Cook Co
Chicago Heights /
Hall Aluminum

HALL ALUMINUM COMPANY

Smelters and Manufacturers of Specification Alloys

RECEIVED
JUL 13 1984
ILL. E.P.A. – D.L.P.C.
STATE OF ILLINOIS

1751 STATE STREET
CHICAGO HEIGHTS, ILLINOIS 60411
P.O. BOX 223 AC 312 757-7350

Hazardous Waste Activity Office
U. S. EPA Region V
230 South Dearborn Street
Chicago, IL 60604

CERTIFIED MAIL P13 4416604

Gentlemen:

We have been requested by the State of Illinois to file the enclosed Notification of Hazardous Waste Activity.

Our Company operates a secondary aluminum smelting facility, and uses a wet scrubbing technique for the removal of aluminum chloride, generated during our magnesium removal process.

The scrubbing fluid, presently, is directed to a neutralization sump, and then runs through a ditch to a lagoon at the east end of the plant.

The occasional failure of our neutralization process to bring the liquid up to an appropriate pH has created a need for us to consider alternative processing techniques. In the meantime, the State has requested our notification to you of the fact that we are operating a facility which can, under certain circumstances, generate a corrosive material.

It is our intention, in the near term, to change our process so that the process itself, results in the discharge of a material with an appropriate pH, and to then take these materials to our storage and evaporation pond as non-hazardous materials. Since we will be doing our neutralization within the process itself, we will not be generating hazardous material, nor will be treating, storing, or disposing of such.

We will keep you advised so that as soon as the process has been changed, we can advise you and our consideration as a hazardous waste generator and/or treater can be rescinded.

Very truly yours,

HALL ALUMINUM COMPANY

Donald Retsky, President

D.
R
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b
l
e
n
c

EPA Region 5 Records Ctr.
354520

HALL ALUMINUM COMPANY

Smelters and Manufacturers of Specification Alloys

1751 STATE STREET
CHICAGO HEIGHTS, ILLINOIS 60411
P.O. BOX 223 AC 312 757-7350

July 11, 1984

Hazardous Waste Activity Office
U. S. EPA
Region V
230 South Dearborn Street
Chicago, IL 60604

- 2 -

cc: Major Hern
Environmental Protection Agency
1701 First Ave.
Suite 600
Maywood, IL 60153

GSA No. 12345-XX
Form Approved OMB No. 158-R00XX

Please print or type with ELITE type. Enter information in the shaded area only.

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY
NOTIFICATION OF HAZARDOUS WASTE ACTIVITY

INSTALLATION'S EPA I.D. NO.

I. NAME OF INSTALLATION

II. INSTALLATION MAILING ADDRESS

III. LOCATION OF INSTALLATION

PLEASE PLACE LABEL IN THIS SPACE

INSTRUCTIONS: If you received a preprinted label, affix it in the space at left. If any of the information on the label is incorrect, draw a line through it and supply the correct information in the appropriate section below. If the label is complete and correct, leave Items I, II, and III below blank. If you did not receive a preprinted label, complete all items. "Installation" means a single site where hazardous waste is generated, treated, stored and/or disposed of, or a transporter's principal place of business. Please refer to the INSTRUCTIONS FOR FILING NOTIFICATION before completing this form. The information requested herein is required by law *(Section 3010 of the Resource Conservation and Recovery Act)*.

FOR OFFICIAL USE ONLY

COMMENTS

INSTALLATION'S NUMBER | APPROVED | DATE RECEIVED (mo., da., & yr.)

I. NAME OF INSTALLATION

HALL ALUMINUM CO

II. INSTALLATION MAILING ADDRESS

STREET OR P.O. BOX

1751 STATE ST

CITY OR TOWN | ST. | ZIP CODE

CHICAGO HEIGHTS | IL | 60411

III. LOCATION OF INSTALLATION

STREET OR ROUTE NUMBER

1751 STATE ST

CITY OR TOWN | ST. | ZIP CODE

CHICAGO HEIGHTS | IL | 60411

IV. INSTALLATION CONTACT

NAME AND TITLE (last, first, & job title) | PHONE NO. (area code & no.)

RETSKY DONALD PRES. | 312-757-7350

V. OWNERSHIP

A. NAME OF INSTALLATION'S LEGAL OWNER

HALL ALUMINUM CO

B. TYPE OF OWNERSHIP (enter the appropriate letter into the box)

F = FEDERAL M = NON-FEDERAL | M

VI. TYPE OF HAZARDOUS WASTE ACTIVITY

[X] A. GENERATION
[ ] B. TRANSPORTATION (complete item VII)
[X] C. TREAT/STORE/DISPOSE
[ ] D. UNDERGROUND INJECTION

VII. MODE OF TRANSPORTATION (transporters only)

[ ] A. AIR [ ] B. RAIL [ ] C. HIGHWAY [ ] D. WATER [ ] E. OTHER (specify): N/A

VIII. FIRST OR SUBSEQUENT NOTIFICATION

Mark "X" in the appropriate box to indicate whether this is your installation's first notification of hazardous waste activity or a subsequent notification. If this is not your first notification, enter your installation's EPA I.D. number in the space provided below.

[X] A. FIRST NOTIFICATION [ ] B. SUBSEQUENT NOTIFICATION (complete item C)

C. INSTALLATION'S EPA I.D. NO.

IX. DESCRIPTION OF HAZARDOUS WASTES

Turn over to the reverse of this form and provide the requested information.

EPA Form 8700-12 (2-80)

CONTINUE ON REVERSE

I.D. NO. — FOR OFFICIAL USE ONLY

S W | TAC 11

IX. DESCRIPTION OF HAZARDOUS WASTES *(continued from front)*

A. HAZARDOUS WASTES FROM NON-SPECIFIC SOURCES. Enter the four-digit number from 40 CFR Part 261.31 for each listed hazardous waste from non-specific sources your installation handles. Use additional sheets if necessary.

1: D002	2: —	3:	4:	5:	6:
7:	8:	9:	10:	11:	12:

B. HAZARDOUS WASTES FROM SPECIFIC SOURCES. Enter the four-digit number from 40 CFR Part 261.32 for each listed hazardous waste from specific industrial sources your installation handles. Use additional sheets if necessary. NONE

13: —	14:	15:	16:	17:	18:
19:	20:	21:	22:	23:	24:
25:	26:	27:	28:	29:	30:

C. COMMERCIAL CHEMICAL PRODUCT HAZARDOUS WASTES. Enter the four-digit number from 40 CFR Part 261.33 for each chemical substance your installation handles which may be a hazardous waste. Use additional sheets if necessary. NONE

31: —	32:	33:	34:	35:	36:
37:	38:	39:	40:	41:	42:
43:	44:	45:	46:	47:	48:

D. LISTED INFECTIOUS WASTES. Enter the four-digit number from 40 CFR Part 261.34 for each listed hazardous waste from hospitals, veterinary hospitals, medical and research laboratories your installation handles. Use additional sheets if necessary. NONE

49: —	50:	51:	52:	53:	54:

E. CHARACTERISTICS OF NON-LISTED HAZARDOUS WASTES. Mark 'X' in the boxes corresponding to the characteristics of non-listed hazardous wastes your installation handles. *(See 40 CFR Parts 261.20 – 261.23.)*

- [ ] 1. IGNITABLE
- [x] 2. CORROSIVE
- [ ] 3. REACTIVE
- [ ] 4. TOXIC

X. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

SIGNATURE	OFFICIAL TITLE	DATE SIGNED
[signature]	PRESIDENT	7/10/84

RS-8303-1F

IL-0245-11

ENVIRONMENTAL PROTECTION AGENCY STATE OF ILLINOIS

L P C F C 0 5 5 C
(1) (8) (9)

OBSERVATION REPORT - SITE INVENTORY NO. 03104520
(11) (18)

Cook CO. - L.P.C. Region # N Date 03/29/84
(20) (25)

