1, careful control of grinding time and particle size appears to have rectified these inaccuracies and given good results, although calcite appears to show high absorption in the low quartz ranges. Errors as high as 50 per cent were found in some of these instances. Reproducibility was found to be in the magnitude of 1 per cent.

TABLE 2.—*Comparison of Chemical and X-Ray Results from a Series of Routine Samples*

Sample	X-Ray Results, Quartz, %	H_2SiF_6 Results, Quartz, % *	
		Initial Analysis	Check Analysis
856	3.1	2.8	....
857	2.6	13.0	1.9
858	55.0	51.3	....
859	44.0	42.3	....
862	11.4	19.0	12.6
868	16.8	28.0	22.6
907	3.25	8.4	4.5
908	Nil	0.9	....

* Initial chemical analyses were performed using reasonable care in a routine manner; check results were obtained using extreme care and unlimited time.

TABLE 3.—*Comparison of Results of Quartz Determinations Made on Dust Samples by Various Laboratories* *

Sample	Los Angeles City Laboratory		U. S. Public Health Service		California Bureau of Adult Health
	H_2SiF_6 %	H_3PO_4 %	Chemical %	X-Ray %	X-Ray %
811	36	31	23	17	16.3
812	43	37	32	33	30.8
813	28	23	19	20	23.8
814	26	..	18	20	19.2
816	17	17	16	15	15.6
817	25	..	22	19	21.5
818	24	..	26	21	28.8
819	27	25	24	27	29.6
820	..	19	3	6	11.6
821	..	13	14	9	11.7
822	27	25	21	20	25.6
823	31	29	25	24	24.4
824	..	28	26	21	19.4
825	..	37	31	25	28.8
826	24	19	..	15	17.9
827	..	25	12	14	10.9
828	..	25	22	17	21.0
829	23	21	17	18	19.6
830	39	38	32	27	30.8
831	..	11	9	9	10.9
832	..	25	21	19	22.2
833	..	21	13	14	18.2
834	..	16	18	11	18.2

* Los Angeles City Laboratory results were obtained by the Knopf (H_2SiF_6) method and a modified Durkan (H_3PO_4) method. The United States Public Health Service chemical results were obtained by a modified phosphoric acid method. The values indicate the quartz percentages found. The Bureau of Adult Health results, while shown to three significant figures, would normally be reported to two significant figures.

A number of dust samples that had been analyzed by the hydrofluosilicic acid method were subjected to x-ray analysis. In some cases the x-ray results, although reproducible, were grossly at variance with the chemical results (table 2). Subsequent reanalysis by the chemical method showed much better agreement. This seems to indicate that the hydrofluosilicic acid method, long a standard in many