



Interoffice Communication

To : Distribution

From : Jerald Uptain

Date : March 3, 1982

Subject : HONEYWELL CONTINUOUS MONITORING DATA VALIDITY STUDY

During the week of November 9, 1981, an audit of the Aberdeen Plant industrial hygiene program was conducted by T. Grumbles, L. Legendre, and S. Pitts. During the audit, the team expressed concern about excessive contamination of breathing air, as reported in the September, 1981 Continuous Monitoring Report. That report stated that 4.03% of the time, VCM concentrations in stream #7 (respirator air filter outlet) amounted to 5 ppm or more. The report also stated that 5 ppm or more was detected 0.28% of the time in stream #10 (respirator air filter inlet). The disparity between the two percentages was also questioned by the audit team.

Following the audit, I checked the validity of the September, 1981 summary of data from streams #7 (respirator air filter outlet) and #10 (respirator air filter inlet) of the "VCM Tank Farm" Honeywell G.C. unit. To do this, I made side-by-side comparisons of the monthly summary, the daily reports from which the monthly summary had been tabulated, and the original stripcharts from which data was taken for the daily reports. As a result, both the monthly summary and the daily reports were discredited for the following reasons:

1. The monthly summary had been incorrectly tabulated from the daily reports. Whereas the monthly report reflected 29 instances (4.03%) of 5+ ppm VCM in stream #7, a recount from the daily reports revealed only 2 (0.28%).
2. In spite of repeated attempts, I was unable to justify the high concentrations of VCM reported for breathing air in the daily reports. Although the daily reports reflected 2 instances (0.28%) of 5+ ppm VCM in stream #7, I could find no such instances on the stripcharts.
3. In addition, I found:
 - a. Obvious instances of chart misreading by operators. One common mistake was interpreting stream #6 as though it were stream #7.
 - b. Cases where stripcharts were not always stamped daily as they are supposed to be. Also, some stampings were done at inconsistent times of the day.

The problem of inadequate strip chart identification was found and addressed by the Safety Department in June, 1979. The department monitored progress in solving the problem until September, 1979. At that time, for EPA reasons, continuous monitors were turned over to Process Engineering.

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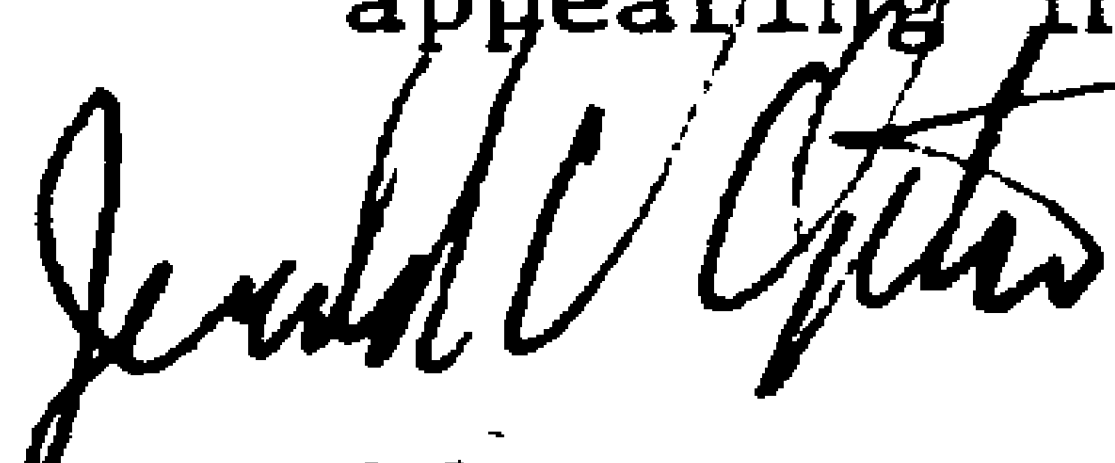
Since these findings made all of the past daily and monthly reports suspect, a program was begun to recheck hourly readings of breathing air VCM concentrations from all of the stripcharts saved since startup of the Honeywells in 1975. The work was done in the following manner:

1. All of the stripcharts which could be identified as containing data on breathing air were retrieved from storage and sorted into chronological order.
2. Hourly readings were then taken from the entire length of each stripchart. This was accomplished by laying out each chart beside a scale marked with hourly divisions. In this way, we were able to overcome mismarkings of the charts noted above.
3. The data sheets resulting from the chart readings were filed chronologically in a large ring binder to segregate them from regular, daily reports.
4. All of the data was then summarized as shown in Table I (attached).
5. In addition to myself the stripchart reading was done by the following people, under my supervision:

Albert Barr	Charles Smith
Robert Bristol	Charles Worlow
Dennis Knight	

Several points concerning the data in Table I should be noted:

1. Over the years, two different Honeywell G.C. Units and three different sampling point locations have been used to monitor VCM in breathing air.
2. Several charts were not located. Whether they were lost or never marked with correct identification is uncertain.
3. The data in Table I represents the best available information on VCM contamination of breathing air and should be used in lieu of data appearing in past monthly summaries.


Jerald Uptain

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c: JF, CRM, Department Heads

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TABLE 1
SUMMARY OF HONEYWELL CONTINUOUS MONITORING OF BREATHING AIR
FEBRUARY, 1975 - JANUARY, 1982

LEGEND

G.C. Units:

- 1 - Large Reactor Area
2 - VCM Tank Farm

Sample Point Locations:

- 1 - Breathing Air Line, Under H-1 Reactor
2 - Respirator Air Inlet
3 - Respirator Air Filter Outlet

Year	Month	G.C. Unit	Stream No.	Location	Range, PPM VCM						Total No.
					0-1.0		1.0-5.0		5.0+		
					No.	%	No.	%	No.	%	
1975	Feb.	1	10	1							
"	Mar.	1	10	1							
"	Apr.	1	10	1	71	98.61	0	0	1	1.39	72
"	May	1	10	1	540	98.90	4	0.74	2	0.36	546
"	June	1	10	1	511	95.16	17	3.16	9	1.68	537
"	July	1	10	1	464	97.07	12	2.51	2	0.42	478
"	Aug.	1	10	1	459	98.29	6	1.28	2	0.43	467
"	Sept.	1	10	1	461	96.04	12	2.51	7	1.45	480
"	Oct.	1	10	1	516	96.09	13	2.42	8	1.49	537

TABLE 1 (Continued)

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3 - Respirator Air Filter Outlet

Year	Month	G.C. Unit	Stream No.	Location	Range, PPM VCM								Total No.
					0-0.5		0.5-1.0		1.0-5.0		5.0+		
					No.	%	No.	%	No.	%	No.	%	
1975	Nov.	1	10	1	607	84.31	46	6.39	62	8.61	5	0.69	720
"	Dec.	1	10	1	514	89.24	33	5.73	29	5.03	0	0	576
1976	Jan.	1	10	1	521	70.03	100	13.43	115	15.46	8	1.08	744
"	Feb.	1	10	1	600	86.21	62	8.91	33	4.74	1	0.14	696
"	Mar.	1	10	1	565	85.09	42	6.33	53	7.98	4	0.60	664
"	Apr.	1	10	1	561	93.66	22	3.67	15	2.50	1	0.17	599
"	May	1	10	1	350	91.86	20	5.25	10	2.63	1	0.26	381
"	June	1	10	1	547	96.80	13	2.28	11	0.92	0	0	571
"	July	1	10	1	450	95.75	13	2.77	6	1.27	1	0.21	470
"	Aug.	1	10	1	480	95.62	8	1.59	12	2.39	2	0.40	502
"	Sept.	1	10	1	583	93.43	18	2.88	20	3.21	3	0.48	624
"	Oct.	1	10	1	11	78.58	1	7.14	1	7.14	1	7.14	14
"	Nov.	1	10	1	132	86.84	10	6.58	9	5.92	1	0.66	152
"	Dec.	1	10	1	116	83.45	14	10.07	5	3.60	4	2.88	139
1977	Jan.	2	4	2	484	97.78	7	1.42	2	0.40	2	0.40	495
"	Feb.	2	4	2	125	87.41	2	1.40	16	11.19	0	0	143
"	Mar.	2	4	2	215	70.26	11	3.59	46	15.03	34	11.12	306
"	Apr.	2	4	2		N O		D A T A					
"	May	2	4	2	141	97.92	2	1.39	1	0.69	0	0	144
"	June	2	4	2		N O		D A T A					
"	July	2	4	2	167	98.82	1	0.59	1	0.59	0	0	169
"	Aug.	2	4	2	136	96.45	5	3.55	0	0	0	0	141
"	Sept.	2	4	2	144	100.0	0	0	0	0	0	0	144
"	Oct.	2	4	2		N O		D A T A					
"	Nov.	2	4	2		N O		D A T A					
"	Dec.	2	4	2		N O		D A T A					