Ch. Hts. / Hall Aluminum Letter Sent (Yes or No) Yes
(Location) (Responsible Party) (26)

Samples Taken: Yes (X) No ( ) Time: From 03:30 Pm Weather 30° partly [illegible]
Ground Water( ) Surface( ) Other(X) To 04:05 Pm
Photos Taken: Yes ( ) No (X) Interviewed M. Petesky Inspector R L E [illegible]
(27) (29)

Previous Inspection ____ Previous Correspondence ____ Site Open: Yes(X) No( )

OPERATIONAL STATUS:		TYPE OF OPERATION:				AUTHORIZATION:	
Operating	(X)	Landfill	( )	Storage	( )	E.P.A. Permit	( )
Temporarily Closed	( )	Random Dump	( )	Salvage	( )	Variance	( )
Closed Not Covered	( )	Other Air	(X)	A.C.D.	( )	21(e)	( )
Closed and Covered	( )	Quantity Received Daily(1-6)		____ (30)		Board Order	( )
						Illegal (5)	( )
						Apparent Non-Compliance (5)	( )

IMPROVED

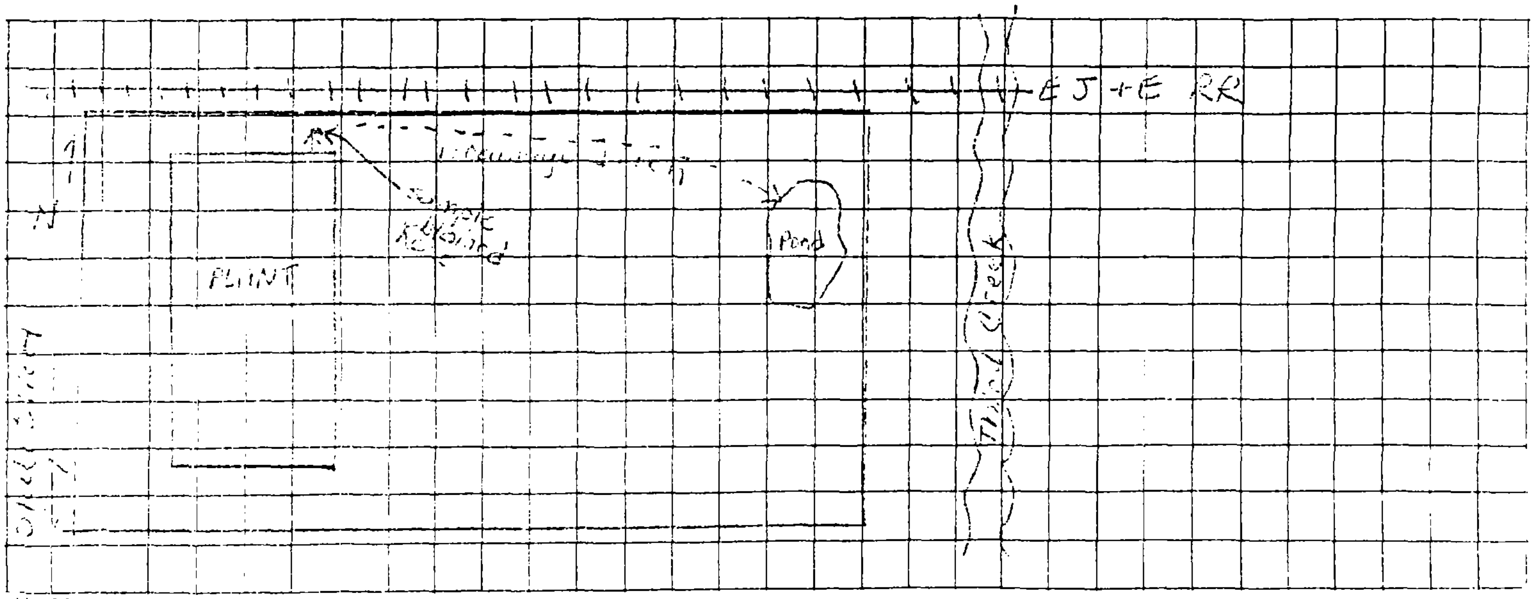
SAME 31

DETERIORATED I S or D ____ (62)

GENERAL REMARKS: Returned to facility accompanied by J. [illegible] of this office to collect sample of [illegible] water [illegible] the [illegible] drains to [illegible] pipe where it discharges into a drainage [illegible] outside of plant [illegible] in ditch [illegible] [illegible] plant [illegible]. One sample taken at [illegible] to [illegible] portion of ditch - to [illegible] for pH and metals.

INTERVIEW:

DIAGRAM:



D.L.P.C. COMPLAINT INVESTIGATION FORM

Cook - 03104520 C84-116N

Chicago Heights / Hall Aluminum ( )

Date Received March By B. Eleder By Phone ___ In Person X By Mail ___

Complainant referral - DWPC (D. Klopke) Respondent Hall Aluminum

Address ___ Address 1751 State St., Ch. Hts 60411

Telephone ___ Telephone 312-757-7350

Directions to Source ___

Complaint Details wastewater discharge from company to on-site surface impoundment
pH at point of discharge ≃ .7
pH in pond ≃ 3-4

****

INVESTIGATION FINDINGS

Date 3-29-84 Time 11:20-11:55am By B. Eleder (J. Taylor)

Interviewed Mr. Retsky Weather 30° partly sunny Photos none

Violations Observed facility is a non-notifier as haz waste generator plus not in compliance with 722 regs -
water from private well used to cool aluminum (ingots) - is discharged to drainage ditch, + to pond where it evaporates -

Respondent's Remarks plan to set up a 20,000 gal. tank as recycling system for water - will neutralize + re-use it
- unable to sample due to plant not running - to return ~3:30 pm today to collect sample

****

FOLLOW-UP ACTION

Refer to 03104520 Cook County Ch. Hts. / Hall Aluminum

File Opened - Yes X No ___

cc N. Reg. (2)
KPB

IL 532-0335
LPC 41 Rev. 11/81

ENVIRONMENTAL PROTECTION AGENCY STATE OF ILLINOIS

L P C F C 0 5 5 C
(1) (8) (9)

OBSERVATION REPORT - SITE INVENTORY NO. 0310452 4
(11) (18)

Cook CO. - L.P.C. Region # N Date 05/16/84
(20) (25)

Chicago Heights / Hall Aluminum Letter Sent (Yes or No) No
(Location) (4) (Responsible Party) (26)

Samples Taken: Yes (X) No ( ) Time: From 03 : 00 Pm Weather 70° sunny
Ground Water( ) Surface( ) Other(X) To 04 : 00 Pm
Photos Taken: Yes ( ) No (X) Interviewed Ms. Petsky / Bill Hall Inspector B L G
(27) (29)

Previous Inspection 3-29-84 Previous Correspondence _____ Site Open: Yes(X) No( )

OPERATIONAL STATUS:		TYPE OF OPERATION:				AUTHORIZATION:	
Operating	(X)	Landfill	( )	Storage	(X)	E.P.A. Permit	( )
Temporarily Closed	( )	Random Dump	( )	Salvage	( )	Variance	N/A
Closed Not Covered	( )	Other gen.	(X)	A.C.D.	( )	21(e)	( )
Closed and Covered	( )	Quantity Received Daily(1-6)				Board Order	( )
					(30)	Illegal (5)	( )
						~~Apparent Non-Compliance (5)~~	( )

IMPROVED

SAME

DETERIORATED

31

I S or D _____
(62)

GENERAL REMARKS: The purpose of today's inspection was for the collection of samples of the dross stockpile and the discharge. It was explained that they no longer discharge the water used to cool the ingots to their retention pond. They now have their recycling system in use. It consists of a 20,000 gal. tank & 2 pumps connected with the aluminum processing area. It is a "closed" system whereby water is pumped from the tank to the area for cooling the ingots. The water then drains to a sump whereby it is pumped back to the tank. The recycling system has been in use since May 7 1984.

