

CHAPTER IV

RESULTS AND DISCUSSION



Selection Zones for Chemical Analysis

From the cross-section of the five drill holes in Figure 1.6 reveals that the rock salt layer begins approximately from the depth 200 feet to 1,000 feet. Base on the mining method, the selection zone for chemical analysis in this work was chosen from the depth between 300 feet to 700 feet. Since from the study of relevant geological, technical and economical factors, the Room and Pillar Method of underground mining was selected to be the most appropriate method for mining of rock salt at Bamnet Narong area. There are certain factors that must be considered for underground mining of rock salt. Firstly, the salt horizon must be as closed as possible to the surface but at the same time it must retain salt in order to support the overlying strata and also prevent the seepage of water from water bearing formation to the minable zone. As the case, the selection of salt for chemical analysis beginning at the depth of 300 feet is therefore suitable. The chemical analysis was carried out to 700 feet due to availability of core log and for the economical reason that the more depth of mining zone would be the more cost in investment.

The results of chemical analysis of five drill holes for percentage of calcium, magnesium, potassium, chloride, sulfate, water insolubles and moisture content are shown in Table 4.1, 4.2, 4.3, 4.4 and 4.5 respectively with corresponding presentation of graph in Figure 4.1(a), 4.1(b), 4.2(a), 4.2(b), 4.3(a), 4.3(b), 4.4(a), 4.4(b), 4.5(a), 4.5(b), and 4.6

Table 4.1 Chemical Analysis of Rock Salt Samples

Drill Hole No. RS. 1.3

depth(ft)	%Ca	%Mg	%K	%Cl	%SO ₄	%NaCl	%Na	%H ₂ O	%I ₂
352-362	0.13±0.00	0.008±0.001	0.005±0.001	58.73±0.09	0.30±0.01	96.72	38.05	0.043±0.001	0.190±0.002
362-372	0.26±0.00	0.021±0.003	0.007±0.000	58.92±0.06	0.56±0.02	96.92	38.13	0.048±0.004	0.515±0.034
372-382	0.25±0.01	0.014±0.005	0.006±0.000	59.16±0.08	0.49±0.03	97.29	38.27	0.045±0.001	0.454±0.053
382-392	0.59±0.02	0.043±0.004	0.006±0.000	58.38±0.08	1.08±0.05	95.60	37.60	0.043±0.007	1.456±0.386
392-405	0.50±0.02	0.036±0.002	0.006±0.000	58.29±0.06	0.94±0.00	95.57	37.60	0.084±0.021	1.293±0.337
405-415	0.24±0.01	0.028±0.017	0.004±0.000	58.75±0.36	0.41±0.05	96.48	37.96	0.110±0.007	0.572±0.024
415-425	0.64±0.01	0.033±0.007	0.006±0.000	58.12±0.21	1.32±0.04	95.35	37.51	0.064±0.002	1.619±0.534
425-435	0.32±0.00	0.008±0.008	0.005±0.000	59.41±1.20	0.61±0.01	97.68	38.43	0.042±0.005	0.356±0.023
435-445	0.32±0.01	0.013±0.005	0.004±0.000	59.36±0.11	0.66±0.02	97.62	38.40	0.032±0.006	0.369±0.031
445-455	0.52±0.01	0.056±0.001	0.006±0.000	58.34±0.38	1.28±0.02	95.90	37.73	0.069±0.001	1.321±0.418
455-465	0.41±0.02	0.065±0.022	0.005±0.000	58.71±0.28	1.07±0.00	96.55	37.98	0.055±0.004	1.173±0.025
465-475	0.70±0.00	0.131±0.004	0.007±0.000	57.54±0.00	1.39±0.01	93.84	36.91	0.049±0.009	1.927±0.002
475-485	0.86±0.02	0.096±0.006	0.006±0.000	57.61±0.89	1.43±0.06	93.70	36.86	0.054±0.005	2.069±0.498
485-495	0.66±0.00	0.010±0.008	0.006±0.000	58.01±0.18	1.13±0.05	95.00	37.37	0.055±0.008	1.454±0.457
495-505	0.21±0.00	0.008±0.001	0.004±0.000	58.51±0.17	0.37±0.01	96.23	37.86	0.033±0.003	0.272±0.016
505-515	0.19±0.00	0.002±0.001	0.005±0.000	58.31±0.34	0.32±0.01	95.91	37.73	0.033±0.001	0.330±0.074

Table 4.1 Chemical Analysis of Rock Salt Drill Hole no RS 1.3 (continued)

depth(ft)	%Ca	%Mg	%K	%Cl	%SO ₄	%NaCl	%Na	%H ₂ O	%IM
515-525	0.16±0.01	0.011±0.004	0.004±0.000	58.44±0.13	0.32±0.01	96.17	37.83	0.038±0.003	0.200±0.042
525-535	0.41±0.02	0.013±0.013	0.004±0.000	58.10±0.27	0.87±0.07	95.54	37.58	0.040±0.002	0.608±0.021
535-545	0.40±0.01	0.007±0.001	0.005±0.000	57.81±0.20	0.75±0.01	94.97	37.36	0.029±0.007	0.600±0.005
545-555	0.23±0.01	0.009±0.003	0.004±0.000	59.01±0.32	0.37±0.01	96.98	38.15	0.057±0.001	0.441±0.021
555-565	0.83±0.00	0.017±0.005	0.007±0.001	56.95±0.57	1.36±0.09	92.99	36.58	0.066±0.002	1.921±0.590
565-575	0.52±0.00	0.006±0.002	0.005±0.001	58.07±0.02	0.78±0.05	95.09	37.41	0.051±0.002	1.235±0.169
575-585	0.37±0.00	0.117±0.003	0.005±0.000	58.43±0.50	0.73±0.05	95.53	37.58	0.031±0.007	0.916±0.063
585-595	0.42±0.03	0.013±0.003	0.005±0.000	58.38±0.33	0.61±0.01	95.66	37.63	0.028±0.009	0.984±0.018
595-605	0.43±0.00	0.010±0.000	0.005±0.000	58.36±0.64	0.70±0.03	95.72	37.66	0.019±0.001	0.920±0.004
605-615	0.16±0.00	0.016±0.000	0.010±0.000	59.39±0.31	0.51±0.03	97.85	38.46	0.015±0.001	0.312±0.013
615-625	0.31±0.01	0.017±0.006	0.009±0.001	58.91±0.26	0.90±0.03	97.06	38.14	0.016±0.000	0.880±0.032
625-635	0.35±0.00	0.012±0.000	0.010±0.000	59.06±0.47	0.78±0.02	97.19	38.24	0.044±0.003	0.817±0.033
635-645	0.39±0.00	0.073±0.003	0.008±0.000	58.75±0.06	1.05±0.01	96.60	38.00	0.016±0.001	0.933±0.044
645-655	0.53±0.01	0.007±0.002	0.010±0.000	58.81±0.21	0.84±0.05	96.35	37.90	0.008±0.002	1.397±0.035
655-665	0.28±0.00	0.016±0.001	0.008±0.000	58.78±1.07	0.72±0.03	96.85	38.10	0.019±0.004	0.577±0.038
665-675	0.10±0.01	0.023±0.001	0.007±0.000	58.74±0.47	0.30±0.06	96.76	38.07	0.051±0.001	0.331±0.019
675-685	0.05±0.00	0.015±0.002	0.004±0.000	59.64±0.12	0.32±0.01	98.28	38.60	0.049±0.003	0.13 ±0.021
685-695	0.10±0.00	0.020±0.002	0.005±0.000	59.08±0.23	0.30±0.02	97.34	38.29	0.038±0.002	0.308±0.009
695-705	0.21±0.01	0.012±0.004	0.004±0.000	59.33±0.19	0.36±0.03	97.54	38.37	0.037±0.003	0.648±0.068

Table 4.1.1 (a) Chemical Analysis of Rock Salt Samples
 Conducted by Technitrol Canada Ltee'

Drill Hole NO. RS. 1.3

Depth(ft)	%Ca	%Mg	%K	%SO ₄	%NaCl	Water Insoluble
279 - 302	0.88	0.010	0.010	2.19	96.10	0.67
302 - 307	0.38	0.020	0.018	0.82	98.46	0.19
307 - 312	0.48	0.010	0.018	1.13	98.02	0.12
312 - 317	0.27	0.010	0.010	0.59	99.05	0.06
317 - 322	0.33	0.010	0.012	0.96	97.35	0.08
322 - 327	0.25	0.010	0.044	0.84	98.40	0.07
327 - 332	0.27	0.010	0.012	0.94	98.22	0.11
332 - 337	0.20	0.010	0.011	0.63	99.12	0.14
337 - 342	0.28	0.014	0.012	0.85	98.91	0.15
342 - 347	0.22	0.010	0.010	0.91	98.22	0.22
347 - 352	0.26	0.010	0.030	1.64	97.62	0.17

Table 4.2 Chemical Analysis of Rock Salt Samples

Drill Hole No. RS. 1.6

depth(ft)	%Ca	%Mg	%K	%Cl	%SO ₄	%NaCl	%Na	%H ₂ O	%IM
355-365	0.66±0.00	0.007±0.001	0.014±0.000	58.46±0.38	1.36±0.00	96.02	37.77	0.045±0.003	0.750±0.040
365-375	0.68±0.01	0.010±0.003	0.014±0.000	58.68±0.18	1.49±0.03	96.48	37.96	0.052±0.001	1.252±0.114
375-385	0.86±0.01	0.017±0.016	0.021±0.000	58.06±0.42	1.57±0.05	94.98	37.37	0.057±0.005	1.878±0.270
385-395	0.92±0.04	0.005±0.001	0.012±0.002	58.05±0.14	1.77±0.05	95.11	37.42	0.078±0.002	1.112±0.002
395-405	0.71±0.00	0.025±0.004	0.012±0.001	58.48±0.28	1.58±0.03	96.09	37.80	0.069±0.003	1.077±0.073
405-415	0.84±0.02	0.036±0.003	0.014±0.002	57.33±0.69	1.70±0.05	93.90	36.94	0.077±0.013	1.787±0.174
415-425	0.83±0.01	0.045±0.004	0.013±0.000	57.76±0.66	1.85±0.04	94.78	37.29	0.064±0.004	1.814±0.302
425-435	0.75±0.01	0.018±0.004	0.011±0.000	58.38±0.07	1.53±0.06	95.78	37.68	0.080±0.020	2.285±0.218
435-445	0.97±0.01	0.012±0.002	0.011±0.001	57.70±0.07	1.93±0.11	94.52	37.19	0.091±0.002	3.056±0.037
445-455	0.57±0.00	0.023±0.002	0.009±0.000	59.23±0.23	1.47±0.05	97.59	38.39	0.061±0.006	2.160±0.294
455-465	0.93±0.05	0.013±0.003	0.011±0.001	57.23±0.10	2.02±0.08	93.99	36.97	0.051±0.003	3.392±0.121
465-475	0.97±0.02	0.026±0.006	0.010±0.001	57.33±0.01	1.84±0.01	93.76	36.88	0.070±0.018	4.198±1.076
475-485	0.81±0.01	0.014±0.001	0.010±0.001	58.37±0.06	1.76±0.02	95.90	37.73	0.060±0.009	2.427±0.056
485-495	0.70±0.02	0.024±0.003	0.010±0.001	58.29±0.29	1.48±0.01	95.92	37.74	0.153±0.090	1.648±0.547
495-505	0.63±0.05	0.016±0.000	0.011±0.004	58.07±0.00	1.32±0.10	95.38	37.52	0.250±0.207	2.071±0.112
505-515	0.59±0.00	0.025±0.002	0.017±0.000	59.02±0.21	1.37±0.03	97.06	38.19	0.141±0.078	1.907±0.031

Table 4.2 Chemical Analysis of Rock Salt Sample Drill Hole no RS 1.6 (continued)

depth(ft)	%Ca	%Mg	%K	%Cl	%SO ₄	%NaCl	%Na	%H ₂ O	%IM
515-525	0.45±0.00	0.029±0.003	0.016±0.001	58.44±0.29	1.13±0.00	96.22	37.85	0.099±0.010	2.175±0.478
525-535	0.58±0.05	0.041±0.016	0.021±0.001	58.71±0.13	1.37±0.03	96.50	37.96	0.066±0.001	1.918±0.349
535-545	0.37±0.04	0.050±0.029	0.016±0.003	59.30±0.16	1.15±0.07	97.70	38.41	0.046±0.008	1.648±0.101
545-555	0.67±0.01	0.032±0.009	0.019±0.002	58.55±0.04	1.53±0.02	96.20	37.84	0.027±0.000	2.035±0.080
555-565	0.94±0.05	0.020±0.007	0.015±0.001	57.81±0.03	1.52±0.13	94.26	37.08	0.038±0.000	3.078±0.196
565-575	0.21±0.00	0.019±0.001	0.012±0.001	59.05±0.18	0.43±0.02	97.12	38.21	0.052±0.001	3.896±0.310
575-585	0.16±0.00	0.026±0.001	0.012±0.000	59.28±0.06	0.31±0.02	97.46	38.34	0.035±0.010	0.779±0.107
585-595	0.13±0.00	0.024±0.000	0.014±0.001	59.79±0.04	0.25±0.02	98.31	38.68	0.031±0.001	0.645±0.198
595-605	0.29±0.00	0.019±0.004	0.015±0.001	58.73±0.12	0.63±0.01	96.59	38.00	0.031±0.010	1.093±0.126
605-615	0.30±0.01	0.029±0.003	0.010±0.000	58.36±0.09	0.58±0.01	95.98	37.76	0.053±0.004	0.891±0.003
615-625	0.46±0.01	0.038±0.005	0.019±0.000	57.59±0.26	1.04±0.02	94.61	37.22	0.063±0.006	1.094±0.028
625-635	0.49±0.01	0.038±0.028	0.017±0.006	57.14±0.03	1.17±0.03	93.88	36.93	0.036±0.001	1.321±0.249
635-645	0.23±0.01	0.022±0.000	0.015±0.005	57.64±0.04	0.59±0.02	94.90	37.33	0.026±0.001	4.227±0.347
645-655	0.39±0.00	0.030±0.007	0.010±0.001	59.81±0.08	0.84±0.01	98.29	38.67	0.032±0.010	1.070±0.008
655-665	0.36±0.01	0.036±0.008	0.019±0.003	59.41±0.12	0.87±0.01	97.70	38.44	0.029±0.005	1.164±0.295
665-675	0.56±0.02	0.035±0.013	0.011±0.000	59.40±0.00	1.41±0.01	97.80	38.47	0.027±0.004	1.307±0.031
675-685	0.47±0.08	0.032±0.000	0.015±0.001	59.41±0.05	1.32±0.01	97.88	38.46	0.033±0.012	1.614±0.527

Table 4.2 (a) Chemical Analysis of Rock Salt Samples

Conducted by Technitrol Canada Ltee'

Drill Hole NO. RS. 1.6

Depth (ft)	%Ca	%Mg	%K	%SO ₄	%NaCl	Water Insoluble
315 - 320	0.67	0.023	0.029	2.14	96.36	0.33
320 - 325	0.60	0.019	0.029	1.46	97.52	0.35
325 - 330	0.64	0.029	0.220	2.51	96.11	0.25
330 - 335	0.64	0.019	0.023	1.63	96.44	0.21
335 - 340	0.87	0.015	0.016	1.00	98.10	0.21
340 - 345	0.60	0.016	0.016	1.39	97.82	0.26
345 - 350	0.49	0.010	0.018	1.03	97.90	0.32

Table 4.3 Chemical Analysis of Rock Salt Samples

Drill Hole No. RS 2.2

depth(ft)	%Ca	%Mg	%K	%Cl	%SO ₄	%NaCl	%Na	%H ₂ O	%IM
310-320	1.39±0.02	0.042±0.016	0.019±0.001	56.47±0.10	2.08±0.03	91.31	35.92	0.057±0.001	4.162±0.004
320-330	1.30±0.00	0.041±0.000	0.019±0.001	56.69±0.02	1.93±0.07	90.66	35.67	0.068±0.011	3.647±0.087
330-340	1.42±0.04	0.040±0.019	0.020±0.000	56.78±0.87	2.03±0.01	91.67	36.06	0.059±0.010	4.326±0.018
340-350	1.71±0.00	0.039±0.001	0.020±0.000	56.43±0.22	2.25±0.01	90.52	35.61	0.075±0.011	4.815±0.006
350-360	1.34±0.00	0.054±0.004	0.019±0.001	56.63±0.19	2.01±0.00	91.58	36.03	0.079±0.002	3.863±0.062
360-370	1.38±0.00	0.026±0.004	0.017±0.000	56.87±0.18	2.07±0.08	92.06	36.22	0.118±0.032	3.922±0.025
370-380	1.12±0.00	0.019±0.003	0.017±0.000	57.51±0.17	1.68±0.03	93.43	36.76	0.061±0.004	3.166±0.024
380-390	1.13±0.01	0.019±0.013	0.017±0.000	56.93±0.30	1.77±0.05	92.57	36.42	0.055±0.002	3.230±0.029
390-400	0.85±0.03	0.061±0.022	0.018±0.000	57.74±0.18	1.59±0.01	94.30	37.10	0.072±0.024	2.249±0.012
400-410	0.64±0.08	0.094±0.038	0.013±0.001	58.13±0.07	1.43±0.04	95.19	37.45	0.048±0.005	1.956±0.023
410-420	0.72±0.02	0.024±0.001	0.018±0.001	58.22±0.08	1.36±0.01	95.36	37.52	0.062±0.012	1.941±0.078
420-430	0.71±0.02	0.035±0.007	0.020±0.001	57.27±0.20	1.52±0.01	93.97	36.97	0.066±0.008	2.143±0.006
430-440	0.79±0.01	0.007±0.001	0.026±0.001	57.13±0.16	1.50±0.05	93.60	36.82	0.029±0.008	2.060±0.280
440-450	0.87±0.00	0.010±0.007	0.027±0.000	56.94±0.24	1.51±0.00	93.05	36.61	0.043±0.001	1.870±0.085
450-460	0.83±0.01	0.018±0.006	0.025±0.001	56.88±0.05	1.61±0.05	93.16	36.65	0.061±0.005	2.002±0.294
460-470	1.19±0.01	0.031±0.003	0.023±0.000	56.83±0.25	2.13±0.02	92.60	36.43	0.102±0.039	2.921±0.289

Table 4.3 Chemical Analysis of Rock Salt Samples Drill Holes No. RS.2.2 (continued)

depth(ft)	%Ca	%Mg	%K	%Cl	%SO ₄	%NaCl	%Na	%H ₂ O	%IM
470-480	0.81±0.01	0.035±0.003	0.023±0.000	57.53±0.25	1.73±0.05	94.18	37.05	0.049±0.001	2.170±0.217
480-490	0.56±0.00	0.013±0.006	0.022±0.000	57.73±0.14	1.25±0.06	94.93	37.35	0.036±0.003	1.071±0.024
490-500	0.72±0.02	0.024±0.005	0.020±0.000	57.35±0.07	1.46±0.05	94.04	37.00	0.046±0.001	1.548±0.168
500-510	0.73±0.01	0.025±0.001	0.023±0.000	57.31±0.02	1.41±0.06	93.90	36.94	0.028±0.025	2.081±0.006
510-520	0.74±0.00	0.017±0.006	0.016±0.001	57.70±0.05	1.46±0.04	94.69	37.25	0.055±0.007	2.188±0.135
520-530	0.72±0.02	0.020±0.009	0.017±0.001	57.70±0.16	1.45±0.05	94.62	37.22	0.045±0.003	1.970±0.265
530-540	0.57±0.00	0.011±0.008	0.016±0.001	57.77±0.22	1.20±0.06	94.94	37.35	0.048±0.000	1.438±0.198
540-550	0.93±0.01	0.024±0.001	0.017±0.001	57.39±0.21	1.73±0.04	93.85	36.92	0.053±0.001	2.428±0.262
550-560	0.90±0.01	0.012±0.001	0.025±0.000	56.90±0.17	1.61±0.05	93.02	36.50	0.068±0.009	2.365±0.087
560-570	0.81±0.01	0.023±0.001	0.026±0.001	57.61±0.30	1.42±0.04	94.16	37.04	0.041±0.003	2.050±0.068
570-580	1.09±0.00	0.039±0.002	0.021±0.001	57.05±0.21	1.66±0.01	92.66	36.45	0.044±0.010	3.044±0.234
580-590	0.81±0.01	0.025±0.013	0.020±0.001	56.96±0.27	1.13±0.23	92.74	36.48	0.044±0.002	2.450±0.095
590-600	0.58±0.02	0.020±0.008	0.020±0.002	57.64±0.01	1.26±0.00	94.69	37.25	0.05±0.001	1.699±0.072
600-610	0.95±0.00	0.029±0.003	0.016±0.000	57.33±0.21	1.73±0.04	93.64	36.84	0.062±0.022	2.525±0.059
610-620	0.57±0.00	0.016±0.009	0.021±0.002	57.93±0.12	1.13±0.00	95.09	37.41	0.087±0.016	1.520±0.037
620-630	0.89±0.01	0.004±0.003	0.025±0.000	57.66±0.06	1.42±0.00	94.11	37.02	0.071±0.013	2.192±0.059

Table 4.4 Chemical Analysis of Rock Salt Samples

Drill Hole No. RS. 2.5

depth(ft)	%Ca	%Mg	%K	%Cl	%SO ₄	%NaCl	%Na	%H ₂ O	%IM
297-307	0.62±0.01	0.006±0.005	0.013±0.001	59.16±0.09	1.51±0.02	97.47	38.34	0.051±0.002	1.773±0.234
307-317	0.61±0.00	0.006±0.005	0.016±0.001	58.89±0.10	1.50±0.06	97.03	38.17	0.055±0.002	1.122±0.115
317-327	0.73±0.00	0.022±0.003	0.015±0.001	58.80±0.01	1.69±0.04	96.71	38.05	0.054±0.010	1.919±0.085
327-337	0.67±0.01	0.008±0.000	0.012±0.001	59.00±0.09	1.73±0.11	97.21	38.19	0.058±0.001	1.650±0.049
337-347	0.43±0.00	0.010±0.001	0.011±0.001	59.88±0.12	1.13±0.09	98.61	38.78	0.052±0.015	1.057±0.0
347-357	0.67±0.01	0.011±0.006	0.011±0.000	59.28±0.00	1.74±0.10	97.68	38.39	0.031±0.001	1.763±0.056
357-367	0.66±0.00	0.032±0.004	0.014±0.001	59.50±0.11	1.77±0.10	98.04	38.54	0.084±0.050	1.776±0.011
367-377	0.57±0.00	0.037±0.000	0.125±0.001	59.60±0.12	1.49±0.07	97.99	38.55	0.051±0.009	1.420±0.429
377-386	0.84±0.03	0.021±0.001	0.011±0.001	58.22±0.01	2.32±0.13	95.93	37.63	0.119±0.039	2.641±0.330
386-396	0.71±0.01	0.016±0.000	0.012±0.001	56.53±0.17	1.40±0.06	92.71	36.47	0.113±0.002	1.670±0.112
396-406	0.22±0.90	0.023±0.006	0.011±0.001	60.12±0.01	0.62±0.02	99.06	38.97	0.079±0.011	0.970±0.020
406-416	0.29±0.00	0.028±0.003	0.010±0.001	59.39±0.21	0.79±0.01	97.84	38.49	0.045±0.005	1.060±0.069
416-425	0.31±0.00	0.025±0.001	0.007±0.000	59.00±0.09	0.80±0.02	97.17	38.22	0.185±0.103	1.282±0.039
425-435	0.26±0.00	0.025±0.002	0.011±0.001	60.12±0.09	0.76±0.10	99.06	38.95	0.048±0.011	1.167±0.542
435-446	0.31±0.01	0.028±0.008	0.011±0.000	59.54±0.18	0.85±0.01	98.09	38.59	0.056±0.001	0.820±0.088
446-456	0.29±0.04	0.038±0.029	0.008±0.001	59.11±0.08	0.86±0.02	97.41	38.31	0.156±0.119	1.142±0.121

