ETHYL CORPORATION

SEP -7 1978

INTER-OFFICE

To W.C. Strader — Address BRP

From Thomas L. Roberts — Address BRT

Subject Revised 1978 Routine Lead and Vinyl Chloride Monitoring Schedule — Date Aug. 29, 1978

Introduction

As discussed in your meeting of June 29, 1978, we have developed a revised personal monitoring schedule for both lead and vinyl chloride. It is attached for your review. Over the past year and a half, we have collected a great deal of data in the TEL and VCl areas relating to employee exposures during all operations. This revised personal monitoring schedule is based on our professional assessment of these data and represents a more realistic approach to industrial hygiene evaluation. The following discussion summarizes my interpretation of the data in developing the monitoring frequency.

Discussion

When a specific government standard is available my interpretation is based on the requirements of the regulation; i.e., vinyl chloride. When a standard is not available, I use a "common sense" approach based on the objective of the monitoring. A more detailed explanation of this concept follows:

Vinyl Chloride

The attached VCl personal monitoring represents a reduction in the number of routine samples presently collected. This schedule is based on our interpretation of the OSHA standard 1910.1017 which reads as follows:

1) Monitoring "may be discontinued for any employee only when at least two consecutive monitoring determinations, made not less than five working days apart, show exposures for that employee at or below the action level."

2) Monitoring "shall be repeated not less than quarterly where employee is exposed, without regard to the use of respiration, in excess of the action level" (yet not exceeding the TLV)

3) Monitoring "shall be repeated at least monthly where any employee is exposed, without the use of respirator, in excess of the permissible exposure limit" (1.0 ppm)

As Item #1 above states, monitoring "may be discontinued", but this will not be done. At this point in our program all jobs

will be monitored at least annually. Due to this method of scheduling the amount of monitoring may have a tendency to change from month to month. However, over a period of time I anticipate it to stabilize.

Organic Lead

There is no formal OSHA procedure for scheduling personal monitoring. This allows a logical sampling schedule to be devised.

1) Monitoring shall be repeated annually for all employees when at least two consecutive samples show exposures at or below the permissible limit of 75 $\mu g/M^3$.

2) Monitoring shall be repeated not less than monthly when at least one of the last two sample results show an exposure in excess of the permissible limit.

This schedule represents an increase over the present routine program but I expect it to reduce the sampling frequency over the next several months. It will concentrate effort on problem areas. A part of the objective is to allow us to put more effort in other areas of the plant. These samples are based on unmasked values.

Inorganic Lead

OSHA is presently reviewing the latest proposed standard for inorganic lead. This schedule is based on the new proposed TLV (100 $\mu g/M^3$). The current TLV is 200 $\mu g/M^3$.

1) Monitoring shall be repeated annually for all employees when at least two consecutive samples show exposures below the permissible limit of 100 $\mu g/M^3$.

2) Monitoring shall be repeated not less than monthly when at least one of the last two sample results shows an exposure in excess of the permissible limit.

A number of inorganic lead evaluations were discontinued based on previous data. These are labeled with an "N" in the right hand column of the attached inorganic lead schedule.

Conclusion

As previously mentioned, the purpose of this revised schedule is to ultimately provide more extensive industrial hygiene coverage in all areas of the Baton Rouge plant. All organic and inorganic lead sampling frequencies are based on unmasked values.

Your comments will be appreciated.

Thomas L. Roberts
Industrial Hygienist

TLR:sbb
File:Oper. BR(VC1)(Lead)

