PLAINTIFF'S EXHIBIT

UC-4948

December 9, 1977

To: P.R. Sherman
Union Carbide Corporation
Metals Division
P. O. Box 579
Niagara Falls, N.Y. 14302

cc: H. B. Rhodes

Subject: A Review of Asbestos Dust Levels at King City

This memo is a summary report of past and present asbestos dust levels at King City. The present Cal/OSHA standards of asbestos fiber cotent in air are 2.0 asbestos fibers/cc of fibers greater than 5 microns in length for 8-hours exposure on a time - weighted average. This standard went into effect July, 1976. A level of 0.5 fiber/cc has been recommended to OSHA by NIOSH. We would like to review the attached data on personal FWA's and area samples.

Since July, 1976 a series of improvements have been initiated in addition to the then existing facilities and procedures. The improvements include the following:

1. Improve the dust collection in the bagging area.

   a. Rather than increase the capacity of the old system, an additional 13,000 cfm capacity collector was added.

   b. One dust pick up point for each Raymond Mill was installed.

   c. A hood was provided for the burst bag cleaning hopper including duct to the dust collector.

2. A maintenance program has been initiated to maintain a tight, leak-free dust handling system.

3. A central vacuuming system has been installed with outlets in the main bagging room and the RG-244 bagging room.

4. All heavy equipment have been provided with pressurized cabs which are air conditioned and provided with filtered air.

Although the above systems have gone into operation, no additional manpower has been added to operate or maintain the equipment.

Table I is a summary of the TWA data collected since January 1975. Figures I thought 4 are graphical presentations of the monthly data for different plant functions.

A09364

X4CC779

Phase I dust control went in operation January 1977; both Table I and Figures I through 4 show the improvements in dust levels after January 1977. It is also evident from this data that we have a long way to go before we reach the 0.5 fiber/cc standard promulgated by NIOSH.

We have reviewed your Phase II recommendations and decided there was a need for more background data on dust levels around the plant area so we spent several weeks collecting samples. This data is attached in the Appendix; the sample conditions and results are listed day by day. Sample locations are shown on the plant layout included in the Appendix.

We would like you to review this data and update your Phase II recommendations taking into account the possibility that we may have to reach 0.5 fiber/cc levels in the near future. If you should need more information give me a call.

Earl W. Shortridge

Earl W. Shortridge

/bd

A09365

X400790

TABLE I

Operator TWA Asbestos Dust Exposure Levels

OPERATOR	1975			1976			1977 YTD November		
	High	Average	Low	High	Average	Low	High	Average	Low
Main Bagger-Palletizer	5.09	3.67	1.84	4.73	3.03	1.21	3.10	1.69	0.56
RG-244 Bagger	4.74	1.63	0.82	2.41	1.14	o.51	2.10	0.85	0.28
Outside Operator	4.07	2.50	0.99	2.60	1.45	0.91	1.66	1.17	0.53
Rock Fiber Operator	1.58	1.03	0.69	1.28	0.89	0.34	1.22	0.69	0.30
Press Operator	1.12	0.79	0.50	0.96	0.66	0.48	1.43	0.70	0.39
Shipping Forklift-Operator	0.98	0.63	0.32	0.58	0.46	0.30	1.10	0.63	0.28
Maintenance	2.01	1.25	0.54	2.05	1.04	0.45	1.46	0.82	0.29

409366

X400781

Published by AsbestosClaims.Law
asbestosclaims.law/library/19452/3

APPENDIX

AREA SAMPLE DATA

A09367

X400782

AUGUST 23, 1977

Conditions: 1. Wind out of the north.	North Fence	South Fence
10:30 A.M. - 11:30 A.M	3-5 mph	3-4 mph
11:35 A.M. - 12:35 P.M.	4-6 mph	4-6 mph
12:35 P.M. - 1:35 P.M.	7- 9 mph	6-8 mph
1:35 P.M. - 2:35 P.M.	9-12 mph	7-9 mph
2:35 P.M. - 3:35 P.M.	12-16 mph	8-12 mph

2. Temperature 74 - 85 °F

3. Traffic
   Heavy forklift traffic around storage area.
   Forklifts moving pallets from main bagging room & RG-244 bagging to storage area.