Table 4.4 Chemical Analysis of Rock Salt Samples Drill Hole No. RS. 2.5 (continued)

depth(ft)	%Ca	%Mg	%K	%Cl	%SO ₄	%NaCl	%Na	%H ₂ O	%IM
456-466	0.23±0.00	0.027±0.005	0.012±0.000	59.44±0.08	0.72±0.00	97.95	38.50	0.028±0.001	0.785±0.098
466-471	0.24±0.00	0.026±0.005	0.010±0.001	59.66±0.26	0.65±0.00	98.27	38.66	0.052±0.001	1.145±0.268
471-476	1.14±0.15	0.150±0.100	0.009±0.000	57.39±0.17	1.79±0.90	92.69	36.46	0.052±0.006	1.135±0.260
476-481	0.57±0.00	0.032±0.007	0.012±0.002	59.28±0.68	1.47±0.02	97.65	38.41	0.072±0.006	1.314±0.021
481-486	0.55±0.01	0.049±0.018	0.009±0.000	59.48±0.07	1.55±0.09	98.01	38.54	0.072±0.008	1.402±0.258
486-496	0.33±0.00	0.038±0.002	0.010±0.001	59.40±0.00	0.85±0.00	97.76	38.46	0.091±0.007	1.560±0.231
496-506	0.42±0.00	0.046±0.000	0.011±0.002	59.66±0.02	1.10±0.02	98.21	38.63	0.089±0.019	1.660±0.331
506-516	0.31±0.00	0.033±0.001	0.007±0.000	59.62±0.11	0.79±0.02	98.14	38.61	0.078±0.021	1.152±0.087
516-526	0.25±0.01	0.065±0.048	0.007±0.000	59.80±0.01	0.80±0.02	98.49	38.74	0.091±0.011	1.132±0.576
526-536	0.39±0.01	0.028±0.005	0.008±0.000	59.29±0.02	0.87±0.01	97.50	38.36	0.089±0.001	0.964±0.636
536-546	0.60±0.01	0.020±0.008	0.010±0.000	59.17±0.07	1.09±0.04	96.97	38.15	0.072±0.019	2.083±0.417
546-556	0.41±0.03	0.050±0.023	0.008±0.000	59.48±0.08	0.96±0.03	97.75	38.46	0.047±0.004	1.53±0.137
556-566	0.24±0.00	0.035±0.003	0.009±0.003	59.29±0.06	0.66±0.01	97.63	38.41	0.047±0.003	0.922±0.023
566-576	0.30±0.01	0.031±0.007	0.006±0.000	59.81±0.04	0.87±0.02	98.55	38.76	0.063±0.010	1.192±0.323
576-581	0.49±0.03	0.056±0.014	0.005±0.000	59.10±0.09	1.34±0.01	97.32	38.29	0.060±0.012	1.266±0.258
601-611	0.79±0.01	0.022±0.005	0.006±0.000	58.87±0.14	2.05±0.00	97.01	38.13	0.043±0.003	2.451±0.187
611-621	0.49±0.02	0.041±0.010	0.005±0.001	58.81±0.15	1.20±0.02	96.74	38.06	0.134±0.014	1.729±0.665

Table 4.4 Chemical Analysis of Loc: Salt Samples Drill Hole No. RS. 2.2 (continued)

depth(ft)	%Ca	%Mg	%K	%Cl	%SO ₄	%NaCl	%Na	%H ₂ O	%IM
621-631	0.64±0.00	0.023±0.001	0.005±0.001	58.79±0.08	1.46±0.05	96.68	38.03	0.091±0.017	2.163±0.031
631-641	0.42±0.01	0.040±0.007	0.004±0.000	59.20±0.00	1.23±0.04	97.55	38.35	0.067±0.002	1.405±0.091
641-651	0.30±0.02	0.025±0.008	0.007±0.000	59.24±0.02	0.83±0.00	97.62	38.40	0.067±0.010	1.609±0.300
651-661	0.33±0.01	0.022±0.008	0.005±0.000	59.52±0.12	1.09±0.01	98.09	38.48	0.056±0.018	0.983±0.125
661-671	0.33±0.01	0.047±0.006	0.005±0.000	59.71±0.12	0.94±0.01	98.35	38.70	0.062±0.012	1.089±0.096
671-681	0.79±0.00	0.021±0.007	0.006±0.000	58.91±0.05	1.92±0.00	97.02	38.17	0.067±0.004	1.889±0.011
681-691	0.35±0.01	0.020±0.005	0.005±0.000	59.43±0.02	1.00±0.02	97.93	38.49	0.076±0.008	1.082±0.091
691-701	0.42±0.02	0.043±0.014	0.006±0.000	59.69±0.01	1.21±0.01	98.36	38.68	0.070±0.001	1.397±0.097
701-711	0.45±0.00	0.023±0.002	0.009±0.001	59.50±0.07	1.20±0.01	98.03	38.55	1.105±0.998	2.576±1.101
711-721	0.65±0.07	0.106±0.043	0.005±0.000	58.79±0.05	1.62±0.02	96.44	37.94	0.103±0.005	1.709±0.017
721-731	0.39±0.02	0.022±0.015	0.007±0.000	58.99±0.18	0.99±0.01	97.17	38.23	0.067±0.003	0.905±0.010

Table 4.5 Chemical Analysis of Rock Salt Samples

Drill Hole No. 2.9

depth(ft)	%Ca	%Mg	%K	%Cl	%SO ₄	%NaCl	%Na	%H ₂ O	%IM
380-391	0.31±0.00	0.019±0.001	0.013±0.000	58.36±0.07	0.63±0.01	95.92	37.74	0.014±0.002	0.982±0.055
391-396	0.20±0.01	0.025±0.003	0.012±0.001	58.23±0.03	0.41±0.01	95.74	37.67	0.018±0.000	0.718±0.062
396-401	0.59±0.06	0.048±0.017	0.012±0.001	58.35±0.05	0.70±0.04	95.05	37.39	0.037±0.007	1.121±0.021
401-411	0.58±0.01	0.022±0.001	0.012±0.001	58.76±0.27	0.48±0.00	95.60	37.61	0.113±0.006	1.641±0.052
411-421	0.28±0.02	0.022±0.008	0.010±0.001	59.73±0.53	0.66±0.07	98.31	38.68	0.082±0.002	0.817±0.022
421-431	0.33±0.01	0.021±0.001	0.011±0.000	58.98±0.04	0.67±0.07	96.95	38.14	0.102±0.048	0.966±0.034
431-441	0.27±0.00	0.016±0.003	0.011±0.002	59.30±0.16	0.63±0.05	98.13	38.61	0.037±0.006	0.754±0.073
441-451	0.36±0.00	0.015±0.003	0.010±0.000	59.40±0.08	0.82±0.00	97.76	38.46	0.077±0.009	0.933±0.010
451-461	0.31±0.01	0.007±0.003	0.009±0.000	59.15±0.02	0.60±0.03	97.26	38.26	0.078±0.002	0.797±0.010
461-471	0.71±0.01	0.025±0.005	0.011±0.002	58.55±0.16	1.52±0.06	96.14	37.82	0.064±0.005	2.006±0.063
471-481	0.52±0.00	0.013±0.001	0.010±0.000	58.99±0.22	1.04±0.02	96.89	38.12	0.090±0.007	1.421±0.070
481-491	0.44±0.01	0.020±0.004	0.010±0.002	59.60±0.11	0.90±0.04	97.91	38.52	0.068±0.010	1.017±0.254
491-501	0.45±0.01	0.018±0.001	0.008±0.001	58.88±0.01	0.95±0.01	96.80	38.08	0.051±0.000	1.092±0.056
501-511	0.60±0.01	0.009±0.004	0.010±0.002	58.96±0.05	1.91±0.05	96.82	38.09	0.062±0.001	1.399±0.309
511-521	0.53±0.00	0.023±0.005	0.014±0.000	59.47±0.57	1.09±0.05	97.65	38.42	0.076±0.006	1.214±0.251
521-531	0.39±0.00	0.012±0.001	0.010±0.000	59.60±0.03	0.64±0.03	97.81	38.48	0.036±0.001	0.929±0.138

Table 4.5 Chemical Analysis of Rock Salt Samples Drill Hole No. RS. 2.9 (continued)

depth(ft)	%Ca	%Mg	%K	%Cl	%SO ₄	%NaCl	%Na	%H ₂ O	%IM
531-541	0.30±0.00	0.016±0.002	0.010±0.003	59.44±0.10	0.60±0.03	97.71	38.44	0.008±0.002	0.688±0.149
541-551	0.61±0.00	0.012±0.003	0.008±0.001	59.47±0.21	1.16±0.01	97.58	38.39	0.011±0.008	0.925±0.265
551-561	0.43±0.00	0.018±0.002	0.011±0.002	59.56±0.05	0.87±0.08	97.86	38.50	0.023±0.005	0.740±0.097

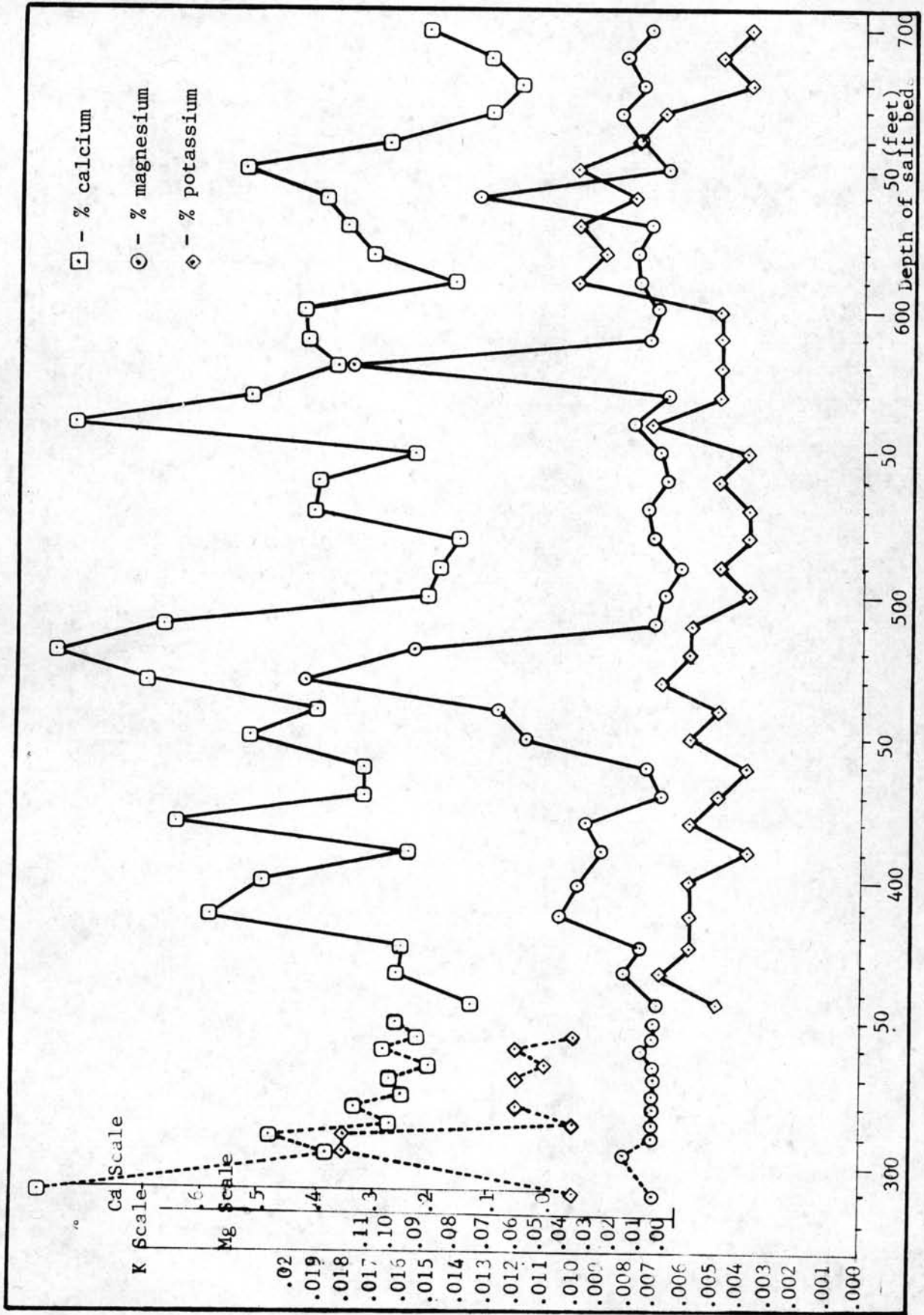


Figure 4.1 (a) Profiles of average calcium, magnesium and potassium contents from correlated intervals in Drill Hole no. RS. 1.3

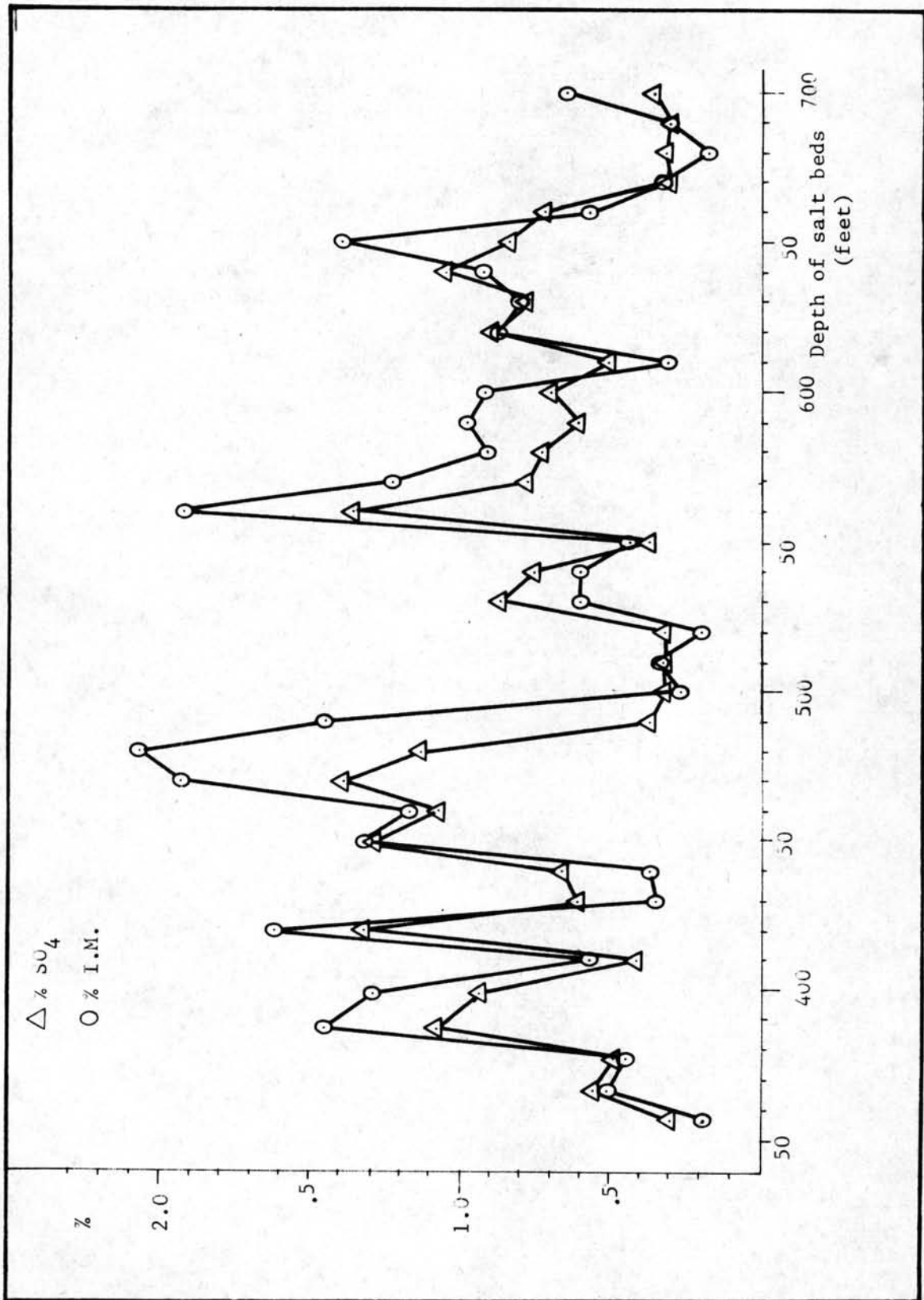


Figure 4.1 (b) Profiles of average sulfate and water insoluble matter contents from correlated intervals in Drill Hole no. RS. 1.3

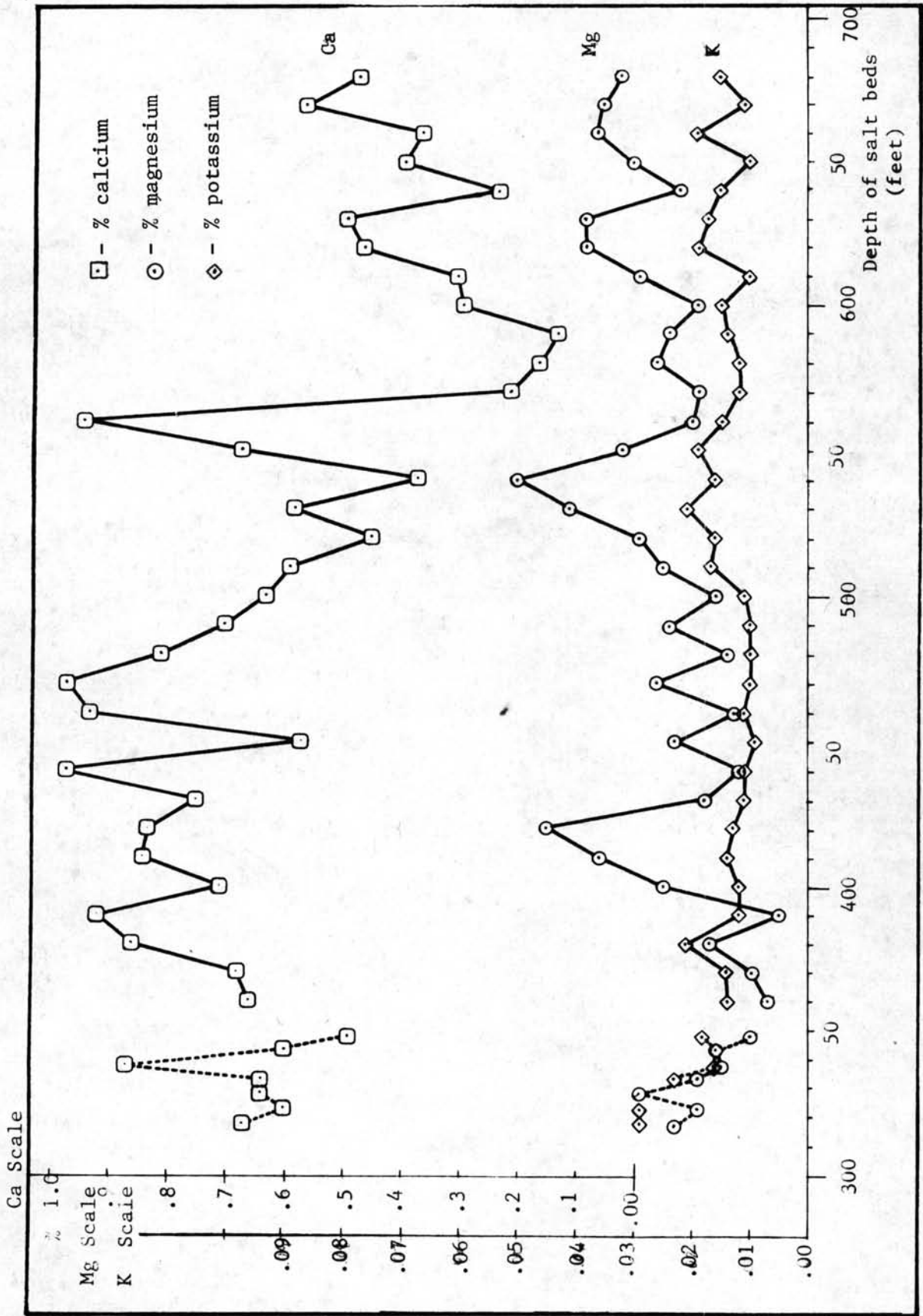


Figure 4.2 (a) Profiles of average calcium, magnesium and potassium contents from correlated intervals in Drill Hole no. RS. 1.6

