UNION CARBIDE CORPORATION
Chemicals and Plastics
P. O. Box 180
Sistersville, West Virginia

June 15, 1970

CRA
DLB
JBB
GMD
DJD
RJD
GMF
BIF
REG
RLL
RJO
JBR
CER
ARR
JVS
CFS
RLS
CWS
CES
JRS
WJS
WHS
DLV
JHY

OPERATIONS IMPROVEMENT AND POLLUTION ABATEMENT

Month of May 1970 - J. F. Brammer

Operations Improvement

A total of 36 new OIP suggestions were approved this month with an estimated recurring savings value of 135.6 M$.

A total of 30 employees submitted approved OIP's, 4 hourly and 26 salary.

A total of 22 OIP's were reported as implemented this month with a recurring value of 77.7 M$. The unimplemented backlog rose 9% to 1.3 MM$. Implementation is falling behind in most areas.

The second quarter departmental reviews will be held week of June 22nd. Each department head and coordinator will receive a list of their unimplemented OIP's by the 15th so they may be prepared for the review.

Pollution Abatement

Neutralization load was lower than average this month and presented no significant problems. The use of the continuous neutralizer has resulted in an OIP savings for MeLites and Me Heavies treatment. An actual chloride balance for this unit is attached for this month and shows as we suspected an over usage of lime. This is now a manual control and should be changed to auto control by pH determination in outflow.

Solvents and drummed waste incineration load from plant went to an all time high of 698,000 lbs. this month. By working some "12-8" shifts extra we were able to keep from shutting production down. Only 20 drums of material were mixed into the solvents due to the high load. The attached charts show material mixed and remarks on compatibility.

The new castable refractory installed in E-523 burner barrel appears to be holding up ok but the lower-melting refractory installed in the windbox plate by Maintenance has melted out. We will try a temporary repair to existing box and have ordered a new windbox with castable refractory from Thermal Research.

Blowing of safety disc on T-768 and 769 again became problem and cause was traced to silane/contamination in nitrogen header from neutralization area. This was corrected by revising nitrogen supply for solvents area to 100 lb. header. The ladders recently installed on T-768 and 769 saved us several dollars on call-in and maintenance crane time.

Scrap Metal Salvage operation is still plagued by contractor strike. We had our Maintenance load out two gondola cars of major scrap equipment but freight costs are too high to continue in this manner. Attached charts indicate status of operation.

Safety

One SIR was filed by yardmen on E-523 filter. Needed correction was made by installing a block valve.

Safety inspection of area was conducted by R. L. Longwell and myself.

The JHA for May on sample container handling is in process and will be finished soon.

OIP activity for the EPC group was six approved OIP's for this month.

Major outstanding Maintenance jobs needing attention are W.O. No. 21486 on providing water supply for Waste Treatment area, W.O. No. 24525 on installation of strainer to eliminate filter at E-523 and W.O. No. 24523 on revision of lines in walkway at Neutralization area.

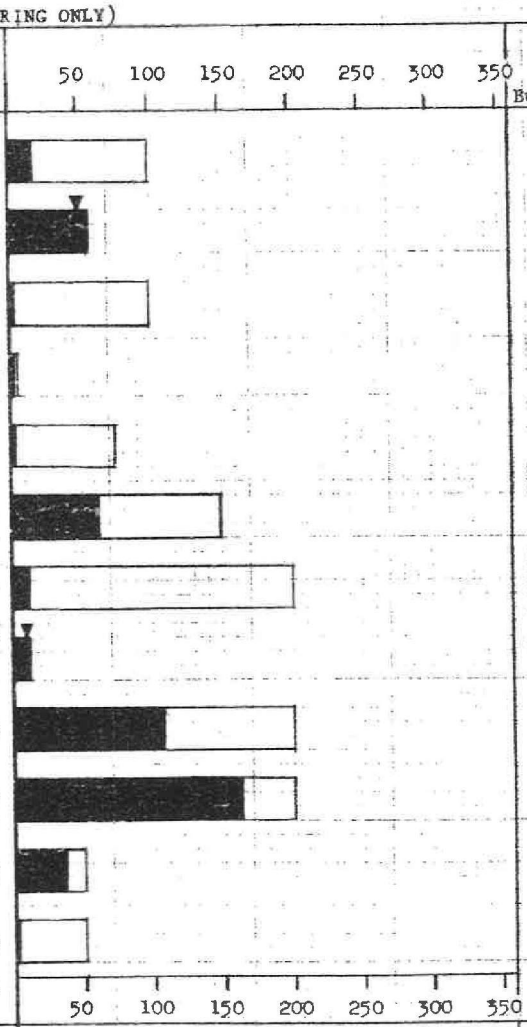
J F Brammer

JFBrammer:ksh

Attachments

1970 BUDGET (RECURRING ONLY)

Department	No. Of Emp.	No. OIP's Approved Jan.	Feb.	Mar.	Apr.	May	YTD	No. Imp. YTD	M$ Budget	Value Ach.
Compounding	28	1	2	5	0	0	8	5	100	19.1
Distribution/Stores	52	3	1	5	3	4	16	8	50	53.7
Industrial Engineering	6	0	1	3	3	4	11	3	100	2.2
Industrial Relations	12	0	0	0	4	0	4	5	5	4.6
Laboratory	46	1	3	4	6	2	16	6	75	2.9
Maintenance/Utilities	126	7	10	16	11	12	56	24	150	62.7
Monomers	44	1	1	3	0	0	5	4	200	11.1
Plant Office Group (Includes Mgmt. and Planning-Scheduling)	27	1	1	3	2	2	9	6	10	13.3
Polymers I	52	3	6	5	1	2	17	10	200	108.8
Polymers II	46	5	1	7	4	4	21	17	200	164.0
Process Development	62	0	1	9	1	3	14	9	50	38.9
Purchasing	5	0	0	1	1	3	5	2	50	1.7
OVPE	17	0	1	2	1	2	6	--	--	--
TOTAL	523	22	28	63	37	38	188	99	1,190	483.0



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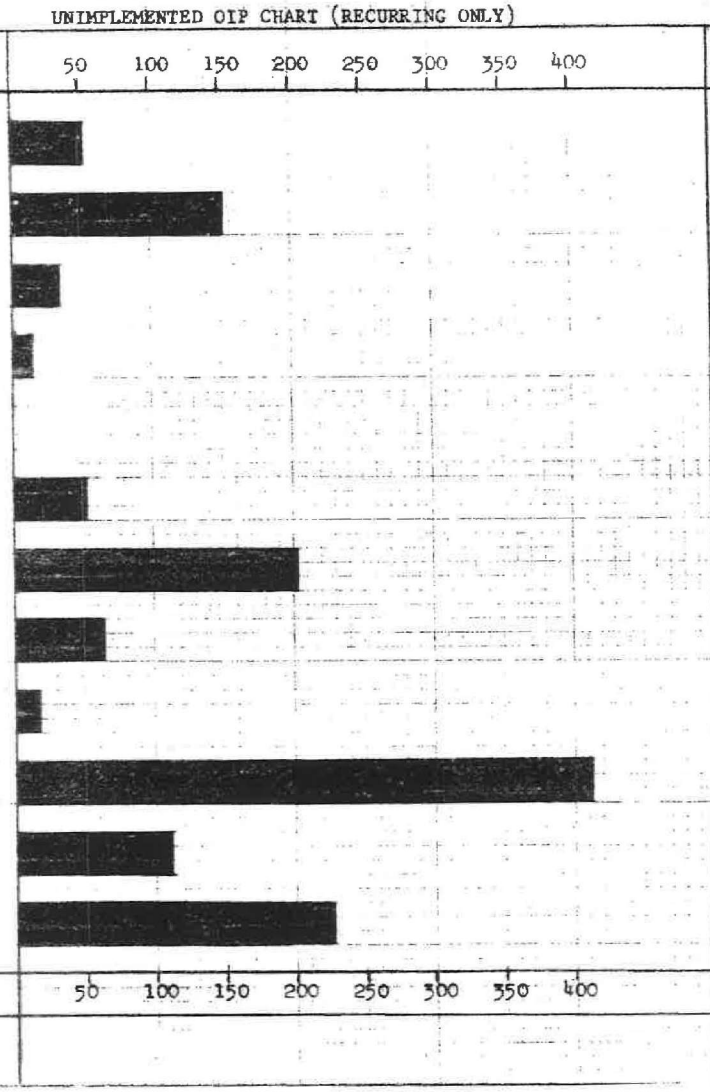
(May 1970) *Does not include OIP's awaiting approval or economic calculations.