   5 ore trucks @ 10:30 A.M. and 3:30 P.M.
   Hand loading truck at dock
   Cat working top of ore piles
   Front end loader filling feed hopper throughout day

4. Sprinklers on stockpile ?? time

Time	North Fence	Parking Lot	Back of Maint.Shop	South Fence
10:30 A.M. - 11:30 A.M.	.04	.08	.12	.05
11:35 A.M. - 12:35 P.M.	.08	.10	.17	.09
12:35 P.M. - 1:35 P.M.	.06	.15	.26	.10
1:35 P.M. - 2:35 P.M.	.13	.44	.63	.35
2:35 P.M. - 3:35 P.M.	.11	.33	.87	.39
	.08	.22	.41	.20

A00368

X400783

AUGUST 25, 1977

Conditions: Same as August 23, 1977 except
1. Wind out of north

	North Fence	Back of Main Bagging Room
10:25 A.M. - 11:25 A.M.	5-6 mph	2-4 mph
11:25 A.M. - 12:25 P.M.	7-10 mph	5-8 mph
12:25 P.M. - 1:25 P.M.	8-11 mph	3-9 mph
1:25 P.M. - 2:25 P.M.	8-12 mph	2-10 mph
2:25 P.M. - 3:25 P.M.	10-17 mph	2-10 mph

2. Water truck traverse of road between ore pile and tailings pile.

3. Started bulk car @ 1:30 P.M.

Time	North Fence	East corner outside of RG-Bagging Room	Backside of RG-Surge Tank	Backside of Main Bagging
10:25 A.M. - 11:25 A.M.	.10	.11	.11	.81
11:25 A.M. - 12:25 P.M.	.11	.11	.13	.69
12:25 P.M. - 1:25 P.M.	.09	.20	.19	.92
1:25 P.M. - 2:25 P.M.	.14	.16	.16	.87
2:25 P.M. - 3:25 P.M.	.33	.33	.37	.72
	.15	.18	.19	.80

A00369

X400704

October 5, 1977

Conditions: 1. Wind out of the north	North Fence	South Fence
10:33 A.M. - 11:33 A.M.	no wind	no wind
11:33 A.M. - 12:33 P.M.	very light wind	0-1 mph
12:33 P.M. - 1:33 P.M.	1-3 mph	1-3 mph
1:33 P.M. - 2:33 P.M.	2-6 mph	3-6 mph
2:33 P.M. - 3:33 P.M.	3-6 mph	3-6 mph

2. Temperature 55 - 70° F cloudy A.M. - clear P.M.

3. Traffic - typical forklift traffic & ore handling.
No ore trucks.
Ore truck loading @ dock in A.M.
Dozer pushing tailings.

Time	North Fence	Parking Lot	Back of Maint.Shop	South Fence
10:33 A.M. - 11:33 A.M.	.05	.05	.05	.08
11:33 A.M. - 12:33 P.M.	.05	.05	.06	.09
12:33 P.M. - 1:33 P.M.	.06	.08	.06	.11
1:33 P.M. - 2:33 P.M.	.10	.08	.10	.09
2:33 P.M. - 3:33 P.M.	.10	.11	.10	.08
	.07	.07	.07	.09

A0037C

X400735

Published by AsbestosClaims.Law
asbestosclaims.law/library/19452/7

OCTOBER 7, 1977

Conditions: 1. Wind from the north — North Fence

10:30 A.M. - 11:30 A.M.	3-5 mph
11:30 A.M. - 12:30 P.M.	3-5 mph
12:30 P.M. - 1:30 P.M.	5-8 mph
1:30 P.M. - 2:30 P.M.	5-10 mph
2:30 P.M. - 3:30 P.M.	10-16 mph

2. Temperature 64 - 86° F clear day.

3. Traffic - typical forklift traffic.
No ore trucks.
Dozer on ore pile from 1 - 2:30

4. Wet down - roads & parking lot wet down early day shift
roadpart RG circuit wet down between 2:30 and 3:30.

Time	North Fence	East Corner outside of RG-Bagging Room	Back of RG Surge Tank	Back of Main Bagging Room
10:30 A.M. - 11:30 A.M.	.04	.13	.16	.29
11:30 A.M. - 12:30 P.M.	.03	.14	.24	.88
12:30 P.M. - 1:30 P.M.	.04	.32	.19	.93
1:30 P.M. - 2:30 P.M.	.04	.14	.21	.61
2:30 P.M. - 3:30 P.M.	.06	.22	.20	1.20
	.04	.19	.20	.78

A09371

X4CC786

OCTOBER 14, 1977

Conditions: 1. Wind 9:30 A.M. - 12:30 P.M. from the South
12:30 P.M. - 2:30 P.M. from the North

North Fence	and	South Fence
9:30 A.M. - 10:30 A.M.		5 mph
10:30 A.M. - 11:30 A.M.		5-10 mph
11:30 A.M. - 12:30 P.M.		0-5 mph
12:30 P.M. - 1:30 P.M.		0-5 mph
1:30 P.M. - 2:30 P.M.		0-5 mph
2:30 P.M. - 3:30 P.M.		0-5 mph

2. Temperature: 68 - 98° F - clear day.

3. Traffic - typical forklift traffic.
working tails.
feeding ore.

4. Wet down - none - dry roads.

Time	North Fence	Parking Lot	Back of Maint.Shop	South Fence
9:30 A.M. - 10:30 A.M.	.03	.04	.11	.04
10:30 A.M. - 11:30 A.M.	.06	.04	.05	.01
11:30 A.M. - 12:30 P.M.	.04	.03	.18	.05
12:30 P.M. - 1:30 P.M.	.03	.08	.04	.03
1:30 P.M. - 2:30 P.M.	.04	.05	.05	.01
	.04	.05	.09	.03

A09372

X400787

OCTOBER 17, 1977

Conditions: 1. Wind - from the North.

