Area K

(Assif Imider) (1)

Sample No.	elements analysed ppm		
	Cu	Pb	Zn
KC- 1	49	4	54
KC- 2	10	28	22
KC- 3	6	42	33
KC- 4	4	26	17
KC- 5	19	34	48
KC- 6	8	50	22
KC- 7	20	36	40
KC- 8	73	126	33
KC- 9	9	34	13
KC- 10	75	10	92
KC- 11	10	38	22
KC- 12	14	6	175
KC- 13	18	12	33
KC- 14	4	26	20
KC- 15	5	44	63
KC- 16	32	16	81
KC- 17	11	42	27
KC- 18	10	30	32
KC- 19	4	40	24
KC- 20	45	6	18
KC- 21	8	28	34
KC- 22	6	24	32
KC- 23	12	32	17
KC- 24	37	42	13
KC- 25	22	34	27
KC- 26	10	10	55
KC- 27	14	34	13
KC- 28	18	46	18
KC- 29	1	10	49
KC- 30	6	22	36
KC- 31	4	24	50
KC- 32	3	30	35
KC- 33	6	34	28
KC- 34	4	38	23
KC- 35	9	36	8

Sample No.	elements analysed ppm		
	Cu	Pb	Zn
KC- 36	9	30	34
KC- 37	11	26	39
KC- 38	124	14	36

* Were checked chemical analysis

Area K

(Assif Imider) (2)

Sample No.	elements analysed ppm		
	Cu	Pb	Zn
KD- 1	200	46	24
*KD- 1	200	44	25
KD- 2	10	34	33
KD- 3	88	40	97
KD- 4	58	8	40
KD- 5	5	32	24
KD- 6	8	26	30
KD- 7	10	26	11
KD- 8	4	28	10
KD- 9	25	76	21
KD- 10	10	48	35
KD- 11	7	32	23
KD- 12	15	22	27
KD- 13	30	60	30
KD- 14	10	28	34
KD- 15	6	22	21
KD- 16	26	4	56
KD- 17	8	22	76
KD- 18	11	36	47
KD- 19	8	18	24
KD- 20	22	24	30
KD- 21	8	20	29
KD- 22	20	20	24
KD- 23	14	28	27
KD- 24	250	26	24
KD- 25	16	28	18
KD- 26	29	64	39
KD- 27	5	26	44
KD- 28	23	124	71
KD- 29	15	34	34
KD- 30	28	26	40
KD- 31	16	30	38
KD- 32	23	40	35
KD- 33	19	10	75
KD- 34	64	46	22

Sample No.	elements analysed ppm		
	Cu	Pb	Zn
KD- 35	24	28	43
KD- 36	13	28	5
KD- 37	12	60	66
KD- 38	14	6	16
KD- 39	29	20	52
KD- 40	71	34	36
KD- 41	7	26	25
KD- 42	17	12	58
KD- 43	8375	30	21

* Were checked chemical analysis

Area K

(Assif Imider) (3)

Sample No.	elements analysed ppm		
	Cu	Pb	Zn
KY- 1	2	10	86
*KY- 1	2	10	85
KY- 2	11	46	42
KY- 3	41	60	23
KY- 4	18	10	51
KY- 5	11	62	50
KY- 6	9	26	22
KY- 7	5	28	32
KY- 8	12	90	30
KY- 9	95	106	45
KY- 10	8	32	35
KY- 11	360	106	120
KY- 12	8	28	24
KY- 13	175	34	22
KY- 14	7	26	36
KY- 15	5	26	26
KY- 16	4	28	33
KY- 17	125	8	40
KY- 18	3	8	43
KY- 19	6	24	21
KY- 20	175	36	35
KY- 21	11	52	37
KY- 22	500	38	40
KY- 23	8	30	22
KY- 24	71	40	63
KY- 25	66	112	51
KY- 26	11	20	26
KY- 27	7	32	30
KY- 28	10	34	21
KY- 29	18	28	41
KY- 30	9	28	21
KY- 31	3	10	48

Sample No.	elements analysed ppm		
	Cu	Pb	Zn

* Were checked chemical analysis

Table I-7-5 Geochemical Data of L(Tizirt) Area

Area L

(Tizirt) (1)

Sample No.	elements analysed ppm		
	Cu	Pb	Zn
LC- 1	120	33	29
* LC- 1	118	32	29
LC- 2	8625	6	30
LC- 3	17	6	1
LC- 4	3	4	31
LC- 5	39	8	27
LC- 6	5	2	1
LC- 7	1425	16	80
LC- 8	11	8	91
LC- 9	500	10	120
LC- 10	4	6	61
LC- 11	6	8	105
LC- 12	11	10	67
LC- 13	18	6	45
LC- 14	5	10	54
LC- 15	11	12	66
LC- 16	8000	8	51
LC- 17	14	8	46
LC- 18	12	8	55
LC- 19	10	6	2
LC- 20	8	4	12
LC- 21	3	6	24
LC- 22	8	8	51
LC- 23	8	8	25
LC- 24	2	10	32
LC- 25	4	8	37
LC- 26	115	10	54
LC- 27	1350	6	6
LC- 28	24	14	95
LC- 29	9	12	66
LC- 30	1300	10	79
LC- 31	16	8	53
LC- 32	33	6	6
LC- 33	4	12	95
LC- 34	20	16	110

Sample No.	elements analysed ppm		
	Cu	Pb	Zn
LC- 35	5	8	44
LC- 36	17	10	4
LC- 37	830	20	105
LC- 38	10	12	65
LC- 39	45	12	66
L			
LC- 40	1600	6	115
LC- 41	15	4	72
LC- 42	6	6	83
LC- 43	4	8	86
LC- 44	210	8	92
LC- 45	3	8	70
LC- 46	3	8	24
LC- 47	165	40	14
LC- 48	118	12	93
LC- 49	93	4	30
LC- 50	15	10	60
LC- 51	330	10	62
LC- 52	12	10	71
LC- 53	5	10	69
LC- 54	7	12	12
LC- 55	93	4	6
LC- 56	36	6	12
LC- 57	9375	10	100
LC- 58	34000	12	67
LC- 59	9375	54	180
LC- 60	580	14	7
LC- 61	46	12	2
LC- 62	370	10	98
LC- 63	45	8	60
LC- 64	520	10	110
LC- 65	32	14	90
LC- 66	470	12	91
LC- 67	30	14	95
*LC- 67	31	14	96
LC- 68	25	4	2

* Were checked chemical analysis

Area L

(Tizirt) (2)

Sample No.	elements analysed ppm		
	Cu	Pb	Zn
*LC- 68	24	4	1
LC- 69	36	6	71
LC- 70	600	4	69
LC- 71	10	4	51
LC- 72	570	8	88
LC- 73	95	4	53
LC- 74	8	6	79
LC- 75	50	6	37
LC- 76	9500	100	12
LC- 77	21	12	6
LC- 78	460	8	114
LC- 79	2000	2	1
LC- 80	8	10	76
LC- 81	28	6	44
LC- 82	5800	3	46
LC- 83	39000	4	60
LC- 84	47	6	49
LC- 85	235	8	63
LC- 86	225	10	44
LC- 87	19	8	87
LC- 88	40	6	43
LC- 89	13	2	1
LC- 90	8	4	11
LC- 91	50	2	2
LC- 92	92	2	1
LC- 93	1875	4	1
LC- 94	15	10	92
LC- 95	4	6	60
LC- 96	5	58	43
LC- 97	10	2	45
LC- 98	20	2	8

Sample No.	elements analysed ppm		
	Cu	Pb	Zn

* Were checked chemical analysis

Area L

(Tizirt) (3)

Sample No.	elements analysed ppm		
	Cu	Pb	Zn
LD- 1	30	30	65
*LD- 1	29	30	67
LD- 2	10	6	18
LD- 3	7	8	35
LD- 4	5	10	47
LD- 5	3	10	33
LD- 6	3	8	32
LD- 7	46	6	9
LD- 8	4	6	13
LD- 9	4	10	51
LD- 10	2	4	1
LD- 11	440	12	102
LD- 12	5	10	100
LD- 13	4	6	36
LD- 14	3	6	98
LD- 15	15	10	136
LD- 16	12	10	41
LD- 17	4	8	78
LD- 18	5	8	13
LD- 19	3	6	33
LD- 20	2	8	26
LD- 21	3	12	175
LD- 22	10	10	82
LD- 23	200	16	83
LD- 24	4	12	7
LD- 25	2	6	80
LD- 26	4	8	55
LD- 27	2	6	103
LD- 28	2	6	62
LD- 29	7	8	124
LD- 30	4	10	15
LD- 31	4	12	8
LD- 32	3	8	105
LD- 33	3	8	61
LD- 34	4	6	34

Sample No.	elements analysed ppm		
	Cu	Pb	Zn
LD- 35	3	2	4
LD- 36	3	8	36
LD- 37	2	14	39
LD- 38	3	10	46
LD- 39	6	2	4
LD- 40	125	16	16
LD- 41	27	12	145
LD- 42	31	10	59
LD- 43	3	12	100
LD- 44	5	18	56
LD- 45	4	12	71
LD- 46	3	6	8
LD- 47	4	8	86
LD- 48	3	4	4
LD- 49	36	26	23
LD- 50	4	12	83
LD- 51	4	8	31
LD- 52	3	6	67
LD- 53	78	134	9
LD- 54	4	12	115
LD- 55	41	10	75
LD- 56	6	8	63
LD- 57	5	10	93
LD- 58	3	10	66
LD- 59	4	6	41
LD- 60	3	8	54
LD- 61	10	10	80
LD- 62	9	6	61
LD- 63	11	6	62
LD- 64	1040	26	45
LD- 65	31	14	122
LD- 66	4	8	58
LD- 67	80	8	76
LD- 68	6750	4	20
LD- 69	14	6	5

* Were checked chemical analysis

Area L

(Tizirt) (4)

Sample No.	elements analysed ppm		
	Cu	Pb	Zn
LD- 70	6	6	37
LD- 71	26	20	13
LD- 72	5	12	38
LD- 73	190	8	79
LD- 74	26	8	51
LD- 75	8	8	60
*LD- 75	8	8	61
LD- 76	6	8	71
*LD- 76	6	8	72
LD- 77	7	2	38
LD- 78	10	4	75
LD- 79	25	4	50
LD- 80	380	2	11
LD- 81	21	2	7
LD- 82	5	4	69
LD- 83	200	12	84
LD- 84	11	2	6
LD- 85	5300	104	165
LD- 86	8	66	63
LD- 87	79	2	4
LD- 88	6	2	71
LD- 89	6	2	65
LD- 90	11	4	4
LD- 91	3	2	3
LD- 92	4	4	70
LD- 93	8	6	88
LD- 94	3	4	55
LD- 95	10	4	61
LD- 96	21	4	81
LD- 97	60	2	63
LD- 98	3	2	2
LD- 99	8	2	4
LD-100	12	6	12
LD-101	740	2	7
LD-102	300	2	21

