

**ESTUDIO DE LOS RECURSOS HIDRICOS  
SUBTERRANEOS DE LA UNIDAD DEL  
SUBBETICO DE MURCIA**

**TOMO 7. ANEXO IV**

**HOJAS DE DATOS Y CURVAS DE CAMPO  
Y ORDENADOR DE LOS S.E.V. ORCE**

**TOMO 7**

**A N E X O IV**

**HOJAS DE DATOS Y CURVAS DE CAMPO Y ORDENADOR DE LOS SEV.  
ORCE**

DATA SET: 11

CLIENT: ITGE  
 LOCATION: CRCE  
 COUNTY: (GR)  
 PROJECT: SEGURA  
 ELEVATION: 950.00  
 SOUNDING COORDINATES: X: 550500.0000 Y: 4175400.0000

DATE: 91  
 SOUNDING: 11  
 AZIMUTH: N-80-W  
 EQUIPMENT: ADARO

Schlumberger Configuration

FITTING ERROR: 1.426 PERCENT

L #	RESISTIVITY (ohm-m)	CHARGEABILITY (pfe)	THICKNESS (meters)	ELEVATION (meters)	CONDUCTANCE (Siemens)
1	44.70		1.14	950.0	
2	16.59		8.80	948.8	0.0257
3	27.60		28.24	940.0	0.530
4	12.90		42.93	911.7	1.02
5	35.03			868.8	3.32

ALL PARAMETERS ARE FREE

No.	Sounding (m)	PA DATA	(ohm-m) SYNTHETIC	DIFFERENCE (percent)
1	2.68	29.00	28.65	0.496
2	3.73	23.00	23.41	-1.78
3	5.18	20.30	19.91	2.32
4	7.20	18.00	18.37	-2.08
5	10.00	18.00	18.11	-0.629
6	13.90	19.00	18.69	1.61
7	19.30	20.00	19.87	0.618
8	26.80	21.00	21.26	-1.26
9	37.30	22.00	22.31	-1.42
10	51.80	23.00	22.55	1.91
11	72.00	22.00	21.95	0.218
12	100.0	21.00	21.12	-0.601
13	139.0	21.00	21.18	-0.860
14	193.0	23.00	22.67	1.41
15	268.0	25.00	25.13	-0.544

PARAMETER RESOLUTION MATRIX:

\*

ADARO

\*

## "F" INDICATES FIXED PARAMETER

P 1	0.90								
P 2	-0.02	0.99							
P 3	-0.01	-0.01	0.94						
P 4	0.01	0.01	0.01	0.72					
P 5	0.00	0.00	0.02	0.03	0.84				
T 1	0.09	0.02	0.01	-0.01	0.00	0.91			
T 2	-0.07	-0.04	-0.11	0.05	0.01	0.09	0.59		
T 3	0.01	0.01	0.15	0.17	-0.14	-0.02	0.23	0.43	
T 4	0.00	0.00	0.02	-0.34	-0.16	0.00	0.04	0.10	0.27
	F 1	F 2	F 3	F 4	F 5	T 1	T 2	T 3	T 4

\* ADARFO \*



Proyecto: .....  
 Zona: Palmas - Mucuna Orce - Grauada  
 Observador: Rafael Canales Martinez  
 Situación: .....

COORDENADAS  
 X 550.500  
 Y 4175400  
 Z 950

m V:  
 m A:

Rumbo AB  
N-80°-W

S.E.V.

1

Perfil:

I

CONSTANTES PARA DISPOSITIVO SCHULUMBERGER  
 SIMETRICO  
 MN

Estación	AB/2	MN	I (mA)	Esc. Volt.	V (mV)	$\rho$ ( $\Omega$ m)	MN	I (mA)	Esc. Volt.	V (mV)	$\rho$ ( $\Omega$ m)	OBSERVACIONES	1 m	10 m	50 m	100 m
1	2.68	1	390	1v	500	29							21.78			
2	3.73		270	300mv	145	23							42.92			
3	5.18		276	100mv	68	20.5							83.51			
4	7.2		295	"	33	18							182.1			
5	10		290	30mv	16.5	18							313.4			
6	13.5		350	"	12	19							606.2			
7	19.3		270	10mv	4.6	20	10	270	100mv	50	20		1.189	109.2		
8	26.8		295	"	2.8	21		295	"	28	21		2.256	217.8		
9	37.3		360	3mv	1.8	22		360	30mv	18.5	22		4.370	429.2		
10	51.8	10	555	30mv	15.5	23							8.429	836.1		
11	72		530	10mv	7.3	22							16.290	1.621		
12	100		610	"	4.1	21							31.420	3.134		
13	139		540	"	1.9	21							60.700	6.062	1.175	
14	193		500	3mv	1	23								11.690	2.301	
15	268		260	1mv	0.29	25								22.560	4.474	
16	373													43.700	8.702	4.292
17	518													84.290	16.820	8.351
18	720													162.900	32.530	16.210
19	1.000														62.790	31.340
20	1.390														121.400	60.620
21	1.930														234.000	116.900
22	2.680														461.200	225.600
23	3.730															437.000
24	5.180															842.880
25	7.200															1.628.520
26	10.000															3.141.510

OBSERVACIONES:

FECHA:

30-01-91



Departamento de Geofísico

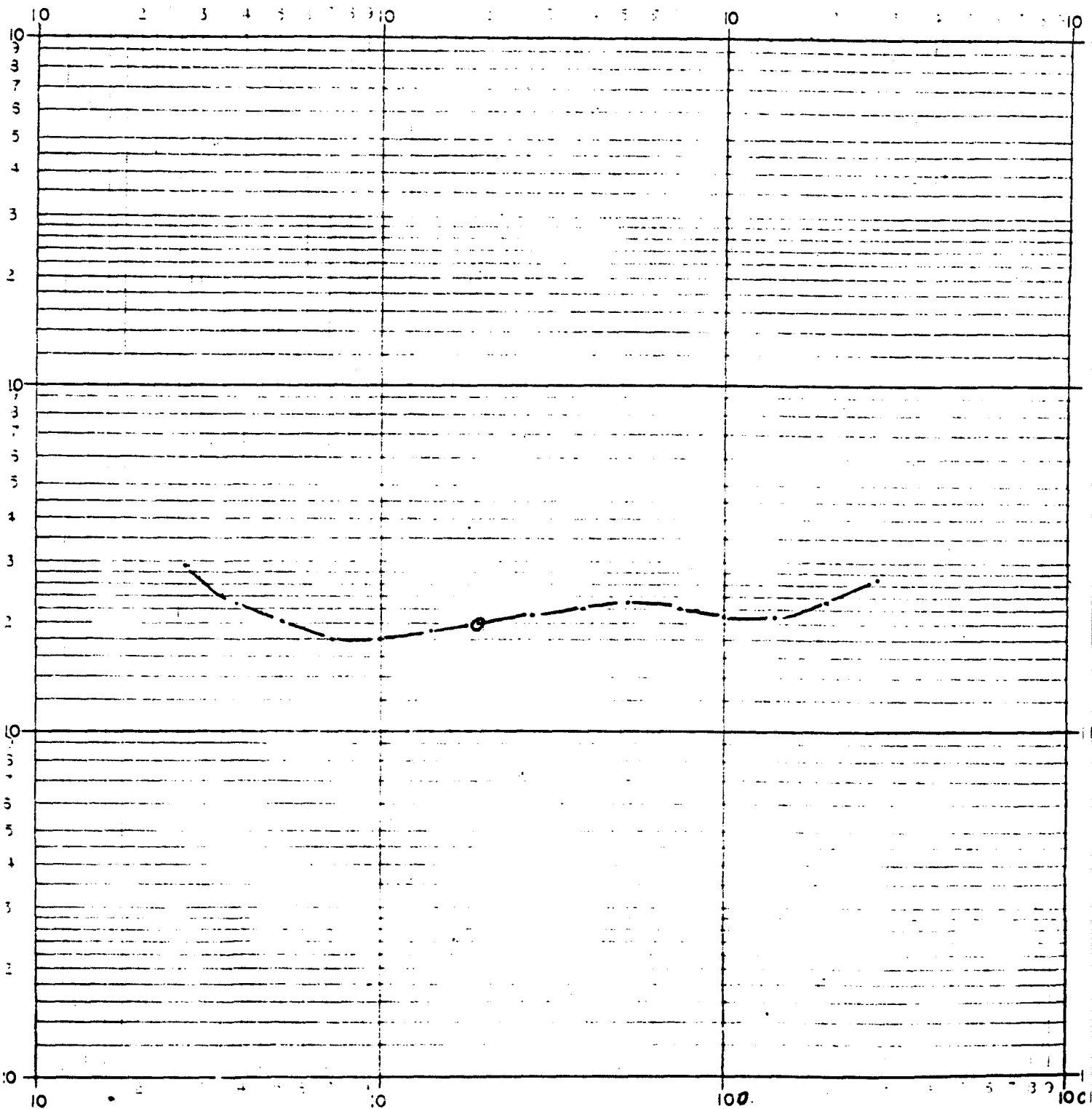
Estudio *Orce - Gravada*

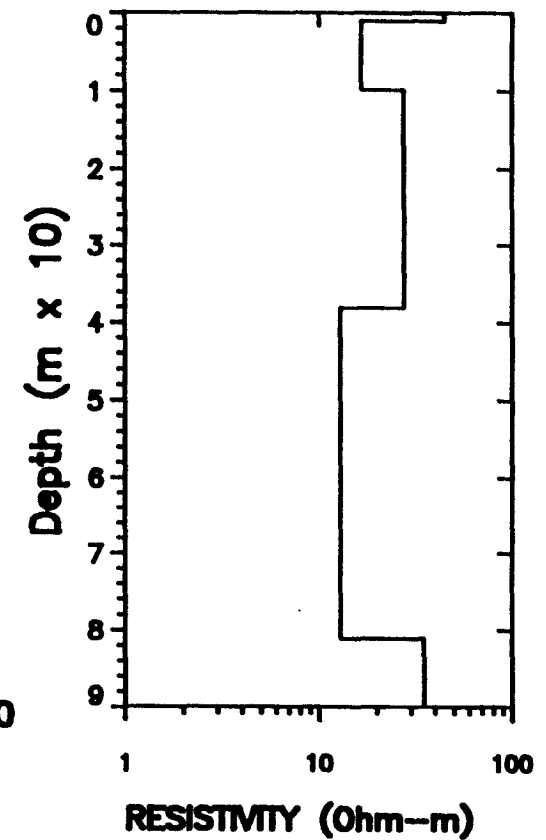
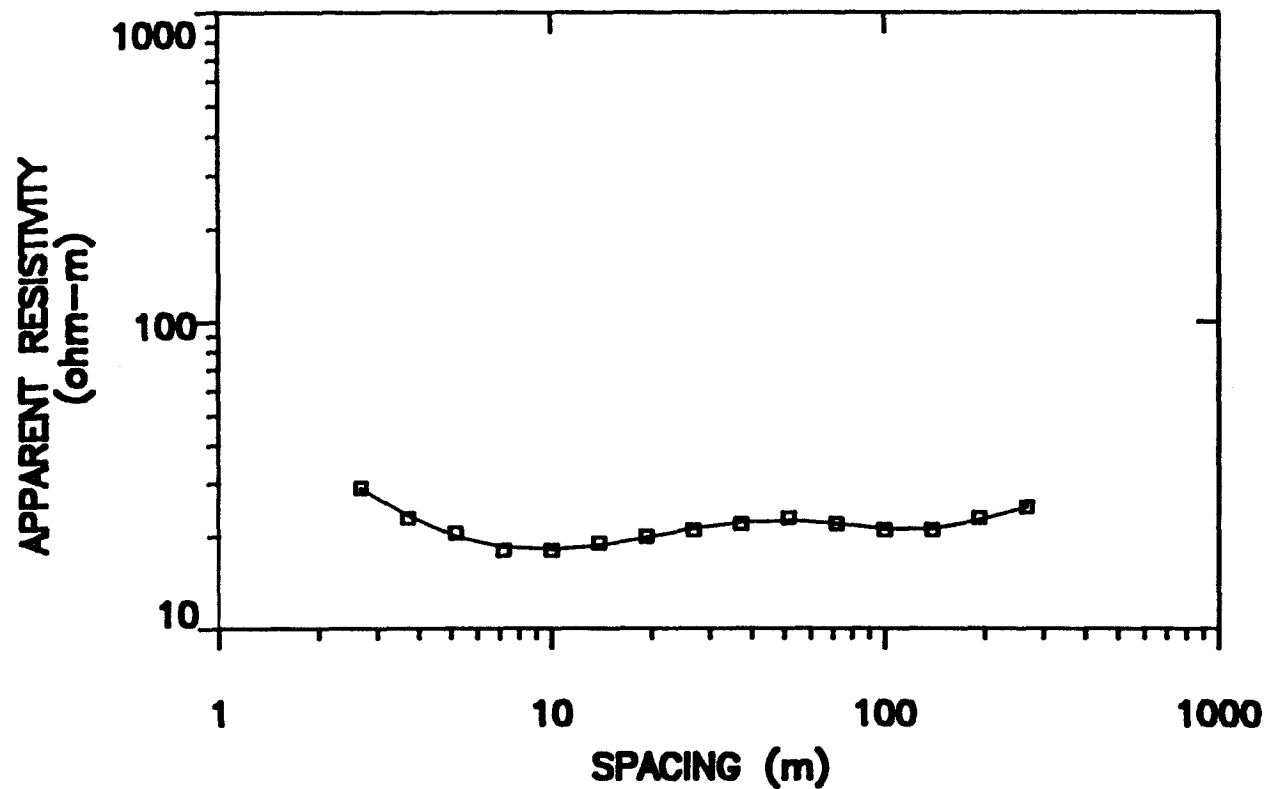
S.E.V. *1*

Fecha *30-01-91* Rumbo AB *N-80°-W* PERFIL *I*

Interpretación

Observaciones:





for: ITGE		SEGURA
by: ADARO		
Data Set: 11	Date: 91	ORCE (GR)
Equipment: ADARO	Sounding: 11	
		Azimuth: N-80-W

