

100-16810

~~Dr. Paul~~

Dept. of Medicine & Environmental Health G2WB (4-8835)

April 18, 1983

Chocolate Bayou Monitoring Assessment

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SDP plant visit of 4/11-14/83

TO J. C. Gaul - 1200
J. S. Hagood - 1200

PLAINTIFF'S EXHIBIT

MON-2328

Attached is the routine monitoring program which was developed by Jackie Gaul and Steve Paul during the week of April 11, 1983. This program represents the minimum requirements to maintain a quality, sustaining plant routine monitoring effort. The program does not include special monitoring (e.g., start-up, turn-around, special request, etc.). Monitoring requirements need to be reviewed annually and adjusted where appropriate to be commensurate with monitoring results and good IH monitoring strategy.

Routine monitoring is a basic element of a plant industrial hygiene program. It encompasses the means of recognizing health concerns. Our ability to evaluate or control occupational health exposures requires quality monitoring data. To effectively target resources to such downstream programs as hearing conservation, respiratory protection, training, personal protective equipment, etc. also requires accurate assessment of worker exposure to workplace stresses.

The monitoring assessment also affords an opportunity to review equipment and manpower resources generally to determine if a quality routine monitoring program can be executed. There are no significant problems in this respect at Chocolate Bayou.

The routine monitoring program developed has the ability to evaluate health hazards, control methods, periodic monitoring results, and compliance with regulatory requirements. It will provide you with quality data from which you may make IH and business decisions. The program should define maximum worker exposure taking into account such variables as seasonal exposure, shift exposure (i.e., day vs. evening vs. graveyard), and job exposure ranges.

Monitoring requirements reflect the nature of the substance/agent of concern, its use in the Chocolate Bayou Plant, and associated regulatory requirements. For example, a substance with a TWA type standard will require TWA type monitoring to document exposures, whereas substances with TWA/STEL or ceiling standards require a different monitoring strategy to ensure adequate exposure documentation. Noise monitoring is specifically designed to effectively quantify exposures of all noise exposed job classifications. This provides you with a means of defining the worker population affected by the Monsanto and OSHA hearing conservation programs.

MAP 005285

LAM001112

Monitoring will require lab and field validation to ensure data quality. Multicomponent analyses will require multicomponent validation either by single injection of multicomponent standards or multiple injections of single component standards.

All routine monitoring forms should be retained at the plant and all monitoring data should be entered into the OE Subsystem of MEHI to assist in data evaluation and recordkeeping.

The table below summarizes the plant monitoring programs for 1981 and 1982 and compares them with the developed routine monitoring program for 1983.

Criteria	1981	1982	1983
Total analytical results	8125	2980	1285
Total samples	2256	1162	1187
Substances/agents monitored	21	20	70
Substances/agents assessed	0	0	15

Note the following results of the monitoring assessment conducted.

- An increase in the number of substances/agents of health concern monitored
- An increase in assessing agents of concern without monitoring
- A decrease in the overall number of analytical results needed
- Total annual samples required remains approximately the same
- A decrease in the overall cost of the routine monitoring program

Since exposures at Chocolate Bayou are very low in the vast majority of cases, the strategy is to look at a wider variety of agents to ensure worker health protection, but use less samples so long as results remain low. Routine monitoring includes agents assessed several years ago by the plant, but not monitored in the past 3 years. Overall program cost can be further reduced by developing multicomponent analyses for some of the materials which are being introduced in 1983.

MAP 005286

LAM001113

Also attached is a detailed breakdown of routine monitoring by unit and a list of substances/agents which should be monitored. If there are questions, please contact me.

A handwritten signature in cursive script, appearing to read "Steve", written in black ink.

S. D. Paul

SDP:sml

Enclosure

MAP 005287

LAM001114

Department	No. Substances/Agents			No. Analytical Results		
	1981	1982	1983(*)	1981	1982	1983
Ethylene	9	--	--	191 (59)	--	--
Hydrocarbons	10	5	--	719 (203)	5 (1)	--
AN-2 and AN-3	6	5	15 (1)	295 (131)	353 (193)	250 (325)
IDA	4	3	12 (1)	32 (32)	37 (37)	89 (89)
MHBA	--	--	14 (1)	--	--	132 (132)
Sorbic Acid	2	5	13 (3)	26 (26)	37 (35)	132 (114)
SAB	7	6	5 (1)	407 (95)	134 (34)	30 (30)
NTA	5	4	9 (2)	31 (31)	28 (28)	61 (61)
Phenol	7	6	20 (1)	791 (171)	372 (84)	99 (90)
Resins/Formalin/DPO	3	3	13 (0)	16 (16)	15 (15)	47 (47)
Olefins	6	--	--	883 (183)	--	--
Environmental Control	11	8	9 (0)	734 (203)	291 (93)	57 (49)
Utilities	2	1	5 (2)	25 (25)	13 (13)	34 (34)
Maintenance (Mechanical)	9	3	10 (2)	429 (294)	23 (19)	77 (68)
Maintenance (I&E)	9	8	2 (0)	2771 (692)	1198 (424)	21 (21)
Distribution	13	10	31 (7)	356 (144)	252 (120)	179 (149)
Process Technology	5	--	1 (0)	30 (6)	--	7 (7)
Control Laboratory	8	7	19 (0)	387 (102)	222 (66)	79 (61)

*Additional agents which will be assessed without monitoring.

Substances/Agents Monitored		Substances/Agents Assessed
Noise, continuous	Acetic anhydride	Cyanohydrins
Acetone	Ketene	Crotononitrile
HCN	Benzene	Methacrylic acid
AN	HF	Methacrylonitrile
Asbestos	NTA	Propionitrile
Acetonitrile	Cumene	Succinonitrile
Acrolein	Therminol VP	Heat stress
NH ₃	Tetrasodiumpyrophosphate	Triethanolamine
Nitto catalyst	Sodium carbonate	Triethylphosphate
Hydroquinone	Acetophenone	Hexamethylenetetramine
Methy ether of HQ	Phenol	Distillate stripper bottoms
Propylene	Propane	KOH
LEV testing	α-Methyl styrene	C ₄ Aromatics
ACY	Mesityl oxide	C ₉ Aromatics
Radiation	Styrene	H ₂ S
IDA	Toluene	
BCME	Melamine	
HCl	Methylamine	
NaOH	Silver	
CH ₂ O	Triethylamine	
SO ₂	Furfural	
H ₂ SO ₄	Chlorine	
Methyl mercaptan	Welding fumes	
Acetic acid	Ozone	
MIBK	NO	
Pyridine	Di ^x cyclopentadiene	
Alimet®	Ethyl benzene	
Dimethyl disulfide	Xylene	
Sorbic acid	Drip oil	
Methanol	Snifo	
Isopropyl alcohol	Snifon	
Crotonaldehyde	Butadiene	
Carbon black	Methyl acetylene	
Celite (FCS)	Napthalene	
Potassium sorbate	Phenolic tars	

MAP 005289

LAM001116

Department AL-2 and AL-3 850-30Issued By S.D. Paul / J.C. GaultDate 1/10/83

Projected Assessment Strategy					Assessments Without Monitoring				
Chemical/Physical Agents	Job Classification/Shift Number Exposed	Summary of Previous Results	Exposure Limit	Annual Frequency*	Number of Persons to Sample	TWA's	Task's	Ceiling's	Area
Noise, Continuous	7-Processors 36-Hr 1-Shift Foreman 1-Group Foreman 7 MHC - M; F, H, S, Spec.	951 = 11P - 70.5-81.6A 1983 = 20P - 54-82.5-8A	90dBA - OSHA 85dBA - ACGIH	1X/Yr Random Peak Production Gen'l unit	12-149 Fore 1-149 Spec. 1-Prod. Spec. 2 MHC	19			
Noise Survey	Same as above 10-Red MHC	not in NEHI	same as above	1X/Yr Random Peak Production Gen'l unit	None				
None	Same as above	1981 = 4A = 0.8-0.22P 4F = 0.01-0.22P 4C = 0.23-0.51P 88P = 0.01-3.10P 1982 = 16A = 0.01-0.22P 144P = 0.01-0.45P	1000ppm OSHA 750ppm ACGIH	1X/Yr Random Peak Production Gen'l unit	None				Yes
Hydrogen Cyanide	12-Processors	1981 = 12A = 0.26-1.00ppm 1982 = 7A = 1.0-33.14ppm	10ppm OSHA 10ppm C ACGIH	2X/Yr Random Peak Production Gen'l unit	4 Proc. 1-149 Fore 1-Prod. Spec. 1-149 Spec.	2			
Hydrogen Sulfide	Same as above noise	1981 = 4A = 0.36-4.11ppm 4F = 0.01-0.22P 4C = 0.23-0.51P 88P = 0.01-3.10P 1982 = 16A = 0.03-0.45ppm 144P = 0.01-0.45ppm	2 ppm - OSHA 10 ppm Ceiling 2 ppm - ACGIH 10 ppm - STEL 2 ppm - DMCH 10 ppm - STEL	2X/Yr Random Peak Production Gen'l unit	4 Proc. 1-149 Fore 1-Prod. Spec. 1-149 Spec.	2			
Asbestos	Same as above	1981 = 8A = 0.0-1.4 f/cc	2 f/cc 5µ - OSHA & ACGIH	1X/Yr Random Peak Production Gen'l unit	1 Proc. 1-149 Fore 1-Prod. Spec. 1-149 Spec.	1			

*Specify period of sampling. For example, state "twice, winter and summer", or "once, during peak production", or "quarterly, random". This approach is to ensure that sampling is done during highest potential exposure periods.