Sample No.	elements analysed ppm		
	Cu	Pb	Zn
LD-103	2	6	92
LD-104	4	6	90
LD-105	3	10	108
LD-106	3	2	31
LD-107	300	6	86

* Were checked chemical analysis

Area L

(Tizirt) (5)

Sample No.	elements analysed ppm		
	Cu	Pb	Zn
LY- 1	10	8	6
*LY- 1	10	8	6
LY- 2	5	8	33
LY- 3	2	6	31
LY- 4	3	6	6
LY- 5	28	8	78
LY- 6	6	10	87
LY- 7	8	10	70
LY- 8	5	8	80
LY- 9	9	10	107
LY- 10	4	10	135
LY- 11	19	10	40
LY- 12	4	8	53
LY- 13	4	8	59
LY- 14	3	6	15
LY- 15	1250	10	110
LY- 16	7	10	69
LY- 17	5	8	118
LY- 18	4	8	72
LY- 19	2	2	5
LY- 20	39	8	77
LY- 21	10	10	38
LY- 22	3	8	34
LY- 23	4	8	19
LY- 24	15	6	76
LY- 25	4	8	96
LY- 26	4	4	66
LY- 27	11	2	13
LY- 28	4	8	137
LY- 29	33	8	67
LY- 30	31	4	61
LY- 31	3	6	73
LY- 32	870	4	64
LY- 33	118	6	58
LY- 34	18	2	9

Sample No.	elements analysed ppm		
	Cu	Pb	Zn
LY- 35	5	4	63
LY- 36	570	8	74
LY- 37	7	6	51
LY- 38	25	14	54
LY- 39	6	10	127
*LY- 39	6	10	128
LY- 40	3	8	89
*LY- 40	3	8	90
LY- 41	3	8	96
LY- 42	46	10	57
LY- 43	68	6	49
LY- 44	2	6	55
LY- 45	1	4	34
LY- 46	3	4	23
LY- 47	5	6	18
LY- 48	5	4	2
LY- 49	4	6	89
LY- 50	16	8	72
LY- 51	11	8	85
LY- 52	7	4	74
LY- 53	7	2	2
LY- 54	29	4	4
LY- 55	130	8	66
LY- 56	27	6	58
LY- 57	68	6	93
LY- 58	9250	6	60
LY- 59	135	4	7

* Were checked chemical analysis

Table I-7-6 Geochemical Data of M(Aniloul) Area

Area M

(Aniloul) (1)

Sample No.	elements analysed ppm		
	Cu	Pb	Zn
MC- 1	210	10	440
*MC- 1	205	10	430
MC- 2	1	10	68
MC- 3	2	2	2
MC- 4	1	2	2
MC- 5	3	2	4
MC- 6	2	6	4
MC- 7	1	4	9
MC- 8	2	2	2
MC- 9	2	2	1
MC- 10	2	2	1
MC- 11	2	8	72
MC- 12	1200	10	184
MC- 13	8	4	51
MC- 14	3	6	21
MC- 15	3	6	29
MC- 16	2	10	150
MC- 17	1240	10	137
MC- 18	10	4	53
MC- 19	3	6	25
MC- 20	2	2	2
MC- 21	17	10	45
MC- 22	19	8	144
MC- 23	2	88	2
MC- 24	2	2	1
MC- 25	2	2	3
MC- 26	1	2	10
MC- 27	1	2	1
MC- 28	2	10	54
MC- 29	2	6	34
MC- 30	31	2	2
MC- 31	3	8	7
MC- 32	2	2	4
MC- 33	3	2	6
MC- 34	8	2	3

Sample No.	elements analysed ppm		
	Cu	Pb	Zn
MC- 35	21	6	6
MC- 36	2	4	34
MC- 37	1	12	170
MC- 38	3	8	41
MC- 39	2150	6	160
MC- 40	47	4	25
MC- 41	2	6	150
MC- 42	55	6	36
MC- 43	3	4	24
MC- 44	2	8	165
MC- 45	1	6	26
MC- 46	1	2	2
MC- 47	2	2	4
MC- 48	1	2	3
MC- 49	1	2	5
MC- 50	2	2	3
MC- 51	5	28	2
MC- 52	3	8	4
MC- 53	6	6	67
MC- 54	2	8	24
MC- 55	2	2	2
MC- 56	1	2	2
MC- 57	2	2	2
MC- 58	1	2	2
MC- 59	1	20	37
MC- 60	1	10	30
MC- 61	1	8	28
MC- 62	2	2	4
MC- 63	1	4	14
MC- 64	5	6	24
MC- 65	6	10	54
MC- 66	10	8	55
MC- 67	3	70	41
MC- 68	2	8	28
MC- 69	1	4	5

* Were checked chemical analysis

Area M

(Aniloul) (2)

Sample No.	elements analysed ppm		
	Cu	Pb	Zn
MC- 70	15	4	5
MC- 71	28	6	39
MC- 72	10	2	2
*MC- 72	10	2	2

Sample No.	elements analysed ppm		
	Cu	Pb	Zn

* Were checked chemical analysis

Area M

(Aniloul)

(3)

Sample No.	elements analysed ppm		
	Cu	Pb	Zn
MY- 1	1	6	18
*MY- 1	1	6	18
MY- 2	1	2	3
MY- 3	1	2	6
MY- 4	1	2	3
MY- 5	2	2	5
MY- 6	1	4	1
MY- 7	1	2	3
MY- 8	1	10	100
MY- 9	360	12	190
MY- 10	6	8	48
MY- 11	15	8	61
MY- 12	440	8	116
MY- 13	245	10	117
MY- 14	15	8	45
MY- 15	5	10	215
MY- 16	780	10	185
MY- 17	4	12	36
MY- 18	2	2	5
MY- 19	1	2	2
MY- 20	2	2	4
MY- 21	1	2	2
MY- 22	1	12	25
MY- 23	1	2	2
MY- 24	2	8	11
MY- 25	2	10	180
MY- 26	2	10	26
MY- 27	1	12	37
MY- 28	2	8	111
MY- 29	3	6	128
MY- 30	1	8	36
MY- 31	8	10	104
MY- 32	3	8	93
MY- 33	2	6	56
MY- 34	1	2	1

Sample No.	elements analysed ppm		
	Cu	Pb	Zn
MY- 35	4	2	4
MY 36	2	4	8
MY 37	3	2	5
MY 38	1	2	4
MY 39	4	2	8
MY 40	2	6	27
MY 41	1	2	5
MY 42	1	2	4
MY 43	2	2	5
MY 44	3	2	3
MY 45	2	2	4
MY 46	2	2	4
MY 47	1	4	5
MY 48	1	2	2
MY 49	1	2	1
MY 50	1	2	5
MY 51	1	6	37
MY 52	1	8	43
MY 53	2	6	5
MY 54	3	8	10
MY 55	1	2	13
MY 56	1	2	4
MY 57	1	2	1
MY 58	1	8	87
MY 59	1	6	82
MY 60	1	6	26
MY 61	3	4	6
MY 62	2	10	92
*MY 62	2	8	96

* Were checked chemical analysis

Table I-7-7 Logarithmic Statistical Values of Geochemical Data by Elements

Area	Elements	Mean	Min.	Max.	Counts	S	M + S	M + 2S	M + 3S
H & J	Cu (ppm)	0.807 (6)	0.0 (1)	4.556 (36000)	1187	0.6087	1.4156 (26)	2.0243 (106)	2.6330 (430)
	Pb (ppm)	1.026 (11)	0.301 (2)	3.146 (1400)	1187	0.4147	1.4405 (28)	1.8551 (72)	2.2698 (186)
	Zn (ppm)	1.337 (22)	0.0 (1)	2.763 (580)	1187	0.3541	1.6911 (49)	2.0452 (111)	2.3994 (251)
I . L & M	Cu (ppm)	0.903 (8)	0.0 (1)	4.591 (39000)	1620	0.7379	1.6405 (44)	2.3784 (239)	3.1163 (1307)
	Pb (ppm)	0.821 (7)	0.301 (2)	3.049 (1120)	1620	0.3494	1.1700 (15)	1.5194 (33)	1.8688 (74)
	Zn (ppm)	1.425 (27)	0.0 (1)	3.041 (1100)	1620	0.5821	2.0071 (102)	2.5892 (388)	3.1713 (1483)
K	Cu (ppm)	1.202 (16)	0.0 (1)	3.923 (8375)	112	0.5544	1.7559 (57)	2.3103 (204)	2.8648 (732)
	Pb (ppm)	1.438 (27)	0.602 (4)	2.100 (126)	112	0.2900	1.7277 (53)	2.0177 (104)	2.3076 (203)
	Zn (ppm)	1.507 (32)	0.699 (5)	2.243 (175)	112	0.2347	1.7413 (55)	1.9760 (95)	2.2106 (162)
Whole	Cu (ppm)	0.875 (8)	0.0 (1)	4.591 (39000)	2919	0.6860	1.5613 (36)	2.2473 (177)	2.9333 (858)
	Pb (ppm)	0.928 (8)	0.301 (2)	3.146 (1400)	2919	0.4015	1.3291 (21)	1.7305 (54)	2.1320 (136)
	Zn (ppm)	1.393 (25)	0.0 (1)	3.041 (1100)	2919	0.4297	1.8854 (77)	2.3782 (239)	2.8709 (743)

Note; S : Standard deviation
M: Mean value

Table I-7-8 Logarithmic Statistical Values of Elements by Geological Units (H and J Areas)

