

PLAINTIFF'S EXHIBIT

CT-448

TITLE PAGE-STOCK NO. 100TP

Industrial Hygiene Survey by Nick Pocock

HILLSBORO A/C PLANT

(Epichlorohydrin) January, 1981

(Dimethyl Formamide) July, 1981

Smead MFG. CO. HASTINGS MN. LOS ANGELES CHICAGO
LOGAN OH. MCCREGOR TX. LOCUST GROVE GA.

CTD016338

CertainTeed

Date

March 11, 1981

To

Jack Anderson

file

Location and mail code

Hillsboro 521

Subject

INDUSTRIAL HYGIENE SURVEY
Hillsboro A/C Plant

From

Tom Shaffer *TS*

Location and mail code

1125/4

cc: O. Kittilstad - 1125/4
D. Hall - 2125/2B
J. McGinley - 2/25/2B
N. Pocock - Hillsboro 521

Please find attached the results of the air monitoring which Nick conducted for epichlorohydrin. In all cases, the results were found to be "none detected". The detection limit averaged 0.1 ppm, well below the OSHA limit of 5 ppm.

These results constitute an "Employee Exposure Record" as defined in OSHA 29CFR1910.20 and CertainTeed Corporate Procedure AD-011. As such, they must be maintained for at least 30 years in the plant and be made available to those federal officials/designees and employees according to those guidelines.

If you have any questions, please don't hesitate to contact me.

TCS/tmf

Industrial Hygiene Survey
Hillsboro A/C Plant
January, 1981

TABLE 1

No. 81-	POSITION LOCATION (DATE)	NAME	ANALYSIS FOR	TIME	MIN.	RESULT*	REMARKS
002	Epoxy Coupling Sprayer 1/28/81	G. Miller	epichlorohydrin	10:26a- 11:46p	80	none detected <0.023 ppm	EPON 828 16" 150 Coupling
003				2:17p- 3:10p	53	none detected <0.035 ppm	Respirator worn
005	South Side End Painter 2/3/81	G. Miller	epichlorohydrin	1:23p- 2:18p	55	none detected <0.034 ppm	EPON 828 8" 150 pipe
006				3:20p- 3:27p	7	none detected <0.27 ppm	

CTD016340

* The OSHA limit as given in 29 CFR 1910.1000 is 5 ppm.

Air monitoring was conducted on 150mg charcoal tubes with an MSA Model S pump equipped with a 92943 low flow adapter. Calibration was obtained before and after monitoring. Analysis was done by gas chromatography.

Industrial Hygiene Survey
Hillsboro A/C Plant
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Air monitoring was conducted on 150mg charcoal tubes with an MSA Model S pump equipped with a 92943 low flow adapter. Calibration was obtained before and after monitoring. Analysis was done by gas chromatography.

CTD016341

CertainTeed

Date

June 4, 1981

To

O. D. Kittilstad

Location and mail code

VF 1125 #1

Subject

DMF MONITORING AT HILLSBORO

From

B. Blakeslee/kb

Location and mail code

BB - 2126

cc: J. L. MacDougall VF 2125 #2B
D. Hall VF 2125 #2B
N. Pocock Hillsboro #257
J. Anderson Hillsboro #257

— SPEEDLINE SOL

Dimethyl
Formamide

Our epoxy process in Hillsboro has recently adopted the use of DMF as a cleaner. I feel the personnel should be monitored on a one time basis for DMF exposure with respect to the 10 ppm OSHA Standard. The results will be used to determine future work practices and monitoring requirements.

Please supply Nick Pocock with monitoring equipment and instructions for DMF. I will supervise his efforts and see that the equipment and samples are returned as soon as possible. Your assistance will be greatly appreciated.