* Many to cover entire unit
+ Multicomponent analysis

ANZ
HCN } ACAM

MAP 005290

Min. 1 VS per ~~shift~~ sampled shift

* ACAM 8-Hr TWA's

Department 2 and AN-3 850.30Issued By S.D. Paul / J.C. GailDate 12/19/93

Projected Assessment Strategy											
Chemical/ Physical Agents	Job Classification/Shift Number Exposed	Summary of Previous Results	Exposure Limit	Annual Frequency*	Number of Persons to Sample	TWA's	STEL's	TASK's	CEILING's	No. PV	Assessments Without Monitoring
Acetonitrile	8-Processors 2-Mech. Mtee	1981-AA=0.01-0.01 ppm SF=0.02-0.47 ppm SBP=0.01-0.13 ppm	OSHA: TLHA: 40 ppm Ceil: NONE ACGIH: TLHA: 40 ppm STEL: 60 ppm	1x/yr - Hot Peak Production Grain Unit	None None	1	1	1	1	1	Yes
Acrolein	8-Processors 4-Mech. Mtee	None	OSHA: TLHA: 0.1 ppm ACGIH: TLHA: 0.1 ppm STEL: 0.3 ppm	1x/yr - Hot Peak Production Purification Area	5 Proc. 1 Mtee	6	6	6	6	6	
Ammonia	8-Processors 4-Mech. Mtee	None	OSHA: TLHA: 50 ppm ACGIH: TLHA: 25 ppm STEL: 50 ppm	1x/yr - Hot Peak Production Reactor Area	4 Proc. 4 Mtee	6	6	6	6	6	
Alko Catalyst	8-Processors None routinely	None	NIOSH: TLHA: 0.5 mg/m ³ STEL: 1.5 mg/m ³	1x/yr - Random Charging Ops to Storage Tanks	None None	1	1	1	1	1	Yes
Hydroquinone	8-Processors 2-Mtee	None	ACGIH: TLHA: 2 mg/m ³ STEL: 4 mg/m ³ OSHA: TLHA: 2 mg/m ³	1x/yr - Random Peak Production Purification Area	6 Proc 1 Mtee	5	5	5	5	5	
NIOSH method of hydro- quinone	8-Processors 2-Mtee	None	None	1x/yr - Random Peak Production Purification Area	6 Proc. 1 Mtee	5	5	5	5	5	

*Specify period of sampling. For example, state "twice, winter and summer", or "once, during peak production", or "quarterly, random". This approach is to ensure that sampling is done during highest potential exposure periods.

LAM001118

MAP 005291

Department 2 and AD-3 850.30

Issued By S.D. Paul / J.C. Green Date April 21, 1993

Projected Assessment Strategy									
Chemical/ Physical Agents	Job Classification/Shift Number Exposed	Summary of Previous Results	Exposure Limit	Annual Frequency*	Number of Persons to Sample	TWA's TASK's CEILING's AREA	No. PV	Assessments Without Monitoring	
Propylene	Same as above 8-Procc 4-M-Mtce	None	OSHA: None ACGIH: TLV=1000ppm Surf No Application	1x/4yr Random Peak Production Rector Area 2	7-Procc. 1-Mtce	8	3		
LEV Testing	Same as above	Not in MCHT	N/A	1x/4yr Random In Operation Sample, Sealing Is Lab Hood	N/A				
Cyanide Carbon monoxide Hydrogen sulfide Hydrocyanic acid Hydrogen cyanide Propylene Acetylene Acetic acid Acetone	Same as above	Not in MCHT	None	1x/4yr Random As appropriate Baylor Area	N/A				④
Acid	Same as above	None	OSHA: C=10ppm	1x/4yr Random Peak Production No other	2-Procc. 1-Mtce	4 2 1 7	1		
Radiation	Same as above	None	10mSv/yr ACGIH	1x/4yr Random While equipment is operating	N/A				
Formaldehyde Acetic acid H ₂ SO ₄	4-Procc 1-Mtce				None				Yes
Acetic acid	4-Procc 1-Mtce			1x/4yr Unscheduled	3-Procc. 1 2				

*Specify period of sampling. For example, state "twice, winter and summer", or "once, during peak production", or "quarterly, random". This approach is to ensure that sampling is done during highest potential exposure periods.

MAC III 8-Procc
(ULS) 2-Mtce

Ethylene
dichloride

MAP 005292

1x/4yr.
When:
Loading
Cat. from
Drums

6-Procc.
1-Mtce

Department I.D.A. 850.10

Location Chocolate Canyon

Issued By S.D. Paul / J.C. Grant Date 11/2/1993

Projected Assessment Strategy						
Chemical/ Physical Agents	Job Classification/Shift Number Exposed	Summary of Previous Results	Exposure Limit	Annual Frequency*	Number of Persons to Sample	STEL's TASK's CEILING's AREA No. FV Assessments Without Monitoring
Noise, Contaminants	25 Processors 5-Shift Foreman 5-Mtce (M; ILE)	1981 TWA = 6 = 68-80 dBA 1982 TWA = 8 = 60-80 dBA	OSHA: 90 dBA TWA ACGIH: 85 dBA TWA	1x/Yr Random Peak Production General Work Area	12 Proc. SF 1 Mts 2	
Noise Survey	8-Processors 2-Mech. Mtce. Same as above	Not in MEHT	Same as above	1x/Yr Random Peak Production Overall Area	N/A	
Hydrogen Sulfide	4-Processors 2-Mech. Mtce. Same as above	1981 TWA = 0.43-0.53 ppm	OSHA: TWA = 10ppm ACGIH: 10ppm - C	1x/Yr Random Peak Production Storage Area Rock for Area	5 Proc. 2 Mtce	
J.D.A.	4-Processors 2-Mech. Mtce.	1981: BA = 0.05-2.72 mg/m ³ 1982: TWA = 0.0-21.50 mg/m ³ 6 C = 1.40-7.18 mg/m ³	DMCH: TWA = 1 mg/m ³	1x/Yr Random Loading Ops in Unpholisc	3 Proc. 2 Mtce	
B.C.M.E.	4-Processors 2-Mech. Mtce.	1981: 3A = 0.0-0.00 ppb 85 = 0.0-0.00 ppb	OSHA: TWA = 1 ppb ACGIH: TWA = 1 ppb	1x/Yr Random Tank 401-5 Surge Tank 4 Peak Production Peak Production	3 Proc. 2 Mtce	
LEV Testing	Same as above N/A	Not in MEHT N/A	N/A	1x/Yr Random Sample Cylinders in 1300000's	N/A	
HCl	Same as above 4-Processors 2-Mech. Mtce.	None	OSHA: 5ppm - C ACGIH: 5ppm - C	1x/Yr Random Peak Production Reactor Area Tank 401-5 Surge Tank 2	3 Proc. 2 Mtce	

*Specify period of sampling. For example, state "twice, winter and summer", or "once, during peak production", or "quarterly, random".
This approach is to ensure that sampling is done during highest potential exposure periods.

Many measurements throughout unit

MAP 005293

LAM001120

Department 2A 950.40

Issued By S.D. Paul / J.C. Gail

Date 1/12/1983

Projected Assessment Strategy									
Chemical/ Physical Agents	Job Classification/Shift Number Exposed	Summary of Previous Results	Exposure Limit	Annual Frequency*	Number of Persons to Sample	TMA's STEPS	TASK'S CEILINGS	AREA	No. PV
Ammonia	8-Proc. 2-Mech. Mtee	Not in MEHI	OSHA: TWA: 50 ppm ACGIH: TWA: 25 ppm STEL: 35 ppm	1X/YR Random Full Production Reactor area Stg. 2, 3, 4	4 Proc. 1 Mtee	2	2	1	1
N ₂ O	4-Proc. 1-Mech. Mtee	Not in MEHI	OSHA: TWA: 2 mg/m ³ ACGIH: C = 2 mg/m ³	1X/YR Random Peak Production Gen'l Unit	4 Proc. 1 Mtee None	3	3	3	3
CH ₂ O	4-Proc. 2-Mech. Mtee	Not in MEHI	OSHA: TWA: 3 ppm Ceil: 5 ppm ACGIH: C = 3 ppm	1X/YR Random Peak Production Reactor area	3 Proc. 2 Mtee	2	2	2	2
SO ₂	4-Proc. 2-Mech. Mtee	Not in MEHI	OSHA: TWA: 5 ppm ACGIH: TWA: 2 ppm STEL: 5 ppm	1X/YR Random Peak Production Structuring Area Storage	2 Proc. 2 Mtee	1	1	1	1
H ₂ SO ₄	4-Proc. 1-Mech. Mtee	Not in MEHI	OSHA: TWA: 1 mg/m ³ ACGIH: TWA: 1 mg/m ³	1X/YR Random Peak Production Structure Reactor area	4 Proc. 1 Mtee None	3	3	3	3
Hot Steam	Same as above	None	OSHA: TWA: 100 ppm ACGIH: TWA: 100 ppm	1X/YR Random Peak Production Structure Reactor area	4 Proc. 1 Mtee None	2	2	2	2
Refrigeration	Same as above	None	OSHA: TWA: 100 ppm ACGIH: TWA: 100 ppm	1X/YR Random Peak Production Structure Reactor area	4 Proc. 1 Mtee None	2	2	2	2

*Specify period of sampling. For example, state "twice, winter and summer", or "once, during peak production", or "quarterly, random". This approach is to ensure that sampling is done during highest potential exposure periods.

Methylamine 4-Processors 2-Mech Mtee

None Yes

Methanol SAA

None Yes

Ammonium Chloride SAA

None Yes

LAM001121

MAP 005294

Department

BA 850.43

Issued By S.D. Paul / J.C. Gell

Date April 12, 1983

Projected Assessment Strategy

Projected Assessment Strategy												
Chemical/ Physical Agents	Job Classification/Shift Number Exposed	Summary of Previous Results	Exposure Limit	Annual Frequency*	Number of Persons to Sample	TWA's	STEL's	TASK's	CEILINGS	AREA	No. FV	Assessments Without Monitoring
MIBK ✓	Same as above 8 Processors 2-Mtce	None	OSHA: TWA=100ppm ACGIH: TWA=50ppm STEL=75ppm	1x/yr Random (Shift Rotation) Full Operation Gen'l Unit	5 Proc. 2 Mtce	1 1				2	3	
Pyridine ✓	Same as above SAA	None	OSHA: TWA= 5 ppm ACGIH: TWA=5 ppm STEL= 10 ppm	1x/yr Random Full Operation Gen'l Unit	5 Proc. 2 Mtce	1 1				2	3	
Sodium Hydroxide	Same as above	None	OSHA: TWA= 2mg/m ³ ACGIH: TWA= 2 mg/m ³	1x/yr Random Full Operation	5 Proc. 2 Mtce None	3					3	Yes
Sulfuric acid	Same as above	None	OSHA: TWA= 1mg/m ³ ACGIH: TWA= 1 mg/m ³	1x/yr Random Full Operation	5 Proc. 2 Mtce None	3				2	3	Yes
Ammonia	Same as above	None	None	1x/yr Random Full Operation Shift Rotation Process Units Exhaust Gases Loading Ops	5 Proc. 2 Mtce	2 2	2				1	
LEV Testing	Same as above	None	N/A	1x/yr Random Full Operation Sampling Gaskets	N/A							
Dinitrofluorobenzene	Same as above	None	None	1x/yr Random Full Operation	5 Proc. 2 Mtce	4 2	2				1	⑦

*Specify period of sampling. For example, state "twice, winter and summer", or "once, during peak production", or "quarterly, random". This approach is to ensure that sampling is done during highest potential exposure periods.