Formation	Rock Facies	Number of Samples	Cu					Pb					Zn				
			M	S	M + S	M + 2S	M + 3S	M	S	M + S	M + 2S	M + 3S	M	S	M + S	M + 2S	M + 3S
L. Calcareous Series	Dolomite & Chert	240	0.653 (4)	0.3116	0.965 (9)	1.276 (19)	1.588 (39)	1.334 (22)	0.2508	1.585 (38)	1.8356 (68)	2.0864 (122)	1.184 (15)	0.2994	1.483 (30)	1.783 (61)	2.082 (121)
Basal Series	Shale, Sandstone, Conglomerate & Dolomite	489	1.128 (13)	0.6499	1.778 (60)	2.580 (380)	3.230 (1698)	1.112 (13)	0.4371	1.549 (35)	1.986 (97)	2.423 (265)	1.430 (27)	0.3230	1.753 (57)	2.075 (119)	2.399 (251)
P - M	Conglomerate, Sandstone & Shale	334	0.472 (3)	0.4085	0.953 (9)	1.361 (23)	1.770 (59)	0.807 (6)	0.2419	1.049 (11)	1.291 (20)	1.533 (34)	1.407 (26)	0.2626	1.670 (47)	1.932 (86)	2.195 (157)
	Rhyolite & It's pyroclastics	62	0.801 (6)	0.6755	1.477 (30)	2.152 (142)	2.828 (673)	0.649 (4)	0.3992	1.048 (11)	1.447 (28)	1.847 (70)	1.003 (10)	0.4046	1.408 (26)	1.812 (65)	2.217 (165)
	Andesite	26	0.600 (4)	0.3373	0.937 (9)	1.275 (19)	1.612 (41)	0.911 (8)	0.2647	1.176 (15)	1.440 (28)	1.705 (51)	1.624 (42)	0.5058	2.130 (135)	2.636 (433)	3.141 (1394)
	Dolomite																
PI - M	Conglomerate, Sandstone & Shale	4	0.437 (3)	0.5052	0.942 (9)	1.447 (28)	1.953 (90)	0.496 (3)	0.2359	0.732 (5)	0.968 (9)	1.204 (16)	1.240 (17)	0.2415	1.482 (30)	1.723 (53)	1.965 (92)
	Rhyolite	25	0.716 (5)	0.9855	1.702 (50)	2.687 (486)	3.673 (4710)	0.445 (3)	0.2303	0.675 (5)	0.906 (8)	1.136 (14)	0.715 (15)	0.4371	1.152 (14)	1.589 (39)	2.026 (106)
	Andesite	7	1.086 (12)	0.7370	1.823 (67)	2.56 (363)	3.297 (1982)	0.989 (10)	0.6286	1.618 (41)	2.246 (176)	2.875 (750)	0.978 (9)	0.4114	1.389 (24)	1.801 (63)	2.212 (163)
PI	Quartzite																
	Green rock & Schist																

Note; S : Standard deviation
M : Mean value
(ppm)

Table I-7-9 Logarithmic Statistical Values of Elements by Geological Units (I, L and M Areas)

Formation	Rock Facies	Number of Samples	Cu					Pb					Zn				
			M	S	M + S	M + 2S	M + 3S	M	S	M + S	M + 2S	M + 3S	M	S	M + S	M + 2S	M + 3S
L.Calcareous Series	Dolomite & Chert	100	1.364 (23)	0.6596	2.024 (106)	2.683 (482)	3.343 (2203)	1.432 (27)	0.2700	1.702 (50)	1.972 (94)	2.242 (175)	1.169 (15)	0.3963	1.565 (37)	1.962 (92)	2.358 (228)
Basal Series	Shale, Sandstone, Conglomerate & Dolomite	50	1.198 (16)	0.8377	2.036 (109)	2.873 (746)	3.711 (5140)	0.999 (10)	0.4235	1.423 (26)	1.846 (70)	2.270 (186)	1.251 (18)	0.3810	1.632 (43)	2.013 (103)	2.394 (248)
P - Ⅱ	Conglomerate, Sandstone & Shale	525	0.630 (4)	0.6180	1.248 (18)	1.866 (73)	2.484 (30)	0.796 (6)	0.2718	1.068 (11)	1.340 (22)	1.611 (41)	1.503 (32)	0.4347	1.938 (87)	2.372 (236)	2.807 (641)
	Rhyolite & It's pyroclastics	246	0.698 (5)	0.7517	1.450 (28)	2.201 (159)	2.953 (897)	0.602 (4)	0.3730	0.975 (9)	1.348 (22)	1.721 (53)	0.700 (5)	0.5043	1.204 (16)	1.709 (51)	2.913 (818)
	Andesite	103	0.994 (10)	0.8700	1.864 (73)	2.734 (542)	3.604 (4018)	0.906 (8)	0.2445	1.151 (14)	1.395 (25)	1.640 (44)	1.921 (83)	0.4677	2.389 (245)	2.856 (718)	3.324 (2109)
	Dolomite	11	1.767 (59)	0.7503	2.517 (329)	3.268 (1854)	4.018 (10423)	1.412 (26)	0.2851	1.697 (50)	1.982 (96)	2.267 (185)	1.254 (18)	0.2752	1.529 (34)	1.804 (64)	2.080 (120)
PⅡ - Ⅱ	Conglomerate, Sandstone & Shale	490	1.088 (12)	0.6973	1.785 (61)	2.483 (304)	3.180 (1514)	0.817 (7)	0.2468	1.064 (12)	1.311 (20)	1.557 (36)	1.775 (60)	0.3078	2.083 (121)	2.391 (246)	2.698 (499)
	Rhyolite	15	1.016 (10)	0.8258	1.842 (70)	2.668 (466)	3.493 (3112)	0.837 (7)	0.4276	1.265 (18)	1.692 (49)	2.120 (132)	1.052 (11)	0.5273	1.579 (38)	2.107 (128)	2.634 (431)
	Andesite	2	1.711 (51)	1.5680	3.279 (1901)	4.847 (70307)	6.415 (2600160)	1.230 (17)	0.2129	1.443 (28)	1.656 (45)	1.869 (74)	1.995 (99)	0.0248	2.020 (105)	2.045 (111)	2.069 (117)
PⅡ	Quartzite	61	1.126 (13)	0.5864	1.712 (52)	2.299 (199)	2.885 (767)	0.520 (3)	0.2845	0.805 (6)	1.089 (12)	1.374 (24)	0.655 (5)	0.6216	1.277 (19)	1.898 (79)	2.5198 (331)
	Greenrock & Schist	14	1.322 (21)	0.5805	1.903 (80)	2.483 (304)	3.064 (1159)	0.739 (5)	0.4152	1.154 (14)	1.569 (37)	1.965 (97)	1.705 (51)	0.3269	2.032 (108)	2.359 (229)	2.685 (484)

Note; S : Standard deviation
M : Mean value
(ppm)

Table I-7-10 Logarithmic Statistical Values of Elements by Geological Units (K Area)

Formation	Rock Facies	Number of Samples	Cu					Pb					Zn				
			M	S	M + S	M + 2S	M + 3S	M	S	M + S	M + 2S	M + 3S	M	S	M + S	M + 2S	M + 3S
L.Calcareous Series	Dolomite & Chert																
Basal Series	Shale, Sandstone, Conglomerate & Dolomite	106	1.221 (17)	0.5288	1.750 (56)	2.279 (190)	2.807 (641)	1.460 (29)	0.2723	1.732 (54)	2.004 (101)	2.277 (189)	1.483 (30)	0.2227	1.706 (51)	1.928 (85)	2.151 (142)
P - M	Conglomerate, Sandstone & Shale																
	Rhyolite & It's pyroclastics																
	Andesite	6	1.099 (13)	0.8639	1.963 (92)	2.827 (671)	3.691 (4909)	1.189 (15)	0.4216	1.611 (41)	2.032 (108)	2.454 (284)	1.852 (71)	0.1668	2.019 (104)	2.186 (153)	2.352 (225)
	Dolomite																
PM - M	Conglomerate, Sandstone & Shale																
	Rhyolite																
	Andesite																
PM	Quartzite																
	Green rock & Schist																

Note; S : Standard deviation
M : Mean value
(ppm)

Table I-7-11 Logarithmic Statistical Values of Elements by Geological Units (Whole Area)

Formation	Rock Facies	Number of Samples	Cu					Pb					Zn				
			M	S	M + S	M + 2S	M + 3S	M	S	M + S	M + 2S	M + 3S	M	S	M + S	M + 2S	M + 3S
L.Calcareous Series	Dolomite & Chert	340	0.862 (7)	0.5485	1.4105 (26)	1.959 (91)	2.508 (322)	1.362 (23)	0.2601	1.622 (42)	1.882 (76)	2.142 (139)	1.179 (15)	0.3304	1.509 (32)	1.840 (69)	2.170 (148)
Basal Series	Shale, Sandstone, Conglomerate & Dolomite	643	1.148 (14)	0.6487	1.797 (63)	2.445 (279)	3.094 (1242)	1.160 (14)	0.4350	1.595 (39)	2.030 (107)	2.465 (292)	1.424 (27)	0.3183	1.742 (55)	2.061 (115)	2.379 (239)
P - M	Conglomerate, Sandstone & Shale	860	0.568 (4)	0.5513	1.119 (13)	1.671 (47)	2.222 (167)	0.800 (6)	0.2604	1.060 (11)	1.321 (21)	1.581 (30)	1.466 (29)	0.3799	1.846 (70)	2.226 (168)	2.606 (404)
	Rhyolite & It's pyroclastics	308	0.719 (5)	0.7371	1.456 (29)	2.193 (156)	2.930 (851)	0.611 (4)	0.3783	0.989 (10)	1.368 (23)	1.748 (56)	0.761 (6)	0.5003	1.261 (18)	1.762 (58)	2.262 (183)
	Andesite	135	0.923 (8)	0.8067	1.730 (54)	2.536 (344)	3.343 (2203)	0.919 (8)	0.2619	1.181 (15)	1.443 (28)	1.705 (51)	1.861 (73)	0.4784	2.339 (218)	2.818 (658)	3.296 (1977)
	Dolomite	12	1.703 (50)	0.7489	2.452 (283)	3.201 (1589)	3.950 (8913)	1.377 (24)	0.2967	1.674 (47)	1.970 (93)	2.267 (185)	1.294 (20)	0.2976	1.592 (39)	1.889 (77)	2.187 (154)
PI - M	Conglomerate, Sandstone & Shale	494	1.083 (12)	0.6980	1.781 (60)	2.479 (301)	3.177 (1503)	0.815 (7)	0.2482	1.063 (12)	1.311 (20)	1.560 (36)	1.771 (59)	0.3109	2.082 (121)	2.393 (247)	2.704 (506)
	Rhyolite	40	0.828 (7)	0.9296	1.758 (57)	2.687 (486)	3.617 (4140)	0.592 (4)	0.3678	0.960 (9)	1.328 (21)	1.965 (50)	0.841 (7)	0.4948	1.336 (22)	1.831 (68)	2.325 (211)
	Andesite	9	1.225 (17)	0.8892	2.11 (129)	3.003 (1007)	3.893 (7816)	1.043 (11)	0.5597	1.603 (40)	2.162 (145)	2.722 (527)	1.204 (16)	0.5730	1.777 (60)	2.350 (224)	2.923 (833)
PI	Quartzite	61	1.126 (13)	0.5864	1.802 (63)	2.389 (245)	2.975 (944)	0.520 (3)	0.2845	0.805 (6)	1.089 (12)	1.374 (24)	0.655 (5)	0.6216	1.277 (19)	1.898 (79)	2.520 (331)
	Green rock & Schist	14	1.322 (21)	0.5805	1.903 (80)	2.483 (304)	3.064 (1159)	0.739 (5)	0.4152	1.154 (14)	1.569 (37)	1.985 (97)	1.705 (51)	0.3269	2.032 (108)	2.359 (229)	2.686 (485)