VC3406

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MASKED

LOCATION / JOB FUNCTION	1978	1977 July	Aug.	Sept.	Oct.	Nov.	Dec.	1978 Jan.	Feb.	Mar.	Apr.	May	June	NEW PROPOSED 1978
* ALLOY														
A.H.3 OPER.	Q		0				0		0		0			M
CHARGE POT OPER.	A		3											A
ALLOY LEADER	SA		42				0	0						A
MELT POT OPER.	Q		4				4		64		4			A
* "B" BUILDING														
5TH FLOOR OPER	SA	20				7		5					15	A
3rd FLOOR OPER.	SA	1				0		0					5	A
WORKING LEADER	SA	0				0		1						A
WASH HOUSE OPER	A	0						41						A
* "C" BUILDING														
5TH FLOOR OPER.	Q	43	12	41	87	16	40		26			12		M
3rd FLOOR OPER.	Q	2	3	46	0	6	3		2		25			A
1ST FLOOR OPER	Q		38				19		13			14		A
* "D" BUILDING														
5TH FLOOR OPER.	A					12								A
3rd FLOOR OPER.	SA	0				0		0					0	A
1ST FLOOR OPER.	SA	1				0		41					14	M
WASH HOUSE	SA	1				0		291					197	M
* BLINDERS														
BLINDMASTER	M	17	6	0	9	0	0	0	11	0	4	1	1	A
MLA OPER.	M	211	544	483	110	8	105	36	465	16	38	6	71	A
OUTSIDE OPER.	M	547	1	14	67	0	42	255	27	0	44	1	6	M
* DRUMMING														
FILLER OPER.	Q	24	0	0			0					0		M
BETCO OPER.	Q	1	0	0		0	0					0		M
* FURNACES														
"A" FURN OPER.	Q	17							26			52		A
"B" FURN. OPER.	Q	60							12			169		M
"C" FURN. OPER	Q					24			59					M
"D-1" FURN. OPER	Q	152				14			31			12		M
"D-2 FURN. OPER	Q					9								A
"E" FURN OPER.	Q	5				3			7					A
RELIEF MAN	Q								32			56		A
														30

VC3408

ORGANIC LEAD TWA's
UNMASKED

Location & Job Function	1978	1977 July	Aug.	Sept.	Oct.	Nov.	Dec.	1978 Jan	Feb	Mar	Apr	May	June	New Proposed 1978
* Alloy														
A.H.B Oper.	Q						71		31		97			M
Charge Pot Oper	A													A
Alloy Leader	SA						22	19						A
Melt Pot Oper.	Q						19		1		21			A
* "B" Building														
5th Floor Oper	SA	16				17		16					50	A
3rd Floor Oper.	SA	25				41		17					39	A
Working Leader	SA	34				12		40						A
Wash House Oper	A	21						30						A
* "C" Building														
5th Floor Oper.	Q	76	35	53	41	46	71		60			96		M
3rd Floor Oper.	Q	98	31	90	27	20	32		53		30			A
1st Floor Oper	Q		48				25		31			54		A
* "D" Building														
5th Floor Oper.	A					8								A
3rd Floor Oper.	SA	9				13		48					48	A
1st Floor Oper.	SA	15				8		103					27	M
Wash House	SA	23				21		29					114	M
* Blenders														
Blendmaster	M	62	7	67	37	14	71	0	17	175	10	12	12	A
M.A Oper.	M	75	74	105	35	19	24	44	1	43	27	15	29	A
Outside Oper.	M	46	42	14	26	16	52	23	27	55	8	82	26	M
* Drumming														
Filler Oper.	Q	67	52	45			34					152		M
Bitco Oper.	Q	45	46	62		42	15					216		M
* Furnaces														
"A" Furn. Oper.	Q	20							17			44		A
"B" Furn. Oper.	Q	26							18			309		M
"C" Furn. Oper	Q					3			106					M
"D-1" Furn. Oper	Q	39				50			7			95		M
"D-2" Furn. Oper	Q					10								A
"E" Furn Oper.	Q	9				40			3					A
Relief Man	Q								56			62		A
122														30

Symbols: A - Annual
Q - Quarterly

VC3409

ORGANIC LEAD TWA'S
POTENTIAL

LOCATION & JOB FUNCTION	1978 JOB	1977 July	Aug.	Sept.	Oct.	Nov.	Dec.	1978 JAN	Feb	MAR	Apr	May	June	NEW PROPOS 1977
* ALLOY														
A.H.B OPER.	Q		223				71		31		97			M
CHARGE POT OPER	A		14											A
ALLOY LEADER	SA		65				22	19						A
MELT POT OPER.	Q		26				33		65		25			A
* "B" BUILDING														
5TH FLOOR OPER	SA	36				24		21					65	A
3rd FLOOR OPER.	SA	26				41		17					44	A
WORKING LEADER	SA	34				12		41						A
WASH HOUSE OPER	A	21						71						A
* "C" BUILDING														
5TH FLOOR OPER.	O	119	47	94	128	62	111		86			108		M
3rd FLOOR OPER.	O	100	34	136	27	26	75		55		55			A
1ST FLOOR OPER	O		86				44		44			68		A
														M
* "D" BUILDING														
5TH FLOOR OPER.	A					20								A
3rd FLOOR OPER.	SA	9				13		48					48	A
1ST FLOOR OPER.	SA	16				8		144					43	M
WASH HOUSE	SA	24				21		320					311	M
* BLENDERS														
BLENDMASTER	M	79	13	67	46	14	71	0	28	175	14	13	13	A
MLA OPER.	M	236	618	338	145	27	129	80	466	59	65	21	100	M
OUTSIDE OPER.	M	593	43	22	93	16	94	248	54	55	52	83	32	M
* DRUMMING														
FILLER OPER.	Q	91	52	45			34					152		M
BOFCO OPER.	Q	46	46	62		42	15					216		M
* FURNACES														
"A" FURN. OPER.	O	37							43			96		M
"B" FURN. OPER.	O	86							30			478		M
"C" FURN. OPER	O					27			165					M
"D-1" FURN OPER	Q	191				64			38			107		M
"D-2" FURN. OPER	O					19								A
"E" FURN OPER.	Q	14				43			10					9
RELIEF MAN	Q								88			118		M
														184

