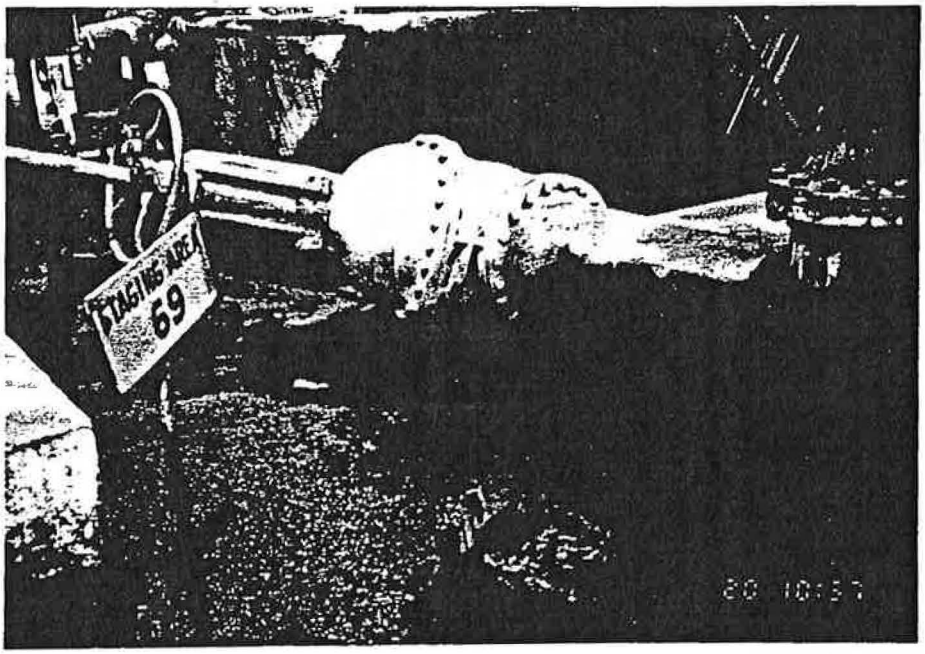


Photo 2.3-30 June 20, 1991

View facing north of the Washoil spill around the "A" Coal Chemicals Plant Decanter (SWMU 142).

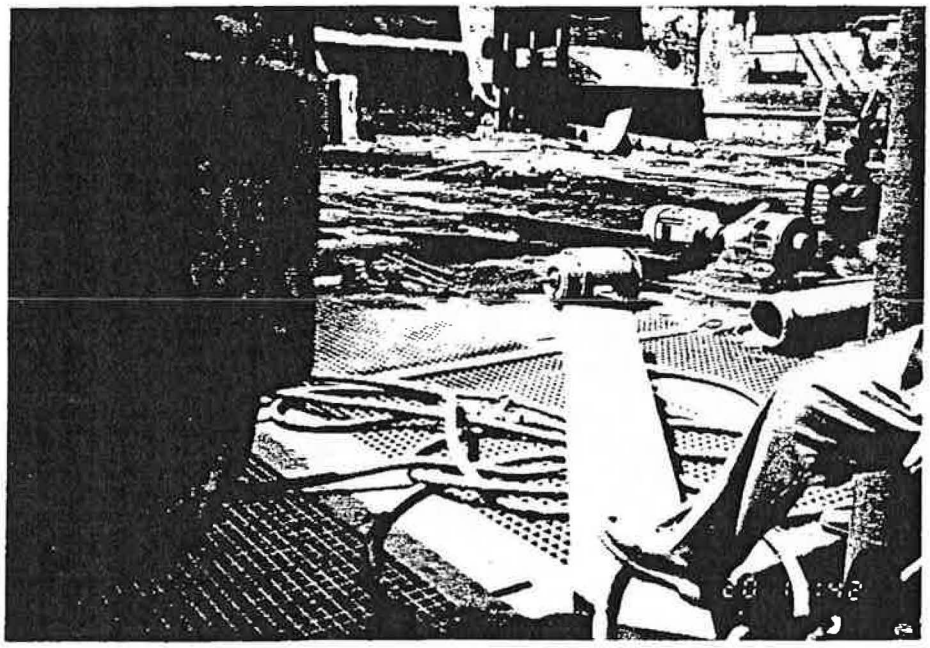


Photo 2.3-31 June 20, 1991

View facing west of the "A" Plant Oil/Water Separator (SWMU 138). In the back are the shells of 2 of the 3 former Tar Decanters (SWMU 139).

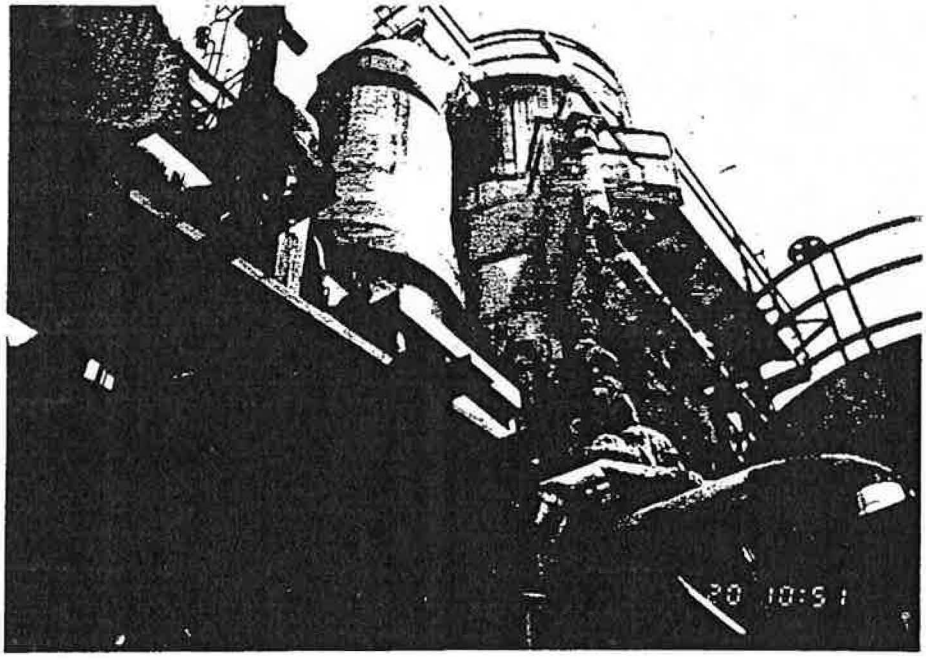


Photo 2.3-32 June 20, 1991

View facing up of the Acid Saturator Tank (SWMU 140) at the "A" Coal Chemicals Plant. Note the crystallized acid around the piping.

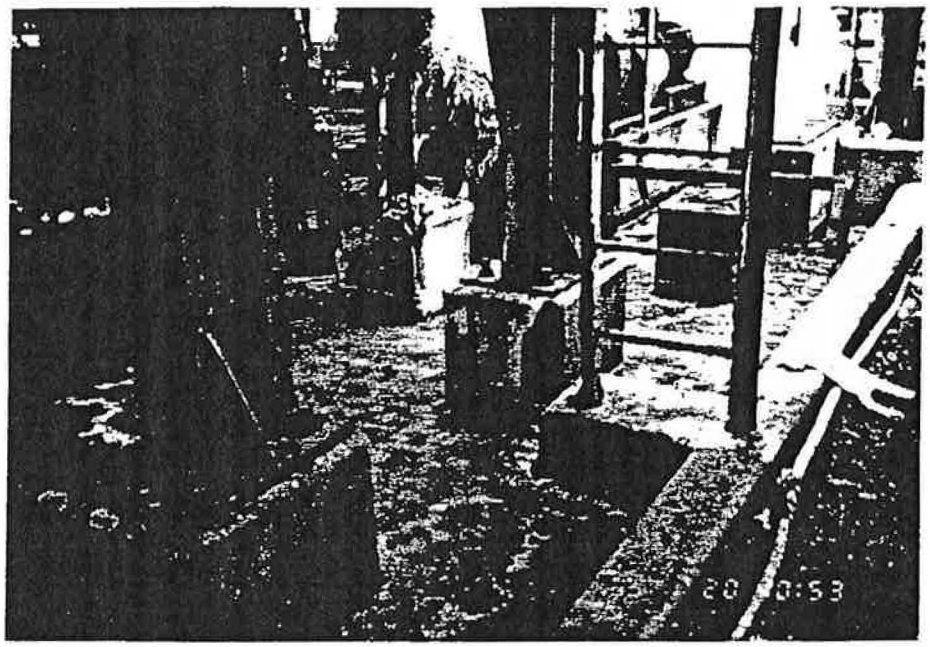


Photo 2.3-33 June 20, 1991

View facing south fo the Saturator Containment Pad at the "A" Coal Chemicals Plant. Note all the white staining.

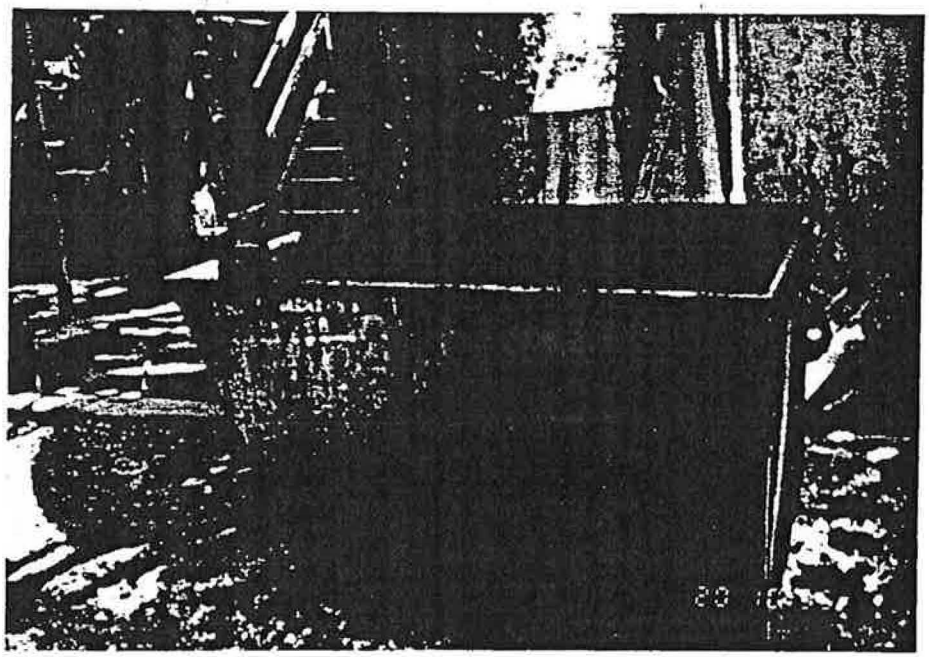


Photo 2.3-34 June 20, 1991

View facing north of the "A" Coal Chemicals Plant Skimmer Box (SWMU 141). The skimmer box collects tar decanter sludge.

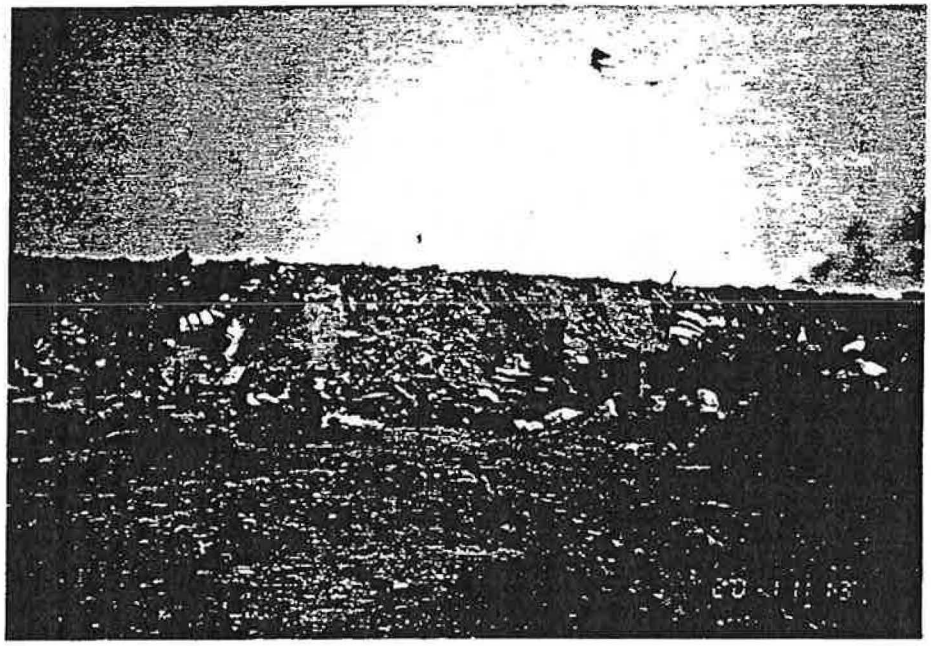


Photo 2.3-35 June 20, 1991

View facing north of Coke Oven Landfill (SWMU 191).

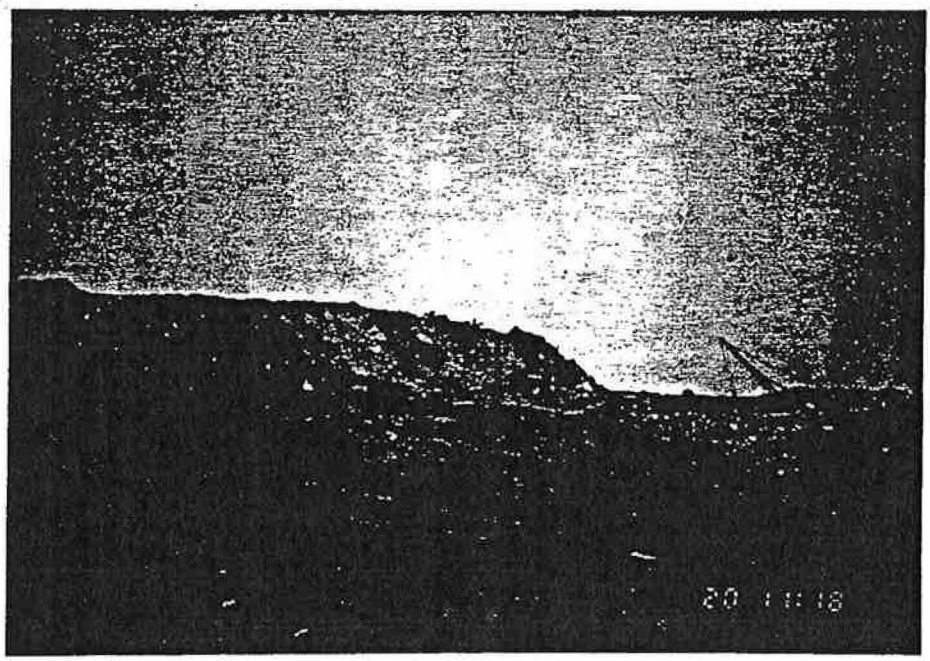


Photo 2.3-36 June 20, 1991

View facing west of Coke Oven Landfill (SWMU 191).

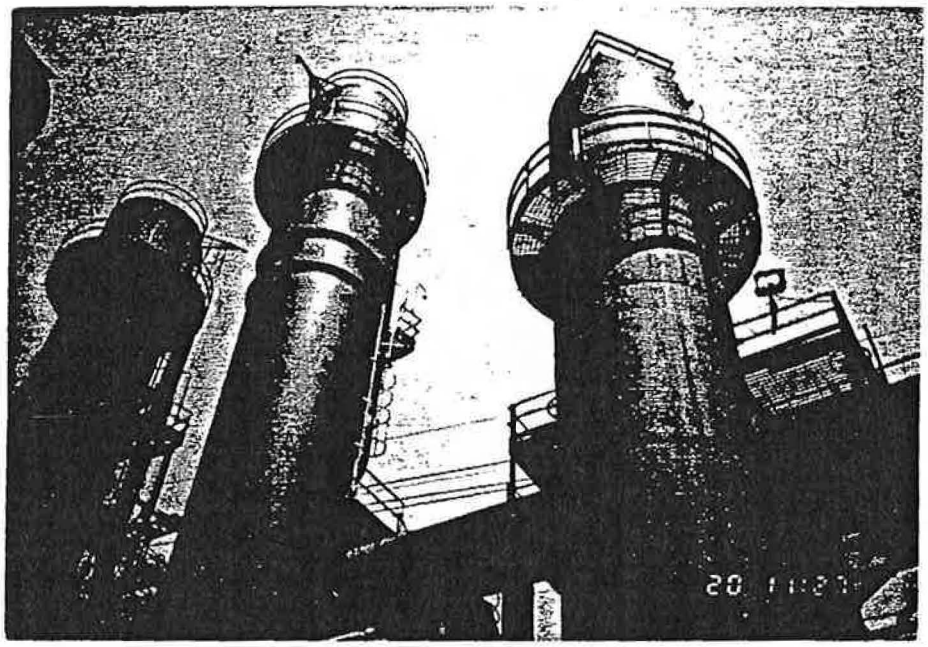


Photo 2.4-1 June 20, 1991

View facing west of the of the Desulferization Plant.

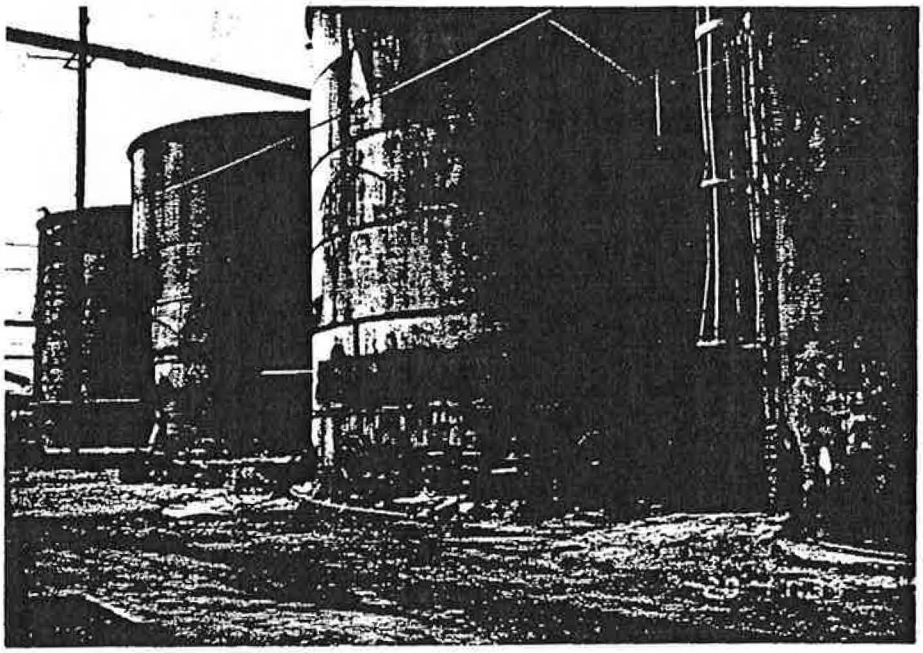


Photo 2.4-2 June 20, 1991

View facing south of the Tar Tanks at the Fuel Station (SWMU 182). These tanks, no longer active, will be cleaned and torn down.

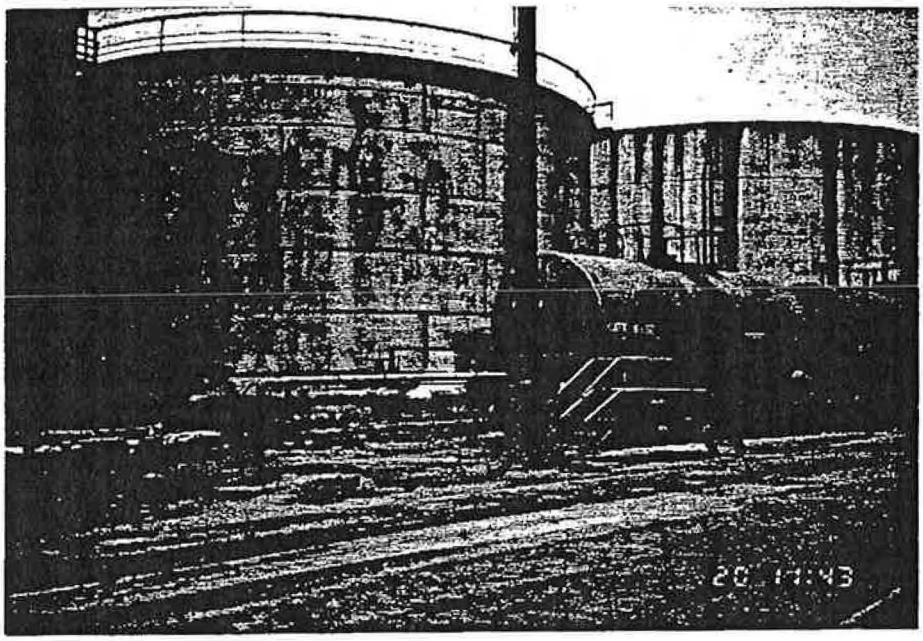


Photo 2.4-3-5 June 20, 1991

Panarama (next page B-147A) view of the Fuel Oil Station (SWMU 182).