LAM001122

MAP 005295

INDUSTRIAL HYGIENE ASSESSMENT STRATEGY

Department A1 3A 850.43

Location UNOCOR Inc. LORON

Issued By S.D. Paul / J.C. Gaul Date Apr 2, 1983

Projected Assessment Strategy									
Chemical/ Physical Agents	Job Classification/Shift Number Exposed	Summary of Previous Results	Exposure Limit	Annual Frequency*	Number of Persons to Sample	TWA's	STEL's	Ceiling's	Area
Noise, Continuous	4 Processors 1 - Shift Foreman 5 Maintenance (M.I.E.) 1 - Prod. Spic. Same as above	None	OSHA: 90 dBA TWA ACGIH: 85 dBA TWA	1x/Yr Random Full Operation Gen'l Unit	5 Proc. 1-M Mtee				
Noise Survey	Same as above	None	Some as above	1x/Yr Random Full Operation Gen'l Unit	N/A			*	
Hydrogen Sulfide	4 Processors Same as above 2-Mech. Mtee	None	OSHA: TWA = 10 ppm ACGIH: C = 10 ppm	1x/Yr Random Full Operation Gen'l Unit	4 Proc. 1-M Mtee				
Benzo(a) pyrene	Same as above	None	OSHA: TWA = 0.1 ppm ACGIH: TWA = 0.1 ppm STEL = 0.3 ppm	1x/Yr Random Full Operation Gen'l Unit	4 Proc. 4-Mtee	8		4	1
Methyl mercaptan	Same as above	None	OSHA: TWA = 0.1 ppm ACGIH: TWA = 0.1 ppm STEL = 0.3 ppm	1x/Yr Random Full Operation Gen'l Unit	4 Proc. 4-Mtee	5		4	1
Acetic acid	Same as above 4-Proc 2-Mech. Mtee	None	OSHA: TWA = 10 ppm ACGIH: TWA = 10 ppm STEL = 15 ppm	1x/Yr Random Full Operation Gen'l Unit	4 Proc. 4-Mtee	3	2		
Ammonia	Same as above	None	OSHA: TWA = 50 ppm ACGIH: TWA = 25 ppm STEL = 35 ppm	1x/Yr Random Full Operation Gen'l Unit	4 Proc. 4-Mtee None				3

*Specify period of sampling. For example, state "twice, winter and summer", or "once, during peak production", or "quarterly, random".
This approach is to ensure that sampling is done during highest potential exposure periods.

*Many area measurements throughout unit

MAP 005296

LAM001123

Department 11HBA 850.43

Location Chocolate Bayou

Issued By S.D. Paul / J.C. Gaur Date 4.12.18

Projected Assessment Strategy									
Chemical/ Physical Agents	Job Classification/Shift Number Exposed	Summary of Previous Results	Exposure Limit	Annual Frequency*	Number of Persons to Sample	TWA's STEL's TASK's CEILINGS ARCA	No. FV	Assessments Without Monitoring	
Heat stress	Same as above	None	Per ACGIH TLV 300 ppm Lave	1x / Yr Hot Work Area	None	6			
P₂O₅ stress	Same as above	None	10ml Wt/m³ ACGIH TLV	Per ACGIH TLV	N/A	1		(1)	
Hydrogen peroxide	4-Process 2-Mach. Mfce				4-Procc. 1-Mfce	3 2			
Acetone Methanol SO ₂	4-Process 2-Mfce Mfce							Yes	

*Specify period of sampling. For example, state "twice, winter and summer", or "once, during peak production", or "quarterly, random". This approach is to ensure that sampling is done during highest potential exposure periods.

LAM001124

MAP 005297

INDUSTRIAL HYGIENE ASSESSMENT STRATEGY

Department Seribic Acid 850.46

Location Chocolate Bayou

Issued By S. D. Paul / J. C. Gaul Date 4/12/83

Projected Assessment Strategy											
Chemical/ Physical Agents	Job Classification/Shift Number Exposed	Summary of Previous Results	Exposure Limit	Annual Frequency*	Number of Persons to Sample	TWA's	STEL's	Ceiling's	AREA	No. FY	Assessments Without Monitoring
Noise, Continuous	24 Processors 1-Shift Foremen 7- Maintenance 1-Mech. Proc.	1981: 20P = 60-87 dBA	OSHA TWA 90 dBA ACGIH TWA 85 dBA	1x/yr Random Full operation Gen'l unit	10 Proc. 2-Mtee.	12					
Noise Survey	8 Proc. 2-Mech. Mtee	Not in MENT	Some rs above	1x/yr Random Full operation Gen'l unit	N/A			*			
Seribic acid	Some rs above	1981: 6A = 0.2-12.4 mg/m ³	NIOSH: TWA = 1 mg/m ³	1x/yr Random Full operation Loading ops & C Bldg	1 Proc. 2 Mtee.	4 2					
Methanol	Some rs above 4-Proc. 1-Mech. Mtee	1982: 7P = 0.01-13.73 ppm	OSHA: TWA = 200 ppm ACGIH: TWA = 100 ppm STEL = 250 ppm	1x/yr Random Full operation C Bldg	8 Proc. 2 Mtee. None	5		3		1	Yes
Isopropyl- alcohol	Some rs above 8-Proc. 2-Mech Mtee	1982: 7P = 0.10-4.33 ppm	OSHA: TWA = 400 ppm ACGIH: TWA = 400 ppm STEL = 500 ppm	1x/yr Random Full operation C Bldg	6 Proc. 1 Mtee.	5 1				2	
Croton- aldehyde	Some rs above 12-Proc. 3-Mech. Mtee	1982: 7P = 0.01-0.03 ppm	OSHA: TWA = 2 ppm ACGIH: TWA = 2 ppm STEL = 6 ppm	1x/yr Random Full operation C & A Bldg	6 Proc. 2 Mtee.	5 1				3	

*Specify period of sampling. For example, state "twice, winter and summer", or "once, during peak production", or "quarterly, random".
This approach is to ensure that sampling is done during highest potential exposure periods.

*Many are measurements throughout unit
+ Multicomponent analysis

MAP 005298

LAM001125

Department: Hydro Acid 850.46

Issued By: S.D. Paul / J.C. Giral Date: 1/17/1992

Chemical/ Physical Agents	Job Classification/Shift Number Exposed	Summary of Previous Results	Exposure Limit	Annual Frequency*	Number of Persons to Sample	Projected Assessment Strategy					Assessments Without Monitoring
						TWA's	STEL's	TASK's	CEILING's	AREA	
HCl	Same as above 8 Proc. 2-Mech Mtce	1982: TA = 1.00-1.00 ppm	OSHA: C = 5 ppm ACGIH: C = 5 ppm	1x/yr Random Full Operation C Bldg	4 Proc. 18 Mtce.		1				
Carbon dioxide	Same as above	Not in MEHI	OSHA: TWA = 3.5 mg/m ³ ACGIH: TWA = 3.5 mg/m ³ STEL = 7.0 mg/m ³	1x/yr Random Full Operation C Bldg	3 Proc. 2 Mtce.	5			3		
Calcium Fluoride (HF)	Same as above	Not in MEHI	OSHA: Permissible Exposure Limit Dusts	1x/yr Random Full Operation A Bldg	3 Proc. 2 Mtce.	5			3		
Perfluorinated Sulfonate	Same as above 8 Proc 2-Mech. Mtce	Not in MEHI	NIOSH: TWA = 1 mg/m ³	1x/yr Random Full Operation C Bldg	3 Proc. 2 Mtce	3			3		
Ammonia hydroxide	Same as above	Not in MEHI	OSHA: TWA = 5 ppm ACGIH: C = 5 ppm	1x/yr Random Full Operation C Bldg	5 Proc. 18 Mtce	5			3		
Xylene	Same as above	Not in MEHI	OSHA: TWA = 1.5 ppm ACGIH: C = 0.5 ppm	1x/yr Random Full Operation C Bldg	3 Proc. 2 Mtce	3			3		
LEL Testing	Same as above	Not in MEHI	N/A	1x/yr Random Sample collection in operation C Bldg	N/A				2		

*Specify period of sampling. For example, state "twice, winter and summer", or "once, during peak production", or "quarterly, random". This approach is to ensure that sampling is done during highest potential exposure periods.

MAP 005299

LAM001126

Chemical/ Physical Agents	Job Classification/Shift Number Exposed	Summary of Previous Results	Exposure Limit	Annual Frequency*	Number of Persons to Sample	Projected Assessment Strategy				Assessments Without Monitoring
						TWA's	STEL's	Ceiling's	AREA	No. PV
Noise, Continuous	16-Processors 1-Shift Foremen 4-Maintenance (M, J&E)	1981: 9P=67-78 dBA 1982: 9P=60-75 dBA	OSHA: 90dBA TWA ACGIH: 85dBA TWA	1x/yr Random Full Operation Gen'l unit	6-Proc. 2-Mtce.	6				
Noise Survey	Same as above	Not in MEHI	Same as above	1x/yr Random Full Operation Gen'l unit	N/A			*		
Benzene	8-Processors 8-Processors 2-Mech. Mtce	1981: LA=0.01-0.10 ppm 72P=0.01-0.54 ppm	OSHA: TWA=10 ppm C=25 ppm ACGIH: TWA=10 ppm STEL=25 ppm	1x/yr Random Full Operation Gen'l unit	5-Proc. 2-Mtce.	3 1 1				2
Asbestos	12-Processors 12-Processors 2-Mech. Mtce	1981: BA=0.0-1.07 f/cc	OSHA: 2 f/cc ACGIH: 2 f/cc	1x/yr Random Full Operation Gen'l unit	13-Proc. 1-Mtce.	1				
Hydrogen fluoride	8-Processors 8-Proc. 2-Mech. Mtce	None	OSHA: None ACGIH: TWA=3 ppm STEL=6 ppm	1x/yr Random Full Operation Acid washed Truck unloading	4-Proc. 2-Mtce	4 2				
Heat Stress	Same as above	None	Per ACGIH TLV	1x/yr Hot Weather Gen'l unit	None			4		
Respiration	8-Processors 8-Processors above	None	OSHA: None ACGIH: None	1x/yr Random Full Operation Respiratory Protecting	N/A					

*Specify period of sampling. For example, state "twice, winter and summer", or "once, during peak production", or "quarterly, random".
This approach is to ensure that sampling is done during highest potential exposure periods.