VC3410

INORGANIC LEAD TWA'S

MASKED

LOCATION & JOB FUNCTION	1978	1977 July	Aug.	Sept.	Oct.	Nov.	Dec	1978 Jan	Feb	Mar	Apr	May	June	NEW PROPOSED 1977
* ALLOY														
A.L.B OPER.	Q		0				0		0		0			A
CHARGE POT OPER.	A		1											A
ALLOY LEADER	SA		395				0	0						A
MELT POT OPR.	Q		6				354		59		41			A
* "B" BUILDING														
5TH FLOOR OPER	SA	8				31		—					—	N
3rd FLOOR OPER.	SA	0				0		—					—	N
WORKING LEADER	SA	0				0		—						N
WASH HOUSE OPER	A	0						—						N
* "C" BUILDING														
5TH FLOOR OPER.	Q	14	3	9	4	0	5		—			—		N
3rd FLOOR OPER.	Q	0	0	3	0	1	2		—		—			N
1ST FLOOR OPER	Q		9				9		—			—		N
* "D" BUILDING														
5TH FLOOR OPER.	A					3							—	N
3rd FLOOR OPER.	SA	0				0		—					—	N
1ST FLOOR OPER.	SA	0				0		—					—	N
WASH HOUSE	SA	0				0		—						N
* BLINDERS														
BLINDMASTER	M	0	0	0	4	0	0	—	—	—	—	—	—	N
MLA OPER.	M	4	1	0	2	0	13	—	—	—	—	—	—	N
OUTSIDE OPER.	M		0	1	3	0	0	—	—	—	—	—	—	N
* DRUMMING														
FILLER OPER.	Q	0	0	0			0					—		N
BETCO OPER.	Q	0	0	0		0	0					—		N
* FURNACES														
"A" FURN. OPER.	Q	65							49			154		A
"B" FURN. OPER.	Q	262							27			50		M
"C" FURN. OPER	Q					569			72					A
"D-1" FURN. OPER	Q	19				38			28			32		A
"D-2" FURN. OPER	Q					0								A
"E" FURN OPER.	Q	5				14			35					M
RELIEF MAN	Q								132			120		A

VC3411

INORGANIC LEAD TWA'S

UNMASKED

LOCATION / JOB FUNCTION	1/8	1977 JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	1978 JAN	FEB	MAR	APR	MAY	JUNE	NEW PROPOSED 1977
* ALLOY														
A.H.3 OPER.	Q		93				47		59		35			A
CHARGE POT OPER	A		86											A
ALLOY LEADER	SA		47				1	9						A
MELT POT OPER.	Q		46				519		2		25			A
* "B" BUILDING														
5TH FLOOR OPER	SA	28				29		—					—	N
3rd FLOOR OPER.	SA	18				45		—					—	N
WORKING LEADER	SA	3				8		—						N
WASH HOUSE OPER	A	4						—						N
* "C" BUILDING														
5TH FLOOR OPER.	Q	24	42	16	9	12	96		—			—		N
3rd FLOOR OPER.	Q	18	24	16	4	6	91		—		—			N
1ST FLOOR OPER	Q		21				28		—			—		N
* "D" BUILDING														
5TH FLOOR OPER.	A					2								N
3rd FLOOR OPER.	SA	17				3		—					—	N
1ST FLOOR OPER.	SA	31				9		—					—	N
WASH HOUSE	SA	6				10		—					—	N
* BLINDERS														
BLINDMASTER	M	4	0	12	0	2	3	—	—	—	—	—	—	N
MLA OPER.	M	0	3	3	3	4	5	—	—	—	—	—	—	N
OUTSIDE OPER.	M	6	3	4	20	34	10	—	—	—	—	—	—	N
* DRUMMING														
FILLER OPER.	Q	3	16	8			19					—		N
BRICO OPER.	Q	4	6	14		9	15					—		N
* FURNACES														
"A" FURN. OPER.	Q	75							118			96		A
"B" FURN. OPER.	Q	207							157			125		M
"C" FURN. OPER	Q					7			74					A
"D-1" FURN. OPER	Q					4			25			61		A
"D-2" FURN. OPER	Q					43								A
"E" FURN OPER.	Q	33				132			27					M
RELIEF MAN	Q								61			43		A