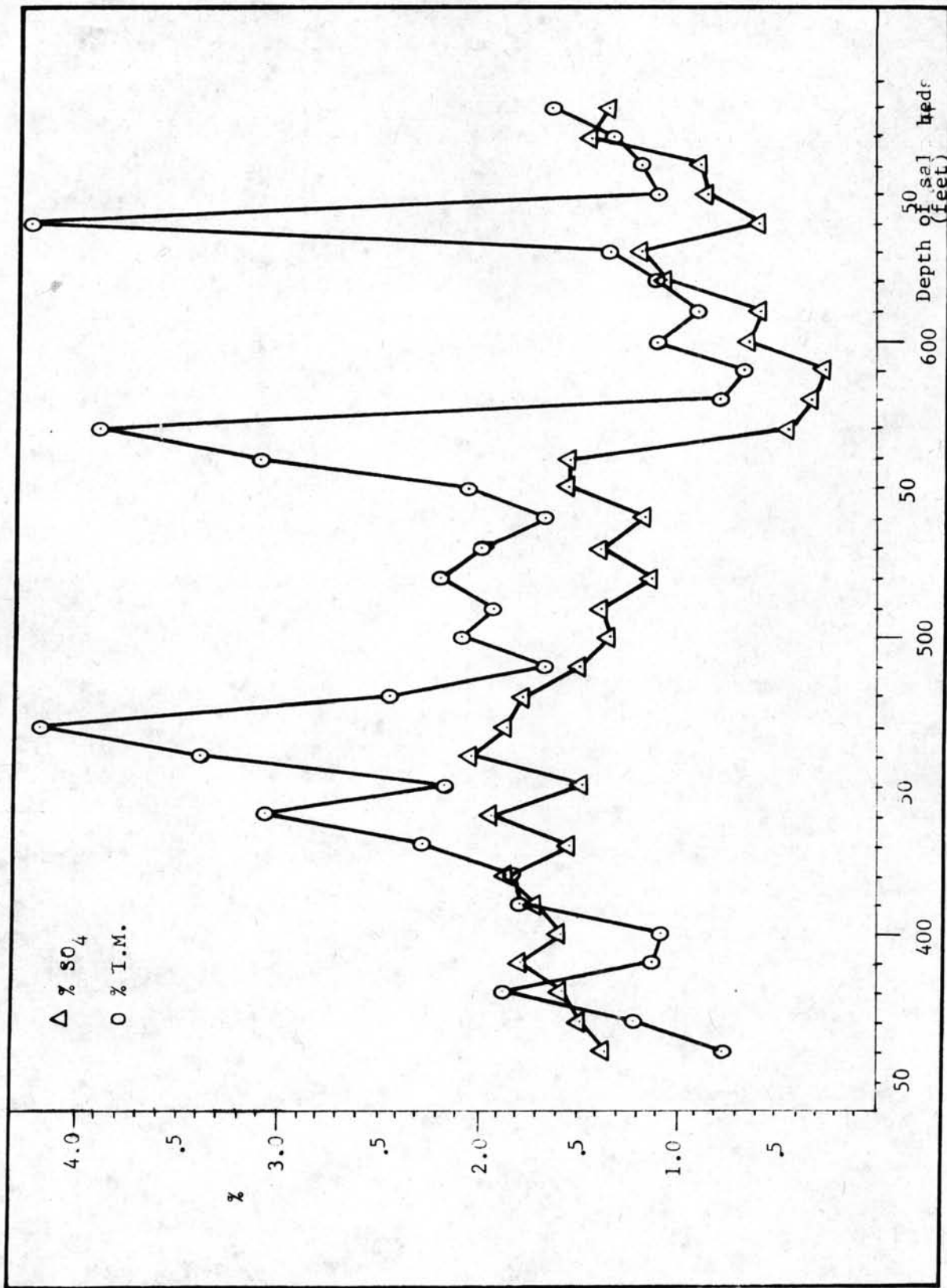


Figure 4.2 (b) Profiles of average sulfate and water insoluble matter contents from correlated intervals in Drill Hole no. RS. 1.6

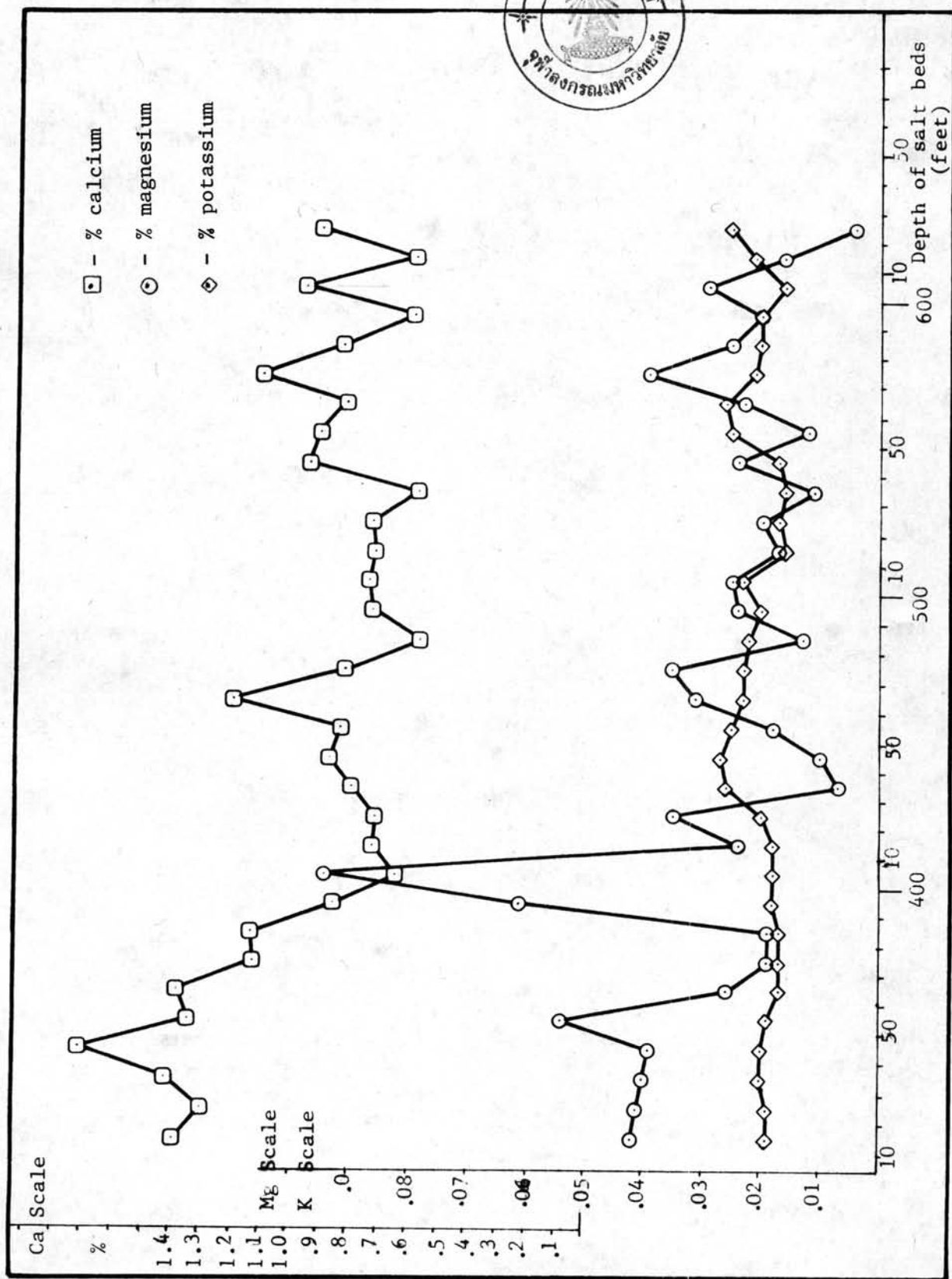


Figure 4.3 (a) Profiles of average calcium, magnesium and potassium contents from correlated intervals in Drill Hole no. RS. 2.2

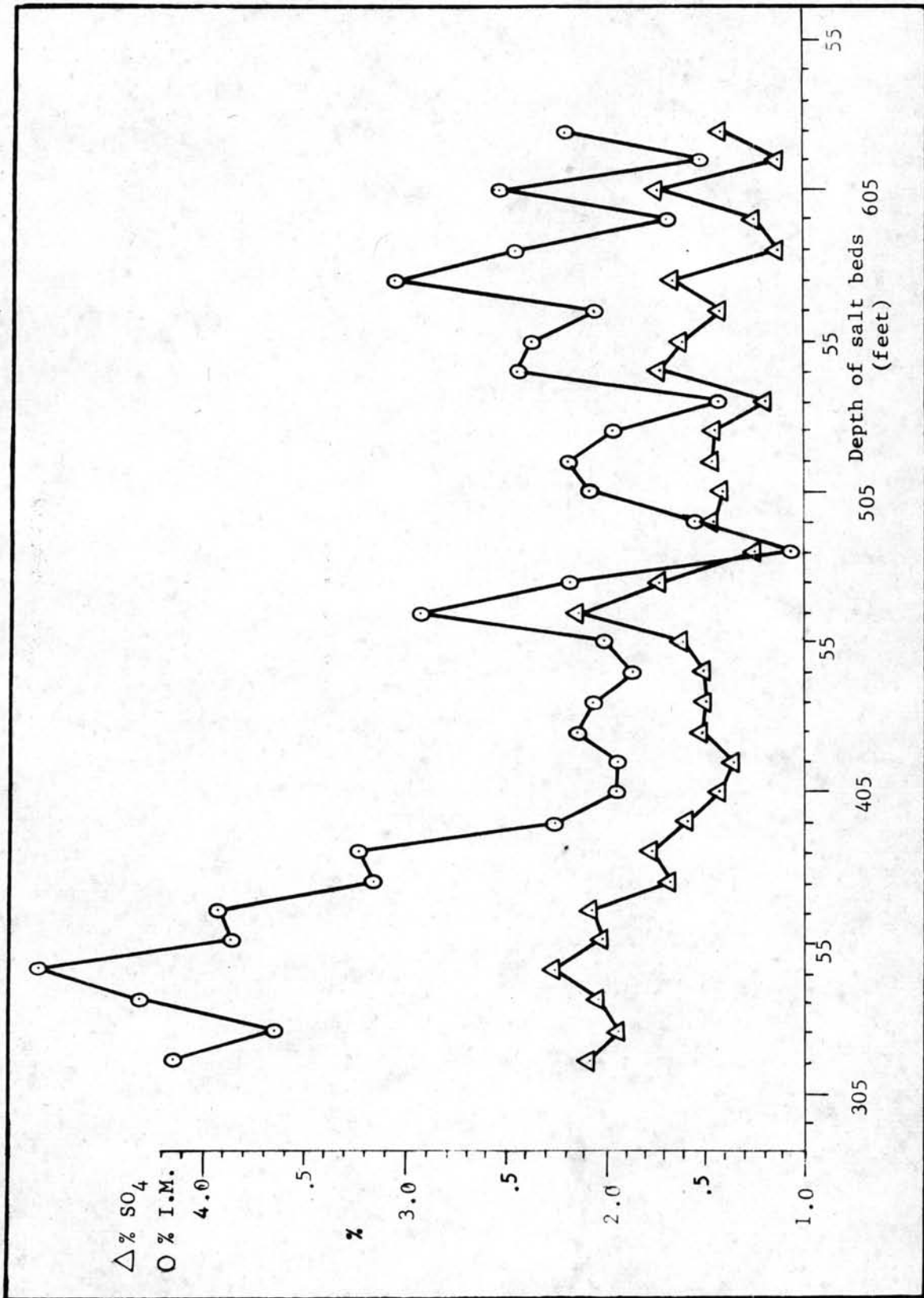


Figure 4.3 (b) Profiles of average sulfate and water insoluble matter contents from correlated intervals in Drill Hole no. RS. 2.2

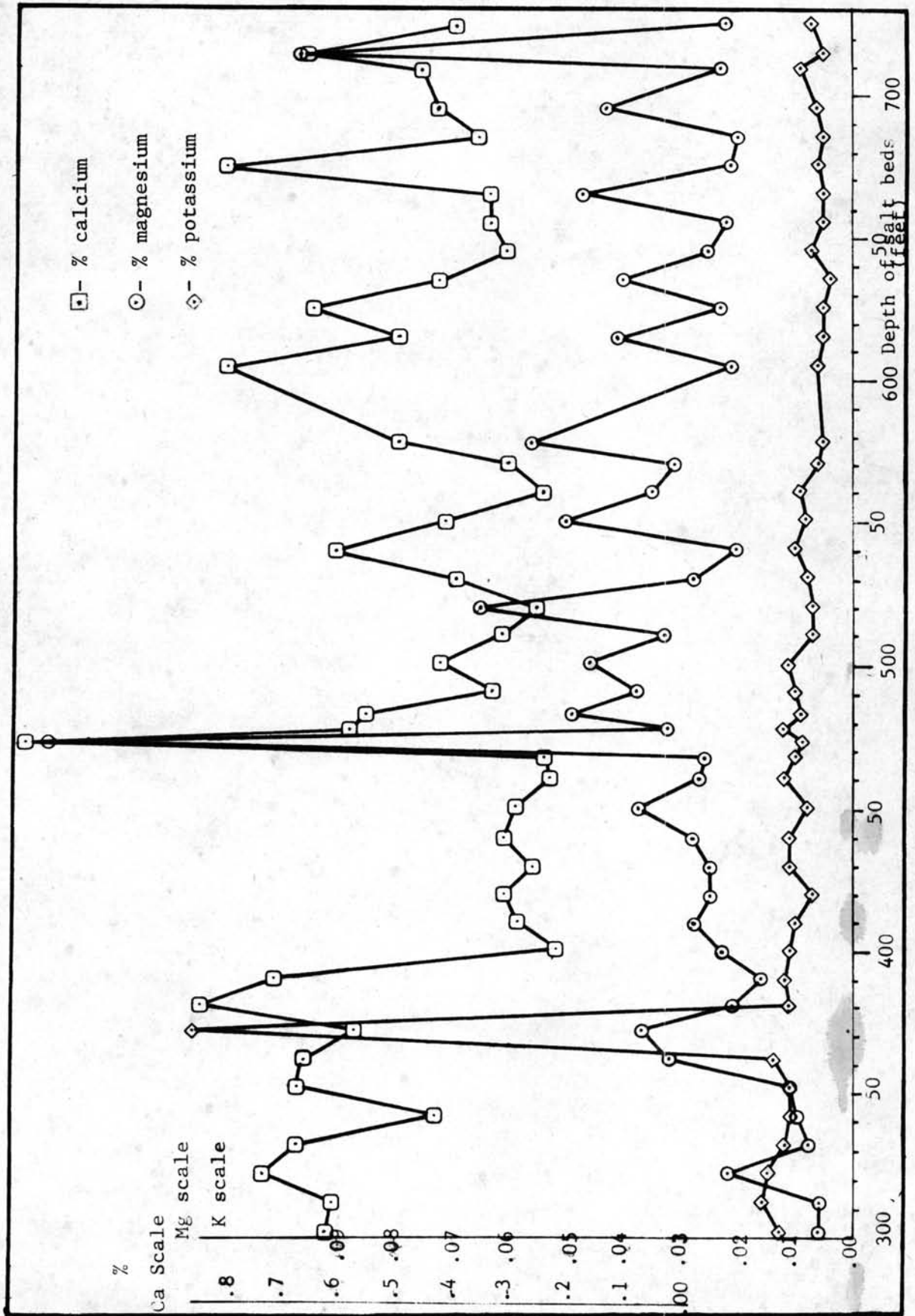


Figure 4.4 (a) Profiles of average calcium, magnesium and potassium contents from correlated intervals in Drill Hole no. RS. 2.5

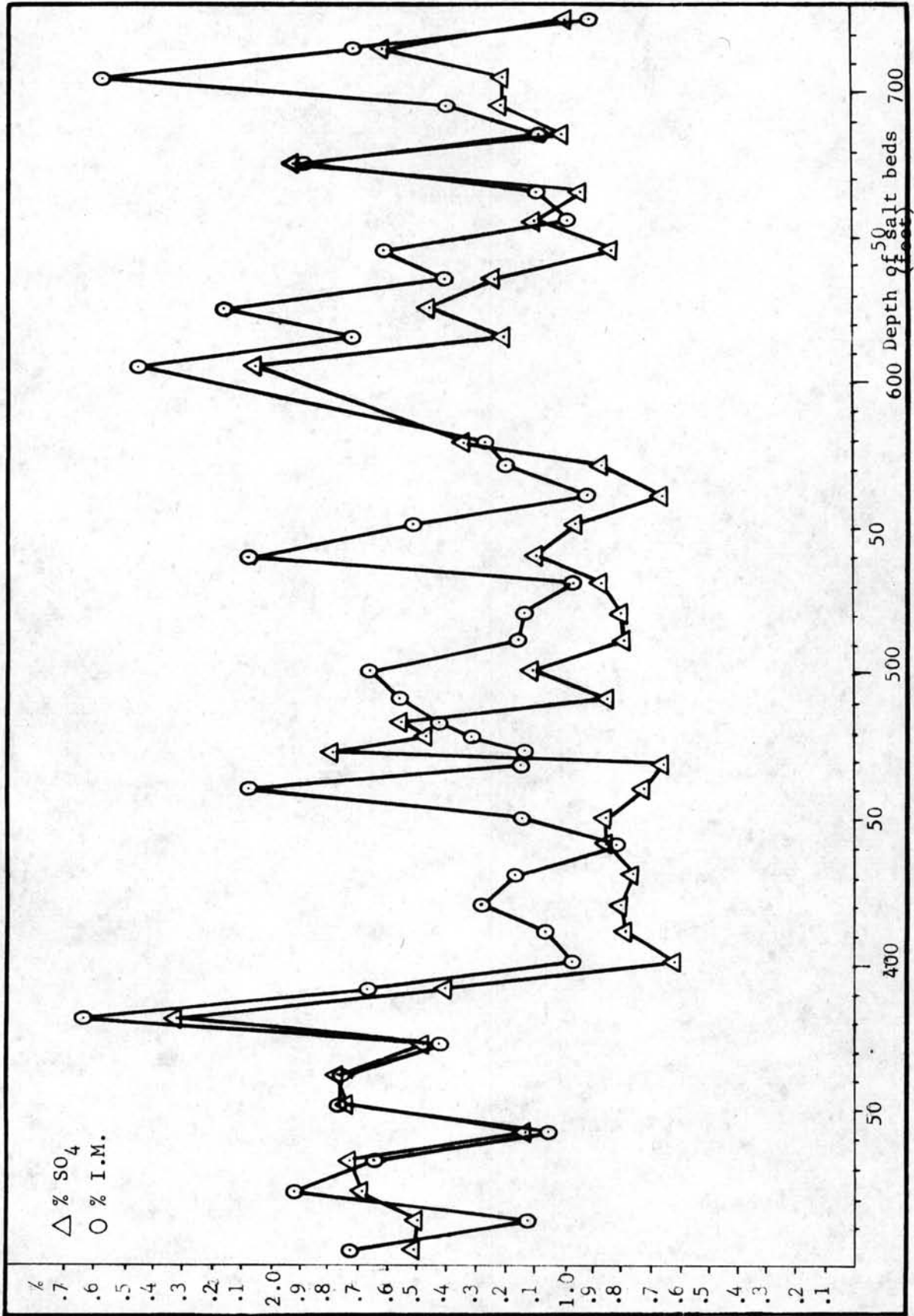


Figure 4.4 (b) Profiles of average sulfate and water insoluble matter contents from correlated intervals in Drill Hole no. RS. 2.5

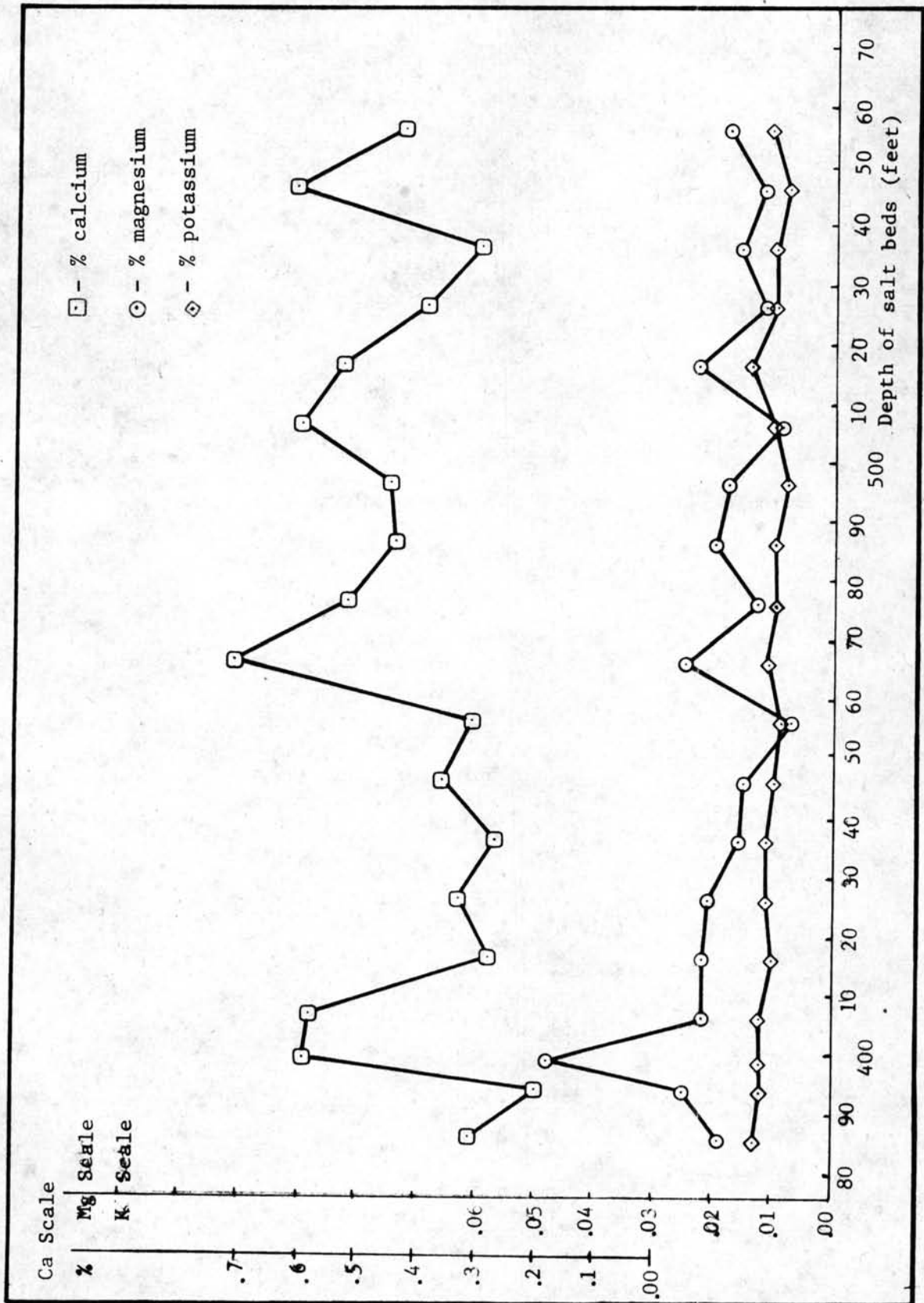


Figure 4.5 (a) Profiles of average calcium, magnesium and potassium contents from correlated intervals in Drill Hole no. RS. 2.9

