PROCESS SURVEY - ENVIRONMENTAL IMPACT ANALYSIS

PLAINTIFF'S EXHIBIT
UC01248

PROCESS/FACILITY Mine PLANT King City

COMPLETED BY R.O. Marsten - R.D. Hopper DATE 3/73

III-A - INPUT

Raw Mat'l, Utility, etc.	Units	Amount	Function	Remarks
Water, Boiler Feed				
~~Cooling~~ Creek Water	Gal/Hr	2500	Keep Ore Wet	Rainbird Sprinklers
Cycle Makeup				Spray Ore Piles - Screening
				During Daylight in Summer
~~Process~~ Water Truck	Gal/Load	6000	Supress Dust	2 Loads on Road per Day
Steam				2 Loads on Pit Area Prn.
Utilities, Other				
Materials, Raw				
Diesel Fuel	GPD	25		Quantities Used
Gasoline	"	30		By UCC Equipment
Lubricating Oils	"	1		8 Hrs Per Day
Grease	Lbs/D	2		6 Months Per Year
Diesel Fuel	GPD	500	Estimated	Used By Contractor
Lubricating Oil	"	10	" "	To Haul Ore
Grease	Lbs/D	10	" "	16 Hrs/Day 4 Mo/Year
Diesel Fuel	GPD	300	Estimated	Used By Contractor
Lubricating Oil	"	10	" "	Stripping and
Grease	Lbs/D	5	" "	Mining
Gasoline	GPD	5	" "	10 Hrs/Day 1 Month
				Per Year
Materials, Auxiliary				

III-B - USEFUL PRODUCTS

Stream	Component	Wt. - Tons/day	How Shipped
	Ore	1500	While Mining Ave
	Overburden	1500	" " " "
	Ore	600	While Hauling, Tandem Bottom
			Dump From Mine To Plant
			55 Miles

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PLANT KING CITY
COMPLETED BY R.O. MARSTEN DATE 3/73
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XII. - WATER QUALITY

DISCHARGE NO. DISCHARGE IMPONOLD NAME EVAPORATES AND PERCOLATES

PARAMETERS OF INTAKE WATER AND DISCHARGE

PARAMETER	UNTREATED INTAKE WATER	DAILY AVERAGE DISCHARGE CONCENTRATION
	UNITS milligrams/liter = ppm	
ALKALINITY(as $CaCO_3$)	172	716
B.O.D. 5-DAY		
CHEMICAL OXYGEN DEMAND (C.O.D.)	<2	854
TOTAL SOLIDS	355	1764
TOTAL DISSOLVED SOLIDS	355	1750
TOTAL SUSPENDED SOLIDS	<.1	14
TOTAL VOLATILE SOLIDS	80	347
AMMONIA (as N)	<.10	<.10
KIELDAHL NITROGEN	<.10	<.10
NITRATE (as N)	<.02	<.02
PHOSPHORUS TOTAL (as P)	0.5	0.3
ACIDITY (as $CaCO_3$)	-	-
TOTAL ORGANIC CARBON (T.O.C.)		
TOTAL HARDNESS		
NITRITE (as N)	<.01	0.01
ORGANIC NITROGEN	<.10	<.10
PHOSPHORUS-ORTHO (as P)	0.3	0.2
SULFATE	20	20
SULFIDE	<.1	<.1
SULFITE	<1	<1
BROMIDE	<.1	<.1
CHLORIDE	34	182
CYANIDE	<.05	<.05
FLUORIDE	<1	<1
CALCIUM - TOTAL	86	44
MAGNESIUM - TOTAL	19	74

PARAMETER	UNTREATED INTAKE WATER	DAILY AVERAGE DISCHARGE CONCENTRATION
	UNITS milligrams/liter = ppm	
POTASSIUM - TOTAL		
SODIUM - TOTAL		
OIL AND GREASE		
KEROSENE	<.01	0.02
SURFACTANTS		
ALGICIDES		
CHLORINATED HYDRO-CARBONS (EXCEPT PESTICIDES)		
PESTICIDES		

RADIOACTIVE PARAMETERS	UNITS picocurie/liter	
DISSOLVED ALPHA - TOTAL	9	1
ALPHA COUNTING ERROR	.27	.24
DISSOLVED BETA - TOTAL	128	99
BETA COUNTING ERROR	1.60	1.53
DISSOLVED RA 226		
RA 226 COUNTING ERROR		
DISSOLVED Th 230		
Th 230 COUNTING ERROR		

COMMENTS:
MONTHLY AGGREGATE SAMPLES
MARCH 1971

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ENVIRONMENTAL PROTECTION SURVEY - ENVIRONMENTAL IMPACT ANALYSIS

PLANT KING CITY
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DATE 3/73
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XII. - WATER QUALITY