Symbols: A — ANNUAL

Q - QUARTERLY

N- NONE.

VC3412

Inorganic Lead TWA's

Potential

Location / Job Function	1978	1977 July	Aug.	Sept.	Oct.	Nov.	Dec	1978 Jan	Feb	Mar	Apr	May	June	New Proposed 1978
* Alloy														
A.H.B Oper.	Q		93				47		59		35			A
Charge Pot Oper.	A		87											A
Alloy Leader	SA		442				1	9						A
Melt Pt Oper.	Q		52				873		61		66			A
* "B" Building														
5th Floor Oper.	SA	36				60		—					—	N
3rd Floor Oper.	SA	18				45		—					—	N
Working Leader	SA	3				8		—						N
Wash House Oper.	A	4						—						N
* "C" Building														
5th Floor Oper.	Q	28	45	25	13	12	101		—			—		N
3rd Floor Oper.	Q	18	24	19	4	7	93		—		—			N
1st Floor Oper.	Q		30				37		—			—		N
* "D" Building														
5th Floor Oper.	A					5								N
3rd Floor Oper.	SA	17				7		—					—	N
1st Floor Oper.	SA	31				9		—					—	N
Wash House	SA	6				10		—					—	N
* Blenders														
Blendmaster	M	4	0	13	4	2	3	—	—	—	—	—	—	N
MLA Oper.	M	4	4	3	5	4	18	—	—	—	—	—	—	N
Outside Oper.	M		3	5	23	34	10	—	—	—	—	—	—	N
* Drumming														
Filler Oper.	Q	3	16	8			19					—		N
Bateo Oper.	Q	4	6	14		9	15					—		N
* Furnaces														
"A" Furn Oper.	Q	140							167			250		M
"B" Furn. Oper.	Q	469							184			175		M
"C" Furn. Oper	Q					576			146					M
"D-1" Furn Oper	Q					42			53			93		A
"D-2 Furn. Oper	Q					43								A
"E" Furn Oper.	Q	38				146			62					M
Relief Man	Q								193			163		M

VC3413

PVC Operations

Job	Code	Present Monitor Cycle	Monthly Results (ppm) 1977 July	Aug.	Sept.	Oct.	Nov.	Dec.	1978 Jan.	Feb	Mar.	Apr.	May	June	Monthly Avg.	Recom. Cyc
Charging	240	M	0.4	1.2	0.7	0.8	1.4	1.0	0.9	5.0	1.5	0.4	16.0	0.5		M
1st. floor	242	M	1.0	1.9	3.5	0.2	3.1	0.5	2.2	2.0	7.5	4.9	0.8	0.3		M
Utility	243	M	<0.1	2.3	1.5	0.4	0.6	0.2	0.3	1.7	1.3	<0.1	<0.1	0.8		Q
Dryer	244	Q	0.2	1.4	0.6	0.3	0.2	<0.1	0.1			0.1				A
Grinder	245	Q		0.2	0.8		0.1	0.1	0.1			0.1				A
Extruder	246	A												<0.1		A
FCM/M.11	247	A												0.1		A
Capd. Pilot	248	A												0.2		A
Warehouse	249	A												0.2		A
Polymerization	250	M	1.6	2.0	9.2	0.4	5.2	5.3	11.9	447.0	4.7	25.9	22.5	0.1		M
Finishing	251	Q	<0.1		1.3	<0.1	0.7	<0.1	0.4			0.1				A
Lab Tech	255	Q	0.2	0.1	<0.1	<0.1	2.1	<0.1	0.1			0.1				A
Gen Sup	256	A						0.3								A
Mfg. Utility	257	Q	0.4	0.6			1.3	0.6	6.1			<0.1				A
Shift Engin.	258	Q	<0.1	0.2	0.3	<0.1	0.1	<0.1	0.1			0.2				A
Reactor Supv.	220	SA					0.1					0.1				A
Finishing Sup.	221	SA					0.1					0.1				A
Shift Engineer	223	Q	0.1	0.1	0.3	<0.1	3.0	0.1	0.1			0.1				A
Reactor Fmn.	224	M	0.9	0.9	1.8	0.3	1.1	1.0								M
Finishing Fmn	225	Q	0.1	0.5	0.8	<0.1	0.3	<0.1	0.1			0.2				A
Cap'l Fmn	229	A						0.2						0.1		A