UNIMPLEMENTED OIP CHART (RECURRING ONLY)

Department	No. OIP's	Est. Cost To Imp.	M$ Value
Compounding	12	263.7	54.9
Distribution/Stores	14	39.7	152.8
Industrial Engineering	6	11.0	35.5
Purchasing	4	--	15.9
Industrial Relations	0	--	--
Laboratory	13	2.1	53.2
Maintenance/Utilities	34	65.6	203.5
Monomers	9	33.1	64.8
Plant Office Group	4	--	19.5
Polymers I	23	80.6	411.4
Polymers II	12	159.5	110.7
Process Development	8	17.5	228.6
TOTAL	139	672.8	1,350.9



NEUTRALIZATION

Material	This Month	YTD	Chloride Contained Month of May	Lime Used M Lbs.	Lime/Chloride Ratio May	Lime/Chloride Ratio YTD
Chlorosilanes	226,200	1,306,200	115,032	May 235	1.78	1.5
A-1100 Hvys	28,000	62,140	---	YTD 1,423		
CNE Hvys	---	152,700	---			
EDA Acid Alcohol	35,000	84,880	7,000			
CNE Lites	45,500	94,300	9,100			
Other	3,500	3,500	700			
Totals	338,200	1,703,720	131,832			

Service Factor and Rates	Batch Tub		Continuous Unit	
	Ser. Factor	Rate/Hr.	Ser. Factor	Rate/Hr.
This Month	30%	1,500 lbs.	10%	3,000 lbs.
YTD	45%	1,500 lbs.	5%	3,000 lbs.

Manhours to Neutralization -- This Month	YTD
168	968

SOLVENTS

Material	This Month	YTD	Equipment Used Unit	Ser. Factor	Rate/Hr.
T-53-U Mix	**680,500		E-523	90%	1,300 lbs.
Other	17,684		E-500	*	
Total	698,184		E-22	*	

Manhours to Solvents Incineration -- This Month	YTD
92	332

* See J. Dowling's report.
** Est. of 150 M added for E-22 and 500 not run thru totalizer.

DRUMMED WASTE HANDLING

	Rec'd from Plant	Avg./Day	Sampled	Processed	Backlog	Manhours to Operation
This Month	397	12.3	108	20	377	57 hrs.
YTD	1,942	12.7	309	185	1,757	285 hrs.

DRUMMED WASTE PROCESSED (THIS MONTH)

Material	Treatment	Amount, lbs.	Comp. with Solvent	Remarks
Ucon 50HB100	Incinerated	2,000	ok	No problem -- occasional white smoke
A-174 CTL	Incinerated	1,200	ok	No problem -- occasional white smoke
Toluene Mix	Incinerated	2,200	ok	No problem -- occasional white smoke
MTG	Incinerated	1,000	ok	No problem
Uconate	Incinerated	1,500	ok	No problem
Y-5713	Incinerated	700	ok	No problem
L-45 Blend	Incinerated	900	ok	No problem
LE-46	Incinerated	1,000	Two Phase	Difficult to burn -- 65% water
Misc. Solids and Rust	Burial Dexter City	36,940		

METAL SALVAGE OPERATION

In-Plant Drums	MT Drums Sold	MT Drums Given	MT Drums OH	In-Plant Scrap Metal	Rec'd	Metal Sold		
						Tin	Hvy	Copper/Brass
This Month	1,358	100	1,100	This Month	32,950	--	46,400	---
YTD	6,827	250		YTD	160,430	33,480	118,280	3,160

SCRAP METAL HANDLING COST

Manhours Req'd	Transport From Plant	Drum Handling		Sorting and Loading		Freight to Buyer $	
		Rinse	Stacking	UCC (Hrs.)	Contractor $	Tin	Hvy Metal
This Month	60 Hrs.	32 Hrs.	40 Hrs.	48 Hrs.	---	---	350
YTD	300 Hrs.	60 Hrs.	100 Hrs.	48 Hrs.	1,500	160	350

INCOME, $

	Drums	Tin	Hvy Metal	Copper Brass
This Month	1,500	---	390	---
YTD	7,379	150	1,130	1,250

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OPERATIONS IMPROVEMENT AND POLLUTION ABATEMENT

Month of May, 1970 - C. W. Shonnard

Operations Improvement

Plant recurring savings dropped from 102% to 97% of plan during the period while participation increased from 85% to 88%. Thirteen percent of the new proposals in May originated from hourly employees. The backlog of unimplemented OIP's continues to grow.

The EPC group submitted six approved OIP's in May, bringing the total to date to 80% of plan.

Pollution Abatement

Operations:

The attached reports of Mr. Dowling and Mr. Brammer have been revised to include additional technical data. This information will provide documentation of changing waste treatment technology and will provide a basis for analyzing waste treatment costs in further detail.

Improvements in continuous neutralization of waste silanes were made which reduced costs. A high waste solvent load required increase in overtime to keep from shutting down some of the plant operating units.

Improvements in combustion efficiency, burning rates, and service factors of E-22 and E-500 waste liquid burners were also made. Observations on burning characteristics for several solid and liquid wastes are included in the attached reports.

Safety activity included a Job Hazard Analysis on Dempster truck operation, a safety inspection of the Waste Treatment Area, and review of 15 UCR's and 3 SIR's. Thirteen shop orders to correct safety items were written in May, three of which were completed. A memo was written to production department heads regarding hazards of permitting flammable liquids to be mixed in with solid combustible wastes, which has resulted in two SIR's.

Training sessions included one for the Foreman on benefits and pensions, and two for the hourly group covering housekeeping, JHA on trucks, serious injuries and continuous neutralizer operation.

Effluent Analyses:

The attached Waste Treatment Cost and Effluent Load Summary Sheet indicates trends during May. An error in the organic and the chloride load on the previous graphs has been corrected. The chloride load continues well below that for the early part of 1970. The organic load has remained fairly steady at 4000-5000 lbs. per day.

A reply was made to the W. Va. Water Resources Division outlining plant mercury uses and estimated losses. Plans for controlling mercury losses have been received from Polymers II and the Pilot Plant. Polymers I and Drumming are working on their control plans.