DATA SET: 21

CLIENT: ITGE DATE: 91  
 LOCATION: ORCE SOUNDING: 21  
 COUNTY: (GR) AZIMUTH: E-W  
 PROJECT: SEGURA EQUIPMENT: ADARO  
 ELEVATION: 970.00  
 SOUNDING COORDINATES: X: 551400.0000 Y: 4176850.0000

Schlumberger Configuration

FITTING ERROR: 2.904 PERCENT

L #	RESISTIVITY (ohm-m)	CHARGEABILITY (pfe)	THICKNESS (meters)	ELEVATION (meters)	CONDUCTANCE (Siemens)
				970.0	
1	725.4		0.810	969.1	0.00112
2	89.96		3.90	965.2	0.0434
3	19.52		5.12	960.1	0.262
4	95.92		18.38	941.7	0.191
5	20.21				

ALL PARAMETERS ARE FREE

No.	Spacing (m)	PA (ohm-m)		DIFFERENCE (percent)
		DATA	SYNTHETIC	
1	2.68	185.1	185.6	-0.296
2	3.73	117.5	115.9	1.37
3	5.18	82.43	85.45	-3.66
4	7.20	68.91	67.17	2.53
5	10.00	52.70	51.99	1.34
6	13.90	41.89	43.22	-3.19
7	19.30	43.24	42.82	0.970
8	26.80	47.29	46.91	0.805
9	37.30	50.00	50.30	-0.613
10	51.80	50.00	49.71	0.569
11	72.00	46.00	44.37	3.54
12	100.0	34.00	36.16	-6.37
13	139.0	29.00	28.56	1.50
14	193.0	25.00	23.86	4.55
15	268.0	21.00	21.74	-3.55

PARAMETER RESOLUTION MATRIX:

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ADARO

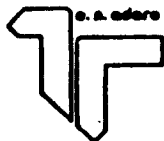
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## "F" INDICATES FIXED PARAMETER

F 1	0.55								
F 2	-0.10	0.95							
F 3	-0.03	-0.03	0.58						
F 4	0.03	0.03	0.05	0.69					
F 5	0.00	0.00	0.01	-0.01	0.99				
T 1	0.16	0.05	0.02	-0.02	0.00	0.94			
T 2	0.05	0.04	0.13	-0.05	0.00	-0.03	0.93		
T 3	-0.02	-0.02	-0.44	-0.10	0.01	0.01	0.12	0.44	
T 4	-0.04	-0.03	-0.05	0.36	0.02	0.02	0.05	0.13	0.56
	P 1	P 2	P 3	P 4	P 5	T 1	T 2	T 3	T 4

\* ALHRO \*



Proyecto: .....  
 Zona: ORCE - GRANADA  
 Observador: Juan Cu. Martínez  
 Situación: .....

COORDENADAS  
 X 551400  
 Y 4176850  
 Z 970

mV: Adaro - 01  
 mA: GEV N° 328

Rumbo AB  
E - N

S.E.V. 2

Perfil: I

CONSTANTES PARA DISPOSITIVO SCHULUMBERGER  
 SIMETRICO  
 MN

Estación	AB/2	MN	I (mA)	Esc. Volt.	V (mV)	$\rho$ ( $\Omega$ m)	MN	I (mA)	Esc. Volt.	V (mV)	$\rho$ ( $\Omega$ m)	OBSERVACIONES	1 m	10 m	50 m	100 m
1	2.68	1	45	30mV	284	137							21.78			
2	3.73		85	"	172	87							42.92			
3	5.18		190	"	138	61							83.51			
4	7.2		400	"	125	51							162.1			
5	10		320	100mV	27.5	39							313.4			
6	13.9		200	30mV	10.2	31							606.2			
7	19.3		210	10mV	5.75	32							1.169	109.2		
8	26.8		235	"	3.65	35	10	340	100mV	49.5	45		2.256	217.8		
9	37.3		235	"	2.0	37		235	"	27.5	50		4.370	429.2		
10	51.8		320	"	1.42	37		320	30mV	19.2	50		8.429	835.1		
11	72	10	335	"	9.6	46							16.290	1.621		
12	100		355	"	3.8	34							31.420	3.134		
13	139		230	3mV	1.1	29							60.700	6.062	1.175	
14	193		260	"	0.55	25								11.690	2.301	
15	268		355	"	0.335	21								22.560	4.474	
16	373													43.700	8.702	4.292
17	518													84.290	16.820	8.351
18	720													162.900	32.530	16.210
19	1.000														62.790	31.340
20	1.390														121.400	60.620
21	1.930														234.000	116.900
22	2.680														451.200	225.600
23	3.730															437.000
24	5.180															842.880
25	7.200															1.628.520
26	10.000															3.141.510

OBSERVACIONES:

FECHA: 30-01-91



Departamento de Geofísica

Estudio *Orce - Granada*

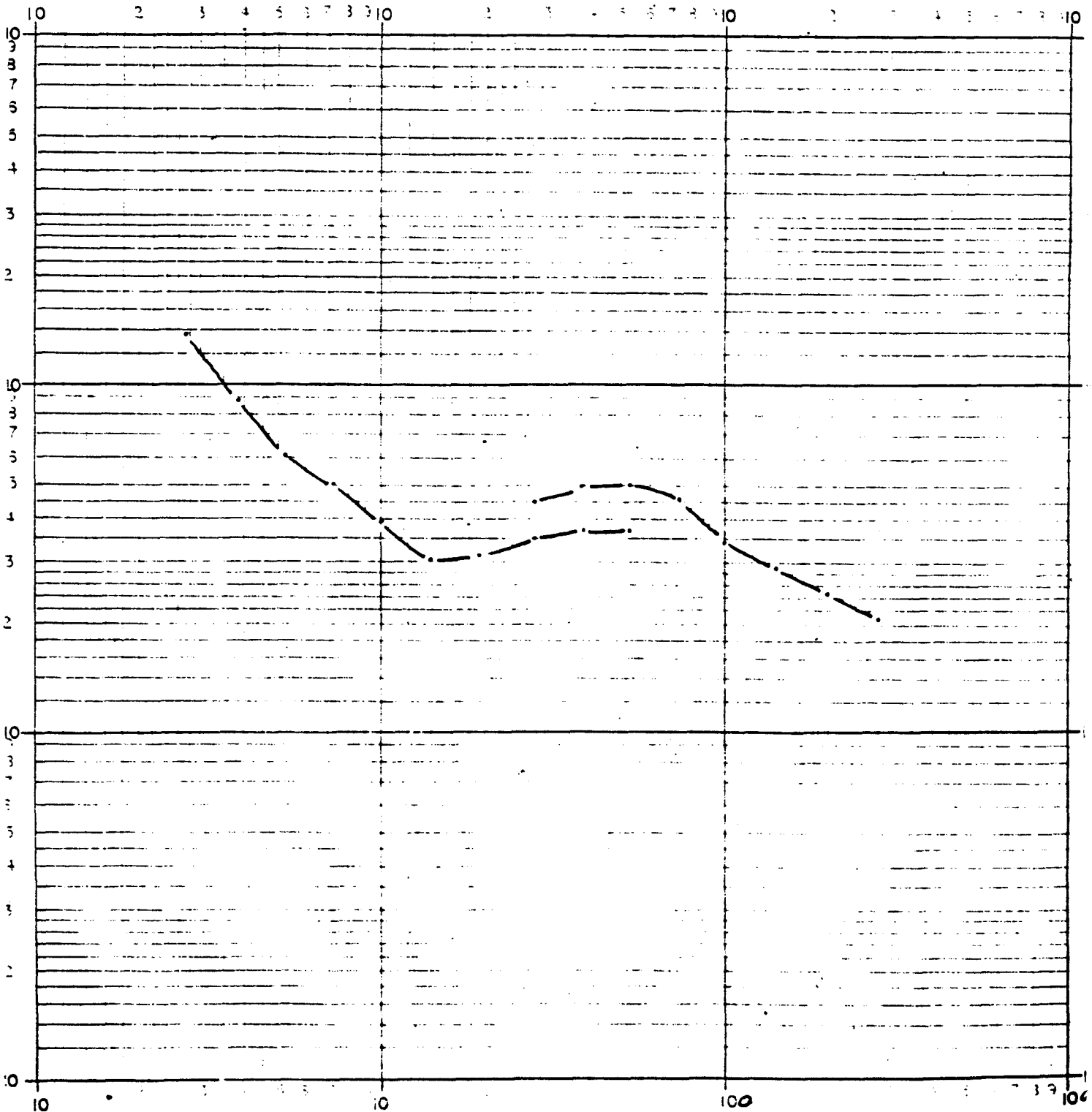
S.E.V. *2*

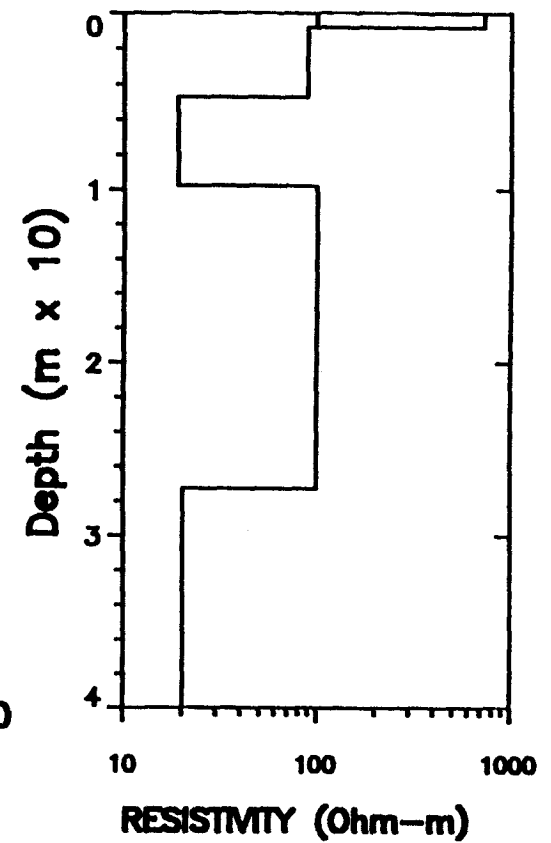
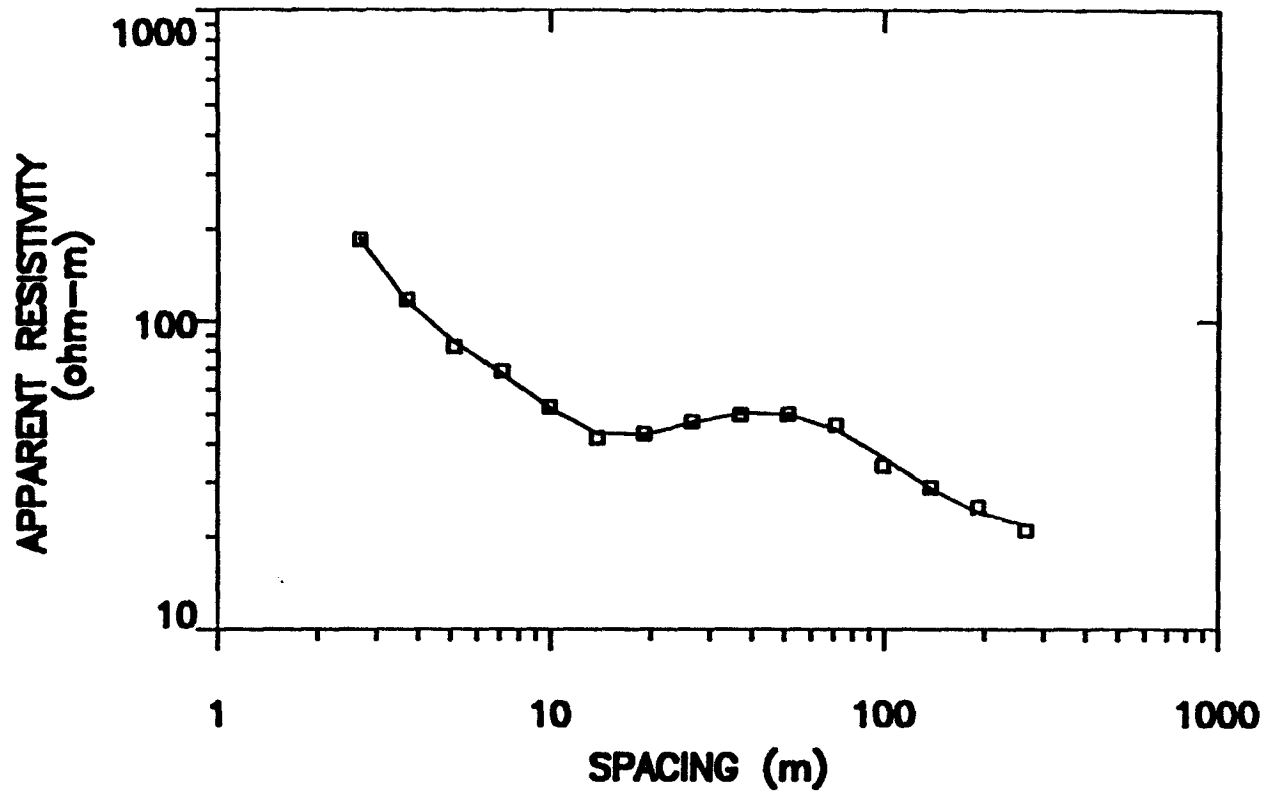
Fecha *30-01-91* Rumbo AB *E-W*

PERFIL *I*

Interpretación

Observaciones:





for: ITGE		SEGURA
by: ADARO		ORCE (GR)
Data Set: 21	Date: 91	
Equipment: ADARO	Sounding: 21	Azimuth: E-W

## DATA SET: 3I

CLIENT: ITGE  
 LOCATION: ORCE  
 COUNTY: (GR)  
 PROJECT: SEGURA  
 ELEVATION: 960.00  
 SOUNDING COORDINATES: X: 552630.0000 Y: 4178600.0000

DATE: 91  
 SOUNDING: 3I  
 AZIMUTH: E-W  
 EQUIPMENT: ADARO

## Schlumberger Configuration

FITTING ERROR: 2.437 PERCENT

#	RESISTIVITY (ohm-m)	CHARGEABILITY (pfe)	THICKNESS (meters)	ELEVATION (meters)	CONDUCTANCE (Siemens)
1	39.23		1.19	960.0	
2	27.56		54.45	958.8	0.0134
3	12.39			904.3	1.97

ALL PARAMETERS ARE FREE

No.	Spacing (m)	PA DATA	(ohm-m) SYNTHETIC	DIFFERENCE (percent)
1	2.68	54.16	55.09	-1.71
2	3.73	44.16	42.61	3.52
3	5.18	34.16	34.36	-0.595
4	7.20	29.16	30.39	-4.19
5	10.00	28.33	28.79	-1.64
6	13.90	28.33	28.11	0.765
7	19.30	28.33	27.75	2.04
8	26.80	28.33	27.45	3.11
9	37.30	27.00	26.97	0.0797
10	51.80	25.00	26.05	-4.23
11	72.00	25.00	24.34	2.63
12	100.0	22.00	21.67	1.46
13	139.0	18.00	18.51	-2.84
14	193.0	16.00	15.77	1.39
15	258.0	14.00	14.03	-0.229

PARAMETER RESOLUTION MATRIX:  
 "F" INDICATES FIXED PARAMETER  
 P 1 1.00

\* ADARO \*

P 2	0.00	1.00			
P 3	0.00	0.00	1.00		
T 1	0.00	0.00	0.00	1.00	
T 2	0.00	0.00	0.00	0.00	1.00
	P 1	P 2	P 3	T 1	T 2



S. A. edore

Proyecto: .....  
 Zona: Oreca - Granada  
 Observador: Juan Cu. Quintana  
 Situación: .....