DIMETHYL FORMAMIDE

ALCOHOL 10 ppm, skin irritation
ACQUIT
OSHA

Silica gel described with Methanol.
≤ 1.0 Lpm sample rate

CDR THRESHOLD - 100 ppm FISHY, PUNGENT

CONFIDENTIAL

To N. Pocock	Location and mail code Hillsboro 257	From P. Norris <i>DR</i>	Location and mail code 1125/4	Phone no and/or ext. 7030
Subject Dimethyl Formamide Sampling				Date June 29, 1981

cc: B. Blakeslee - 2126/00
J. MacDougall - 2125/2B
D. Hall - 2125/2B
J. Anderson - Hillsboro 257

In reference to the letter dated June 4, 1981, concerning Dimethyl Formamide monitoring at the Hillsboro plant, and conversation between N. Pocock and myself dated June 29, 1981, the following equipment and information are forwarded for sampling DMF:

1. Bulk sample vial.
2. Eleven silica gel tubes.
3. National Institute for Occupational Safety and Health (NIOSH) sampling data sheet on Dimethyl Formamide.
4. Air Monitoring Data Sheets.

Please return the samples and Data Sheets upon completion of sampling and we will have the samples analyzed. If you have any questions, please feel free to contact me.

PJN/tmf

Send vials

*Samples taken
7/24/81*

CTD016343

Certified

To	Nick Pocock	Mail Code #257	From	Peter J. Norris	Mail Code 1125/4	Ext. 7935
Subject	DMF SAMPLING RESULTS					Date October 6, 1981

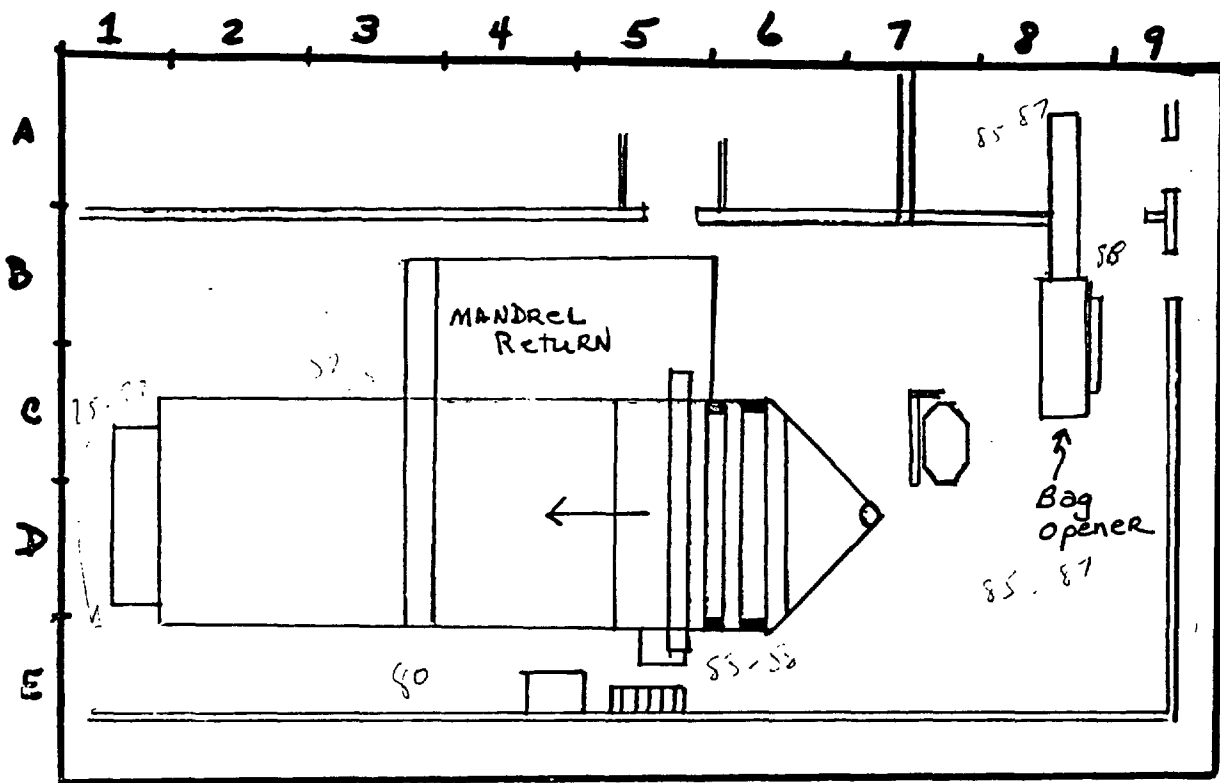
cc: B. Blakeslee - 2126/00
D. Hall - 2125/2B
J. Anderson - Hillsboro, #257

The result of Dimethylformamide sampling at the Epoxy applicator dispensing station was <0.02 ppm. OSHA regulates DMF at a Permissible Exposure Limit of 10 ppm and DMF also has a "skin" notation assigned to it. Based on the description of the application process, the actual tour of the dispensing station on 11 September, and the resultant personal exposure, the operation is in compliance with the applicable standards and there is no apparent over exposure to employees. It is recommended, however, when handling Dimethylformamide directly, that employees use appropriate gloves designed for protection against organic solvents.