	North Fence
10:30 A.M. - 11:30 A.M.	4-8 mph
11:30 A.M. - 12:30 P.M.	4-8 mph
12:30 P.M. - 1:30 P.M.	4-8 mph
1:30 P.M. - 2:30 P.M.	8-12 mph
2:30 P.M. - 3:30 P.M.	12-16 mph

2. Temperature: 58 - 78° F - fair to clear day.

3. Traffic - normal forklift traffic.
feeding ore.

4. Wet down - dry roads.
sprinklers on ore stockpile.

Time	North Fence	East Corner outside of RG-Bagging Room	Back of RG Surge Tank	Back of Main Bagging-Room
10:30 A.M. - 11:30 A.M.	.01	.08	* .29	1.03
11:30 A.M. - 12:30 P.M.	.04	.12	** .40	1.35
12:30 P.M. - 1:30 P.M.	.01	.06	.27	1.39
1:30 P.M. - 2:30 P.M.	.01	.05	.21	.85
2:30 P.M. - 3:30 P.M.	.01	.10	.08	1.21
	.02	.08	.25	1.17

* Airborne particulate due to cleaning filterpress 25 minutes.
** Same as above - 10 minutes.

A0933

X400788

OCTOBER 26, 1977

Conditions: 1. Wind - from the North

	North Fence
10:35 A.M. - 11:35 A.M.	3-5 mph
11:35 A.M. - 12:35 P.M.	15-20 mph
12:35 P.M. - 1:35 P.M.	15-23 mph
1:35 P.M. - 2:35 P.M.	15-23 mph
2:35 P.M. - 3:35 P.M.	22-30 mph

2. Temperature: 62 - 70° F - foggy early A.M. - clear day @ 11:15 A.M. to partly cloudy @ 3:00 P.M.

3. Traffic - typical forklift traffic.
feeding ore.
loading bulk car all day.

4. Wet down - Parking lot wetted down early day shift.

Time	North Fence	Parking Lot	Back of Maint.Shop	South Fence
10:35 A.M. - 11:35 A.M.	.04 *	.05	.05	.09
11:35 A.M. - 12:35 P.M.	.08 *	.05	.08	.11
12:35 P.M. - 1:35 P.M.	.04	.04	.10	.09
1:35 P.M. - 2:35 P.M.	.05	.09	.11	.08
2:35 P.M. - 3:35 P.M.	.08	.14	.25	.14
	.06	.07	.12	.10

* Some cows were moved across area near sample station.

A09374

X400789

OCTOBER 31, 1977

Conditions: 1. Wind - from the North

	North Fence
10:30 A.M. - 11:30 A.M.	8-12 mph
11:30 A.M. - 12:30 P.M.	8-12 mph
12:30 P.M. - 1:30 P.M.	8-12 mph
1:30 P.M. - 2:30 P.M.	8-12 mph
2:30 P.M. - 3:30 P.M.	12-16 mph

2. Temperature: 61 - 76° F - clear A.M. to fair P.M.

3. Traffic - lighter than normal forklift traffic. feeding ore.

4. Wet down - trace of rain October 28th.

5. Misc. - field hands picking field just north of plant.

Time	North Fence	East Corner outside RG-Bagging Room	Back of RG-Surge Tank	Back of Main Bagging-Room
10:30 A.M. - 11:30 A.M.	.05	.04	.06	.14
11:30 A.M. - 12:30 P.M.	.08	.13	.05	.16
12:35 P.M. - 1:30 P.M.	.09 *	.15	.09	.14
1:30 P.M. - 2:30 P.M.	.05	.09	.06	.21
2:30 P.M. - 3:30 P.M.	.05	.10	.06	.25
	.06	.10	.06	.18

* Moved cows across area - lots of dust.

A09375

X4CC79C

Figure 1

Main Bagger Pallet Tier Operator

Monthly Samples

Phase I Dust Control In Service

TWA

1974 1975 1976 1977

X400791

Published by AsbestosClaims.Law
asbestosclaims.law/library/19452/13

Figure 2

RG-2 4H Bagger Operator
Monthly Samples
Plotted Mid-Month
Control Points
Service
1975
1976
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N
0.1
0.2
0.5
1.0
2.0
5.0
10.0
20.0
50.0
100.0
F/CC
460700
X400792

Figure 3

Outside Operator

Phase I Dust Control Services

Rock Fiber Circuit Operator

Fibers per cc TWA

Fibers per cc TWA

X400793

Published by AsbestosClaims.Law
asbestosclaims.law/library/19452/16