COORDENADAS

X 552 630  
 Y 4178 600  
 Z 960

mV: Adaro-01  
 mA: 650 N° 328

Kumbo AB

E-W.

S.E.V. 3

Perfil: I

CONSTANTES PARA DISPOSITIVO SCHULUMBERGER  
SIMETRICO  
MN

Estación	AB/2	MN	I (mA)	Esc. Volt.	V (mV)	$\rho$ ( $\Omega$ m)	MN	I (mA)	Esc. Volt.	V (mV)	$\rho$ ( $\Omega$ m)	OBSERVACIONES	1 m	10 m	50 m	100 m
1	2.68	1	310	1V	920	65							21.78			
2	3.73		250	1V	310	53							42.92			
3	5.18		257	300 mV	126	41							83.51			
4	7.2		290	100 mV	62	35							182.1			
5	10		285	"	31	34							313.4			
6	13.9		320	20 mV	18	34							606.2			
7	19.3		340	"	9.8	34							1.169	109.2		
8	26.8		365	10 mV	5.5	34	10	370	100 mV	46	27		2.256	217.8		
9	37.3		335	3 mV	2.55	33		335	30 mV	21	<del>27</del>	-D 27	4.370	429.2		
10	51.8		260	"	0.94	30		260	10 mV	7.8	25		8.429	836.1		
11	72	10	235	10 mV	3.6	<del>25</del>							16.290	1.621		
12	100		445	"	3.1	22							31.420	3.134		
13	139		460	3 mV	1.35	18							60.700	6.062	1.175	
14	193		445	1 mV	0.6	16								11.690	2.301	
15	268		520	"	0.33	14								22.560	4.474	
16	373													43.700	8.702	4.292
17	518													84.290	16.820	8.351
18	720													182.900	32.530	16.210
19	1.000														62.790	31.340
20	1.390														121.400	60.620
21	1.930														234.000	116.900
22	2.680														451.200	225.600
23	3.730															437.000
24	5.180															842.880
25	7.200															1.628.520
26	10.000															3.141.510

OBSERVACIONES:

FECHA: 30-01-91



Departamento de Geofísica

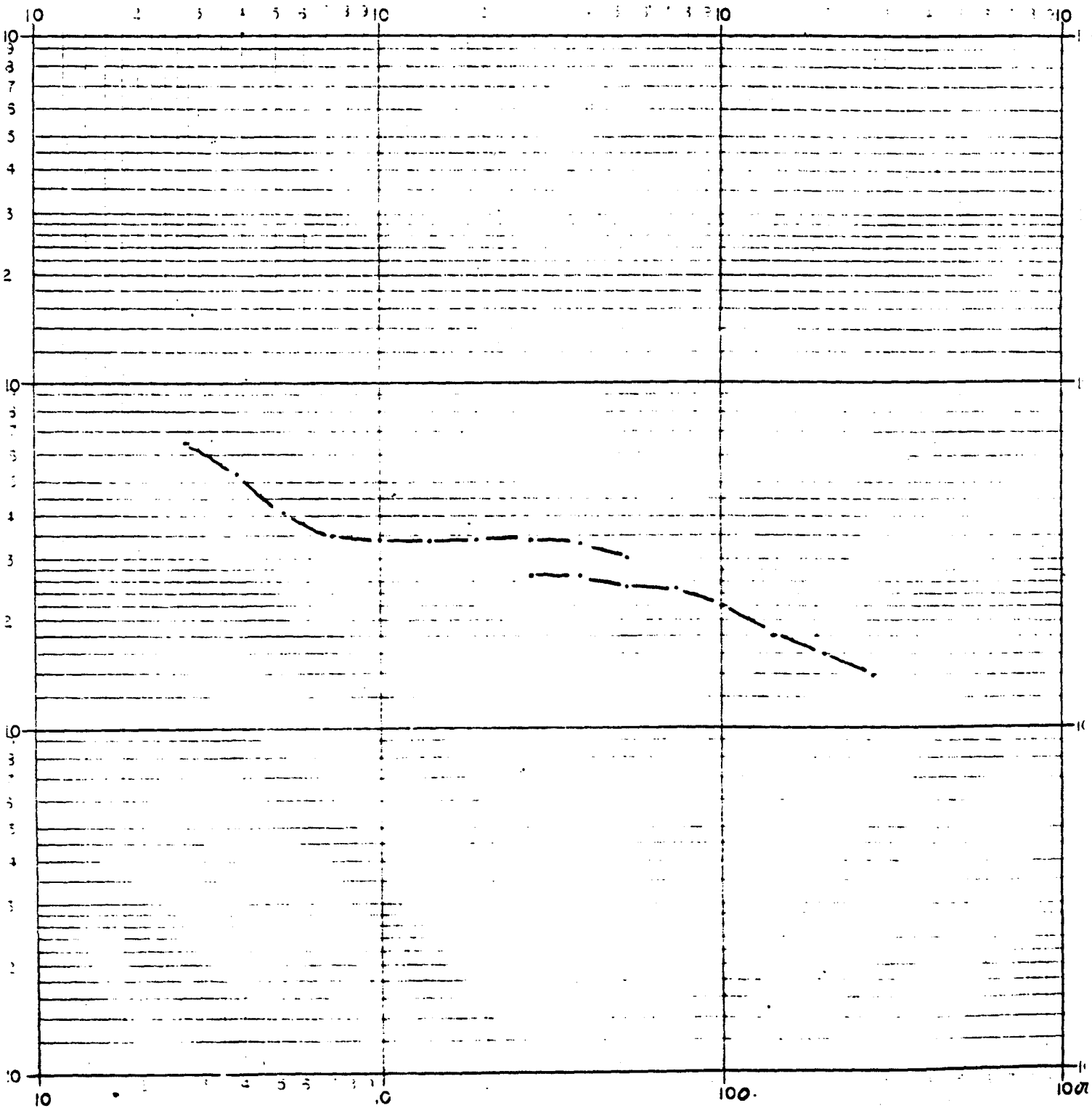
Estudio *Orce - Granada*

S.E.V. *3*

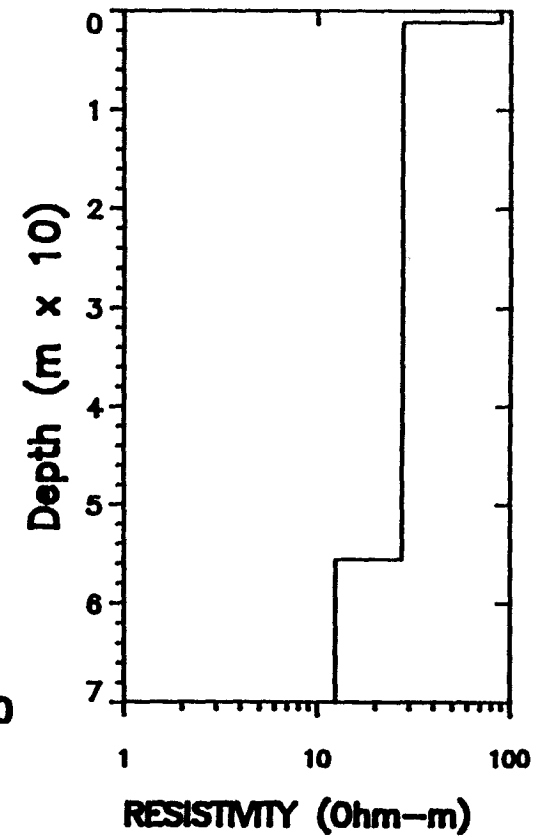
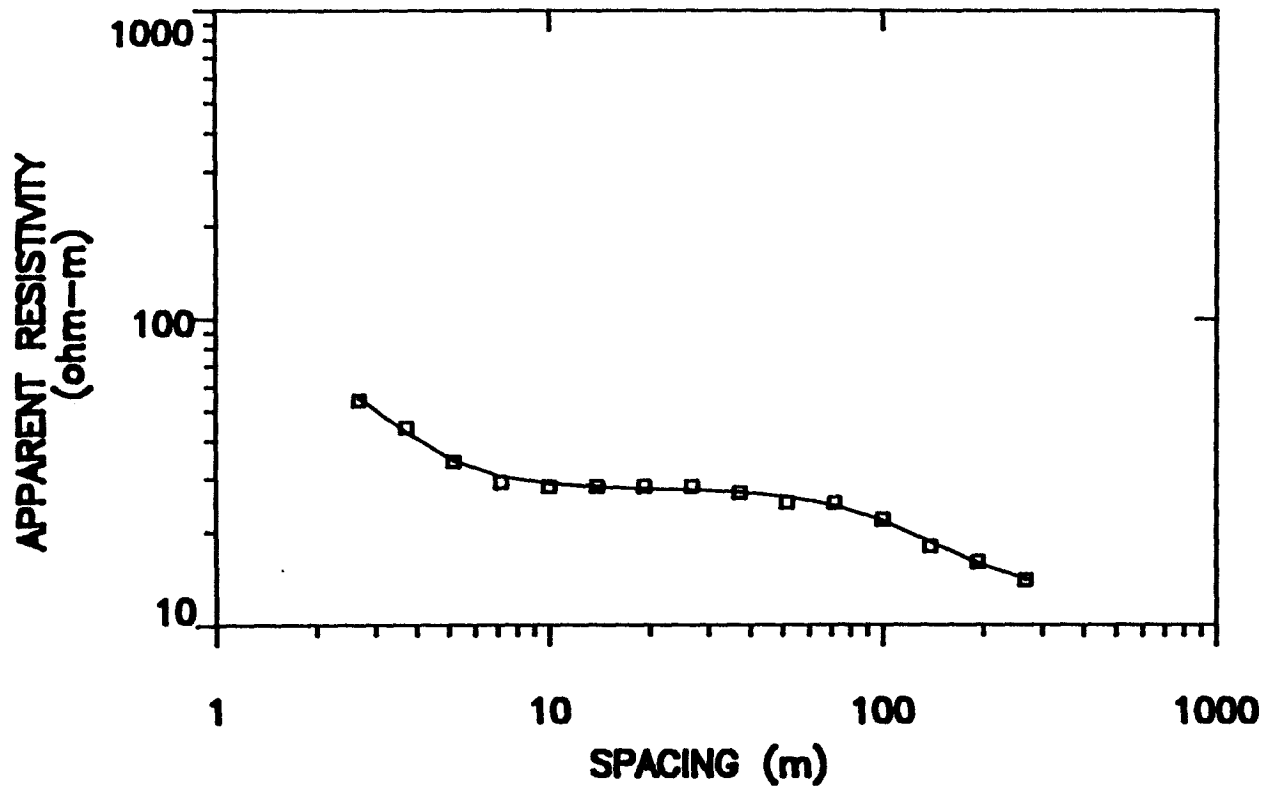
Fecha *30-01-91* Rumbo AB *E-W*

PERFIL *I*

Interpretación	Observaciones:
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for: ITGE		SEGURA
by: ADARO		ORCE (GR)
Data Set: 31	Date: 91	Azimuth: E-W
Equipment: ADARO	Soundings: 31	

## DATA SET: 4II

CLIENT: ITGE  
 LOCATION: GRCE  
 COUNTY: (GR)  
 PROJECT: SEGURA  
 ELEVATION: 950.00  
 SOUNDING COORDINATES: X: 554100.0000 Y: 4176550.0000

DATE: 91  
 SOUNDING: 4II  
 AZIMUTH: E-W  
 EQUIPMENT: ADARO

## Schlumberger Configuration

FITTING ERROR: 1.781 PERCENT

L #	RESISTIVITY (ohm-m)	CHARGEABILITY (pfe)	THICKNESS (meters)	ELEVATION (meters)	CONDUCTANCE (Siemens)
1	67.76		0.869	950.0	
2	12.40		16.99	949.1	0.0128
3	29.56		31.46	932.1	1.36
4	14.04			900.6	1.06

ALL PARAMETERS ARE FREE

No.	Spacing (m)	PA DATA	(ohm-m) SYNTHETIC	DIFFERENCE (percent)
1	2.68	24.00	24.01	-0.0716
2	3.73	17.00	16.94	0.295
3	5.18	14.00	14.03	-0.259
4	7.20	13.00	13.13	-1.04
5	10.00	13.00	12.92	0.549
6	13.90	13.00	13.09	-0.743
7	19.30	14.00	13.69	2.21
8	26.80	15.00	14.83	1.09
9	37.30	16.00	16.49	-3.11
10	51.80	18.00	18.22	-1.26
11	72.00	20.00	19.39	3.03
12	100.0	20.00	19.50	2.47
13	139.0	18.00	18.57	-3.17
14	193.0	17.00	17.12	-0.746
15	268.0	16.00	15.81	1.14

PARAMETER RESOLUTION MATRIX:  
 "F" INDICATES FIXED PARAMETER

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ADARO

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P 1	0.77				
P 2	-0.01	1.00			
P 3	-0.02	0.00	0.85		
P 4	0.00	0.00	-0.01	0.97	
T 1	0.08	0.01	0.01	0.00	0.97
T 2	-0.04	-0.01	-0.11	0.01	0.02
T 3	0.02	0.00	0.28	0.08	-0.01
	P 1	P 2	P 3	F 4	T 1
					T 2
					T 3

ADAFD

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Proyecto: .....  
 Zona: Orce - Granada  
 Observador: Juan W. Quintanar  
 Situación: .....