PJN/car

CTD016344

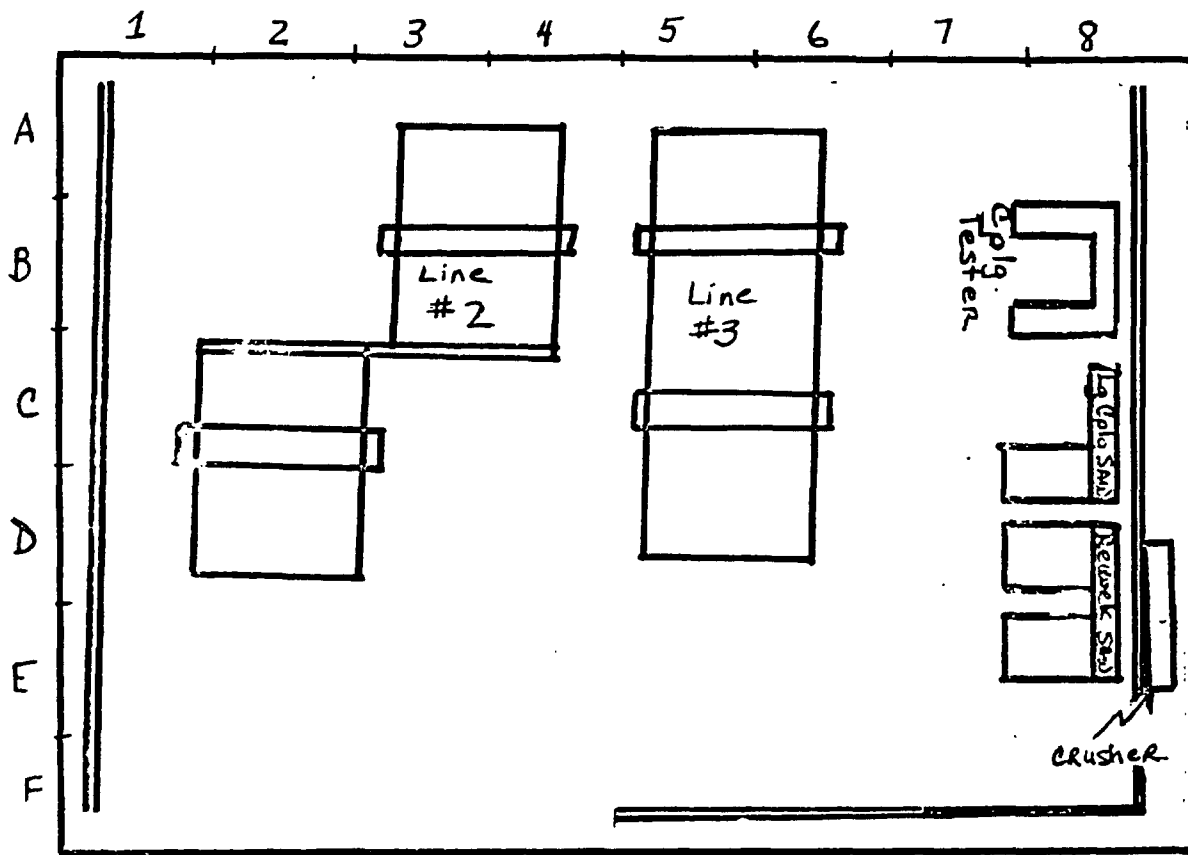
LLSBOBOA PIPE PLANT
PIPE MACHINE



POSITION	LOCATION	SOUND PRESSURE LEVEL (dBA)	ESTIMATED dBA	DOSIMETER-TWA dBA			REMARKS
				80	85	90	
Mixer Operator (4)	A-C 8-9	85 87				73.4	
Machine Tender (5)	B-E 6-9	85 86				85.4	
Press Operator (4)	D-E 6-9	85 86				79.4	
Pipe Handler (5)	B-E 1-2	75 83				88.8	
Laborer (2)	A-E 1-9	75 88				83.0	Tray Loader
Manufacturing Supervisor (7)	A-E 1-9		< 85				