Note; S : Standard deviation
M : Mean value
(ppm)

Table I-7-12 Logarithmic Statistical Values of Elements by Geological Formations (H and J Areas)

Formation	Number of samples	Cu					Pb					Zn				
		M	S	M + S	M + 2S	M + 3S	M	S	M + S	M + 2S	M + 3S	M	S	M + S	M + 2S	M + 3S
L.Calcareous Series	240	0.653 (4)	0.3116	0.965 (9)	1.276 (19)	1.588 (39)	1.334 (22)	0.2508	1.585 (38)	1.8356 (68)	2.0864 (122)	1.184 (15)	0.2994	1.483 (30)	1.783 (61)	2.082 (121)
Basal Series	489	1.128 (13)	0.6499	1.778 (60)	2.580 (380)	3.230 (1698)	1.112 (13)	0.4371	1.549 (35)	1.986 (97)	2.423 (265)	1.430 (27)	0.3230	1.753 (57)	2.075 (119)	2.399 (251)
P - Ⅱ	422	0.528 (3)	0.4676	0.996 (10)	1.463 (29)	1.931 (85)	0.790 (6)	0.2786	1.069 (12)	1.347 (22)	1.626 (42)	1.361 (23)	0.3440	1.705 (51)	2.049 (112)	2.393 (247)
PⅡ - Ⅱ	36	0.757 (6)	0.9031	1.660 (46)	2.563 (366)	3.466 (2924)	0.556 (4)	0.3945	0.951 (9)	1.345 (22)	1.740 (55)	0.824 (7)	0.4451	1.269 (19)	1.7142 (55)	2.159 (144)

Table I-7-13 Logarithmic Statistical Values of Elements by Geological Formations (I, L and M Areas)

Formation	Number of samples	Cu					Pb					Zn				
		M	S	M + S	M + 2S	M + 3S	M	S	M + S	M + 2S	M + 3S	M	S	M + S	M + 2S	M + 3S
L.Calcareous Series	100	1.364 (23)	0.6596	2.024 (106)	2.683 (482)	3.343 (2203)	1.432 (27)	0.2700	1.702 (50)	1.972 (94)	2.242 (175)	1.169 (15)	0.3963	1.565 (37)	1.962 (92)	2.358 (228)
Basal Series	50	1.198 (16)	0.8377	2.036 (109)	2.873 (746)	3.711 (5140)	0.999 (10)	0.4235	1.423 (26)	1.846 (70)	2.270 (186)	1.251 (18)	0.3810	1.632 (43)	2.013 (103)	2.394 (248)
P - Ⅱ	885	0.706 (5)	0.7098	1.416 (26)	2.126 (134)	2.835 (684)	0.762 (6)	0.3250	1.087 (12)	1.412 (26)	1.737 (55)	1.325 (21)	0.6145	1.940 (87)	2.554 (358)	3.169 (1476)
PⅡ - Ⅱ	507	1.088 (12)	0.7038	1.792 (62)	2.496 (313)	3.199 (1581)	0.820 (7)	0.2544	1.074 (12)	1.329 (21)	1.583 (38)	1.755 (57)	0.3384	2.093 (124)	2.432 (270)	2.770 (588)
PⅡ	78	1.150 (14)	0.5787	1.729 (54)	2.307 (203)	2.886 (769)	0.592 (4)	0.3512	0.943 (9)	1.294 (20)	1.646 (44)	0.868 (7)	0.7024	1.570 (37)	2.273 (187)	2.975 (944)

Table I-7-14 Logarithmic Statistical Values of Elements by Geological Formations (K Areas)

Formation	Number of samples	Cu					Pb					Zn				
		M	S	M + S	M + 2S	M + 3S	M	S	M + S	M + 2S	M + 3S	M	S	M + S	M + 2S	M + 3S
L.Calcareous Series																
Basal Series	106	1.221 (17)	0.5288	1.750 (56)	2.279 (190)	2.807 (641)	1.460 (29)	0.2723	1.732 (54)	2.004 (101)	2.277 (189)	1.483 (30)	0.227	1.706 (51)	1.928 (85)	2.151 (142)
P - Ⅱ	6	1.099 (13)	0.8639	1.963 (92)	2.827 (671)	3.691 (4909)	1.189 (15)	0.4216	1.611 (41)	2.032 (108)	2.454 (284)	1.852 (71)	0.1668	2.019 (104)	2.186 (153)	2.352 (225)
PⅡ - Ⅱ																

S : Standard deviation

Note; M : Mean value (ppm)

Table I-7-15 Mean, Minimum and Maximum Values of Elements by Geological Units

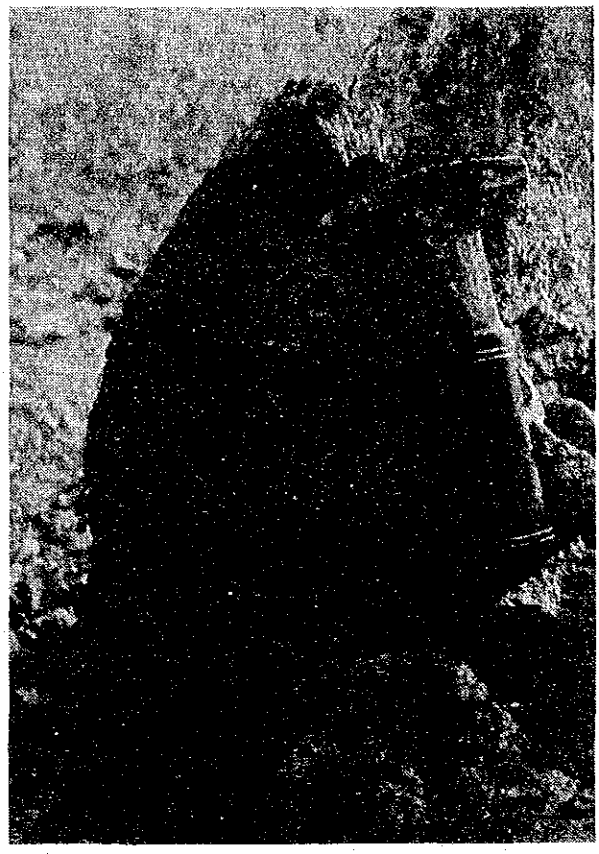
Formation	Rock Facies	Number of Samples	Cu			Pb			Zn		
			Mean	Min.	Max.	Mean	Min.	Max.	Mean	Min.	Max.
L. Calcareous Series	Dolomite & Chert	340	7	1	10,750	23	2	1,120	15	2	430
Basal Series	Shale, Sandstone, Conglomerate & Dolomite	643	14	1	36,000	14	2	1,400	27	2	580
P - III	Conglomerate, Sandstone & Shale	860	4	1	39,000	6	2	86	29	1	240
	Rhyolite & It's pyroclastics	308	5	1	9,500	4	2	370	6	1	185
	Andesite	135	8	1	2,150	8	2	106	73	3	440
	Dolomite	12	50	3	1,360	24	4	40	20	7	65
PII - III	Conglomerate, Sandstone & Shale	494	12	1	16,250	7	2	102	59	1	1,100
	Rhyolite	40	7	1	3,400	4	2	114	7	1	54
	Andesite	9	17	3	660	11	4	186	16	4	103
PII	Quartzite	61	13	1	980	3	2	21	5	1	141
	Green rock & Schist	14	21	3	300	5	2	52	51	12	155

Table I-8 Results of Chemical Analysis for Ore Minerals

Sample No.	Location	Cu %	Pb %	Zn %	Ag g/t
B – 52	H	1.68	< 0.01	0.02	
C – 55	L	1.95	< 0.01	< 0.01	
C – 74	L	3.18	< 0.01	0.02	
C – 82	L	3.62	< 0.01	0.01	
D – 12	L	0.78	< 0.01	< 0.01	
E – 6	I	0.08	< 0.01	0.01	
E – 19	H	0.44			7
E – 67	J	4.74			28
E – 68	J	1.56			22
E – 71	J	0.02			< 1
E – 72	J	0.02			< 1
E – 75	J	1.24			12
E – 79	J	0.42			< 1
E – 80	J	1.24			5
E – 84	J	6.12			212
E – 85	J	1.24			159
E – 87	J	7.68			286
E – 88	J	2.26			107
E – 91	J	1.30			53
E – 94	J	0.36			14
E – 96	J	11.20			770
E – 97	J	8.88			850
E – 100	J	10.12			850
E – 101	J	1.46			45
E – 103	J	0.15			8
E – 107	J	6.70			129
E – 108	J	4.72			75
E – 109	J	1.43			25
E – 111	J	3.08			22
E – 113	J	1.74			26
E – 114	J	2.64			34
E – 116	J	4.48			159
E – 117	J	1.49			27
E – 130	H	4.24			22
E – 131	H	1.11			13
Y – 25	L	0.92	< 0.01	0.01	
Y – 43	K	1.43	< 0.01	0.01	