Many area measurements throughout unit

Yes

Yes

3-Proc. 2-1
4-Mtce 1-1

LAM001128

MAP 005301

NaOH
4-Processors
1-Mech Mtce

Potassium
(Catalyst)
Dust

Thermine (53)
4-Proc.
2-Mech Mtce

Projected Assessment Strategy									
Chemical/ Physical Agents	Job Classification/Shift Number Exposed	Summary of Previous Results	Exposure Limit	Annual Frequency*	Number of Persons to Sample	TWA's STEL's TASK's CEILINGS AREA	No. PV	Assessments Without Monitoring	
Noise, Continuous	16 Processors 1-Shift Foreman 3-Maintenance (M; I/E)	1981: 9P=67-82 dBA 1982: 4P=72-85 dBA	OSHA: TWA=90 dBA ACGIH: TWA=85 dBA	2x/yr Random Full Operation Clean unit	6 Proc. 2 MTEE. 2				
Noise Survey	Same as above	Not in MEHI	Same as above	1x/yr Random Full Operation Clean unit	N/A	*			
CH₂O	8 Processors 2-MTEE	1981: 2P=0.01-0.01 ppm	OSHA: TWA=3 ppm ACGIH: C=2 ppm	1x/yr Random Full Operation Reactor Area	6 Proc. 1 MTEE	2	3		
Hydrogen cyanide	8 Processors 2-MTEE	1981: TA=1.0-1.0 ppm (C) 1982: 3A=1.0-1.0 ppm (C)	OSHA: TWA=10 ppm ACGIH: C=10 ppm	1x/yr Random Full operation Reactor Area Storage Area	4 Proc. 1 MTEE	2	5		
NH₃	4 Processors 1-MTEE	1982: 10A=0.53-28.64 mg/m ³ 7C=1.03-78.04 mg/m ³	OSHA: TWA=1 mg/m ³ STEL=3 mg/m ³	3x/yr Random Full Operation Loading Ops	3 Proc. 1 MTEE.	3	3		
Ammonia	Same as above	1981: 6A=1.0-12.11 ppm 1S=6.57 ppm 1982: 4A=0.35-2.2 ppm	OSHA: TWA=50 ppm ACGIH: TWA=25 ppm STEL=35 ppm	1x/yr Random Full Operation Reactor Area & Process Pumps	2 Proc. 1 MTEE.	1	3		

*Specify period of sampling. For example, state "twice, winter and summer", or "once, during peak production", or "quarterly, random". This approach is to ensure that sampling is done during highest potential exposure periods.

*Many area measurements throughout unit

LAM001129

MAP 005302

Projected Assessment Strategy									
Chemical/ Physical Agents	Job Classification/Shift Number Exposed	Summary of Previous Results	Exposure Limit	Annual Frequency*	Number of Persons to Sample	TLV's TASK's CEILING's	No. FV	Assessments Without Monitoring	
Asbestos	Some asbestos 12-Processors 3-Mtee	1981: GA = 0.0-0.5 f/cc	OSHA: 2 f/cc TWP ACGIH: TWA: 2 f/cc	1x/yr Random Full Operation Gen'l Unit	1 Proc. 1 Mtee.	1			
NaOH	Some asbestos 8-Processors 2-Mech. Mtee	None	OSHA: TWA = 3 mg/m ³ ACGIH: C = 3 mg/m ³	1x/yr Random Full Operation Reactor Area	4 Proc. 1 Mtee.	3			
Sulfuric acid	Some asbestos 4-Processors 1-Mech. Mtee	None	OSHA: TWA = 1 mg/m ³ ACGIH: TWA = 1 mg/m ³	1x/yr Random Full Operation Reactor Area	None None			Yes	
Hydrocyanic acid	Some as above	None	None	1x/yr Random				Yes	
Heat Stress	8-Processors	None	Per ACGIH TLV	1x/yr 1x/yr	None None		4		
LEV Testing	Some asbestos N/A	None	N/A	1x/yr Random Sample cabinets in operation	N/A		2		
Hydrochloric acid	4-Processors 1-Mtee			1x/yr 1x/yr				Yes	
Phosphoric acid	4-Processors 1-Mtee			1x/yr 1x/yr					
Phosphoric acid	4-Processors			1x/yr 1x/yr					
SO₂	8-Processors 2-Mech Mtee			5x/yr Acidity Runaway Run	2-Proc	2		Yes	

*Specify period of sampling. For example, state "twice, winter and summer", or "once, during peak production", or "quarterly, random".
This approach is to ensure that sampling is done during highest potential exposure periods.

Department 74901 850.65

Issued By S.D. Paul / J.C. Gaud

Date 11/12/1983

Projected Assessment Strategy									
Chemical/ Physical Agents	Job Classification/Shift Number Exposed	Summary of Previous Results	Exposure Limit	Annual Frequency*	Number of Persons to Sample	TWA's STEL's TASK's CEILING's AREA	No. PV	Assessments Without Monitoring	
Noise, Continuous	4- Processors 1- Shift Foremen 2- Maintenance (M, I & E)	1981: 14P = 65-86.1 dBA 1982: 12P = 60-82 dBA	OSHA: 90 dBA TWA ACGIH: 85 dBA TWA	1x/yr Random Full Operation Gen'l Unit	4-Proc. 2-Mtce.	6		⑥	
Noise, Survey	Same as above	Not in MEHL	Same as above	1x/yr Random Full Operation Gen'l Unit	N/A	*			
Benzene	Same as above	1981: 3A = 0.03-1.30 ppm 152P = 0.01-16.46 ppm 1982: 72P = 0.01-25.76 ppm	OSHA: TWA = 10 ppm C = 25 ppm ACGIH: TWA = 10 ppm STEL = 25 ppm	2x/yr Hot/Cold Full Operation Gen'l Unit	4-Proc. 2-Mtce.	8	4	①⑦	
Camene	Same as above	1981: 3A = 0.04-0.28 ppm 152P = 0.01-2.14 ppm	OSHA: TWA = 50 ppm ACGIH: TWA = 50 ppm STEL = 75 ppm	1x/yr Random Full Operation Gen'l Unit	4-Proc. 2-Mtce.	6	2	⑨	
Asbestos	Same as above	1981: 9A = 0.0-0.5 f/lcc	OSHA: TWA = 2 f/lcc ACGIH: TWA = 2 f/lcc	1x/yr Random Full Operation Gen'l Unit	1-Proc. 1-Mtce.	2	1	③	
NaOH	Same as above	None	OSHA: TWA = 2 mg/m ³ ACGIH: C = 2 mg/m ³	1x/yr Random Full Operation Dpt. 75	2-Proc. 1-Mtce.	2	1	③	

*Specify period of sampling. For example, state "twice, winter and summer", or "once, during peak production", or "quarterly, random".
This approach is to ensure that sampling is done during highest potential exposure periods.

* Many area measurements throughout unit
+ Multicomponent analysis

MAP 005304

LAM001131

INDUSTRIAL HYGIENE ASSESSMENT STRATEGY

Department

Phanol B50.65

Location Chocolate Barge

Issued By S.D. Paul / J.C. Gaul Date Jul 12, 1983

Chemical/ Physical Agents	Job Classification/Shift Number Exposed	Summary of Previous Results	Exposure Limit	Annual Frequency*	Number of Persons to Sample	Projected Assessment Strategy					Assessments Without Monitoring
						TWA's	STEL's	TASK's	Ceiling's	AREA	No. FV
Propylene	Same as above	None	OSHA: None ACGIH: TWA = 1000ppm (asphyxiant)	1x/Yr Random Full Operation Dept. 75 Reactors	2-Proc. 1-Mtce.	3					1 (4)
Sulfuric acid	Same as above	None	OSHA: TWA = 1mg/m ³ ACGIH: TWA = 1mg/m ³	1x/Yr Random Full Operation Dept. 75	2-Proc. 1-Mtce.	3					1 (4)
Therminol VP	Same as above	None	Biphenyl OSHA: TWA = 0.2ppm ACGIH: TWA = 0.2ppm SEL = 0.6ppm	1x/Yr Random Full Operation Dept. 75	2-Proc. 1-Mtce.	3					1 (4)
Tetraethyl- pyrophosphate (TEPP)	Same as above	None	Nursing dusts OSHA: 15mg/m ³ ACGIH: 15mg/m ³ Nursing dust	1x/Yr Random Full Operation Dept. 77 (both)	2-Proc.	2			1		3 (3)
Sodium carbonate	Same as above	None	OSHA: TWA = 1000ppm ACGIH: TWA = 750ppm SEL = 1000ppm	1x/Yr Random Full Operation Dept. 75	2-Proc. 1-Mtce.	2			1		3 (3)
Acetone	Same as above	None	OSHA: TWA = 1000ppm ACGIH: TWA = 750ppm SEL = 1000ppm	1x/Yr Random Full Operation Dept. 75	2-Proc. 1-Mtce.	3					1 (4)
Acetophenone	Same as above	None	None	1x/Yr Random Full Operation Gen'l Unit	2-Proc. 1-Mtce.	3			2		1 (6)

*Specify period of sampling. For example, state "twice, winter and summer", or "once, during peak production", or "quarterly, random". This approach is to ensure that sampling is done during highest potential exposure periods.