The samples were obtained from the dross stockpile. One from the most recently generated dross - which was mostly in large chunks; the 2nd from the front of the pile; the 3rd from the back which is the oldest dross. For some time now (how long wasn't known off-hand) the dross has

INTERVIEW:

DIAGRAM: been shipped off-site to a metals reclamation. Thus the stockpile has not been growing. The dross in the stockpile will not be sent for reclamation because there is no market for such materials. What use goes to the cement industry - let down in the economy.

The percentage of aluminum in the dross was also tested. A metal acid was also discharged from machining. It was determined that it is ammonia chloride - that this is used to boil oil impurities in the reclamation process. Upon a bid to test it it was ~~[illegible]~~ was actually the bleed of the cooling tower in the rotary kiln area. The chemical was changed of late.

LP 41

Time Collected: 3:45 pm

Date Collected: 5-11-84

Lab # C 5390 MAY 18 84

SPECIAL ANALYSIS FORM

Date Received

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND/NOISE POLLUTION CONTROL

X104

COUNTY:	FILE HEADING:	FILE NUMBER:
Cook	[illegible] Aluminum	1104524

SOURCE OF SAMPLE: (Exact Location) [illegible] discharge ditch on [illegible] property

PHYSICAL OBSERVATIONS, REMARKS: milky white liquid-precipitate into white solid & clear liquid - aluminum fluoride from aluminum + fluoride determination

TESTS REQUESTED: pH

COLLECTED BY: [illegible]

TRANSPORTED BY: J. Taylor

LABORATORY

RECEIVED BY: [illegible]

DATE COMPLETED:

DATE FORWARDED: MAY 25. 1984

SW-846 ANALYTICAL PROCEDURES MUST BE FOLLOWED

pH 1.0

IL 532-0314
LPC 8A 4/77

C005390

(NOT FOR DATA PROCESSING)

Environmental Protection Agency
Division of Laboratory Services
2131 W. Taylor Street
Chicago, Illinois 60612

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY (54)

SPECIAL ANALYSIS FORM

02964 NOV20

Time Collected 1:45 P.M. Sub-Basin Thorn Creek

Date Collected 11/19/81 Collector Don Klopke / Chris Kallis

Facility Name: Hall Aluminum Co. Facility Number: File Town Chicago Heights

Stream Name(s) State Street Ditch Stream Code:

Source of Sample: (Exact Location)

Process waste stream. Taken upstream of settling pond and downstream of process discharge

Physical Observations, Remarks:

RECEIVED ILL. ENVIRONMENTAL PROTECTION AGENCY FEB 3 - 1982

Flow	Field Dissolved Oxygen	Field pH	Field Temp.
		2	

Arsenic	Coliform/100ml	BOD
Barium	Fecal Coliform 100 ml	640 COD
Boron	Fecal Strep 100 ml	TS/EC
Cadmium	Algae (Total) /ml	Susp.Solids
12.5 Copper	110.0 Ammonia (N)	Vol.Susp.Solids
Chromium (tri)	Organic Nitrogen (N)	0.7 pH (units)
Chromium (hex)	0.2 Nitrate + Nitrite (N)	Turbidity (JTU)
73.0 Iron (Total)	Phosphorus (P)	Hardness
Iron (Dissolved)	Chloride	Alkalinity
Lead	Fluoride	Total Acidity
Manganese	345 Sulfate	Free Acidity
Mercury (ppb)	Cyanide	Oil
Nickel	MBAS	10,500 Residue on Evaporat Other (Specify)
Selenium	Phenol (ppb)	1375 Aluminum
Silver		
15.8 Zinc		

Results in mg/l unless otherwise noted.

Transported by: DJK/

Received by:

Transported by: CK

Received by:

FOR LAB USE ONLY

Lab Number: C002964 Rec'd by: [illegible]

Date sample rec'd: 11-20-81 Time: [illegible]

Date analysis completed:

Date results forwarded: FEB. -2. 1982

Total Tests requested: Tests run:

Lab Section: Chemo Supervisor: Daugherty

100% Recycled Paper

IL532-0546

LABS 3 3/73

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY (2H)

SPECIAL ANALYSIS FORM

02961 NOV20

Time Collected 11:40 A.M. Sub-Basin Thorn Creek

Date Collected 11/19/81 Collector Don Klopke / Chris Kallis

Facility Name: Hall Aluminum Co. Facility Number: File Town Chicago Heights

Stream Name(s) State Street Ditch Stream Code:

Source of Sample: (Exact Location)

Sample collected approximately 100 feet downstream of Hall Aluminum Co. discharge point. Just upstream of the nearby culvert. Collected from the State Street Ditch

Physical Observations, Remarks:

RECEIVED
ILL. ENVIRONMENTAL PROTECTION AGENCY
FEB 3 - 1982

Flow	Field Dissolved Oxygen	Field pH	Field Temp.

0.003	Arsenic		Coliform/100ml	8	BOD
0.0	Barium		Fecal Coliform 100 ml	31	COD
1.2	Boron		Fecal Strep 100 ml	1081	TS/EC
0.02	Cadmium		Algae (Total) /ml	130	Susp.Solids
0.08	Copper	9.9	Ammonia (N)	45	Vol.Susp.Solids
0.00	Chromium (tri)		Organic Nitrogen (N)	8.0	pH (units)
0.00	Chromium (hex)	1.9	Nitrate + Nitrite(N)		Turbidity (JTU)
0.6	Iron (Total)	1.7	Phosphorus (P)		Hardness
	Iron (Dissolved)	320	Chloride		Alkalinity
<0.03	Lead		Fluoride		Total Acidity
0.54	Manganese	335	Sulfate		Free Acidity
<0.05	Mercury (ppb)	0.01	Cyanide		Oil
0.0	Nickel		MBAS	1420	Residue on Evaporation
<0.001	Selenium	0.007	Phenol (ppm)	8.4	Other (Specify) Aluminum
0.00	Silver				
0.4	Zinc				

Results in mg/l unless otherwise noted.

Transported by: OK/

Received by:

Transported by: CK

Received by:

FOR LAB USE ONLY

Lab Number: C002961 Rec'd By: [illegible]

Date sample rec'd: 11-20-81 Time: [illegible]

Date analysis completed:

Date results forwarded: FEB. -2. 1982

Total Tests requested: Tests run:

Lab Section: Chicago Supervisor: [illegible]

100% Recycled Paper

IL532-0546
LABS 3 3/73

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

(3H)

SPECIAL ANALYSIS FORM

02962 NOV20

Time Collected 1:20 P.M.

Sub-Basin Thorn Creek

Date Collected 11/19/81

Collector Don Klopke/Chris Kallis

Facility Name: Hall Aluminum Co.

Facility Number:

File Town Chicago Heights

Stream Name(s) State Street Ditch

Stream Code:

Source of Sample: (Exact Location)

Discharge from pond behind Hall Aluminum (State Street) prior to reaching the State Street Ditch.

Physical Observations, Remarks:

RECEIVED
ILL. ENVIRONMENTAL PROTECTION AGENCY
FEB 3 1982

Flow	Field Dissolved Oxygen	Field pH	Field Temp.

0.002	Arsenic		Coliform/100ml	< 15	BOD
0.0	Barium		Fecal Coliform 100 ml	640	COD
0.5	Boron		Fecal Strep 100 ml		TS/EC
0.86	Cadmium		Algae (Total) /ml	77	Susp. Solids
3.2	Copper	130.0	Ammonia (N)	30	Vol. Susp. Solids
0.04	Chromium (tri)		Organic Nitrogen (N)	3.6	pH (units)
0.00	Chromium (hex)	2.7	Nitrate + Nitrite (N)		Turbidity (JTU)
4.3	Iron (Total)	0.13	Phosphorus (P)		Hardness
	Iron (Dissolved)	5600	Chloride		Alkalinity
0.48	Lead		Fluoride		Total Acidity
10.53	Manganese	310	Sulfate		Free Acidity
0.11	Mercury (ppb)	0.00	Cyanide		Oil
0.6	Nickel		MBAS	5950	Residue on Evaporat.
0.018	Selenium	0.006	Phenol (ppm)	660	Other (Specify) Aluminum
0.00	Silver				
13.6	Zinc				

Results in mg/l unless otherwise noted.