Wastewater samples were taken from MH44N (manhole which drains emulsion and drumming equipment) for 5 days for mercury analysis. All samples indicated less than 0.06 ppm, which is the lower limit of the dithizone colorimetric analytical procedure. Sampling of MH44N will continue.

The report on the potable water sample sent to the State was satisfactory.

The shop order backlog for Waste Treatment now totals approximately 30. Of these, 3 are in OVPE, 10 are in contract maintenance, 3 are in instrument maintenance, and 14 are in field maintenance. Overtime will be requested to reduce the backlog.

Engineering Projects:

OVPE cost estimated the silane tank installation at approximately $22,000. Further justification is being developed which includes relocating the tank at Monomers and considerable OIP savings.

The drum dump and gunk feed station is still being defined by OVPE and Plant EPC.

Bartlett-Snow, Inc. has submitted a favorable proposal for a rotary kiln incinerator for liquid and solid wastes including filter cake. It is possible that the additional liquid incinerator requested (EJN-0934) may be eliminated if the kiln unit can handle the additional thermal load. This is being explored with Bartlett-Snow.

The chemical landfill project is awaiting recommendations from Achenheil (consultants) in coordination with OVPE and Tech Center Engineering.

Group I EPC Engineering has made significant progress in developing the PBD for neutralization, clarification and sewer separation of wastewaters. Mr. Larry Peggs will visit the plant June 23 and 24 to review project plans and estimated costs. The plant EPC work on wastewater stream by stream surveys will be completed at that time and the information made available by Mr. Peggs.

Field test work on air pollution surveys will be initiated in June in collaboration with Mr. Jack Dermit of the Group I Industrial Hygiene group.

C W Shonnard

CWShonnard:ksh
Attachments

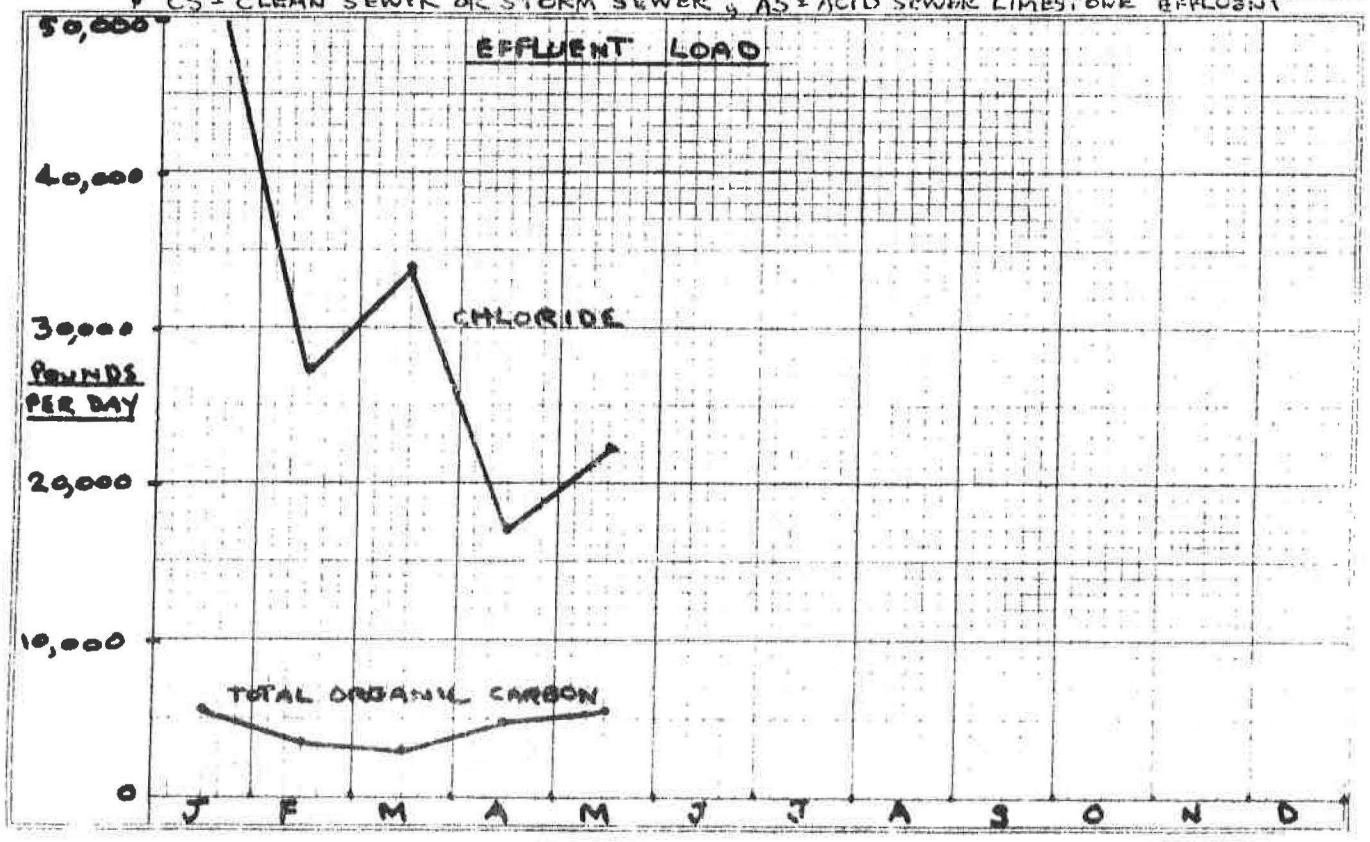
WASTE TREATMENT COST AND EFFLUENT LOAD SUMMARY

1970 — COST SUMMARY

	NEUTRALIZATION			LIQ. INCINERATION			SOLID INCINERATION			SOLID LANDFILL		
	LIME, $/Lb CL	LABOR, $/Lb SLAWE	MAINT. $/Lb SLAWE	LABOR, $/Lb	MAINT. $/Lb		LABOR, $/Lb	MAINT. $/Lb		LABOR, $/Lb		
JAN												
FEB												
MAR												
APR												
MAY	0.0196	0.0037		0.0009			0.0019			0.0042		
JUN												
JUL												
AUG												
SEP												
OCT												
NOV												
DEC												

	CHLORIDE, PPM		pH		CARBON, PPM		SUS. SOLIDS		MILE POINT 145				FLOW, GPM	
	*CS	*ASL	CS	ASL	CS	ASL	CS	ASL	pH	CL	C	Cu	CS	ASL
1 JAN	100	4733	8.5	1.5	205	429	308	82						1080
2 FEB	106	1518	8.2	4.7	19	218	32	209					4138	945
3 MAR	123	2478	7.1	1.6	30	53	118	10	4.0	580	31	.8	4038	1165
4 APR	NIL	1350	7.3	3.0	20	316	14	75	5.0	215	180	1.2	4053	960
5 MAY	102	1630	7.5	4.0	33	252	36	133	5.9	413	91	.4	4160	1220
6 JUN														
7 JUL														
8 AUG														
9 SEP														
10 OCT														
11 NOV														
12 DEC														