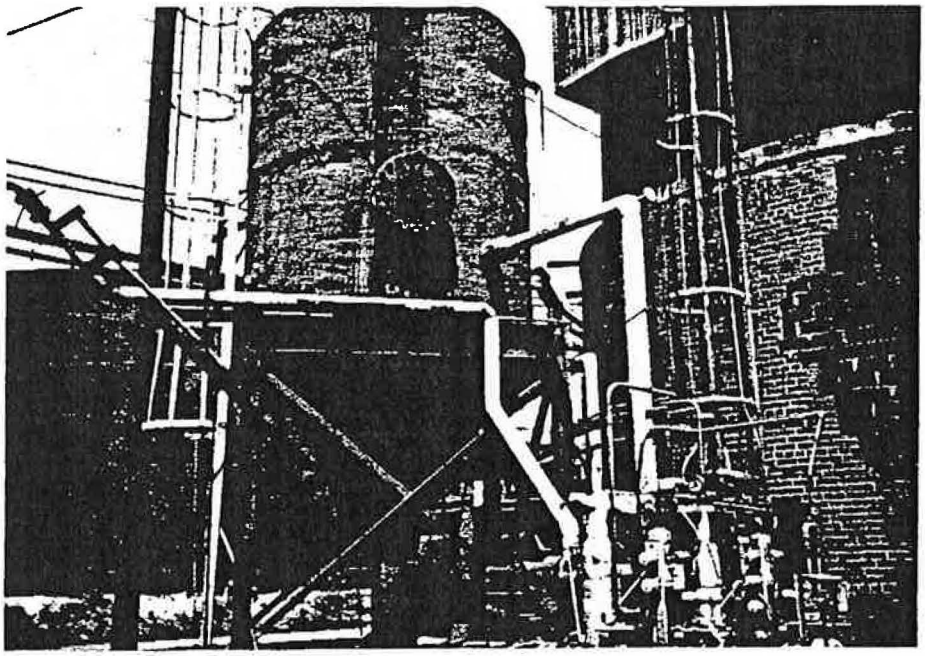
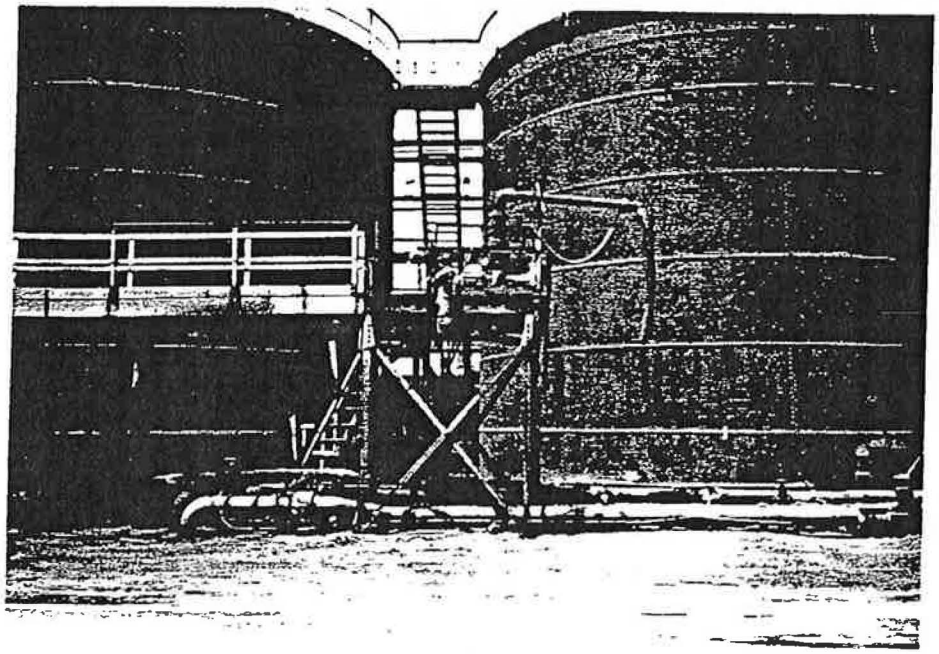


Photo 2.4-6 June 20, 1991

View facing west of the Former Ball Mill and associated tank (SWMU 183). The liquified tar decanter sludge was placed inside the tank after going through the rotating kiln to liquify the sludge. The liquified tar was then sprayed on the coal.



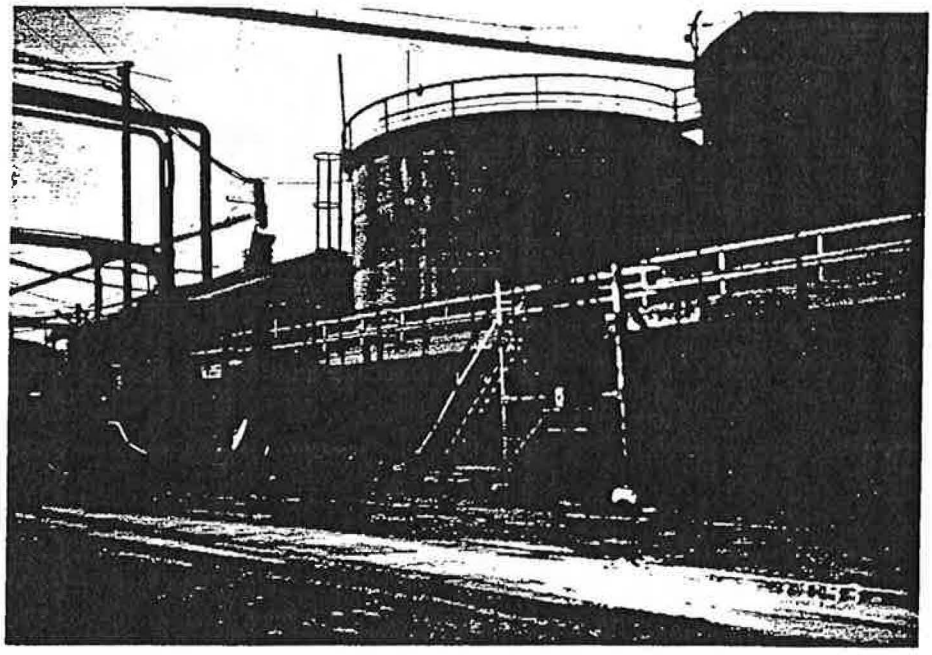


Photo 2.4-4, 2.4-5

June 21, 1991

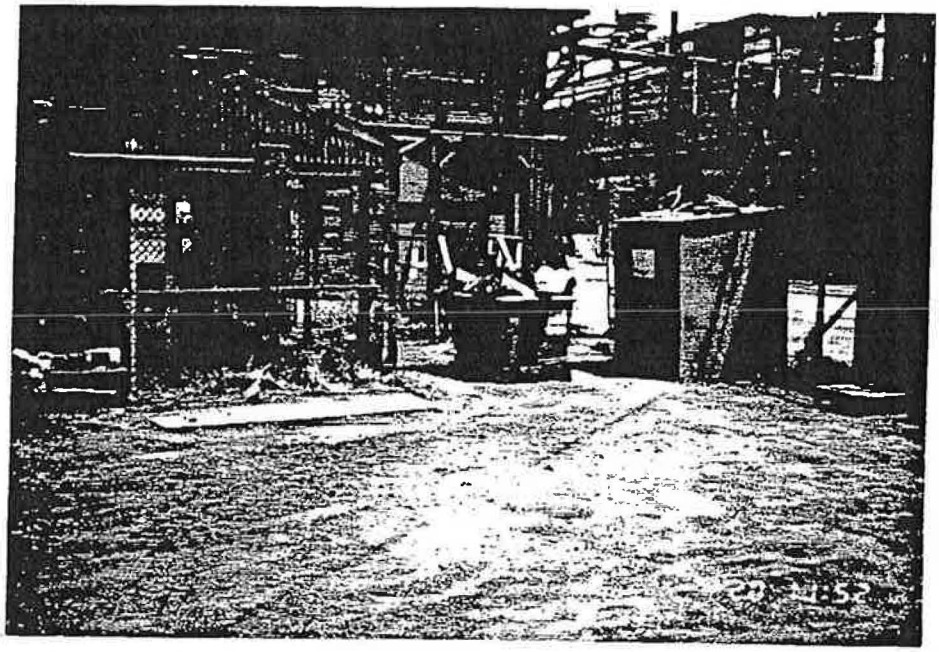


Photo 2.4-7 June 20, 1991

View facing northeast of a dumpster (SWMU 184) full of buckets which caught leakage from pipes and valves full of No. 6 Oil. This was located next to the Former Ball Mill.

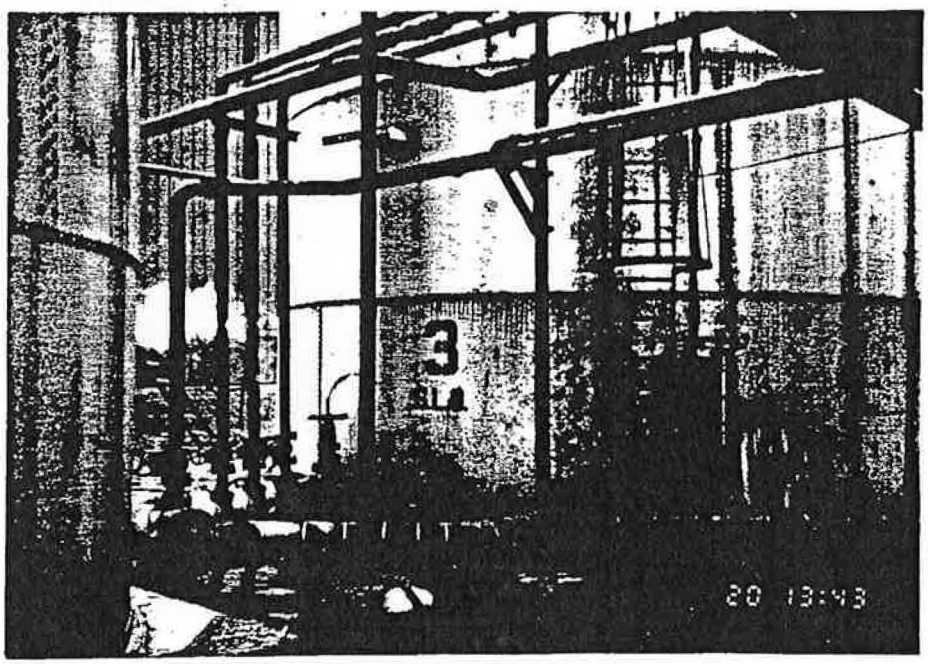


Photo 2.4-8 June 20, 1991

View facing southwest of a Secondary Light Oil Tank in the Benzene Plant (AOC L). This was the location of a spill.



Photo 2.4-9 June 20, 1991

View facing southeast of the Benzene Plant Containment Pad around the Light Oil Tanks (AOC L). The pad empties into a sump.



Photo 2.4-10 June 20, 1991

View facing west of the Benzene Plant Containment Pad surrounding the Light Oil Tanks (AOC L). Note the cracking in the concrete.

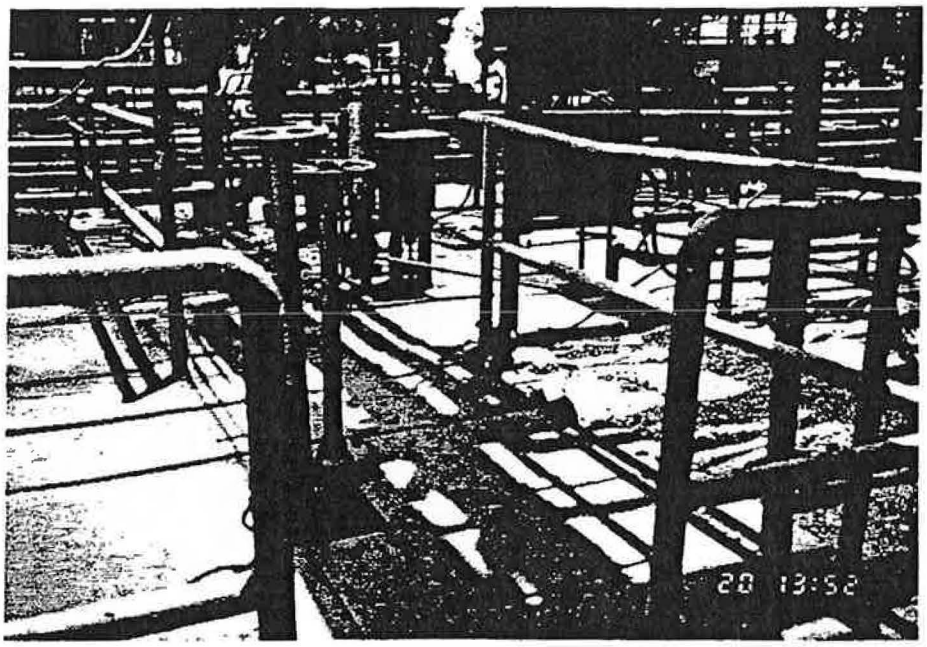


Photo 2.4-11 June 20, 1991

View facing west of the Benzene Plant Oil/Water Separator (SWMU 147).

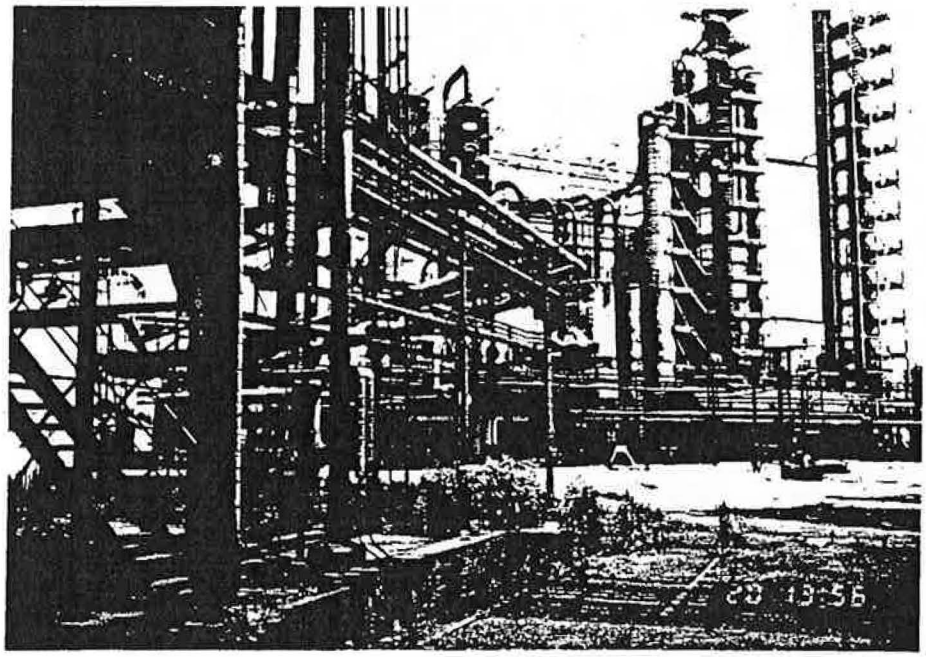


Photo 2.4-12 June 20, 1991

View facing south of the Benzene Plant (AOC L) cooling towers.

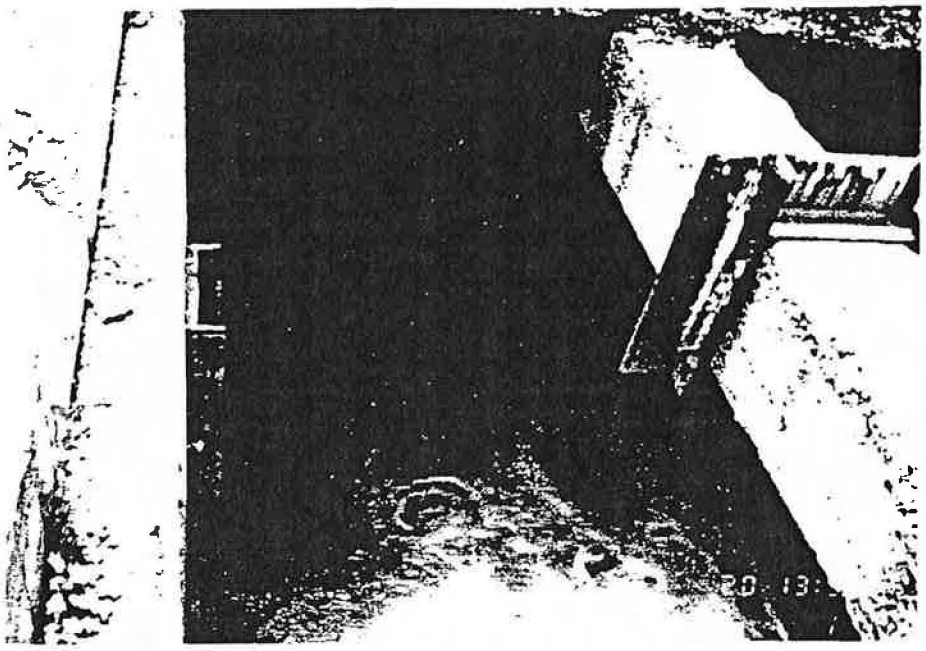


Photo 2.4-13 June 20, 1991

View facing down of the Benzene Plant Cooling Water or Oil/Water Separator overflow point of connection to the Storm Water Sewer System (SWMU 196).

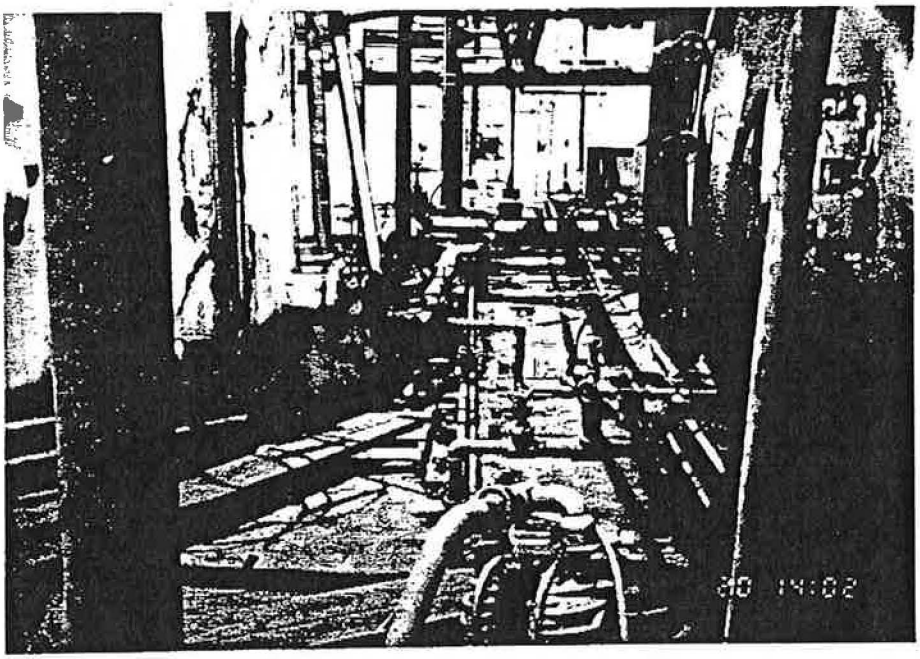


Photo 2.4-14 June 20, 1991

View facing north of the oil spillage surrounding #40 Oil Tank at the Benzene Plant (AOC L).

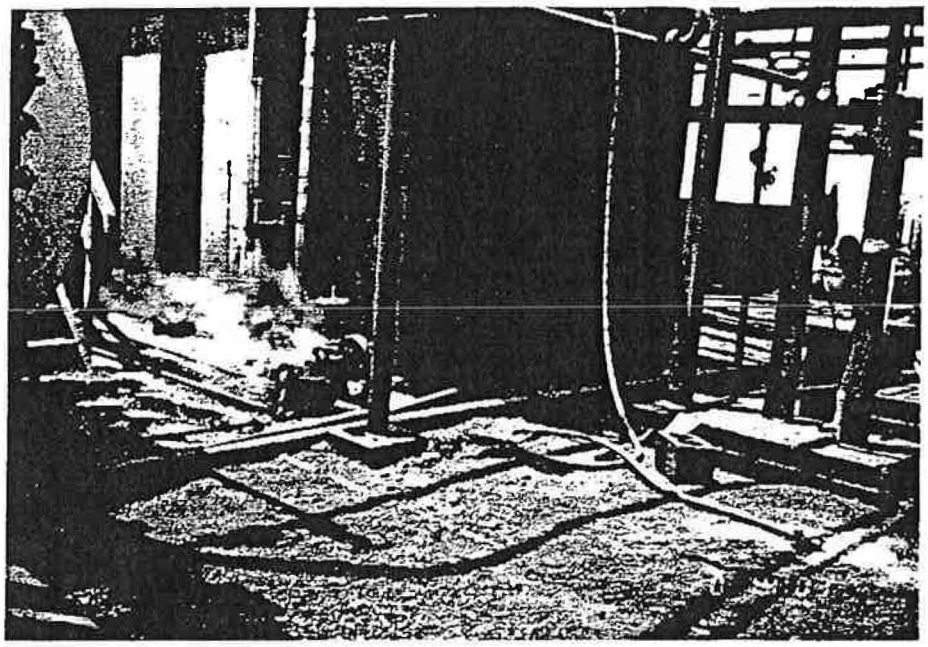


Photo 2.4-15 June 20, 1991

View facing northwest of the #40 Oil Spill site at the Benzene Plant (AOC L).

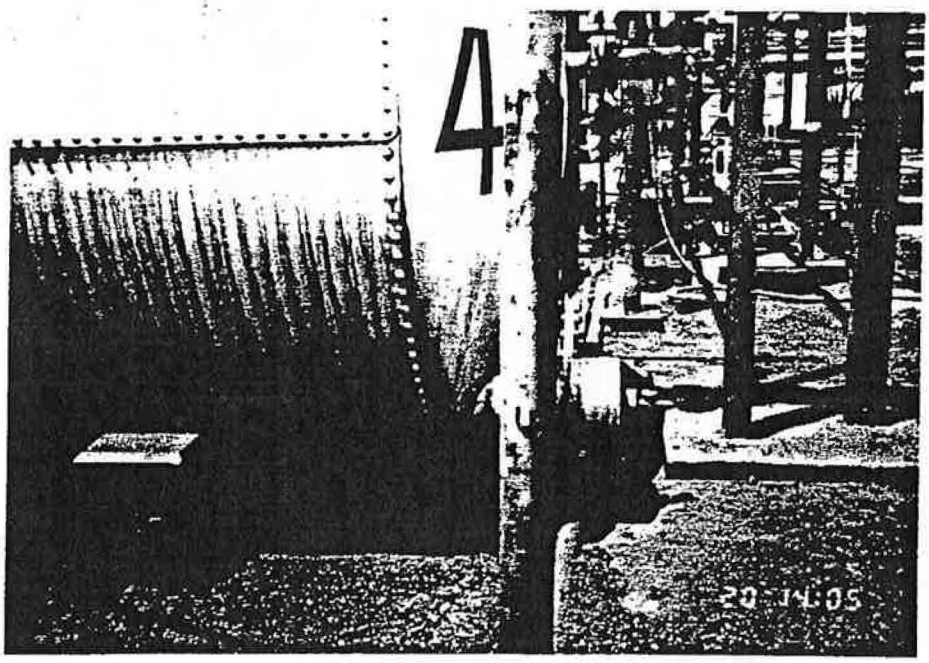


Photo 2.4-16 June 20, 1991

View facing north of the Oil Spill Site at the Benzene Plant Recirculation Tank (AOC L).

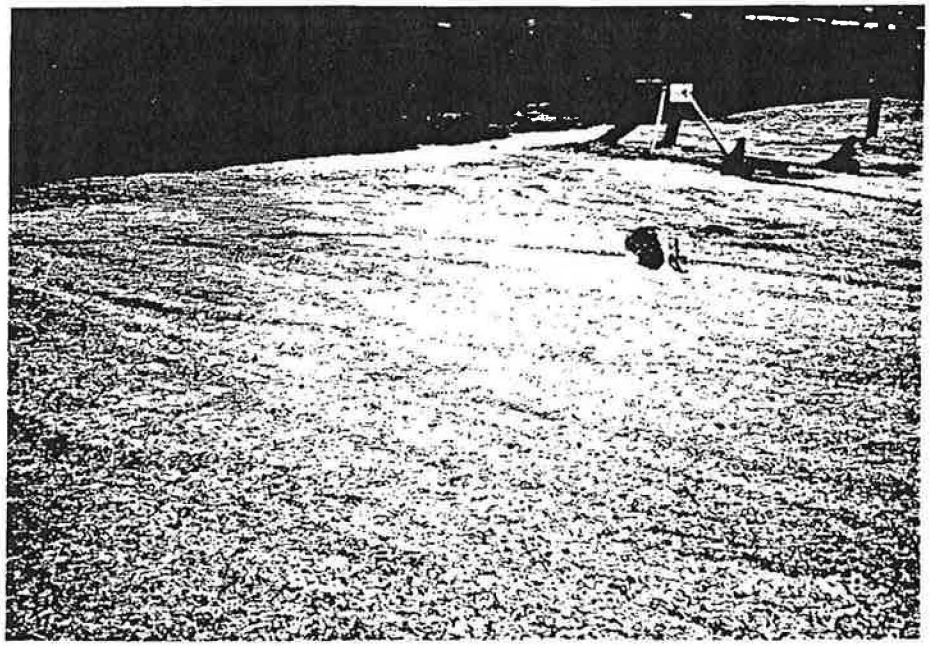


Photo 2.4-17 June 20, 1991

View facing south of the area used as a temporary drum storage area for the Benzene Plant (SWMU 143). The area is used when the muck is cleaned out of the Secondary Light Oil, Benzene, and Toluene Tanks.