COORDENADAS  
 X 554 100  
 Y 4176 550  
 Z 950

mV: Adorno - 01  
 mA: GE0 328

Rumbo AB  
E.-W.

S.E.V. 4

Perfil: II

CONSTANTES PARA DISPOSITIVO SCHULUMBERGER  
 SIMETRICO  
 MN

Estación	AB/2	MN	I (mA)	Esc. Volt.	V (mV)	$\rho$ ( $\Omega$ m)	MN	I (mA)	Esc. Volt.	V (mV)	$\rho$ ( $\Omega$ m)	OBSERVACIONES	1 m	10 m	50 m	100 m
1	2.68	1	400	1V	440	24							21.78			
2	3.73		390	300 mv	155	17							42.92			
3	5.18		345	100 mv	58	14							83.51			
4	7.2		410	"	33	13							182.1			
6	10		420	80 mv	17	13							313.4			
6	13.9		340	10 mv	7.4	13							608.2			
7	19.3		330	"	3.9	14							1.189	109.2		
8	26.8		530	"	3.6	15	10	525	100 mv	37	15		2.258	217.8		
9	37.3		320	3 mv	1.2	16		820	30 mv	12.5	17		4.370	429.2		
10	51.8	10	470	3 mv	1	18		470	"	10.2	18		8.429	836.1		
11	72	10	410	10 mv	5	20							16.290	1.621		
12	100		460	"	2.9	20							31.420	3.134		
13	139		705	"	2.05	18							60.700	6.062	1.175	
14	193		620	3 mv	0.92	17								11.690	2.301	
15	268		490	"	0.35	16								22.660	4.474	
16	373													43.700	8.702	4.292
17	518													84.290	16.820	8.351
18	720													162.900	32.530	16.210
19	1.000														62.790	31.340
20	1.390														121.400	60.620
21	1.930														234.000	116.900
22	2.680														451.200	225.600
23	3.730															437.000
24	5.180															842.880
25	7.200															1.628.620
26	10.000															3.141.510

OBSERVACIONES:

FECHA: 30-01-91



Departamento de Geofísica

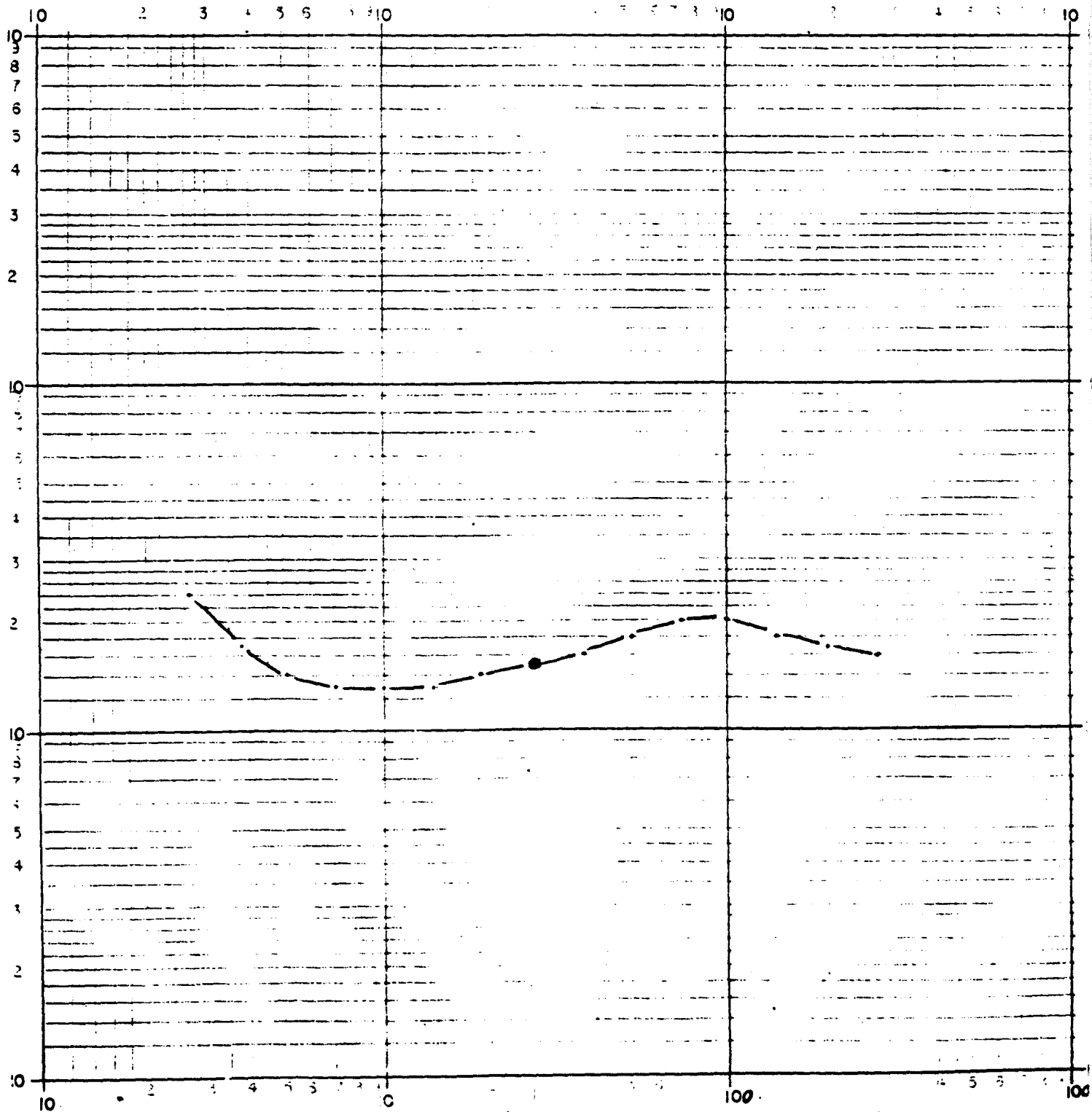
Estudio ORCE - Gemada

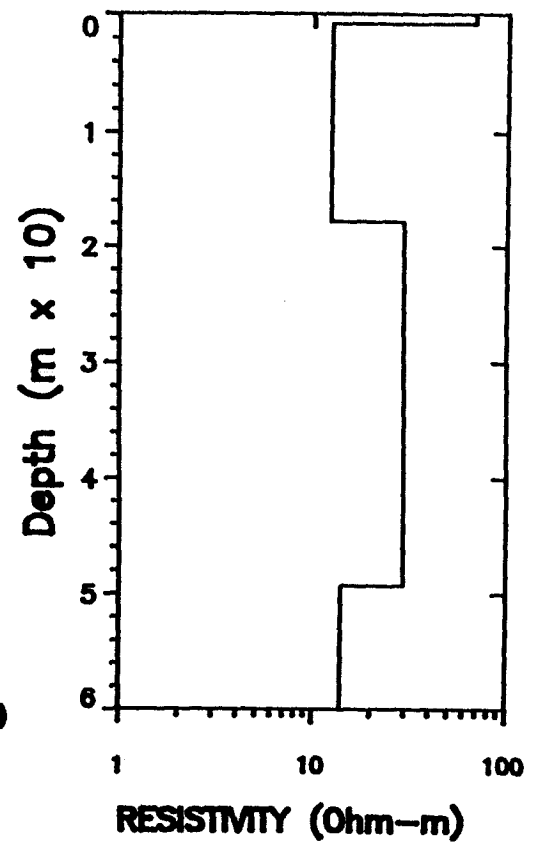
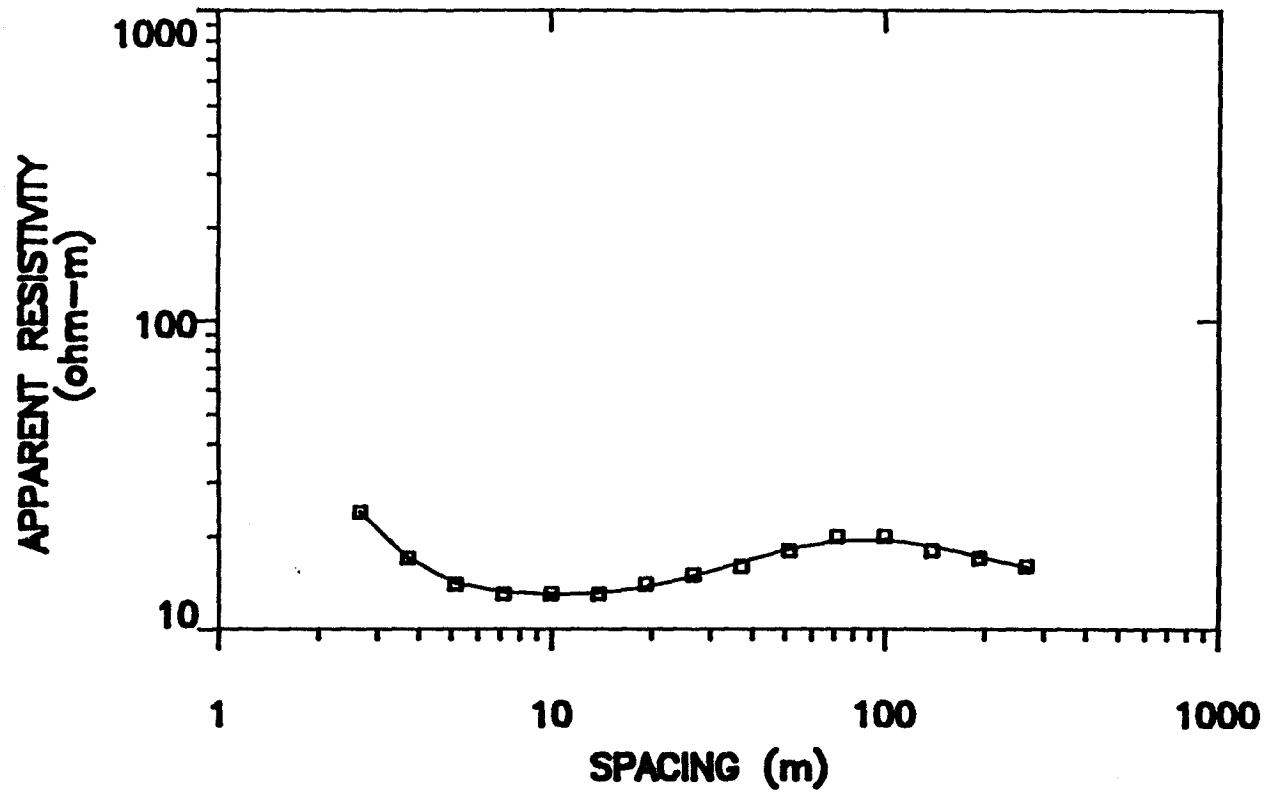
S.E.V. 4

Fecha 30-01-91 Rumbo AB E-W

PERFIL II

Interpretación	Observaciones:
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for: ITGE		SEGURA
by: ADARO		ORCE (GR)
Data Set: 4I	Date: 91	
Equipment: ADARO	Sounding: 4I	Azimuth: E-W

## DATA SET: SII

CLIENT: ITGE  
 LOCATION: ORCE  
 COUNTY: (GR)  
 PROJECT: SEGURA  
 ELEVATION: 970.00  
 SOUNDING COORDINATES: X: 554650.0000 Y: 4178170.0000

DATE: 91  
 SOUNDING: SII  
 AZIMUTH: E-W  
 EQUIPMENT: ADARO

## Schlumberger Configuration

FITTING ERROR: 4.074 PERCENT

L #	RESISTIVITY (ohm-m)	CHARGEABILITY (pfe)	THICKNESS (meters)	ELEVATION (meters)	CONDUCTANCE (Siemens)
				970.0	
1	158.5		4.34	965.6	0.0273
2	22.34		11.27	954.3	0.504
3	44.21		6.19	948.1	0.140
4	27.99		34.04	914.1	1.21
5	12.50				

ALL PARAMETERS ARE FREE

No.	Spacing (m)	PA DATA	(ohm-m) SYNTHETIC	DIFFERENCE (percent)
1	2.68	161.6	153.0	5.31
2	3.73	143.8	145.3	-1.03
3	5.18	120.9	129.9	-7.51
4	7.20	103.0	104.8	-1.73
5	10.00	77.63	73.98	4.70
6	13.90	48.36	47.58	1.61
7	19.30	30.54	33.31	-9.05
8	26.80	31.00	29.01	6.40
9	37.30	28.00	28.43	-1.56
10	51.80	28.00	27.72	0.993
11	72.00	26.00	25.77	0.883
12	100.0	23.00	22.62	1.61
13	139.0	19.00	19.00	-0.0421
14	193.0	16.00	16.00	-0.00679
15	268.0	14.00	14.15	-1.12

PARAMETER RESOLUTION MATRIX:

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ADARO

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"F" INDICATES FIXED PARAMETER

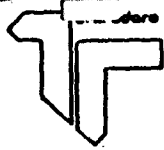
	P 1	P 2	P 3	P 4	P 5	T 1	T 2	T 3	T 4
P 1	1.00								
P 2	0.00	0.99							
P 3	0.00	0.01	0.24						
P 4	0.00	-0.02	0.27	0.77					
P 5	0.00	0.00	0.01	-0.01	1.00				
T 1	0.00	0.00	0.00	0.00	0.00	1.00			
T 2	0.00	-0.04	-0.30	0.00	0.00	0.01	0.68		
T 3	0.00	0.01	0.04	0.12	0.00	0.00	0.03	0.04	
T 4	0.00	0.04	0.02	0.20	0.02	-0.01	0.25	0.12	0.52

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ADREF

+





Proyecto: .....  
 Zona: Ocece - Granada  
 Observador: Juan G. Cuatrecasas  
 Situación: .....