CTD016428

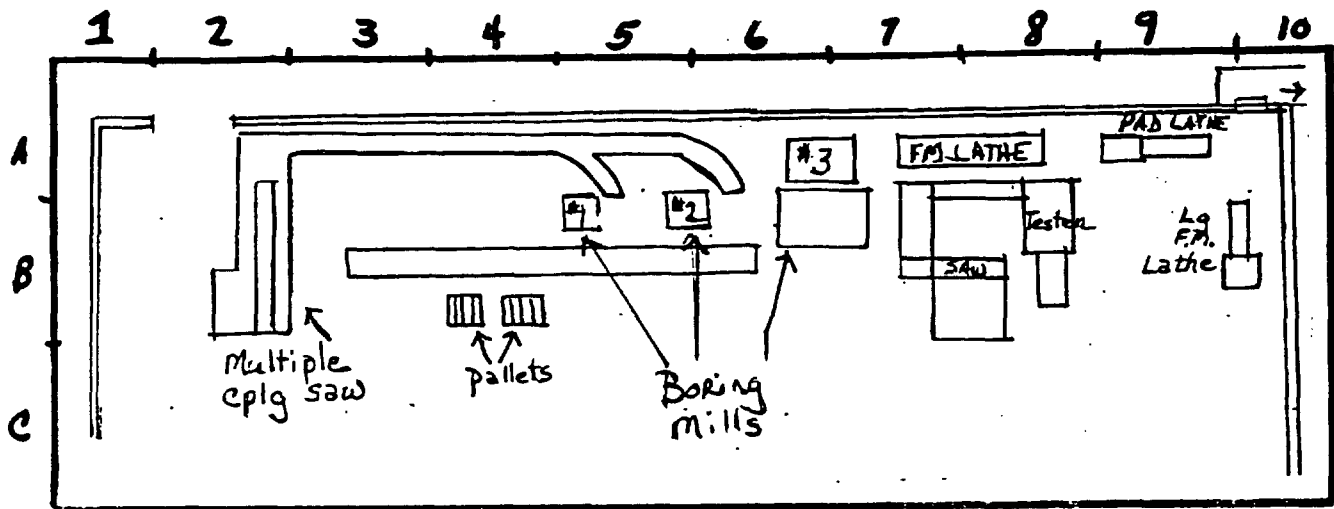
LLSBORO 'A' PIPE PLANT
FINISHING DEPARTMENT



POSITION	LOCATION	SOUND PRESSURE LEVEL (dBA)	ESTIMATED dBA	DOSIMETER-TWA dBA			REMARKS
				80	85	90	
Lathe Operator Line #2	A-B 3-4					96.2	(4) Lathe Operator Rotate Between Lines
Lathe Operator Line #3	A-B 5-6	92-95				94.2	
Inspector Line #2	A-D 1-4					83.9	(5) Inspectors Rotate Between Lines
Inspector Line #3	A-D 5-6		✓ <85 >		91.9	97.8	(2) Hydrotester Rotate Between Lines
Hydrotester Operator Line #2	C-D 1-3	87				91.3	
Hydrotester Operator Line #3	C-D 5-6					88.6	
Coupling Tester Operator	A-B 7-8	85-96				92.1	
lg. Coupling Saw Operator	C-D 7-8	not running				92.1	
Rework Saw Operator	D-E 7-8	87-96				92.1	
Material Operator (10)	C-D 1-6	85-90	<85*		96.0		Work as Bellers/ Handlers on Lines & Stackers.
Truck Driver (4)	A-F 1-8		85-90*		93.2	79.7	Rebanding Pipe
Laborer (1)	A-F 1-8		85-90*				
Finish Supervisor (4)	A-F 1-8		85-90*	91.0			
Crusher Operator	D-F 6	95-101				97.1	Also Operates Wood Saw