Table 1 – 9

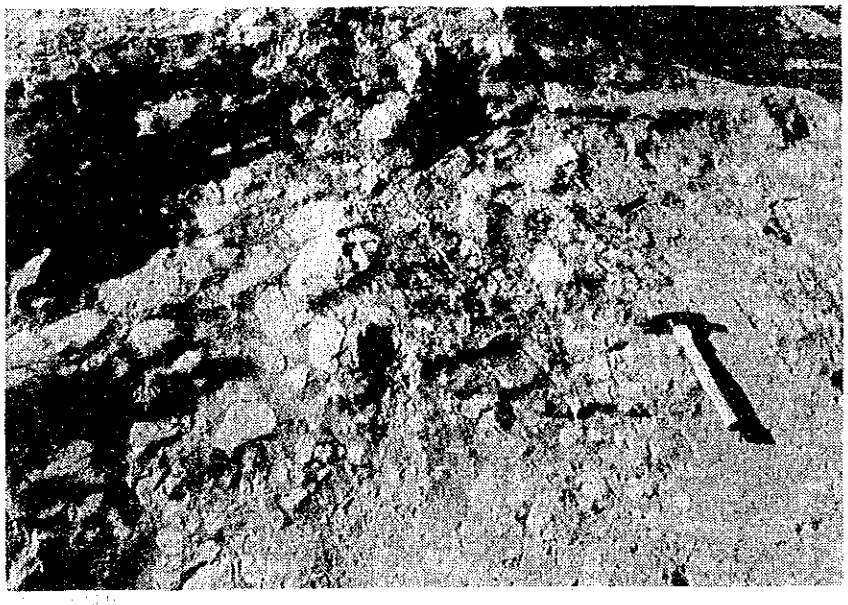
Photographs



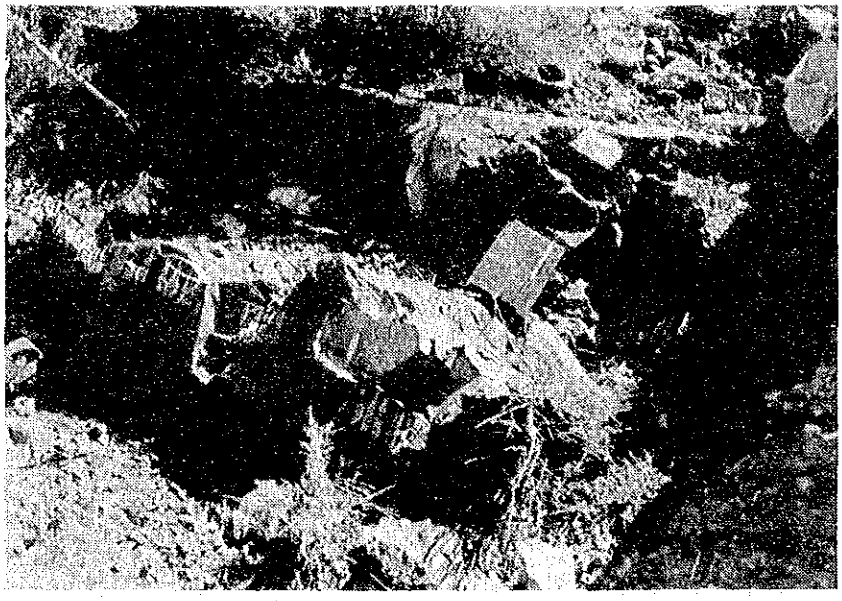
Phot. I-1.
Andesite disseminated by malachite, near Igherm village.

Phot. I-2.
Ripple mark in sandstone (P III), near Igherm village.

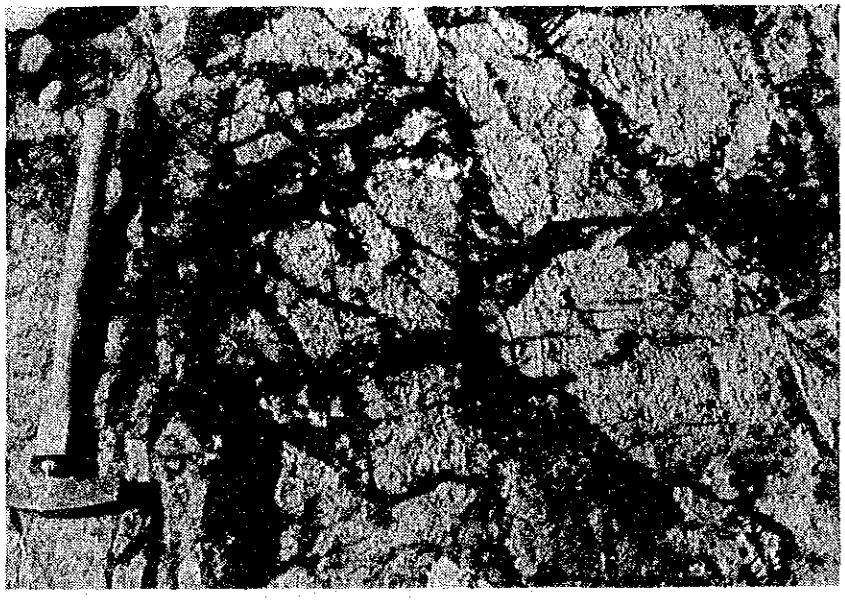
Phot. I-3.
Cross lamina in sandstone (P III), near Igherm village.



Phot. I-4.
Conglomerate composed of boulder of granite and quartzite, near Tawrit village.

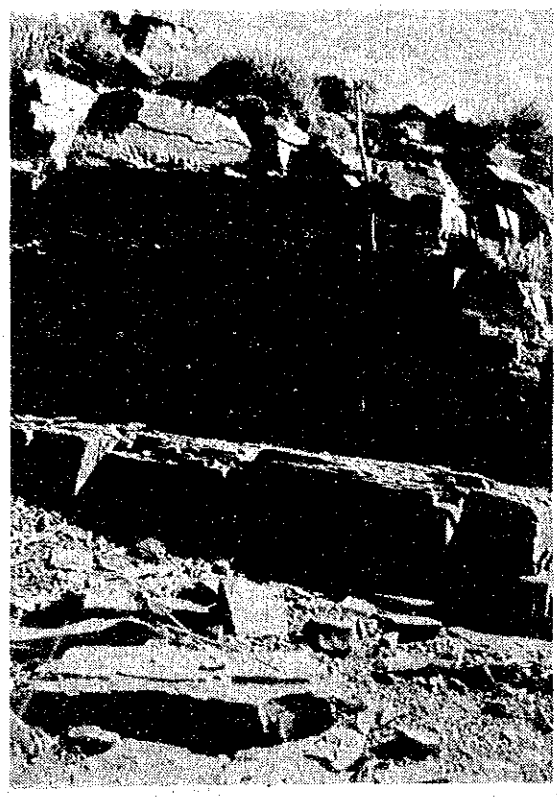


Phot. I-5.
Slate intercalated in conglomerate, near Tadenst.

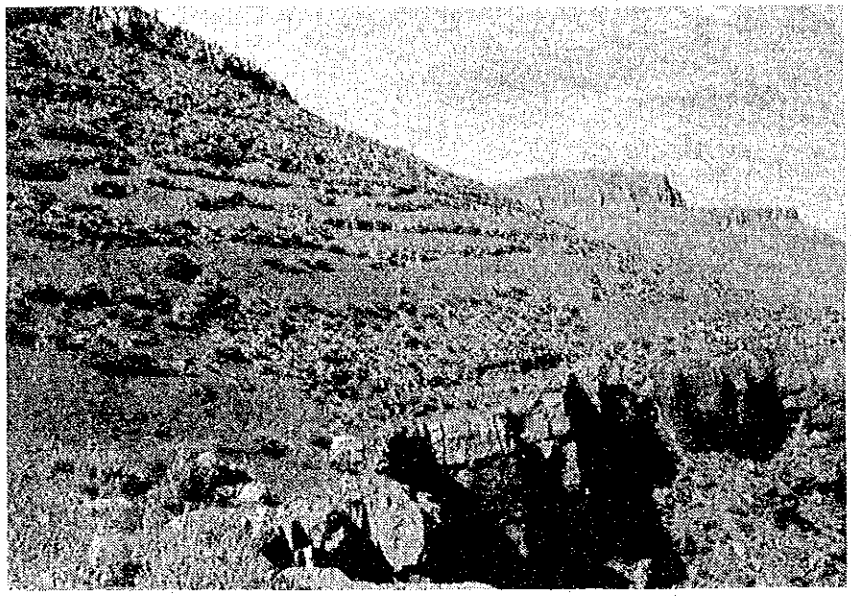


Phot. H-1.
Network hematite veinlets in dolomite of Lower Calcareous series, near Ait Addi village.

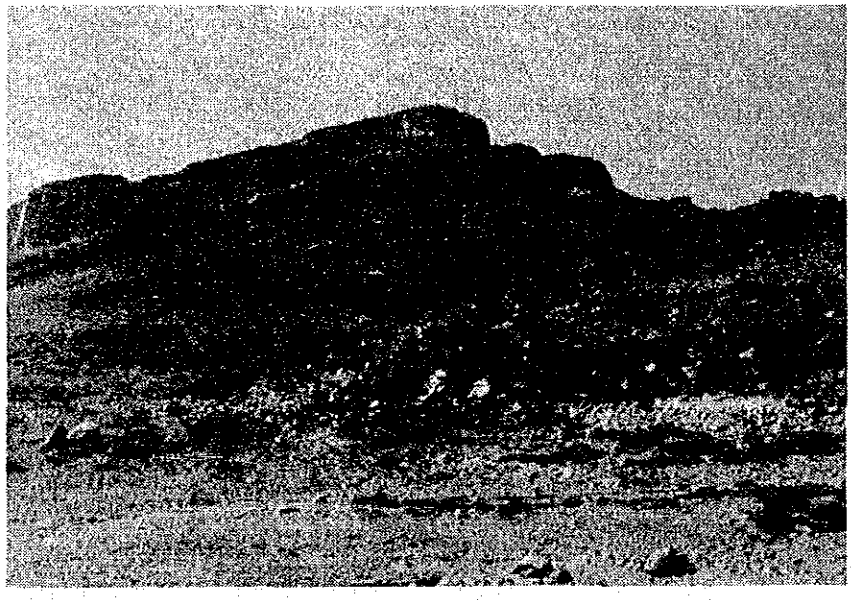
Phot. H-2.
Conglomerate (Basal series) composed mainly of well rounded pebbles of quartzite.



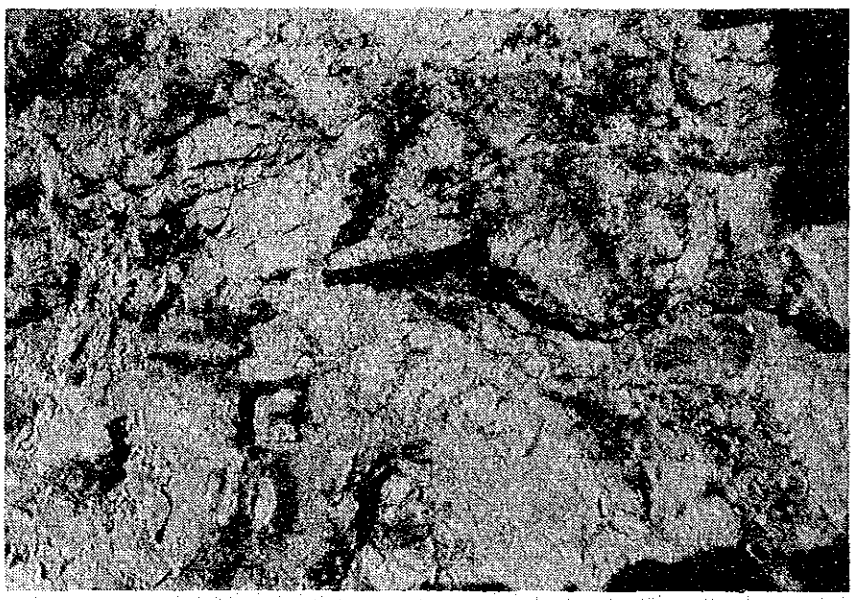
Phot. H-3.
Well bedded Shale of Basal series, near Ait Addi village.