* CS = CLEAN SEWER OR STORM SEWER, AS = ACID SEWER LIMESTONE EFFLUENT



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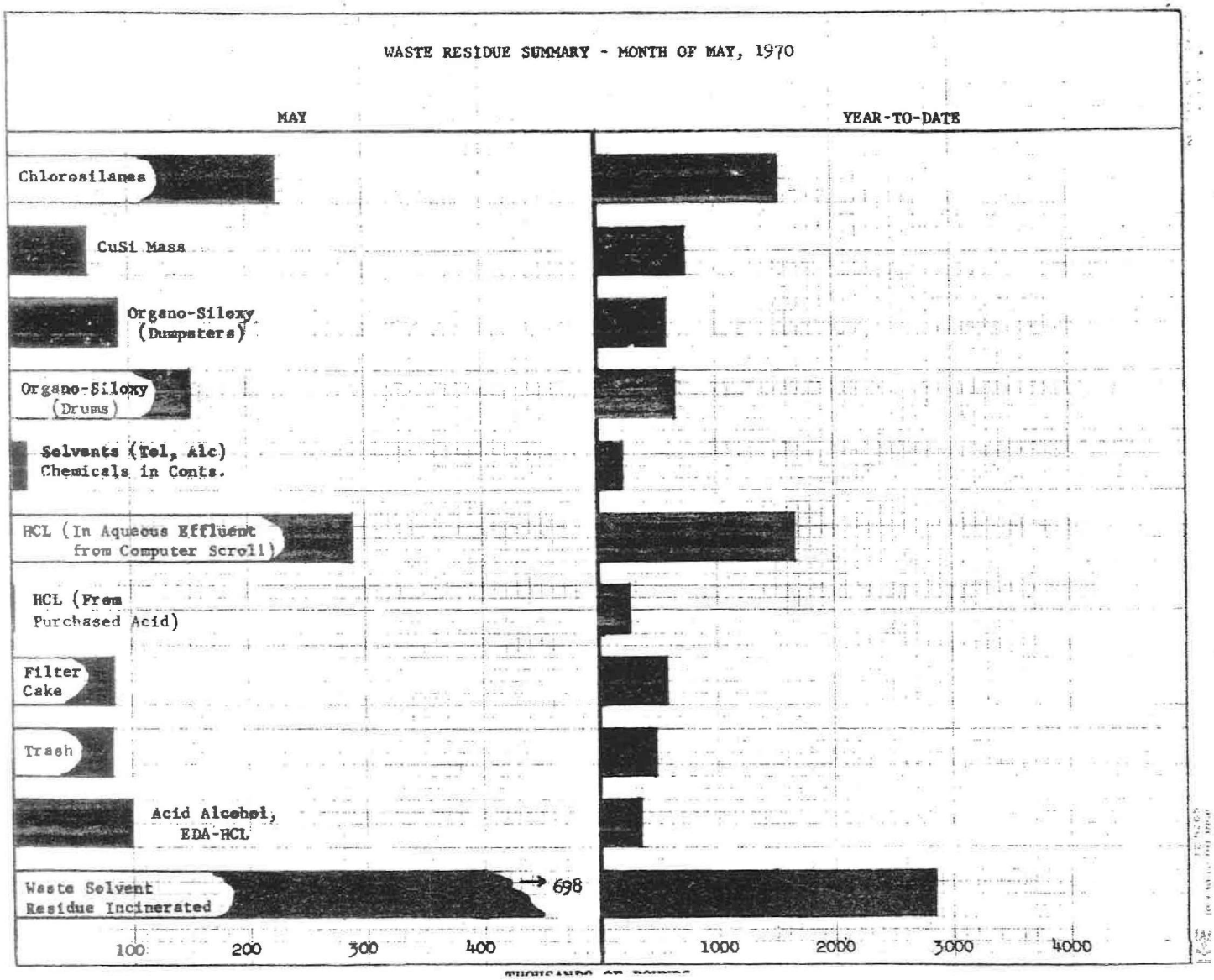
WASTE RESIDUE SUMMARY - MONTH OF MAY, 1970
MAY
YEAR-TO-DATE
Chlorosilanes
CuSi Mass
Organo-Siloxy (Dumpsters)
Organo-Siloxy (Drums)
Solvents (Tol, Alc) Chemicals in Conts.
HCL (In Aqueous Effluent from Computer Scroll)
HCL (From Purchased Acid)
Filter Cake
Trash
Acid Alcohol, EDA-HCL
Waste Solvent Residue Incinerated
698
100
200
300
400
1000
2000
3000
4000

EPA005482

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POLLUTION ABATEMENT

Month of May - D. J. Dowling

Chemical Landfill

Mr. C. K. Wood (UCC Tech Center) and L. Nottingham (Achenheil Consultant) recommended that 250 acres of plant property east of the Silicones Plant proper be plotted on a contour map of 100 feet to inch at 2 feet contour lines to pinpoint landfill site. The OVPE requested this of the Henderson Aerial Survey Company of Columbus, Ohio.

A new depoly trench was dug north of the existing trench area, and initial use will be in June. The spotting area for the Dempster tank was sloped toward the trench and a grating platform was utilized to cover a portion of the trench for safety.

No material from drums was added to landfill in May.

From May 15, OPI ash was successfully buried at the crest of the bank, dug up after several days of cooling and put over the bank. At the end of month, burying OPI ash was resumed at base of bank since contractors strikes prevented use of powerhouse ash for cover and maintaining bank elevation.

Burning Residues in Steam Boilers

A shop order and design of facilities to burn waste solvent and organosiloxy liquids from drums in one of the Combustion Engineering boilers (No. 1) was submitted to OVPE. Initially the plan is to burn these liquids via an existing inspection port above the traveling grate and at the rear of the boiler from a Dempster tank. In the future, consideration will be given to pipeline transfers from various solvent tanks.

If all the solvent and organosiloxy liquid were burned in the boilers, the fuel saving would be above $20,000 per year. Other advantages will arise from this operation.

OPI

The refractory in the walls and doors were repaired using Moldit D dry mix. On May 6, approximately 15 square feet of the wall were repaired which had holes from 1 inch to 4 inches deep. Twist nails were driven in the refractory for anchors and in one area expanded metal was fastened over the nails. The wetted Moldit D was trowelled in place until flush with the wall surface. Maintenance was limited to four hours to permit burning trash on evening shift after a 4 hour air dry.

On May 25, shims totalling about 1/2 inch were added to the ends of a previously heat distorted structural beam in order to straighten the columns supporting the discharging doors. This eliminated the scraping of the doors at the top and now permits the doors to be opened and closed easily.

On May 26, approximately 25 square feet of the refractory in the discharging doors were repaired with Moldit D. Maintenance and drying time were as above except that both trash and solvents were burned on evening shift. To date all repairs are still in place.

On May 28, began charging only one box of filter cake at a time to the OPI to minimize dark smoke. The new fork lift will be utilized to remove more than one box in the charging pan and extra boxes will be charged to the OPI at a later time. This change will not limit movement of filter cake from the production units.

Some gunk was burned via a drum pump through copper tubing to the top of the OPI. Dark smoke was produced. Several additional tests will be made.

The service factor on the Hauck burner E-500 increased to a record 54 percent. The previous high was 30 percent in April.

Hauck Burner E-22

The size of the flame, occasional dark plume, and electric current of 9 amps compared to rating of 14.3 amps indicated E-22 wasn't burning at capacity rates. On May 22 the turbofan damper and the burner were cleaned and adjusted. The problem appeared to be accumulated solids in the air chamber of the burner which limited air flow. Burning quality and rate have improved. Provision was made for a pressure gage connection in the discharge line of the turbofan.

The service factor on E-22 increased to a record 67 percent. This burner was down 6 percent of the time to clean the burner, 6 percent for maintenance and 3 percent due to weather conditions.

