

Colorado Department of Health  
Newark Test Site - Environmental Venting

Radiological Surveillance

On December 18, 1970, the Colorado Department of Health was notified by the Environmental Protection Agency (EPA) that the Rocky Flats Radiological Health Laboratory (SWRHL), Las Vegas, Nevada, had released a quantity of radioactive material to the atmosphere which occurred at the Nevada Test Site (NTS) during a nuclear device detonation.

Upon this notification, the Department's Radiological Health Staff activated the various radiological surveillance programs to provide adequate monitoring of the situation.

Four air sampling programs were so activated. These included air sampling stations used for (1) the National Environmental Health Research Administration (NEHRA) Rocky Flats surveillance program, (2) the U.S. Atomic Energy Commission-Rocky Flats surveillance program, (3) the Environmental Protection Agency (EPA) and (4) the NTS-EPA network. A total of 68 air samples were collected from 55 air sampling stations throughout the State. Of these 68 samples collected, 68 were retained by the Department for analysis with the remainder of the samples submitted to EPA, SWRHL for their determination.

A total of 164 determinations have been made of the 68 samples retained by the Department. The results of these determinations show that no air samples collected deviated from sample to sample variations observed by the Department prior to the "venting".

The Department's milk surveillance program was activated and 16 milk samples were collected from December 19 through January 1, 1971. Four determinations were made on these samples and the result was that no increase in radioactivity above that observed prior to the "venting" was observed.

In conferring with representatives of the EPA, the air samples collected in Colorado and submitted for determination have shown no increase in environmental radioactivity which could be attributed to the "venting".

Individual air sample analysis results determined by the Department, are tabulated in the attached health surveillance report. The report lists the Beta ( $\beta$ ) or Alpha ( $\alpha$ ) concentration as determined by the Department in a concentration, picocurie (2.22 disintegrations per minute per liter of air, pCi/m<sup>3</sup>). All milk samples had non-detectable levels of radioactivity while the naturally-occurring Potassium-40 concentration was observed.

In summary, radiological release of material "vented" on December 18, 1970 was not detected in the State of Colorado.

LARGE FILTER, HI-VOLUME AIR SAMPLING RESULTS - DECEMBER 1970 pCi/m<sup>3</sup>

#	Location	18		19*		19		20*		20		21*		21		22	
		B	α	B	α	B	α	B	α	B	α	B	α	B	α	B	α
2	Colo. Dept. of Health							.39	.249	.14	.004						
5	School Admin. Bldg.									.22	.016						
7	Aurora									.13	.009						
8	Adams City			.26	.165	.13	.005	.65	.503	.14	.010			.16	.003		
9	Englewood									.21	.010						
11	Cherry Creek Dam									.13	<.001						
13	Jefferson County									.17	.008						
15	Arvada									.18	.003						
16	Golden									.14	<.001					.14	.007
19	Essex																
22	Louisiana					.21	.003			.16	.003			.20	.001		
24	Windsor																
27	Windsor																
29	Windsor																
30	Windsor																
31	Windsor																
32	Windsor																
33	Windsor																
34	Windsor																
35	Windsor																
36	Windsor																
37	Windsor																
38	Pueblo																
41	Trinidad																
60	Castle Rock																
79	Greeley Sewer Plant																
D-1	Dow																
D-2	Dow																
D-3	Dow																
D-4	Dow																
D-5	Dow																
38	Pueblo																
41	Trinidad																
60	Castle Rock																

\* Early count, includes short-lived activity  
 \*\* Bad sample - small deposit  
 \*\*\* Polonium 210 by alpha spectroscopy  
 \*\*\*\* Thoron daughter activity

IFB = Indistinguishable From Background

RAN - 24 hr. time for sampling - December 1970

Total  $\mu$ g/m<sup>3</sup>

	<u>18</u>	<u>19</u>	<u>20</u>	<u>21</u>	<u>22</u>
Denver	1.0	4.1	1.9	4.9	1.4
					3.3
					0.3

The following appears for the 24 hr. post sampling analysis at the Denver site is the 24 hr. post sampling data for the 24 hr. post sampling at the Denver site. The data is at the Denver site. The data is at the Denver site.

NTS - 24 hr. time for sampling - December 1970

	<u>18</u>	<u>19</u>	<u>20</u>	<u>21</u>	<u>22</u>
Denver	*	*	*	*	*
Durango	*	*	*	*	*
Grand Junction	*	*	*	*	*
Pueblo	*	*	*	*	*
Rangely	*	*	*	*	*

\* Two samples were taken per day for particulates and one for particulates and one for charcoal. Samplers manned by State of Colorado. Each day for each site and determinations made by State of Colorado. Each day for each site and determinations made by State of Colorado. Each day for each site and determinations made by State of Colorado.