CTD016429

WILSBORO 'A' PIPE PLANT
FITTINGS DEPARTMENT



POSITION	LOCATION	SOUND PRESSURE LEVEL (dBA)	ESTIMATED dBA	DOSIMETER-TWA dBA			REMARKS
				80	85	90	
Coupling Cut Off Saw Operator (1)	A-C 1-3	91	> 90*	90.5			
Coupling Stacker	B 3-5	87-91				87.1	
Boring Mill Operator #1 (1)	A-C 1-5	88-92				93.0	Consider all Mill Operators Exposed >90dBA
Boring Mill Operator #2 (1)	A-C 5-6	91	>90*		95.7		
Boring Mill Operator #3	A-B 6-7	85-91				91.5	> 100 compress. air
F.M. Lathe Operator (2)	A-C 7-8	91-97	>90*		89.9		
Specialty Lathe Operator (4)	A-C 9-10	91-92				89.9	

CTD016430

A hand-drawn floor plan of a rectangular room. The room is bounded by a thick black line. The top edge is marked with numbers 1 through 9, and the left edge is marked with letters A, B, C, and D. Inside the room, there are several rectangular shapes representing furniture or fixtures. On the left side, there are three vertical rectangles. In the center, there is a large horizontal rectangle with an arrow pointing left towards it. To the right of this large rectangle, there is a smaller horizontal rectangle. Below the large rectangle, there are two vertical rectangles, with an arrow pointing to them and the text 'Cplg. Painting' written below. To the right of the small rectangle, there is a vertical line with a small square at the bottom, and the text 'Pipe cleaning Brush' written next to it.

POSITION	LOCATION	SOUND PRESSURE LEVEL (dBA)	ESTIMATED dBA	DOSIMETER-TWA dBA			REMARKS
				80	85	90	
Pipe Cleaner	A-D 8					84.7	(1) Classified Person in Epoxy Department
Coupling Painter	C-D 4-5	not running	85*				

CTD016431

WILLSBORO A/C PIPE PLANT
MISCELLANEOUS JOB POSITIONS

POSITION	LOCATION	SOUND PRESSURE LEVEL (dBA)	ESTIMATED dBA	DOSIMETER-TWA dBA			REMARKS
				80	85	90	
Fittings Maker (2)	Fittings Area	not running				92.6	85-90 background from line 2
Mechanic (11)	Maintenance		<85				
Boiler Operator (3)	Plant B Boiler Rm.	84-88				84.7	1 Boiler running - manually
✓ Machinist (3)	Maintenance	71-80	<85*		83.5		Background levels with doors closed
Electrician (1)	Maintenance		<85				
Maintenance Supervisor (3)	Maintenance		<85				
Equipment Operator (3)	Yard		<85				
✓ Bulk Cement Unloader (1)	Yard		<85*		86.2		
Warehouse Supervisor (1)	Yard		<85				Mostly inside
Pressure Operator (1)	Yard		<85				
Loading Laborer (1)	Yard		<85				
✓ Truck Driver (1)	Yard		<85*		86.1		
Shipping Supervisor (1)	Yard		<85				
Lab Technician (1)	Lab		<85				

CTD016432

P.N.

CTD016433

10/11/12

CTD016434

HUSKORP

01/11/82

☐ FIBERGLASS ☐ ASBESTOS ☐ TOTAL DUST ☐ SILICA DUST ☐ ASPHALT FUMES ☐ VINYL CHLORIDE (MONOMER) ☐ FORMALDEHYDE ☐ PHENOL ☒ NOISE	☐ OPEN FACE ☐ CLOSED FACE ☐ CYCLONE ☐ CLOSED FACE ☐ CHARCOAL TUBE ☐ IMPINGERS, TWO IN SERIES ☐ SILICA GEL ☒ AUDIODOSIMETER	☐ 0.8u MCEF, MILLIPORE FILTER ☐ 5u PVC FILTER ☐ GLASS FIBER-SILVER HEILFILTER ☐ 150 mg. CHARCOAL ☐ SODIUM BISULFITE ☐ 300mg SILICA GEL ☒ 85 dBA ☐ 90 dBA
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☐ DUO II PUMP ☐ DUO SUPER PUMP	☐ MSA PUMP ☐ DU PONT 7176 AUDIODOSIMETER	DEPARTMENT / LINE LINE # 2
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EMPLOYEE NAME: Albert Hornak