MAP 005305

LAM001132

Department enol 850.65Issued By S.D. Paul/J.C. GaulDate 12.19.83

Projected Assessment Strategy									
Chemical/ Physical Agents	Job Classification/Shift Number Exposed	Summary of Previous Results	Exposure Limit	Annual Frequency*	Number of Persons to Sample	Task's TLV's	Task's CEILING's	Area FV	Assessments Without Monitoring
Phenol	Same as above	None	OSHA: TWA = 5 ppm Skin ACGIH: TWA = 5 ppm Skin STEL = 10 ppm Skin Gen'l Unit	1x/Yr Random Full Operations Gen'l Unit	4-Proc. 1-Mtce.	5	3	1	②
Propene	Same as above	None	OSHA: TWA = 1000 ppm ACGIH: TWA = 1000 ppm (asphyxiant)	1x/Yr Random Full Operations Dept. 75	2-Proc.	2		1	③
α -methyl styrene	Same as above	None	OSHA: C = 100 ppm ACGIH: TWA = 50 ppm STEL = 100 ppm	1x/Yr Random Full Operations Gen'l Unit	2-Proc.	2		1	③
Mesityl oxide	Same as above	None	OSHA: TWA = 25 ppm ACGIH: TWA = 15 ppm STEL = 35 ppm	1x/Yr Random Full Operations Gen'l Unit	2-Proc. 1-Mtce.	3	1	1	⑤
Styrene	Same as above	None	OSHA: None ACGIH: TWA = 50 ppm STEL = 100 ppm	1x/Yr Random Full Operations Gen'l Unit	2-Proc. 1-Mtce.	3	1	1	⑤
Toluene	Same as above	None	OSHA: TWA = 200 ppm C = 300 ppm ACGIH: TWA = 100 ppm STEL = 150 ppm	1x/Yr Random Full Operations Gen'l Unit	2-Proc. 1-Mtce.	3	1	1	⑤
Heat Stress	Same as above	None	Per ACGIH TLV	As Approp.	As Approp.				④

*Specify period of sampling. For example, state "twice, winter and summer", or "once, during peak production", or "quarterly, random". This approach is to ensure that sampling is done during highest potential exposure periods.

LAM001133

MAP 005306

Location Chorlston Mine

Issued By S.D. Paul / J.C. Gaur

Date, 12, 1933

[illegible]

*Specify period of sampling. For example, state "twice, winter and summer", or "once, during peak production", or "quarterly, random". This approach is to ensure that sampling is done during highest potential exposure periods.

MAP 005307

LAM001134

Department Farmalin/DPO 850.83Issued By S.D. Paul/J.C. Gail Date 12, 1983

Projected Assessment Strategy					Assessments Without Monitoring				
Chemical/Physical Agents	Job Classification/Shift Number Exposed	Summary of Previous Results	Exposure Limit	Annual Frequency*	Number of Persons to Sample	TWA's	STEL's	Ceiling's	Area
Noise, Continuous	8 Processors 1-Shift Foreman 2-Loaders 4 Maintenance (M, IE)	1981: AP=67-84 dBA 1982: BP=56-78 dBA	OSHA: 90 dBA TWA ACGIH: 85 dBA TWA	1x/Yr Random Full Operation Gen'l Unit	4-Proc. 1-Mtce	4			
Noise Survey	Same as above	Not in NEHI	Same as above	1x/Yr Random Full Operation Gen'l Unit	N/A			*	
CH ₂ O	Same as above	1981: 2A=0.57-0.67 ppm 1P=0.09 ppm	OSHA: TWA=3 ppm ACGIH: C=2 ppm	1x/Yr Random Full Operation Gen'l Unit	6-Proc. 2-Loaders 1-Mtce	2	1		
Asbestos	Same as above 4-Processors	1981: 9A=0.0-1.93 f/cc	OSHA: TWA=2 f/cc ACGIH: TWA=2 f/cc	1x/Yr Random Full Operation Gen'l Unit	2-Proc.	2			
Thermal VP-1	Same as above SAA	None	OSHA: Biphenyl TWA=0.2 f/cc ACGIH: TWA=0.2 f/cc STEL=0.6 f/cc	1x/Yr Random Full Operation Tank Farm/Dig	4-Proc. 1-Loaders	2	1		
Methylene	Same as above	None	DMHELA: ?	1x/Yr Random Full Operation Resins	2-Proc.	2			
Methanol	Same as above 4 Processors 2-Mech. Mtce	None	OSHA: TWA=300 ppm ACGIH: TWA=300 ppm STEL=250 ppm	1x/Yr Random Full Operation Formalin	3-Proc. 1-Mtce. 2-Loaders	2	1		

*Specify period of sampling. For example, state "twice, winter and summer", or "once, during peak production", or "quarterly, random". This approach is to ensure that sampling is done during highest potential exposure periods. * Many area measurements throughout unit

Ammonia

Biphenyl

Some as noise

DPO

LAM001135

MAP 005308

Projected Assessment Strategy						
Chemical/ Physical Agents	Job Classification/Shift Number Exposed	Summary of Previous Results	Exposure Limit	Annual Frequency*	Number of Persons to Sample	THA's STEL's TASK's CEILING's AREA No. FV Assessments Without Monitoring
Methylamine	Same as above	None	OSHA: TWA=10ppm ACGIH: TWA=10ppm	1x/yr Random Full Operation Resins	2-Proe	1
Phenol	Same as above 4 Processors 1 Mfce	None	OSHA: TWA=5ppm ACGIH: TWA=5ppm STEL=10ppm	1x/yr Random Full Operation DPO	3-Proe 1-Mfce	2
Silver	Same as above None Routinely	None	OSHA: TWA=0.01mg/m ³ ACGIH: TWA=0.1mg/m ³	1x/yr Random Full Operation Formalin Reactor	None	Yes
NaOH	Same as above	None	OSHA: TWA=2mg/m ³ ACGIH: TWA=2mg/m ³	1x/yr Random Full Operation Resins	1-Proe	1
Triethyl- amine	Same as above	None	OSHA: TWA=25ppm ACGIH: TWA=10ppm STEL=15ppm	1x/yr Random Full Operation Resins	1-Proe	1
LEV Testing	Same as above	None	N/A	1x/yr Random Sample cabinet in operation	N/A	3
Reaction	Same as above 4 Processors	None	10mV/cm ² ACGIH TLV	1x/yr Random in operation DPO Catalyst	None	4

*Specify period of sampling. For example, state "twice, winter and summer", or "once, during peak production", or "quarterly, random".
This approach is to ensure that sampling is done during highest potential exposure periods.

MAP 005309

LAM001136

Department Environmental Control 899.23Location Chocolate BayouIssued By S.D. Paul / J.C. Genl Date 13.1983

Projected Assessment Strategy

Chemical/ Physical Agents	Job Classification/Shift Number Exposed	Summary of Previous Results	Exposure Limit	Annual Frequency*	Number of Persons to Sample	TWA's	STEL's	TASK's	Ceiling's	AREA	No. PV	Assessments Without Monitoring
<u>Noise, Continuous</u>	<u>12 Processors</u> 12 Processors <u>5-Maintenance</u> <u>(M; I&E)</u>	1981: 9P=65-71dBA 1982: 6P=60-74dBA	OSHA: 90dBA TWA ACGIH: 95dBA TWA	1x/yr Random Full Operation Gen'l Unit	5-Proc. 1-Mtce	5	1					
<u>Noise Survey</u>	Same as above	Not in MEMI	Same as above	1x/yr Random Full Operation Gen'l Unit	N/A				*			
<u>Benzene</u>	Same as above	1981: 51A=0.01-3.04ppm 57P=0.01-0.48ppm 1982: 37P=0.01-0.62ppm	OSHA: TWA=10ppm C=25ppm ACGIH: TWA=10ppm STEL=25ppm	1x/yr Random Full Operation Gen'l Unit	3-Proc. 2-Mtce	6	1	1			3	
<u>Formal</u>	Same as above	1981: 7A=0.01-141ppm 1982: None	OSHA: TWA=5ppm ACGIH: TWA=2.5ppm STEL=10ppm	1x/yr When transferred from HCS	2-Proc. 2-Mtce	4			4	1	1	
<u>Cumene</u>	Same as above	1981: 51A=0.01-34.0ppm 57P=0.01-0.58ppm 1982: 36P=0.01-0.18ppm	OSHA: TWA=50ppm ACGIH: TWA=50ppm STEL=150ppm	1x/yr Random Full Operation Gen'l Unit	2-Proc. 1-Mtce	3			4	1	1	
<u>Acrylonitrile</u>	Same as above 8-Proc. 2-Mech. Mtce	1981: 7A=0.01-0.84ppm 112P=0.01-0.86ppm 1982: 50P=0.01-0.36ppm	OSHA: TWA=2ppm C=10ppm ACGIH: TWA=2ppm STEL=10ppm DNEL: TWA=2ppm STEL=10ppm	1x/yr Random Full Operation Gen'l Unit	5-Proc. 2-Mtce	3	2	1			3	

*Specify period of sampling. For example, state "twice, winter and summer", or "once, during peak production", or "quarterly, random". This approach is to ensure that sampling is done during highest potential exposure periods. *Many area measurements throughout unit

MAP 005310

LAM001137

Projected Assessment Strategy									
Chemical/ Physical Agents	Job Classification/Shift Number Exposed	Summary of Previous Results	Exposure Limit	Annual Frequency*	Number of Persons to Sample	Task's STEL's	Task's CEILING's	No. PV	Assessments Without Monitoring
Asthetics	4-Processors 1-Mech. Mtce	1981: 14A=0.0-1.34 lb/cc	OSHA: TWA=2.41cc ACGIH: TWA=2.41cc	1x/yr Random Full Operation Gen'l Unit	1-Proc. 1-Mtce	1			
Chlorine	Same as above 4-Processors 1-Mech Mtce	None	OSHA: C=1 ppm ACGIH: TWA=1 ppm STEL=3 ppm	1x/yr Random Full Operation Change Outfall	None				Yes
Acetylene	Same as above	None	None	1x/yr Random Full Operation Gen'l Unit	2-Proc. 1-Mtce	3		1	
Radiation	Same as before	Above	1000 Rads ACGIH TLV	1x/yr Random While machinery is operating	N/A			1	
Chlorine - Solvent	8-Processors 2-Mech. Mtce				3-Proc 1-Mtce	2	1		
Vent Test	N/A	N/A	N/A	1x/yr Lab Hood	N/A				
Formal- dehyde	4-Processors 1-Mech Mtce				1-Proc 1-Mtce	1			

*Specify period of sampling. For example, state "twice, winter and summer", or "once, during peak production", or "quarterly, random". This approach is to ensure that sampling is done during highest potential exposure periods.