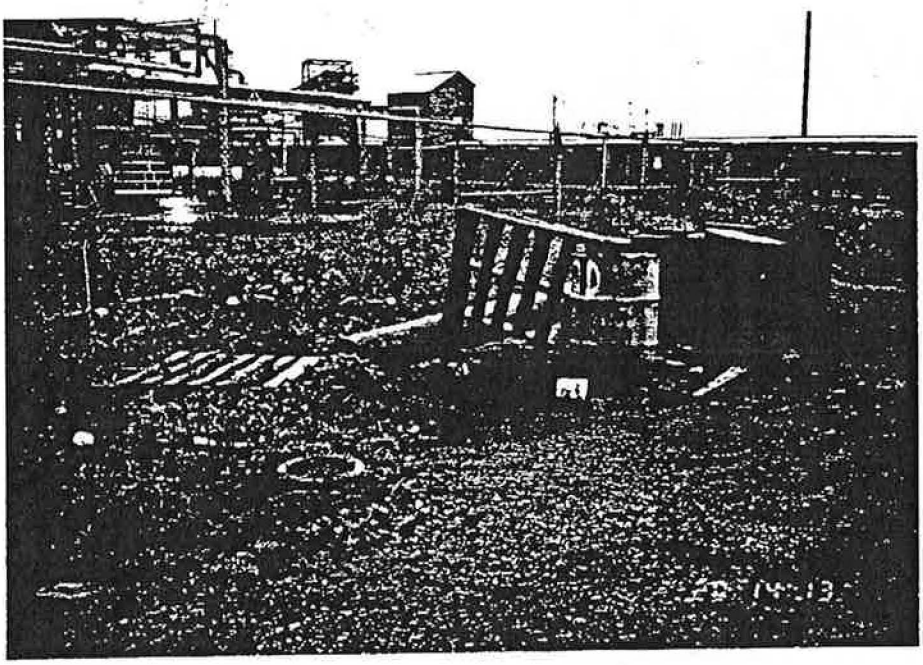


Photo 2.4-18 June 20, 1991

View facing south of the Benzene/Litol Plant Waste Oil Satellite Accumulation Area (SWMU 151).

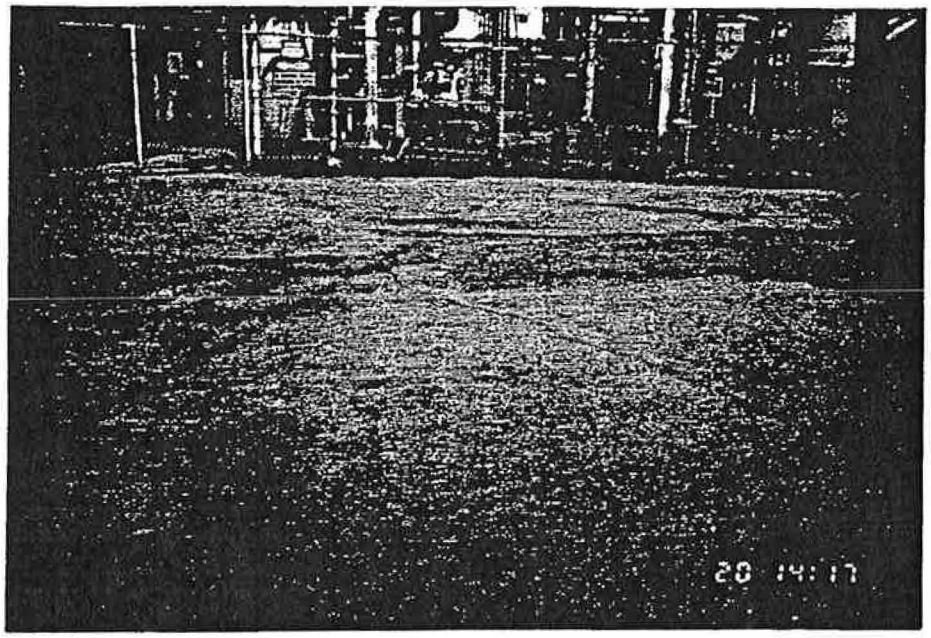


Photo 2.4-19 June 20, 1991

View facing east of the Litol Plant Catalyst Drum Station (SWMU 150).



Photo 2.4-20 June 20, 1991

View facing south of the staging area (SWMU 152) where the Litol drums were moved and sampled for its contents. This operation occurred once every 5 years.

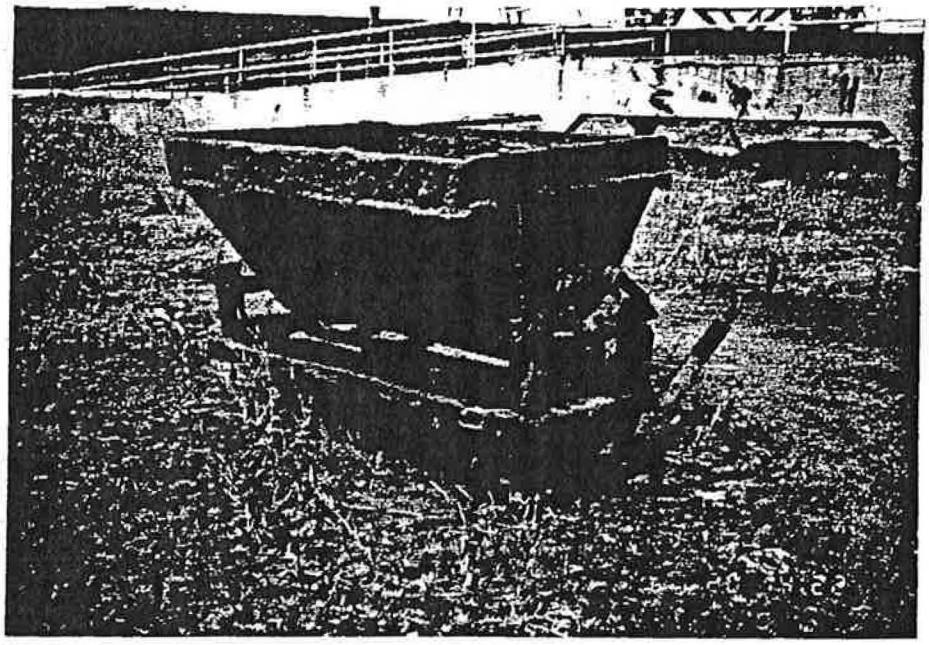


Photo 2.4-21 June 20, 1991

View facing northwest of the Tar Decanter Buggy (SWMU 185) found near the Benzene Plant.

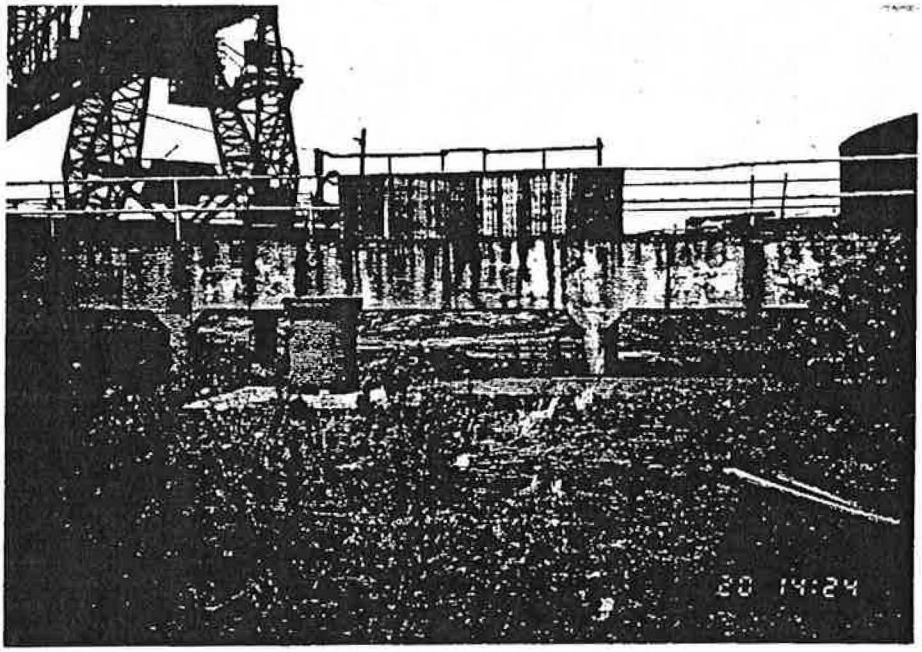


Photo 2.4-22 June 20, 1991

View facing north of the Former Tar Decanter Storage Box (SWMU 186) location.

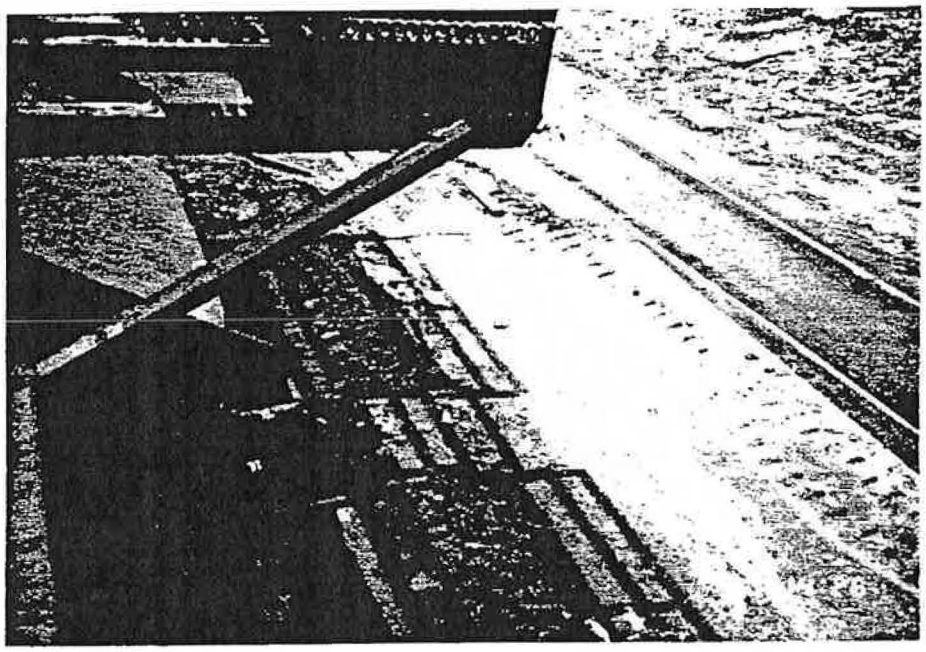


Photo 2.4-23 June 20, 1991

View looking down from the Tar Decanter Buggy incline. The area on the ground is where the Tar Decanter Storage Boxes (SWMU 186) were formerly located.



Photo 2.4-24 June 20, 1991

View facing northwest of the top of the Tar Decanter Buggy (SWMU 185) incline. Note the corrosion of the concrete.



Photo 2.4-25 June 20, 1991

View facing north of an unknown drum storage area located near the Benzene Truck Loading Area (SWMU 153). The drums were not labelled.

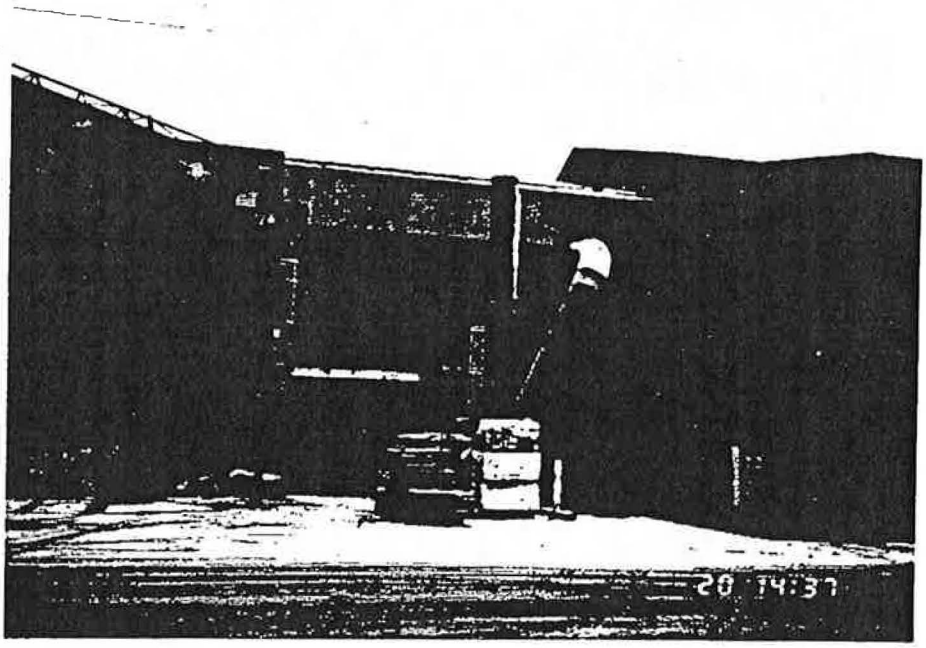


Photo 2.4-26 June 20, 1991

View facing south of the Coke Battery Repair Shop Baghouse (SWMU 201).

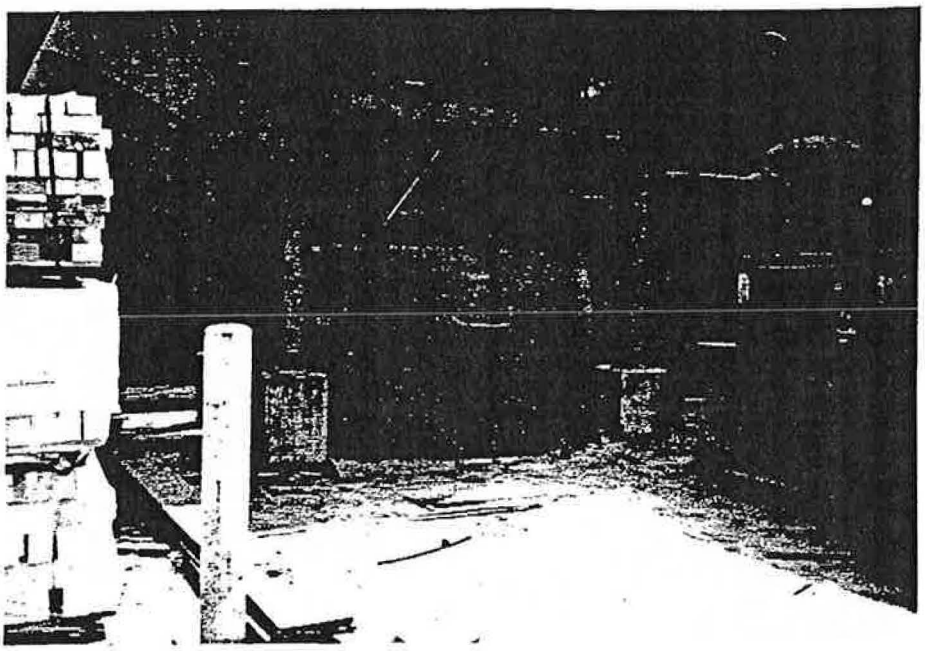


Photo 2.4-27 June 20, 1991

View facing southwest of the dumpster which collected the dust form the Coke Battery Repair Shop Baghouse. The dumpster is emptied into Gray's Landfill (SWMU 93).



Photo 2.4-28 June 20, 1991

View of the gravel area which received a Ferric Chloride Spill (AOC N) from the Bio-oxidation Plant.

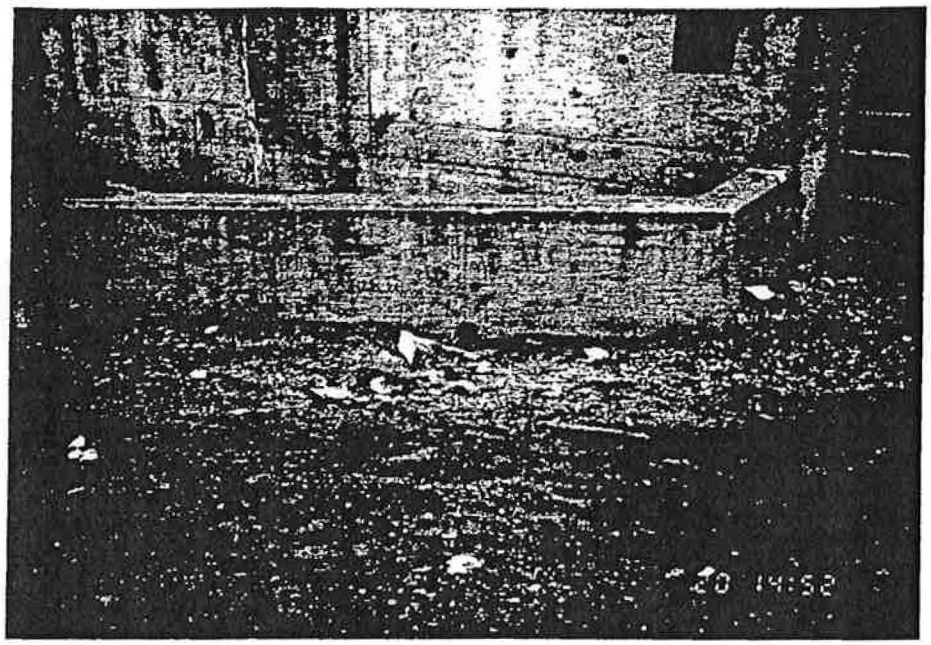


Photo 2.4-29 June 20, 1991

View facing northeast of the Ferric Chloride (AOC N) Containment drain which discharged to the surrounding soil.

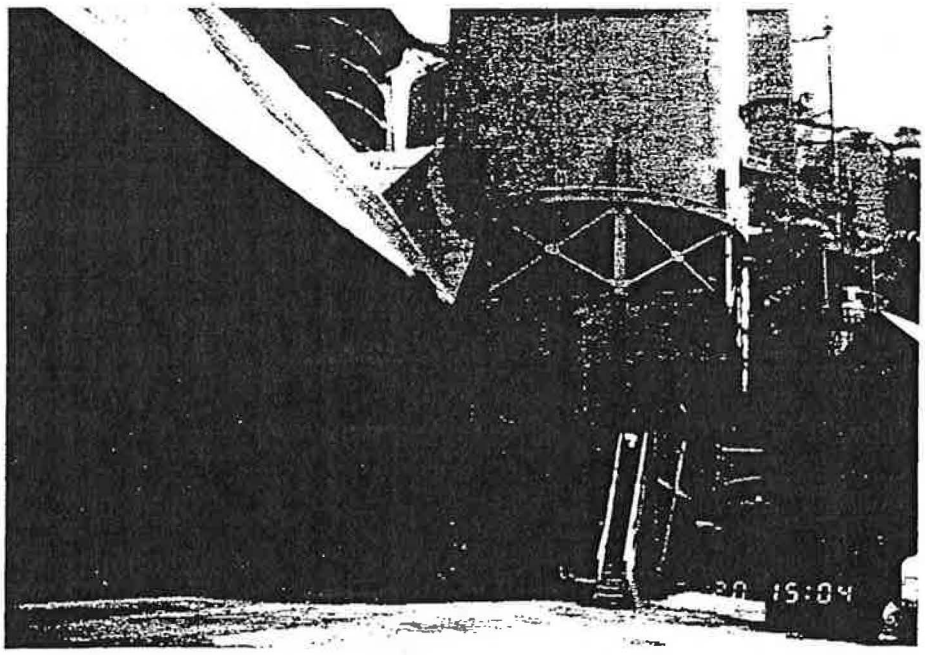


Photo 2.4-30 June 20, 1991

View facing southwest of H Furnace Dust Catcher (SWMU 154). The area beneath is where a railcar collected the dust from the catcher.

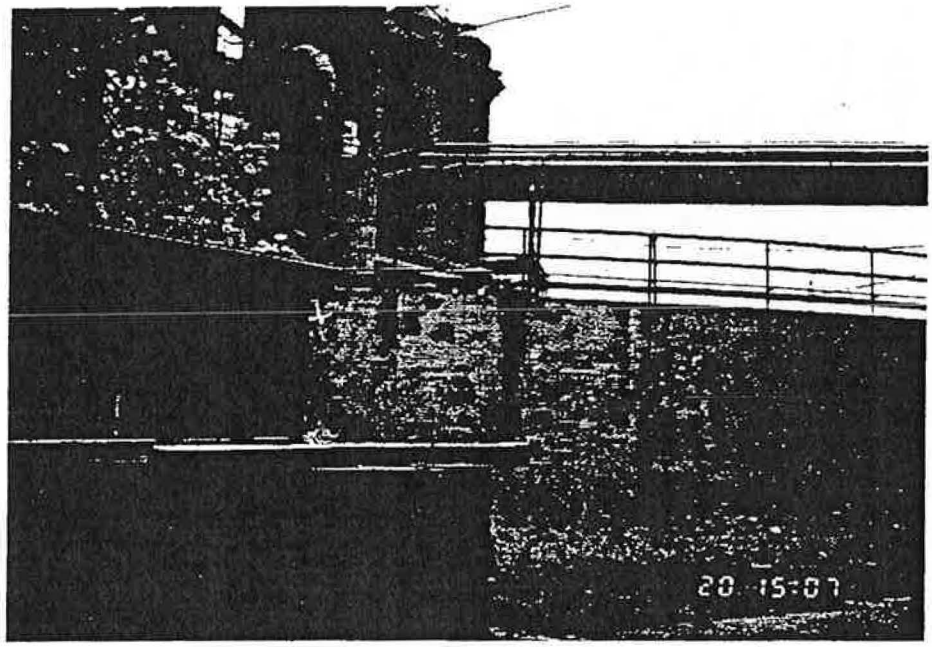


Photo 2.4-31 June 20, 1991

View facing west of H Furnace Wastewater Thickener Tank (SWMU 155). Note the corrosion on the outside of the tank.

