SDMS US EPA REGION V -1

SOME IMAGES WITHIN THIS DOCUMENT MAY BE ILLEGIBLE DUE TO BAD SOURCE DOCUMENTS.

Monsanto

F. J. Helmer - W. G. Krummrich Plant

October 14, 1977

DEFINITION OF WGK WASTE STREAMS

Memo, same subject, Pierle to Heisler and Smull dated 8/30/77

TO TSD SUPERINTENDENTS

F. J. Basile
R. L. Harness
P. E. Heisler
H. J. Horner
J. W. Molloy
W. L. Smull
Manufacturing Supts.
Manufacturing Gen. Supts.
M. A. Pierle - ElSA

The Corporate Administrative Committee has promulgated worldwide environmental protection guidelines for Monsanto. The first guideline calls for the establishment of discharge standards for each process. Such standards are to be established by January 1, 1980, with compliance by January 1, 1983. Before discharge standards can be set, it is necessary to determine present levels of discharges.

W. L. Smull has asked me to work with our Environmental Control and Industrial Hygiene Group to develope a program for the orderly definition of waste streams from the WGK plant processes. In cooperation with Frank Basile and Bob Harness, a program has been developed and is presented here for your consideration and comment.

Goals of the Program:

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2. Determine the composition and quantity of all discharges to the sewer from each process.

   These discharges will be either liquid, slurry, or in some cases, solids.

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TIMING

These goals are to be accomplished by July 31st, 1979.

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The Department Representatives will be the "Project Sponsors" for the waste stream determination activity in their areas.

RESPONSIBILITY

The TSD Superintendents have primary responsibility for the completion of of program in their zones.

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Bob Harness will provide sampling service for sewer streams where "normal" department sampling procedures will not suffice. Solids sampling will usually be done by the department. Hap Horner will provide the necessary analytical backup. It may be necessary to supplement the existing sampling and analytical functions in order to meet the deadline.

AIR EMISSIONS - PLAN OF ATTACK

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AIR EMISSIONS - PLAN OF ATTACK (Con't)

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MATTER HAS BEEN
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AIR EMISSIONS - PLAN OF ATTACK (Cont'd)

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SEWER DISCHARGES - PLAN OF ATTACK

The procedure here is almost identical to the air emissions program except that Bob Harness is the Environmental Control and Industrial Hygiene contact. The department representative is again the key man. The important steps in the plan are:

1. **Select Department Representative**

   In most cases, one Department Representative will handle the determination work on all the waste streams - air, sewer, and solid.

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SEWER DISCHARGES - PLAN OF ATTACK (Cont'd)

2. Name and List all Sewer Discharge Streams

Again, all streams are listed. They will be named by department and vessel, as in the following examples:

221 #2 Settler Overflow
221 Chiller Steam Pig Condensate Discharge

The complete phase is thus the name as well as the description of the sewer discharge source.

3. Divide the List into "Must Sample" and "Can Calculate"

Essentially the same as in the air emission section.

4. Check for Existing Data

Department representative checks list of sewer discharges with Environmental Control and Industrial Hygiene (Bob Harness or delagate) and also within the department and TSD files. The department representative must pass judgement on the useability of existing data.

5. Assignment of Sampling Priority and Responsibility

Essentially the same as in air emissions section.

6. Execution of Sampling, Analysis, and Completion of the Forms

Essentially the same as in the air emissions section, except that Bob Harness is the Environmental Control and Industrial Hygiene contact. The department representative is responsible for listing all data and keeping the forms.

7. Reporting on Progress

Essentially the same as in the air emissions section, but addressee is the TSD Superintendent with copies to the Manufacturing Superintendent, Department Supervisor, Bob Harness, and Warren Smull.

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SOLIDS WASTES - PLAN OF ATTACK

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If you have comments or suggestions, please communicate them to me by October 25th, 1977.

F. J. Helmer

ed
att.

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Air Emissions - Vent List

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Solid Wastes

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Discharges to Sewer

Ref. No.	Discharge Stream Name Dept, Vessel, Function	Discharge Mode: Contin.	Discharge Mode: Periodic	Discharge Mode: S.U. or Malfunc. only	Composition of Discharge	Quantity Discharged: Avg. #/day	Quantity Discharged: Range hi #/hr	Quantity Discharged: Range Low #/hr	Average Discharge per lb. Product	Comments

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ONA/PNA WASTE STREAM COMPOSITE

Nerve & tissue Breakdown to all new streams.