COORDENADAS  
 X 554650  
 Y 4178170  
 Z 970

mV: Adoro...  
 mA: 650 N: 328

Libro A  
E-W

S.E.V. 5

Perfil: II

CONSTANTES PARA DISPOSITIVO SCHULUMBERGER  
 SIMETRICO  
 MN

Estación	AB/2	MN	I (mA)	Esc. Volt.	V (mV)	$\rho(\Omega m)$	MN	I (mA)	Esc. Volt.	V (mV)	$\rho(\Omega m)$	OBSERVACIONES	1 m	10 m	50 m	100 m
1	2.68	1	98	1V	570	127							21,78			
2	3.73		130	"	342	113							42,92			
3	5.18		110	300uV	125	95							83,51			
4	7.2		280	"	140	81							182,1			
5	10		240	100uV	46.5	61							313,4			
6	13.9		185	30uV	11.6	38							606,2			
7	19.3		430	"	8.7	24	10	435	300uV	125	31		1.169	109.2		
8	26.8		330	10uV	3.5	24		330	100uV	47.5	31		2.256	217.8		
9	37.3		315	"	1.6	22		315	30uV	20.5	28		4.370	429.2		
10	51.8	10	250	10uV	8.4	28							8.429	836.1		
11	72		355	"	5.7	26							16.290	1.621		
12	100		605	"	4.45	23							31.420	3.134		
13	139		195	3uV	0.60	19							60.700	6.062	1.175	
14	193		425	"	0.58	16								11.690	2.301	
15	268		415	"	0.26	14								22.560	4.474	
16	373													43.700	8.702	4.292
17	518													84.290	16.820	8.361
18	720													162.900	32.530	16.210
19	1.000														62.790	31.340
20	1.390														121.400	60.620
21	1.930														234.000	116.900
22	2.680														461.200	225.600
23	3.730															437.000
24	5.180															842.880
25	7.200															1.628.520
26	10.000															3.141.510

OBSERVACIONES:

FECHA: 30-01-91



Departamento de Geofísica

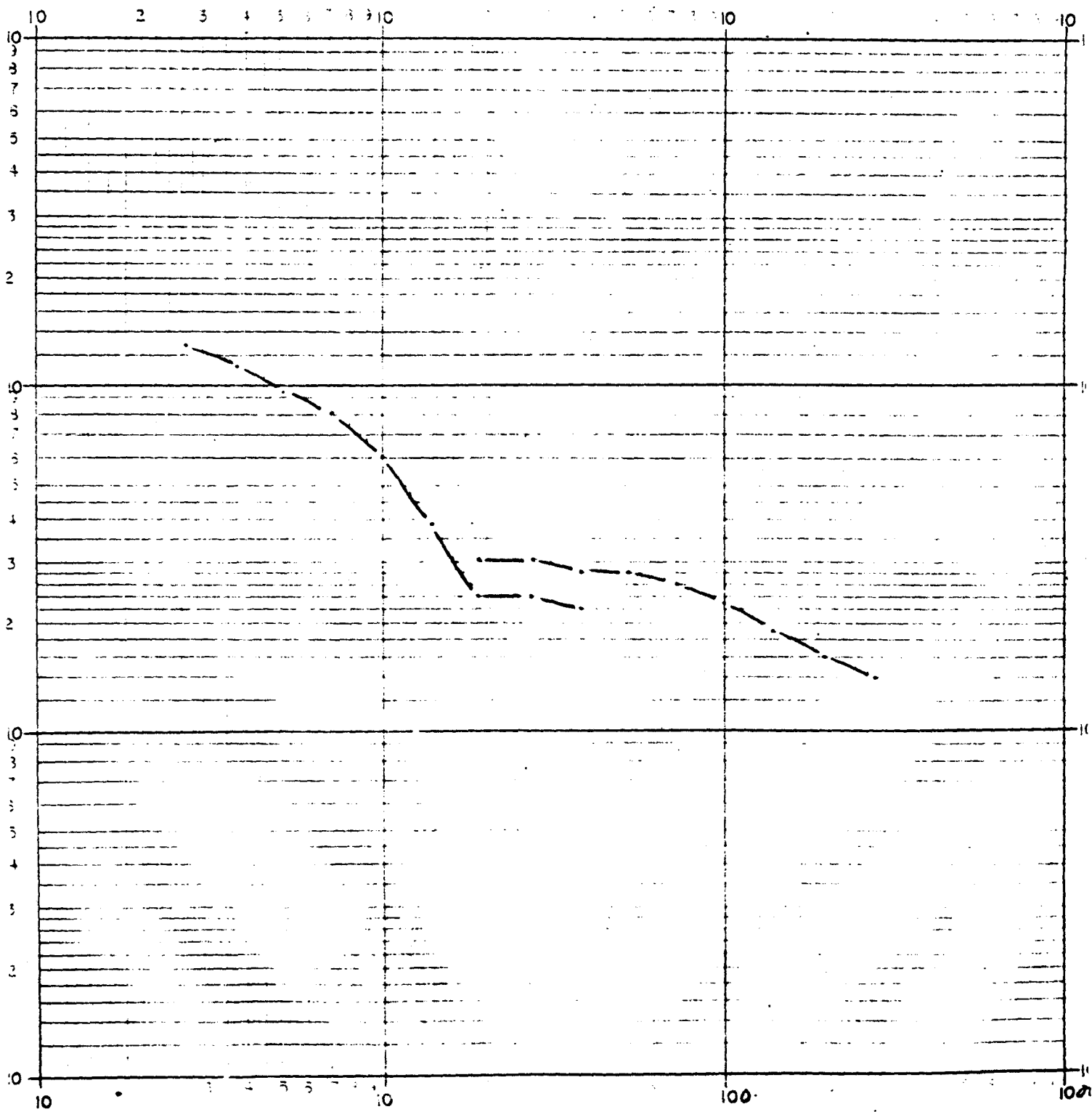
Estudio *Oree - Granada*

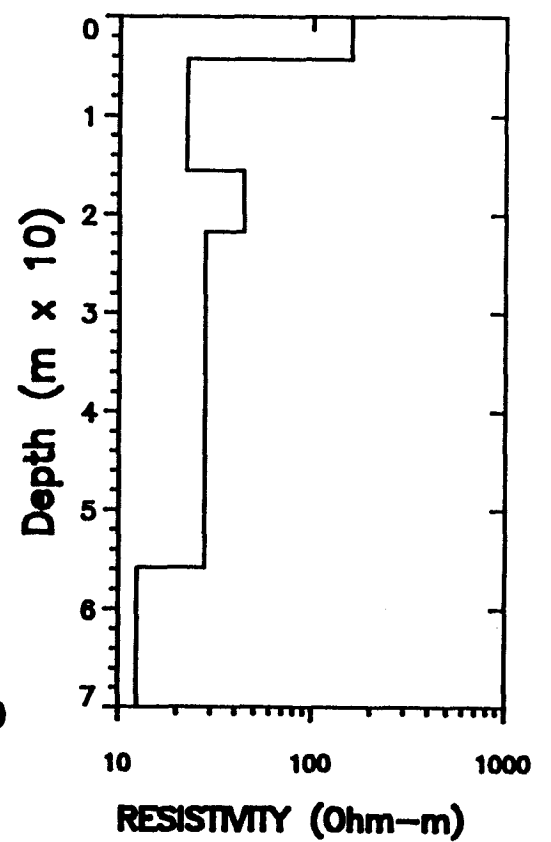
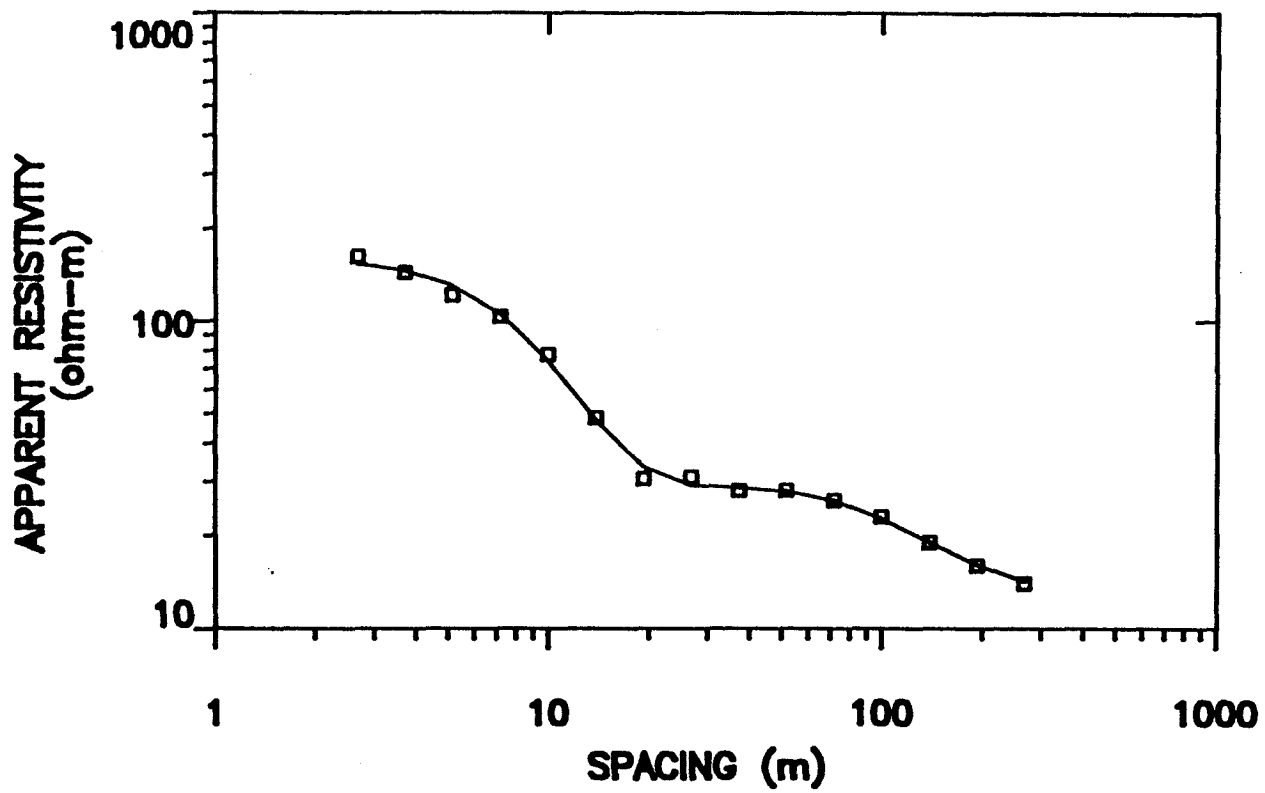
S.E.V. *5*

Fecha *30-01-91* Rumbo AB *E-W*

PERFIL *II*

Interpretación	Observaciones:
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for: ITGE		SEGURA
by: ADARO		ORCE (GR)
Data Set: 511	Date: 91	Azimuth: E-W
Equipment: ADARO	Sounding: 511	

DATA SET: 6III

CLIENT: ITGE	DATE: 91
LOCATION: ORCE	SOUNDING: 6III
COUNTY: (GR)	AZIMUTH: E-W
PROJECT: SEGURA	EQUIPMENT: ADARO
ELEVATION: 1020.00	
SOUNDING COORDINATES: X: 553350.0000 Y: 4171200.0000	

Schlumberger Configuration

FITTING ERROR: 1.410 PERCENT

L #	RESISTIVITY (ohm-m)	CHARGEABILITY (pfe)	THICKNESS (meters)	ELEVATION (meters)	CONDUCTANCE (Siemens)
				1020.0	
1	266.4		0.376	1019.6	0.00141
2	1110.6		5.19	1014.4	0.00468
3	597.3		71.10	943.3	0.119
4	112.1				

ALL PARAMETERS ARE FREE

No.	Spacing (m)	PA DATA	(ohm-m) SYNTHETIC	DIFFERENCE (percent)
1	2.68	769.0	778.3	-1.20
2	3.73	881.8	862.7	2.17
3	5.18	914.7	920.0	-0.582
4	7.20	933.3	939.0	-0.604
5	10.00	918.0	911.1	0.754
6	13.90	839.1	841.6	-0.298
7	19.30	747.1	755.9	-1.17
8	26.80	687.9	682.5	0.792
9	37.30	641.9	631.7	1.59
10	51.80	587.2	593.4	-1.06
11	72.00	551.0	548.0	0.543
12	100.0	478.0	478.0	-0.0157
13	139.0	367.0	377.2	-2.79
14	193.0	274.0	266.5	2.70
15	268.0	180.0	181.4	-0.825

PARAMETER RESOLUTION MATRIX:  
"F" INDICATES FIXED PARAMETER

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ADARO

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P 1	0.54								
P 2	-0.01	1.00							
P 3	0.00	0.00	1.00						
P 4	0.00	0.00	0.00	1.00					
T 1	-0.49	-0.01	0.00	0.00	1.00	0.48			
T 2	0.02	0.00	0.00	0.00	0.00	0.03	0.99		
T 3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	
	P 1	P 2	P 3	P 4	T 1	T 2	T 3		

\* ADARU \*



Proyecto: .....  
 Zona: Oreja - Granada  
 Observador: Juan Cu. Martínez Peña  
 Situación: .....