Transported by: DTK

Received by:

Transported by: CK

Received by:

FOR LAB USE ONLY

Lab Number: C002962 Rec'd by: M. Tosh

Date sample rec'd: 11-20-81 Time: 10:40 am

Date analysis completed:

Date results forwarded: FEB. -2. 1982

Total Tests requested: Tests run:

Lab Section: Chicago Supervisor: Daugherty

100% Recycled Paper

IL532-0546
LABS 3 3/73

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY (4H)

SPECIAL ANALYSIS FORM

Time Collected 11:45 A.M. Sub-Basin Thorn Creek 0002963 NOV20

Date Collected 11/19/81 Collector Don Klopke / Chris Kallis

Facility Name: Hall Aluminum Co. Facility Number: File Town Chicago Heights

Stream Name(s) State Street Ditch Stream Code:

RECEIVED ENVIRONMENTAL PROTECTION AGENCY FEB 3 - 1982

Source of Sample: (Exact Location)

Approximately 100 feet downstream of Hall Aluminum Co. discharge point. Just upstream of nearby culvert. Collected from the State Street Ditch.

Physical Observations, Remarks: Collected a sample of the white, floc-like material which was noticed on the State Street Ditch bed.

Flow	Field Dissolved Oxygen	Field pH	Field Temp.

0.10	Arsenic		Coliform/100ml		BOD
1.0	Barium		Fecal Coliform 100 ml	440	COD
	Boron		Fecal Strep 100 ml		TS/EC
0.20	Cadmium		Algae (Total) /ml		Susp.Solids
3.7	Copper	11.0	Ammonia (N)		Vol.Susp.Solids
	Chromium (tri)		Organic Nitrogen (N)	7.1	pH (units)
	Chromium (hex)	3.2	Nitrate + Nitrite(N)		Turbidity (JTU)
23.8	Iron (Total)		Phosphorus (P)		Hardness
	Iron (Dissolved)		Chloride		Alkalinity
1.63	Lead		Fluoride		Total Acidity
0.94	Manganese		Sulfate		Free Acidity
	Mercury (ppb)		Cyanide		Oil
0.0	Nickel		MBAS		Other (Specify)
0.005	Selenium		Phenol (ppb)	1100	Aluminum
0.00	Silver				
6.4	Zinc				

Results in mg/l unless otherwise noted.

Transported by: DOK/

Received by:

Transported by: CK

Received by:

FOR LAB USE ONLY

Lab Number 0002963 Rec'd by:

Date sample rec'd 11 20 81 Time

Date analysis completed:

Date results forwarded: FEB -2 1982

Total Tests requested: Tests run:

Lab Section: Chicago Supervisor

100% Recycled Paper

IL532-0546

LABS 3 3/73

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

SPECIAL ANALYSIS FORM

02960 NOV20

Time Collected 11:20 A.M. Sub-Basin Thorn Creek

Date Collected 11/19/81 Collector Don Klopke / Chris Kallis

Facility Name: Hall Aluminum Co. Facility Number: File Town Chicago Heights

Stream Name(s) State Street Ditch Stream Code:

Source of Sample: (Exact Location)

Sample collected approximately 600 feet upstream of the Hall Aluminum Co. discharge point. Collected from the State Street Ditch.

Physical Observations, Remarks:

ILL. ENVIRONMENTAL PROTECTION AGENCY FEB 3 - 1982

Flow	Field Dissolved Oxygen	Field pH	Field Temp.

0.003	Arsenic		Coliform/100ml	8	BOD
0.0	Barium		Fecal Coliform 100 ml	30	COD
1.2	Boron		Fecal Strep 100 ml	927	TS/EC
0.00	Cadmium		Algae (Total) /ml	11	Susp.Solids
0.00	Copper	6.2	Ammonia (N)	3	Vol.Susp.Solids
0.00	Chromium (tri)		Organic Nitrogen (N)	8.4	pH (units)
0.00	Chromium (hex)	1.7	Nitrate + Nitrite(N)		Turbidity (JTU)
0.5	Iron (Total)	1.7	Phosphorus (P)		Hardness
	Iron (Dissolved)	110	Chloride		Alkalinity
<0.03	Lead		Fluoride		Total Acidity
0.14	Manganese	355	Sulfate		Free Acidity
<0.05	Mercury (ppb)	0.02	Cyanide		Oil
0.0	Nickel		MBAS	1160	Residue on Evaporation
<0.001	Selenium	0.007	Phenol (ppm)	0.0	Other (Specify) Aluminum
0.00	Silver				
0.0	Zinc				

Results in mg/l unless otherwise noted.

Transported by: DOK/

Received by:

Transported by: C Kallis

Received by:

FOR LAB USE ONLY

Lab Number: C002960 Rec'd by:

Date sample rec'd: 11-20-81 Time: 10:00

Date analysis completed: FEB -2 1982

Date results forwarded:

Total Tests requested: Tests run:

Lab Section: Chicago Supervisor: Daugherty

100% Recycled Paper

IL532-0546

LABS 3 3/73

Don

— Unable to find waste quantity figure for this site. ie for waste lagoon.

Jerry O. suggests another 'on-site' inspection.

— No information available in files or from state files and Hall Aluminum is uncooperative at best.

— Possibly the IEPA could get info. from Hall as to dimensions of lagoon?

John Geiger

IEPA

call Jeane Berka
Mount Hall Aluminum
ch. ago
ILD 005246590

CC - DWPC/FOS/RU
- ESS, Maywood
- DJK
1-7-81

INSPECTION NOTES

HALL ALUMINUM CO.
1751 State Street
Chicago Heights, Illinois 60411

DATE: November 19, 1981

INTERVIEWED: Donald Retsky, Vice President
Bill Peters, Plant Manager

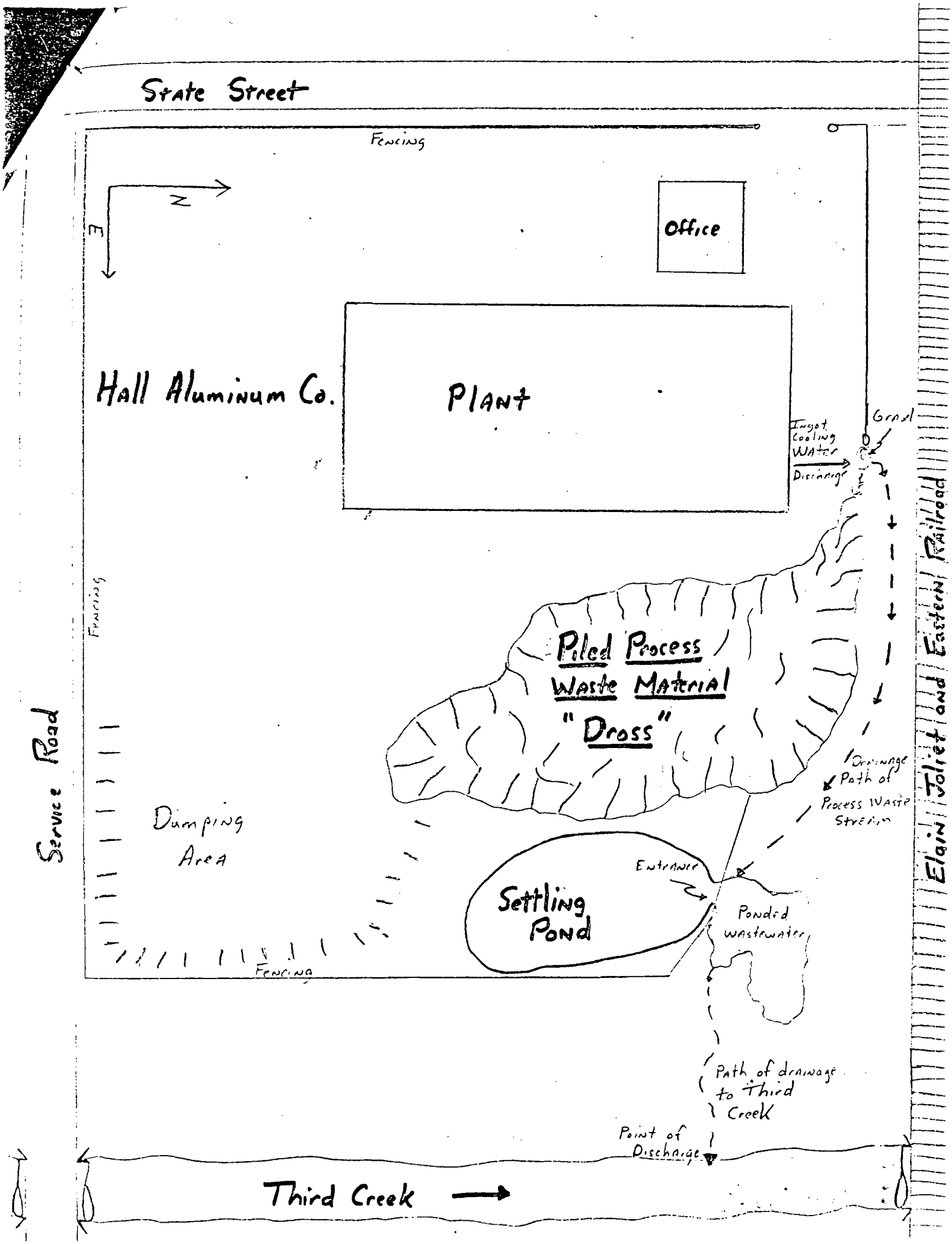
INSPECTED BY: Don Klopke, FOS, Maywood
Chris Kallis, FOS, Maywood