Phot. H-4.
Occurrence of Basal series, southern part of Tazert-n-Bouydir.

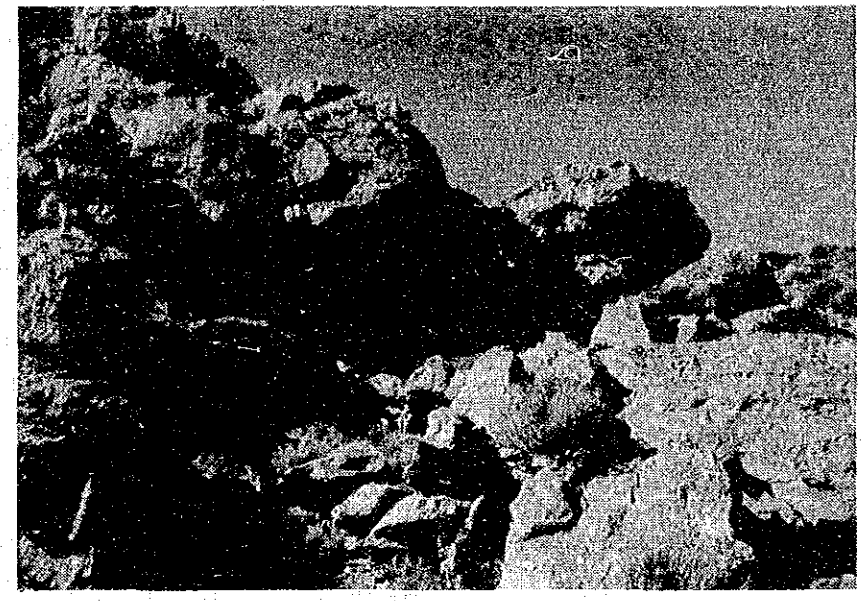


Phot. H-5.
Occurrence of conglomerate, sandstone (P III), Basal Series, and dolomite (Dt), at Azerfnine.



Phot. H-6.
Occurrence of malachite, azurite and crysocolla in No. 1 trench, at Talat-n-Sous mineralized area.

Phot. K-1.
Alternation of dolomite and shale.



Phot. L-1.
Rhyolite disseminated by malachite, near Tizirt.

Table 1-10 List of Ore Deposits in Surveyed Area

No.	Area	Name	Kind of ore	Host rock: Formation	Host rock: Rock	Alteration	Related Igneous Rock	Mode of Occurrence	Scale of Mineralization	Direction of Mineralization	Amount of Unit Ore body	Unit Ore body: Scale	Unit Ore body: Thickness Width	Unit Ore body: Direction	Grade of Ore	Ore Minerals	Gangue Minerals	Structural Control	*Histry*	*Note*	*Sample No.*
1	J	Talat - n - Sous	Cu	PI-M	rhy	silic	rhy	dissm	300m × 100m	N70°E	3	100m × 100m	2～3m	N70°E	Ag 137g/t Cu 3.08%	mala, az cc, ccp	quartz	NNW & NE fracture	explored by B.R.P.M. trench 9, 270m, pit 6, 60m	B.R.P.M. rep japanese mission 1973	E-67～E-117 B-17, F-120, G-41, G-43
2	J	Ait Hsayn	Cu	PI-M	rhy		rhy	dissm	800m × 100m	N60°E	2	200m × 50m	0.3m	N60°E	Cu 0.1%	mala					
3	J	Tlouririno - 1	Cu	PM	cg			dissm	150m × 20m	E-W	1	150m × 20m	0.2m	E-W	Cu 0.7%	mala					F-116 G-45
4	J	Tlouririno - 2	Cu	B.S.	slt			dissm	10m × 2m	E-W	1	10m × 2m	0.35m	E-W	Cu 0.2%	mala					
5	J	Tlouririno - 3	Cu	PM	rhy	silic	rhy	dissm	5m × 1m	E-W	1	5m × 1m	0.3m	E-W	Cu < 0.1%	mala					
6	H	Tlouririno - 4	Cu	B.S.	cg			dissm	600m × 3m	E-W	2	10m × 2m	2～3m	E-W	Cu 0.4%	mala		stratiform			E-137, F-161, F-166, F-170 F-162, F-169, G-35
7	H	Amdouz	Cu	B.S. PM	cg, dol sh			disam	4.5km × 3m	E-W	>10	10m × 2m	2～3m	E-W N20°W	Cu 1～1.5%	mala, az cc, ccp		stratiform			
8	H	Ait Addi - 1	Cu	B.S.	ss, sh			dissm	200m × 2m	N20°W N70°～90°W	3	10m × 2m		N70°～90°W	Cu < 0.1%	mala					
9	H	Ait Addi - 2	Cu	B.S.	sh			dissm	15m × 3m	N-S	1	15m × 3m	1.3m	N-S	Cu < 0.1%	mala					
10	H	Tazert - 1	Cu	PM	rhy	silic	rhy	dissm	spot	—	1	spot	—	—	Cu 3.22%	cc, mala					F-105
11	H	Tazert - 2	Cu	PM	cg, and	chl	and	dissm	10m × 1m	E-W	1	10m × 1m	0.3m	E-W	Cu < 0.1%	mala					F-108
12	H	Tazert - 3	Cu	B.S. PM	cg, and	chl, ep	and	dissm	50m × 10m	N40°E E-W	2	50m × 10m	1.0m	N40°E E-W	Cu 1～2%	mala			explored by B.R.P.M.		F-150
13	H	Azerfnine	Cu	PM	rhy	silic	rhy	dissm	40m × 30m	N30°W	1	40m × 30m	2m	N30°W	Ag 17g/t Cu 2.63%	mala, az	quartz	NW & ENE fracture	explored by B.R.P.M.		E-130, E-131
14	K	Assif Imider	Cu	PM	and dol	ep, chl cal		dissm	50m × 800m	N20°E	1	50m × 250m	5m	N20°E	Cu 1.8%	mala, az br, cc, ccp	quartz	along shear zone	explored by B.R.P.M. trench 7, drilling 16, tunnel		Y-43
15	L	Tizirt - E - 1	Cu	PI-M	cg			dissm	1.5km × 0.8km	NNE-SSW	9	2m × 5m	1～2m	NNE-SSW	Cu 0.2 ～0.9%	mala					C-64, Y-25
16	L	Tizirt - E - 2	Cu	PI-M	cg			dissm	1.5km × 0.8km	N-S	12	2m × 5m	0.5～2m	N-S NE-SW	Cu < 0.1%	mala, cc ccp					C-70, C-79, C-80
17	L	Tizirt - E - 3	Cu	PM	ss			dissm	2m × 4m	NNE-SSW	1	2m × 4m	2m	NNE-SSW	Cu 0.14%	mala					
18	L	Tizirt - E - 4	Cu	PM	ss, rhy dol		rhy	dissm	1.5km × 1.0km	NNE-SSW	20	10m × 20m ～2m × 5m	0.5～3m	NNE-SSW	Cu 0.68%	mala, az cc, ccp					C-74, C-82, D-12
19	L	Tizirt - E - 5	Cu	B.S.	ss, sh			dissm	10m × 50m	horizontal	1	10m × 50m	3～4m	horizontal	Cu 1.95%	mala		stratiform			C-55
20	M	Aniloul - N	Cu	PM	and	ep, chl	and	dissm	20m × 2.5km	NNE-SSW	13	2m × 5m	1～2m	NNE-SSW	Cu 0.1%	mala, cc ccp					C-43
21	I	Ait Ya'azza	Cu	L.C. (D.T.)	dol			dissm	50m × 2.5km	NNE-SSW	4	2m × 10m	1～2m	NNE-SSW	Cu 0.4%	mala, hem					C-2, C-6, D-3, E-1
22	I	Amsengarf	Cu	PI-M	cg			dissm	20m × 500m	NNE-SSW	3	2m × 5m	0.3m	NNE-SSW	Cu < 0.1%	mala					
23	I	Assoulai	Cu	PI-M	cg			dissm	50m × 300m	N-S	2	2m × 20m	1.0m	N-S	Cu 1%	mala					C-13
24	I	Tadenst	Cu	PI-M	cg			dissm	10m × 500m	N-S	3	4m × 15m	1.5m	N-S	Cu 0.3%	mala					E-5, E-6
25	I	Tifelsine - N	Cu	PM	rhy			dissm	5m × 250m	NE-SW?	2	2m × 10m	0.5m	NE-SW?	Cu < 0.1%	mala, ccp					Y-10
26	I	Tifelsine - W	Cu	PI	qte			*dissm*	*2m × 10m*	?	*1*	*2m × 10m*	*0.3m*	?	Cu < 0.1%	mala					
27	I	Aniloul - S	Cu	PM	and	ep, chl	and	dissm	2m × 750m	N-S	2	2m × 5m	0.5m	N-S	Cu < 0.1%	mala, ccp					G-12
28	I	Igherm - 1	Cu	B.S. L.C. (T.D.)	ss dol			dissm	10m × 2.0km	N-S	8	2m × 5m	0.5m	N-S	Cu < 0.1%	mala					B-7, B-8
29	I	Igherm - 2	Cu	PM	and	ep, chl	and	dissm	10m × 1.8km	N-S	5	2m × 5m	0.5m	N-S	Cu < 0.1%	mala					

Host Rock Formation
- LC ...Lawar Calcareous Series
- TD ...dolomite (Tamjout)
- BS ...Basal Series
- PM ...Precambrian M
- PI-M.. " II-M
- PI ... " I

Host Rock
- and ..... andesite
- sh ..... shale
- cg ..... conglomerate
- dol ..... dolomite
- qte ..... quartz
- rhy ..... rhyolite
- slt ..... siltstone
- ss ..... sandstone

Alteration
- chl ..... chlorite
- cal ..... calcite
- ep ..... epidote
- silic .... siliceous

Mode of Occurrence
- dissm .. dissemination

Ore Minerals
- az ..... azurite
- br ..... bornite
- cc ..... chalcocite
- ccp .... chalcopyrite
- hem .... hematite
- mala ... malachite

Table. I-II Geochronological Scheme in Surveyed Area.