Platinum Recovery

On May 25, a hanging pan was installed in the recovery slag pot. This replaces a pan supported on legs in the slag pot which was installed in April at the suggestion of yardman Dennis Cain. The pan permits liquid containing platinum compounds to reach ignition temperature and additional circulation and preheat of natural draft air. Fire above and below the pan has substantially increased the burning rate of these liquids.

The slag pot had a service factor of 20 percent. Burning rate of PT liquids was higher than plant production.

Filter cakes containing platinum continued to build inventory and the inventory increased 25,600 pounds in May. A burning tray is planned to increase the materials handling efficiency of this filter cake.

Utilization of Disposal Units

Unit	Service Factor %	EPC Dept. Manhours	Contract Manhours	Downtime - Hours			
				Ash Removal	Waiting - EPC Manpower	Main	Fumes
E-22	67	115	--	30	45	30	14
E-500	54	71	--	10	--	10	3
OPI	70	237	--	30	--	25	--
Slag Pot	20	36	--	15	45	4	14
Landfill	--	18	--	--	--	--	--

Solid Waste Burning in OPI

Material	Quantity M lbs.	OPI Temp. °F	Air Setting %	Plume Color
Trash	81.8	800	30	Clear to grey
Filter Cake	57.1	600	30	Dark to light grey
Lab Bottles	3.0	--	30	Dark to light grey
Gunk from Drums	.1	--	--	Dark

Waste to Landfill

Material	Quantity M lbs.	EPC Dept. Manhours	Contract Manhours
Nuetralization Sludge	0	--	0
Boiler Ash	0	--	
Incinerator Ash	65.0	30	
Depoly	20.4	18	
Drums	0	0	

Incineration for Platinum Recovery

Material Incinerated	Quantity to EPC	Quantity to Incineration	Quantity of Incinerate	Quantity PT Contained Incinerate
	M lbs.	M lbs.	M lbs.	Ounces
A-174 Second Pass	5.4	8.8	2.0	6.3
Filter Cake	25.6	0	--	--

Liquid Wastes to E-22

Material	Time Hours	Quantity M lbs.	Solvent / Silane	Suspended Solids %	Production Unit	Container	Plume Color
Y-4149	12	3.5	--	--	--	774	White
Waste Toluene	120	84.0	99	Tr.	Inter-mediates	35J	Clear 46% White 54%
GCPT lites	41	22.7	2.1	Tr.	Monomers	199	White
Waste Solvents	66	46.1	Trace Silane	Tr.	Polymers	530	Clear 75% White 25%
Methyl lites	3	3.5	1.9	0	Monomers	719	White
CNE lites	7	7.0	19	0	Monomers	198	White
Toluene Heavies	15	10.5	9	5	Monomers	441	Clear 50% White 50%
A-1620 lites	37	26.9	4.0	0	Polymers I	901, 902	White
A-163 plus Solvent 12	11	7.7	1.4	0	Polymers I	901, 902	White
Acid Alcohol	2	1.5	--	--	Polymers I	901	White

Liquid Wastes to OPI via E-500

Material	Time Hours	Quantity M lbs.	Solvent / Silane	Suspended Solids %	Production Unit	Container	OPI Temp. °F
Waste Toluene	27	19.0	99	Tr.	Inter-mediates	35J	1500
GCPT lites	46	25.5	2.1	Tr.	Monomers	199	800
Waste Solvents	161	112.8	No Silane	Tr.	--	768, 769	1200
A-1620 lites	20	14.0	4.0	0	Polymers I	902	700
EDA-HCl	3	3.0	No Silane	Tr.	Polymers I	587	--
Waste Solvents	1	.7	Trace Silane	Tr.	Misc.	53U	--
Toluene Hvs.	2	1.4	9	5	Monomers	441	--
A-174 lites	1	.7	--	--	Small Scl.	774	--
Phenyl lites	4	2.8	100	0	Monomers	194	--
Y-4789, etc.	3	2.9	--	--	Small Scl.	5 gal.cans	--

Safety Activity Report for May 1970

1. Shop Orders

No.	Title	Status
50-24696	Tag switches E-22 and E-500 card holders T-902, T-199	No activity
50-24700	Platform at cable drum - OPI	Engineering completed
50-25477	Concrete pad at OPI doors	To const. - no activity
50-25481	Drainage from filters at E-22	To const. - no activity
50-25485	Install ball valve to replace globe valve to feed OPI -- Maint. can rod out	Complete
50-25486	Shim overhead beam at OPI doors so doors will open easily	Complete
50-25487	Install fuel cut-off with high pres. in E-500 air chamber	Engineering completed
50-25489	Cover for E-22 filter	SIR-UCR - Complete except for handle
50-25492	Add 2 posts in front of electrical switchgear	To const. - no activity
50-25496	Escapeway from OPI	Held up per CWS and Bill Long
40-25498	Move sign at OPI -- install pipe to replace hose jumper	

2. Other Activity

a) Letter to Maintenance and production unit supervision cautioning against flammable liquids mixed with solids in lip pans.

b) Dug new depoly trench. Utilized platform to cover portion of trench for safety.

D. J. Dowling

DJDowling:ksh

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OPERATIONS IMPROVEMENT AND POLLUTION ABATEMENT

Month of July, 1970 - J. F. Brammer

Operations Improvement

A total of 16 new OIP suggestions were approved this month with an estimated recurring savings of 42.8 M$. This is a decrease in activity from last month. Peak vacation load probably accounts for some of the decrease but we must continue to solicit new ideas to keep competition in operation.

Acceptable OIP's were submitted by 12 salary and 4 hourly people.

Only one OIP was reported as implemented this month for a recurring value of 1.9 M$.

Second quarter review report of all unimplemented OIP's has been sent to area coordinators and department heads. These should be used as a guide for getting projects implemented.

Pollution Abatement

Neutralization load was 320 M lbs. of silanes and related materials for month. Both batch and continuous systems ran well with no major problems. Lime usage remains high and a request to provide pH control of lime input has been submitted to Engineering. They are working on definition of job now.

We're still plagued with no water to run continuous neutralizer much of time. The second pump installation at Silicon Building didn't work out, as a used pump installed as part of job proved to be worn out. A new one is on order. The drilled well at Waste Treatment was again tried and found to be full of sediment from ponds.

One major surge of 20% HCl came through system when Polymers I had a hole come in HCl storage tank. We were able to effectively control situation by adding lime slurry to pond.

A major piping revision to neutralization area piping was accomplished this month which eliminated a safety hazard from tripping and also renewed much corroded piping. This amounted to approximately 150 manhours labor.

Solvents and drummed waste incineration load from plant was lower than average thus giving us opportunity to work on backlog of drummed waste. A total of 109 drums were processed through E-523-V burner system.

Our efforts to process A-1100 and CNE heavies through the E-523-V system failed when we started mixing siloxy drummed material with combined mix of solvents and heavies. A gel-like material was formed which plugged lines, etc. Since we must process the drums in this system, the A-1100 and CNE heavies will be handled in the neutralizing system as before.

Maintenance on system this month consisted of five seal repairs to feed pump for 40 hours total and 12 hours to cleaning of plugged lines.

A major revision was made to system by removing R/P filters on feed to burner and installing a 20 mesh strainer unit. This revision cost approximately $2000 but will result in a $1900/year recurring savings from material alone for operation of R/P filters.