Methylene
chloride

LAM001138

MAP 005311

INDUSTRIAL HYGIENE ASSESSMENT STRATEGY

Department hltos 899.50

Location Chocolate Dagon

Issued By S.D. Paul / J.C. Gray Date 4.12.1983

Projected Assessment Strategy									
Chemical/ Physical Agents	Job Classification/Shift Number Exposed	Summary of Previous Results	Exposure Limit	Annual Frequency*	Number of Persons to Sample	TWA's	TASK's	CEILING's	AREA
Noise Continuous	123 Processors to Shift Foreman 3 Maintenance (M, I&E)	1981: 1BP=66.5-92 dBA 1982: 13P=60-95.5 dBA	OSHA: 90 dBA TWA ACGIH: 85 dBA TWA	2x 1Yr Random Full Operation Gen'l Unit	7 Proc. 2 Mtr.	7			
Noise Survey	Same as above	Not in MEHI	Same as above	1x 1Yr Random Full Operation Gen'l Unit	N/A			*	
Asbestos	4 Processors 1 Mtr.	1981: TA=0.0-3.54 f/lcc	OSHA: TA=2 f/lcc ACGIH: TA=2 f/lcc	1x 1Yr Random Full Operation Gen'l Unit	2 Proc.	2			
Chlorine	Same as above	None	OSHA: C=1 ppm ACGIH: TWA=1 ppm STEL=3 ppm	1x 1Yr Random Full Operation Gen'l Unit	None				Yes
MTA	Same as above	None	DMH: TWA=1 mg/m ³ STEL=3 mg/m ³	1x 1Yr Random Full Operation Gen'l Unit	1 Proc.	1			
Respiratory Inhalation	Same as above	None	OSHA: C=10 ppm ACGIH: TWA=5 ppm Per ACGIH TLV	1x 1Yr As approp. Furnace Area	As approp.				
Heat Stress	Same as above	None		1x 1Yr Random Full Operation Gen'l Unit	None			6	
Radiation	Same as above	None	DMH: C=10 mR/hr ACGIH: TLV	1x 1Yr Random Full Operation Gen'l Unit	N/A				

*Specify period of sampling. For example, state "twice, winter and summer", or "once, during peak production", or "quarterly, random".
This approach is to ensure that sampling is done during highest potential exposure periods.

Sulfuric Acid Yes
NH₃ Yes
HCl Yes
Silica Nitrate Yes

LAM001139

Department Reference (Mich) 908.10Location Chocolate FactoryIssued By S.O. Paul / J.C. Gaul Date 13.1983

Projected Assessment Strategy									
Chemical/ Physical Agents	Job Classification/Shift Number Exposed	Summary of Previous Results	Exposure Limit	Annual Frequency*	Number of Persons to Sample	TWA's	STEL's	TASK's	CEILINGS
Noise, Continuous	45 Technicians 4 - Mice Foremen	1981: 29P = 62-88 dBA 1982: 15P = 60-88.5 dBA	OSHA: 90 dBA TWA ACGIH: 85 dBA TWA	1x/1yr Random Full Operations Shop 7	12-Tech. 13				
Noise Survey	Same as above	Not in MEHI	Same as above	1x/1yr Random Full Operation All Shops	N/A				
Acrylonitrile	Same as above 3-Techs	1981: 5SP = 0.01-2.76 ppm 1982: 4P = 0.08-0.14 ppm	OSHA: TWA = 3 ppm C = 10 ppm ACGIH: TWA = 3 ppm STEL = 10 ppm DMEH: TWA = 3 ppm STEL = 10 ppm	1x/1yr Random Full Operation Shop 4	25-Tech.		2		
Benzene	Same as above SAA	1981: 2A = 0.13-0.58 ppm 51P = 0.01-0.46 ppm	OSHA: TWA = 10 ppm C = 25 ppm ACGIH: TWA = 10 ppm STEL = 25 ppm ACGIH: Indiv. Shds	1x/1yr Random Full Operation Shops 5 & 6	2-Tech		7		
Working Fumes	Same as above 7-Welders	None	OSHA: Indiv. Shds ACGIH: TWA = 5 mg/m ³	1x/1yr Random During Uploading Operations in Shop 7	25-Tech. 5		5		
LEV Testing	Same as above	None	N/A	1x/1yr Random Shop 7 Welding	N/A				

*Specify period of sampling. For example, state "twice, winter and summer", or "once, during peak production", or "quarterly, random". This approach is to ensure that sampling is done during highest potential exposure periods. *Many area measurements throughout shops

LAM001140

MAP 005313

Projected Assessment Strategy									
Chemical/ Physical Agents	Job Classification/Shift Number Exposed	Summary of Previous Results	Exposure Limit	Annual Frequency*	Number of Persons to Sample	TWA's	STEL's	Ceiling's	Assessments Without Monitoring
Purine	Same as above	None	As before	1 X / Yr During approx. welding ops in shop	4 Tech				
Hot Stress	Same as above	None	Per ACGIH TLV	As approp. All 4 Shops	As approp.				
Pylene	7 Welders	None	OSHA: TWA = 0.1 ppm ACGIH: TWA = 0.1 ppm STEL = 0.3 ppm	1 X / Yr During approx. welding ops in shop	None				Yes
NOx	Same as above	None	OSHA: TWA = 5 ppm (as NO2) ACGIH: TWA = 3 ppm STEL = 5 ppm	1 X / Yr During approx. welding ops in shop	None				Yes
Asbestos	8 Techs.	None	OSHA: TWA = 2 fb/cc ACGIH: TWA = 2 fb/cc	1 X / Yr During approx. welding ops in shop	6 Tech				
Radiation	Same as above	Not in MEHI	Per ACGIH TLV (10mu/cm ²)	1 X / Yr Microtome ovens	N/A				Yes
Exhaust									

*Specify period of sampling. For example, state "twice, winter and summer", or "once, during peak production", or "quarterly, random". This approach is to ensure that sampling is done during highest potential exposure periods.

INDUSTRIAL HYGIENE ASSESSMENT STRATEGY

Department Maintenance (IAE) 908.15

Location Chloride Plant

Issued By S.D. Paul / S.C. Gail Date April 12, 1983

Projected Assessment Strategy									
Chemical/ Physical Agents	Job Classification/Shift Number Exposed	Summary of Previous Results	Exposure Limit	Annual Frequency*	Number of Persons to Sample	TWA's	TASK's	CEILINGS	AREA No. PV
Noise, Vibrations	AS-Technicians	1981: VICP-62-90-18A 1982: 67P-56-86-588A	OSHA: 90dBA TWA ACGIH: 85dBA TWA	1x/1yr Random Full Operation 11 IE Shops	20 Tech.	20			(20)
	Same as above	Not in MCH	Same as above	1x/1yr Random Full Operation in 11 IE Shops	N/A			X	
Noise Survey	Same as above	None	100 dBA ACGIH TWA	1x/1yr Random Full Operation in 11 IE Shops	N/A				(1)

*Specify period of sampling. For example, state "twice, winter and summer", or "once, during peak production", or "quarterly, random". This approach is to ensure that sampling is done during highest potential exposure periods. *Many area measurements throughout shop

Department: Distribution 9/10/48

Issued By: S.D. Paul / J.C. Gail Date: 11/3/1982

Projected Assessment Strategy					Projected Assessment Strategy				
Chemical/Physical Agents	Job Classification/Shift Number Exposed	Summary of Previous Results	Exposure Limit	Annual Frequency*	Number of Persons to Sample	TWA's	Task's	Ceilings	Area
Noise: Continuous	2 Processors 1 Shift Foreman 16 Maintenance (M, JAE)	None	OSHA: 90dBA TWA ACGIH: 85dBA TWA	1x/yr Random During opps Activities	7-Proc. 1-Mtce	8			
Noise Survey	Same as above	Not in MCH	Same as above	1x/yr Random Full Operation Gen'l Unit	N/A			*	
Aerosols	Same as above	1981: 2A = 0.02-1.60 ppm 39P = 0.01-2.50 ppm 1982: 2A = 0.02-0.41 ppm 39P = 0.01-1.92 ppm 14C = 0.01-0.65 ppm	OSHA: 100ppm TWA ACGIH: 75ppm TWA STEL: 100ppm	1x/yr During Loading Ops Warm Up/ler Beng Loading	1-Proc. 2-Mtce	1 1 1			
Benzene	Same as above SAA	1981: 2A = 5.46-4753 ppm 4F = 0.44-5.90 ppm 17P = 0.01-2.20 ppm 5C = 0.47-41.06 ppm 1982: 17P = 0.01-0.51 ppm 5C = 0.18-12.73 ppm	OSHA: 10ppm TWA ACGIH: 5ppm TWA STEL: 10ppm	1x/yr During Loading Ops Warm Up/ler Beng Loading	2-Proc. 2-Mtce	2 2			
Aerosols	Same as above	1981: 2A = 0.01-0.09 ppm 39P = 0.01-0.87 ppm 1982: 2A = 0.02-0.41 ppm 39P = 0.01-1.92 ppm 14C = 0.01-0.65 ppm	OSHA: 10ppm TWA ACGIH: 5ppm TWA STEL: 10ppm	1x/yr During Loading Ops Warm Up/ler Beng Loading	2-Proc. 2-Mtce	2 2			

*Specify period of sampling. For example, state "twice, winter and summer", or "once, during peak production", or "quarterly, random". This approach is to ensure that sampling is done during highest potential exposure periods. * Many area measurements throughout unit