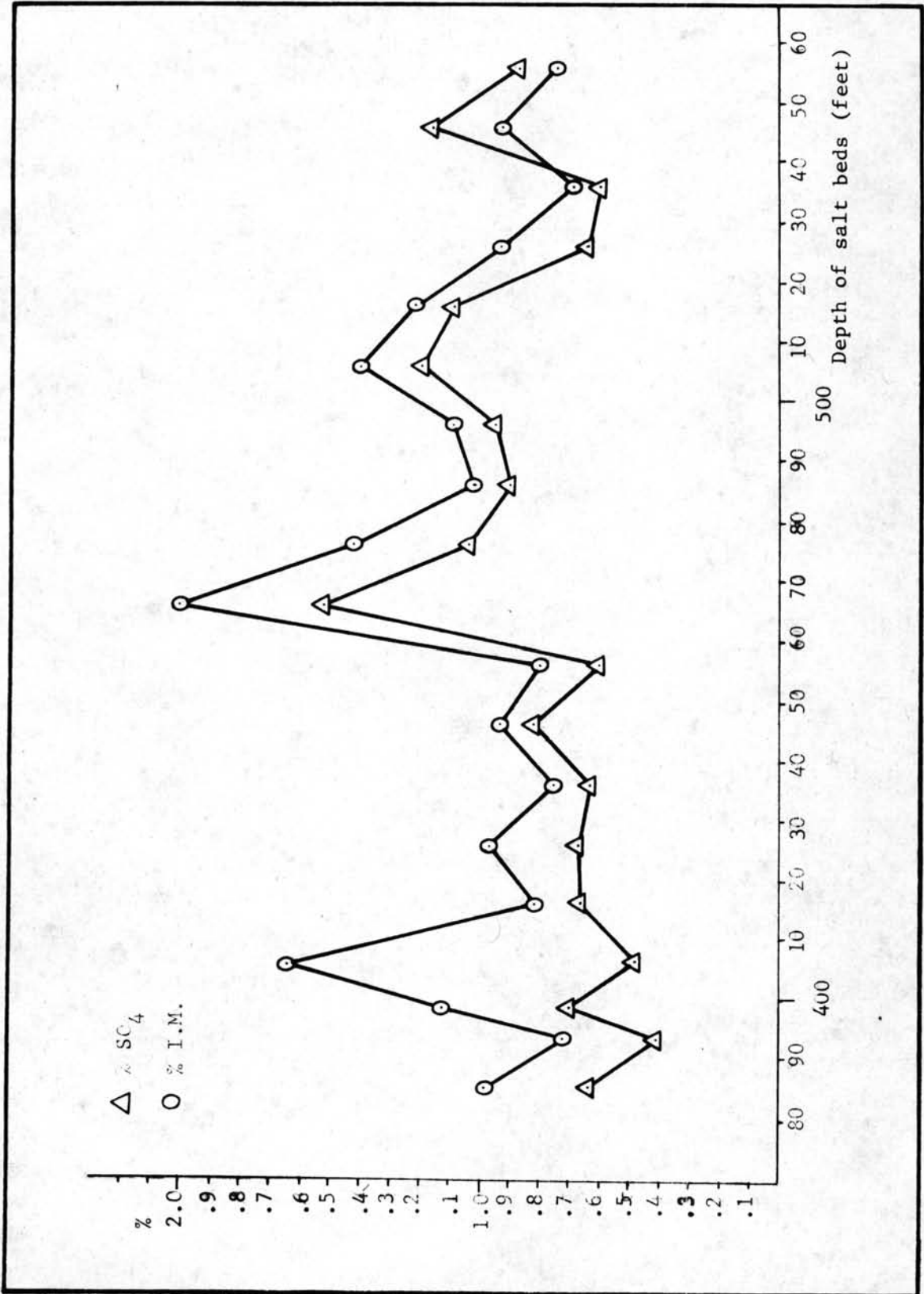


Figure 4.5 (b) Profiles of average calcium, magnesium and potassium contents from correlated intervals in Drill Hole no. RS. 2.9

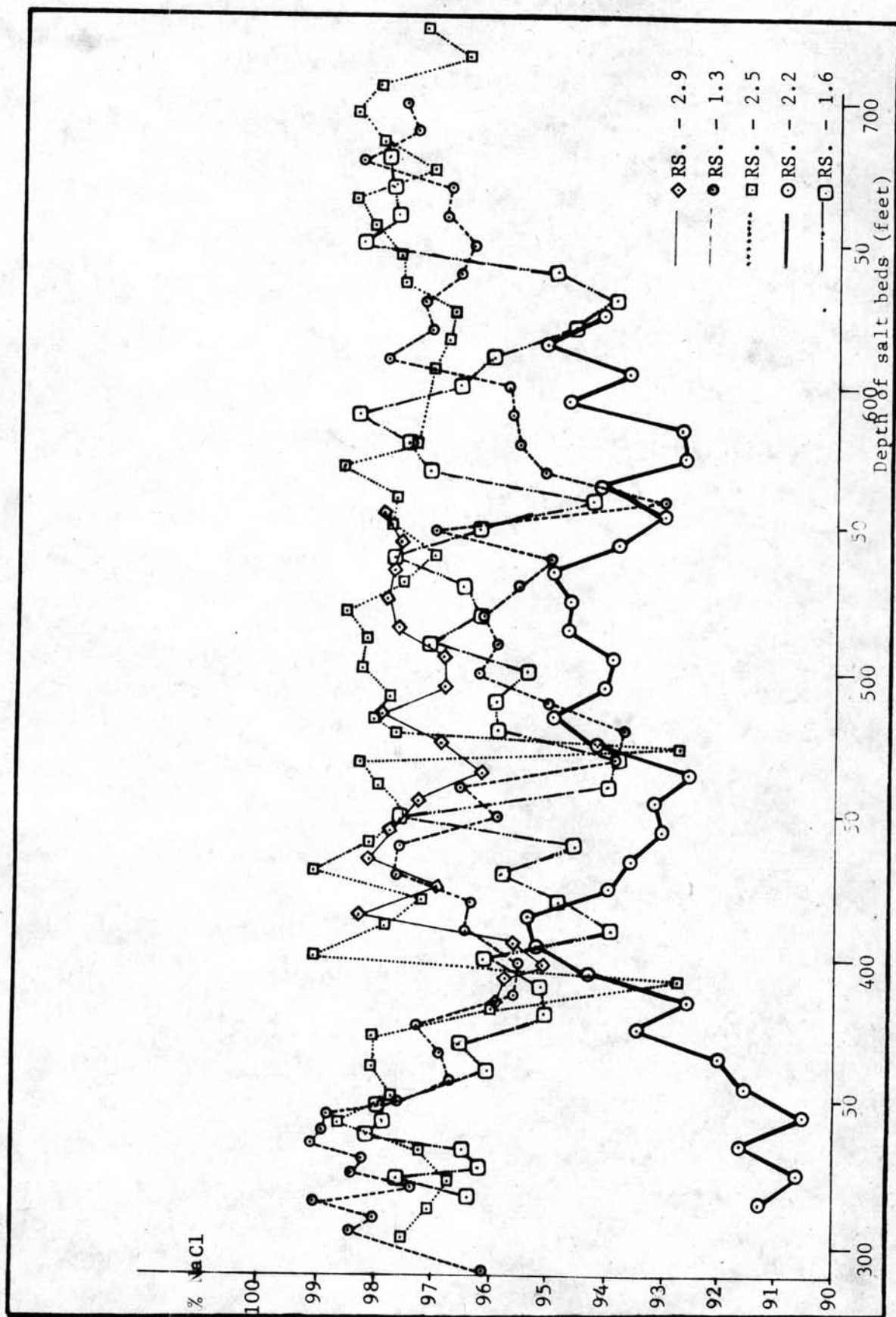


Figure 4.6 Profiles of average sodium chloride contents from correlated intervals in five Drill Holes.

The mean values of each constituents in each drill hole are calculated and appeared in Table 4.6. The distribution of each constituent is shown in Figure 4.7(a) to 4.7(i).

Table 4.6 The mean values of chemical analysis from five drill holes

Drill Hole no.	%Ca	%Mg	%K	%Cl	%SO ₄	%NaCl	%Na	%H ₂ O	%IM
1.3	0.37	0.024	0.008	58.54	0.81	96.66	37.84	0.043	0.847
1.6	0.59	0.024	0.020	58.45	1.34	96.22	37.77	0.064	1.901
2.2	0.92	0.028	0.020	57.28	1.61	93.45	36.76	0.059	2.532
2.5	0.48	0.034	0.008	59.22	1.21	97.45	38.32	0.074	1.418
2.9	0.43	0.019	0.011	59.09	0.82	97.05	38.18	0.055	1.061
\bar{x}	0.55	0.027	0.013	58.53	1.17	96.23	37.78	0.060	1.571

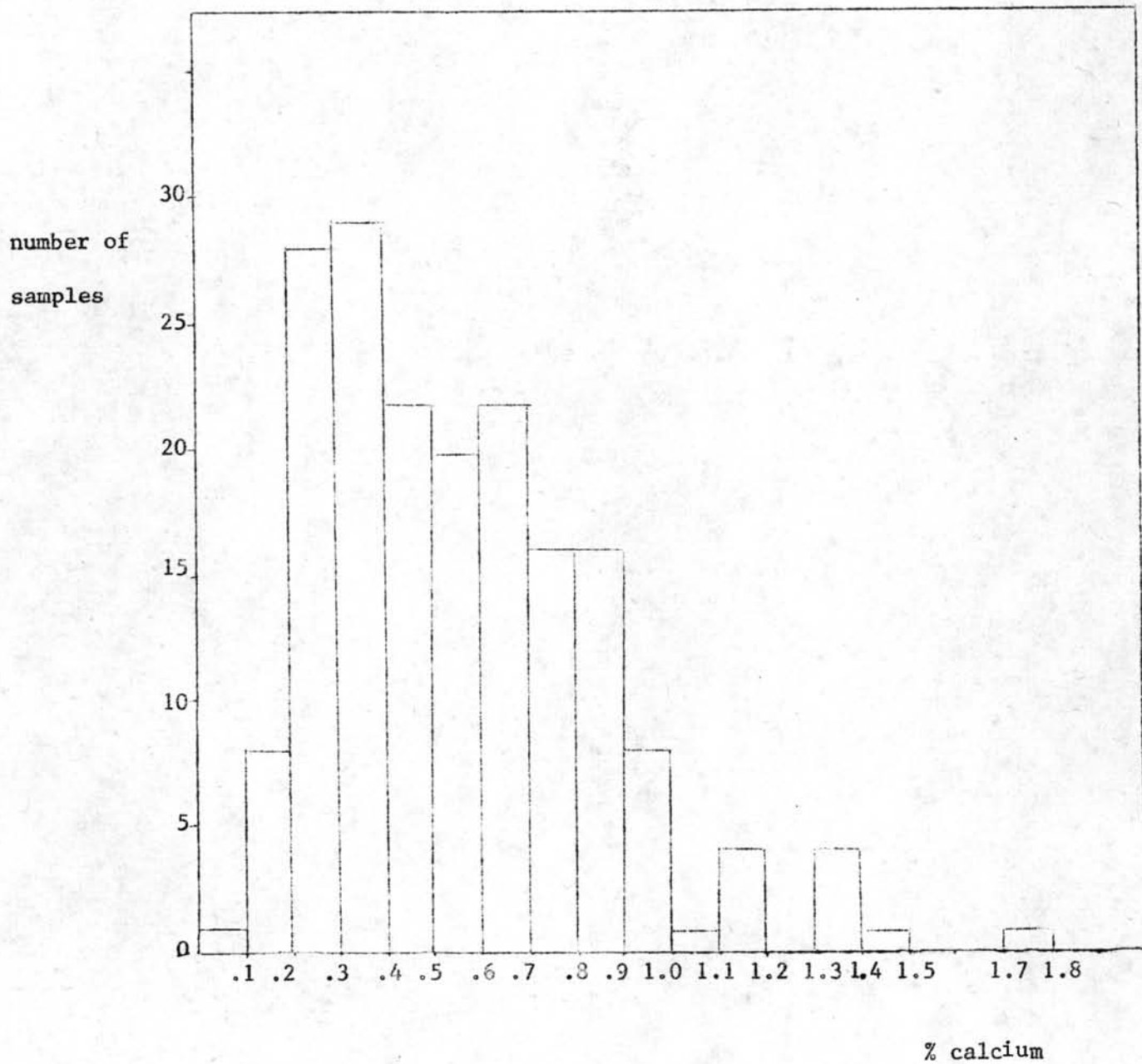


Figure 4.7 (a) Distribution of % calcium in rock salt samples.

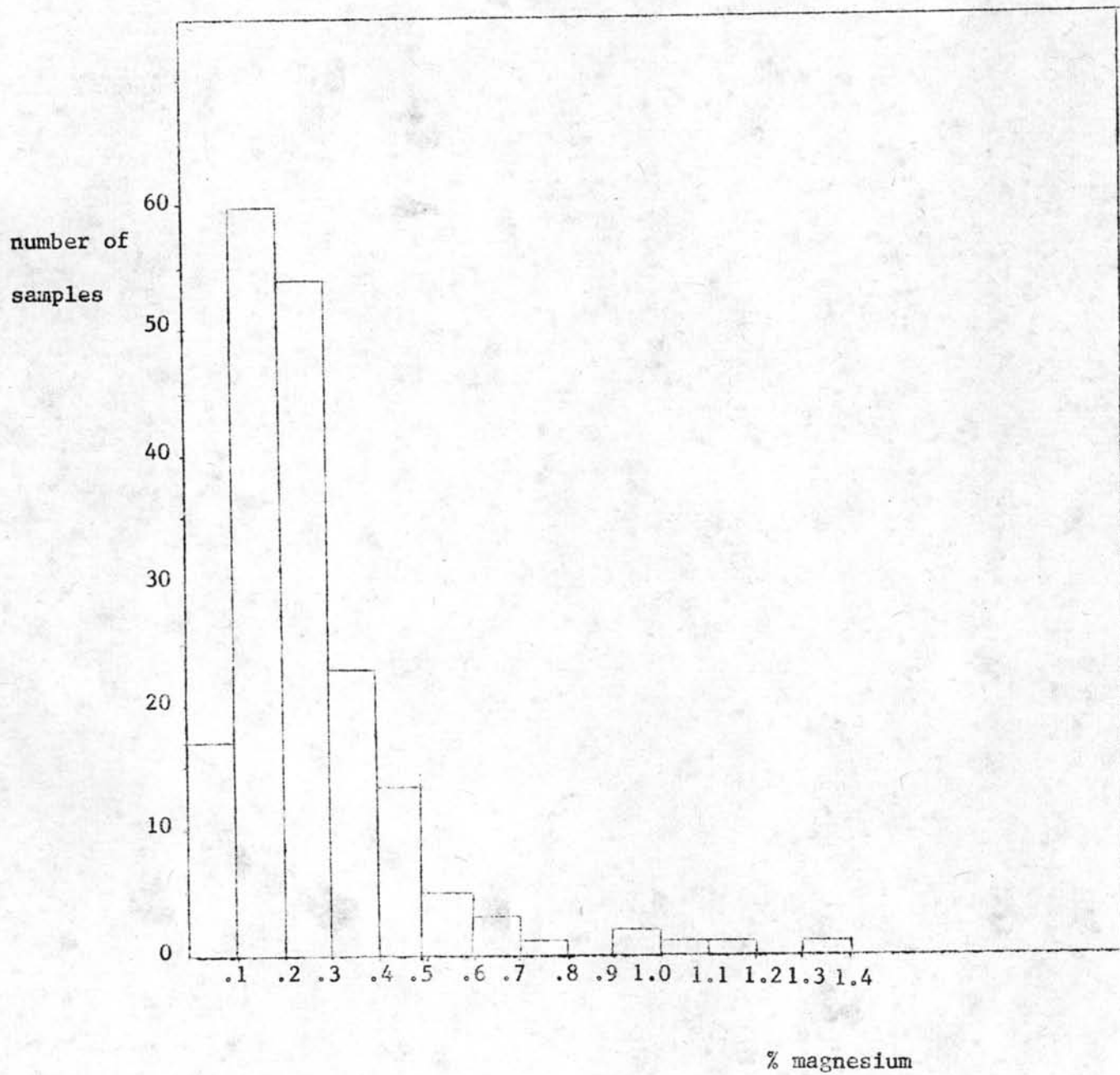


Figure 4.7 (b) Distribution of % magnesium in rock salt samples.