Separation of approximately 2000 drums of backlog waste for processing has begun. Initial action is to sort out all known solids for landfill, all emulsions and SAG for possible reprocess and used vacuum pump oil for road dust control or incineration.

Scrap metal salvage operation continued to proceed toward September 1st goal of moving to new area north of Intermediates. A temporary carrier was hired to haul tin scrap to Cremer with summer help being utilized to load truck. Nine loads were processed this month in this manner. Scrap drum pile north of Monomers was cleaned out this month and hauled to Dexter City Landfill. This unsightly mess had been with us since the 1966 work stoppage.

Safety

W.O. No. 24525 - Provide strainer for E-523 burner was implemented which has been the topic of several SIR and UCR's.

W.O. No. 24523 - Revise piping at neutralizer area was implemented which has also been topic of several SIR and UCR's as a safety hazard.

OIP

OIP activity for the EPC group was one in July.

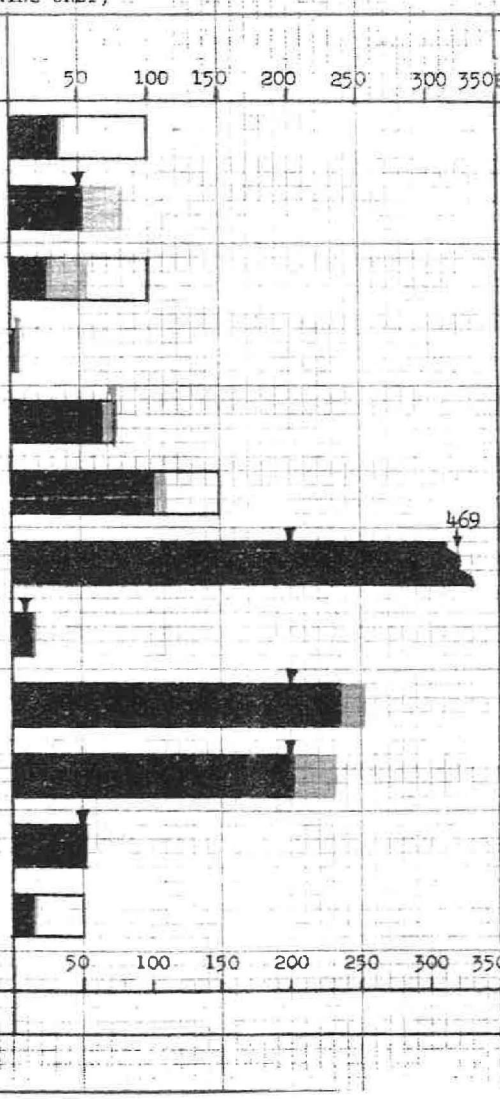
J. F. Brammer

JFBrammer:ksh

Attachments

1970 BUDGET (RECURRING ONLY)

Department	No. Of Emp.	No. OIP's Approved Jan.	Feb.	Mar.	Apr.	May	June	July	YTD	No. Imp. YTD	M$ Budget	YTD Value Ach.
Compounding	28	1	2	5	0	0	2	2	12	11	100	37.1
Dist./Stores	32	3	1	5	3	4	4	1	21	14	50	53.7
Industrial Eng.	6	0	1	3	3	4	5	1	17	5	100	28.4
Industrial Rel.	12	0	0	0	4	0	1	0	5	5	5	4.6
Laboratory	46	1	3	4	6	2	2	0	18	19	75	65.9
Maint./ Utilities	126	7	10	16	11	12	5	4	65	38	150	107.2
Monomers	44	1	1	3	0	0	2	1	8	8	200	469.4
Plant Office Group (Includes Mgmt. and Planning-Scheduling)	27	1	1	3	2	2	1	2	12	8	10	15.7
Polymers I	52	3	6	5	1	2	3	1	21	13	200	235.3
Polymers II	46	5	1	7	4	4	3	4	28	22	200	203.0
Process Devel.	62	0	1	9	1	3	5	0	19	10	50	53.0
Purchasing	5	0	0	1	1	3	3	0	8	6	50	14.4
OVPE	17	0	1	2	1	2	2	0	8	--	--	--
TOTAL	523	22	28	63	37	38	38	16	242	159	1190	1267.7

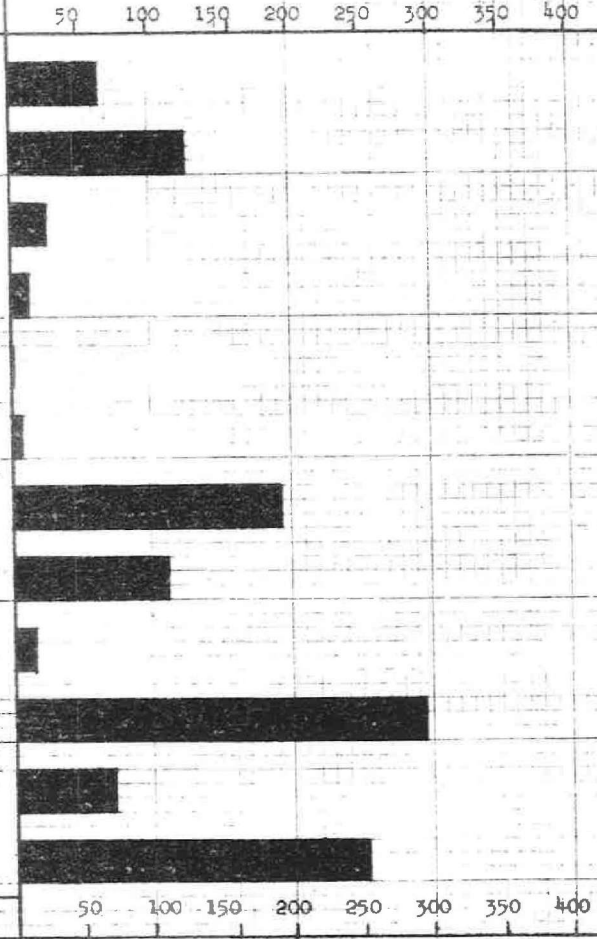


EPA005490

(July 1970) *Does Not Include OIP's Awaiting Approval or Economic Calculations.

UNIMPLEMENTED OIP CHART (RECURRING ONLY)

Department	No. OIP's	Est. Cost To Imp.	M$ Value
Compounding	9	264.2	~~[illegible]~~ 64.5
Distribution/Stores	9	~~[illegible]~~ 15.7	~~109.0~~ ~~[illegible]~~ 76.0
Industrial Engineering	9	~~[illegible]~~ 3.1	~~28.7~~ 22.3
Purchasing	3	---	~~[illegible]~~ 10.4
Industrial Relations	1	---~~[illegible]~~	.2 ~~[illegible]~~
Laboratory	4	1.4	9.6 ~~[illegible]~~
Maintenance/Utilities	39	~~61.5~~ 61.0	~~190.4~~ 181.4
Monomers	11	~~100.2~~ 100.0	~~113.3~~ 111.8
Plant Office Group	4	.5	~~[illegible]~~ 14.4
Polymers I	19	~~[illegible]~~ 60.1	~~[illegible]~~ 328.4
Polymers II	13	~~13.7~~ 13.0	~~72.3~~ 43.9
Process Development	8	~~[illegible]~~ 19.3	~~253.8~~ 255.4
TOTAL	129	~~[illegible]~~ 538.3	~~[illegible]~~ 1118.3



EPA005491

NEUTRALIZATION

Material	Month of July	YTD	Chloride Contained Month of July	Lime Used M Lbs.	Lime/Chloride Ratio July	Lime/Chloride Ratio YTD
Chlorosilanes	194,510	1,712,910	117,900	July - 200	1.50	1.51
A-1100 Hvys	13,640	87,940	---	YTD - 1,808		
CNE Hvys	43,580	227,680	---			
Acid Alcohol	6,660	91,660	1,300			
CNE Lites	---	101,300	---			
Other 20% HCl	72,000	---	14,400			
Totals			133,600			

Service Factor and Rates	Batch Tub		Continuous Unit	
	Ser. Factor	Rate/Hr.	Ser. Factor	Rate/Hr.
Month of July	15%	1500 lbs.	4%	3000 lbs.
YTD	38%	1500 lbs.	5%	2930 lbs.