MAP 005316

LAM001143

Projected Assessment Strategy									
Chemical/ Physical Agents	Job Classification/Shift Number Exposed	Summary of Previous Results	Exposure Limit	Annual Frequency*	Number of Persons to Sample	TWA's TASK'S CEILING'S AREA	No. PV	Assessments Without Monitoring	
Diaclo- pantothene	<u>Same as above</u>	1981: TWA = 0.07-0.04 ppm ACGIH: TWA = 5 ppm	OSHA: TWA = 100 ppm ACGIH: TWA = 100 ppm NIOSH: REL = 100 ppm	1X/Yr During Loading Ops - Down Wardley Refr 10d.	2 Proc.	2 1 1	1		
Bumone	<u>Same as above</u>	1981: AA = 0.76-0.77 ppm MA = 0.01-0.01 ppm TWA = 0.01-0.01 ppm ACGIH: TWA = 0.01-0.01 ppm NIOSH: REL = 0.01-0.01 ppm	OSHA: TWA = 100 ppm ACGIH: TWA = 100 ppm NIOSH: REL = 100 ppm	1X/Yr During Loading Ops - Down Wardley Refr 10d.	4 Proc.	3 1 1	1		
Ethyl alcohol	<u>Same as above</u>	1981: AA = 0.15-0.15 ppm MA = 0.08-0.07 ppm TWA = 0.01-0.01 ppm ACGIH: TWA = 0.01-0.01 ppm NIOSH: REL = 0.01-0.01 ppm	OSHA: TWA = 100 ppm ACGIH: TWA = 100 ppm NIOSH: REL = 100 ppm	1X/Yr During Loading Ops - Down Wardley Refr 10d.	2 Proc.	2 1 1	1		
Methylanthio	<u>Same as above</u>	1981: 37A = 0.01-0.01 ppm 38B = 0.01-0.01 ppm 132C: TWA = 0.60-0.73 ppm 310F = 0.01-0.01 ppm 14C = 0.08-0.08 ppm	OSHA: TWA = 100 ppm ACGIH: TWA = 100 ppm NIOSH: REL = 100 ppm	1X/Yr During Loading Ops - Down Wardley Refr 10d.	6 Proc 2-Mtce	1 1 1	3	** Includes 20 fixed month. 5 day. ACMA Sydney	

*Specify period of sampling. For example, state "twice, winter and summer", or "once, during peak production", or "quarterly, random". This approach is to ensure that sampling is done during highest potential exposure periods.

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MAP 005317

LAM001144

Projected Assessment Strategy										
Chemical/ Physical Agents	Job Classification/Shift Number Exposed	Summary of Previous Results	Exposure Limit	Annual Frequency*	Number of Persons to Sample	TVA's	STEL's	TASK's	CEILING's	AREA
						No. PV	Assessments Without Monitoring			
Hydrogen Cyanide	<u>Same as above</u>	1981: 2A=0.08-0.10 ppm 4F=0.05-0.07 ppm 17P=0.01-0.05 ppm 5C=0.01-0.22 ppm 1982: 17P=0.01-0.04 ppm 3C=0.01-0.01 ppm	OSHA: TLV: 200 ppm C=300 ppm ACGIH: TLV: 100 ppm STEL: 150 ppm	1X/Yr During Loading/ Unloading Ops. Warm weather preferred.	2-Proc 1-MTCE	2	1			3
BENE	<u>Same as above</u>	1981: 6A=0.0-99.6 ppb 23S=0.0-89.6 ppb 1982: 8A=0.0-0.0 ppb 32S=0.0-206.8 ppb	OSHA: TLV: 1 ppb ACGIH: TLV: 1 ppb	1X/Yr During Unload- ing Ops. Warm weather preferred.	4-Proc.	2	2			3
Xylene	<u>Same as above</u>	1981: 2A=0.01-0.01 ppm 4F=0.01-0.11 ppm 17P=0.01-0.04 ppm 5C=0.01-0.41 ppm 1982: 17P=0.01-0.08 ppm 3C=0.01-0.41 ppm	OSHA: TLV: 100 ppm ACGIH: TLV: 100 ppm STEL: 150 ppm	1X/Yr During Loading Ops. Warm weather preferred.	2-Proc. 1-MTCE	2	1			3
Ammonia	Same as above <u>8 Processors</u>	1981: 6A=5.47-23.67 ppm	OSHA: TLV: 50 ppm ACGIH: TLV: 25 ppm STEL: 35 ppm	1X/Yr Ops involving sphere or unladen lifting.	4-Proc.	2	2			3
Hydrogen Cyanide	<u>Same as above</u> <u>16</u>	1982: 2A=1.0-1.0 ppm	OSHA: C=5 ppm ACGIH: C=5 ppm	1X/Yr During Unloading Ops.	6-Proc	2	4			1

*Specify period of sampling. For example, state "twice, winter and summer", or "once, during peak production", or "quarterly, random". This approach is to ensure that sampling is done during highest potential exposure periods.

MAP 005318

LAM001145

Projected Assessment Strategy											
Chemical/ Physical Agents	Job Classification/Shift Number Exposed	Summary of Previous Results	Exposure Limit	Annual Frequency*	Number of Persons to Sample	AREA				No. PV	Assessments Without Monitoring
						TWA's	STEL's	TASK's	CEILINGS		
Acetic acid	<u>Same as above</u>	<u>None</u>	CSHA: TWA: 10ppm ACGIH: TWA: 10ppm STEL: 15ppm	1x/yr During Unloading of Warm weather preferred	6 Proc.	4	2			2	
Ortho-dichloro	<u>Same as above</u>	<u>None</u>	CSHA: TWA: 8ppm ACGIH: TWA: 2ppm STEL: 6ppm	1x/yr During Unloading Ops. for Tank Cars. Warm weather preferred	6 Proc.	4	2	3		3	
Rip Oil (2,5,6 Bz)	<u>Same as above</u>	<u>None</u>	CSHA: TWA: 10ppm C: 8.5ppm ACGIH: TWA: 10ppm STEL: 15ppm	1x/yr During Unloading of Warm weather preferred	6 Proc.	2	2	2		2	
Isopropyl- alcohol	<u>Same as above</u>	<u>None</u>	CSHA: TWA: 100ppm ACGIH: TWA: 100ppm STEL: 250ppm	1x/yr During Unloading of Warm weather preferred	6 Proc. 4	2	2	3		3	
Methanol	<u>Same as above</u>	<u>None</u>	CSHA: TWA: 200ppm ACGIH: TWA: 20ppm STEL: 250ppm	1x/yr During Unloading of Warm weather preferred	6 Proc.	4	2	2		3	
Ammonia	<u>Same as above</u>	<u>None</u>	CSHA: TWA: 10ppm ACGIH: TWA: 10ppm STEL: 15ppm	1x/yr During Unloading of Warm weather preferred	1 Proc.	1	1	1		1	

*Specify period of sampling. For example, state "twice, winter and summer", or "once, during peak production", or "quarterly, random". This approach is to ensure that sampling is done during highest potential exposure periods.

Department Distribution 910.48Issued By D. Paul / J. C. Paul Date April 1983

Chemical/ Physical Agents	Job Classification/Shift Number Exposed	Summary of Previous Results	Exposure Limit	Projected Assessment Strategy						Assessments Without Monitoring
				Annual Frequency*	Number of Persons to Sample	TWA's	STEL's	TASK's	AREA CEILINGS	No. IV
Benzene	Same as above	None	OSHA: TWA: 100ppm ACGIH: TWA: 100ppm SEL: 150ppm	1x/yr During loading Ops	4 Proc.	2	2			3
o-Nitrophenol <i>(Syringic)</i>	Same as above	None	OSHA: C: 100ppm ACGIH: TWA: 100ppm SEL: 150ppm	1x/yr During loading Ops Warm weather preferred	1-Proc.	1	1			3
Phenol	Same as above	None	OSHA: TWA: 5 ppm ACGIH: TWA: 5 ppm SEL: 10 ppm	1x/yr During loading Ops Warm weather preferred	4 Proc.	2	2			1
Formaldehyde	Same as above	None	OSHA: TWA: 3 ppm ACGIH: TWA: 5 ppm C: 2 ppm	1x/yr During sampling Warm weather preferred	1-Proc.	1	1			3
Methylamine <i>(Cement trucks)</i>	Same as above	None	OSHA: TWA: 100ppm ACGIH: TWA: 100ppm SEL: 125ppm	1x/yr During loading Ops	1-Proc.	1	1			3
Asbestos	Same as above	None	OSHA: TWA: 10 fpm ACGIH: TWA: 10 fpm SEL: 15 fpm	1x/yr During loading Ops Warm weather preferred	1-Proc.	1	1			3

Leave
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*Specify period of sampling. For example, state "twice, winter and summer", or "once, during peak production", or "quarterly, random". This approach is to ensure that sampling is done during highest potential exposure periods.

LAM001147

MAP 005320

Projected Assessment Strategy								
Chemical/ Physical Agents	Job Classification/Shift Number Exposed	Summary of Previous Results	Exposure Limit	Annual Frequency*	Number of Persons to Sample	TWA's TASK'S CEILING AREA	No. PV	Assessments Without Monitoring
Phenolic VA	Same as above	None	FIAH ?	1x/Yr During Loading	1-Proc.	1	X	(X)
Hexphone	Same as above	None	DCHA Above ACGIH: TWA=100ppm (as phosgene)	1x/Yr During Loading	None	N/A	3	Yes
LEV Testing	Same as above	None	N/A	1x/Yr While sample extract in use	N/A	1	1	(X)
Radiation	Same as above	Not in MCH	10muS/hr ACGIH TLV	1x/Yr Random Microprobe in use	N/A	1	1	(X)
Hydrogen peroxide H₂O₂	Same as above	None	As imp.	3-Proc.	12	12	1	(X)
H₂CN(CN) (Grade 400)	Same as above	None	As imp.	3-Proc.	2	2	2	(X)
HCN (Grade 400)	Same as above	None	As imp.	4-Proc.	2	2	2	(X)
HCN (Grade 400)	Same as above	None	As imp.	4-Proc.	2	2	2	(X)

*Specify period of sampling. For example, state "twice, winter and summer", or "once, during peak production", or "quarterly, random". This approach is to ensure that sampling is done during highest potential exposure periods.