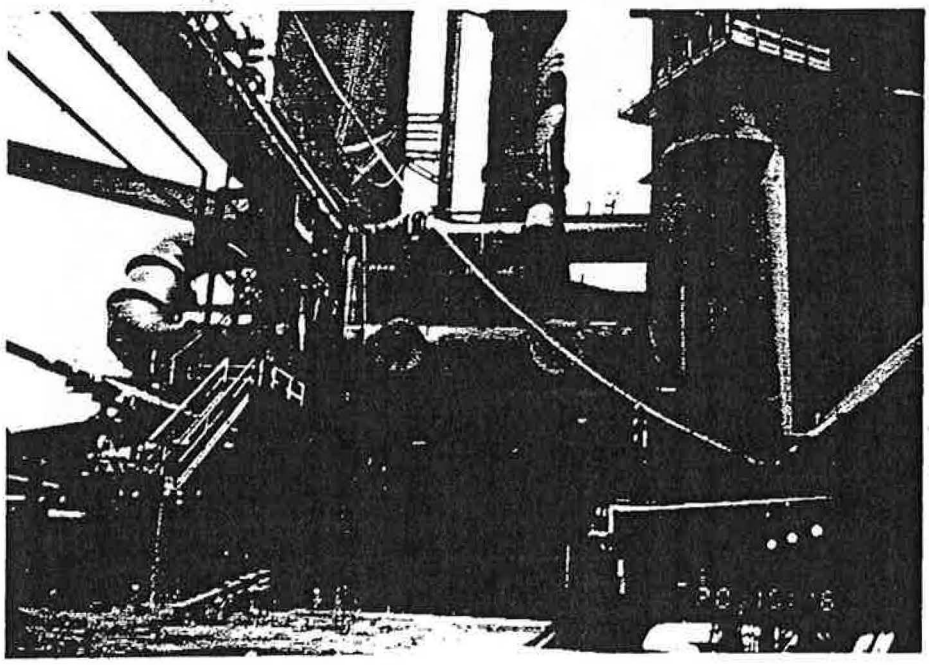


Photo 2.4-32 June 20, 1991

View facing west where Former J Blast Furnace Precipitators (SWMU 156) were located. The two red circular pieces represent where the precipitators were located.

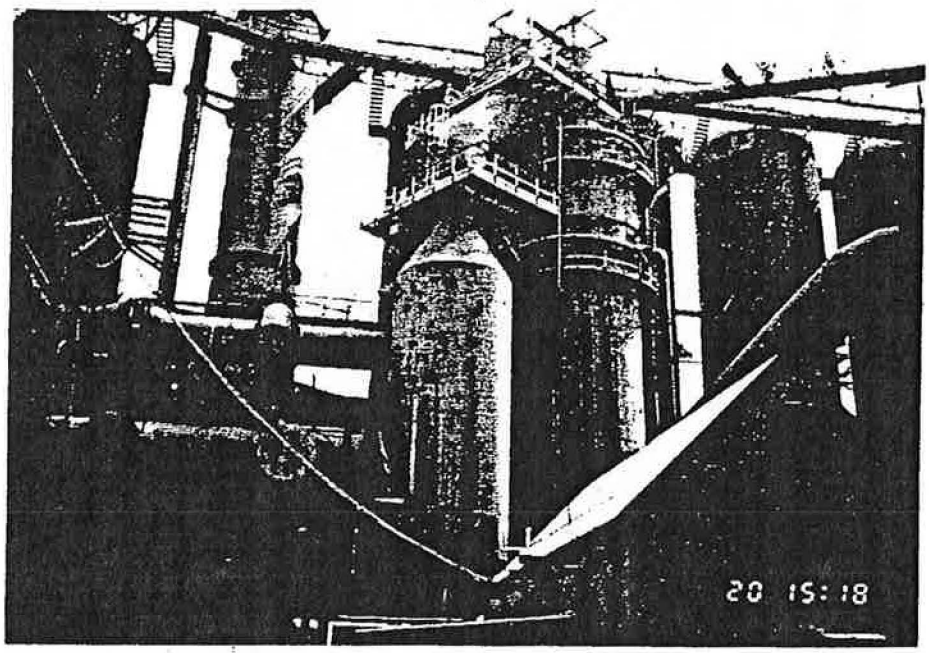


Photo 2.4-33 June 20, 1991

View facing west of the Gas Washer (SWMU 156) and Scrubber (SWMU 158) of J Furnace. The cone shape to the left is the gas washer and the scrubber is to the right.

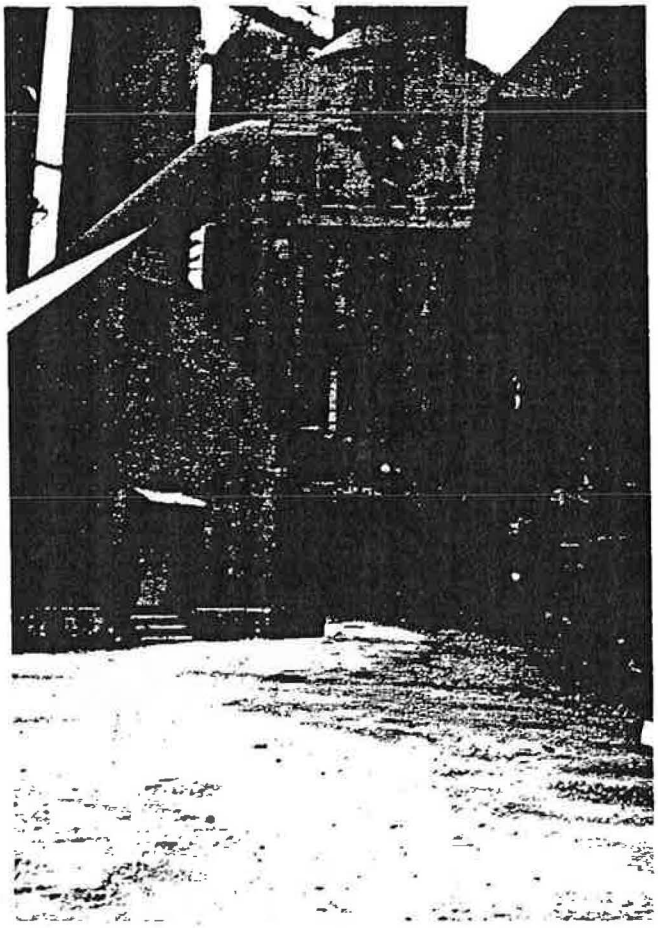


Photo 2.4-34 June 20, 1991

View facing west of J Blast Furnace Dust Catcher (SWMU 159).

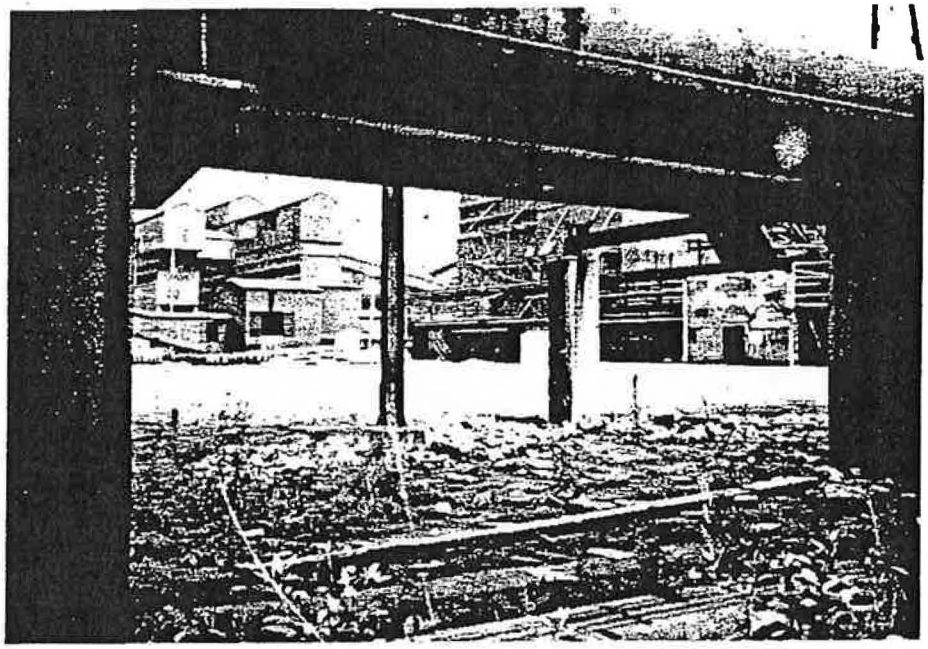


Photo 2.4-35 June 20, 1991

View facing south of the area where K Blast Furnace (SWMU 161) was formerly located. The Thickener Tank for J and K Furnaces was also located in this area.

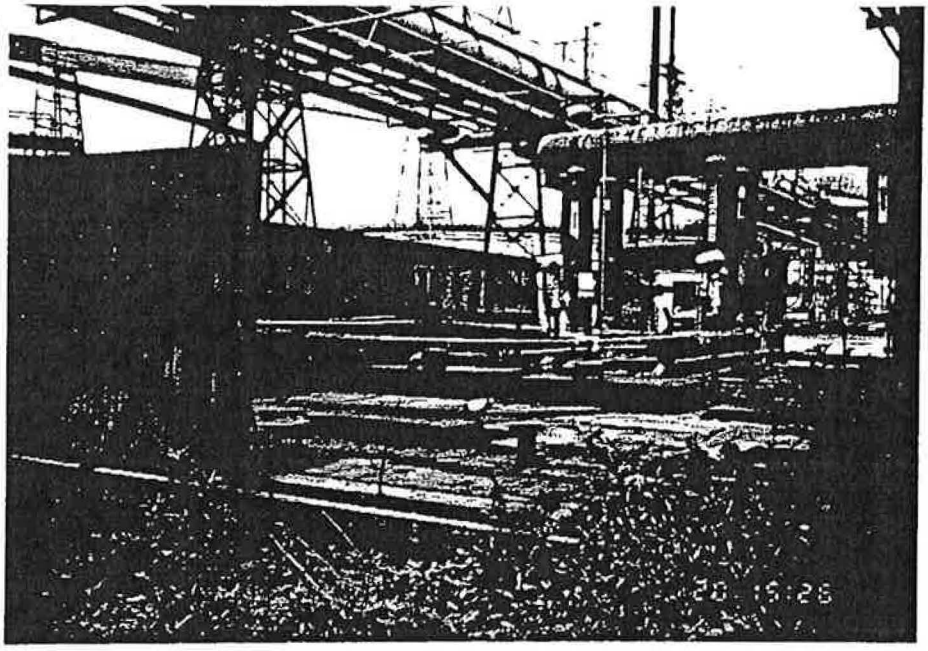


Photo 2.4-36 June 20, 1991

View facing east of the RIW Sump (SWMU 167) which collected the dirty water from the scrubber at J Furnace. Water was then routed through the RIW Treament Plant.

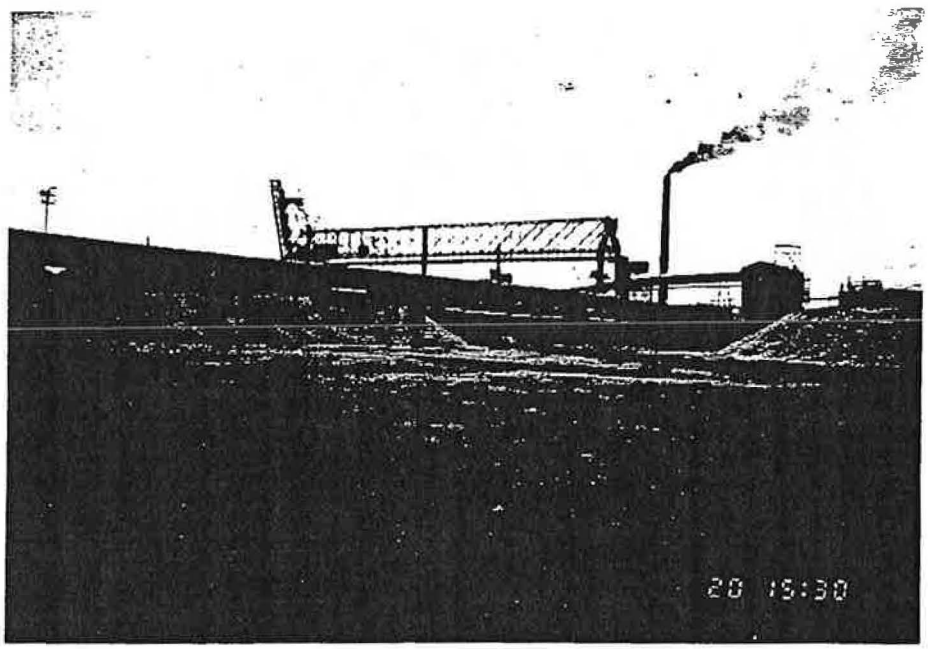


Photo 2.4-37 June 20, 1991

View facing southeast of the area which formerly housed E, F, and G Blast Furnaces (SWMU 161). Raw material storage is now located in this area.

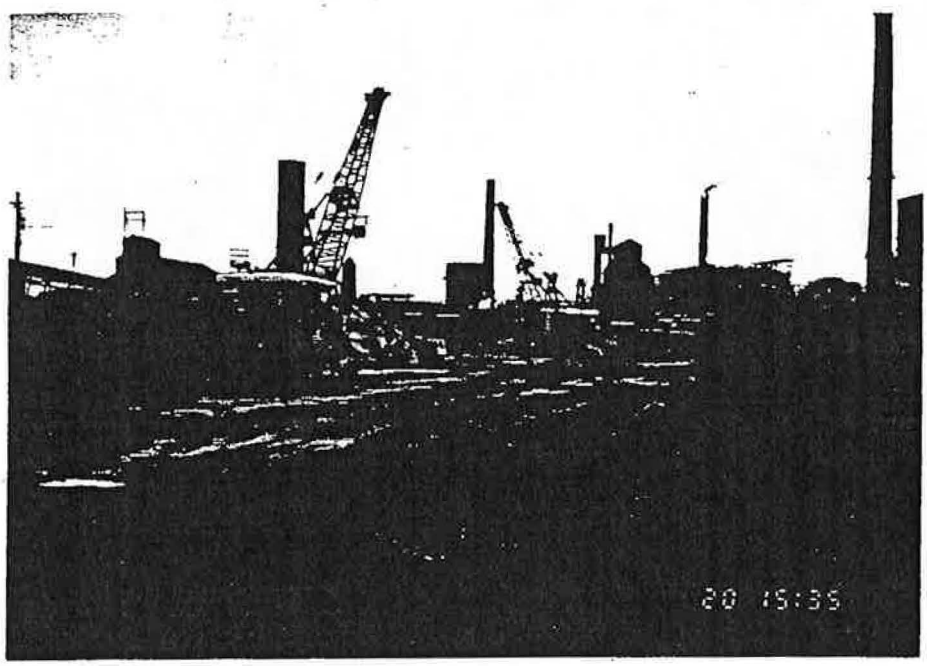


Photo 2.5-1 June 20, 1991

View facing south of the former location of A, B, C, and D Blast Furnace (SWMU 161). Slag is now being processed, by Langerfeld, Inc., in this location.

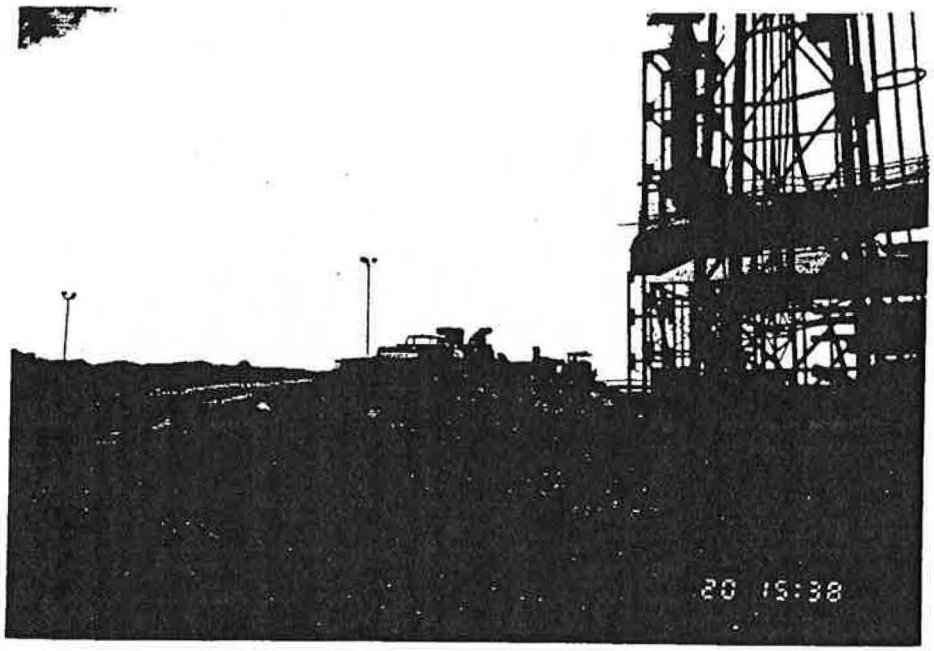


Photo 2.5-2 June 20, 1991

View facing west of the A, B, C, and D Former Blast Furnace location (SWMU 161). Note the old gas main to the right.

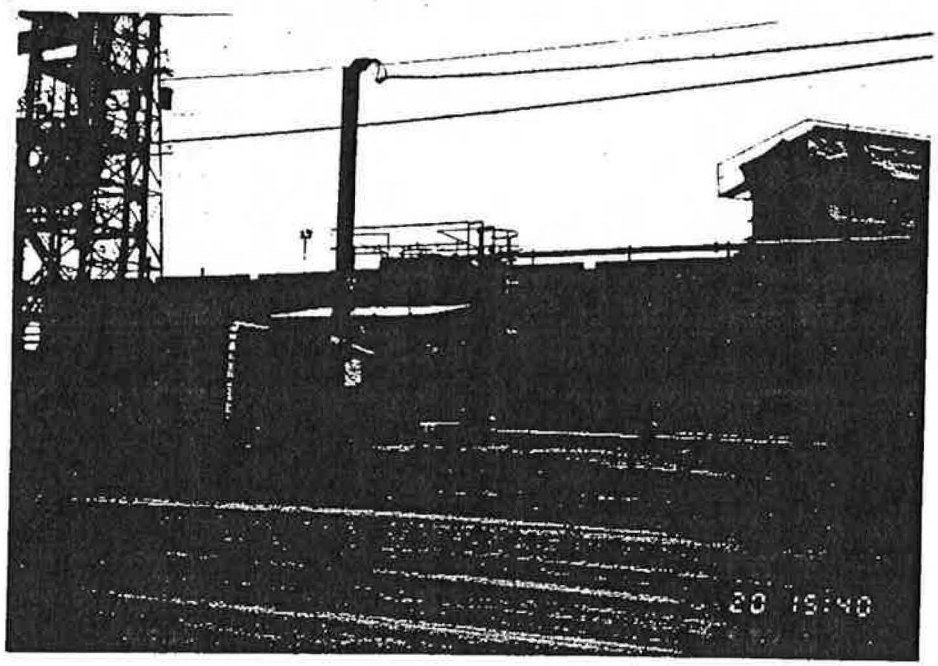
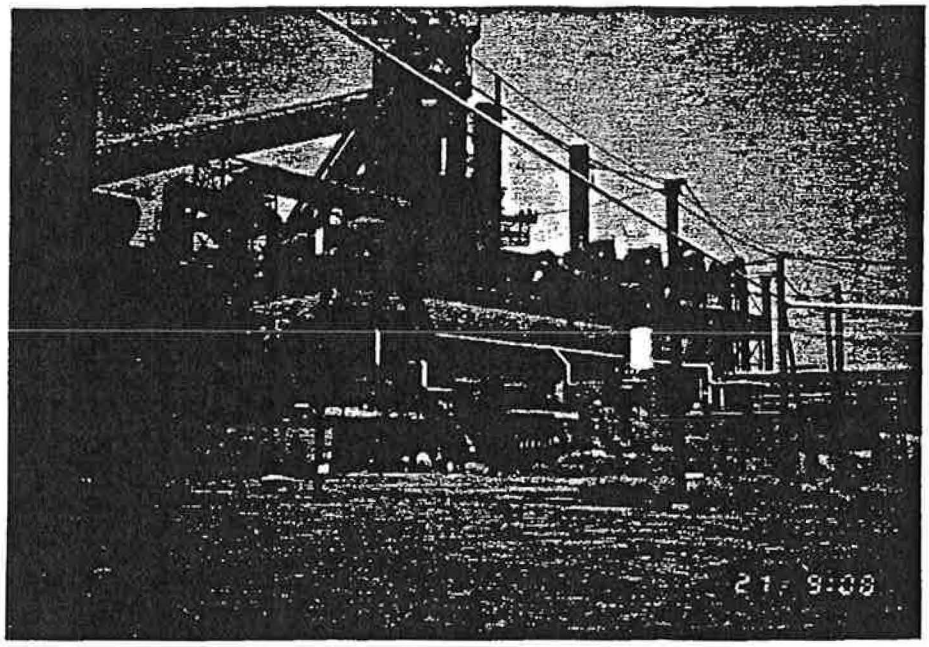


Photo 2.5-3 June 20, 1991

View facing south of the Langerfeld Wastewater Treatment Tank (SWMU 187).



Photos 2.5-4 to 2.5-6 June 21, 1991

Panorama (next page 166A) of L Blast Furnace (SWMUs 162-165).