COORDENADAS  
 X 553350  
 Y 4171.200  
 Z 1020

m V: Adoro - 01  
 m A: GEO N° 328

Rumbo E-W

S.E.V. 6

Perfil: III

CONSTANTES PARA DISPOSITIVO SCHULUMBERGER SIMETRICO MN

Estación	AB/2	MN	I (mA)	Esc. Volt.	V (mV)	ρ (Ωm)	MN	I (mA)	Esc. Volt.	V (mV)	ρ (Ωm)	OBSERVACIONES	CONSTANTES PARA DISPOSITIVO SCHULUMBERGER SIMETRICO MN				
													1 m	10 m	50 m	100 m	
1	2.68	1	72	3V	2320	702							21.78				
2	3.73		60	"	1125	805							42.92				
3	5.18		48	1V	480	835							83.51				
4	7.2		118	"	620	852							182.1				
5	10		160	"	428	838							313.4				
6	13.9		190	"	240	766							606.2				
7	19.3		180	300uV	105	682							1.169	109.2			
8	26.8		210	100uV	58.5	628							2.256	217.8			
9	37.3		190	"	25.5	586							4.370	429.2			
10	51.8		220	30uV	14	536							8.429	835.1			
11	72		23.5	10uV	7.25	503	10	235	100uV	82	566		18.290	1.821			
12	100		315	"	4.2	419		315	"	48	478		31.420	3.134			
13	139		190	30uV	1.05	335		190	30uV	11.5	367		60.700	6.062	1.175		
14	193	10	320	10uV	7.5	374								11.890	2.301		
15	268		300	"	2.4	180								22.560	4.474		
16	373													43.700	8.702	4.292	
17	518													84.290	16.820	8.361	
18	720													182.900	32.530	16.210	
19	1.000														62.790	31.340	
20	1.380															121.400	60.620
21	1.930															234.000	116.900
22	2.680															461.200	225.600
23	3.730																437.000
24	5.180																842.880
25	7.200																1.628.620
26	10.000																3.141.510

OBSERVACIONES:

FECHA: 31-01-91



Departamento de Geofísica

Estudio *Oree - Gramada*

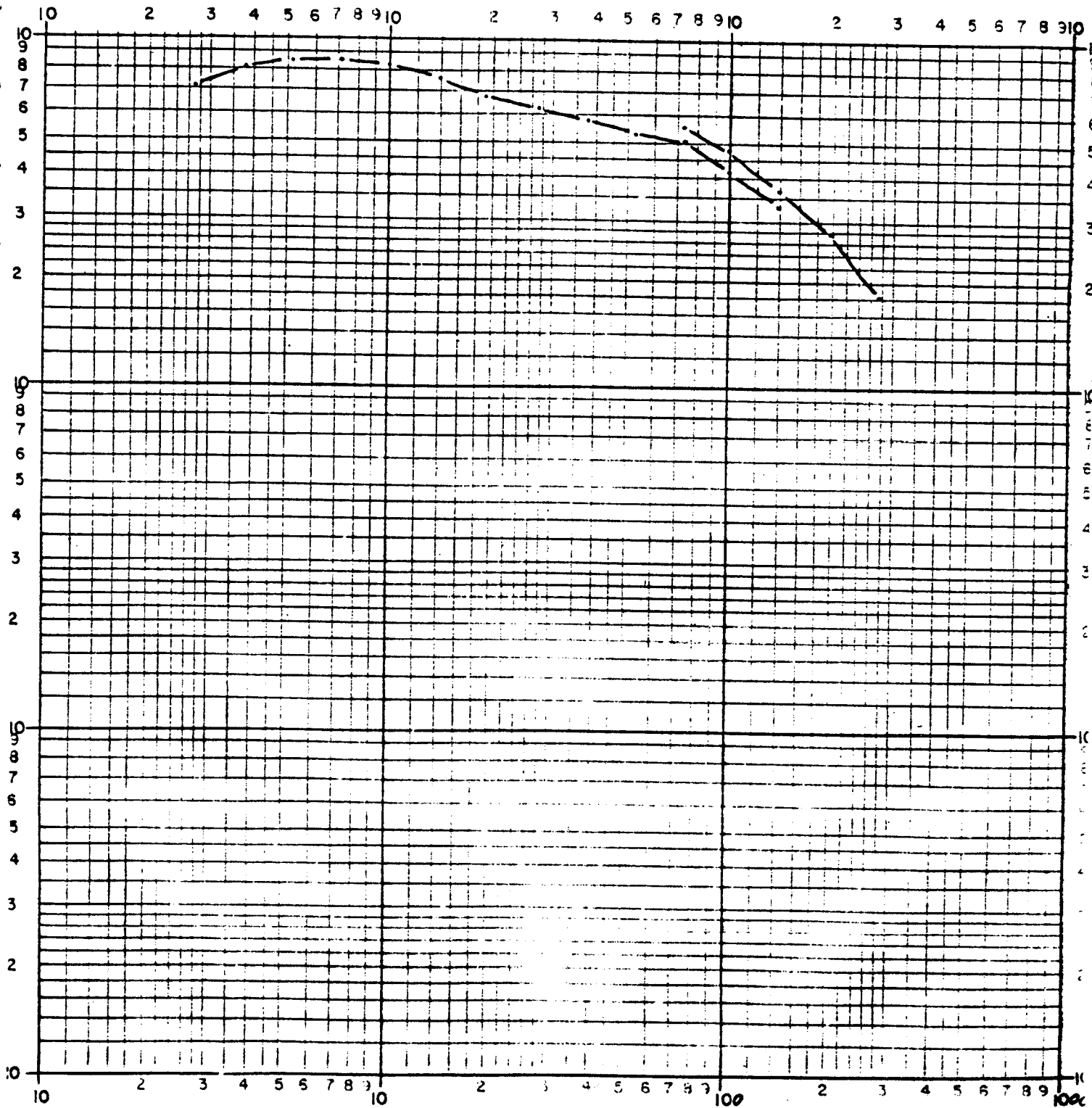
S.E.V. *6*

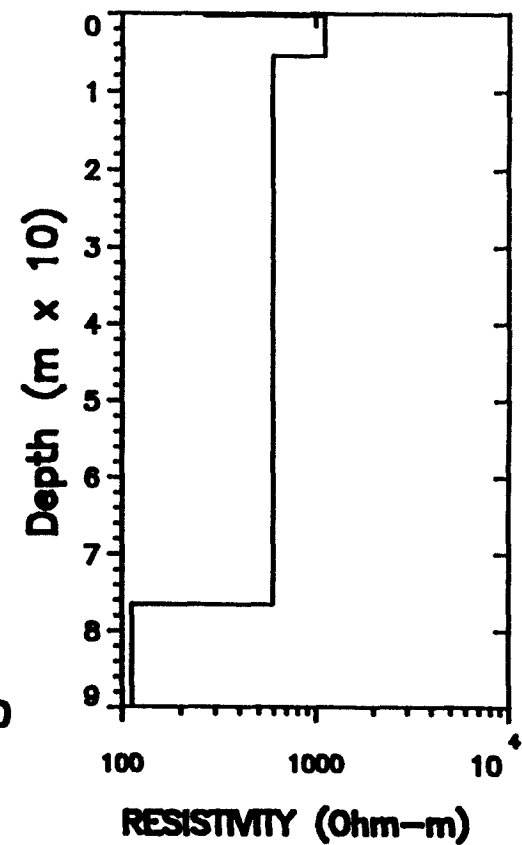
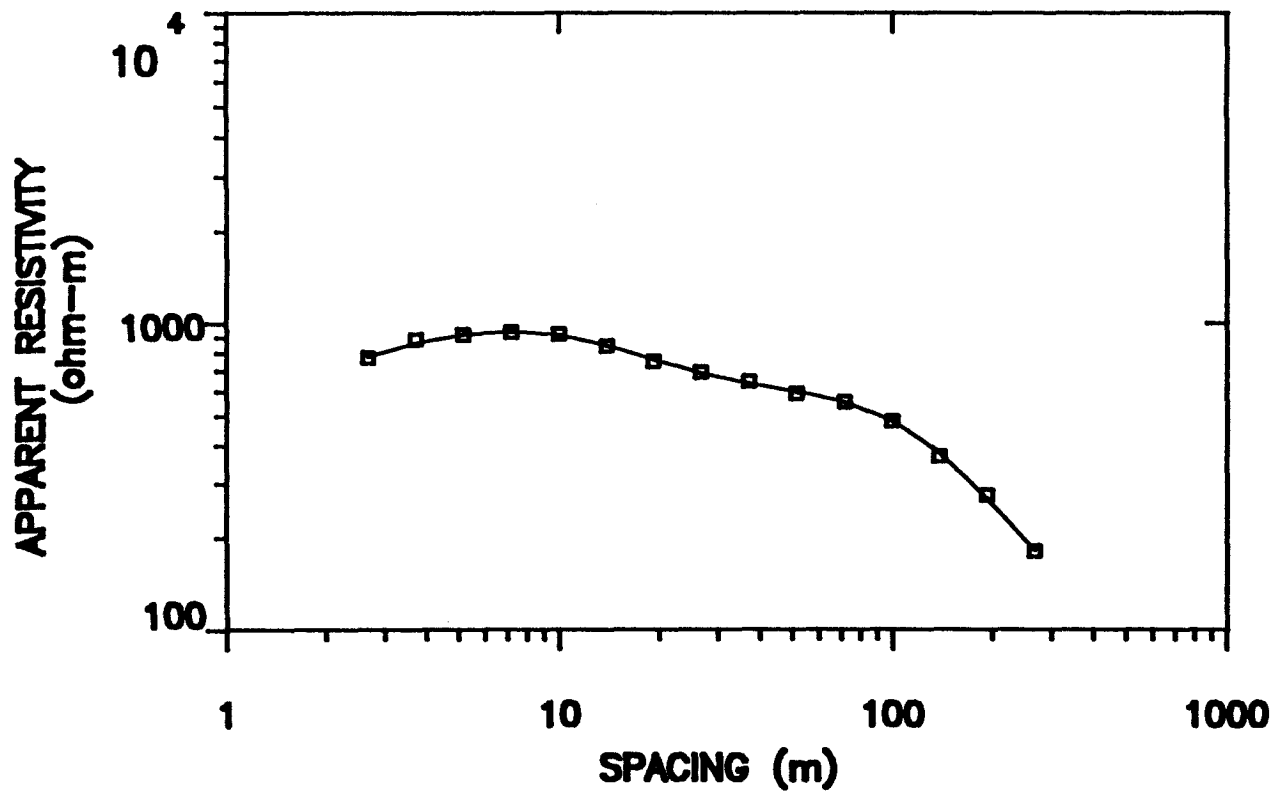
Fecha *31-01-91* Rumbo AB *E-W*

PERFIL *III*

Interpretación

Observaciones:





for: ITGE		SEGURA
by: ADARO		ORCE (GR)
Data Set: 6111	Date: 91	Azimuth: E-W
Equipment: ADARO	Sounding: 611	



## DATA SET: 7111

CLIENT: ITGE DATE: 91  
LOCATION: ORCE SOUNDING: 7111  
COUNTY: (GR) AZIMUTH: E-W  
PROJECT: SEGURA EQUIPMENT: ADARO  
ELEVATION: 990.00  
SOUNDING COORDINATES: X: 554470.0000 Y: 4173270.0000

Schlumberger Configuration

FITTING ERROR: 3.189 PERCENT

L #	RESISTIVITY (ohm-m)	CHARGEABILITY (pfe)	THICKNESS (meters)	ELEVATION (meters)	CONDUCTANCE (Siemens)
				990.0	
1	682.0		0.506	989.4	7.429E-04
2	1335.3		1.93	987.5	0.00145
3	703.2		33.32	954.2	0.0473
4	735.9		32.54	921.6	0.0442
5	101.8				

ALL PARAMETERS ARE FREE

No.	Spacing (m)	PA DATA	(ohm-m) SYNTHETIC	DIFFERENCE (percent)
1	2.68	1027.0	1067.9	-3.99
2	3.73	1106.0	1070.0	3.24
3	5.18	1050.0	1016.4	3.19
4	7.20	924.0	926.4	-0.270
5	10.00	800.0	836.6	-4.58
6	13.90	770.0	772.2	-0.296
7	19.30	728.0	735.3	-1.00
8	26.80	727.0	714.3	1.74
9	37.30	728.0	696.5	4.31
10	51.80	674.0	669.1	0.721
11	72.00	597.0	615.5	-3.12
12	100.0	512.0	520.5	-1.66
13	139.0	377.0	386.3	-2.48
14	193.0	268.0	251.9	6.00
15	268.0	156.0	161.0	-3.25

PARAMETER RESOLUTION MATRIX:

\*

ADARO

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"F" INDICATES FIXED PARAMETER

F 1	0.16								
F 2	0.17	0.72							
F 3	-0.03	0.03	0.93						
F 4	0.02	-0.03	0.05	0.40					
F 5	-0.01	0.01	-0.03	0.03	0.43				
T 1	-0.12	-0.10	0.03	-0.02	0.01	0.09			
T 2	-0.05	0.23	0.06	-0.03	0.03	0.06	0.18		
T 3	-0.01	0.00	-0.01	0.25	0.18	0.01	0.02	0.27	
T 4	0.00	0.00	-0.01	0.28	0.17	0.00	0.01	0.28	0.28
	F 1	F 2	F 3	F 4	F 5	T 1	T 2	T 3	T 4

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ADARC

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e. a. odore

Proyecto: .....

Zona: Orce - Granada

Observador: Juan Lu. Quintanar

Situación: .....