JOB TITLE: Inspector

PHYSICAL STATEMENT: ☐ FUNCTIONING NORMALLY ☐ NOT FUNCTIONING NORMALLY

OUTSIDE TEMPERATURE °F	WIND DIRECTION	WIND VELOCITY MPH	☐ 1-Sunny ☐ 2-Cloudy ☐ 3-Hazy ☐ 4-Rain ☐ 5-Partly ☐ 6-Fog	☐ 7-Snow ☐ 8-Other
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CONTROL NO.	PUMP SERIAL	SAMPLE NUMBER	TIME START	TIME STOP	TOTAL MINUTES	LPM	VOLUME LITERS	ANALYSIS RESULT	AIRBORNE CONCENTRATION
002	9177		0905	1457	352	95		129.5 / 91.9 dB	

DID EMPLOYEE WEAR RESPIRATOR? ☐ YES ☐ NO ☐ SOMETIMES

8 HOUR CORRECTED EXPOSURE = %

COMMENTS, SKETCHES

CTD016435

Huisson

11/11/11

CONTAMINANT	DAMPING FILTER	DAMPING MEDIA
☐ FIBERGLASS	☐ OPEN FACE	☐ 0.8u MCEF, MILLIPORE FILTER
☐ ASBESTOS	☐ CLOSED FACE	☐ 5u PVC FILTER
☐ TOTAL DUST	☐ CYCLONE	☐ GLASS FIBER-SILVER MEM.FILTER
☐ SILICA DUST	☐ CLOSED FACE	☐ 150-g. CHARCOAL
☐ ASPHALT FUMES	☐ CHARCOAL TUBE	☐ SODIUM BISULFITE
☐ VINYL CHLORIDE (MONOMER)	☐ IMPINGERS, TWO IN SERIES	☐ 300-g SILICA GEL
☐ FORMALDEHYDE	☐ SILICA GEL	☐ 85 uBA
☐ PHENOL	☒ AUDIODOSIMETER	☐ 90 uBA
☒ NOISE		

☐ DUPO RT PIANO PUMP ☐ MSA PUMP ☐ BUBBLE SUPER PUMP ☐ DUPO RT B376 AUDIOBUSHILTER	
EMPLOYEE NAME	DEPARTMENT / LINE
Tom Westmoreland	
JOB TITLE / TO EMPLOYMENT SAMPLE DISCOUNT LOG NUMBER CODE	REPLACEMENT CATEGORY
Finishing Supervisor	

[illegible]

☐ YES ☐ NO ☐ SOMETIMES							
CONTROL NO.	DESIGNATOR	CELL NO.	START TIME	STOP	TOTAL HOURS	SHADE OF SOIL	8 HOUR CORRECTED EXPOSURE - %
003	REFINE 5245		0910	1500	350	84°	115 LED 115.2 / 91.0 dB
DO NOT WRITE WITH HEAVY PENCIL/			DO NOT WRITE WITH		DO NOT WRITE		
☒ YES ☐ NO ☐ SOMETIMES							

[illegible]

CTD016436

4
1/1/1/1/8/2

Shack metal ceiling
Reinforced Plywood plait

☐ DUFOIT PUMP ☐ ELION COPPER PUMP		☐ MSA PUMP ☐ DUPONT 7176 AUDIOBAND FILTER	
EMPLOYEE NAME	FAT CELL NUMBER	DEPARTMENT / LINE	
11/01/01			
200		HARVESTING	
Coupling Cutoff			

[illegible]

AREA	POSITION	CELL	START	TIME	STOP	TOTAL	ADJUST	8 HOUR CORRECTED CUMULATIVE - %
NO.	STATION	NO.				SAMPLES	OFFSET	
005	5247		0911		1458	347	78	107.9 / 90.5dB
☐ YES ☒ NO ☐ SOMETIMES								

PLANS, SKETCHES

A large sheet of graph paper with a grid pattern. The grid consists of horizontal and vertical lines forming small squares. There are approximately 20 columns and 15 rows visible. The paper appears to be blank, with no drawings or markings other than the grid itself.