DISCHARGE NO. —
NAME —

PARAMETERS OF INTAKE WATER AND DISCHARGE

PARAMETER	UNTREATED INTAKE WATER	DAILY AVERAGE DISCHARGE CONCENTRATION
	UNITS micrograms/liter = ppb	
ALUMINUM - TOTAL	8500	< 1000
ANTIMONY - TOTAL	< 50	< 50
ARSENIC - TOTAL	20	10
BARIUM - TOTAL	4110	1180
BERYLLIUM - TOTAL	< 100	2270
BORON - TOTAL	120	120
CADMIUM - TOTAL	< 10	< 10
CHROMIUM - TOTAL	< 10	< 10
COBALT - TOTAL	< 100	< 100
COPPER - TOTAL	130	< 10
IRON - TOTAL	< 100	< 100
LEAD - TOTAL	< 10	< 10
MANGANESE - TOTAL	< 10	< 10
MERCURY - TOTAL	< .1	< .1
MOLYBDENUM-TOTAL	< 100	< 100
NICKEL - TOTAL	< 100	1300
SELENIUM - TOTAL	< 10	< 10
SILVER - TOTAL	< 10	< 10
THALLIUM - TOTAL		
TIN - TOTAL	< 1000	1400
TITANIUM - TOTAL		
TUNGSTEN - TOTAL		
URANIUM - TOTAL		
VANADIUM - TOTAL	< 2	< 2
ZINC - TOTAL	< 10	< 10
PHENOLS	< 1	< 1

PARAMETER	UNTREATED INTAKE WATER	DAILY AVERAGE DISCHARGE CONCENTRATION
	UNITS as specified	
COLOR (Pt-Co units)	0	0
SPECIFIC CONDUCTANCE (mhos at 25° C.)	540	1760
TURBIDITY (Jackson units)		
FECAL STREPTOCOCCI BACTERIA number/100 mi		
COLIFORM BACTERIA FECAL number/100 mi		
COLIFORM BACTERIA TOTAL number/100 mi		
FLOW GPD ( ) MGPD ( ) GPM ( )		
pH	8.15	8.10
Temperature (Winter) (°F)		
Temperature (Summer) (°F)		

ppb - means Parts Per Billion
ppm - means Parts Per Million
GPD- means Gallons Per Day
MGPD-means Million Gallons Per Day
GPM- means Gallons Per Minute

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PROCESS SURVEY - ENVIRONMENTAL IMPACT ANALYSIS

PROCESS/~~MACHINE~~ ASBESTOS PLANT KING CITY

COMPLETED BY R.O. MARSTEN DATE 3/73

VII. - STORAGE TANKS

Tank No.	Size (Gal)	* Type	Contents	Sp Gr	MW	Odor	Mat'l of Const.	Dia. (ft)	Ht. (ft)	Press (psig)
	8000	A	GLACIAL ACETIC ACID			YES	ALUMIUM	9'-3"	16'-0	A
	22000	A	SODIUM SILICATE			-	STEEL	16'	16'	A
	500	A	GASOLINE							
	1000	A	DIESEL FUEL							
	10,000	PV	LP GAS							

* Type A - Atmospheric, PV - Pressure Vented, PNV - Pressure Non Vented, FR - Floating Roof, B - Bin, S - Silo

Pollution Abatement Devices

ACETIC ACID AND SODIUM SILICATE TANKS DYKED WITH DRAIN TO POND

Handling and Cleaning (Emissions)

SLIGHT ACETIC ACID ODOR AT MIXING TANK

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PROCESS SURVEY -- ENVIRONMENTAL IMPACT ANALYSIS

PROCESS ASBESTOS PLANT KING CITY
COMPLETED BY R. O. MARSTEN DATE 7/73

IX - NOISE EMISSIONS

A. Abnormal Noise Emissions (above 85 Decibels, dBA)

Source	Location (In/Out Doors)	Sound Pressure (dBA)	At Distance (ft)	Exposure (Hrs/Shift)
	SEE ATTACHED SHEET			

B. Sound Pressure and Range in Usual Work Areas (Provide data if available)

Location	Sound Pressure (dBA)	Range (dBA)	Remarks
RG244 BAGGER	88	88-90	EAR PLUGS WORN
REFINER CONTROL STATION	88	87-92	" " "
GEN. MILL AREA		91-96	" " "

C. Noise Emissions to Public

Source	Location Measured	Sound Pressure (dBA)	Distance from Plant Boundary	Hrs/day
NONE				

D. Abnormal Noise Abatement Plans or Protective Measures

EAR PLUGS REQUIRED IN MILL - NOISE ELIMINATION ENGINEERING TO BE DONE BY PLANT ENGINEER AS TIME AVALIABLE

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PROCESS SURVEY - ENVIRONMENTAL IMPACT ANALYSIS

PLANT KING CITY COMPLETED BY R.O. MARSTEN DATE 3/73

FACILITY ASBESTOS

IV-A. ENERGY SYSTEMS INFORMATION

A. Boiler and Fuel Data

Boiler No.	Input (MM Btu/hr)	Fuel * Type	Feed Rate (~~lbs/hr~~) (scfh)	Heat Cont. (Btu/~~lb~~ cu ft)	Composition (%) Ash	Sulfur	Others	Stack N
1*	2.8	NAT GAS	2800	1000	-		-	1