Manhours to Neutralization - Month of July	YTD
80	1194

SOLVENTS

Material	Month of July	YTD	Unit	Equipment Used Ser. Factor	Equipment Used Rate/Hr.
T-53-U Mix	200,000		E-523	40%	1160 lbs.
Drums and Dumpsters	32,400				
Total	232,400				

Manhours to Solvents Incineration - Month of July	YTD
25	381

DRUMMED WASTE HANDLING

	Rec'd from Plant	Avg./Day	Sampled	Processed	Backlog	Manhours to Operation
Month of July	228	7.4	220	120	108	175
YTD	2,415	11.6	729	421	1,994	610

DRUMMED WASTE PROCESSED (THIS MONTH)

Material	Treatment	Amount, lbs.	Comp. with Solvent	Remarks
A-174 CT Lites	Incinerated	3,900	Good	White Smoke
Y-1587	Incinerated	1,200	Good	No Problem
Vacuum Oil	Incinerated	1,500	Good	Occ. Dark Smoke
Soda Ash Sol.	Neutralized	1,200	No	Drained to Lime Pond
Y-5713	Incinerated	1,200	Good	White Smoke
Toluene Flush	Incinerated	3,000	Good	No Problem
Misc. < 1,000 ea.	Incinerated	21,300	Good	Occ. Gray Smoke
Total		32,400		

METAL SALVAGE OPERATION

In-Plant Drums	MT Drums Sold	MT Drums Given	MT Drums OH	Scrap Metal Rec'd, lbs.
This Month	1,489	35	450	27,660
YTD	10,157	335		222,760

DRUM HANDLING

	MT Rec'd	MT Rinsed	MT Stacked
This Month	75	32	150
YTD	775	484	1,150

SCRAP METAL HANDLING COST

Manhours Req'd	Transport From Plant	Drum Handling		Sorting and Loading		Freight to Buyer $	
		Rinse	Stacking	UCC (Hrs.)	Contractor $	Tin	Hvy. Metal
This Month	50	16	20	76	100	305	---
YTD	420	116	155	292	1,600	505	271

DEXTER CITY LANDFILL

This Month	65,800 lbs.
YTD	

Metal Sold lbs.		
Tin	Hvy.	Copper/Brass
---	---	---
44,680	138,940	3,160

INCOME $

	Drums	Tin	Hvy. Metal	Copper Brass
This Month	2,800	---	---	---
YTD	11,640	180	1,306	1,250

UNION CARBIDE CORPORATION
Chemicals and Plastics
P. O. Box 180
Sistersville, West Virginia

August 10, 1970

CRA
DLB
JBB
FDB
JFB
RJD
GMF
BTF
REG
RLL
RJO
JBR
CER
ARR
JVS
CFS
RLS
CWS
CES
JRS
WJS
DLV

POLLUTION ABATEMENT

Month of July, 1970 - D. J. Dowling

Chemical Landfill

No material from drums was added to landfill in July.

A trench has been prepared north of the depoly trench to receive drums of material that are solid or too thick to pump to an incinerator. Over 100 drums are set aside for this trench.

OPI

The Construction Department completed work order on air header to supply air to bottom of the OPI during third week of July. Manometers to measure air flow are needed yet.

A gunk burning system was installed to burn drums of liquid waste that cannot be handled in solvents tank. This burner uses air for atomization. The waste is pumped to center of E-500 burner through a 1 inch pipe while burning other waste is continued in E-500 burner. The gunk system was started up July 27 and 12 drums of miscellaneous materials were burned during day shifts. Combustion was good with smoke color of Ringelmann 2 or less most of the time.

The refractory in the discharging doors was repaired with plibrico on July 1. Most of these repairs were in place at end of month. Approximately 45 square feet of the refractory on the north wall were repaired on July 30. Moldit D was plastered on after first sand blasting the wall. This appeared to be best repair to date.

Hauck Burner E-22

The dumpster station of E-22 was relocated west of lime tank for more remoteness from E-22 burner. It was started up July 7. The nitrogen pressure can be bled off dumpster from a distance with remote reach rod and valves.

The blades of Spencer air turbine were replaced with new ones. Now able to get full air flow through fan.

Platinum Recovery

Bar grating was placed on blocks between E-22 burner and the slag pot. This can be satisfactorily used to burn PT filter cake in bulk and solid in drums with ends cut out. Loading of the grating can be accomplished with Melroe loader instead of by hand shovelling.

General

1. Started to use Ringelmann smoke indicator cards to determine smoke color from incinerators.

2. All log sheets of the operators were revised and use of new ones was started on July 30.

3. Waste disposal rates were curtailed week of July 27 through 31 due to planned plant shutdown. Advantage was taken of this cut back to increase disposal rate of accumulated drums.

4. The electric power was partially off at the EPC Department for 45 hours starting 2:30 July 29 due to lightning hitting power supply.

Safety Activity for July 1970

1. Platform was installed for access to drum and motor for cable on OPI.

2. Relocated switches for liquid fuel cut-off and indicator for OPI temperature at upper level.

3. Completed new depoly trench and SOP for this dumping. Trench has been used satisfactorily and safely.

4. Relocated E-22 dumpster station to area more remote from burner.

5. SOP was put into effect on handling of Gaylord boxes of filter cake to improve safety of operation.

6. SOP was put into effect on disposal of lab bottles to improve safety of operation.

7. SOP was put into effect on operation of platinum recovery at slag pot.

8. Provided ground wires and use at every drum and dumpster unloading station.

D J Dowling

DJDowling:ksh

Attachments

Liquid Waste to E-500

Material	Time Hrs.	Quantity M lbs.	Prod. Unit	Container	Smoke % Ringelmann						
					C	W	1	2	3	4	5
Waste Solvents	56	39.2	108	768, 769	50		40	10			
Y-4351 lites	4	2.7	108	902							
GCPT lites	22		104	199		X					
EDA-HCl	8		108	587		X					
Waste toluene	25	17.5	104	35J	40	20	40				
Me Lites	4	3.0	104	198							
CNE Lites	2		104	198		X					
Toluene Hvs.	4	4.0	104	441				X			

Waste to Landfill

Material	Quantity M lbs.	EPC Dept. Manhours	Contract Manhours
Neutralization Sludge	200	0	
Boiler Ash	990	0	
OPI Ash	62	22	
Depoly	8.2	12	0
Solid Drums	--	--	4