TABLE 1 (Continued)

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- 1 - Large Reactor Area
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3 - Respirator Air Filter Outlet

Year	Month	G.C. Unit	Stream No.	Location	Range, PPM VCM									
					0-0.5		0.5-1.0		1.0-5.0		5.0+		Total	
					No.	%	No.	%	No.	%	No.	%	No.	
1978	Jan.	2	4	2		N O	D A T A							
"	Feb.	2	4	2		N O	D A T A							
"	Mar.	2	4	2		N O	D A T A							
"	Apr.	2	4	2		N O	D A T A							
"	May	2	4	2		N O	D A T A							
"	June	2	4	2		N O	D A T A							
"	July	2	4	2		N O	D A T A							
"	Aug.	2	4	2		N O	D A T A							
"	Sept.	2	4	2	86	59.72	12	8.33	45	31.26	1	0.69	144	
"	Oct.	2	7	2		N O	D A T A							
"	Nov.	2	7	2		N O	D A T A							
"	Dec.	2	7	2		N O	D A T A							
1979	Jan.	2	7	2		N O	D A T A							
"	Feb.	2	7	2		N O	D A T A							
"	Mar.	2	7	3	142	85.55	17	10.24	6	3.61	1	0.60	166	
"	Mar.	2	10	2	153	92.17	11	6.63	2	1.20	0	0	166	
"	Apr.	2	7	3	494	95.92	14	2.72	7	1.36	0	0	515	
"	Apr.	2	10	2	515	100.0	0	0	0	0	0	0	515	
"	May	2	7	3	699	96.42	9	1.24	17	2.34	0	0	725	
"	May	2	10	2	725	100.00	0	0	0	0	0	0	725	
"	June	2	7	3	448	98.24	7	1.54	1	0.22	0	0	456	
"	June	2	10	2	456	100.00	0	0	0	0	0	0	456	
"	July	2	7	3	417	98.58	5	1.18	1	0.24	0	0	423	
"	July	2	10	2	422	99.76	0	0	0	0	1	0.24	423	
"	Aug.	2	7	3	105	97.22	3	2.78	0	0	0	0	108	
"	Aug.	2	10	2	108	100.00	0	0	0	0	0	0	108	
"	Sept.	2	7	3	691	99.71	2	0.29	0	0	0	0	693	
"	Sept.	2	10	2	693	100.00	0	0	0	0	0	0	693	
"	Oct.	2	7	3	683	94.07	19	2.62	19	2.62	5	0.69	726	
"	Oct.	2	10	2	677	93.24	15	2.07	19	2.62	15	2.07	726	

TABLE 1 (Continued)

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3 - Respirator Air Filter Outlet