An inspection of Hall Aluminum Company, Third Creek (originally identified as State Street Ditch), and the surrounding area was conducted on the above date. The following information was obtained. The attached schematic provides a layout of the area:

1.) Hall Aluminum Co. is in the business of reclaiming aluminum and zinc from scrap metal products. Ingots are poured from the reclaimed metals. Water, pumped from private wells, is applied to the ingots for cooling purposes. Ingots are later sold to die casters. Hall representatives stated that lime is the only additive applied to the cooling water process. The process waste stream is discharged overland to a settling pond located on Hall's property to the east of the plant (see schematic). Note that the drainage path of this discharge may be across property owned by the Elgin, Joliet and Eastern Railroad. The process waste stream had a noticeable ammonia odor, was slightly heated, and appeared highly turbid containing a significant amount of white floc material. A sample was taken at a point located downstream of the process discharge and upstream of the settling pond.

2.) Wet weather periods may find the process waste stream draining areas containing discarded process waste material "dross" (see schematic). Discoloration characteristic of copper wastes were noted in these areas.

3.) Representatives stated that wastewater is not recycled from the settling pond but is allowed to evaporate by natural means. No other removal technique is utilized. At the time of the inspection the settling pond appeared to be at capacity and the process waste-


State Street
Fencing
N
E
Office
Hall Aluminum Co.
Plant
Ingot Cooling Water Discharge
Gravel
Elgin Joliet and Eastern Railroad
Fencing
Piled Process Waste Material "Dross"
Drainage Path of Process Waste Stream
Service Road
Dumping Area
Entrance
Settling Pond
Ponded wastewater
Fencing
Path of drainage to Third Creek
Point of Discharge
Third Creek

HAZARDOUS WASTE COMPLIANCE AND ENFORCEMENT LOG - MINOR Facilities Only

1a. U.S. EPA ID # none

1b. State ID # 031045284

2. Facility Name Hall Aluminum

3. Chicago Heights City

4. Agency doing evaluation [S] S = State, J = Joint State/U.S. EPA, E = U.S. EPA (etc)

5a DATE OF ~~INITIAL~~ EVALUATION WHICH IS THE BASIS FOR THIS REPORT (may be date of a previous inspection or review or other) 5 (M) 16 (D) 84 (Y)

5b Inspection Comment:

6. TYPE OF EVALUATION COVERED BY THIS REPORT (check one box only)

- ☐ Compliance Evaluation Inspection
- ☒ Sampling Inspection
- ☐ Detailed Record Review
- ☐ Groundwater Inspection
- ☐ Follow-up (to enforcement action)
- ☐ Other

7. NOT APPLICABLE FOR MINOR FACILITIES

8. NOT APPLICABLE FOR MINOR FACILITIES

9. Enforcement Action

10. Comment (Limited to 80 Characters):

STATUS OF VIOLATION (Code 0 thru 9)	Type of Action (enter code)	Date of Action	Compliance Date Scheduled	Compliance Date Actual	Status Code	Status Date	Resp* Agency	Free Field	Penalty (if any) Assessed	Penalty (if any) Collected	REFERENCE (Optional)
6	3	5/31/84					S	PC			

INSTRUCTIONS FOR MINOR FACILITIES LOG:

1) For each minor facility inspected, complete Items 1 - 6 as for major facilities.

2) For Item 9, Status of Violation column, enter the code from the list below.

CODE	STATUS
0 -	In Compliance
1 -	Non-Compliance, Class 1 (Environmental Impact)
2 -	Non-Compliance, Class 2 (Statutory)
3 -	Non-Compliance, Class 3 (Administrative)
4 -	Non-Compliance, Classes 1 & 2
5 -	Non-Compliance, Classes 1 & 3
6 -	Non-Compliance, Classes 2 & 3
7 -	Non-Compliance, Classes 1, 2, & 3
8 -	Entry Inactive, Retained for Reference
9 -	Non-Compliance, (State Use Only)

3) For Item 9, complete all but the "Reference" column as for major facilities.

4) Complete the optional "Reference" column using using the code shown below:

CODE	REFERENCE
A	Annual Report
B	Groundwater
C	Financial
D	Manifest

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

SPECIAL ANALYSIS FORM

82960 NOV20

Time Collected 11:20 A.M. Sub-Basin Thorn Creek

Date Collected 11/19/81 Collector Don Klopke / Chris Kallis

Facility Name: Hall Aluminum Co. Facility Number: File Town Chicago Heights

Stream Name(s) State Street Ditch Stream Code:

Source of Sample: (Exact Location)

Sample collected approximately 600 feet upstream of the Hall Aluminum Co. discharge point. Collected from the State Street Ditch

Physical Observations, Remarks:

ILL. ENVIRONMENTAL PROTECTION AGENCY FEB 3 - 1982

Flow	Field Dissolved Oxygen	Field pH	Field Temp.

0.003	Arsenic		Coliform/100ml	8	BOD
0.0	Barium		Fecal Coliform 100 ml	30	COD
1.2	Boron		Fecal Strep 100 ml	927	TS/EC
0.00	Cadnium		Algae (Total) /ml	11	Susp.Solids
0.00	Copper	6.2	Ammonia (N)	3	Vol.Susp.Solids
0.00	Chromium (tri)		Organic Nitrogen (N)	8.4	pH (units)
0.00	Chromium (hex)	1.7	Nitrate + Nitrite(N)		Turbidity (JTU)
0.5	Iron (Total)	1.7	Phosphorus (P)		Hardness
	Iron (Dissolved)	110	Chloride		Alkalinity
<0.03	Lead		Fluoride		Total Acidity
0.14	Manganese	355	Sulfate		Free Acidity
<0.05	Mercury (ppb)	0.02	Cyanide		Oil
0.0	Nickel		MBAS	1160	Residue on Evaporation
<0.001	Selenium	0.007	Phenol (ppm)	0.0	Other (Specify) Aluminum
0.00	Silver				
0.0	Zinc				

Results in mg/1 unless otherwise noted.

