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Radon on surface and underground at SNO site
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SNO-STR-95-043

3:30 pm

August 10, 1995

By means of Lucas cells ^{SNO} Rn-222 activity ^{the} was determined on ^{in air} surface (rm.103, surface building) and underground (utility room). Lucas cells were first brought ^{pumped.} to vacuum and then simply filled with air. Row data are as follows:

of counts, scaled to 1 day of counting

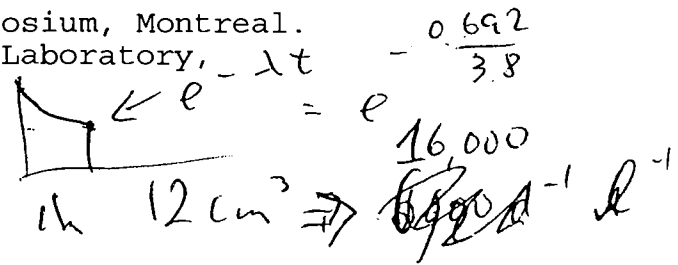
L.C. #	Background	On ground	Underground	Comments
1	28	52	-	
2	28	31	404	Filled on Aug.2, ventilation was "OFF"
3	22	43	405	>
4	26	37	318	>
5	23	24	400	Filled on Aug.3, ventilation was "ON"
Average net per cell:		10	357	

1. ^{Using} As an ESC as a monitor of Rn on surface provides rate of Po-218 of 30 h⁻¹. ^{for} The expected rate underground would be 1000 h⁻¹ or so. Therefore, accuracy of 10% or so could be achieved in 10 min run;

2. ~~5.6~~ "5.6 pCi/l" is another interpretation of the number "357 day⁻¹", if one takes into account 12 cm³ Lucas cell volume, 62% alpha particle detection efficiency in the cell and 3 alphas per 1 Rn atom introduced inside the cell. This is to compare with previously reported 1 pCi/l [1] and 1.8 - 2.4 pCi/l [2] in the SNO cavity.

[1] J.J.Simpson, in Proc. of the WEIN'89 Symposium, Montreal.

[2] D.Hallman, Radon Measurements in the SNO Laboratory, May 16, 1995.



$$\frac{357}{3 \cdot 0.62} = 192 \text{ d}^{-1} \text{ Rn decays in } 12 \text{ cm}^3$$

$$\frac{0.692}{3.8}$$

$$\frac{16,000}{3.8}$$