COORDENADAS

X 554470

Y 4173270

Z 990

mV: Adaro-01

mA: 650-328

Numero A: E-X

S.E.V. 7

Perfil: III

CONSTANTES PARA DISPOSITIVO SCHULUMBERGER  
SIMETRICO  
MN

Estación	AB/2	MN	I (mA)	Esc. Volt.	V (mV)	P (Ωm)	MN	I (mA)	Esc. Volt.	V (mV)	P (Ωm)	OBSERVACIONES	1 m	10 m	50 m	100 m
1	2.68	1	28	3V	1320	1027							21.78			
2	3.73		45	"	1160	1106							42.92			
3	5.18		37	1V	465	1050							83.51			
4	7.2		86	"	490	924							182.1			
5	10		85	"	250	922	800						313.4			
6	13.9		100	300uV	127	770							606.2			
7	19.3		98	100uV	61	728							1.169	109.2		
8	28.8		135	"	43.5	727							2.256	217.8		
9	37.3		120	"	20	728							4.370	429.2		
10	51.8		150	30uV	12	674	10	150	300uV	124	690		8.429	835.1		
11	72		195	10uV	7.15	597		195	100uV	73	607		16.290	1.621		
12	100	10	245	100uV	40	512							31.420	3.134		
13	139		265	30uV	16.5	377							60.700	8.062	1.175	
14	193		240	10uV	5.5	268								11.690	2.301	
15	268		195	"	1.35	156								22.560	4.474	
16	373													43.700	8.702	4.292
17	518													84.290	16.820	8.351
18	720													182.900	32.530	16.210
19	1.000														62.790	31.340
20	1.390														121.400	60.620
21	1.930														234.000	116.900
22	2.680														451.200	225.600
23	3.730															437.000
24	5.180															842.880
25	7.200															1.828.520
26	10.000															3.141.510

OBSERVACIONES:

FECHA: 30-01-91



Departamento de Geofísica

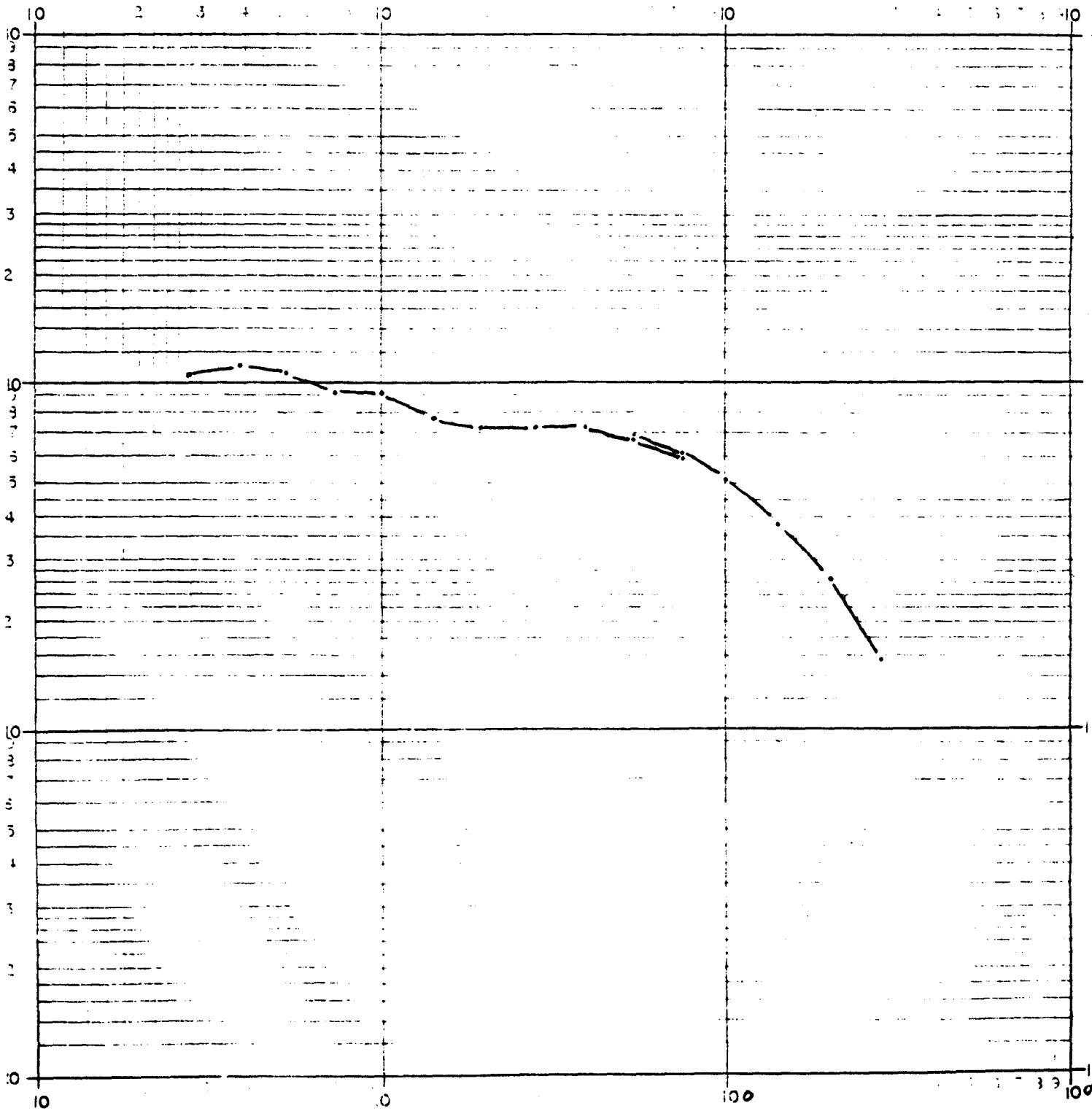
Estudio *Orcu - Gramada*

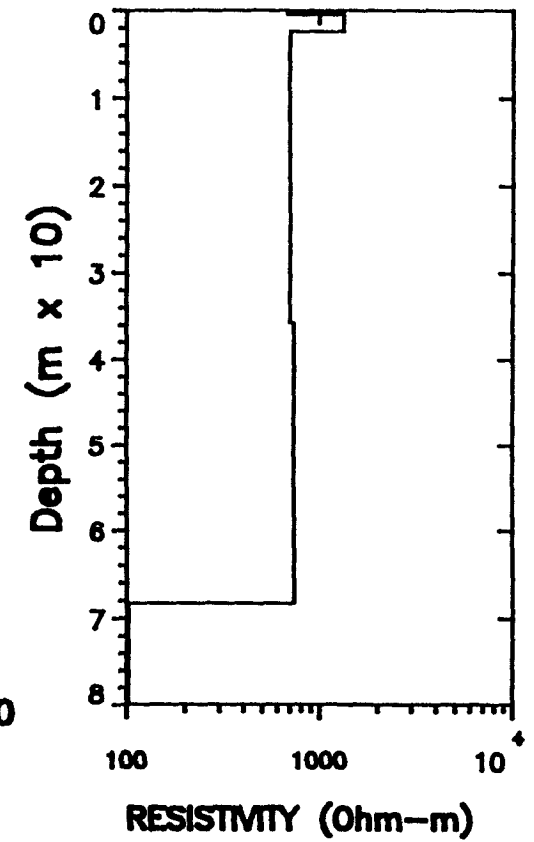
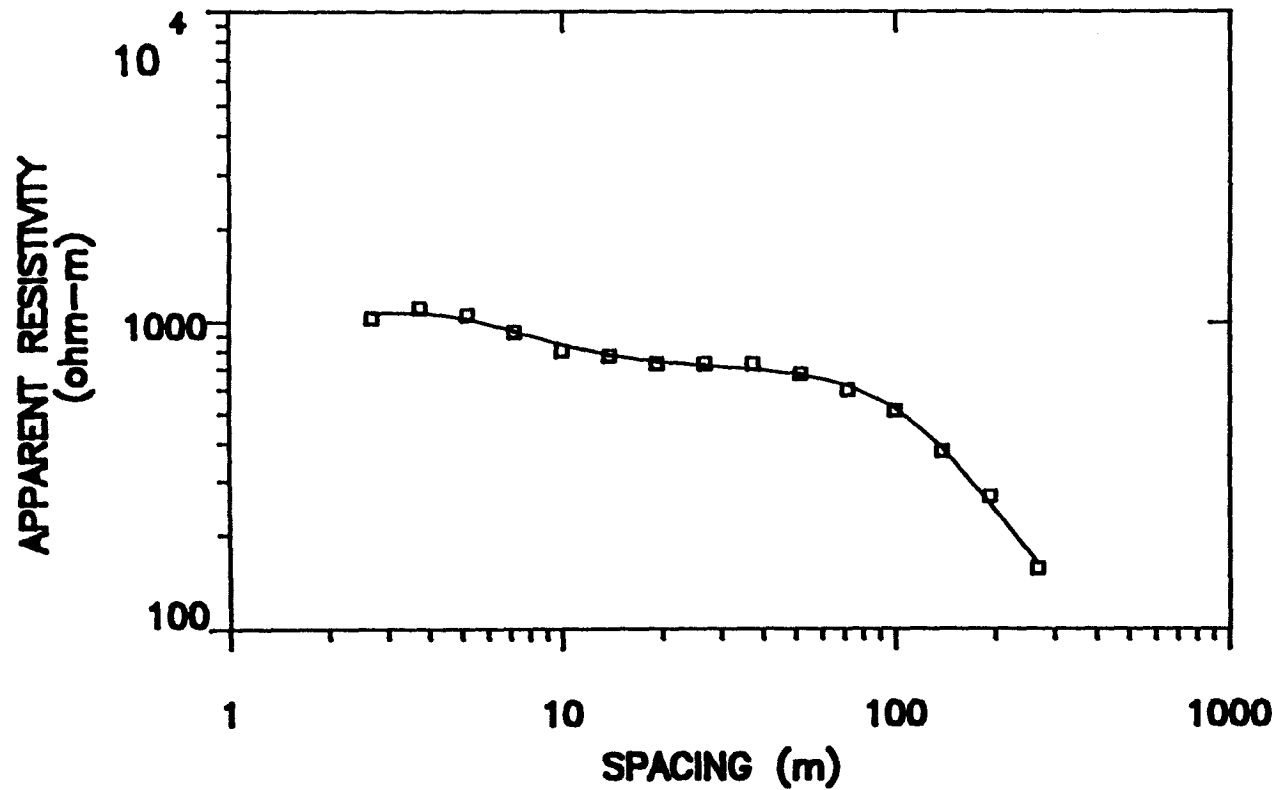
S.E.V. *7*

Fecha *30-01-91* Rumbo AB *E-W*

PERFIL *III*

Interpretación	Observaciones:
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for: ITGE		SEGURA
by: ADARO		ORCE (GR)
Data Set: 7III	Date: 91	
Equipment: ADARO	Sounding: 7III	Azimuth: E-W

DATA SET: 8111

CLIENT: ITGE  
 LOCATION: ORCE  
 COUNTY: (GR)  
 PROJECT: SEGURA  
 ELEVATION: 940.00  
 SOUNDING COORDINATES: X: 556000.0000 Y: 4175600.0000

DATE: 91  
 SOUNDING: 8111  
 AZIMUTH: E-W  
 EQUIPMENT: ADARO

Schlumberger Configuration

FITTING ERROR: 2.507 PERCENT

#	RESISTIVITY (ohm-m)	CHARGEABILITY (pfe)	THICKNESS (meters)	ELEVATION (meters)	CONDUCTANCE (Siemens)
				940.0	
1	925.0		1.22	938.7	0.00132
2	91.28		3.35	935.4	0.0367
3	25.61		12.72	922.6	0.496
4	12.49		68.72	853.9	5.50
5	91.00				

ALL PARAMETERS ARE FREE

No.	Spacing (m)	PA DATA	(ohm-m) SYNTHETIC	DIFFERENCE (percent)
1	2.68	410.0	417.8	-1.92
2	3.73	250.0	238.2	4.70
3	5.18	121.0	126.7	-4.72
4	7.20	76.00	74.63	1.79
5	10.00	50.00	49.43	1.12
6	13.90	34.00	34.73	-2.15
7	19.30	27.00	26.78	0.787
8	26.80	22.00	22.08	-0.407
9	37.30	19.00	18.49	2.65
10	51.80	15.50	16.18	-4.44
11	72.00	16.00	15.61	2.39
12	100.0	17.00	16.90	0.574
13	139.0	20.00	20.13	-0.657
14	193.0	25.00	25.20	-0.825
15	268.0	32.00	31.78	0.668

PARAMETER RESOLUTION MATRIX:

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ADARO

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"F" INDICATES FIXED PARAMETER

P 1	1.00									
P 2	0.00	0.99								
P 3	0.00	-0.01	0.99							
P 4	0.00	0.00	0.00	1.00						
P 5	0.00	0.00	-0.01	-0.01	0.96					
T 1	0.00	0.00	0.00	0.00	0.00	1.00				
T 2	0.00	0.01	0.01	0.00	0.01	0.00	0.99			
T 3	0.00	0.01	0.01	0.01	0.02	0.00	-0.01	0.98		
T 4	0.00	-0.01	-0.01	-0.01	-0.03	0.00	0.01	0.02	0.98	
	F 1	P 2	P 3	P 4	P 5	T 1	T 2	T 3	T 4	

\*

ADARO

\*



Proyecto: .....  
 Zona: *Orce - Granada*  
 Observador: *Juan A. Quintanes*  
 Situación: .....

COORDENADAS

X *556.000*  
 Y *4175600*  
 Z *940*

mV: *Adaro - 01*  
 mA: *660 N° 328*

Número A: *E - W*

S.E.V. *8*

Perfil: *III*

CONSTANTES PARA DISPOSITIVO SCHULUMBERGER SIMETRICO MN

Estación	AB/2	MN	I (mA)	Esc. Volt.	V (mV)	P (Ωm)	MN	I (mA)	Esc. Volt.	V (mV)	P (Ωm)	OBSERVACIONES	CONSTANTES PARA DISPOSITIVO SCHULUMBERGER SIMETRICO MN			
													1 m	10 m	50 m	100 m
1	2.68	<i>1</i>	<i>130</i>	<i>3v</i>	<i>2450</i>	<i>410</i>							21.78			
2	3.73		<i>145</i>	<i>1v</i>	<i>845</i>	<i>250</i>							42.92			
3	5.18		<i>145</i>	<i>300 mv</i>	<i>210</i>	<i>121</i>							83.51			
4	7.2		<i>170</i>	<i>11</i>	<i>80</i>	<i>76</i>							162.1			
6	10		<i>195</i>	<i>100 mv</i>	<i>31</i>	<i>50</i>							313.4			
6	13.9		<i>160</i>	<i>30 mv</i>	<i>9</i>	<i>34</i>							606.2			
7	19.3		<i>151</i>	<i>10 mv</i>	<i>3.6</i>	<i>27</i>							1.169	109.2		
8	26.8		<i>180</i>	<i>3 mv</i>	<i>1.73</i>	<i>22</i>	<i>180</i>	<i>30 mv</i>	<i>16.5</i>	<i>20</i>			2.256	217.8		
9	37.3		<i>197</i>	<i>1 mv</i>	<i>0.85</i>	<i>19</i>	<i>197</i>	<i>10 mv</i>	<i>8</i>	<i>18</i>			4.370	429.2		
10	51.8	<i>10</i>	<i>180</i>	<i>10 mv</i>	<i>3.3</i>	<i>15.5</i>							8.429	836.1		
11	72		<i>170</i>	<i>3 mv</i>	<i>1.7</i>	<i>16</i>							16.290	1.621		
12	100		<i>222</i>	<i>11</i>	<i>1.2</i>	<i>17</i>							31.420	3.134		
13	139		<i>540</i>	<i>3 mv</i>	<i>1.8</i>	<i>20</i>							60.700	6.062	1.175	
14	193		<i>330</i>	<i>3 mv</i>	<i>0.7</i>	<i>25</i>								11.690	2.301	
15	268		<i>425</i>	<i>11</i>	<i>0.60</i>	<i>32</i>								22.560	4.474	
16	373													43.700	8.702	4.292
17	518													84.290	16.820	8.351
18	720													162.900	32.530	16.210
19	1.000														62.790	31.340
20	1.390														121.400	60.620
21	1.930														234.000	116.900
22	2.680														461.200	225.600
23	3.730															437.000
24	5.180															842.880
25	7.200															1.628.520
26	10.000															3.141.510