Age	Rock Facies	Inlier	Area	Geochronological scale (Proterozoic / Paleozoic; 2600 2400 2200 2000 1800 1600 1400 1200 1000 800 600 400 200 my)	Orogeny
					309 397 ~ Hercynian Orogeny
Lower Cambrian	Tiyourhzo granite	If	E	• 541	
	Tafrout granite	K	(I)	• 530	
	———				
Adoudonian (Infracambrian)	Dolomite series				
	~~				580 603 ~ Late Panafrican Orogeny (II)
	Azerbalou rhyolite	Az	H	® 331	
P.III	Igherm rhyolite	Ig	L	® 288	
	Igherm meta - dolerite	Ig	B	® 329	
	Kerdous rhyolite	K	D	• 580 • 380	
	Touret Magon granite	K	D	? ® 338	
	Taoulecht med. grained granite	If	F	• 583 ® 350	
	Ifni andesite	If	(I)	• 603	
	~~				
	Oued Amorphous rhyolite	K	(I)	• 618 ? • 574 • 530 • 384	630 ~ Late Panafrican Orogeny I (morrocanides)
	Igherm rhyolite	Ig	I	® 325	
	(Anezi series)	K	D		
P.II - III			H	® 379 ® 344	
	Azerbalou rhyolite	Az	A	® 309	
	Ifni granite	If	(I)	• 647 ® 356	
	Ifni rhyolite	If	F	• 631 ® 329	
	~~				1000 ~ Panafrican Orogeny (Anti-Atrasides)
P.I	P.I pebble in P.I-III congromerate	K	D	• 1480 • 1519 • 1430 • 1035 • 470	
	(Kerdous schist)	K	D		
	~~				1300 1600 Torkwaian Orogeny (Bou Azzerides)
	Tazeroualt pegmatites	K	D	• 1750 • 1500 • 1045	
	Tahala grannite	K	(I)	• 1920	
	~~				1800 1900 ~ Eburnean Orogeny (Berberides)
	Tasserhirt granite	K	D	• 2550 • 2545 • 1680 ® 1015	
P.O	Tazeroualt two mica granite	K	D	• 2600 b 2600 • 2257 • 1905 ® 1623 ® 199	
	Alouzod two mica granite	If	E	• 2217	
	Oued Amarphous granite	K	(I)	• 1850 • 1610 • 1440 • 1230 • 930 • 800 • 750	
	(Kerdous series)				
	~~				2600 ~ Zagorides Orogeny
	Jebel Ouiharem gniess	K	(I)	• 2650 × 1700 × 1300	

Precambrian

K : Kerdous inlier , If : Ifni inlier , Ig : Igherm inlier , Az : Azerbalou inlier ,
(I): Phase I surveyed area , A, B, C, D, E, F : Phase II surveyed area.
H, I, L : Phase III surveyed area.

• Data: mainly from G. Choubert & A. Faure -Muret (1976) Rene Charlot (1976)
® Data of phase I, phase II and phase III survey
△ Assumed deta

APPENDICES

(GEOPHYSICAL SURVEY)

Table II-2-1 List of IP Survey Works

Explorated Area	Line	Length of Line	Electrode Spacing	Electrode Separation	Number of Measuring Stations
Talat-n-Sous	B	3.0 km	100 m	1-5	130
	C	3.1	100	1-5	135
	D	2.9	100	1-5, 6	131
	E	2.7	100	1-5, 6	120
	F	3.0	100	1-5, 6	145
	G	3.0	100	1-5, 6	145
	H	3.0	100	1-5	130
	I	3.0	100	1-5	130
	J	3.0	100	1-5	130
	K	3.0	100	1-5, 6	137
	L	3.2	100	1-5, 6	150
	M	3.4	100	1-5, 6	159
	N	3.4	100	1-5, 6	150
	P	2.6	100	1-7	154
	Q	3.0	100	1-5	130
	S	3.0	100	1-6	153
	X	3.6	100	1-7	217
Sub-Total	17 Lines	51.9 km			2,446
Assif Imider	No.1	1.5 km	100 m	1-6	63
	No.2	2.0	100	1-6	93
	No.4	2.0	100	1-5, 6	92
	No.6	2.0	100	1-6	93
	No.8	1.5	100	1-6	63
	No.9	1.5	100	1-6	63
Sub-Total	6 Lines	10.5 km			467
Total	23 Lines	62.4 km			2,913

Table II-2-2 Examination of the Reciprocity (by Party B)

Line	Station		AR_1	FE_1	AR_2	FE_2	$R=AR_1-AR_2/AR_1$	FE_1-FE_2
N	26-27	24-25	. 361	. 0.3	364	0.3	0.8 %	0. %
		23-24	. 217	. 0.4	231	0.6	- 6.5	- 0.2
		22-23	. 572	. 0.6	582	0.8	- 1.7	- 0.2
J	19-20	22-23	. 707	. 0.2	721	0.3	- 2.0	- 0.1
		23-24	. 759	. 0.0	771	0.6	- 1.6	- 0.6
		24-25	. 934	. 1.0	940	0.8	- 0.6	0.2
		25-26	. 730	. 0.9	749	1.1	- 2.6	- 0.2
	18-19	22-23	. 522	. 0.2	514	0.3	1.5	- 0.1
		23-24	. 573	. 0.2	565	0.7	1.4	- 0.5
		24-25	. 669	. 1 4	654	1.2	2.2	0.2
H	19-20	17-18	. 399	. 3.4	381	4.5	4.5	- 1.1
		16-17	. 356	. 3.8	344	3.7	3.4	0.1
		15-16	. 319	. 3.6	307	4.1	3.8	- 0.2
		14-15	. 373	. 2.8	358	3.5	4.0	1.2
		13-14	. 439	. 1.0	431	2.4	1.8	0.6
	7-8	5-6	. 284	. 5.1	291	4.9	- 2.5	0.2
		4-5	. 222	. 6.3	226	5.2	- 1.8	1.1
		3-4	. 186	. 5.6	189	6.1	- 1.6	- 0.5
		2-3	. 159	. 5.1	161	5.1	- 1.3	0.0
	8-9	5-6	. 168	. 5.9	165	5.8	1.8	0.1
		4-5	. 179	. 6.6	176	5.4	1.7	1.2
		3-4	. 171	. 5.5	167	4.8	2.3	0.7
		2-3	. 162	. 5.6	159	5.9	1.9	- 0.3
						$R_T=\Sigma\|R\|$	53.3	10.2
						$\bar{R}=\frac{R_T}{K}$	2.317	0.443

K = 23
n = 2

Table II-2-3 Comparison of Data between Party A and Party B

Line	Station		AR_A	FE_A	AR_B	FE_B	$(AR_A-AR_B)/AR_A$	FE_A-FE_B
H	24-25	22-23	. 251	. 2.7	253	2.2	- 0.8	0.5
		21-22	. 372	. 3.1	379	2.4	- 1.9	0.7
		20-21	. 633	. 2.2	649	2.0	- 2.5	0.2
		19-20	. 717	. 1.8	743	1.8	- 3.6	0.0
		18-19	. 765	. 4.5	804	3.8	- 5.1	- 0.7
	25-26	23-24	. 300	. 0.6	294	1.3	2.0	- 0.7
		22-23	. 35	. 2.6	36.0	2.7	- 2.9	- 0.1
		21-22	. 57	. 2.9	59.	3.0	- 3.5	- 0.1
		19-20	. 106	. 2.4	112	2.1	- 5.7	- 0.3
	28-29	26-27	. 2531	. 0.9	2610	0.9	- 3.1	0.
		25-26	. 2990	. 1.3	3100	0.7	- 3.7	0.6
		24-25	.25400	. 1.3	25800	1.1	- 1.6	0.2
		23-24	. 1880	. 1.2	1950	1.1	- 3.7	0.1
		22-23	. 219	. 3.2	211	2.9	3.6	0.4
		27-28	. 1630	. 0.9	1590	0.8	2.4	0.1
		26-27	. 1810	. 0.4	1846	0.3	- 2.0	0.1
		25-26	. 2790	. 0.9	2920	0.9	- 4.7	0.0
		24-25	.22300	. 1.3	23000	1.1	- 3.1	0.2
		23-24	. 1440	. 1.2	1530	1.4	- 6.3	- 0.2
						$R_T=\Sigma\|R\|$	62.2	5.3
						$\bar{R}=\frac{R_T}{K}$	3.274	0.2737

$K = 19$

Table II-3-1 In-situ Measurement

Lithology	Measuring Station	Frequency Effect (%)		Resistivity (Ω-m)	
		a	b	a	b
Dolomite (Tamjout)	E (No.22)	0.2	0.2	8,370	10,000
Dolomite (Basal Series)	L (No.8)	0.8	0.9	1,130	2,610
	L (No.27)	0.8	0.9	1,620	3,180
	L (No.6)	1.0	1.0	91	109
	H (No.8)	1.4	1.7	248	232
Sandstone, Siltstone	H-Q (No.8)	0.5	0.6	474	335
	H (No.17)	1.4	1.8	353	474
	X (No.17)	0.3	0.3	269	231
Conglomerate	L (No.10)	0.8	0.5	438	235
Rhyolite	Y (No.20)	0.5	0.3	796	1,230
Andesite Lava	L (No.20)	0.1	0.4	135	227
	L (No.25)	0.1	0.0	170	225

a, b; a couple of measuring points

Table II-3-2 In-situ Measurement

Line, Station No.	Depth n = 1		Depth n = 2		Remarks
	FE (%)	AR (Ω-m)	FE (%)	AR (Ω-m)	
XX - 51					
52	0.8	717	0.6	712	
53	0.5	353	0.8	325	
54	0.3	523	0.5	716	
55	0.6	432	0.8	429	
56	0.0	320	0.1	426	
57	0.0	363	0.1	758	
58	0.0	404	0.6	513	
59	0.5	564	0.5	1,300	
60	0.2	1,820	0.4	302	J No.18
61	0.6	256	0.5	381	
62	0.7	254	0.6	208	
63	0.3	147	0.5	178	
64	0.5	113	0.6	81	
65	0.5	45	0.7	107	
66	0.1	85	0.9	175	
67	0.8	138	0.5	151	
68	0.5	163	0.8	253	
69	0.5	282	1.1	263	No.7 Trench
70	1.0	278	0.6	230	
71	0.6	205	0.8	241	
72	0.6	386	0.5	372	
73	0.6	434	1.1	712	
74	0.6	987	0.7	544	
75	0.3	357	0.6	504	A No.18
76	0.7	647	0.6	945	
77	0.6	456	0.6	489	
78	0.5	408	0.4	492	
79	0.3	394	0.2	401	