Asbestos

Tank Car
Ref 5

LAM001148

MAP 005321

INDUSTRIAL HYGIENE ASSESSMENT STRATEGY

Department 1 not laboratory 9/14/35

Issued By S.D. Paul 10/10/35 Date 10/10/35

Chemical/ Physical Agents	Job Classification/Shift Number Exposed	Summary of Previous Results	Exposure Limit	Annual Frequency*	Number of Persons to Sample	Projected Assessment Strategy				Assessments Without Monitoring
						TWA's	Task's	CEILING's	Area	
Acetic Continuous	9 Analyst 1 Shift Foreman 7 Technicians	None	90% TWA ACGIH: 850 ppm	1X 1Yr Random Routine Cps Gen'l Lab Area	2 Anal. 1 Tech.	5				3
Acetic Solvent	Same as above 18-20 analysts 3-4 techs 1-2 process chemist	None	Same as above	1X 1Yr Random Routine Cps Gen'l Lab Area	N/A			*		
Acetone	Same as above	1981: 2A=3.14-5.16 ppm 1S=7.78 ppm 45P=0.30-11.76 ppm 1982: 36P=1.27-20.63 ppm	OSHA: TWA=1000 ppm ACGIH: TWA=750 ppm STEL=1000 ppm	1X 1Yr Random Routine Cps Std floor & Anal. Acetone samples + touch glassware	3 Anal. 1 Tech.	4			5	
Benzene	Same as above	1981: 5AP=0.01-0.16 ppm 1982: 30P=0.01-0.44 ppm	OSHA: TWA=10 ppm ACGIH: TWA=10 ppm STEL=25 ppm	1X 1Yr Random Routine Cps Std floor & Anal. Benz samples	4 Anal. 2 Tech.	6			4	
Acetonitrile	Same as above	1981: 2A=0.01-0.05 ppm 1S=0.21 ppm 18P=0.01-1.97 ppm	OSHA: TWA=10 ppm ACGIH: TWA=10 ppm STEL=25 ppm	1X 1Yr Random Routine Cps Std floor & Anal. Acetonitrile	2 Anal. 1 Tech.	3			1	4
Toluene	Same as above	1981: 5AP=0.01-0.07 ppm 1982: 30P=0.01-0.36 ppm	OSHA: TWA=50 ppm ACGIH: TWA=50 ppm STEL=75 ppm	1X 1Yr Random Routine Cps Std floor & Anal. Toluene samples	2 Anal. 1 Tech.	3			1	4

*Specify period of sampling. For example, state "twice, winter and summer", or "once, during peak production", or "quarterly, random". This approach is to ensure that sampling is done during highest potential exposure periods. * Many site measurements throughout laboratory

LAM001150

MAP 005323

Department C. Tool Laboratory 914.35Issued By S.D. Paul / J.C. Gail Date A 13-1-83

Projected Assessment Strategy								
Chemical/ Physical Agents	Job Classification/Shift Number Exposed	Summary of Previous Results	Exposure Limit	Annual Frequency*	Number of Persons to Sample	TWA's STEL's TASK's CEILINGS AREA	No. FV	Assessments Without Monitoring
Chloroform Acrylonitrile	Same as above	1981: SAP = 0.01-0.09 ppm 1982: SAP = 0.01-0.16 ppm	OSHA: TWA = 100 ppm ACGIH: TWA = 100 ppm STEL = 150 ppm	1x 1yr Random Peak Prop & Anal 4 samples	2-Anal. 1-Tech.	2	1	
Acrylonitrile	Same as above 18-Lab Analysts 3-Lab Technician 1-Process Chemist	1981: 2A = 2.36-3.28 ppm 15 = 0.23 ppm 45P = 0.01-1.21 ppm 1982: 36P = 0.01-1.03 ppm	OSHA: TWA = 2 ppm C = 10 ppm ACGIH: TWA = 2 ppm STEL = 10 ppm DMCH: TWA = 2 ppm STEL = 10 ppm	1x 1yr Random Peak Prop & Anal 4 samples	4-Anal. 2-Tech.	3	3	
Toluene	Same as above	1981: SAP = 0.01-0.25 ppm 1982: 30P = 0.01-0.31 ppm	OSHA: TWA = 200 ppm C = 300 ppm ACGIH: TWA = 100 ppm STEL = 150 ppm	1x 1yr Random Peak Prop & Anal 4 samples	2-Anal. 1-Tech	3	3	
Xylene	Same as above	1981: SAP = 0.01-1.03 ppm 1982: 30P = 0.01-0.40 ppm	OSHA: TWA = 100 ppm ACGIH: TWA = 100 ppm STEL = 150 ppm	1x 1yr Random Peak Prop & Anal 4 samples	2-Anal. 1-Tech	3	3	
CH₂O	Same as above	Above	OSHA: TWA = 3 ppm ACGIH: C = 2 ppm	1x 1yr Random Peak Prop & Anal 4 samples	4-Anal 2-Tech	3 1	4	

*Specify period of sampling. For example, state "twice, winter and summer", or "once, during peak production", or "quarterly, random". This approach is to ensure that sampling is done during highest potential exposure periods.

LAM001151

MAP 005324

Department: atrol Laboratory 914.35Issued By: DDP/JS Date: 1/1/83

Projected Assessment Strategy									
Chemical/ Physical Agents	Job Classification/Shift Number Exposed	Summary of Previous Results	Exposure Limit	Annual Frequency*	Number of Persons to Sample	Task's STEL's TLV's	Area CEILING's	No. FY	Assessments Without Monitoring
Defoliant	Same as above	None	OSHA: TLV: 100ppm ACGIH: TLV: 100ppm STEL: 125ppm	1x/yr Random Peak Prod. Ops Std Prop & Anal. 4.15% samples	2-Anal. 1-Tech.	3	CEILING's	1	Yes
Trifluoroacetic acid	Same as above	None	DNCH: TLV: 100ppm STEL: 300ppm	1x/yr Random Peak Prod. Ops Std Prop & Anal. 4.15% samples	2-Anal. 1-Tech.	3	CEILING's	2	Yes
Methanol	Same as above	None	OSHA: TLV: 5ppm ACGIH: TLV: 5ppm STEL: 10ppm	1x/yr Random Peak Prod. Ops Std Prop & Anal. 4.15% samples	2-Anal. 1-Tech.	3	CEILING's	3	Yes
Methanol	Same as above	None	OSHA: TLV: 5ppm ACGIH: TLV: 5ppm STEL: 10ppm	1x/yr Random Peak Prod. Ops Std Prop & Anal. 4.15% samples	2-Anal. 1-Tech.	3	CEILING's	3	Yes
Acetone	Same as above	None	OSHA: TLV: 0.1ppm ACGIH: TLV: 0.1ppm STEL: 0.3ppm	1x/yr Random Peak Prod. Ops Std Prop & Anal. 4.15% samples	2-Anal. 1-Tech.	3	CEILING's	2	Yes

*Specify period of sampling. For example, state "twice, winter and summer", or "once, during peak production", or "quarterly, random".
This approach is to ensure that sampling is done during highest potential exposure periods.

MAP 005325

LAM001152

Projected Assessment Strategy						
Chemical/ Physical Agents	Job Classification/Shift Number Exposed	Summary of Previous Results	Exposure Limit	Annual Frequency*	Number of Persons to Sample	Assessments Without Monitoring
MIBK	Same as above	None	OSHA: TWA: 100 ppm MSHA: TWA: 50 ppm SIL: 75 ppm	IX 1/yr Random Samples Op. S. S.H. Pop. & Anal. of MIBK samples	2 Anal. 1 Tech.	3
ACH	Same as above	None	DMEH: C = 10 ppm	IX 1/yr Random Samples Op. S. S.H. Pop. & Anal. of ACH samples	2 Anal. 1 Tech.	3
Radiation	Same as above	None	10 mSv/yr	IX 1/yr Random Samples Op. S. S.H. Pop. & Anal. of Radiation	2 Anal. 1 Tech.	3
Ammonia	Same as above	None	10 mSv/yr	IX 1/yr Random Samples Op. S. S.H. Pop. & Anal. of Ammonia	2 Anal. 1 Tech.	3
Biphenyl	Same as above	None	10 mSv/yr	IX 1/yr Random Samples Op. S. S.H. Pop. & Anal. of Biphenyl	2 Anal. 1 Tech.	3
Crotonaldehyde	Same as above	None	10 mSv/yr	IX 1/yr Random Samples Op. S. S.H. Pop. & Anal. of Crotonaldehyde	2 Anal. 1 Tech.	3
DPO	Same as above	None	10 mSv/yr	IX 1/yr Random Samples Op. S. S.H. Pop. & Anal. of DPO	2 Anal. 1 Tech.	3
HCl	Same as above	None	10 mSv/yr	IX 1/yr Random Samples Op. S. S.H. Pop. & Anal. of HCl	2 Anal. 1 Tech.	3
HCN	Same as above	None	10 mSv/yr	IX 1/yr Random Samples Op. S. S.H. Pop. & Anal. of HCN	2 Anal. 1 Tech.	3

*Specify period of sampling. For example, state "twice, winter and summer", or "once, during peak production", or "quarterly, random". This approach is to ensure that sampling is done during highest potential exposure periods.

Acetic acid
 Acetic anhydride
 Aluminum chloride
 Ammonium chloride
 Ammonium hydroxide
 Barium chloride
 Benzene
 Butanol
 Butyl cellosolve
 N-butylamine
 Cadmium sulfide
 Carbon bisulfide
 CO
 CCl₄
 Cl₂
 Chloroform
 Cobalt oxide
 Cyclopentadiene
 Cyclohexanone
 Dimethylformamide
 Dimethylphthalate
 Ethanolamine
 Formic acid
 Hydroxyne
 H₂
 H₂O₂
 Hydroquinone
 IPA
 Isobutyl alcohol
 Methyl cellosolve
 Methylamine
 Methylchloroform
 Methyl chloride
 Nickel oxide
 Oxalic acid
 Phenol
 Phosphoric acid
 Picric acid
 Silver chloride
 Sodium bisulfite
 NaOH
 SO₂
 Sulfuric acid
 Toluene
 Triethylamine
 V₂O₅