Transported by: DTK/

Received by:

Transported by: C Kallis

Received by:

FOR LAB USE ONLY

Lab Number: C002960 Rec'd by:

Date sample rec'd: 11-20-81 Time:

Date analysis completed: FEB. -2. 1982

Date results forwarded:

Total Tests requested: Tests run:

Lab Section: Chicago Supervisor:

100% Recycled Paper

IL532-0546

LABS 3 3/73

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY (4H)

SPECIAL ANALYSIS FORM

Collected 11:45 A.M. Sub-Basin Thorn Creek

Date Collected 11/19/81 Collector Don Klopke/Chris Kallis

Facility Name: Hall Aluminum Co. Facility Number File Town Chicago Heights

Stream Name(s) State Street Ditch Stream Code:

Source of Sample: (Exact Location)

Approximately 100 feet downstream of Hall Aluminum Co. discharge point. Just upstream of nearby culvert. Collected from the State Street Ditch.

Physical Observations, Remarks: Collected a sample of the white, floc-like material which was noticed on the State Street Ditch bed.

Flow	Field Dissolved Oxygen	Field pH	Field Temp.

0.10	Arsenic		Coliform/100ml		BOD
1.0	Barium		Fecal Coliform 100 ml	440	COD
	Boron		Fecal Strep 100 ml		TS/EC
0.20	Cadmium		Algae (Total) /ml		Susp.Solids
3.7	Copper	11.0	Ammonia (N)		Vol.Susp.Solids
	Chromium (tri)		Organic Nitrogen (N)	7.1	pH (units)
	Chromium (hex)	3.2	Nitrate + Nitrite(N)		Turbidity (JTU)
23.8	Iron (Total)		Phosphorus (P)		Hardness
	Iron (Dissolved)		Chloride		Alkalinity
1.63	Lead		Fluoride		Total Acidity
0.94	Manganese		Sulfate		Free Acidity
	Mercury (ppb)		Cyanide		Oil
0.0	Nickel		MBAS		Other (Specify)
0.005	Selenium		Phenol (ppb)	1100	Aluminum
0.00	Silver				
6.4	Zinc				

Results in mg/l unless otherwise noted.

Transported by: DTK

Received by:

Transported by: CK

Received by:

FOR LAB USE ONLY

Lab Number C002963 Rec'd by:

Date sample rec'd 11-20-81 Time:

Date analysis completed:

Date results forwarded FEB. -2. 1982

Total Tests requested: Tests run:

Lab Section: Chicago Supervisor

100% Recycled Paper

IL532-0546

LABS 3 3/73

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

(3H)

SPECIAL ANALYSIS FORM

02962 NOV20

Time Collected 1:20 P.M.

Sub-Basin Thorn Creek

Date Collected 11/19/81

Collector Don Klopke/Chris Kallis

Facility Name: Hall Aluminum Co.

Facility Number:

File Town Chicago Heights

Stream Name(s) State Street Ditch

Stream Code:

Source of Sample: (Exact Location)

Discharge from pond behind Hall Aluminum (State Street) prior to reaching the State Street Ditch.

Physical Observations, Remarks:

RECEIVED
ILL. ENVIRONMENTAL PROTECTION AGENCY
FEB 3 1982

Flow	Field Dissolved Oxygen	Field pH	Field Temp.

0.002	Arsenic		Coliform/100ml	< 15	BOD
0.0	Barium		Fecal Coliform 100 ml	640	COD
0.5	Boron		Fecal Strep 100 ml		TS/EC
0.86	Cadmium		Algae (Total) /ml	77	Susp.Solids
3.2	Copper	130.0	Ammonia (N)	30	Vol.Susp.Solids
0.04	Chromium (tri)		Organic Nitrogen (N)	3.6	pH (units)
0.00	Chromium (hex)	2.7	Nitrate + Nitrite(N)		Turbidity (JTU)
4.3	Iron (Total)	0.13	Phosphorus (P)		Hardness
	Iron (Dissolved)	5600	Chloride		Alkalinity
0.48	Lead		Fluoride		Total Acidity
10.53	Manganese	310	Sulfate		Free Acidity
0.11	Mercury (ppb)	0.00	Cyanide		Oil
0.6	Nickel		MBAS	5950	Residue on Evaporation
0.018	Selenium	0.006	Phenol (ppm)	660	Other (Specify) Aluminum
0.00	Silver				
13.6	Zinc				

Results in mg/l unless otherwise noted.

Transported by: OTK

Received by:

Transported by: CK

Received by:

FOR LAB USE ONLY

Lab Number: C002962 Rec'd by: [illegible]

Date sample rec'd: 11-20-81 Time: 10:40 am

Date analysis completed:

Date results forwarded: FEB. -2, 1982

Total Tests requested: Tests run:

Lab Section: Chicago Supervisor: [illegible]

100% Recycled Paper

IL532-0546
LABS 3 3/73

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY (2H)

SPECIAL ANALYSIS FORM 02961 NOV20

Time Collected 11:40 A.M. Sub-Basin Thorn Creek

Date Collected 11/19/81 Collector Don Klopke / Chris Kallis

Facility Name: Hall Aluminum Co. Facility Number: Eile Town Chicago Heights

Stream Name(s) State Street Ditch Stream Code:

Source of Sample: (Exact Location)

Sample collected approximately 100 feet downstream of Hall Aluminum Co. discharge point. Just upstream of the nearby culvert. Collecte from the State Street Ditch

Physical Observations, Remarks:

RECEIVED ILL. ENVIRONMENTAL PROTECTION AGENCY FEB 3 - 1982

Flow	Field Dissolved Oxygen	Field pH	Field Temp.

0.003	Arsenic		Coliform/100ml	8	BOD
0.0	Barium		Fecal Coliform 100 ml	31	COD
1.2	Boron		Fecal Strep 100 ml	1081	TS/EC
0.02	Cadmium		Algae (Total) /ml	130	Susp.Solids
0.08	Copper	9.9	Ammonia (N)	45	Vol.Susp.Solids
0.00	Chromium (tri)		Organic Nitrogen (N)	8.0	pH (units)
0.00	Chromium (hex)	1.9	Nitrate + Nitrite(N)		Turbidity (JTU)
0.6	Iron (Total)	1.7	Phosphorus (P)		Hardness
	Iron (Dissolved)	320	Chloride		Alkalinity
<0.03	Lead		Fluoride		Total Acidity
0.54	Manganese	335	Sulfate		Free Acidity
<0.05	Mercury (ppb)	0.01	Cyanide		Oil
0.0	Nickel		MBAS	1420	Residue on Evaporation
<0.001	Selenium	0.007	Phenol (ppm)	8.4	Other (Specify) Aluminum
0.00	Silver				
0.4	Zinc				

Results in mg/l unless otherwise noted.

Transported by: OK/

Received by:

Transported by: CK

Received by:

FOR LAB USE ONLY

Lab Number: C002961 Rec'd By: M. Jacobs

Date sample rec'd: 11-20-81 Time: 1:44

Date analysis completed:

Date results forwarded: FEB -2 1982

Total Tests requested: Tests run:

Lab Section: Chicago Supervisor: [illegible]

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IL532-0546

LABS 3 3/73

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY (54)

SPECIAL ANALYSIS FORM

02964 NOV20

Time Collected 1:45 P.M. Sub-Basin Thorn Creek

Date Collected 11/19/81 Collector Don Klopke / Chris Kallis

Facility Name: Hall Aluminum Co. Facility Number: File Town Chicago Heights

Stream Name(s) State Street Ditch Stream Code:

Source of Sample: (Exact Location)

Process waste stream. Taken upstream of settling pond and downstream of process discharge

Physical Observations, Remarks:

RECEIVED ILL. ENVIRONMENTAL PROTECTION AGENCY FEB 3 - 1982

Flow	Field Dissolved Oxygen	Field pH	Field Temp.