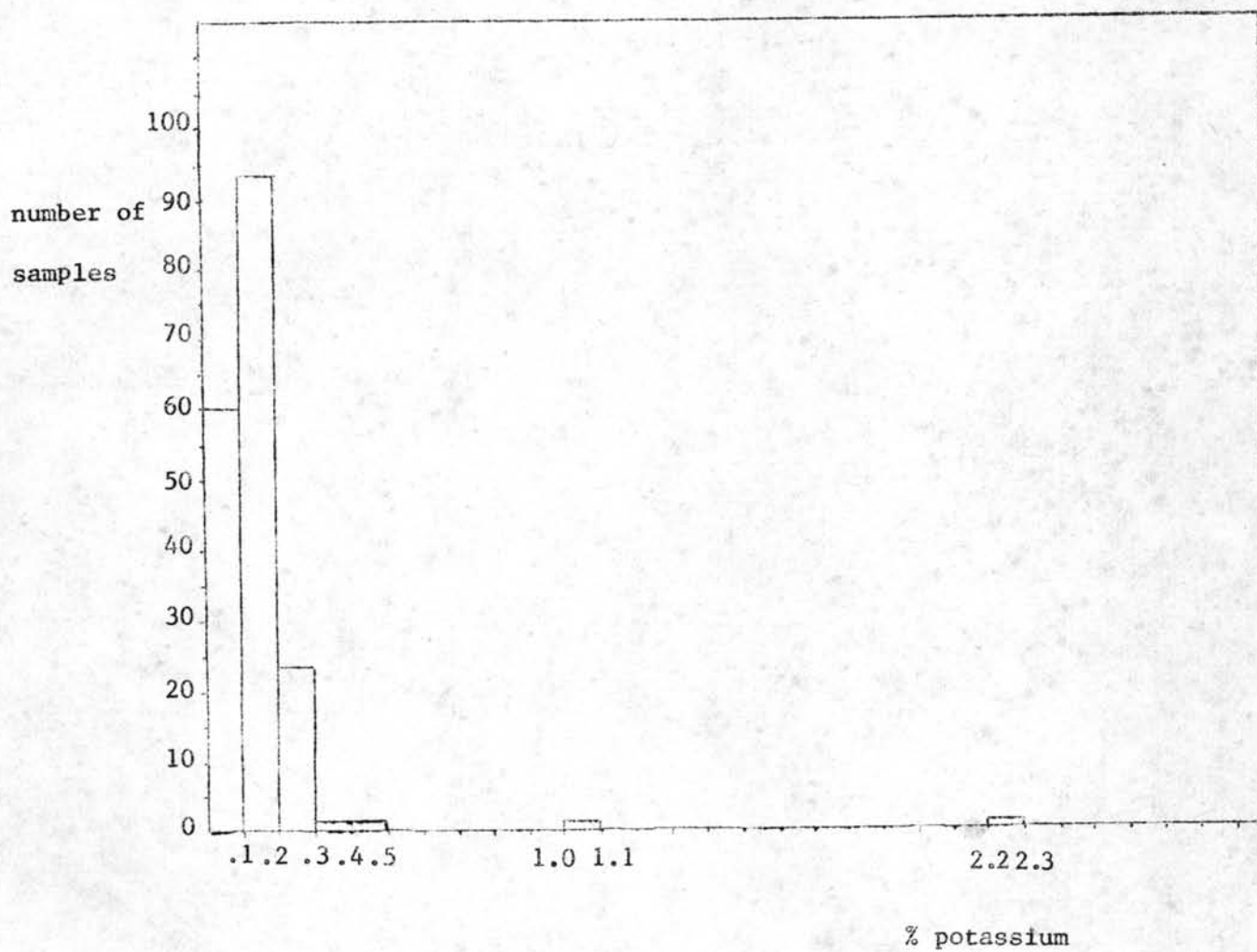


Figure 4.7 (c) Distribution of % potassium in rock salt samples

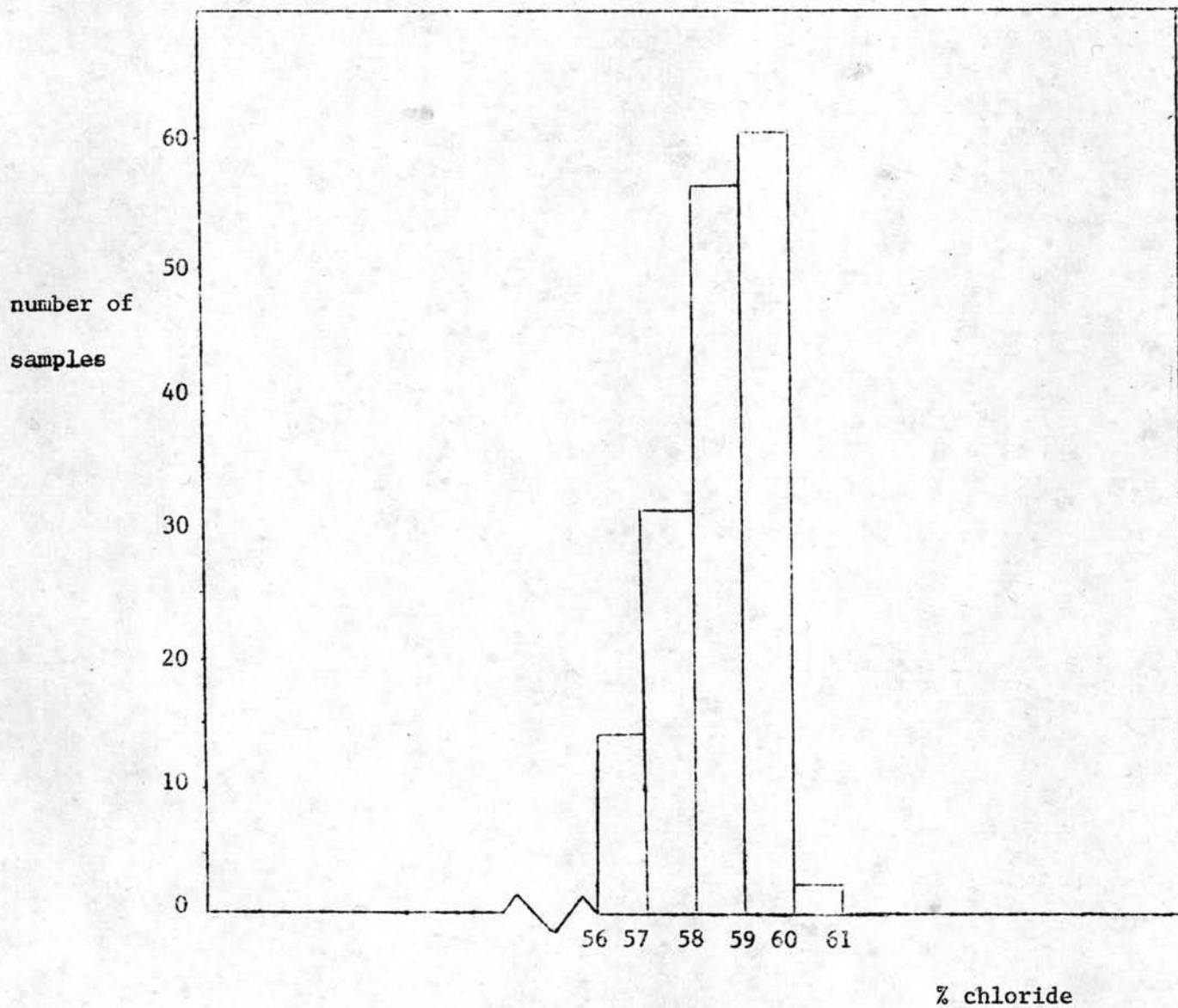


Figure 4.7 (d) Distribution of % chloride in rock salt samples

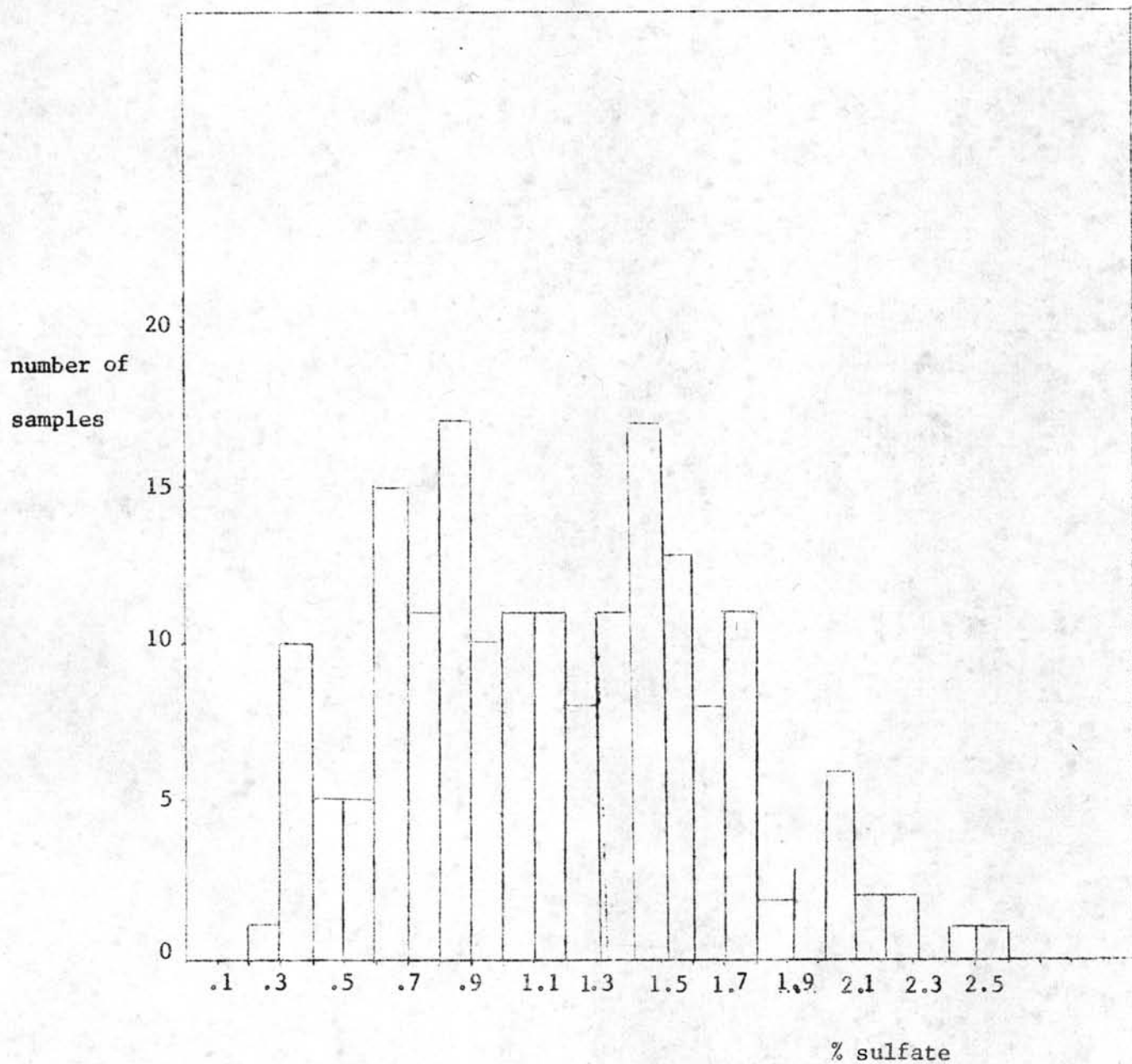


Figure 4.7 (e) Distribution of % sulfate in rock salt samples

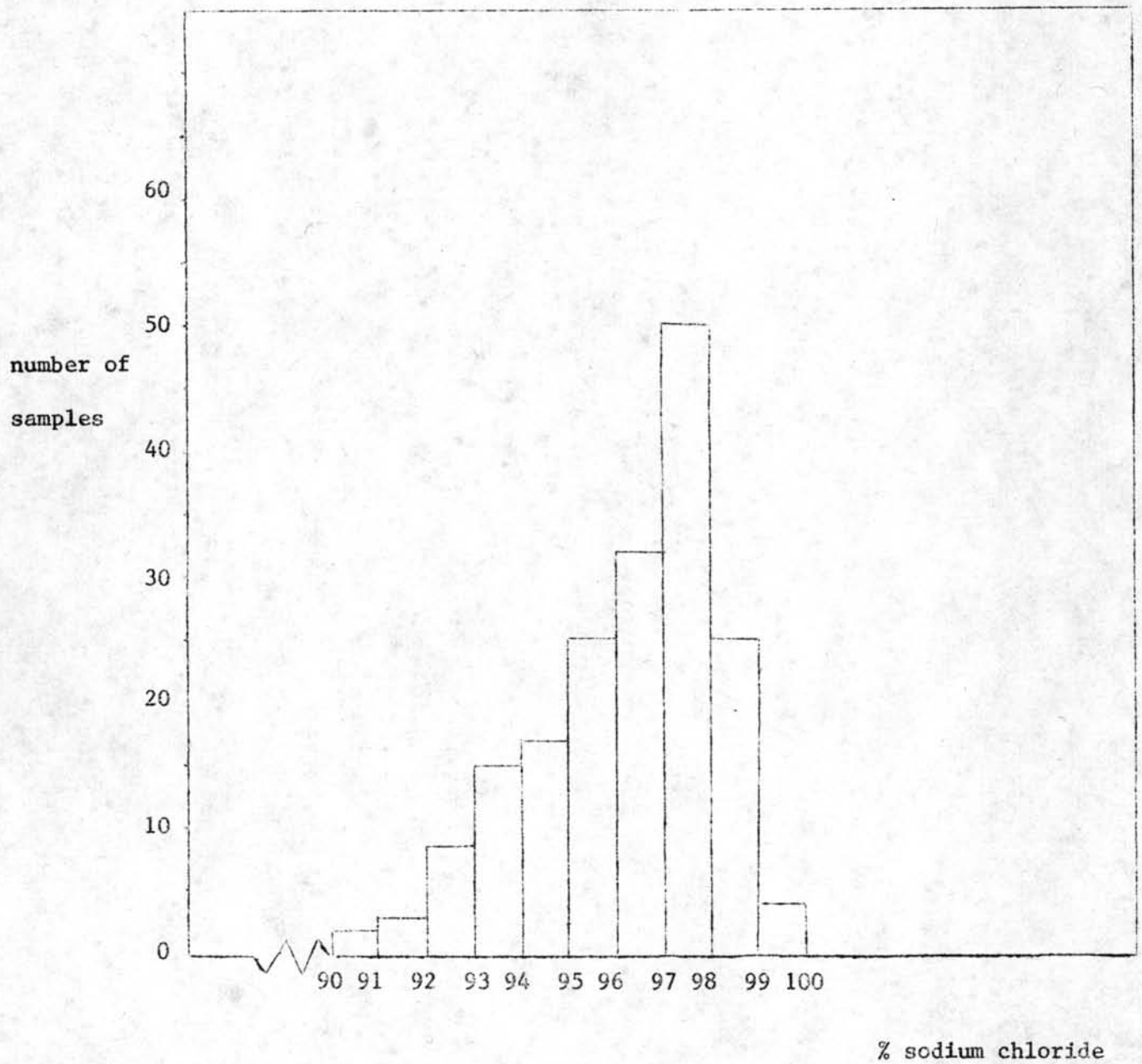


Figure 4.7 (f) Distribution of % sodium chloride in rock salt samples

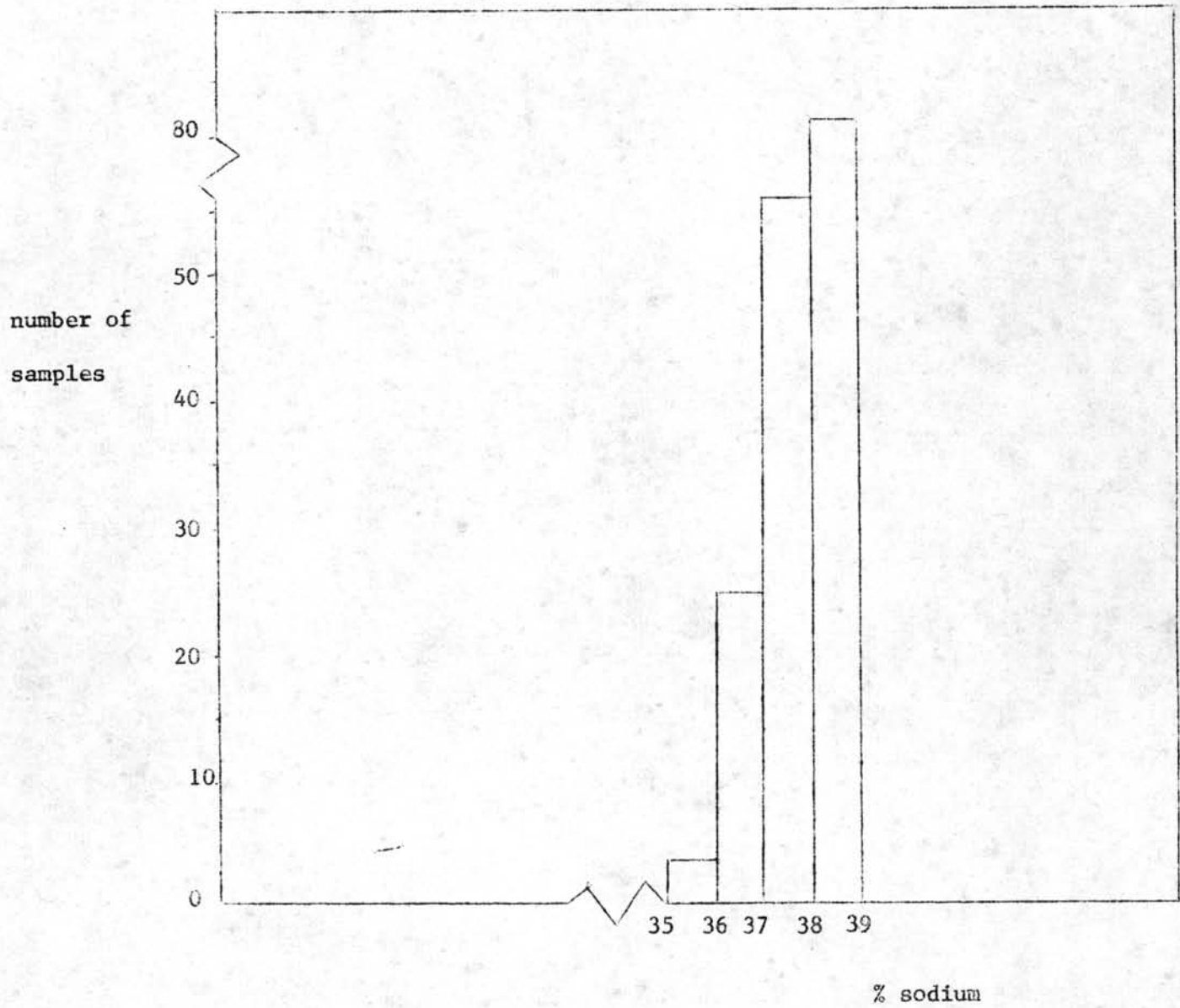


Figure 4.7 (g) Distribution of % sodium in rock salt samples

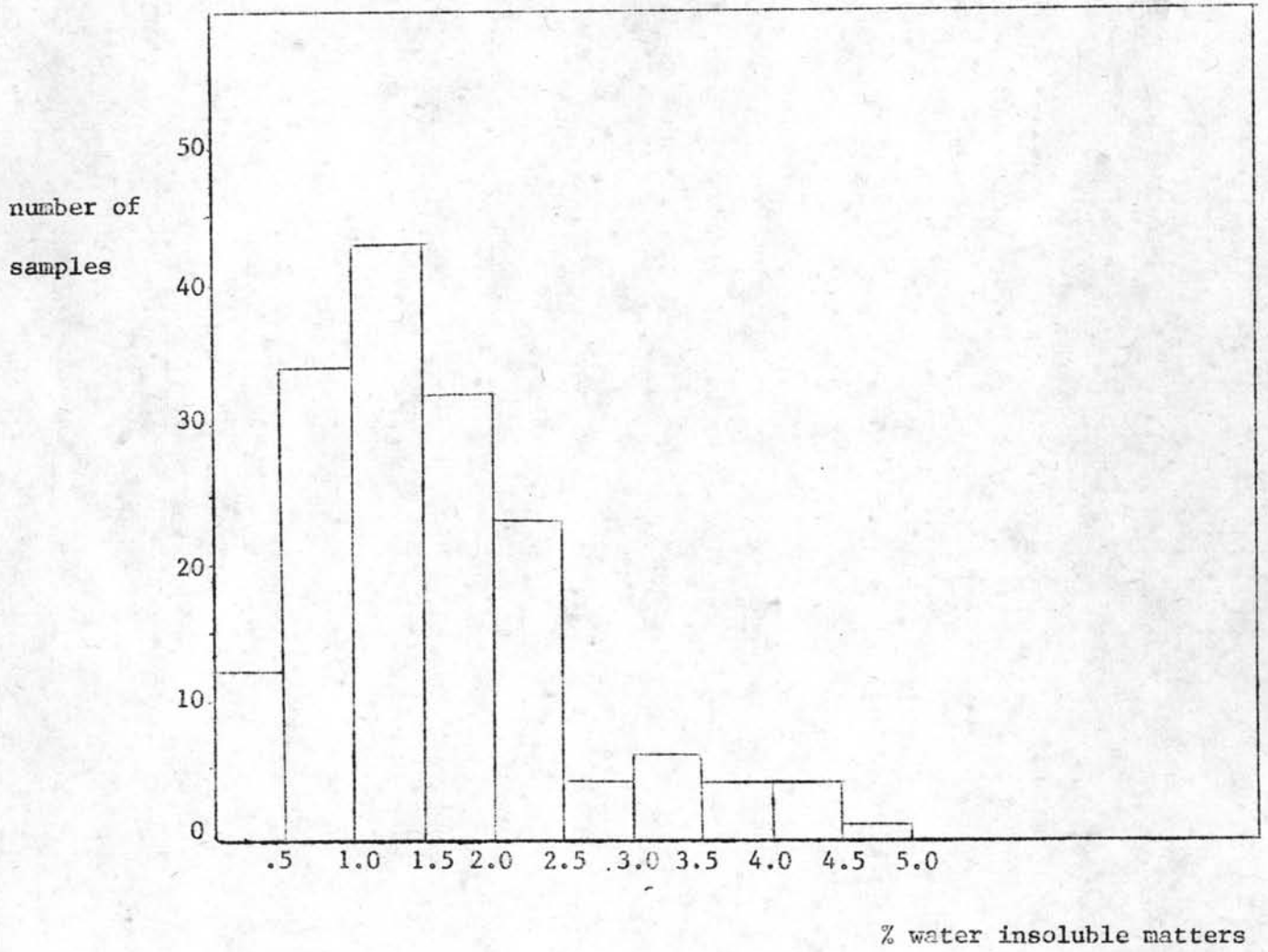


Figure 4.7 (h) Distribution of % water insoluble matters in rocksalt samples

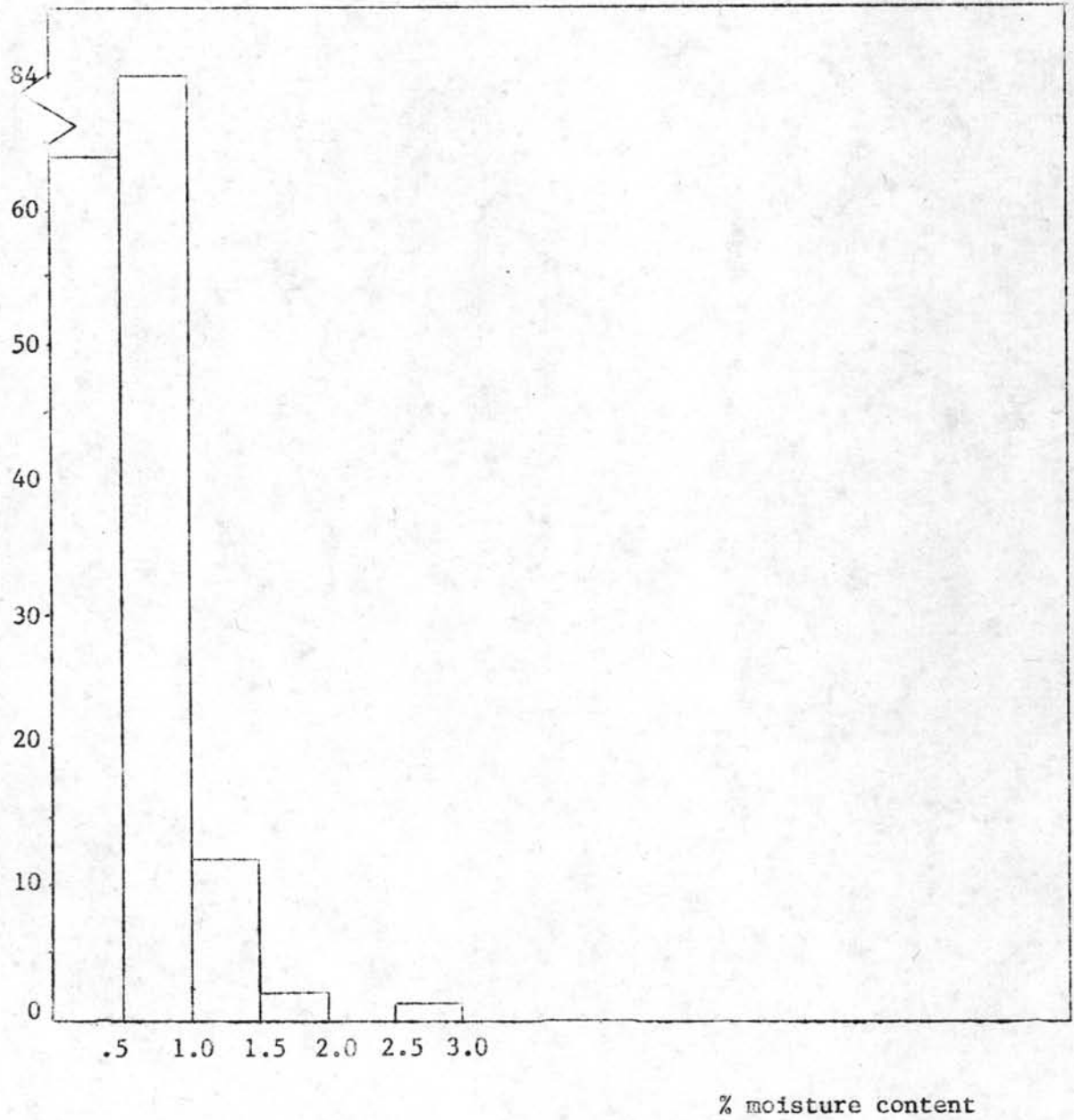


Figure 4.7 (1) Distribution of % moisture content in rock salt samples

Selection of Better Grade Zone

The better grade zone is selected based on the quantity of impurity in salt. Since the specification of the proposed soda ash plant is defined that the quality of salt for a raw material must be comparable to the Australian Salt or the Mexican Salt. The matter in the quality of salt is not only its purity but also the kinds and contents of the impurities present (27,28). The chemical impurities that will effect the processing of soda ash plant are calcium, magnesium and sulfate. Comparing the mean values of the impurities with typical Australian and Mexican Salt, magnesium content is comparable but calcium and sulfate content of Thai rock salt are higher. Since the amount of calcium in the rock salt sample is correlated to sulfate, it is therefore the quantity of calcium is chosen as a base for selection of better grade zone. The calcium content in salt samples lower than 0.55% which is the mean values of calcium content of Thai rock salt in this specific area is selected to be the suitable grade salt.

Bore Hole no. RS 1.3 contains the highest purity of salt among five drill holes. Calcium content occurred in this hole is in the range of 0.05 to 0.86% and sulfate content is from 0.30 to 1.43%. There are five layers of salt with the thickness of 20-80 feet that have the better grade salt than others as shown in Table 4.7 and corresponding Figure 4.8. Drill hole no RS 1.6 has one layers of better grade salt in the thickness of 100 feet as appear in

Table 4.8 with the corresponding Figure 4.9. Calcium and sulfate content in this drill hole are in range of 0.13-0.97% and 0.25-2.51% respectively. Bore hole no RS 2.2 contains lowest purity of salt among five drill holes with the percentage of calcium in the range of 0.56-1.71% and 1.13-2.25% of sulfate. At the depth above 400 feet, the calcium and magnesium are higher (more than 1% Ca and 2% SO_4) than that below 400 feet as illustrated in Table 4.9 with the corresponding Figure 4.10. Bore hole no RS 2.5 has five layers of better grade salt as shown in Table 4.10 and corresponding Figure 4.11. Calcium and sulfate content are 0.22-1.14% and 0.62-2.32% respectively. Bore hole no RS 2.9 has only one layer of salt that has better grade salt with the thickness of 16-50 feet as illustrated in Table 4.11 and Figure 4.12. Calcium content is in the range of 0.20-0.71% and sulfate is 0.41-1.52%.