STREAM	H_2O #/DAY	ONA #/DAY	PNA #/DAY	NCB #/DAY	PNP #/DAY	OTHER ORGANICS #/DAY	NH_3 #/DAY	NH_4Cl #/DAY	NaCl #/DAY	NaOH #/DAY
ONA M/L ok	47304	585	9	9	-	-	585	10008	-	-
ONA DEHYDRATOR ok	29993	135	-	22.5	-	-	-	-	-	-
ONA COLUMN ok	30015	72	-	13.5	-	49.5(1b)	-	-	-	-
[redacted] Column Stripper	[redacted] 148509	112	[redacted] 500	4	78	-	24	-	14616	500
P[redacted]R VENT	[redacted]	-	-	[redacted]	gone	-	-	-	-	-
~~ONE BOTTOM TANK~~ [redacted]	[redacted] 153864	-	[redacted] 760	-	-	-	[redacted] 90	[redacted] 36	-	-
PNCB SLUDGE WATER	6360	-	2	38	-	-	-	-	-	-
WASH-UP WATER	132000	-	~~223~~ 852 (misc. losses)	-	-	-	-	-	-	-
RAIN	18000	-	-	-	-	-	-	-	-	-
TOTALS 365044	[redacted]	904	[redacted] 1323	[redacted]	78	49.5	[redacted]	10044	14616	500
	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

153140

611335

AVERAGE ORGANICS = [redacted] ~~ORGANICS/DAY~~ 24 [redacted]

gpm (AVG.) = [redacted] gpm (S.G.1.02) → large amount of [redacted] ~~GALLONS/DAY~~

(57-65 gpm by 1977 Sewer Flow)

this is solids - not dissolved. Solubility at 45°C ≤ 0.1%

[redacted]

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ONA/PNA WASTE STREAM COMPOSITE

STREAM	H_2O #/DAY	ONA #/DAY	PNA #/DAY	NCB #/DAY	PNP #/DAY	OTHER ORGANICS #/DAY	NH_3 #/DAY	NH_4Cl #/DAY	NaCl #/DAY	NaOH #/DAY
ONA M/L	47304	585	9	9	-	-	585	10008	-	-
ONA DEHYDRATOR	29993	135	-	22.5	-	-	-	-	-	-
ONA COLUMN	30015	72	-	13.5	-	49.5(1b)	-	-	-	-
PNA M/L	96592	112	78	4	78	-	-	-	14616	520
PNA CRYSTALLIZER VENT	12760	-	-	40	-	-	-	-	-	-
ONE BOTTOM TANK	155724	-	160	-	-	-	80	36	-	-
NCB SLUDGE WATER	6360	-	2	38	-	-	-	-	-	-
ASH-UP WATER	132000	-	213 (misc. losses)	-	-	-	-	-	-	-
AIN	18000	-	-	-	-	-	-	-	-	-
OTALS	528,748	904	462	127	78	49.5	665	10044	14616	520
%	95.06	.163	.083	.023	.014	.009	.12	1.8	2.63	.0934

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AVERAGE ORGANICS = 0.292% 1621# ORGANICS/DAY

gpm (AVG.) = 45.5 gpm (S.G.1.02) 65,463 GALLONS/DAY

ONP WASTE STREAM

STREAM	H_2O #/DAY	ONP #/DAY	PNP #/DAY	Na_2SO_4 #/DAY	NaCl #/DAY	H_2SO_4 #/DAY
DECANT M/L	~~482067.5~~	688.5	~~68.85~~	90467	~~49519.4~~	~~1091.5~~
WASH-UP	48000	-	-	-	-	-
RAIN	6000	-	-	-	-	-
TOTALS	536067.5	688.5	68.85	90467	49519.4	1091.5
%	79.08	.102	.0102	13.345	7.305	.161

multiply by .666 - 2 reactor sys.

469934.6
677907.5

Average Organic Concentration = 0.11% 505 ~~767.4~~# Organics/Day

gpm (AVG.) (S.G. = 1.1) = ~~51.5gpm~~ 35.6gpm ~~73983~~ 51286 Gallons/Day

7/19/77
MPD

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No lime waste streams

Stripping column bottoms
Sdm J37

75# PNA
6# NH_3
37127 # H_2O
125 # NaOH
3654 # NaCl
40987 # Total

Check Brine table

SG = ~~1.05~~
1.06 per Brine table (close enough)
8.825#/gal

Core Bottom Tank
Sdm.

40# PNA/PNP
9# NH_4Cl
20 # NH_3
38216 # H_2O

38285 #

est ~~235~~ 60 Additional NH_3 loss (MISC.)
~~813~~ 60 MISC PNA loss (unidentified)

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