	Arsenic		Coliform/100ml		BOD
	Barium		Fecal Coliform 100 ml	640	COD
	Boron		Fecal Strep 100 ml		TS/EC
	Cadmium		Algae (Total) /ml		Susp.Solids
12.5	Copper	110.0	Ammonia (N)		Vol.Susp.Solids
	Chromium (tri)		Organic Nitrogen (N)	0.7	pH (units)
	Chromium (hex)	0.2	Nitrate + Nitrite(N)		Turbidity (JTU)
73.0	Iron (Total)		Phosphorus (P)		Hardness
	Iron (Dissolved)		Chloride		Alkalinity
	Lead		Fluoride		Total Acidity
	Manganese	345	Sulfate		Free Acidity
	Mercury (ppb)		Cyanide		Oil
	Nickel		MBAS	10,500	Residue on Evaporation
	Selenium		Phenol (ppb)	1275	Other (Specify) Aluminum
	Silver				
15.8	Zinc				

Results in mg/l unless otherwise noted.

Transported by: DTK/

Received by:

Transported by: CK

Received by:

FOR LAB USE ONLY

Lab Number: C002964 Rec'd by: [illegible]

Date sample rec'd: 11-20-81 Time: [illegible]

Date analysis completed:

Date results forwarded: FEB. -2. 1982

Total Tests requested: Tests run:

Lab Section: Chemical Supervisor: Dougherty

100% Recycled Paper

IL532-0546

LABS 3 3/73

(65600—60M—10-57)

Page 1

ILLINOIS GEOLOGICAL SURVEY, URBANA

Strata	Thickness	Top	Bottom
Sand	25	0	25
Clay	23	25	48
Limestone	77	48	125
Limestone and shale	110	125	235
Limestone	205	235	440
Shale	85	440	525
Limestone	23	525	548
Shale	127	548	675
Limestone (H_2S)	319	675	994
Sandstone	141	994	1135
Limestone	363	1135	1498
Shale	30	1498	1528
Limestone	19	1528	1547
Shale	2	1547	1549
Limestone	27	1549	1576
Shale	10	1576	1586
Limestone	51	1586	1637
Sandstone	163	1637	1800
Limestone	5	1800	1805

Hole size: 20" 0-58',
19" 58'-675'
15" 675'-1805'

Casing record: 20" 0-58'
16" 0-675' (cemented)
12" 1506'-1671' (Slotted)

Static water level: 328'
Pumping level: 428' at 448 g.p.m. for 8 hrs.

COMPANY C. Neely
FARM Calumet Steel Div. NO. 2
DATE DRILLED 1951 COUNTY NO.
AUTHORITY
ELEVATION
LOCATION 500'S, 1600'W, of NEc
COUNTY Cook

21-35N-14E

John C. Moore Corporation—Rochester, N.Y. Binder and holes in leaves, each Patented 1906. 286790

6

TOWN Chicago Heights TOWNSHIP Bloom Map No. 28
COMPANY S. B. Geiger & Co. No. R. 14 E
FARM ~~City Well~~ ? No. T. Sec.
AUTHORITY S. B. Geiger files 35 21
ELEVATION 645 450'S, 2600' W of NE cor
COLLECTOR Workman DATE DRILLED 1923
CONFIDENTIAL Morden Frog + Crossing Works

No.	STRATA	Thickness Feet	Thickness In.	Depth Feet	Depth In.
	PLEISTOCENE SYSTEM				
	Soil	40		40	
	SILURIAN SYSTEM				
	Lime, gray - hard	70		110	
	Sand, soft, water level 60 feet, probably dolomite	15		125	
	Lime	305		430	
	Richmond				
	Shale, blue	90		520	
	Lime, white, hard	20		540	
	Shale, blue	125		665	
	Galena-Platteville				
	Lime, medium hard	155		820	
	Lime, crevices, water level 164	110		930	
	Limestone, very hard	62		992	
	St. Peter				
	Sand, caving	138		1130	
	Shale, blue	5		1135	
	Oneota				
	Lime, medium hard	165		1300	
	Trempealeau				
	Limestone, hard	185		1485	
	Franconia				
	Sand, soft, green	115		1600	
	Limestone, very hard	20		1620	
	Dresbach				
	Sand, hard and sharp	75		1695	
	Sand, soft, cavey	75		1770	

County COOK Index No 2800
T.—DRILL RECORD 21-35N-14E

46244—10M—11-35 Illinois Geological Survey, Urbana

	Thickness	Top	Bottom
pyritic; siltstone, dark greenish gray	10		445
ORDOVICIAN SYSTEM			
Cincinnatian Series			
Maquoketa formation			
Shale, dolomitic, greenish gray, weak; interbedded dolomite, pale yellowish brown to greenish, fine, silty	80		525
Dolomite, silty, greenish, light to dark gray, mottled, fine to coarse, fossiliferous; few shale streaks in lower half, sandy, olive, weak	40		565
Shale, medium to dark olive gray, weak; interbedded thin dolomite, olive, fine	85		650
Shale, brownish gray, weak; Siltstone, dolomitic, olive gray compact;	29		679
Mohawkian Series			
Galena formation			
Dolomite, pale yellowish brown, fine to coarse, fossiliferous	91		770
Dolomite, silty, calcareous, pale yellowish brown, white, fine to coarse; little shale, sandy, calcareous, gray to white, weak to brittle	20		790
Dolomite, pale yellowish brown, medium to very coarse	40		830
Revision by P. M. Busch 10/51 850-955'			
Decorah formation			
Dolomite, slightly sandy, yellowish gray to brown, mottled, medium to very coarse, few dark specks; few brown shaly surfaces	20		850
Dolomite, partly sandy, yellowish			

Neely & Schimelpfenig Calumet Steel Division, Borg Warner Corp. #4
COUNTY COOK S.S.#21216 21-35N-14E

Strata	Thickness	Top	Bottom
Studied by D.W. Baird			
No Samples	175		175
SILURIAN SYSTEM			
Niagaran Series (Joliet - Waukesha)			
Dolomite, coarsely silty, greenish gray, fine, fairly porous	30		205
Dolomite, silty, argillaceous, greenish gray, yellowish gray to light gray, fine to medium	35		240
Dolomite, silty, yellowish gray to medium gray, mottled, fine, rare scattered glauconitic; little shale in lower ¼, dolomitic, silty, olive gray, compact	85		325
Dolomite, silty, argillaceous, light yellowish gray to light gray, fine to medium	50		375
Brandon Bridge formation			
Dolomite, silty - partly shaly, light yellowish gray to light gray, fine to medium; little shale, olive to gray, weak, at base	20		395
Alexandrian Series			
Kankakee formation			
Dolomite, silty, light yellowish gray to light gray, fine to medium, scarce glauconitic in middle	40		435
Edgewood formation			
Dolomite, very silty, dark greenish gray, fine to medium,			

COMPANY Neely and Schimelpfenig NO.
FARM Calumet Steel Division NO. 4
DATE DRILLED Borg Warner Corp. Well COUNTY NO. 492
1951
AUTHORITY Summary Sample Study
ELEVATION
LOCATION 1600' E. line, 500' N. line of SE
COUNTY COOK S.S.#21216 21-35N-14E

	Thickness	Top	Bottom
Dolomite, cherty, partly calcareous, partly sandy, yellowish gray, pale greenish, sublithographic to medium; little shale in middle, dolomitic, pale greenish gray, weak	20		1255
Dolomite, cherty, partly sandy, white yellowish gray, fine to coarse	13		1268
Sandstone, dolomitic, white, fine to coarse, incoherent; little dolomite, as above	12		1280
Dolomite, partly sandy, brownish, pinkish, greenish, white; little sandstone, interbedded in middle, fine to coarse, rounded to subrounded	35		1315
Dolomite, very silty in upper half, partly sandy, white to light gray, little glauconitic in upper half, fine to medium; scattered calcite	50		1365
CAMBRIAN SYSTEM			
Trempealeau formation			
Dolomite, siliceous, white to light gray, pale yellowish brown, crystalline quartz in basal 3/4, scattered calcite	85		1450
Dolomite, slightly sandy, pale yellowish gray, scattered glauconitic in base, fine to medium, little quartz, sugary	18		1468
Franconia formation			
Sandstone, glauconitic, dolomitic, white to greenish, pinkish, fine, angular, coherent	32		1500
Sandstone, as above; shale, dolomitic, pale greenish sandy, weak	10		1510
Sandstone, as above; shale, as above; siltstone, dolomitic, dark olive,			