Table 4.7 Selected zones of better grade salt of Drill Hole no. RS 1.3

Depth (ft)	thickness (ft)	%Ca	%Mg	%K	%Cl	%SO ₄	%NaCl	%Na	%H ₂ O	%IM
302 - 382	80	0.28	0.012	0.015	58.9	0.82	98.03	38.15	0.045	0.386
392 - 415	23	0.37	0.032	0.005	58.52	0.68	96.02	37.78	0.097	0.933
425 - 465	40	0.39	0.036	0.005	58.96	0.90	96.94	38.14	0.050	0.805
495 - 555	60	0.47	0.008	0.004	58.36	0.50	95.97	37.75	0.038	0.410
565 - 705	40	0.30	0.026	0.007	58.84	0.64	96.70	38.03	0.030	0.749

Table 4.8 Selected zones of better grade salt of Drill Hole no RS 1.6

Depth (ft)	thickness (ft)	%Ca	%Mg	%K	%Cl	%SO ₄	%NaCl	%Na	%H ₂ O	%IM
565 - 665	100	0.30	0.028	0.014	58.68	0.67	96.48	37.96	0.039	1.618

Table 4.9 Selection of better grade zone of Drill Hole no RS 2.2

Depth (ft)	thickness (ft)	%Ca	%Mg	%K	%Cl	%SO ₄	%NaCl	%Na	%H ₂ O	%IM
390 - 460	70	0.77	0.036	0.022	57.47	1.50	94.09	37.02	0.054	2.032
470 - 570	100	0.75	0.02	0.021	57.50	1.47	94.23	37.07	0.047	1.931
580 - 630	50	0.75	0.019	0.020	57.50	1.33	94.05	37.00	0.064	2.077

Table 4.10 Selected zones of better grade salt of Drill Hole no. RS 2.5

Depth (ft)	Thickness (ft)	%Ca	%Mg	%K	%Cl	%SO ₄	%NaCl	%Na	%H ₂ O	%IM
396-471	75	0.27	0.028	0.010	59.55	0.76	98.11	38.59	0.081	1.046
481-536	55	0.3	0.042	0.009	59.54	0.88	98.02	38.56	0.085	1.312
546-581	35	0.36	0.043	0.007	59.42	0.96	97.81	38.48	0.054	1.223
631-671	40	0.35	0.034	0.005	59.42	1.02	97.90	38.48	0.063	1.272
681-711	30	0.40	0.029	0.007	59.54	1.14	98.11	38.57	0.074	1.685

Table 4.11 Selected zones of better grade salt of Drill Hole no. RS 2.9

Depth (ft)	Thickness (ft)	%Ca	%Mg	%K	%Cl	%SO ₄	%NaCl	%Na	%H ₂ O	%IM
380-390	16	0.255	0.022	0.013	58.30	0.52	95.83	37.71	0.016	0.850
411-461	50	0.31	0.016	0.010	59.31	0.68	97.68	38.43	0.075	0.853
471-501	30	0.47	0.017	0.009*	59.13	0.96	97.20	38.24	0.070	1.177
511-541	30	0.35	0.014	0.010	59.52	0.62	97.76	38.46	0.040	0.944

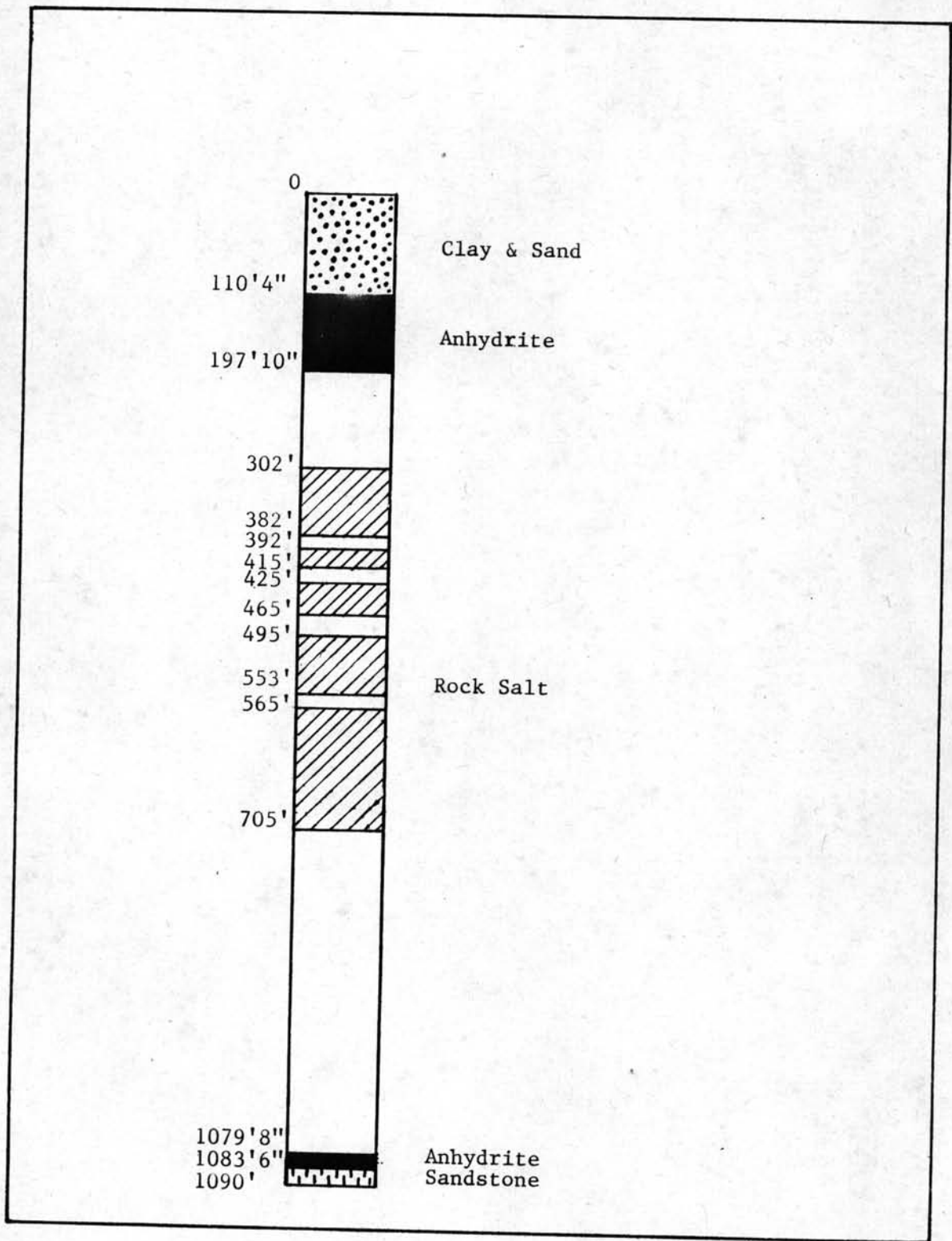


Figure 4.8 Selected zone of better grade salt in drill hole no. RS 1.3

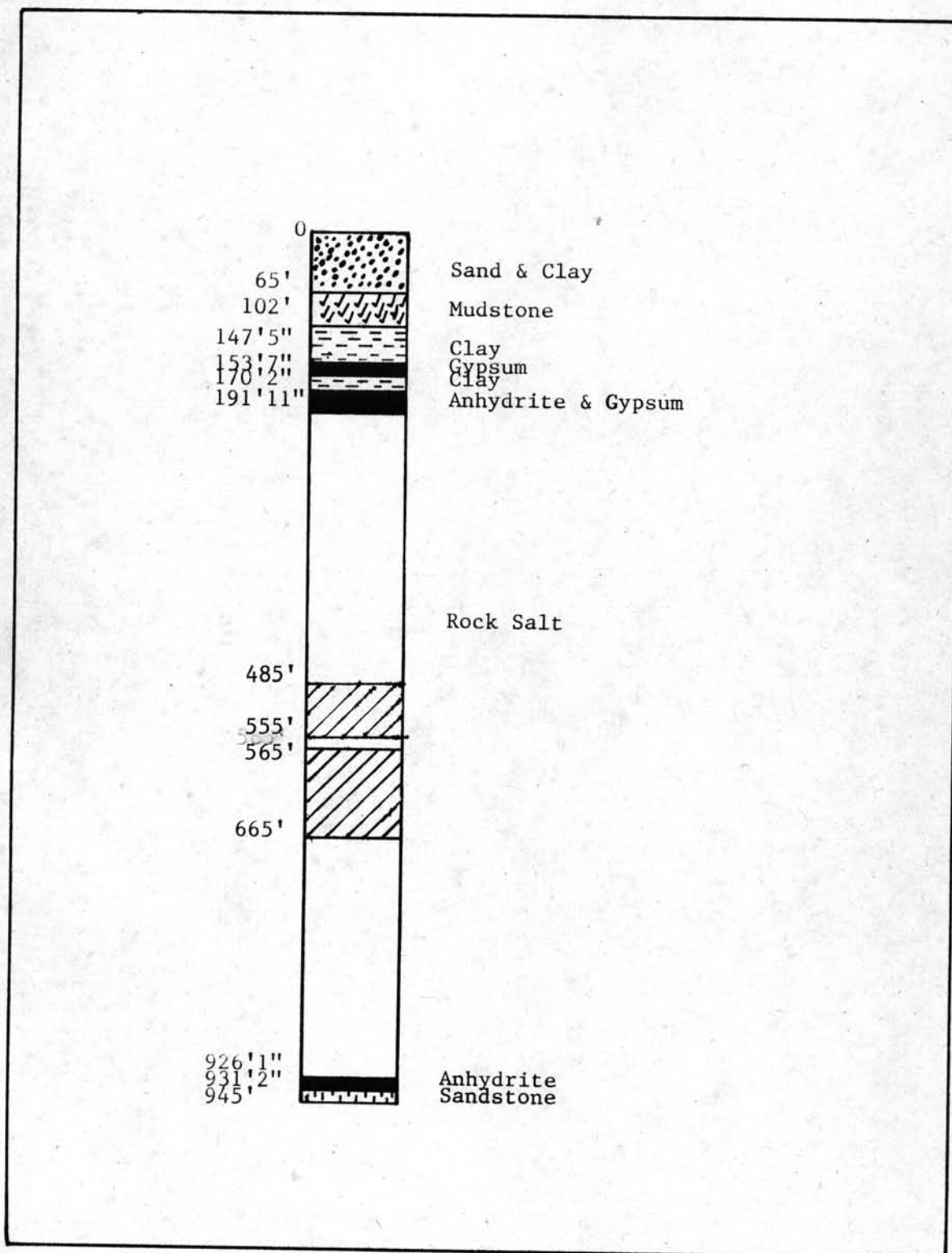


Figure 4.9 Selected zone of better grade salt in drill hole no. RS 1.6

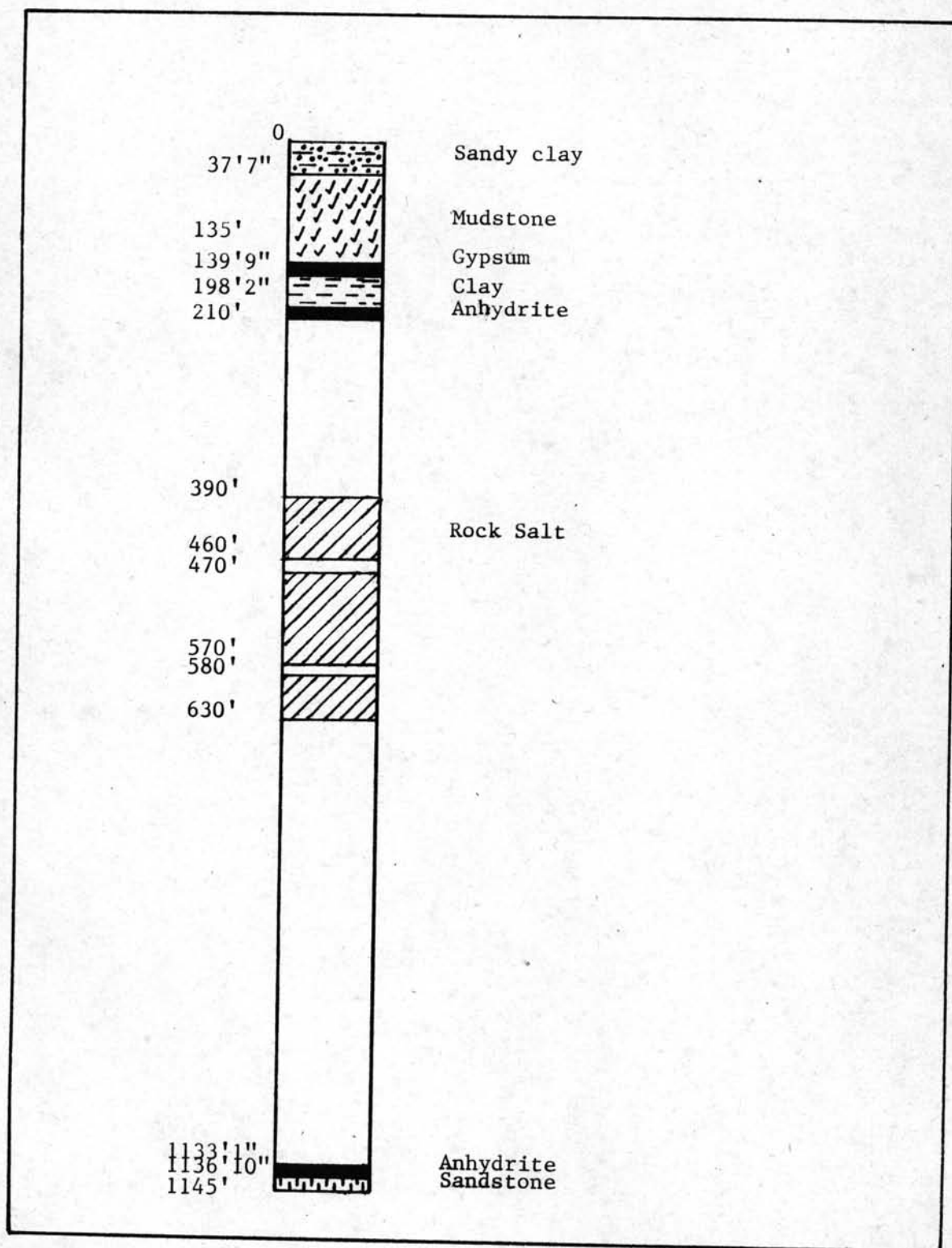


Figure 4.10 Selected zone of better grade salt in drill hole no. RS 2.2

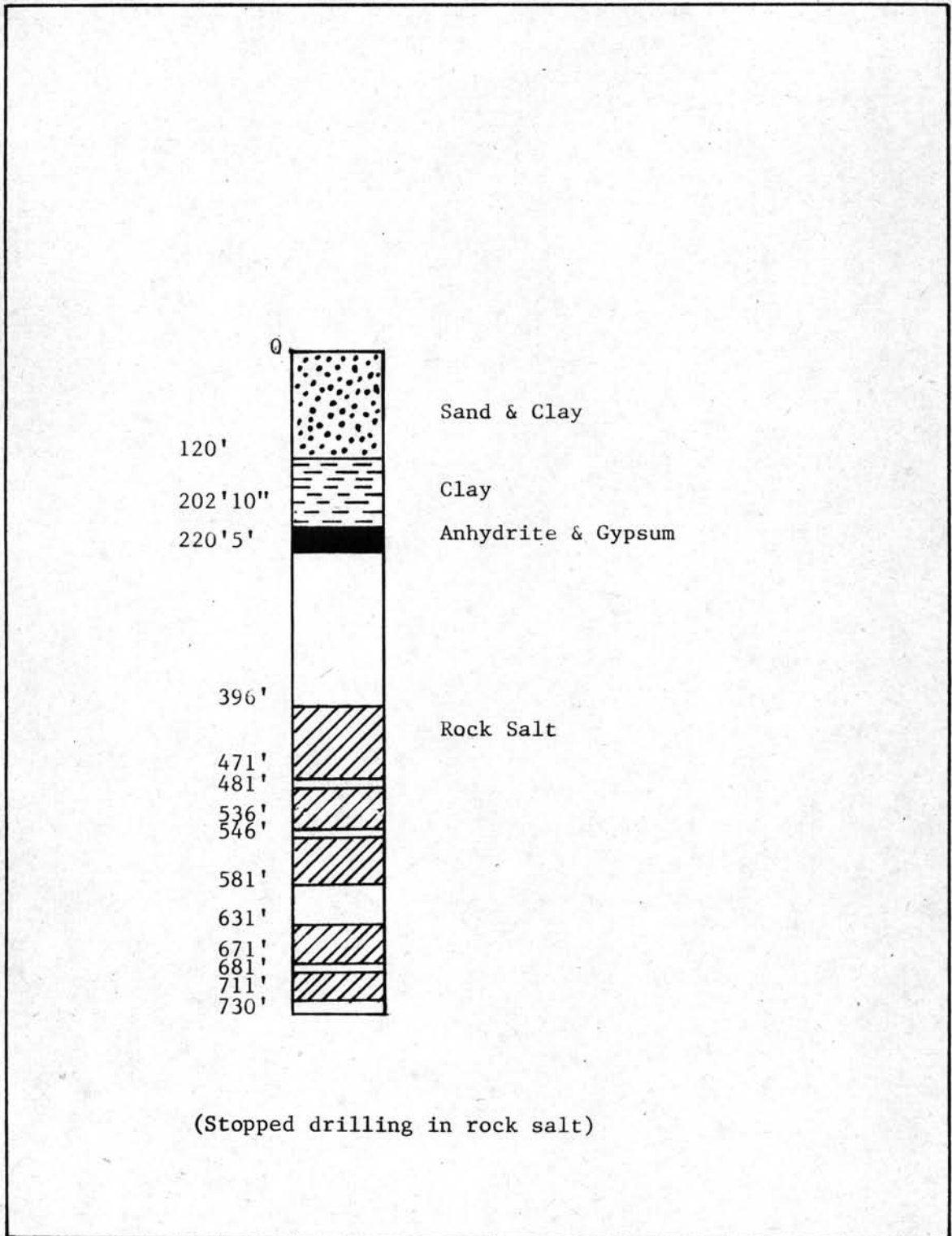


Figure 4.11 Selected zone of better grade salt in drill hole no. RS 2.5

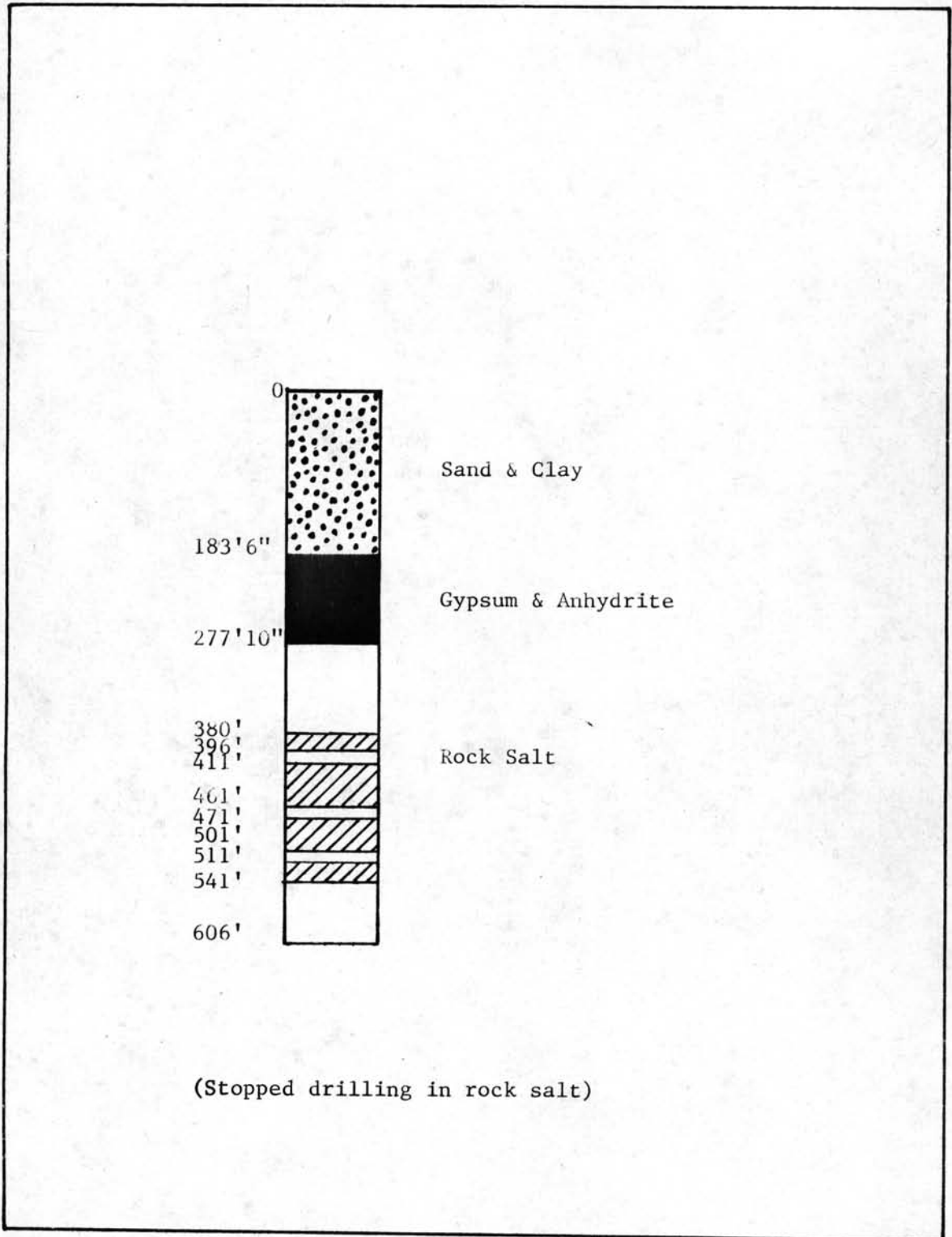


Figure 4.12 Selected zone of better grade salt in drill hole no. RS 2.9

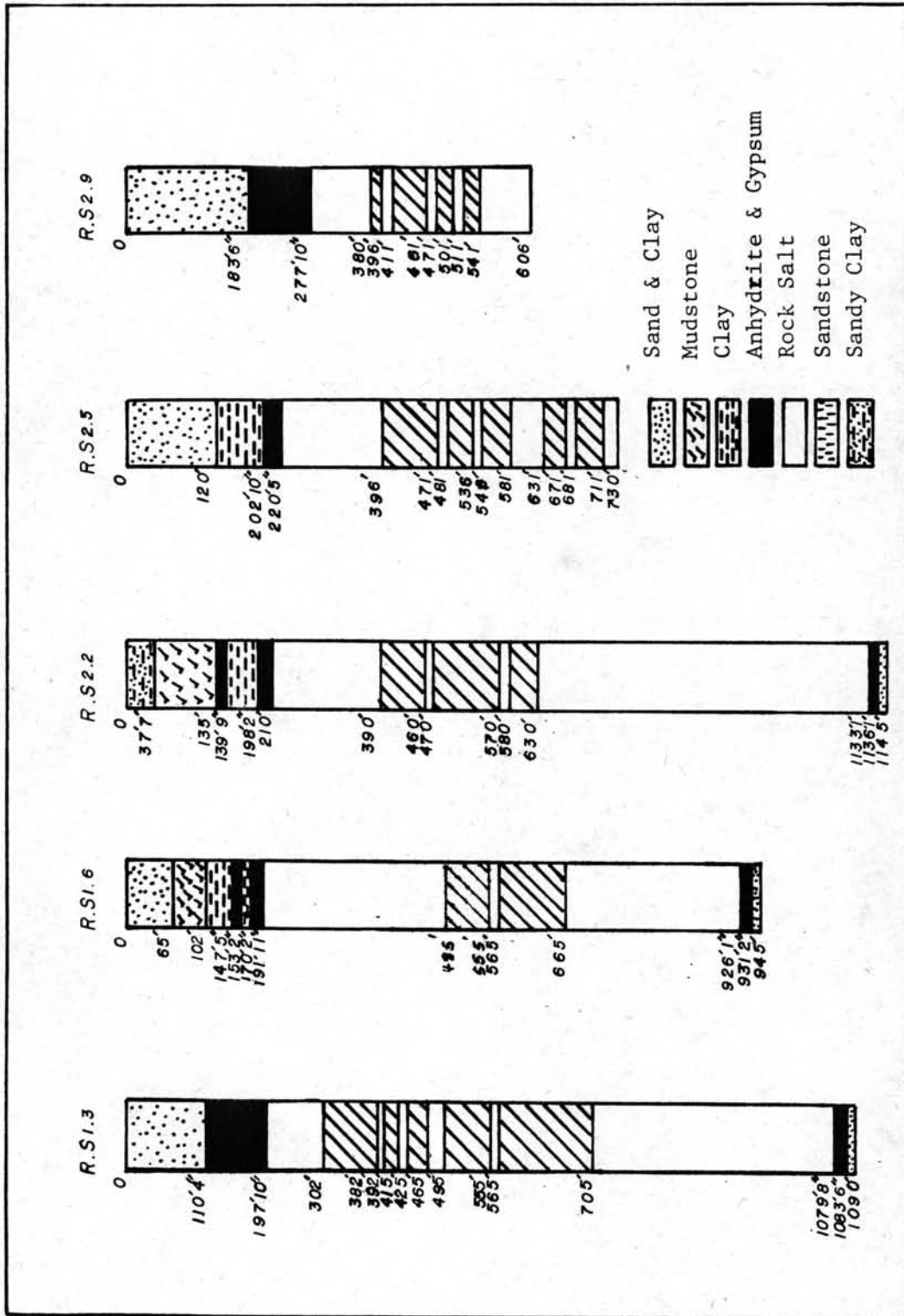


Figure 4.13 Selected zone of better grade salt of five drill holes

Selection of Movable Zone

The selected better grade zones of five drill holes are illustrated in Figure 4.13. It is clearly seen that the favourable grade salt zone are not in the range between 300 - 400 feet which it would not obviously be the movable zone. This is contradicted to the Report on the Feasibility of Rock Salt Soda Ash Project in Thailand (21) which recommends the depth of 300 - 350 feet for being the movable zone. In the range of 400 - 450 feet, only three bore holes have better grade zones. It may be concluded that the possible movable zone should be in the range of 480 feet to 580 feet. Since the regional area is slightly relief difference in the order of 23 feet, it is therefore necessary to reset the levels of all five holes. The corrected levels of these holes are appeared in table 4.12.