* USED FOR PROCESS STEAM ONLY DURING PART OF HI PURITY RUNS. OPERATES 20% TIME

B. Stack and Abatement Data

Stream No.	Stack ** No.	Ht. (ft)	Dia. (ft)	Exit Gas Flow (ft^3/min)	Vel. (ft/sec)	Temp (°F)	Moisture (%)	Pollution Abatement Equip. Type	Eff. (%)	Install. (year)	Particles Conc. (gr/ft^3)	Size (micr

NOTES * Provide source of fuel here ** Provide stack outlet height above grade; diameter at outlet

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PROCESS SURVEY - ENVIRONMENTAL IMPACT ANALYSIS

PROCESS ~~SAFETY~~ ASBESTOS PLANT KING CITY

COMPLETED BY R.O. MARSTEN DATE 3/73

VIII. - LOADING AND PACKAGING

Material	Package Description	Shipped To	
		UCC Plant	Customer
RG 244	10# BAG 3 PLY + 5MIL POLYETHLENE BAG COVER		X
REG PELLETS	50# OR 100# 3 PLY BAG		X
REGULAR AND HI PURITY OPEN	30# OR 40# 3 PLY BAGS SOME 5MIL POLY. OVERWRAP		X
T MIXTURE			
OPEN	40# 3 PLY BAGS		X
PELLETS	50# 3 PLY BAGS		X

ALL BAGS ARE PRESSURE PACKED AND HAVE VENT HOLES. PRODUCT LEAKS THROUGH VENT HOLES AND FILLING SPOUT. NEW PACKER BEING DESIGNED TO ELIMINATE PROBLEM IN SO FAR AS POSSIBLE

A10510

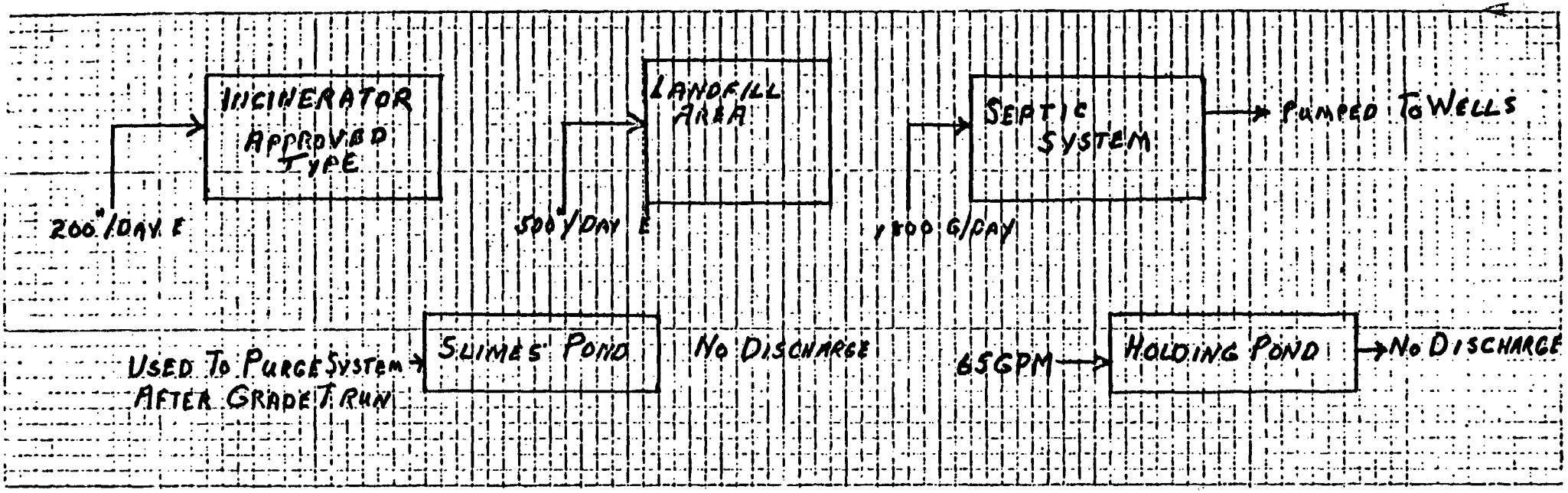
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ENVIRONMENTAL PROTECTION FACILITIES - ENVIRONMENTAL IMPACT ANALYSIS

Plant KING CITY Completed By R. O. MARSTEN Date 3/73

XIII. - WASTE TREATMENT FACILITIES

A. Simplified Block Diagram



B. Brief Description (Refer to above block diagram)

C. Description of Composite Intake and Discharge Streams

Parameter	Intake		Discharge No. W-	
	Normal	Maximum	Normal	Maximum
Flow (Mlb/day)				
pH				
Temperature (°F) Winter				
Temperature (°F) Summer				
BOD_5 (Mlb/day)				
COD (Mlb/day)				
Total Solids (Mlb/day)				

Union Carbide trial exhibit UC-1248: R. O. Marsten and R. D. Hopper, Process Survey and Environmental Impact A...
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