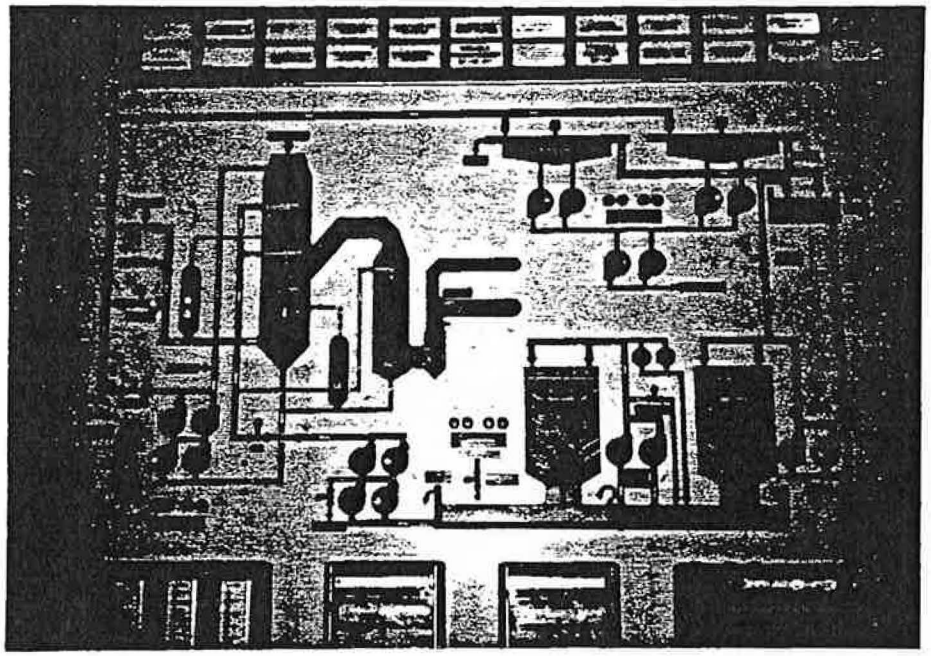
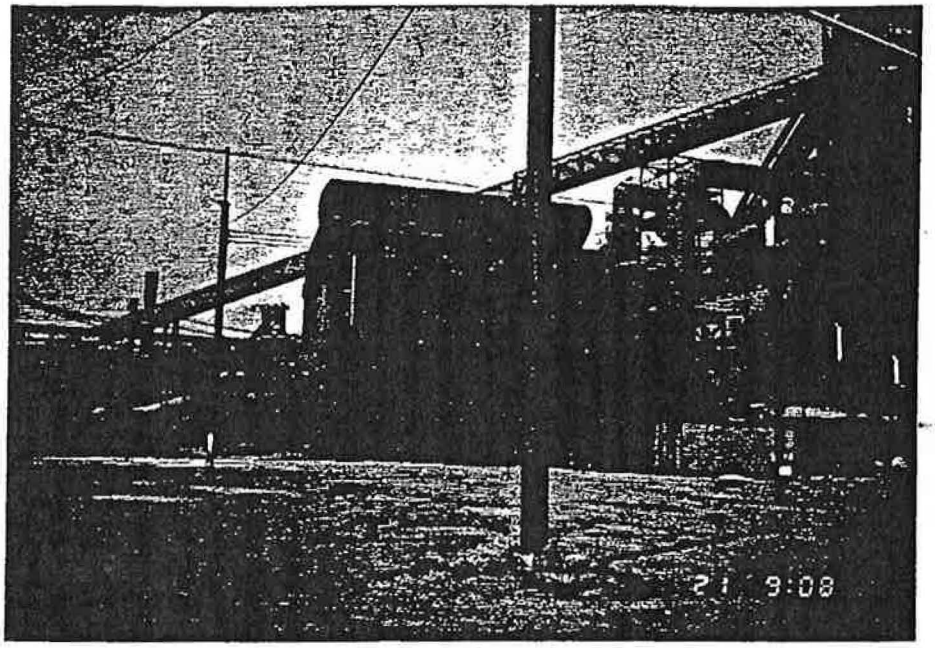


Photo 2.5-7 June 21, 1991

View of L Blast Furnace Process Flow Diagram.



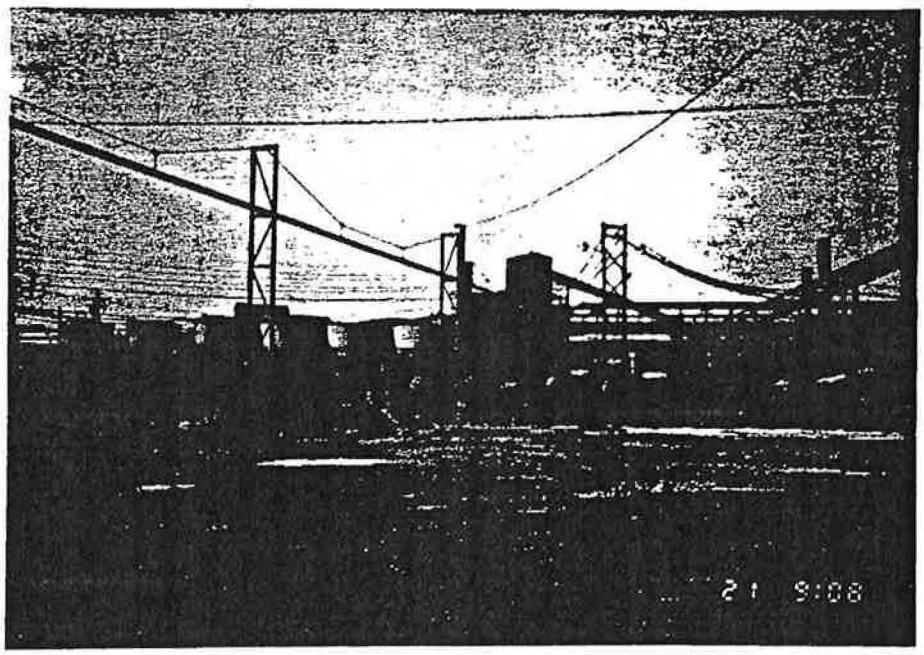


Photo 2.5-5, 2.5-6

June 21, 1991

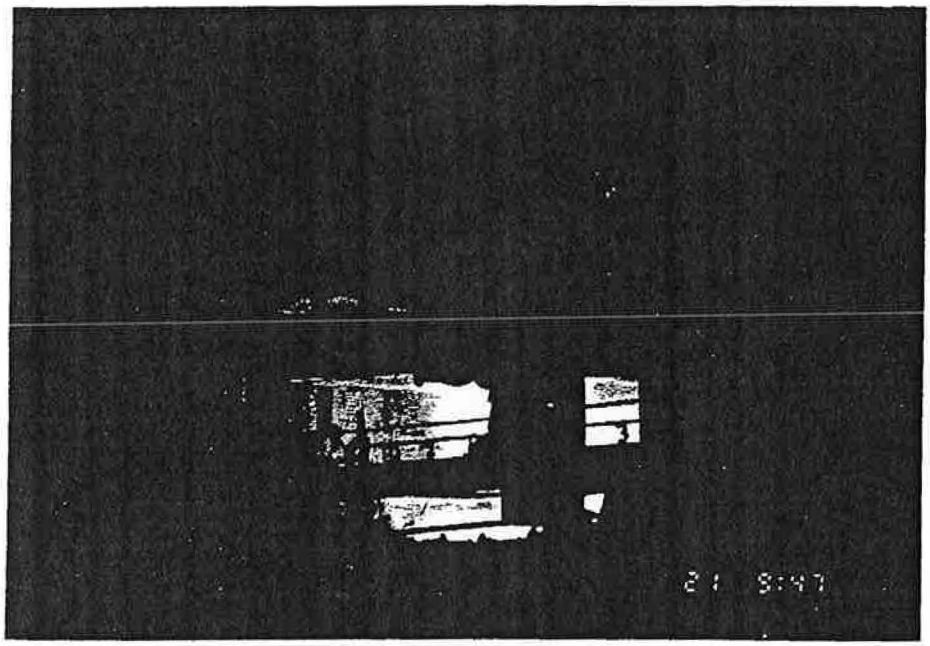


Photo 2.5-8 June 21, 1991

View within L Blast Furnace facing south where emmission are entering the baghouse (SWMU 162).

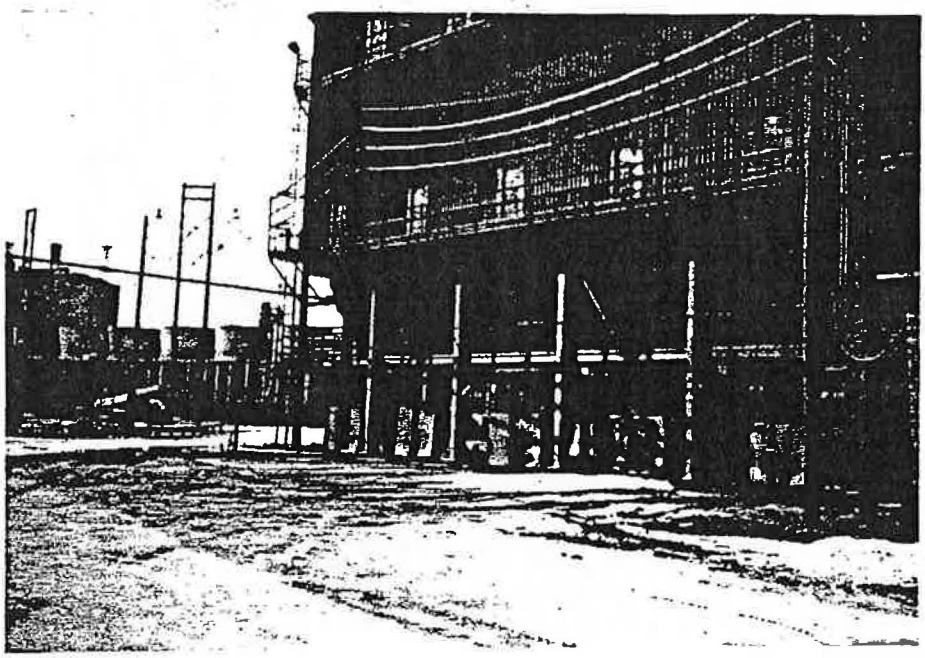


Photo 2.5-9 June 21, 1991

View facing southwest of the L Blast Furnace Baghouse (SWMU 162). Note the dumpsters which collect the dust from the baghouse.

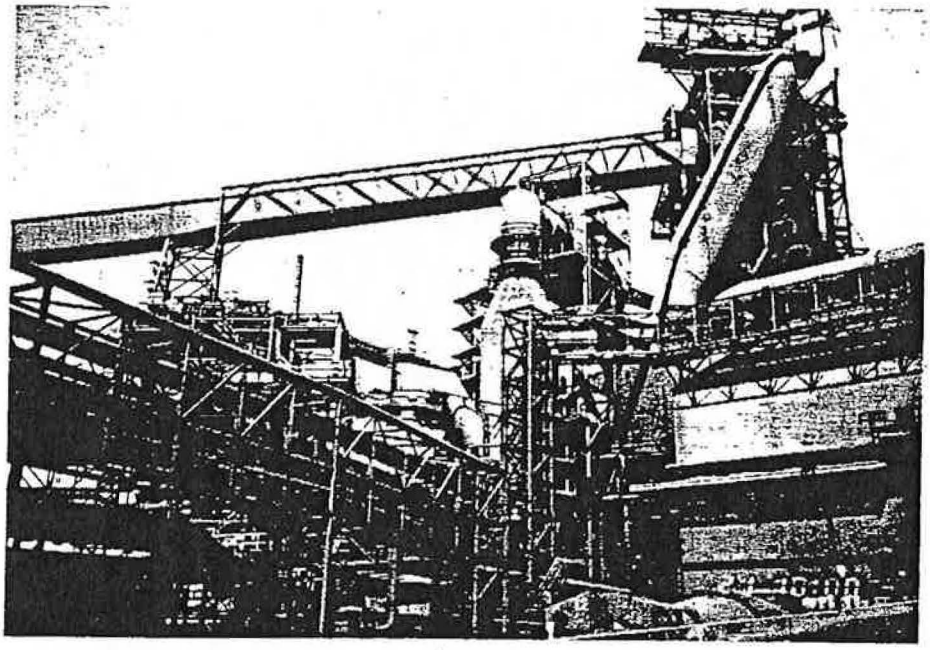


Photo 2.5-10 June 21, 1991

View facing west of L Blast Furnace Bishoff Gas Scrubber (SWMU 164).

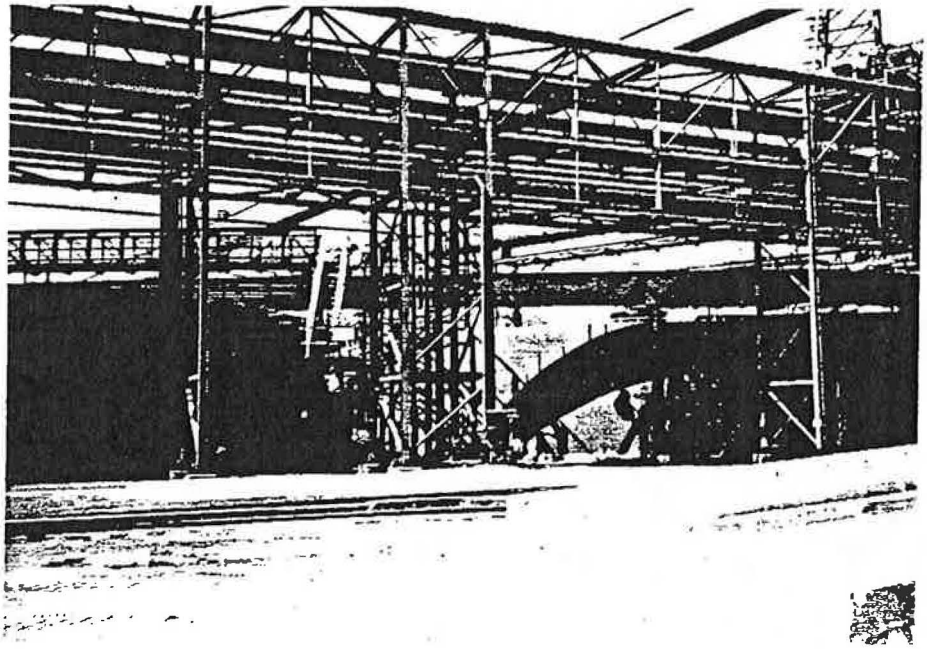


Photo 2.5-11 June 21, 1991

View facing west of L Blast Furnace Thickener #1 (SWMU 163).

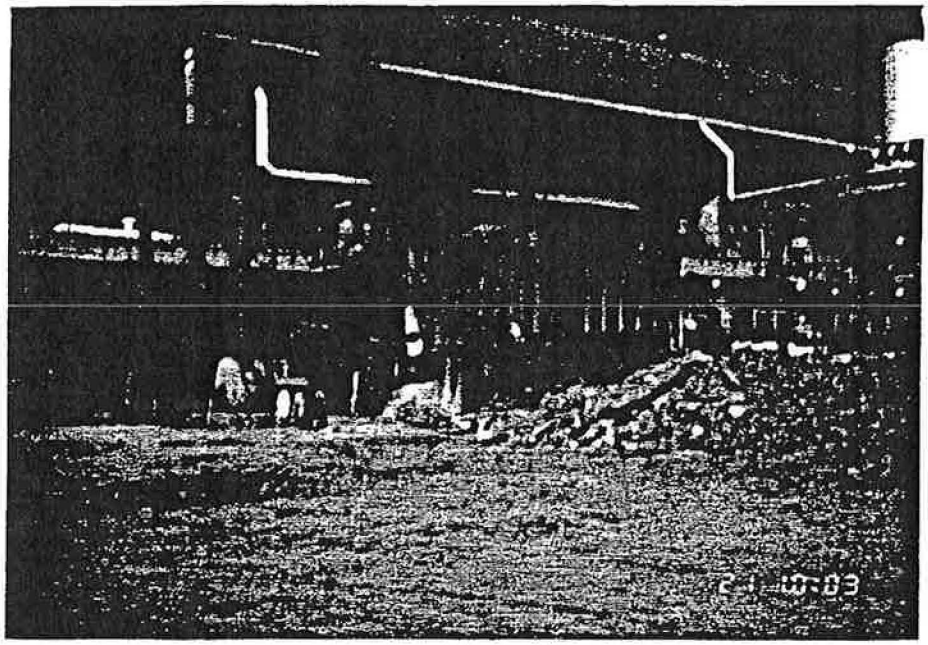


Photo 2.5-12 June 21, 1991

View facing west of the slag area where slag seeps out of L Blast Furnace. The slag is transported by Langerfeld for processing.

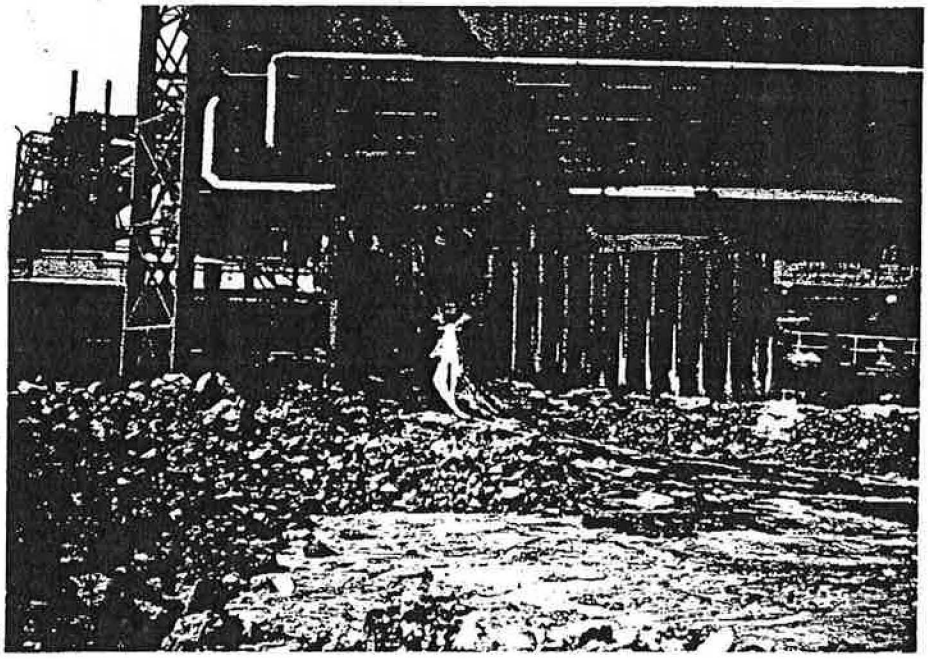


Photo 2.5-13 June 21, 1991

View facing west of the hot slag coming hout of L Blast Furnace (SWMU 165).

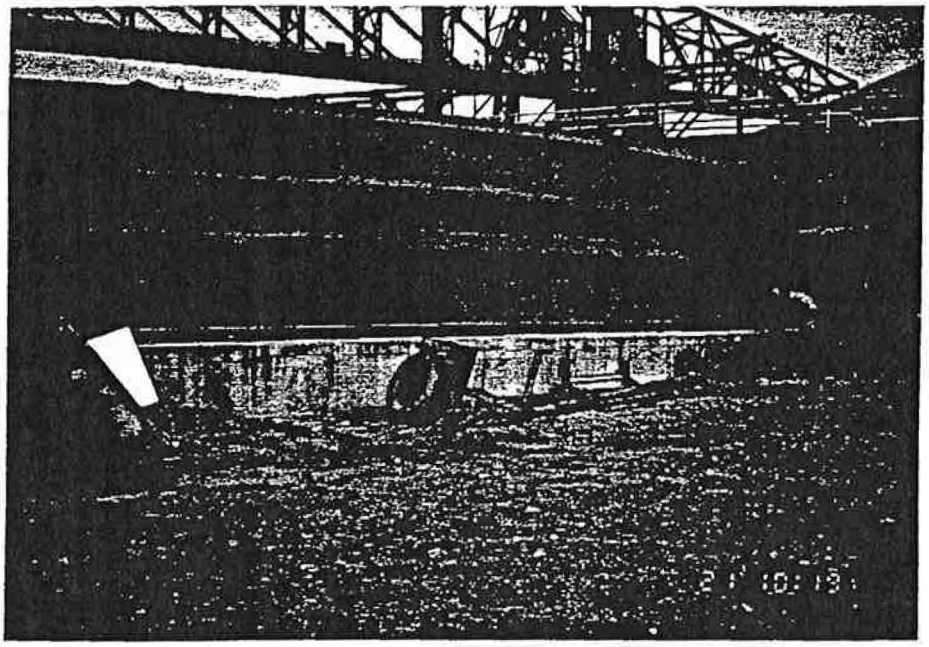


Photo 2.5-14 June 21, 1991

View facing northwest of 1.6 million gallon Clarifying Tank (SWMU 169) at the H and J Blast Furnace RIW System.

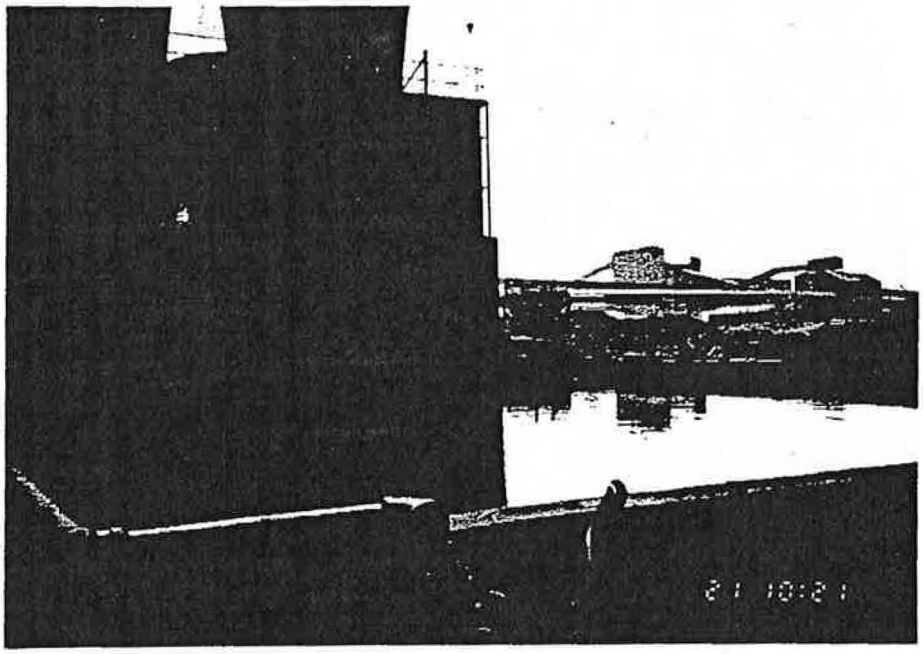


Photo 2.5-15 June 21, 1991

View facing northeast of the cold well holding pond at the H and J Blast Furnace RIW System.

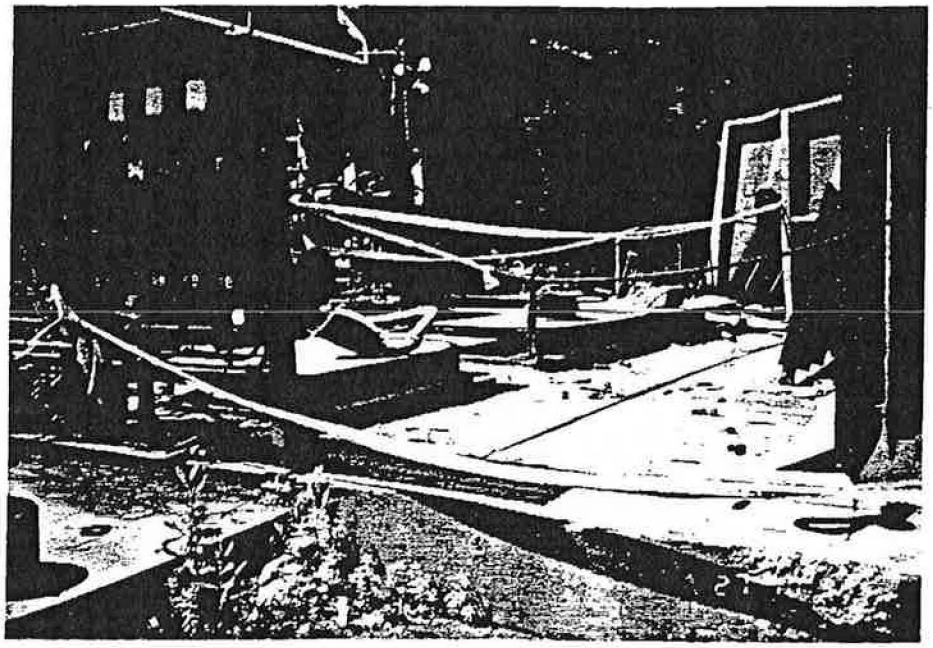


Photo 2.5-16 June 21, 1991

View facing north of #3 Sump (SWMU 167) from H Furnace which pumped wastewater into the #6 Thickener (SWMU 155).