In order to assign areas of influence to drill holes samples, the geometric pattern is then constructed. The triangular method of estimating the grade of ore is as approximation (51,52) because it assumes an exact linear change of grade of ore in direct proportion to the distance between drill holes. From the geometric pattern of possible movable zone in the range of 480 to 580 feet as in Figure 4.14 (a) to 4.14 (i), it is clear that the corrected range between 110 to 170 (depth between 500 to 560 approximately) covered nearly most area of five drill holes, would be the potential movable zone.

Table 4.12 Corrected level of Drill Holes

Drill Hole no	Depth above sea level	Range of possible minable zone (feet)	Corrected Depth (feet)
RS 1.3	665.43	565-475	100.43-190.43
RS 1.6	668.77	565-475	103.77-193.77
RS 2.2	663.63	560-470	103.63-193.63
RS 2.5	674.10	576-486	98.10 -188.10
RS 2.9	669.32	561-491	108.32-188.32

Table 4.13 % Calcium in range of possible minable zone used
in constructed geometric pattern

Corrected Depth (feet)	RS 1.3	RS 1.6	RS 2.2	RS 2.5	RS 2.9
100 - 110	0.83	0.94	0.90	0.30	*
110 - 120	0.23	0.67	0.93	0.24	0.43
120 - 130	0.40	0.37	0.57	0.41	0.61
130 - 140	0.41	0.58	0.72	0.60	0.30
140 - 150	0.16	0.45	0.71	0.39	0.39
150 - 160	0.19	0.59	0.73	0.25	0.53
160 - 170	0.21	0.63	0.72	0.31	0.60
170 - 180	0.66	0.70	0.56	0.42	0.45
180 - 190	0.86	0.81	0.81	0.33	0.44

* The data are not available

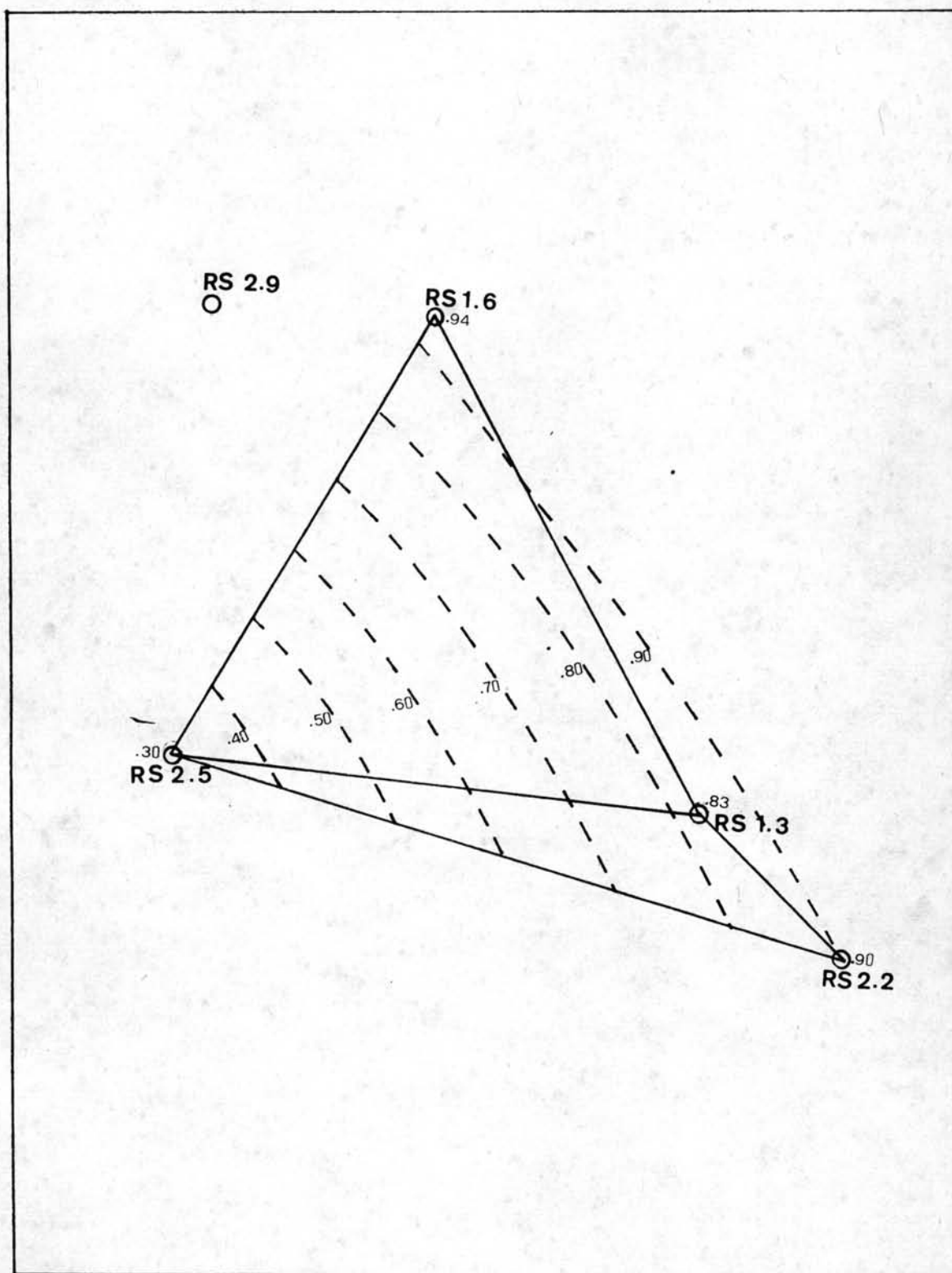


Figure 4.14 (a) Geometric Pattern showing percentage of calcium in rock salt beds at the depth between 100-110 feet related to the sea level. (actual depth 570-560 feet)

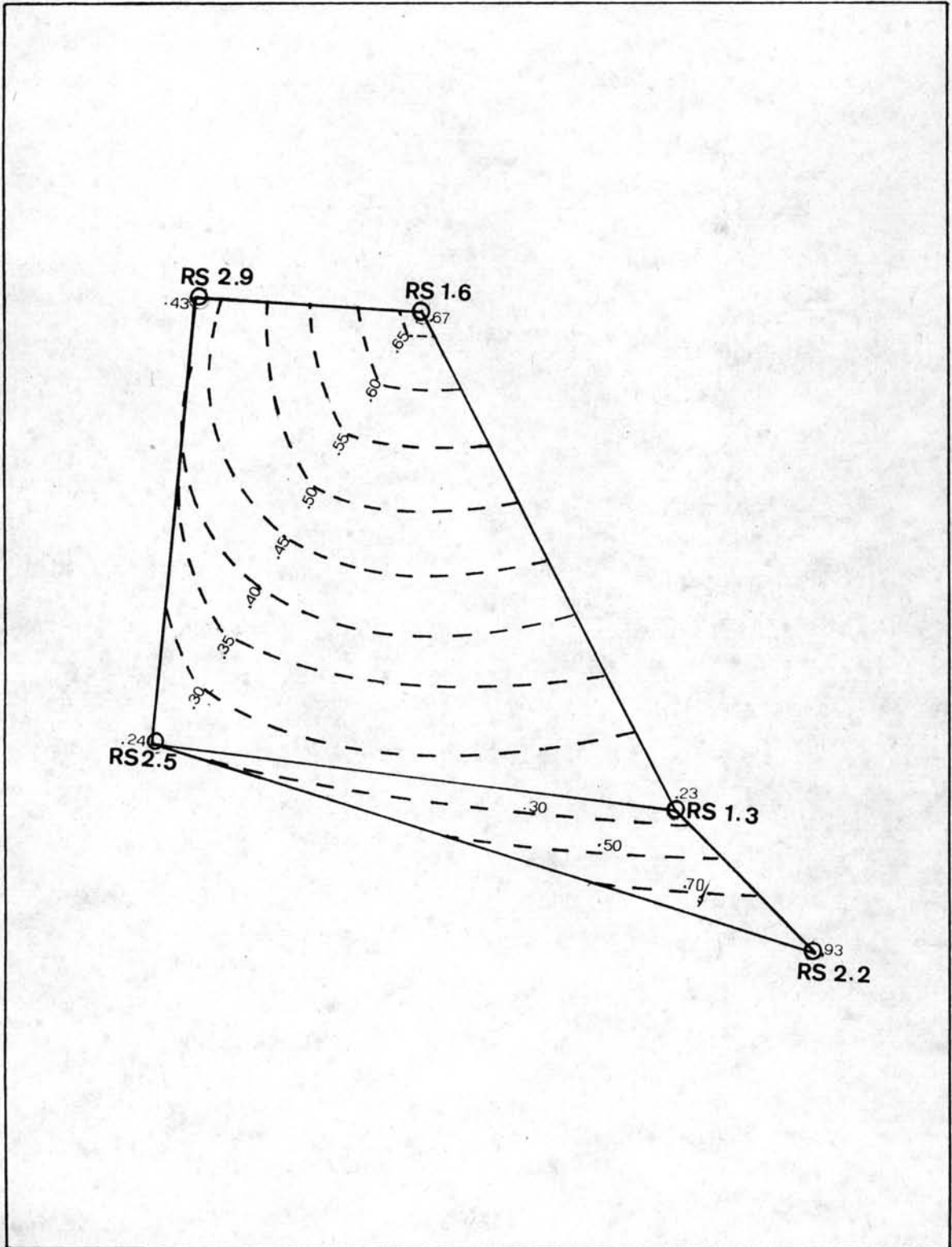


Figure 4.14 (b) Geometric Pattern showing percentage of calcium in rock salt beds at the depth between 110-120 feet related to the sea level. (actual depth 560-550 feet)

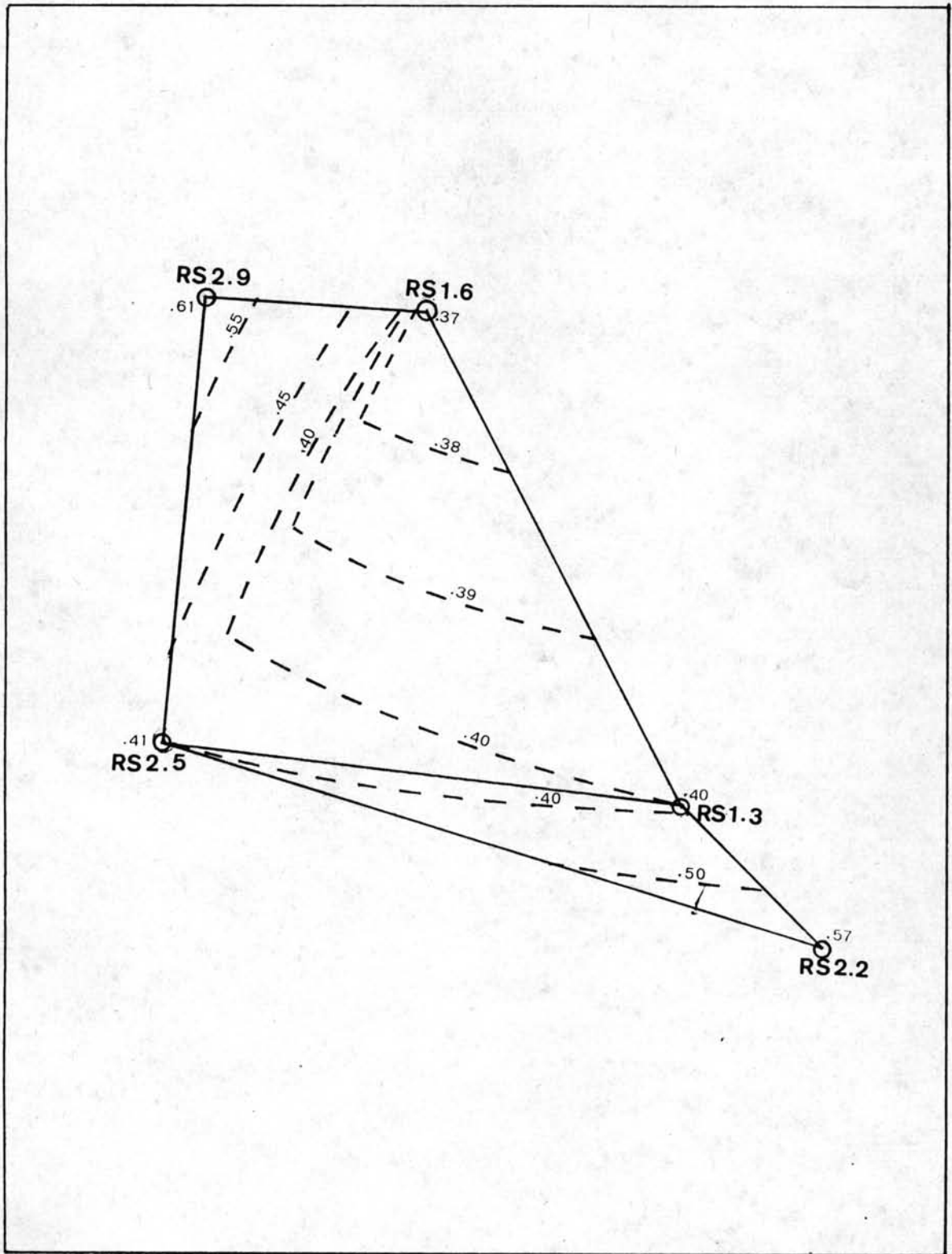


Figure 4.14 (c) Geometric Pattern showing percentage of calcium in rock salt beds at the depth between 120-130 feet related to the sea level. (actual depth 550-540 feet)

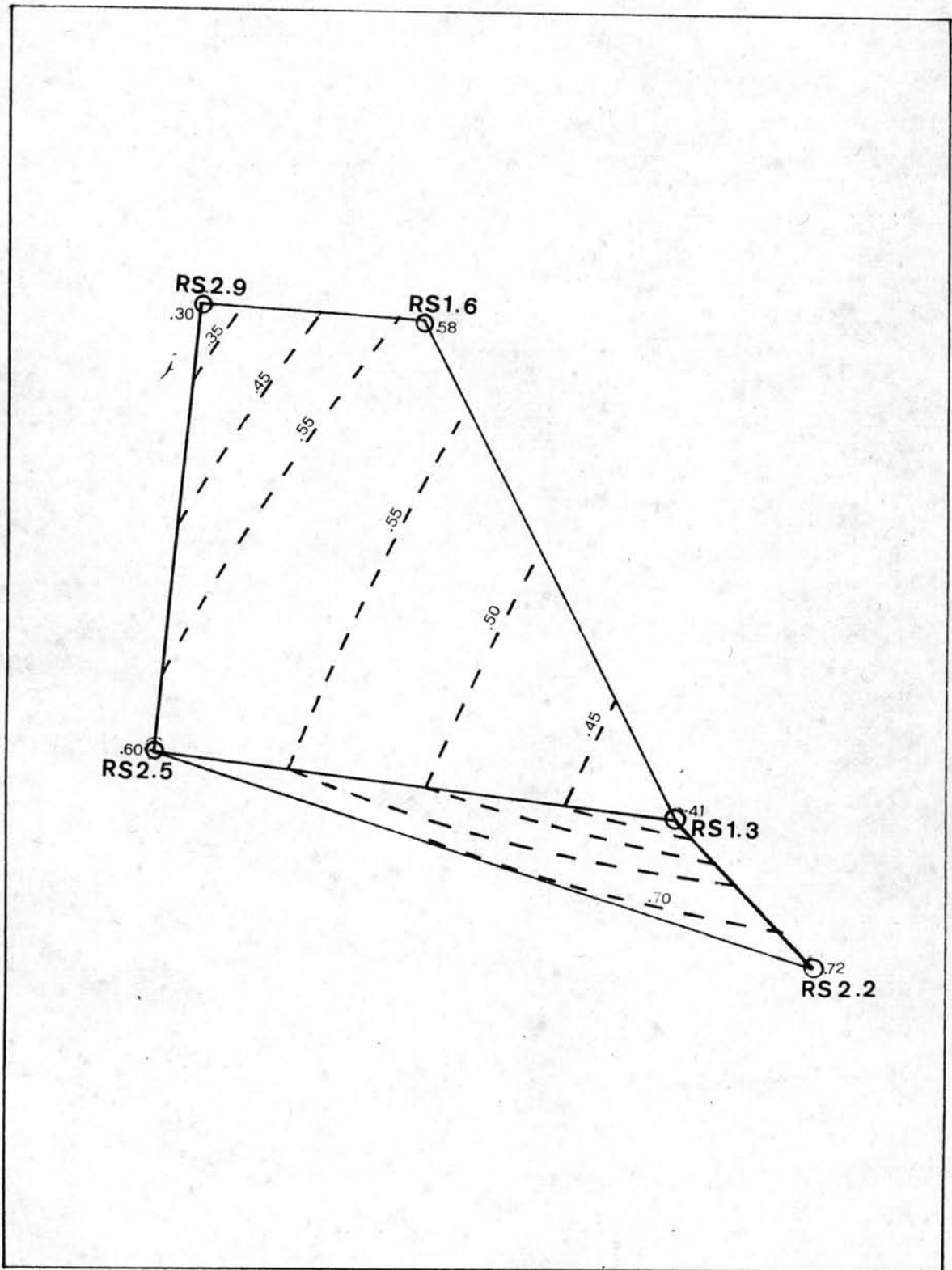


Figure 4.14 (d) Geometric Pattern showing percentage of calcium in rock salt beds at the depth between 130-140 feet related to the sea level. (actual depth 540-530 feet)

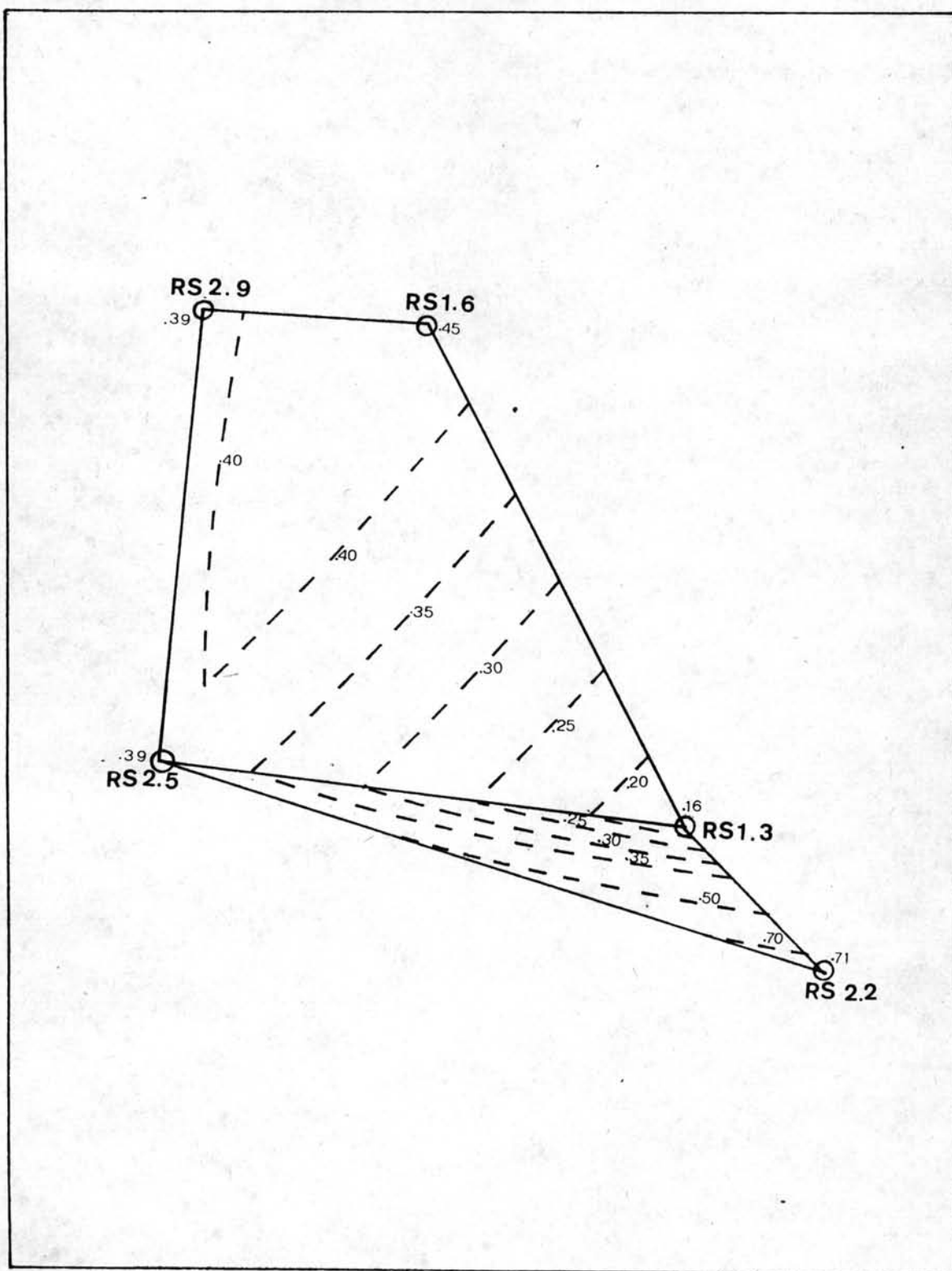


Figure 4.14 (e) Geometric Pattern showing percentage of calcium in rock salt beds at the depth between 140-150 feet related to the sea level. (actual depth 530-520 feet)