QC Lab

VC-3415

Lab	Code	Present Monitor Cycle	Monthly Results (ppm)												Monthly Avg.	Recommended Cycle
			July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar	Apr.	May	June		
[illegible]	320	SA	<0.1		0.3	0.4	<0.1	<0.1			<0.1					A
[illegible]	340	SA	<0.1		0.3	0.1	0.2	<0.1			0.8					Q
[illegible] Room	341	SA	<0.1		0.3	0.2	<0.1	<0.1			0.2					A
Lab. Tech.	342	M	0.2		<0.1	2.1	2.3	0.9	3.2	2.2	0.2		0.2	0.8		Q

PVC MAINTENANCE

VC.3416

Job	Code	Present Monitor Cycle	Monthly Results (ppm)												Monthly Avg.	Recommended Cycl
			July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan	Feb.	Mar.	Apr.	May	June		
MAINT. SUP	222	Q	0.1		<0.1		0.8	0.1	0.2			0.1				A
MAINT. FMN.	226	Q	0.2	0.2	0.1	0.1	1.4	0.1	0.2			0.2				A
E & I	05	Q	0.2	0.1	0.2	0.1	0.8	0.4	0.4			0.1				A
[illegible]	12	Q	0.1	<0.1	<0.1	<0.1	2.5	0.4	16.3			0.2				M
Mechanic	60	Q	0.9	0.1	<0.1	0.1	0.1		0.4			0.3				A

Job	Code	Present Monitor Cycle	Monthly Results (ppm)												Monthly Avg.	Recon c Cyc
			July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June		
Boilermkr	02	A	0.2					0.1								
Carpenter	04	A	0.3													
Electrician	05	A	<0.1			0.1		<0.1						0.1		
Instl Mech.	06	SA	0.4	<0.1	<0.1	0.1	0.3	<0.1	0.2			0.3		0.2		
Insulator	07	A	0.1													
Machinist	12	Q	<0.1	<0.1	0.3	0.1		0.3	0.1			0.1				
Mech. Insp.	13	SA				0.3		<0.1			0.2					
Painter	15	A	0.3													
Pipefitter	16	Q	0.2		0.3	0.1	0.6	<0.1		0.1						
Crane Opr.	21	A				<0.1		<0.1			0.2					
Rigger	22	Q				0.8		<0.1						0.1		
Sandblast Painter	23	A	0.3													
Rigger Painter	27	A	0.1													
Welder	29	A						<0.1								
Auxiliary	72	SA	0.2	<0.1	0.3	0.3	<0.1	<0.1			0.1					

VC-341H

Hydrocarbon Operations

Job	Code	Present Monitor Cycle	Monthly Results (ppm) 1977 July	Aug	SEPT.	Oct.	Nov.	Dec.	1978 JAN	Feb.	Mar	Apr.	May	June	Monthly Avg.	Recommended Cycle
A Board	140	A				0.1	<0.1							0.1		A
B Board	141	A				0.1		<0.1						0.1		A
Compressor	142	M	1.6	3.1	0.1	0.9	0.3	<0.1	1.2	0.4	0.4	0.3	1.8	0.2		M
Tower	143	Q	2.1	0.7	0.2	0.1	<0.1	<0.1	0.1			0.1				A
Furnace	144	Q	0.5	<0.1	<0.1	0.1	0.2	<0.1	0.4			0.1				A
Landing	145	M	0.5	2.5	1.2	12.8	1.1	1.7	121.2	1.3	<0.1	<0.1	0.6	1.8		M
Foreman	120	Q	0.5	6.3	<0.1	0.1	0.5	<0.1			58.4	0.1	<0.1			A