Year	Month	G.C. Unit	Stream No.	Location	Range, PPM VCM								Total No.
					0-0.5		0.5-1.0		1.0-5.0		5.0 +		
					No.	%	No.	%	No.	%	No.	%	
1979	Nov.	2	7	3	664	92.22	45	6.25	11	1.53	0	0	720
"	Nov.	2	10	2	720	100.00	0	0	0	0	0	0	720
"	Dec.	2	7	3	724	97.31	16	2.15	4	0.54	0	0	744
"	Dec.	2	10	2	744	100.00	0	0	0	0	0	0	744
1980	Jan.	2	7	3	542	97.83	5	0.90	7	1.27	0	0	554
"	Jan.	2	10	2	550	99.28	2	0.36	2	0.36	0	0	554
"	Feb.	2	7	3	534	99.62	1	0.19	1	0.19	0	0	536
"	Feb.	2	10	2	534	99.62	0	0	2	0.38	0	0	536
"	Mar.	2	7	3	459	100.00	0	0	0	0	0	0	459
"	Mar.	2	10	2	459	100.00	0	0	0	0	0	0	459
"	Apr.	2	7	3	523	100.00	0	0	0	0	0	0	523
"	Apr.	2	10	2	523	100.00	0	0	0	0	0	0	523
"	May	2	7	3	608	98.38	9	1.46	1	0.16	0	0	618
"	May	2	10	2	618	100.00	0	0	0	0	0	0	618
"	June	2	7	3	547	97.50	6	1.07	6	1.07	2	0.36	561
"	June	2	10	2	548	97.60	7	1.25	6	1.07	0	0	561
"	July	2	7	3	621	88.09	60	8.51	23	3.26	1	0.14	705
"	July	2	10	2	623	88.37	56	7.94	25	3.55	1	0.14	705
"	Aug.	2	7	3	572	76.88	149	20.03	23	3.09	0	0	744
"	Aug.	2	10	2	570	76.61	135	18.15	39	5.24	0	0	744
"	Sept.	2	7	3	705	97.92	14	1.94	0	0	1	0.14	720
"	Sept.	2	10	2	702	97.50	18	2.50	0	0	0	0	720
"	Oct.	2	7	3	523	90.49	38	6.57	17	2.94	0	0	578
"	Oct.	2	10	2	578	100.00	0	0	0	0	0	0	578
"	Nov.	2	7	3	428	91.46	34	7.26	5	1.07	1	0.21	468
"	Nov.	2	10	2	465	99.36	2	0.43	1	0.21	0	0	468
"	Dec.	2	7	3	490	94.77	8	1.55	19	3.68	0	0	517
"	Dec.	2	10	2	493	95.36	6	1.16	18	3.48	0	0	517

TABLE 1 (Continued)

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Year	Month	G.C. Unit	Stream No.	Location	Range, PPM VCM								Total No.
					0-0.5		0.5-1.0		1.0-5.0		5.0 +		
					No.	%	No.	%	No.	%	No.	%	
1981	Jan.	2	7	3	607	87.08	45	6.46	43	6.17	2	0.29	697
"	Jan.	2	10	2	617	88.52	40	5.74	38	5.45	2	0.29	697
"	Feb.	2	7	3	158	77.45	27	13.24	19	9.31	0	0	204
"	Feb.	2	10	2	165	80.89	25	12.25	14	6.86	0	0	204
"	Mar.	2	7	3	622	95.98	22	3.40	2	0.31	2	0.31	648
"	Mar.	2	10	2	623	96.14	20	3.09	2	0.31	3	0.46	648
"	Apr,	2	7	3	665	92.34	13	1.95	37	5.56	1	0.15	716
"	Apr.	2	10	2	673	93.61	10	1.49	33	4.90	0	0	716
"	May	2	7	3	566	98.95	4	0.70	2	0.35	0	0	572
"	May	2	10	2	568	99.30	4	0.70	0	0	0	0	572
"	June	2	7	3	644	99.37	3	0.47	1	0.16	0	0	648
"	June	2	10	2	645	99.53	1	0.16	2	0.31	0	0	648
"	July	2	7	3	458	99.56	1	0.22	1	0.22	0	0	460
"	July	2	10	2	457	99.34	3	0.66	0	0	0	0	460
"	Aug.	2	7	3	376	95.48	7	1.86	9	2.39	1	0.27	393
"	Aug.	2	10	2	356	94.95	15	4.21	3	0.28	2	0.56	393
"	Spet.	2	7	3	631	97.79	10	1.58	4	0.63	0	0	645
"	Sept.	2	10	2	635	98.43	8	1.26	2	0.31	0	0	645
"	Oct.	2	7	3	413	99.52	0	0	1	0.24	1	0.24	415
"	Oct.	2	10	2	410	98.80	4	0.96	1	0.24	0	0	415
"	Nov.	2	7	3	587	99.83	1	0.17	0	0	0	0	588
"	Nov.	2	10	2	585	99.49	3	0.51	0	0	0	0	588
"	Dec.	2	7	3	413	99.76	1	0.24	0	0	0	0	414
"	Dec.	2	10	2	413	99.76	1	0.24	0	0	0	0	414
1982	Jan.	2	7	3	358	98.90	2	0.54	1	0.28	1	0.28	362
"	Jan.	2	10	2	342	94.48	11	3.04	6	1.65	3	0.83	362