Liquid Waste to E-22

Material	Time Hrs.	Quantity M lbs.	Production Unit	Container	Plume Color
Metri and toluene	4	1.9	342	194	Clear
Mineral Spirits	5	3.5	108	195	Clear
EDA-HCl	37	48.6	108	587	White
Toluene	3	1.5	104	199	Clear
GCPT Lites	12		104	199	White
CNE Lites	37	20.9	108	901	White
Waste Toluene	46	32.2	104	35J	23% White 77% Clear or R-1
A-186 Hvs.	3	2.5	104	807	White
Waste Solvents	4	4	108	53U	Clear

Incineration for Platinum Recovery

Material	Quantity to EPC M lbs.	Quantity to Slag pot M lbs.	Quantity Incin. Lbs.	Plume Color %						
				C	W	1	2	3	4	5
Y-4351 and A-174 Second Pass	13.1	13.0	1400	25		25	50			
Filter Cake	19.8	2.0								

Utilization of Disposal Units

Unit	Service Factor	EPC Dept. Manhours Total/Driver	Downtime Hours				
			Solids Removal	Main.	Fumes	Mo. Business	Power Failure
E-22	32	64/29		78	13	90	--
E-500	25	47/14	22	34	--	45	45
OPI	74	257/171	22	96	--	45	45
Slag pot	22	60/0	18	--	--		
Landfill	--	12/8	--	--	--		

Solid Waste Burning in OPI

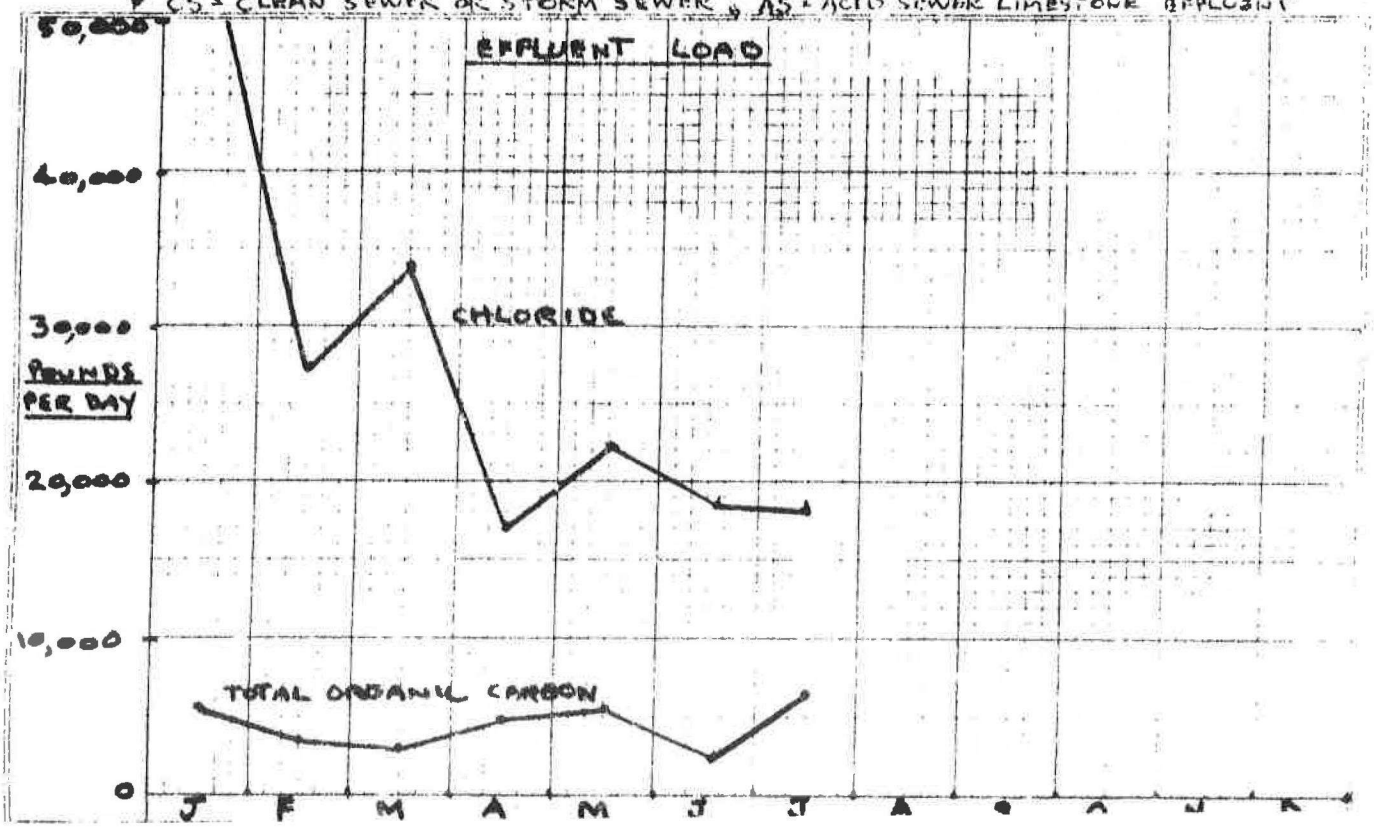
Material	Quantity M lbs.	Plume Color %						
		Clear	White	Ringelmann				
				1	2	3	4	5
Trash	70.2			10	70	10	10	
Filter Cake	68.5				70	30		
Lab Samples	12.8			70	10	10	10	
Gunk drums	5.0			40	40	20		
Gum and Cans	.6							

WASTE TREATMENT COST AND EFFLUENT LOAD SUMMARY

1970

COST SUMMARY

	NEUTRALIZATION			LIQ. INCINERATION			SOLID INCINERATION			SOLID LANDFILL		
	LIME, $/Lb CL	LABOR, $/Lb SILANE	MAINT. $/Lb SILANE	LABOR, $/Lb	MAINT. $/Lb		LABOR, $/Lb	MAINT. $/Lb		LABOR $/Lb		
JAN												
FEB												
MAR												
APR												
MAY	0.0196	0.0037		0.0009			0.0019			0.0042		
JUN	.018	.0027	.0009	.0013	.0005		.005	.005		.020		
JUL	.015	.003	.0120	.0005	.0011		.007	.003		.020		
AUG												
SEP												
OCT												
NOV												
DEC												

	CHLORIDE, PPM		pH		CARBON, PPM		SUS. SOLIDS		MILE POINT 145				FLOW, GPM	
	*CS	*ASL	CS	ASL	CS	ASL	CS	ASL	pH	CL	C	Cu	CS	ASL
1 JAN	100	4733	8.5	1.5	205	429	38	82						1060
2 FEB	106	1518	8.2	4.7	19	218	32	209					4138	945
3 MAR	123	2478	7.1	1.6	30	53	118	10	4.0	580	31	.8	4038	1165
4 APR	NIL	1350	7.3	3.0	20	316	14	75	5.0	215	180	1.2	4053	960
5 MAY	102	1630	7.5	4.0	33	252	36	133	5.9	413	91	.4	4160	1220
6 JUN	113	1430	7.2	2.5	21	194	23	114	3.8	591	36	.3	4100	1200
7 JUL	126	1299	7.4	4.1	19	377	56	142	4.4	478	130	1.1	3746	1222
8 AUG														
9 SEP														
10 OCT														
11 NOV														
12 DEC														

* CS = CLEAN SEWER OR STORM SEWER, AS = ACID SEWER LIMESTONE EFFLUENT