Calumet Steel Div.
Borg Warner Corp. #4
Neely & Schimelpfenig
COUNTY COOK S.S. #21216 21-35N-14E

	Thickness	Top	Bottom
gray to brown, mottled, fine to coarse, few dark specks	5		855
Guttenberg formation			
Dolomite, partly argillaceous, yellowish gray to reddish brown, fine to coarse, some red speckled; little shale, dark red, firm	15		870
Platteville formation			
Dolomite, yellowish gray, fine to coarse	30		900
Dolomite, cherty, dark yellowish brown, fine to medium	20		920
Dolomite, light olive gray to olive gray, fine to medium	35		955
Dolomite, pale yellowish brown, olive gray, partly mottled, fine to coarse; little chert in base, light olive gray	50		1005
Glenwood formation			
Sandstone, silty, white, very fine, medium to very coarse, incoherent, rounded	20		1025
Chazyan Series			
St. Peter formation			
Sandstone, very silty, very fine to coarse, white incoherent, rounded, frosted	112		1137
Prairie DuChien Series			
Oneota formation			
Dolomite, cherty, light gray to white, medium to coarse	28		1165
Dolomite, as above; little oolitic chert; little shale, white, very weak, in top	22		1187
Dolomite, cherty (oolitic), glauconitic in top, pale greenish, pale yellowish brown, fine to medium	48		1235

Calumet Steel Division
Borg Warner Corp. #4
Neely & Schimelpfenig
COUNTY COOK S. S. #21216 21-35N-14E

	Thickness	Top	Bottom
Dolomite, very silty, sandy, brownish gray, fine to medium; sandstone silty, dolomitic, brownish gray, fine, compact; little shale, sandy, brittle, olive gray	10		1805

Calumet Steel Div.

Neely & Schmelpfenig Borg-Warner Corp. #4

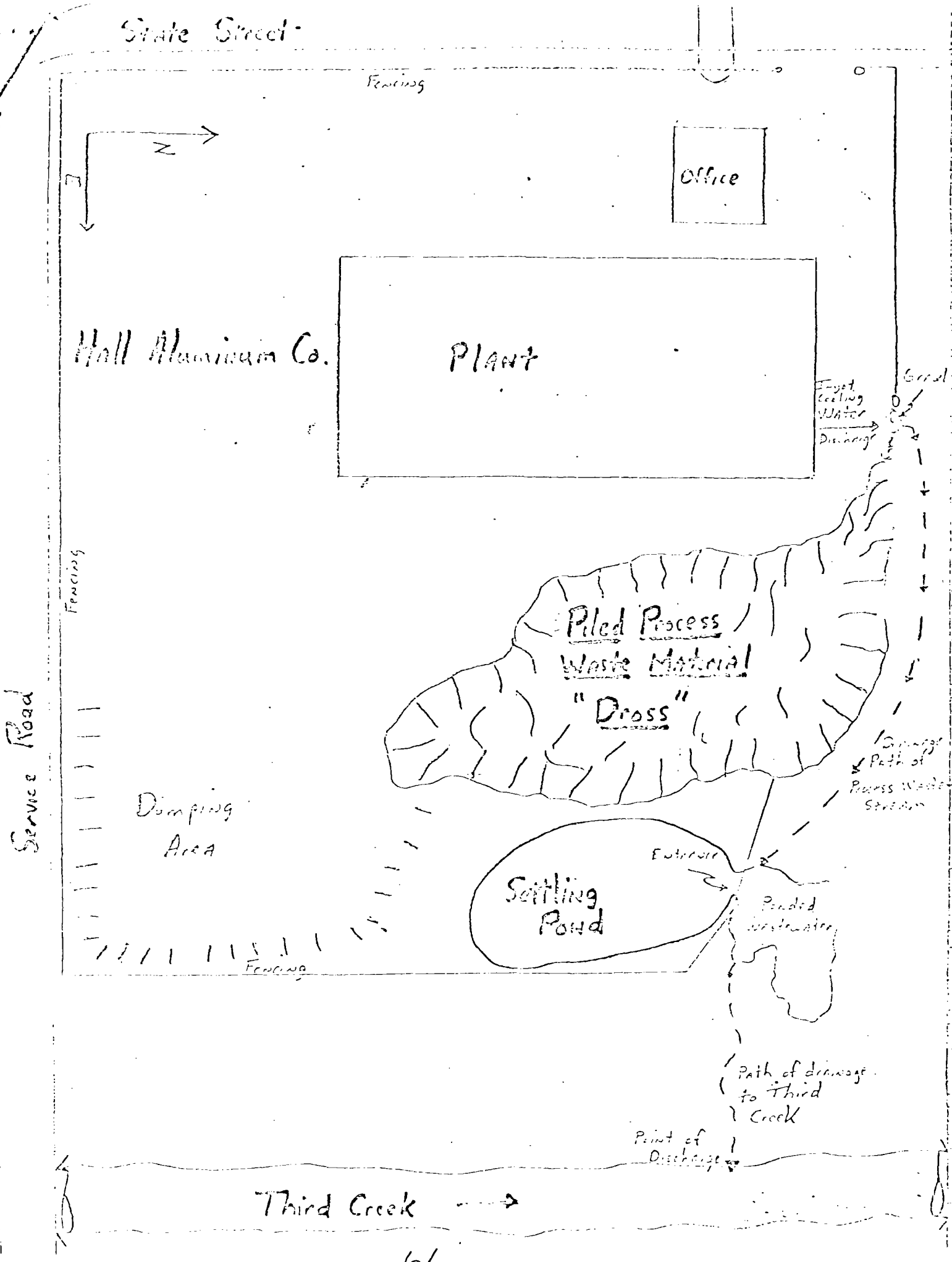
COUNTY COOK S.S. #21216 21-35N-14E

	Thickness	Top	Bottom
compact, at base	30		154
Shale, silty, dolomitic, medium greenish, weak	15		155
Shale, as above; sandstone, dolomitic, glauconitic, gray greenish, fine angular, compact	25		158
Sandstone, glauconitic, dolomitic, silty, pale greenish, very fine to fine, angular, shaly, incoherent to coherent	30		161
Dolomite, silty, sandy, glauconitic, greenish, grayish brown, fine to medium; little shale, silty, pale greenish, weak, at base	15		162
Dresbach Group			
Galesville formation			
Sandstone, dolomitic, glauconitic, greenish, yellowish gray, little chert, fine to coarse, partly incoherent, subangular to subrounded; little dolomite, sandy, glauconitic, fine to medium, yellowish gray to pinkish	45		167
Sandstone, partly dolomitic, white to pinkish, yellowish gray, fine to very coarse, fine at base, mostly incoherent, subrounded	45		171
Sandstone, partly dolomitic at top, white, fine to very coarse, incoherent, subrounded	60		177
Eau Claire formation			
Sandstone, white to brownish red, medium to coarse, incoherent, subrounded; shale, orange brown, silty, weak; dolomite, sandy, white, greenish, fine	10		178
Sandstone, silty, dolomitic white to brownish, partly coherent	10		179

Calumet Steel Div.

Neely & Schmelpfenig Borg Warner Corp.

COUNTY COOK S.S. #21216 21-36N-14E


State Street
Fencing
N
Office
Hall Aluminum Co.
Plant
Effect Cooling Water Discharge
Canal
Fencing
Piled Process Waste Material "Dross"
Drainage Path of Process Waste Stream
Service Road
Dumping Area
Entrance
Settling Pond
Ponded wastewater
Fencing
Path of drainage to Third Creek
Point of Discharge
Third Creek

6/16