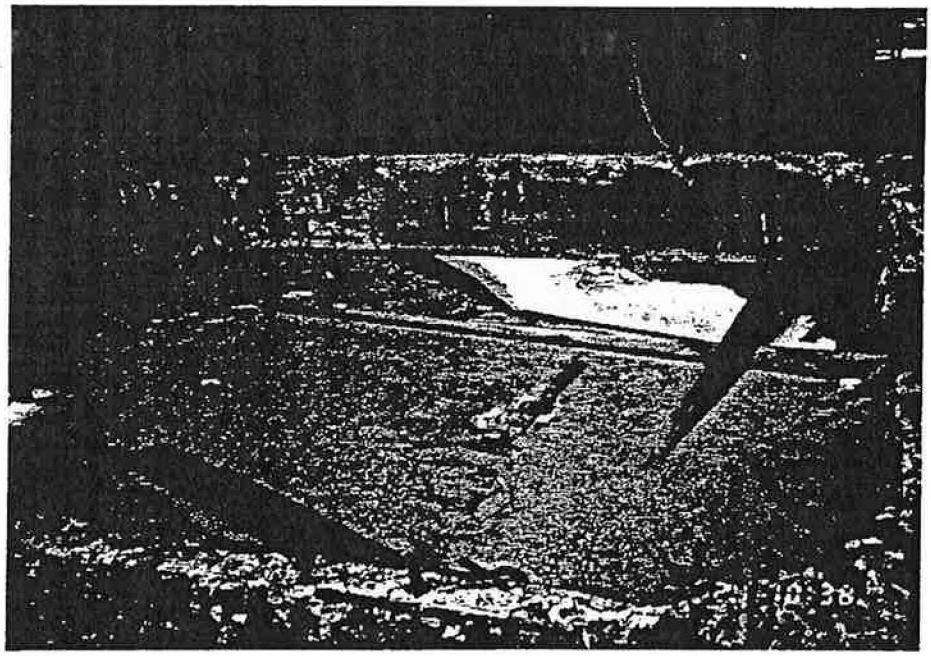


Photo 2.5-17 June 21, 1991

View facing south of a former H Furnace Holding Tank (SWMU 168). The tank functioned as a loop-seal and pumped any waste through #3 sump (SWMU 167) which tied into the RIW.

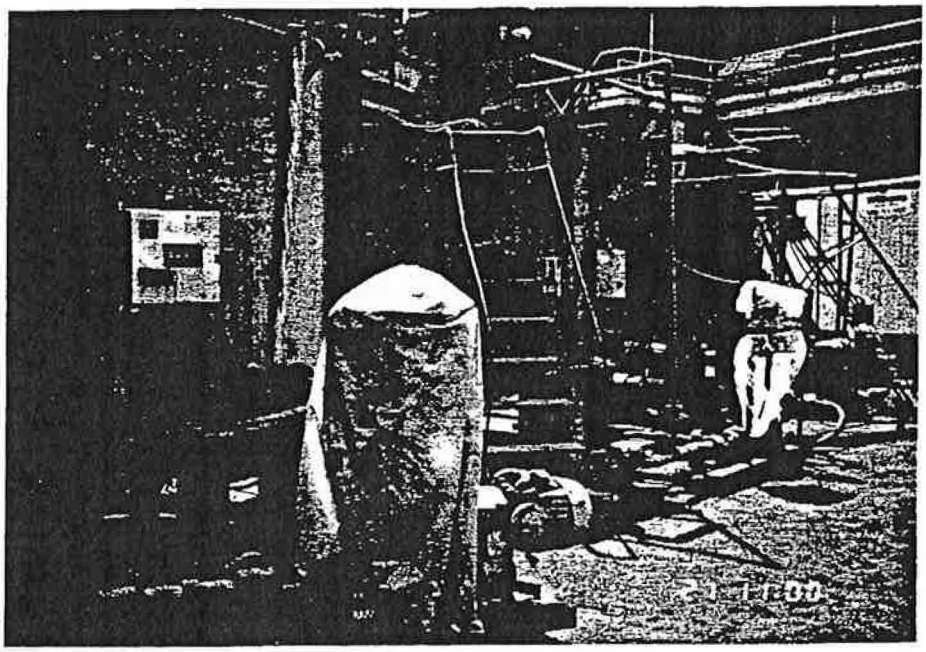


Photo 2.5-18 June 21, 1991

View facing southeast of the Sinter Plant Pilot Project (SWMUs 170-172).



Photo 2.5-19 June 21, 1991

View facing north of A Coal Chemicals Plant Cyanide Sump (SWMU 146). The sump carries wastewaters to the Cyanide Stripper (SWMU 137). Note the yellow/green waste inside the containment area.



Photo 2.5-20 to 2.5-22 June 21, 1991

Panorama (next page 173A) view facing north of the Cyanide Stripper (SWMU 137) at A Coal Chemicals Plant.

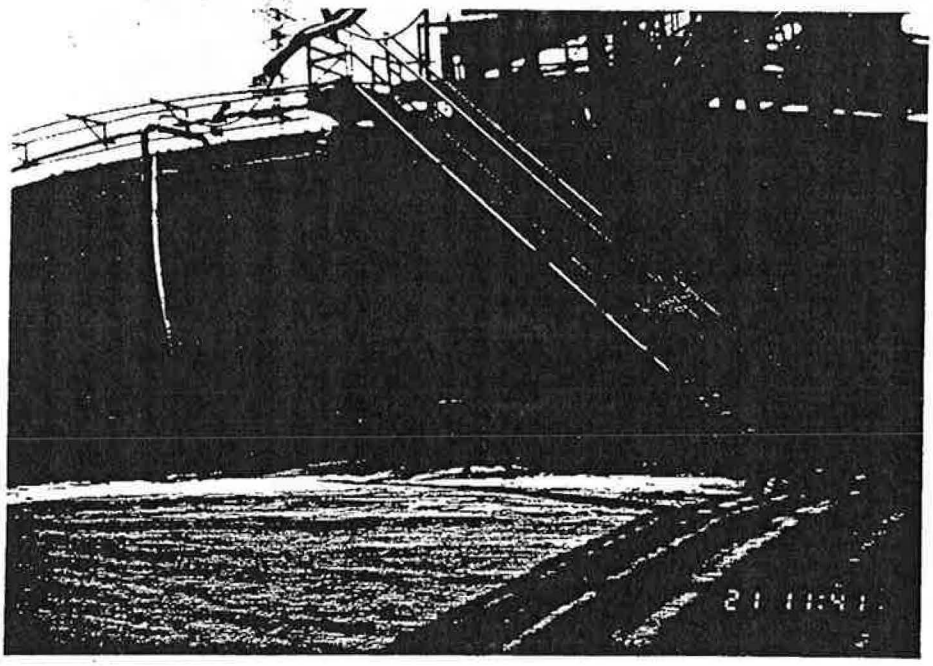
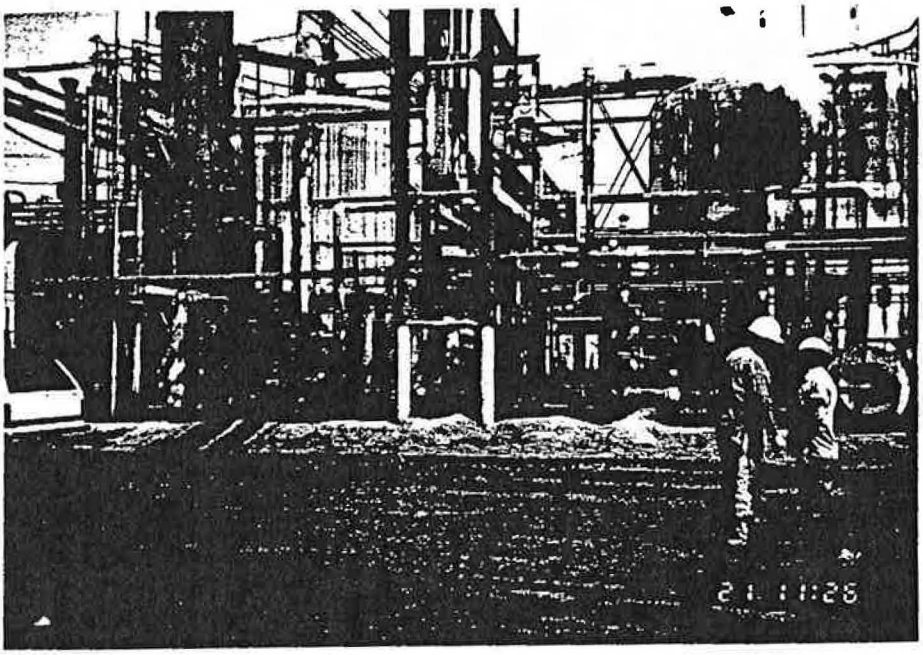


Photo 2.5-23 June 21, 1991

View facing east of the BOF Treatment Plant Thickener (SWMU 174).



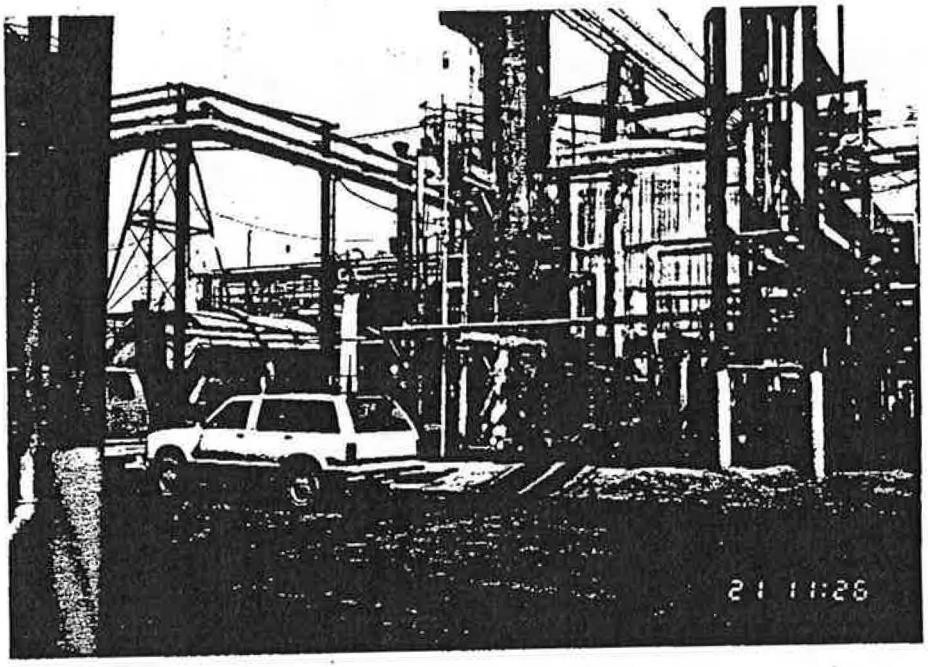


Photo 2.5-21, 2.5-22

June 21, 1991

B-173A

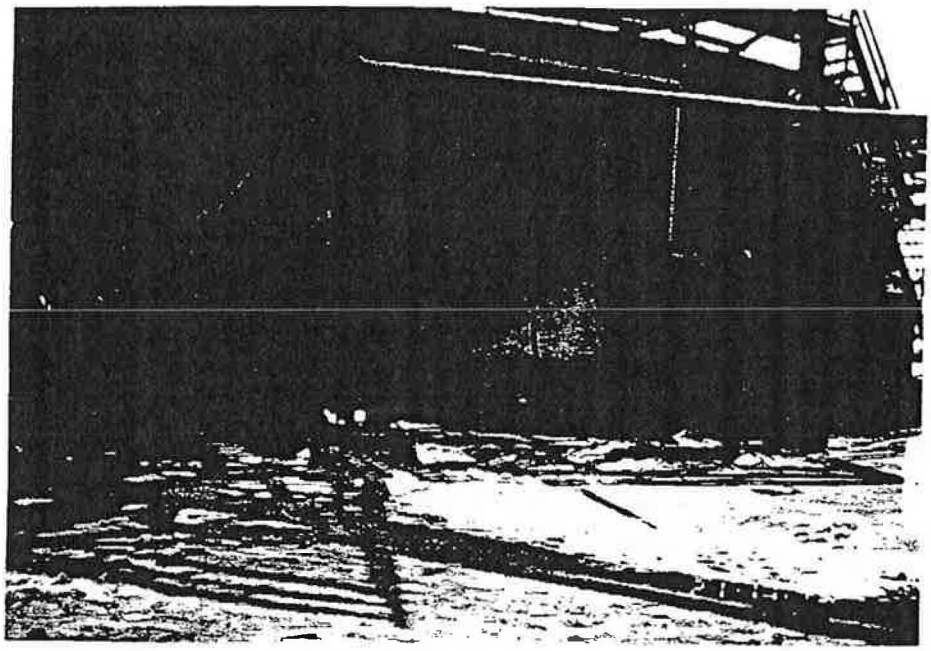


Photo 2.5-24 June 21, 1991

View facing southeast of the BOF Sand Collection Area (SWMU 175) which is sent off to the Bedding Plant.

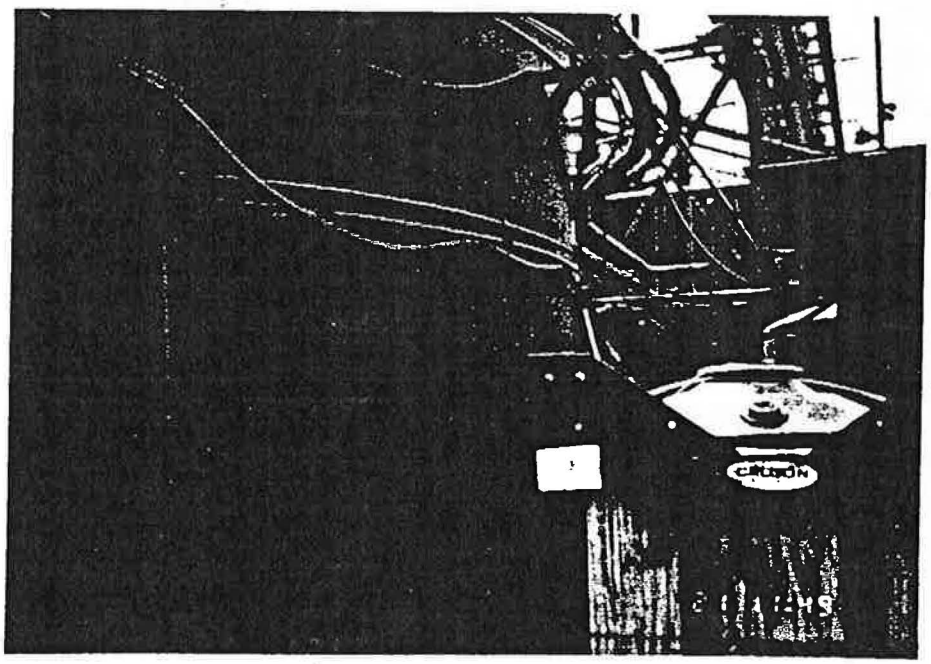


Photo 2.5-25 June 21, 1991

View facing south of the Reclaimed Tank (SWMU 176) and Mixing Tank (SWMU 177) at the BOF Treatment Plant.

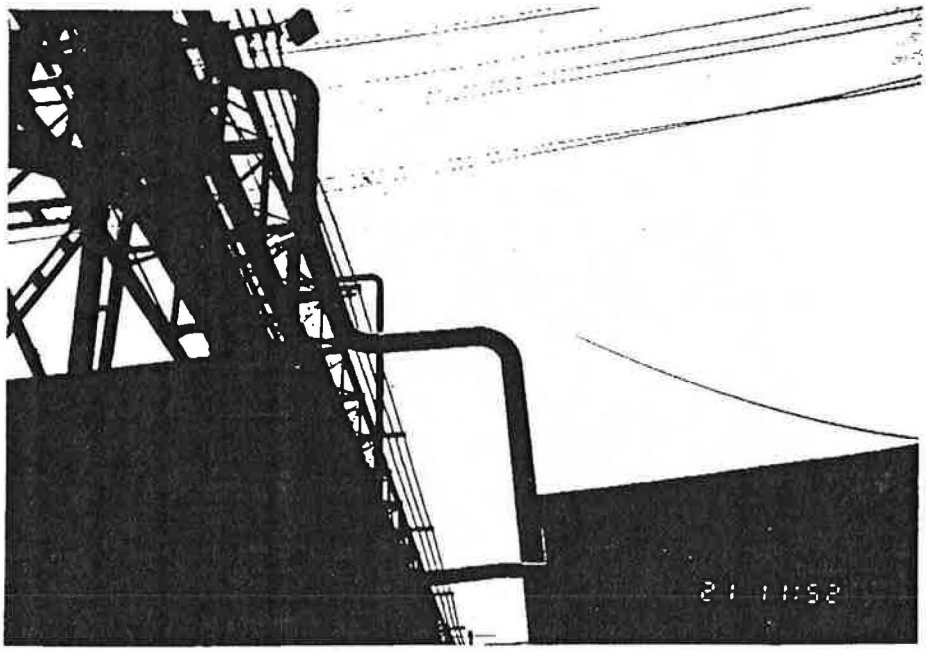


Photo 2.5-26 June 21, 1991

View facing up and south of the above ground pipe system (SWMU 202) which carries wastewater from the BOF Treatment Plant to Humphrey's Creek Wastewater Treatment Plant.

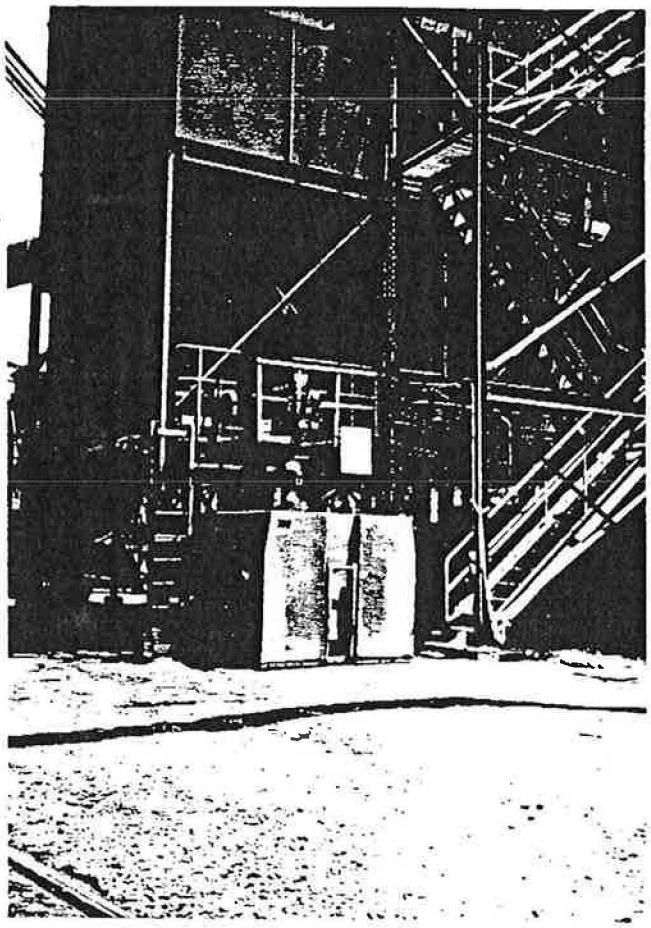


Photo 2.5-27 June 21, 1991

View facing north of the Reladel Baghouse (SWMU 179) at the BOF Treatment Plant.

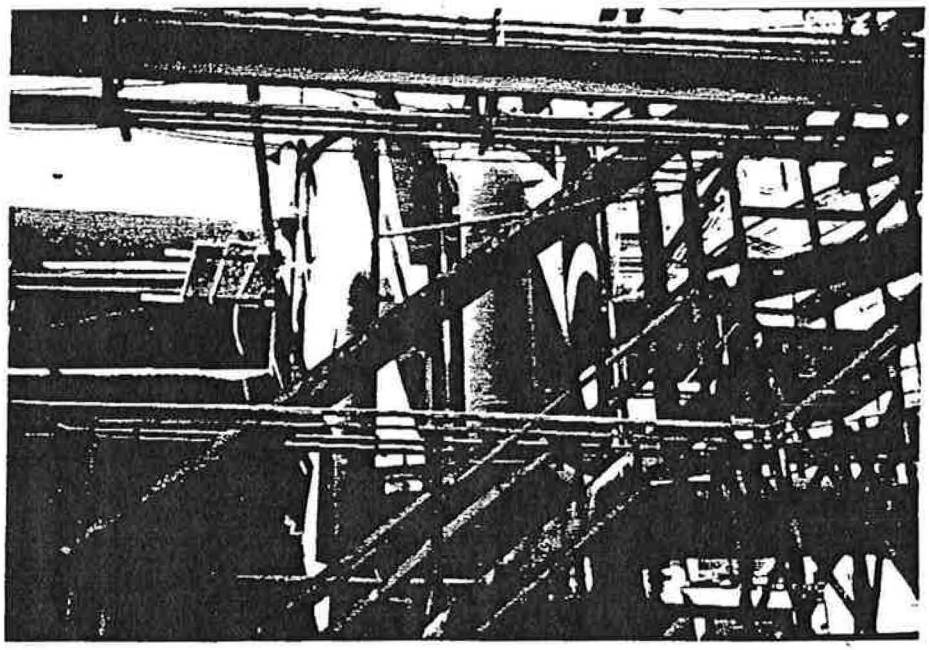


Photo 2.5-28 June 21, 1991

View facing west of the BOF Treatment Plant Recycle Tank (SWMU 178).