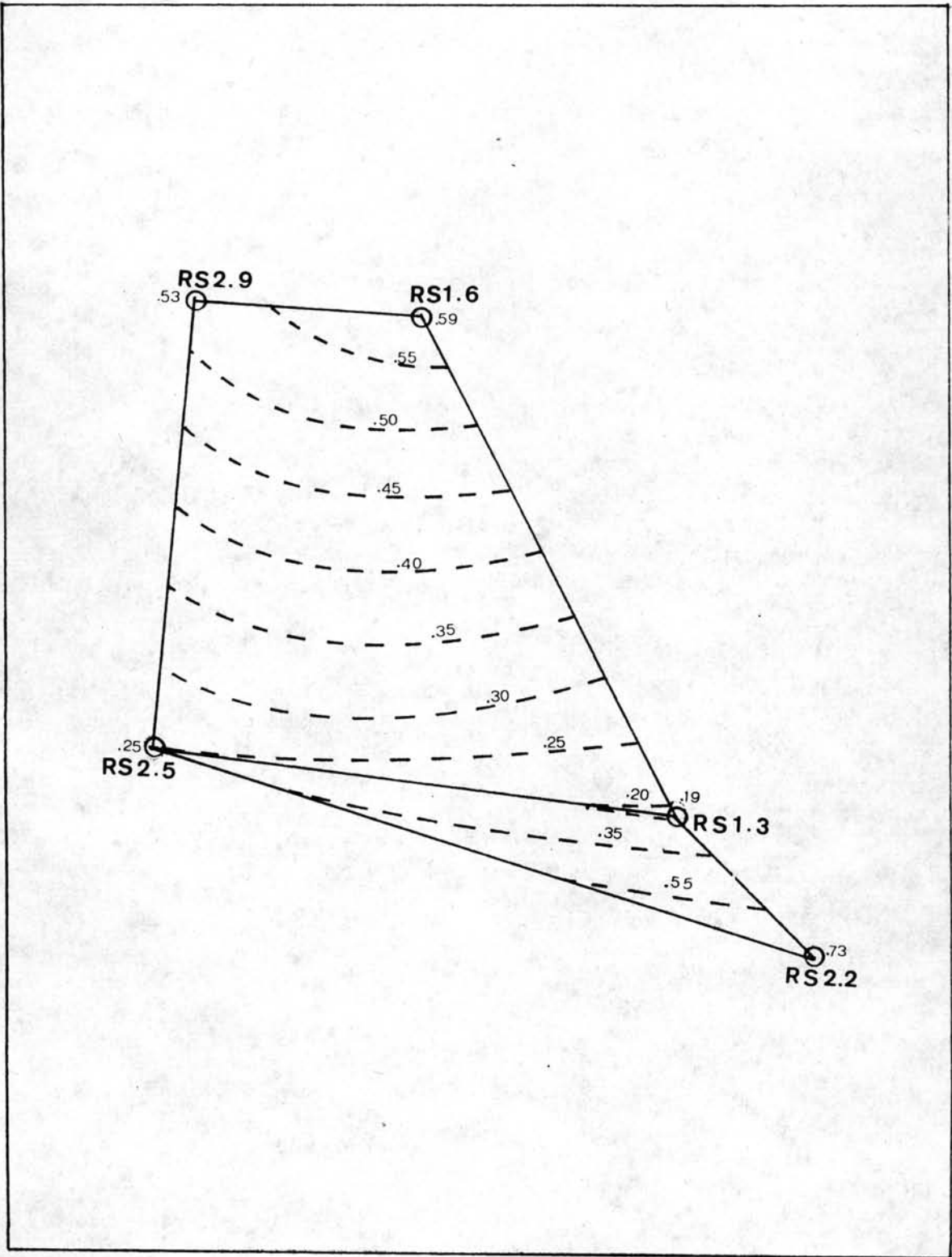


Figure 4.14 (f) Geometric Pattern showing percentage of calcium in rock salt beds at the depth between 150-160 feet related to the sea level. (actual depth 520-510 feet)

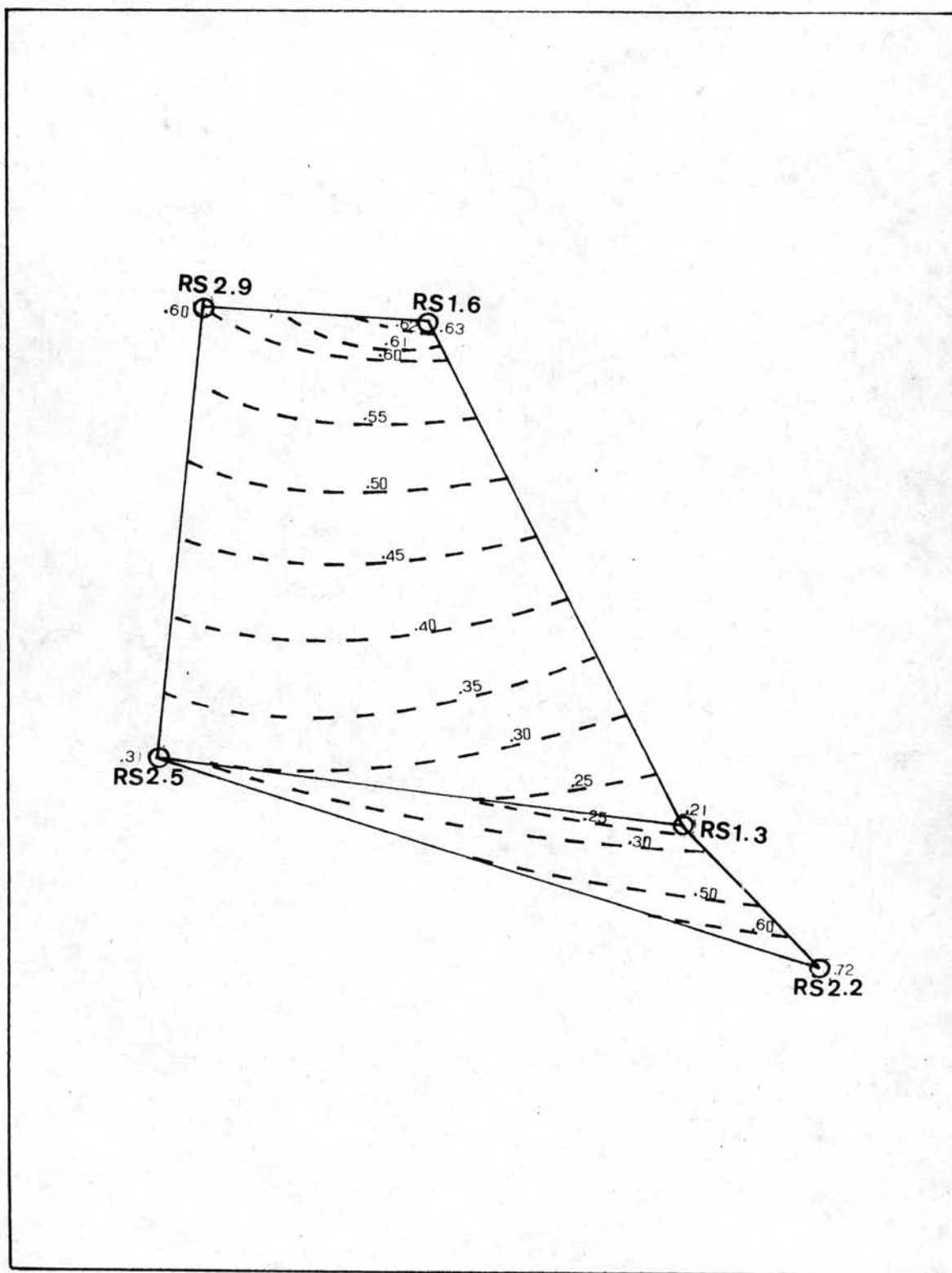


Figure 4.14 (g) Geometric Pattern showing percentage of calcium in rock salt beds at the depth between 160-170 feet related to the sea level. (actual depth 510-500 feet)

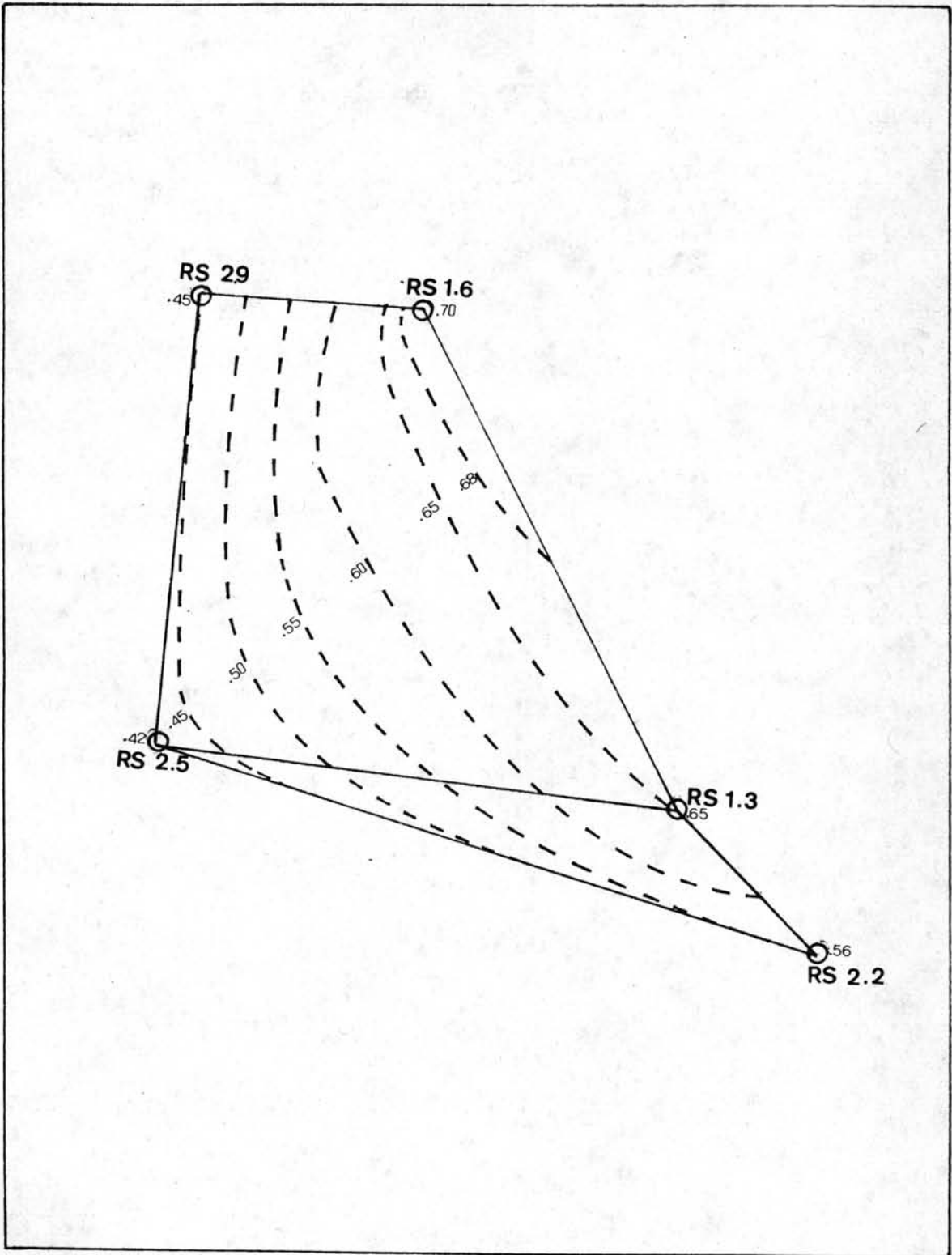


Figure 4.14 (h) Geometric Pattern showing percentage of calcium in rock salt beds at the depth between 170-180 feet related to the sea level. (actual depth 500-490 feet)

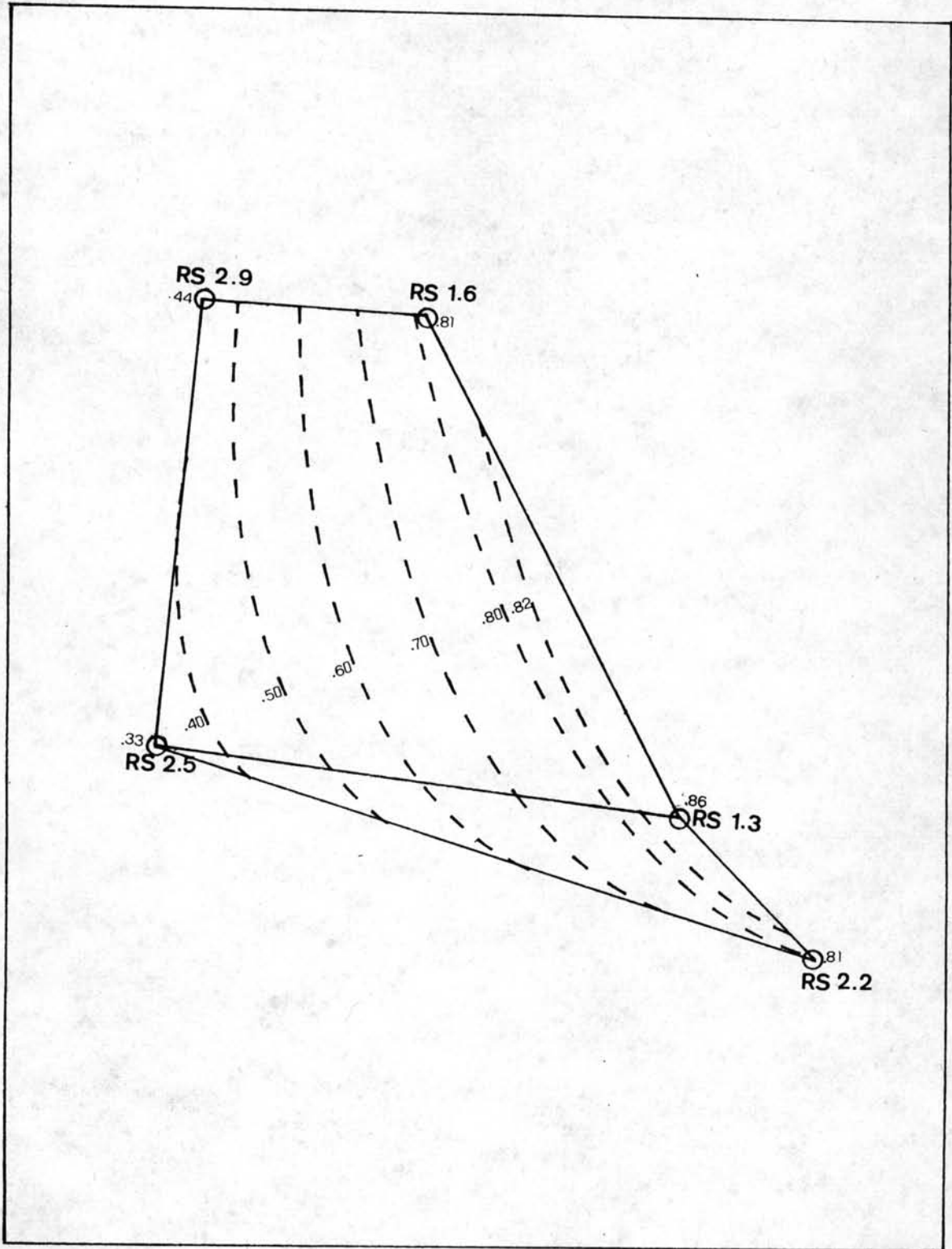


Figure 4.14 (i) Geometric Pattern showing percentage of calcium in rock salt beds at the depth between 180-190 feet related to the sea level. (actual depth 490-480 feet)

The average of all constituents in rock salt sample in minable zone are in Table 4.15 with the comparison of Thai rock salt with typical Australian and Mexican Salt.

Table 4.14 The average of constituents of rock salt in minable zone

	%Ca	%Mg	%K	%Cl	%SO ₄	%NaCl	%Na	%H ₂ O	%IM
Rock Salt in minable zone. (500-560ft)	0.42	0.024	0.010	58.98	0.90	96.95	38.14	0.063	1.162
Australian Salt	0.05	0.04	0.02	*	0.15	96.46	*	2.60	0.03
Mexican Salt	0.06	0.02	0.02	*	0.16	97.37	*	2.09	0.04

* The data are not available

Calculation of Reserved Area

From the geometric pattern, it is seen that the contour line of percent calcium lower than 0.55 % covered four areas of drill holes Nos. RS 1.3, RS 1.6 RS 2.5 and RS 2.9. Thus, the potential minable area should be in the area of four drill holes as mentioned above. Since the area extended from area of these four drill hloes to RS 2.2 has calcium content higher than 0.55 %, so it should not be involved in calculation of the reserved area.

The detailed reserve area calculation appears in Figure 4.15 in which the area is equal to 2,743,237 square meters.

The total area covered by four drill holes is 2,743,237 square meters. The depth of minable zone is from 500 to 560 feet or about 18.29 meters. (18 meters is used in the calculation) The specific gravity of rock salt is 2.18. These data give the basic information for the calculation of reserves as shown in Table 4.14

Table 4.15 Reserves Calculation

Area (sq.m)	Minable zone (m)	Volume (cu.m)	Specific Gravity	Reserves metric ton
a	b	a x b	c	a x b x c
2,740,000	18	49,320,000	2.18	107,517,600

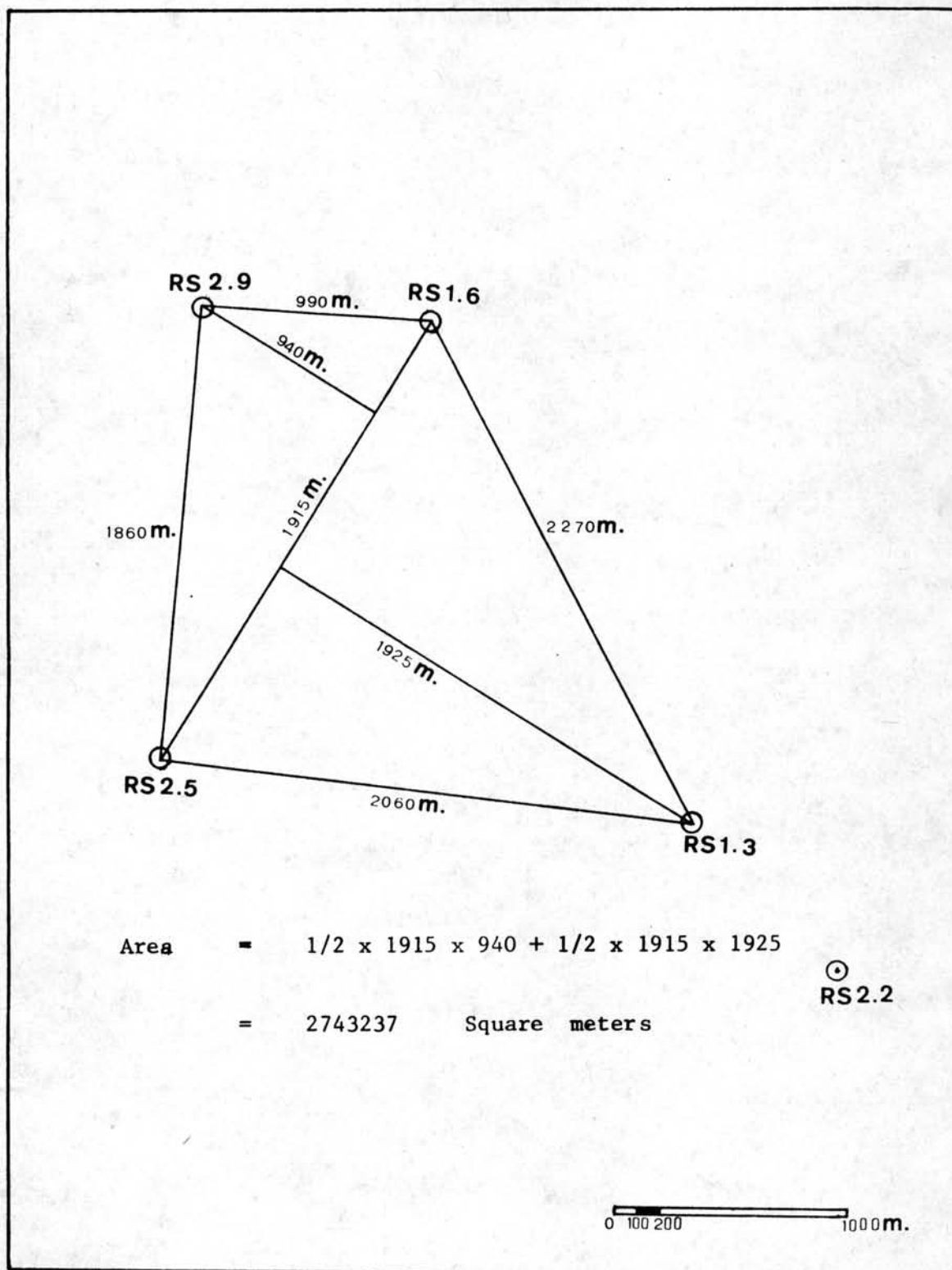
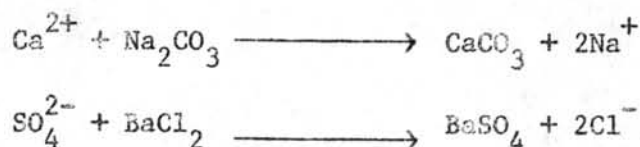


Figure 4.15 Calculation of reserve area

The production capacity of rock salt for the proposed Rock Salt-Soda Ash Project is estimated to be about 1.8 million ton per year. From the reserves calculation above, the mining can therefore be operated continuously at least more than fifty years.

Grade of Thai Rock Salt in minable zone

The average percentage of all constituents in rock salt sample in minable zone are shown in Table 4.15. From the comparison of Thai Rock Salt with Typical Australian and Mexican Salt in Table 4.15, it is seen that in the aspect of the purity of salt and the percentage of sodium chloride is quite comparable with the grade of 96 % NaCl. In case of the impurities in rock salt, magnesium and potassium content are comparable, but calcium, sulfate and water insoluble matter content of Thai Rock Salt are higher than those typical salts. However, for the utilization of rock salt in a soda ash plant, the salt should be purified before entering other manufacturing units. In the purification process the calcium content and sulfate content can be effectively removed by the addition of sodium carbonate and barium chloride. The chemical reactions may be written as follows..



The contents of calcium and sulfate are somewhat high but they can be removed in the process and therefore do not give an influence on the quality of the products. However their high content causes scales in the equipment and accordingly bring about increased maintenance cost.

Conclusion and Suggestion for Further Work

The result obtained from this research work shows that within the depth range from 500 to 560 feet, the rock salt found in the vicinity of the interested area is of high quality grade of which is suitable for being a raw material for a proposed soda ash plant and also comparable for exporting to the Asean Market.

To the author point of view, it is advisable to carry out the additional drill at the half of the distance between the original drill since these would give more representative samples. Furthermore, it might be interesting to perform the chemical analysis of the rock salt sample within the depth range between 500 and 560 feet. It is consequently hoped that results obtained from this study would be beneficial in the mine design.