Line, Station No.	Depth n = 1		Depth n = 2		Remarks
	FE (%)	AR (Ω-m)	FE (%)	AR (Ω-m)	
XX - 80	0.6	417	0.9	462	
81	0.4	367	0.8	332	
82	0.6	257	0.7	234	
83	0.6	131	0.5	232	
84	0.5	250	0.5	285	
85	0.0	129	0.8	153	
86	0.3	118	0.4	238	
87	0.1	159	0.6	251	
88	0.3	146	0.5	543	
89	0.3	177			
XP - 1					No.1 Pit
2	0.4	314	0.5	315	
3	0.4	412	0.4	246	
4	0.3	311	0.3	393	No.3 Pit
5	0.3	375	0.2	293	
6	0.3	275	0.7	352	
7	0.0	311	0.0	414	
8	0.0	193	0.		No.2 Pit
YP - 1					
2	0.2	240	0.6	218	
3	0.3	235	1.2	417	
4	0.2	389	0.6	480	
5	0.4	236	0.5	126	No.3 Pit
6	0.9	254	0.7	330	
7	0.6	308	0.6	367	
8	0.3	175	0.0	204	
9	0.1	154			

Line, Station No.	Depth n = 1		Depth n = 2		Remarks
	FE (%)	AR (Ω-m)	FE (%)	AR (Ω-m)	
ZP - 2					
3	0.7	146	0.7	180	
4	0.9	171	0.8	221	
5	0.8	229	1.0	213	No.2 Trench
6	0.8	161	1.0	223	
7	1.1	258	1.4	156	No.1 Pit
8	1.1	134	1.0	160	No.8 Trench
9	1.2	171			
ZZ - 1					
2	1.0	197	0.5	242	
3	0.6	173			

Note : Locations of the measuring stations XX, XP, YP, ZP and ZZ shall be refered to Fig. II-3-4.

Table II-3-3 Laboratory Measurement

Dolomite

Explored Area	Name of Sample	Locality	ARΩ-m 2.5 Hz	FE % 2.5-0.3 Hz	Note
Talat-n-Sous	L-8	near st. 8, Line L	3,110	0.1	with malachite
	L-26-0	near st. 26, Line L	11,000	0.2	with malachite
	L-28	near st. 28, Line L	13,100	0.1	with malachite
	Q-20	near st. 20, Line Q	19,400	0.1	
	R-25	near st. 25, Line R	747	0.1	with malachite
	T-1	Trench 1	20,900	0.1	with malachite
	T-9	Trench 9	2,250	0.1	with malachite, chalcopyrite
Assif Imider	3-8	near st. 8, Line 3	30,800	0.2	with azurite
	9-9	near st. 9, Line 9	26,700	0.3	with malachite
Alous	DH-No. 1	101.35 m	6,120	0.7	
		125.4	17,400	0.6	
		141.6	48,600	0.1	
		143.9	17,600	0.6	

Sandstone, siltstone, shale

Explored Area	Name of Sample	Locality	ARΩ-m 2.5 Hz	FE % 2.5-0.3 Hz	Note
Talat-n-Sous	H-8 ~ 9	between st. 8 and st. 9 Line H	857	12.9	shale
	H ~ G-8	between st. 8's of Line H and Line G	359	0.1	shale with muscovite
	L-6	near st. 6, Line L	4,000	0.2	sandstone
	L-26-3	near st. 26, Line L	4,760	0.1	andesitic fine sandstone
	L-28 ~ 29	between st. 28 and st. 29 Line L	9,640	0.2	sandstone with malachite
	NO-14	near st. 25, Line J	879	0.5	shale with malachite, pyrite
	X-17	near st. 17, Line X	4,060	0.2	sandstone with malachite, pyrite
Assif Imider	1-8	near st. 8, Line I	206	0.3	shale with malachite
Alous	DH-No. 1	10 m	164	25.0	sandstone with pyrite
		39.5	284	0.3	siltstone

Explored Area	Name of Sample	Locality	ARΩ-m 2.5 Hz	FE % 2.5-0.3 Hz	Note
Alous	DH-No.1	60 m	2,060	4.6	sandstone with pyrite
		75.2	2,360	4.6	sandstone with pyrite
		80	1,630	4.7	sandstone with pyrite

Rhyolitic Tuff

Explored Area	Name of Sample	Locality	ARΩ-m 2.5 Hz	FE % 2.5-0.3 Hz	Note
Talat-n-Sous	L-16	near st.16, Line L	1,270	0.1	with malachite
	L-27	near st.27, Line L	2,670	0.1	with malachite
	P ~ H-3	between st.3's of Line P and Line H	7,330	0.1	with malachite chalcocite
	T-2	Trench 2	1,180	0.1	with malachite

Andesite

Explored Area	Name of Sample	Locality	ARΩ-m 2.5 Hz	FE % 2.5-0.3 Hz	Note
Assif Imider	8-8	near st.8, Line 8	4,750	0.2	
	11-8	near st.8, Line 11	1,280	2.1	with malachite, chalcopyrite
		Mine Site	2.6	3.9	with chalcopyrite
Alous	DM-No.1	166 m	736	2.2	with hematite
		175	3,340	9.8	with hematite
		180	1,250	2.3	with hematite
		185	816	1.6	with hematite
		204	2,900	9.8	with hematite
		205	2,890	19.9	with hematite
		211	3,320	13.0	with hematite & malachite
		220.45	10,200	13.9	with hematite & malachite
		230.3	1,140	2.6	with hematite & malachite
		270	6,770	4.6	with epidote vein
		290.8	3,000	2.8	with epidote vein

Tuff

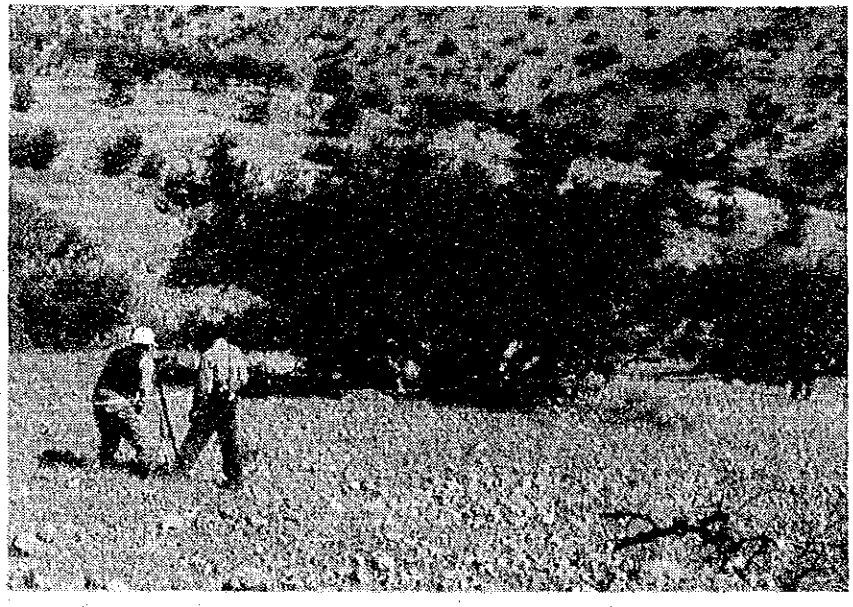
Explored Area	Name of Sample	Locality	AR m 2.5 Hz	FE % 2.5-0.3 Hz	Note
Talat-n-Sous	L-11	near st. 11, Line L	1,610	0.1	andesitic
	L-19	near st. 19, Line L	962	0.4	andesitic tuff breccia
	L-22-5	near st. 25, Line L	10,700	0.3	andesitic tuff breccia with malachite
	L-24	near st. 24, Line L	2,780	0.1	andesitic tuff breccia
	L-26	near st. 26, Line L	11,300	0.5	andesitic tuff breccia
	L-26-2	near st. 26, Line L	15,600	1.2	andesitic tuff with malachite
	NO-12	near st. 15, Line J	1,600	0.1	andesitic tuff breccia
	NO-10	near st. 15, Line Q	25,900	0.4	andesitic tuff
	NO-11	near st. 17, Line J	16,000	0.6	andesitic tuff breccia
	P-3	Pit 3	2,310	0.2	andesitic tuff breccia
Assif Imider	2-8	near st. 8, Line 2	3,300	0.1	andesitic tuff
Alous	DH-No. 1	156 m	581	0.1	with hematite
		161.5	966	0.2	
		240	2,630	1.3	lapilli
		250	10,800	0.6	lapilli

Conglomerate

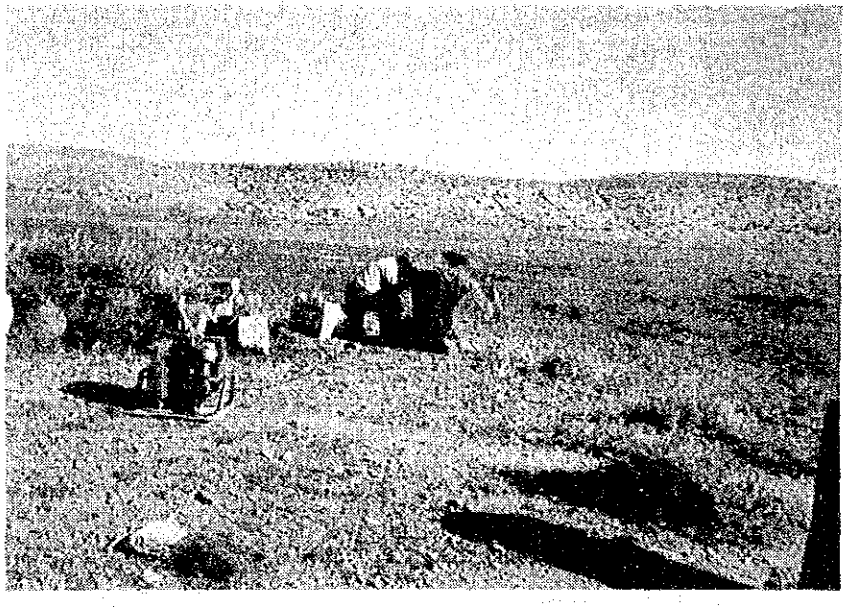
Explored Area	Name of Sample	Locality	AR m 2.5 Hz	FE % 2.5-0.3 Hz	Note
Talat-n-Sous	A-9		4,860	0.2	with malachite
	P-2	Pit 2	10,300	0.2	with malachite
Assif Imider	3-8	near st. 8, Line 3	8,230	0.1	with malachite

Digging hall

Wire setting



Topographical survey



Measurement (Transmitter)