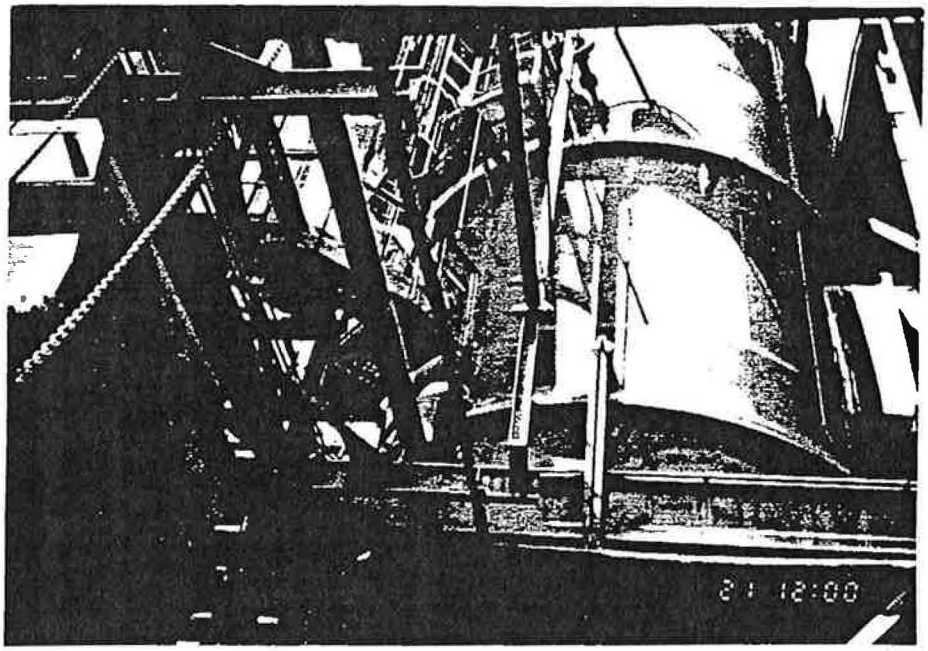


Photo 2.5-29 June 21, 1991

View facing up of the BOF Separator (SWMU 181) at the BOF Treatment Plant.

ATTACHMENT D

GROUNDWATER MONITORING PROGRAM FOR GRAY'S LANDFILL AND HUMPHREY'S IMPOUNDMENT

Table 6
SUMMARY OF WELLS WITH CALCULATED STATISTICALY SIGNIFICANT DIFFERENCES COMPARED TO BACKGROUND/UPGRADIENT

Monitoring Well		Contamination Indicator Parameter			
		pH	Specific Conductance	TOC	TOX
Grays Landfill					
GL-7pl	(U)		X		
GL-2pl-2	(D)	X(+)	X	X	
GL-3pl	(D)	X(+)		X	
GL-5pl	(D)	X(+)	X	X	
GL-6pl-2	(D)	X(+)			
Humphreys Impoundment					
HC-8pl	(U)	X(-)	X		
HC-3pl	(D)	X(-)		X	
HC-5pl	(D)	X(-)			
HC-7pl	(D)	X(-)		X	
HC-13pl	(D)	X(+)		X	X

Notes

- Data of February 17-19, 1987 compared to background (June 1986, August 1986, November 1986, February 1987) using Cochran's Approximation to the Behrens-Fisher Student's t-test at the 0.05 level of significance.
- (U) and (D) denote upgradient and downgradient site wells respectively.
- X denotes parameter is statistically elevated compared to background/upgradient.
- X(+) pH is statistically more basic than background.
- X(-) pH is statistically more acidic than background.

☐ Interpreted as false positive or inconsequential determination

Table 7
SUMMARY OF CONSTITUENT CONCENTRATIONS
SLAG UNIT WELLS
HUMPHREYS IMPOUNDMENT AREA

Parameter	Qtr	Upgradient Well HC-8s	Downgradient Wells			
			HS-2	HC-3s	HS-6	HC-7s
Arsenic (mg/l)	1	0.007	<0.005	<0.005	0.007	--
	2	<0.005	<0.005	<0.005	0.015	--
	3	0.015	0.016	0.013	0.045	--
	4	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium (mg/l)	1	<0.03	<0.03	<0.03	<0.03	--
	2	<0.03	<0.03	<0.03	<0.03	--
	3	0.009	0.022	0.01	0.01	--
	4	<0.03	<0.03	<0.03	<0.03	<0.03
Lead (mg/l)	1	<0.01	<0.01	<0.01	<0.01	--
	2	<0.01	<0.01	<0.01	<0.01	--
	3	<0.01	<0.01	<0.01	<0.01	--
	4	<0.01	<0.01	<0.01	<0.01	<0.01
Benzo (A) Pyrene (mg/l)	1	<0.002	<0.002	<0.002	<0.002	--
	2	<0.002	<0.002	<0.002	<0.002	--
	3	<0.002	<0.002	<0.002	<0.002	--
	4	<0.002	<0.002	<0.002	<0.002	<0.002
Naphthalene (mg/l)	1	<0.002	0.019	0.007	<0.002	--
	2	<0.002	0.013	0.008	0.013	--
	3	<0.002	0.017	0.012	0.002	--
	4	<0.002	0.015	0.014	<0.002	<0.002
Cyanide (mg/l)	1	0.005	<0.005	<0.005	0.005	--
	2	<0.005	0.095	0.05	0.02	--
	3	<0.005	0.04	0.03	<0.005	--
	4	0.08	0.12	0.09	0.02	<0.005
Nitrogen-Ammonia (mg/l)	1	4.4	5.2	4.3	6.4	--
	2	4.4	4.8	4.5	6.3	--
	3	3.6	4	4.5	6	--
	4	2.1	4	4.4	3.5	3.5

Table 7
-CONTINUED-

Parameter	Qtr.	Upgradient Well HC-8s	Downgradient Wells			
			HS-2	HC-3s	HS-6	HC-7s
Benzene (mg/l)	1	<0.01	<0.01	<0.01	<0.01	--
	2	0.003	<0.002	<0.002	<0.002	--
	3	0.002	0.005	0.002	<0.002	--
	4	0.002	0.002	0.003	<0.002	<0.002
Toluene (mg/l)	1	<0.01	<0.01	<0.01	<0.01	--
	2	<0.002	<0.002	<0.002	<0.002	--
	3	<0.002	<0.002	<0.002	<0.002	--
	4	<0.002	0.002	0.003	<0.002	<0.002
Tetrachloroethylene (mg/l)	1	<0.01	<0.01	<0.01	<0.01	--
	2	<0.002	<0.001	<0.001	<0.002	--
	3	<0.002	0.008	<0.002	<0.002	--
	4	<0.002	<0.002	<0.002	<0.002	<0.002
Trichloroethylene (mg/l)	1	<0.01	<0.01	<0.01	<0.01	--
	2	<0.002	<0.002	<0.002	<0.002	--
	3	<0.002	0.004	<0.002	<0.002	--
	4	<0.002	<0.002	<0.002	<0.002	<0.002
Phenol (mg/l)	1	0.008	<0.002	<0.002	<0.002	--
	2	0.007	<0.002	<0.002	<0.002	--
	3	<0.002	<0.002	<0.002	<0.002	--
	4	<0.002	<0.002	<0.002	<0.002	<0.002
2,4-Dimethylphenol (mg/l)	1	0.002	0.003	0.018	<0.002	--
	2	<0.002	0.002	0.032	<0.002	--
	3	0.003	<0.002	0.022	<0.002	--
	4	<0.002	0.003	0.029	<0.002	<0.002
Sulfate (mg/l)	1	380	400	226	1570	--
	2	350	330	200	1380	--
	3	545	485	242	1550	--
	4	294	510	272	1620	162

Table 8
SUMMARY OF CONSTITUENT CONCENTRATIONS
PLEISTOCENE UNIT WELLS
HUMPHREYS IMPOUNDMENT AREA

Parameter	Qtr.	Upgradient Well HC-8pl	Downgradient Wells				HC-2pl
			HC-3pl	HC-5pl	HC-7pl	HC-13pl	
Arsenic (mg/l)	1	0.01	0.032	0.006	--	0.013	0.008
	2	0.02	0.034	0.012	--	0.012	0.013
	3	0.012	0.026	0.021	--	0.029	0.02
	4	0.005	0.022	<0.005	<0.005	0.006	0.01
Chromium (mg/l)	1	<0.03	0.03	<0.03	--	<0.03	<0.03
	2	<0.03	<0.03	<0.03	--	<0.03	<0.03
	3	0.023	0.023	0.011	--	0.022	0.002
	4	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Lead	1	<0.01	<0.01	<0.01	--	<0.01	<0.01
	2	<0.01	<0.01	<0.01	--	<0.01	<0.01
	3	<0.01	<0.01	<0.01	--	<0.01	<0.01
	4	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Benzo (A) Pyrene (mg/l)	1	<0.002	<0.002	<0.002	--	<0.002	<0.002
	2	<0.002	<0.002	<0.002	--	<0.01	<0.002
	3	<0.002	<0.002	<0.002	--	<0.002	<0.002
	4	<0.002	<0.002	<0.002	<0.002	<0.01	<0.002
Naphthalene (mg/l)	1	<0.002	<0.002	<0.002	--	0.01	<0.002
	2	<0.002	<0.002	<0.002	--	0.022	<0.002
	3	<0.002	<0.002	<0.002	--	0.016	<0.002
	4	<0.002	<0.002	<0.002	<0.002	0.017	<0.002
Cyanide (mg/l	1	<0.005	<0.005	<0.005	--	0.005	<0.005
	2	0.005	<0.005	0.005	--	1.3	0.005
	3	<0.005	<0.005	0.005	--	0.045	<0.005
	4	<0.025	<0.025	<0.025	<0.025	0.125	<0.025
Nitrogen-Ammonia (mg/l)	1	2.6	1.1	2.2	--	57.7	4
	2	2.5	1.7	2.8	--	63.8	3.3
	3	2.1	1.5	2.2	--	57.1	3.8
	4	2.6	1.9	2.1	1.3	59.1	3.4

Table 8
-CONTINUED-

Parameter	Qtr.	Upgradient Well HC-8pl	Downgradient Wells				HC-2pl
			HC-3pl	HC-5pl	HC-7pl	HC-13pl	
Benzene (mg/l)	1	<0.002	<0.002	<0.002	--	0.011	<0.002
	2	<0.002	<0.002	<0.002	--	0.003	<0.002
	3	<0.002	<0.002	<0.002	--	0.002	<0.002
	4	<0.002	<0.002	<0.002	<0.002	0.003	<0.002
Toluene (mg/l)	1	<0.002	<0.002	<0.002	--	<0.002	<0.002
	2	<0.002	<0.002	<0.002	--	0.002	<0.002
	3	<0.002	<0.002	<0.002	--	0.003	<0.002
	4	<0.002	<0.002	<0.002	<0.002	0.002	<0.002
Tetrachloroethylene (mg/l)	1	<0.002	<0.002	<0.002	--	<0.002	<0.002
	2	<0.002	<0.002	<0.002	--	<0.005	<0.002
	3	<0.002	<0.002	<0.002	--	<0.002	<0.002
	4	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Trichloroethylene (mg/l)	1	<0.002	0.008	<0.002	--	0.003	<0.002
	2	<0.002	0.006	<0.002	--	<0.002	<0.002
	3	<0.002	0.007	<0.002	--	<0.002	<0.002
	4	<0.002	0.007	<0.002	0.003	<0.002	<0.002
Phenol (mg/l)	1	<0.002	<0.002	<0.002	--	0.23	<0.002
	2	<0.002	<0.002	<0.002	--	0.52	<0.002
	3	<0.002	<0.002	<0.002	--	0.24	<0.002
	4	<0.002	<0.002	<0.002	<0.002	0.35	<0.002
2,4-Dimethylphenol (mg/l)	1	<0.002	<0.002	<0.002	--	0.03	<0.002
	2	<0.002	<0.002	<0.002	--	0.035	<0.002
	3	<0.002	<0.002	<0.002	--	0.022	<0.002
	4	<0.002	<0.002	<0.002	<0.002	<0.01	<0.002
Sulfate (mg/l)	1	190	251	95	--	314	4
	2	234	234	100	--	290	2
	3	288	336	160	--	454	3.8
	4	215	244	69	69	374	<1

Table 9
SUMMARY OF CONSTITUENT CONCENTRATIONS
SLAG UNIT WELLS
GRAYS LANDFILL AREA

Parameter	Quarter	Upgradient Well GL-8s	Downgradient Wells		
			GS-2A	GS-4	GS-6
Arsenic (mg/l)	1	0 029	0.008	<0.005	0.006
	2	0.032	0.007	0.005	0.01
	3	0.049	0.023	0.023	0.025
	4	0.013	0.005	<0.005	<0.005
Chromium (mg/l)	1	<0.03	<0.03	<0.03	<0.03
	2	<0.03	<0.03	<0.03	<0.03
	3	0.021	0.016	0.008	0.017
	4	<0.03	<0.03	<0.03	<0.03
Lead (mg/l)	1	<0.01	<0.01	<0.01	<0.01
	2	<0.01	<0.01	<0.01	<0.01
	3	<0.01	<0.01	<0.01	<0.01
	4	<0.01	<0.01	<0.01	<0.01
Benzo (A) Pyrene (mg/l)	1	<0.002	<0.002	<0.002	<0 002
	2	<0.01	<0.01	<0.002	<0.002
	3	<0.002	<0.002	<0.002	<0.002
	4	<0.002	<0.002	<0.008	<0.002
Naphthalene (mg/l)	1	0.013	0.038	<0.002	0.041
	2	0.019	0.065	<0.002	0.021
	3	0.022	0.084	<0.002	0.15
	4	0.03	0.032	<0.008	0.066
Cyanide (mg/l)	1	0.01	0.005	<0.005	<0.005
	2	0.03	2.25	0.075	0.025
	3	<0.005	0.005	<0.005	0.005
	4	0.38	0.85	<0.005	0.05
Nitrogen-Ammonia (mg/l)	1	64 2	28.7	0.11	39.2
	2	78.9	29.3	0.35	47.1
	3	87.6	27.5	<0.1	20.9
	4	80	16.5	0.29	29.7

Table 9
-CONTINUED-

Parameter	Quarter	Upgradient Well GL-8s	Downgradient Wells		
			GS-2A	GS-4	GS-6
Benzene (mg/l)	1	<0.01	0.481	<0.002	<0.01
	2	0.003	0.49	<0.002	0 005
	3	0.003	0.29	<0.002	0 003
	4	0.003	1.6	<0.002	0 005
Toluene (mg/l)	1	<0.01	0.002	0.002	<0.01
	2	0.012	0.002	<0.002	<0.002
	3	0.015	0.004	<0.002	0.004
	4	0.008	0.003	<0.002	<0.002
Tetrachloroethylene (mg/l)	1	<0.01	<0.002	<0.002	<0.01
	2	<0.002	<0.002	<0.002	<0.002
	3	<0.002	<0.002	<0.002	<0.002
	4	<0.002	0.002	<0.002	<0.002
Trichloroethylene (mg/l)	1	<0.01	<0.002	<0.002	<0.01
	2	<0.002	<0.002	0.012	<0.002
	3	<0.002	<0.002	<0.002	<0.002
	4	<0.002	<0.002	<0.002	<0.002
Phenol (mg/l)	1	<0.002	0.003	<0.002	0.009
	2	0.45	<0.01	<0.002	0.003
	3	0.67	0.003	<0.002	0.011
	4	0.35	<0.002	<0.008	<0.002
2,4-Dimethylphenol (mg/l)	1	0.078	0.23	<0.002	0.009
	2	<0.01	<0.01	<0.002	<0.002
	3	0.12	0.49	0.004	0.012
	4	0.063	0.127	<0.008	<0.002
Sulfate (mg/l)	1	785	500	1080	380
	2	625	455	870	415
	3	600	515	1250	780
	4	1140	363	1080	480

Table 10
SUMMARY OF CONSTITUENT CONCENTRATIONS
PLEISTOCENE UNIT WELLS
GRAYS LANDFILL AREA

Parameter	Qtr.	Upgradient Well GL-7pl	Downgradient Wells				GL-8pl	GL-12pl
			GL-2pl-2	GL-3pl	GL-5pl	GL-6pl-2		
Arsenic (mg/l)	1	<0.005	<0.005	<0.005	<0.005	<0.005	--	<0.005
	2	<0.005	<0.005	<0.005	0.014	<0.005	--	<0.005
	3	0.012	0.02	0.004	0.027	<0.002	0.003	--
	4	<0.005	<0.005	<0.005	0.006	<0.005	<0.005	--
Chromium (mg/l)	1	<0.03	0.04	<0.03	0.03	<0.03	--	<0.03
	2	<0.03	<0.03	<0.03	<0.03	<0.03	--	<0.03
	3	0.013	0.055	0.011	0.016	<0.001	0.009	--
	4	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	--
Lead (mg/l)	1	<0.01	<0.01	<0.01	<0.01	<0.01	--	<0.01
	2	<0.01	<0.01	<0.01	<0.01	<0.01	--	<0.01
	3	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	--
	4	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	--
Benzo (A) Pyrene (mg/l)	1	<0.002	<0.002	<0.002	<0.002	<0.002	--	<0.002
	2	<0.002	<0.002	<0.002	<0.002	<0.002	--	<0.002
	3	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--
	4	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--
Naphthalene (mg/l)	1	<0.002	<0.002	<0.002	0.02	<0.002	--	<0.002
	2	<0.002	<0.002	<0.002	0.115	<0.002	--	<0.002
	3	<0.002	<0.002	<0.002	0.037	<0.002	<0.002	--
	4	<0.002	<0.002	<0.002	0.029	<0.002	<0.002	--
Cyanide (mg/l)	1	<0.005	<0.005	<0.005	<0.005	<0.005	--	<0.005
	2	<0.005	0.07	0.005	0.02	0.005	--	0.005
	3	<0.005	0.015	<0.005	<0.005	<0.005	<0.005	--
	4	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	--
Nitrogen-Ammonia (mg/l)	1	0.34	5.5	7	4	0.97	--	2.4
	2	<0.1	6	6.1	4.5	0.69	--	2
	3	0.17	5.7	5.5	4.2	0.88	1.7	--
	4	<0.1	5.3	5.4	4	0.98	1.5	--

Table 10
-CONTINUED-

Parameter	Qtr	Upgradient Well GL-7pl	Downgradient Wells				GL-8pl	GL-12pl
			GL-2pl-2	GL-3pl	GL-5pl	GL-6pl-2		
Benzene (mg/l)	1	<0.002	<0.002	<0.002	0.005	<0.002	--	<0.002
	2	<0.002	<0.002	<0.002	<0.002	<0.002	--	<0.002
	3	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--
	4	<0.002	<0.002	<0.002	0.003	0.005	<0.002	--
Toluene (mg/l)	1	<0.002	<0.002	<0.002	0.005	<0.002	--	<0.002
	2	<0.002	<0.002	<0.002	<0.002	<0.002	--	<0.002
	3	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--
	4	<0.002	<0.002	<0.002	0.005	<0.002	<0.002	--
Tetrachloroethylene (mg/l)	1	<0.002	<0.002	<0.002	<0.002	<0.002	--	<0.002
	2	<0.002	<0.002	<0.002	<0.002	<0.002	--	<0.002
	3	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--
	4	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--
Trichloroethylene (mg/l)	1	<0.002	<0.002	<0.002	<0.002	<0.002	--	<0.002
	2	<0.002	<0.002	<0.002	<0.002	<0.002	--	<0.002
	3	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--
	4	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--
Phenol (mg/l)	1	<0.002	<0.002	<0.002	<0.002	<0.002	--	<0.002
	2	<0.002	<0.002	<0.002	<0.002	<0.002	--	<0.002
	3	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--
	4	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--
2,4-Dimethylphenol (mg/l)	1	<0.002	<0.002	<0.002	0.014	<0.002	--	<0.002
	2	<0.002	<0.002	<0.002	<0.002	<0.002	--	<0.002
	3	<0.002	<0.002	<0.002	0.004	<0.002	<0.002	--
	4	<0.002	<0.002	<0.002	0.006	<0.002	<0.002	--
Sulfate (mg/l)	1	416	434	70	70	2	--	2
	2	1120	460	91	46	<1	--	<1
	3	545	425	148	67	2.5	76	--
	4	510	588	134	55	<1	86	--

ATTACHMENT E

ADDENDUM

The representatives at Bethlehem Steel Corporation (BSC), Sparrows Point, Maryland have prepared a review of the Draft Phase II RFA Report for their facility. A total of 56 comments were made pertaining to the Draft RFA Report. The comments fell into four broad categories (1) new or additional information; (2) contradictory and/or inaccurate information; (3) policy or legal issues; and (4) mixed comments which contain any combination of the first three categories of comments.

A total of 37 comments represented new or additional information which was not available at the time of the writing of the report. A total of 11 comments were judged to be contradictory and/or inaccurate information. Another three comments involved policy or legal issues. The remaining five comments fell into the mixed category.

All of the facility comments and responses to those comments are presented in Table E-1. The organization of Table E-1 is discussed below. The far-left hand column designates the facility comment number. The middle column indicates the page number to which the comment refers in the Final RFA Report. The far-right hand column consists of the original comment made by the facility and the responses by the agency. The facility comment is indicated in **bold** type in order to assist the reader in following the logic of the table.

The 37 new or additional information comments are included in the body of the report in **bold** type. This has been done in order to assist the reader in identifying the new or additional information. The comments from the facility have been assigned Reference Number 79 in Section V, References. In order to further assist the reader, this number has been included in the body of the report as appropriate. In cases where a comment reflected a typographical error, these changes were made to the body of the report.

TABLE E-1

Comments From Reference 79	Page Number of Revised RFA to Which Facility Comment Pertains	Facility Comments and Responses to Comments
1	Throughout	**GENERAL: The scope of EPA's RFA must be limited to legitimate solid waste management units (SWMUs). We therefore request that the following types of alleged SWMUs in the draft report be deleted:** • **Process areas and process units from which no routine and systematic releases of hazardous waste or hazardous waste constituents are suspected to have occurred. For example, the following are clearly not SWMUs:** **Coke Oven Batteries** **Blast Furnaces** **Open Hearth Furnaces** **Product Acid, Tar, and other Tanks.** • **Industrial process collection sewers and stormwater sewers, including open and enclosed trenches, because these are not discernable waste management units. Our position in this regard is outlined in an excerpt from the American Iron and Steel Institute's (AISI's) comments on EPA's June 1990 proposed corrective action rule. (See Attachment A.)** • **One-time spills that are not "routine and systematic" do not meet any of the criteria that would justify their being included in a SWMU inventory. Accordingly, all references to such spills should be removed from the RFA.** **We are also confused and concerned with the term "Areas of Concern" and respectfully question EPA's authority to identify such "areas" for further study.** The concerns raised in this facility comment are considered to be legal/policy issues and will not be addressed at this time.

TABLE E-1 (con't)

Comments From Reference 79	Page Number of Revised RFA to Which Facility Comment Pertains	Facility Comments and Responses to Comments
2	I-2	**SPECIFIC CITATIONS WITHIN THE REPORT:** **<u>Page I-2, first full paragraph</u> - Slag is not a waste material; rather, is a by-product from the manufacture of iron and steel.** The information has been incorporated into the report.
3	I-2	**<u>Page I-2, second full paragraph</u> - A comment is made about NPDES and Air files not being made available. This is incorrect. A.T. Kearney (Kearney) personnel had asked about receiving copies of DMRs and the NPDES permit. Since this is extremely voluminous information, all of which is routinely sent to EPA, we advised that they review that information at the Plant and obtain copies from EPA. They chose not to do that. Kearney was provided with a complete set of registrations and permits.** Kearney performed two additional file searches, one at U.S. EPA Region III and one at Maryland Department of the Environment; supplementary information was obtained from the Air and NPDES files. The report has been altered to reflect this.
4	II-1	**<u>Page II-1, second paragraph</u> - The Sparrows Point Plant occupies approximately 3,000 acres.** The information has been incorporated into the report.
5	II-1	**<u>Page II-1, last paragraph</u> - Bethlehem does not believe that buildings in Baltimore affect wind velocities at the Plant site.** The information has been removed from the report.
6	II-4	**<u>Page II-4, fourth paragraph</u> - Humphreys Creek was not dredged to form the Tin Mill Canal (Canal). The Canal was formed primarily by placing slag fill into Humphreys Creek and then digging out the Canal from the slag. An extensive briefing was provided to EPA personnel in April 1988 at Sparrows Point on the subject of construction of the Canal.** The information has been incorporated into the report.