CTD016439

10/11/18/2

[illegible]

10/11/17/18/2

CONTAMINANT	SAMPLING METHOD	SAMPLING METHOD
☐ FIBERGLASS	☐ OPEN FACE	☐ 0.8u MCEF, MILLIPORE FILTER
☐ ASBESTOS	☐ CLOSED FACE	☐ 5u PVC FILTER
☐ TOTAL DUST	☐ CYCLONE	☐ GLASS FIBER-SILVER MEM. FILTER
☐ SILICA DUST	☐ CLOSED FACE	☐ 150 mg. CHARCOAL
☐ ASPHALT FUMES	☐ CHARCOAL TUBE	☐ SODIUM BISULFITE
☐ VINYL CHLORIDE (MONOMER)	☐ IMPINGERS, TWO IN SERIES	☐ 300 mg SILICA GEL
☐ FORMALDEHYDE	☐ SILICA GEL	☒ 85 dBA
☐ PHENOL	☒ AUDIODOSIMETER	☐ 90 dBA
☒ NOISE		

☐ AUTO RE FLYING FORM ☐ BLOWN SUPER PUMP		☐ MSA PUMP ☐ DuPont D376 Audiometer FILTER	
EMPLOYEE NAME	PAT HATURA	EMPLOYEE NUMBER	DEPARTMENT / LINE
JOB TITLE	TO ENGINEER IN CHARGE, DISCREET, LOW MOUNT, LOW	EMPLOYEE NUMBER	DEPARTMENT / LINE
	Machinist		

☐ FUNCTIONING INTERNALLY ☐ NOT FUNCTIONING NORMALLY -

[illegible]

☐ YES ☐ NO ☐ SOMETIMES							
CONTAINER NO.	DISINFECTANT STRAIN	CALL NO.	START TIME	STOP	TOTAL MINUTES	REABSORB OF DUST	8 HOUR CORRECTED EXPOSURE - %
008	6465		0925	1521	356	30	40.4 / 83.5 DBA
☐ YES ☒ NO ☐ SOMETIMES							

comment, sketches

12/11/17/18/2

CONTROLS/TESTS	SAMPLING METHOD	SAMPLING MEDIA
☐ FIBERGLASS	☐ OPEN FACE	☐ 0.8μ MCEP, MILLIPORE FILTER
☐ ASBESTOS	☐ CLOSED FACE	☐ 5μ PVC FILTER
☐ TOTAL DUST	☐ CYCLONE	☐ GLASS FIBER SILVER MELLIFILTER
☐ SILICA DUST	☐ CLOSED FACE	☐ 150 mg. CHARCOAL
☐ ASPHALT FUMES	☐ CHARCOAL TUBE	☐ SODIUM BISULFITE
☐ VINYL CHLORIDE (MONOMER)	☐ IMPINGERS, TWO IN SERIES	☐ 300 mg. SILICA GEL
☐ FORMALDEHYDE	☐ SILICA GEL	☒ BS 18A
☐ PHENOL	☒ AUDIODOSIMETER	☐ 90 18A
☒ NOISE		

☐ Duro II Pycro Pump ☐ MSA PUMP ☐ Cludis Super Pump ☐ D.Pont 3176 Audiobuffer		DEPARTMENT / LINE	
EMPLOYEE NAME Richard Strickland		EMPLOYEE NUMBER [] [] [] [] [] [] [] [] [] []	
JOB TITLE Forklift driver (Yard)		HOURS WORKING [] [] [] [] [] [] [] [] [] []	
[] [] [] [] [] [] [] [] [] []		[] [] [] [] [] [] [] [] [] []	

[illegible]

DIE		WIND		RESPIRATOR		IF SOMETIMES, WHEN?		RESPIRATION MADE - YES	
☐ YES ☐ NO ☐ SOMETIMES									
CONTROL	DESIGNER	DATE	TIME	STOP	TOTAL	REWORK	8 Hour Corrected Exposure - 7.		
609	9133	0	0922	1517	355	43	50.1	86.1	DBA
DIE		WIND		RESPIRATOR		IF SOMETIMES, WHEN?		RESPIRATION MADE - YES	
☐ YES ☐ NO ☐ SOMETIMES									

COMMENT, SKETCHES

CTD016443