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RADON MEASUREMENTS IN WAREHOUSE AND
BOX CARS CONTAINING HIGH GRADE ORE

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RADON MEASUREMENTS IN WAREHOUSE AND BOX CARS CONTAINING HIGH GRADE ORE

By S. H. Anonsen

WAREHOUSE AIR SAMPLES

(% of Tolerance)

<u>Date</u>	<u>S.E.</u>	<u>S.W.</u>	<u>N.E.</u>	<u>N.W.</u>
11-20-45	20	20	20	20
21	6	40	--	70
23	20	20	20	20
26	300	20	20	80
28	200	--	20	50
30	10	8	200	200
12-3-45	200	300	300	60
5	600	200	40	50
7	1000	500	10	200
10	80	20	90	20
17	800	150	200	--
19	200	50	140	60
21	1200	200	1600	500
* 26	200	90	10	60
28	1900 (1)	1000	500	500 (1)
	1400 (2)			1100 (2)
1-2-46	1000 (1)	60	200	200 (1)
	1200 (2)	--	--	200 (2)
4	300 (1)	700	600	500 (1)
	1600 (2)			600 (2)
7	60 (1)	40	100	90 (1)
	70 (2)			120 (2)
9	400 (1)	10	20	20 (1)
	150 (2)			10 (2)
** 14	300	200	900	60
16	200	100	30	2
23	380	320	1100	100
25	480	1200	80	860
28	330	150	2	290
30	220	290	480	180
2-1-46	150	420	360	55

* All readings up to and including 12-26-45 were made at floor level.

** All readings from 1-14-46 and beyond were made at face level.

(1) Face level

(2) Floor level

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Vertical Measurements

	<u>Floor</u>	<u>4 ft.</u>	<u>8 ft.</u>	<u>12 ft.</u>	<u>20 ft.</u>
12-12-45	200	100	20	30	20
12-14-45	200	300	90	20	30
12-15-45	90	--	20	20	8

Box Car Air Samples

(11-20-45)

Car No. 1

<u>West</u>	<u>Center</u>	<u>East</u>	<u>Time (Hrs)</u>
30,000	8000	20,000	0
2,000	800	3,000	4
700	100	2,000	8
1,000	300	1,000	22
1,000	400	1,000	26
2,000	300	6,000	70
2,000	300	1,000	74
2,000	--	2,000	94

(11-24-45)

Car No. 2

4,000	2,600	3,300	0
1,000	50	1,800	4
2,900	20	6,000	24

(11-28-45)

Car No. 3

700	2,000	8,000	1
1,100	1,100	1,200	5
500	200	1,600	23
200	40	2,200	27

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(1-11-46)

Car No. 4

<u>West</u>	<u>Center</u>	<u>East</u>	<u>Time (Hrs)</u>
16,000	2,400	14,800	0
600	150	1,600	4
150	250	1,900	22
1,800	200	900	27
1,440	90	300	48

(1-18-46)

Car No. 5

2,500	2,700	2,700	24

(2-7-46)

Car No. 6

30,000	18,500	18,000	0
1,470	350	470	4
600	210	640	24

The samples taken in the warehouse were taken in the corners - in the center of a rectangle formed by the front line of the ore in the bay, the corner of the building and a point directly opposite the inside wall of the bay. One half bay of ore was added to the warehouse on 11-20-45, 11-24-45, 11-28-45, 1-11-46 and 1-18-46.

A plot was made of measured radon value vs. date and superimposed on the same graph a plot of maximum wind velocity vs. date. (The maximum was the only value available.) There was no correlation.

Box car samples were taken with both doors open at various times after opening. The samples were taken at face level in the center of the width of the car and half way between the door and the ends of the car for the "east" and "west" samples, and in exact center of the car for the "center" sample. The "center" sample was in the direct path of air moving through the open doors of the car. The car is unloaded about 24-36 hours after being opened.

A 1500 cfm Coppus blower has been obtained in assist in the ventilating of the box cars. It is hoped that it will also be of some assistance in the warehouse problem. Results of the experimental work with the blower will be forthcoming at a later date.

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Comparison Of Air Sample Results

<u>Meas. No.</u>	<u>Rochester</u>	<u>M.C.W.</u>
A-22	L15	10
A-23	L11	10
A-25	L25	35
A-26	724	10
A-27	407	2000
A-28	L15	1080
A-29	L12	12
A-53	L18	4
A-54	L36	24
A-60	43	50
A-61	L18	12
A-62	L18	10
A-63	L15	3
A-64	L18	12
A-65	L23	3
A-66	151	150
A-67	L15	15
A-68	L15	10
A-69	L15	11
A-70	L12	2
A-71	63	24
A-86	L24	20
A-87	763	2400
A-88	32	24
A-92	L15	L40
A-93	L22	L40
A-94	L15	L40
A-95	30	L40
A-96	L26	30
A-97	211	600
A-98	58	45
A-99	113	55
A-100	69	55
A-229	62	120
A-230	100	55
A-231	29	10
A-232	65	40
A-262	203	240
A-263	L12	10
A-264	L12	20
A-265	L12	20
A-266	117	90
A-267	L12	10