TABLE E-1 (con't)

Comments From Reference 79	Page Number of Revised RFA to Which Facility Comment Pertains	Facility Comments and Responses to Comments
7	II-4	**Page II-4, fifth paragraph - Outfall No. 021 discharges to the Patapsco River, not to Bear Creek.** The information has been incorporated into the report.
8	II-7	**Page II-7, third full paragraph - The last sentence states that, "...permeabilities are relatively high, indicating that potential contaminants may migrate quickly to ground water." This is a conclusory statement which ignores the documented presence of clays, some of which are confining in nature. The sentence should be stricken.** The statement remains unchanged because it is based on data presented in Table II-2. The data shows that the Pleistocene deposits appear to be heterogeneous. There may be geologic zones of lower permeability which may locally retard the groundwater flow. However, the presence of randomly collected samples of high permeability (10^{-1} to 10^{-3}) all fit within the lithologic class of gravel to clean sand. This information has been added to the report to provide clarification.
9	II-12	**Page II-11, last paragraph - Edgemere and Sparrows Point are not cities. Edgemere is a community within Baltimore County and Sparrows Point no longer exists as a community.** The information has been incorporated into the report.
10	III-1, 9, 12, and 14	**Page III-1, second paragraph and elsewhere throughout the report - Sparrows Point's remaining coke ovens were taken out of service on December 6, 1991.** The information has been incorporated into the report.
11	III-2	**Page III-2, second paragraph - Contrary to the statement that, "IE2a was not made available to the contractor for review", the contractor was provided with a complete copy of Permit A074. Paragraph IE2a in Permit A074 states that:** **"The permittee is authorized to dispose of asbestos-containing waste material in Grays Landfill."** The information has been incorporated into the report.

TABLE E-1 (con't)

Comments From Reference 79	Page Number of Revised RFA to Which Facility Comment Pertains	**Facility Comments** and Responses to Comments
12	III-2, 12, 14, 22, 23, 25, and 26	**Page III-2, October 1982 comment - On September 3, 1991, in a letter to Dominique Luekenhoff, EPA-III, from Joseph T. Mendelson of the Sparrows Point Plant, Bethlehem attempted to correct a number of errors in the so-called 1988 Draft Interim RFA Report (the Draft PRC Report), your Reference 46. (See Attachment B.) With respect to the October 1982 comment, please note our response regarding pre-limer clarifier sludge. Please also note that the Coke Ovens and the Coal Chemical Plant have been shut down.** The information has been incorporated into the report.
13	III-4 and 5	**Page III-2 December 1981 comment and Page III-5 November 1986 comment - As in the case of the previous item, please note Bethlehem's comments on Page 2 of the September 3, 1991 letter to EPA (last bullet) regarding Humphreys Creek Wastewater Treatment Plant (HCWWTP) centrifuge cake which is not a hazardous waste.** The information has been incorporated into the report.
14	III-2	**Page III-2 - For some reason, PRC's reference to Bethlehem receiving Maryland Permit A074 has been omitted in Kearney's chronology. This is both a hazardous and non-hazardous waste management permit.** The information has been incorporated into the report.
15	III-4	**Page III-2, April 1983 comment - See our response to Page IV-51. Bethlehem has provided EPA with the information which was allegedly not available.** The information has been removed from the report.

TABLE E-1 (con't)

Comments From Reference 79	Page Number of Revised RFA to Which Facility Comment Pertains	Facility Comments and Responses to Comments
16	III-6	**Page III-6, first full paragraph after bullets - The language here suggests that some, but not all, of the information required by the Consent Order has been provided. Bethlehem believes that it has complied with the requirements of CO-85-179. Moreover, on this same page, the contractor has chosen to add language which is not in the Consent Order! (See bullet 5.)** First, the Draft RFA Phase II Report quoted the PRC RFA Report exactly. The statements in the Draft RFA Phase II report can be changed if proper documentation is provided regarding the facility's compliance with all the requirements of Complaint and Order C-0-85-179. Kearney was unable to find this documentation during the MDE and EPA file searches performed. At this time, the EPA WAM has decided not to pursue this portion of the comment further. Therefore, the Draft RFA Phase II RFA report remains unchanged. Second, bullet number five accurately summarizes Complaint and Order C-0-85-179's number eight on page six. Therefore, The Draft Phase II RFA report remains unchanged.
17	III-9	**Page III-7, last paragraph - Bear River should be Bear Creek. More importantly, the description of the NPDES permit is incorrect. The effective date for the permit was October 10, 1985 and, although the expiration date was October 10, 1990, a timely reapplication was submitted on April 12, 1990, thereby administratively extending the conditions of the permit. The permit was modified in 1989 to add limits for oil and grease, benzene, and naphthalene at Outfall No. 021. Later, the basin was modified and a new outfall structure was constructed. Bethlehem believes that some of the spills cited are not actionable because they were federally permitted releases.** The above information has been incorporated into the report except for the last sentence. The concerns raised in the last sentence are considered to be policy issues that will not be addressed at this time.
18	III-11	**Page III-11 - Designation 052 is a salt water intake, not an outfall.** Designation 052 has been removed from the figure.

TABLE E-1 (con't)

Comments From Reference 79	Page Number of Revised RFA to Which Facility Comment Pertains	**Facility Comments** and Responses to Comments
19	III-13	**Page III-12 - This figure is poorly done. Also, the sinter plant identified is an old one which has been demolished.** This figure dates back to 1968 according to the PRC RFA Report. Since Kearney does not have a more recent map, this figure will be annotated as follows: "Configuration drawn represents the plant layout on or about 1968. Since that time, the sinter plant shown has been removed."
20	III-15 and 16	**Page III-14 - Langenfelder is a separate corporate entity which has its own NPDES permit. Therefore, their operations should not be addressed in this RFA.** The concerns raised in this facility comment are considered to be legal issues and will not be addressed at this time.
21	III-18	**Page III-17, first full paragraph - Bethlehem at one time operated four open hearth shops, not furnaces. Also, the last sentence should read: "The open-hearth shop had seven furnaces, each with a capacity of 420 tons ...."** The information has been incorporated into the report.
22	III-18 and 22	**Page III-19, first paragraph - Bethlehem operates one 68" hot strip mill. The 56" hot strip mill has been shut down.** The information has been incorporated into the report.
23	III-21	**Page III-21 - Figure III-5 is out of date and inaccurate in several respects (location of halogen lines, "tanden lines"?, pipe mill and rod mill no longer there, etc.).** This figure dates back to November 1985 according to the PRC RFA Report. Since Kearney does not have a more recent map, this figure will be annotated as follows: "Configuration drawn represents the plant layout on or about November 1985. Since that time, the pipe and rod mills have been removed, and the halogen lines have been moved within the finishing mill complex."
24	III-28	**Page III-26, last paragraph - Pre-limer clarifier sludge was beneficially reused at HCWWTP, not disposed there.** The information has been incorporated into the report.

TABLE E-1 (con't)

Comments From Reference 79	Page Number of Revised RFA to Which Facility Comment Pertains	Facility Comments and Responses to Comments
25	III-28	**Page III-27, first paragraph - The green pellet plant was shut down prior to 1980.** The information has been incorporated into the report.
26	III-29	**Page III-27 and elsewhere throughout the report - PORI is a separate corporate entity which has its own NPDES permit. Thus, PORI is not a part of the Sparrows Point facility and should not be included in this RFA.** The concerns raised in this facility comment are considered to be legal issues and will not be addressed at this time.
27	III-30	**Page III-28, third full paragraph - The description of waste characterization is not correct. Unknown wastes are characterized by use of the TCLP testing procedure.** The information has been incorporated into the report.
28	III-30	**Page III-28 Wastewater Treatment System - Bethlehem also uses some potable city water and well water for industrial process water. Also, most process water is discharged after treatment, rather than being reused.** The information has been incorporated into the report.
29	III-29 and 37	**Page III-28 Wastewater Treatment Systems, item e - There are three High Density Sludge (HDS) Treatment Plants; the Chrome HDS Plant, the Rod Mill area ground-water treatment system, and the Blast Furnace/Sinter Plant system.** The high density sludge (HDS) treatment plant referred to in item "e" on page III-28 is the Blast Furnace/Sinter Plant system. The Chrome HDS Plant (also known as Chrome Recovery) is presented on pages III-27 and III-28. The Rod Mill area ground-water treatment system (also known as Cadmium Treatment) is discussed on page III-44. The report has been revised to reflect this information.

TABLE E-1 (con't)

Comments From Reference 79	Page Number of Revised RFA to Which Facility Comment Pertains	**Facility Comments** and Responses to Comments
30	III-31	**Page III-29, last paragraph - The mixer described became inoperational several years after installation. Subsequently, the tank was used as a phase separator. Tar and other oils floated to the surface and were periodically vacuumed off while liquor was removed from the tank and sent to the bio-treatment system.** The information has been incorporated into the report.
31	III-31	**Page III-31 last sentence in top paragraph - Ferric chloride is added to the discharge from the basins, not the entry side.** The information has been incorporated into the report.
32	III-36	**Page III-35, top paragraphs - The drum filters are used only on an emergency basis. A centrifuge normally dewaters No. 7 and No. 10 thickener underflows.** The information has been incorporated into the report.
33	III-36 and 37	**Page III-35, BOF Water Treatment System - The first paragraph and Figure III-9 refer to Bethlehem's BOF water treatment system that used to operate at Lackawanna, NY. This fact was pointed out in Bethlehem's September 3, 1991 letter to EPA. The discussion at paragraph 3 seems to be correct.** The information has been removed from the report.
34	III-42	**Page III-40, Table III-5 - Air Pollution Control Device Inventory contains some errors and is incomplete. Please see the complete set of registrations and permits provided to Kearney.** Air Pollution Control Device (APCD) information has been obtained from MDE and EPA, and Table III-5 has been updated accordingly.

TABLE E-1 (con't)

Comments From Reference 79	Page Number of Revised RFA to Which Facility Comment Pertains	**Facility Comments** and Responses to Comments
35	III-40	<u>Page III-41, third paragraph</u> - **Discharges were with Maryland Department of the Environment (MDE) concurrence.** The statements made in the Draft RFA Phase II Report can be changed if proper documentation is provided regarding MDE's concurrence with the facility's discharges. Kearney was unable to find this documentation during the MDE and EPA file searches performed. At this time, EPA has decided not to pursue this comment further. Therefore, the Draft RFA Phase II Report remains unchanged.
36	III-43	<u>Page III-41, last paragraph</u> - **Kearney, in paraphrasing from PRC's draft, has incorrectly described ground-water monitoring findings. While PRC stated (see Page 99 of its report), "Therefore, the ground water under Grays Landfill and HCI may have been contaminated by past disposal operations.", Kearney now states, "It is believed that ground water under these units may have been contaminated by past disposal operations." Bethlehem believes that this latter language portrays an improper impression.** The Draft RFA Phase II Report has not incorrectly paraphrased the 1988 PRC RFA Report. The Draft RFA Phase II and PRC reports both state that groundwater may have been contaminated by past disposal operations. For clarification purposes, one statement has been slightly altered and one statement has been removed.
37	III-45	<u>Page III-43, Table III-7</u> - **The contractor (PRC) extracted data from old reports and filed to cite the concentrations. The data provided were in mg/l and are "unknown" only because PRC failed to provide that information to EPA.** The information has been incorporated into the report.

TABLE E-1 (con't)

Comments From Reference 79	Page Number of Revised RFA to Which Facility Comment Pertains	**Facility Comments** and Responses to Comments
38	III-43	**Page III-44, first three lines - Once again, Kearney has improperly paraphrased the PRC report! PRC cites an MDE reference which apparently claims that ground water is moving from the landfill to a nearby parts yard. PRC then goes on to draw the separate speculation that ground water under Grays Landfill may have been contaminated by past disposal operations." PRC did not, as Kearney claims, "... conclude that contaminated ground water is moving from the landfill to the spare parts yard."** The Draft RFA Phase II Report has not incorrectly paraphrased the 1988 PRC RFA report. The Draft RFA Phase II and PRC reports both state that contaminated groundwater is moving from the landfill to the spare parts yard. For clarification purposes, one statement has been slightly altered and one statement has been removed.
39	III-46	**Page III-44, last paragraph - The dense hydroxide sludges described are sent off-site for metals reclamation, not treated in a detox process.** The information has been incorporated into the report.
40	III-46	**Page III-48, top paragraph - The contractor states, "No information was available on these tanks. Consequently, if the tanks were leaking, the ground water beneath the rod and wire mills has the potential to be contaminated." Bethlehem believes that such statements represent unwarranted, generalized speculation and are without merit.** The statement "No information was available on these tanks" will remain in the Draft RFA Phase II Report because there is no file information on the old process tanks. In addition, the facility representatives could not provide any information regarding the tanks. The statement "Consequently, is the tanks were leaking, the ground water beneath the rod and wire mills has the potential to be contaminated" has been removed from the Draft RFA Phase II Report.
41	IV-12	**Page IV-12 - Slag was generated in Open Hearth and Blast Furnaces.** The information has been incorporated into the report.

TABLE E-1 (con't)

Comments From Reference 79	Page Number of Revised RFA to Which Facility Comment Pertains	Facility Comments and Responses to Comments
42	IV-12	**Page IV-12 - Fill permits were issued by the Corps of Engineers.** The information has been incorporated into the report.
43	IV-14	**Page IV-14, top - The Tin Mill Canal flowrate is approximately 40,000 gpm.** The information has been incorporated into the report.
44	IV-16	**Page IV-16, first paragraph under "Waste Managed" - This paragraph makes reference to Table IV-2, calling it a list of hazardous wastes which have been discharged to the Canal. The table provided represents what has been termed by Bethlehem as "EPA's List of 35 Waste Streams". Bethlehem has made repeated attempts to repudiate this list! Our clearest remarks on this issue may be found in Bethlehem's letter of August 20, 1991 to Mr. Bruce Smith, Director, Office of Hazardous Programs, EPA-III. (See Attachment C.)** A voluminous amount of file material was reviewed regarding hazardous wastes discharged to Tin Mill Canal (TMC). Based upon the file material, Table IV-2 includes hazardous wastes discharged to TMC. However, Bethlehem Steel Corporation (BSC) does not agree with Table IV-2. The statements made in the Draft RFA Phase II Report can be changed if proper documentation is provided. This documentation must contain a comprehensive and accurate list of hazardous wastes discharged to TMC currently and in the past including information such as flow or volume, temperature and pH. At this time, the EPA WAM has decided not to pursue this comment further. Therefore, the Draft RFA Phase II report remains unchanged.

TABLE E-1 (con't)

Comments From Reference 79	Page Number of Revised RFA to Which Facility Comment Pertains	**Facility Comments** and Responses to Comments
45	IV-20	**Page IV-20, Table IV-3 - This information is out of date and the flows are inaccurate.** A voluminous amount of file material was reviewed regarding waste streams discharged to TMC. Based upon the file material, Table IV-3 includes waste streams discharged to TMC. However, BSC does not agree with Table IV-3. The statements made in the Draft RFA Phase II Report can be changed if proper documentation is provided. This documentation must contain a comprehensive and accurate list of waste streams discharged to TMC currently and in the past including information such as flow or volume, temperature and pH. At this time, the WAM has decided not to pursue this comment further. Therefore, the Draft RFA Phase II Report remains unchanged.
46	IV-22, 23, and 24	**Page IV-22, Table IV-4 - It may be more useful to refer to data provided to Mr. Bruce Smith, EPA-III on July 10, 1991. (See Attachment D.)** Table IV-4 will be renamed as Table IV-4A. The information in Reference 79 provided by BSC will be included in a new table, Table IV-4B.
47	IV-32	**Page IV-28 - The entire unit description should be replaced by information available from the enclosed report, "Groundwater and Soil Remediation Efforts at the Sparrows Point Wire Mill", by Charles R. Schumacher, Bethlehem Steel Corporation, 1990, presented at the Aquifer Reclamation and Source Control conference, Woodbridge, NJ, November 13-14, 1990. (See Attachment E.)** The current unit description is an adequate summary of the SWMU. The entire unit description will not be replaced by the information in the report titled "Groundwater and Soil Remediation Efforts at the Sparrows Point Wire Mill". However, the current description will be updated with information from the "Groundwater and Soil Remediation Efforts at the Sparrows Point Wire Mill" report as follows, "The zinc concentration at BW-27 has been reduced from 2580 mg/l in mid-1986 to 970 mg/l in late-1990".

TABLE E-1 (con't)

Comments From Reference 79	Page Number of Revised RFA to Which Facility Comment Pertains	**Facility Comments** and Responses to Comments
48	IV-35	**Page IV-34 - Figure IV-3, as in the case of other figures, is not accurate.** The figure in the Draft RFA Phase II Report can be changed if proper documentation is provided. This documentation must include a listing of the exact inaccuracies of this figure, and a list of the other figures and their exact inaccuracies. At this time, the EPA WAM has decided not to pursue this comment further. Therefore, the Draft RFA Phase II Report remains unchanged.
49	IV-38	**Page IV-37 - The scale pit manages oily mill scale, not the other materials cited in the description. Also, please identify what hazardous constituents are present in this material.** There is no information in the file material regarding the wastes managed, and the presence or absence of hazardous constituents. The description presented is based upon information provided by BSC facility representatives and visual observations during the VSI. However, BSC does not agree with the description. The statements made in the Draft RFA Phase II Report can be changed if proper documentation is provided. This documentation must contain a listing of the wastes managed including the presence or absence of hazardous constituents. At this time, the WAM has decided not to pursue this comment further. Therefore, the Draft RFA Phase II Report remains unchanged.

TABLE E-1 (con't)

Comments From Reference 79	Page Number of Revised RFA to Which Facility Comment Pertains	**Facility Comments** and Responses to Comments
50	IV-43	<u>Page IV-42 and elsewhere throughout the report</u> - **Descriptions concerning wastes disposed at Grays Landfill are incorrect. Bethlehem attempted to clarify this matter in its responses in 1987-1988 to an Information Request from EPA. Bethlehem's responses Numbers 3, 8 and 19, together with accompanying Exhibits 8A and 19A, are attached. (See Attachment F.) Also, Tin Mill Canal dredgings have not been placed in Grays Landfill since about mid-1980. The Canal does not routinely generate dredgings; the Canal is infrequently dredged. The correct term is "Humphreys Creek Wastewater Treatment," not "Humphrey's Impoundment Wastewater Treatment Plant."** First, a voluminous amount of file material was reviewed regarding the wastes disposed at Gray's Landfill. Based upon the file material and information obtained during the VSI, the "Waste Managed" portion of the description was written. However, BSC does not agree with the description. The statements made in the Draft RFA Phase II Report can be changed if proper documentation is provided. This documentation must contain a complete and accurate listing of the current and past wastes disposed in Gray's Landfill including information such as the waste name, process generating the waste, volume of waste, dates of disposal, and hazardous constituents. At this time, EPA has decided not to pursue this comment further. Therefore, the Draft RFA Phase II Report remains unchanged. Second, there is documentation in Reference 79 (specifically, Attachment F - Exhibit 8A) provided by BSC which states TMC dredgings were disposed in Gray's Landfill before November 1980 through 1984. During the VSI, recent dredgings were observed along the banks of TMC. Therefore, the Draft RFA PHase II Report remains unchanged. Third, the correct terminology regarding Humphreys Creek Wastewater Treatment Plant has been incorporated into the report.

TABLE E-1 (con't)

Comments From Reference 79	Page Number of Revised RFA to Which Facility Comment Pertains	**Facility Comments** and Responses to Comments
51	IV-55	**Page IV-51 - There are a number of errors in the description of the closed Tar Decanter Cell at Grays Landfill. Bethlehem's responses Number 7 and 80, together with accompanying Exhibit 80A to EPA's Information Request, provides factual information. These references are attached. (See Attachment G.)** The information has been incorporated into the report.
52	IV-62, 63, 64, 65, and 66	**Page IV-58, next to last paragraph - Pre-limer clarifier sludge is not a hazardous waste. See information previously referenced. Also, the description of wastes managed does not appear to be accurate. Please refer to Bethlehem's response Number 20 and accompanying Exhibit 20A to EPA's Information Request. These documents are attached. (See Attachment H.)** The incorrect information regarding pre-limer clarifier sludge has been removed from the report. Also, the report has been changed to more accurately reflect the wastes managed at Humphrey's Impoundment. A table which provides EP Toxicity results of the wastes managed has been incorporated into the report as the new Table IV-16.
53	IV-62 and 63	**Page IV-58, last paragraph and Page IV-59, second paragraph - BOF slurry is placed into Humphreys Impoundment only on an emergency basis and only after approval from MDE.** The statements in the report can be changed if proper documentation is provided regarding BOF slurry being placed in Humphrey's Impoundment only on an emergency basis and only after approval from MDE. Kearney was unable to find this documentation during the MDE and EPA file searches performed. At this time, the EPA WAM has decided not to pursue this comment further. Therefore, the report remains unchanged.

TABLE E-1 (con't)

Comments From Reference 79	Page Number of Revised RFA to Which Facility Comment Pertains	**Facility Comments** and Responses to Comments
54	IV-74	**Page IV-68 - The description of this one-time spill incident is inaccurate. In any event, this site is not a SWMU.** First, the description in the RFA Phase II Report can be changed if proper documentation is provided. This documentation must include a listing of the exact inaccuracies of this description. At this time, the EPA WAM has decided not to pursue this comment further. Therefore, the report remains unchanged. Second, the report does not state that this site is a SWMU. The report states that this site is an Area of Concern (AOC). The concerns as considered to be legal issues and will not be addressed at this time.
55	IV-85	**Page IV-79 - Bethlehem cannot understand Kearney's figure.** The figure in the RFA Phase II Report can be changed if proper documentation is provided. This documentation must include a listing of what is not understood about this figure. At this time, the EPA WAM has decided not to pursue this comment further. Therefore, the report remains unchanged.
56	IV-100	**Page IV-94 - These tanks which were visited were not and are not "bulging and buckling." These tanks have an exterior covering of sprayed-on insulation.** There is no file information on the tanks. The facility representatives could not provide detailed information regarding the tanks such as inspections and integrity testing. During the VSI, the tanks were observed to be bulging and buckling, and the area underneath the tanks was observed to be stained. The tank description is based upon visual observations and limited facility representative information. Therefore, the report remains unchanged.