OBSERVACIONES:

FECHA: *30-01-91*





Departamento de Geofísica

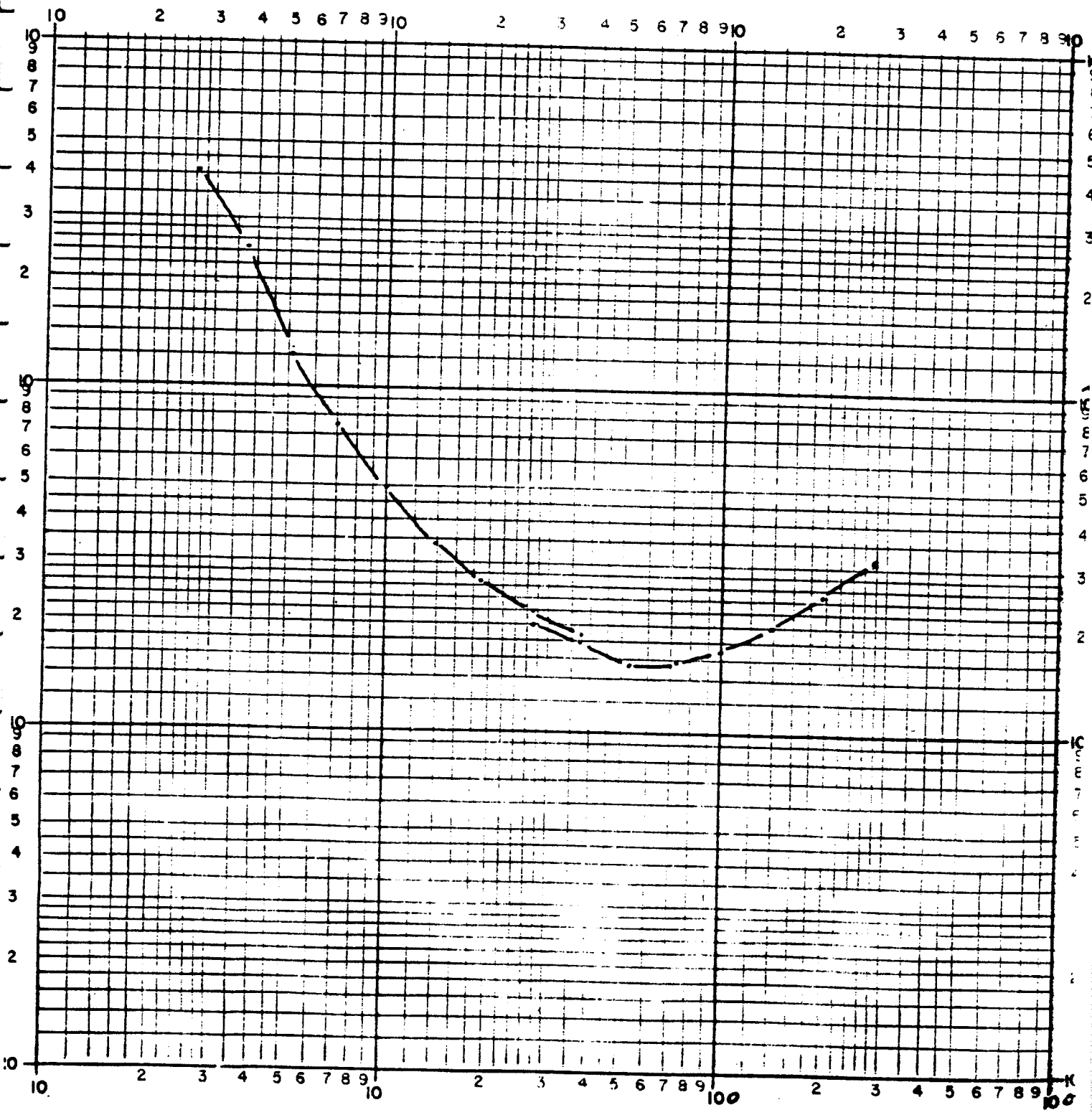
Estudio Oree - Grande

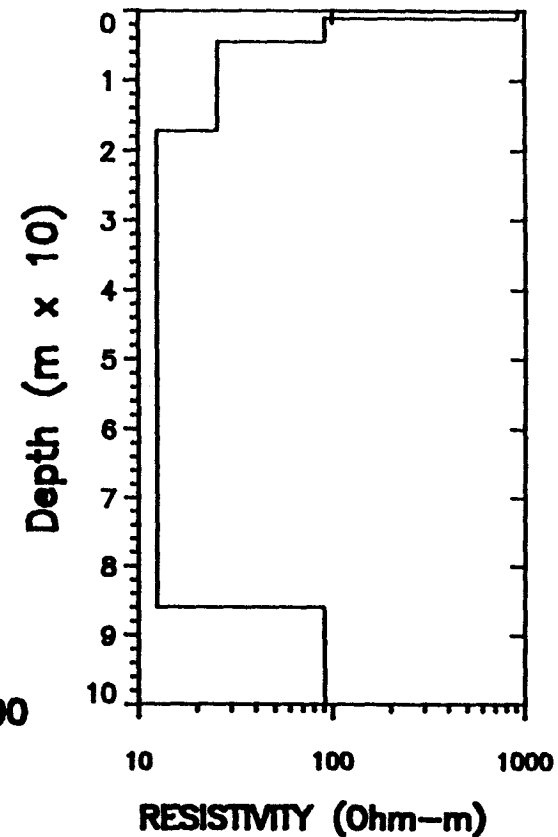
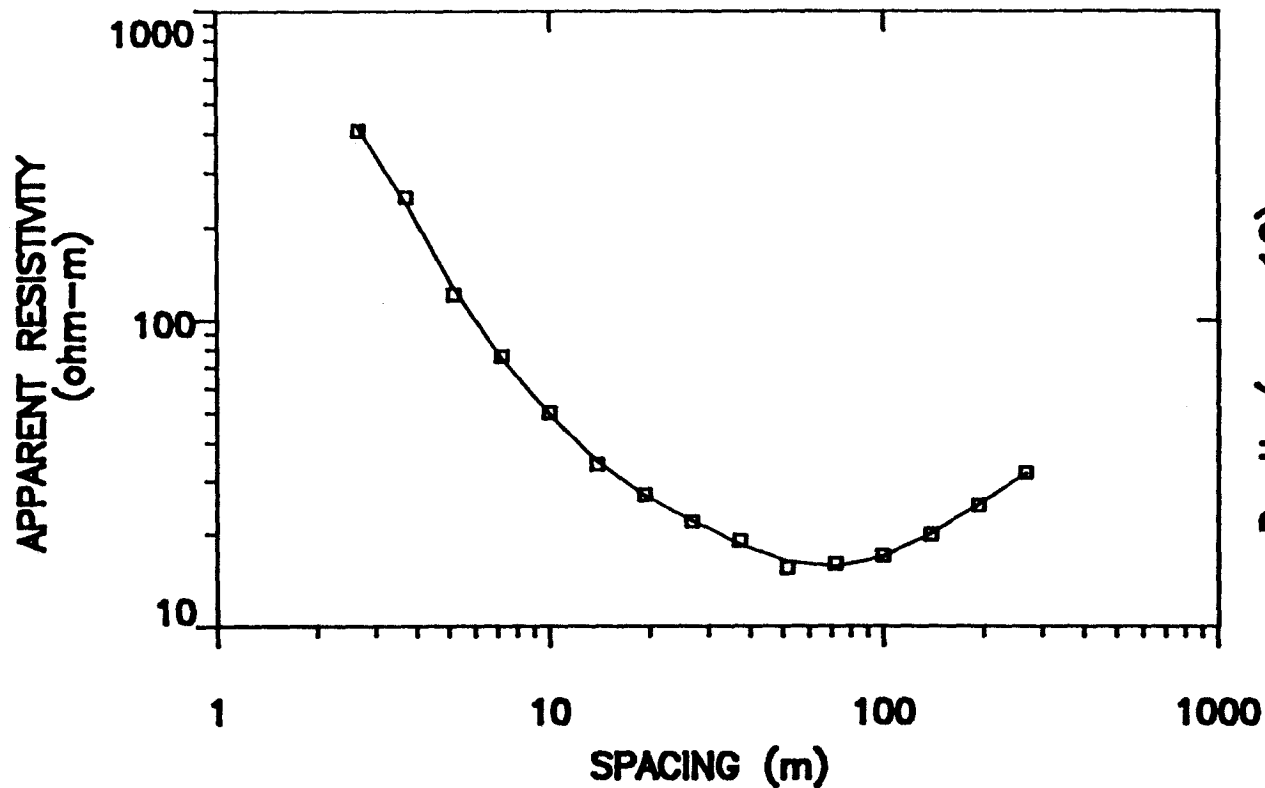
S.E.V. 8

Fecha 30-01-91 Rumbo AB E-W

PERFIL III

Interpretación	Observaciones:
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for: ITGE		SEGURA
by: ADARO		ORCE (GR)
Data Set: 8III	Date: 91	
Equipment: ADARO	Sounding: 8III	Azimuth: E-W

DATA SET: 9III

CLIENT: ITGE	DATE: 91
LOCATION: ORCE	SOUNDING: 9III
COUNTY: (GR)	AZIMUTH: E-W
PROJECT: SEGURA	EQUIPMENT: ADARO
ELEVATION: 1010.00	
SOUNDING COORDINATES: X: 557150.0000 Y: 4177650.0000	

Schlumberger Configuration

FITTING ERROR: 2.252 PERCENT

L #	RESISTIVITY (ohm-m)	CHARGEABILITY (pfe)	THICKNESS (meters)	ELEVATION (meters)	CONDUCTANCE (Siemens)
				1010.0	
1	136.5		1.97	1008.0	0.0144
2	58.51		5.70	1002.3	0.0974
3	219.2		33.47	968.8	0.152
4	33.44		67.26	901.5	2.01
5	19.23				

ALL PARAMETERS ARE FREE

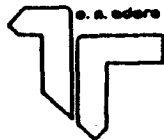
No.	Spacing (m)	PA DATA	(ohm-m) SYNTHETIC	DIFFERENCE (percent)
1	2.63	120.1	118.9	1.01
2	3.73	104.0	105.4	-1.32
3	5.13	89.51	91.07	-1.74
4	7.20	85.48	81.83	4.26
5	10.00	79.83	81.94	-2.64
6	13.90	89.51	91.41	-2.12
7	19.30	108.0	106.8	1.10
8	26.80	129.0	123.7	4.10
9	37.30	135.4	137.1	-1.24
10	51.80	136.2	141.5	-3.86
11	72.00	133.8	131.8	1.52
12	100.0	108.0	107.1	0.762
13	139.0	75.00	74.95	0.0595
14	193.0	47.00	47.35	-0.763
15	268.0	31.00	30.92	0.251

PARAMETER RESOLUTION MATRIX:

## "F" INDICATES FIXED PARAMETER

P 1	0.98								
P 2	-0.03	0.69							
P 3	0.00	-0.04	0.91						
P 4	0.00	0.00	-0.09	0.42					
P 5	0.00	0.00	0.01	0.15	0.79				
T 1	0.05	0.12	0.03	-0.01	0.00	0.82			
T 2	-0.04	-0.18	-0.11	-0.04	0.00	0.20	0.66		
T 3	0.00	0.05	0.13	0.26	-0.06	-0.03	0.15	0.77	
T 4	0.00	-0.01	-0.03	0.18	0.28	0.00	-0.02	0.01	0.15
	P 1	P 2	P 3	P 4	P 5	T 1	T 2	T 3	T 4

\* ADARQ \*



Proyecto: .....  
 Zona: ORCE - GRANADA  
 Observador: Juan Cu. Cuartero  
 Situación: .....

COORDENADAS  
 X 557.150  
 Y 4177650  
 Z 1010

mV: Schro - 01  
 mA: 600 n° 328

Rumbo AB  
E-W

S.E.V. 9

Perfil: III

CONSTANTES PARA DISPOSITIVO SCHULUMBERGER  
 SIMETRICO  
 MN

Estación	AB/2	MN	I (mA)	Esc. Volt.	V (mV)	ρ (Ωm)	MN	I (mA)	Esc. Volt.	V (mV)	ρ (Ωm)	OBSERVACIONES	SIMETRICO MN			
													1 m	10 m	50 m	100 m
1	2,68	1	95	10	650	149						<i>junto a una cascata.</i>	21,78			
2	3,73		90	"	270	129							42,92			
3	5,18		280	300μV	365	111							83,51			
4	7,2		235	"	153	106							162,1			
5	10		250	100μV	79	99							313,4			
6	13,9		400	"	73	111							606,2			
7	19,3		380	"	43,5	134							1.169	109,2		
8	26,8		430	"	30,5	160							2.256	217,8		
9	37,3		485	30μV	18,7	168							4.370	429,2		
10	51,8		460	"	9,2	169							8.429	835,1		
11	72		460	10μV	4,7	166	10	460	100μV	40	141		16.290	1.621		
12	100		500	"	2,0	136		500	"	17,2	108		31.420	3.134		
13	139		465	3μV	0,71	93		460	"	5,7	75		60.700	6.062	1.175	
14	193	10	675	"	2,72	47								11.690	2.301	
15	268		525	"	0,71	31								22.560	4.474	
16	373													43.700	8.702	4.292
17	518													84.290	16.820	8.361
18	720													162.900	32.530	16.210
19	1.000														62.790	31.340
20	1.390														121.400	60.620
21	1.930														234.000	116.900
22	2.680														451.200	225.600
23	3.730															437.000
24	5.180															842.880
25	7.200															1.628.520
26	10.000															3.141.510

OBSERVACIONES:

FECHA: 30-01-91



Departamento de Geofísico

Estudio Orce - Granada

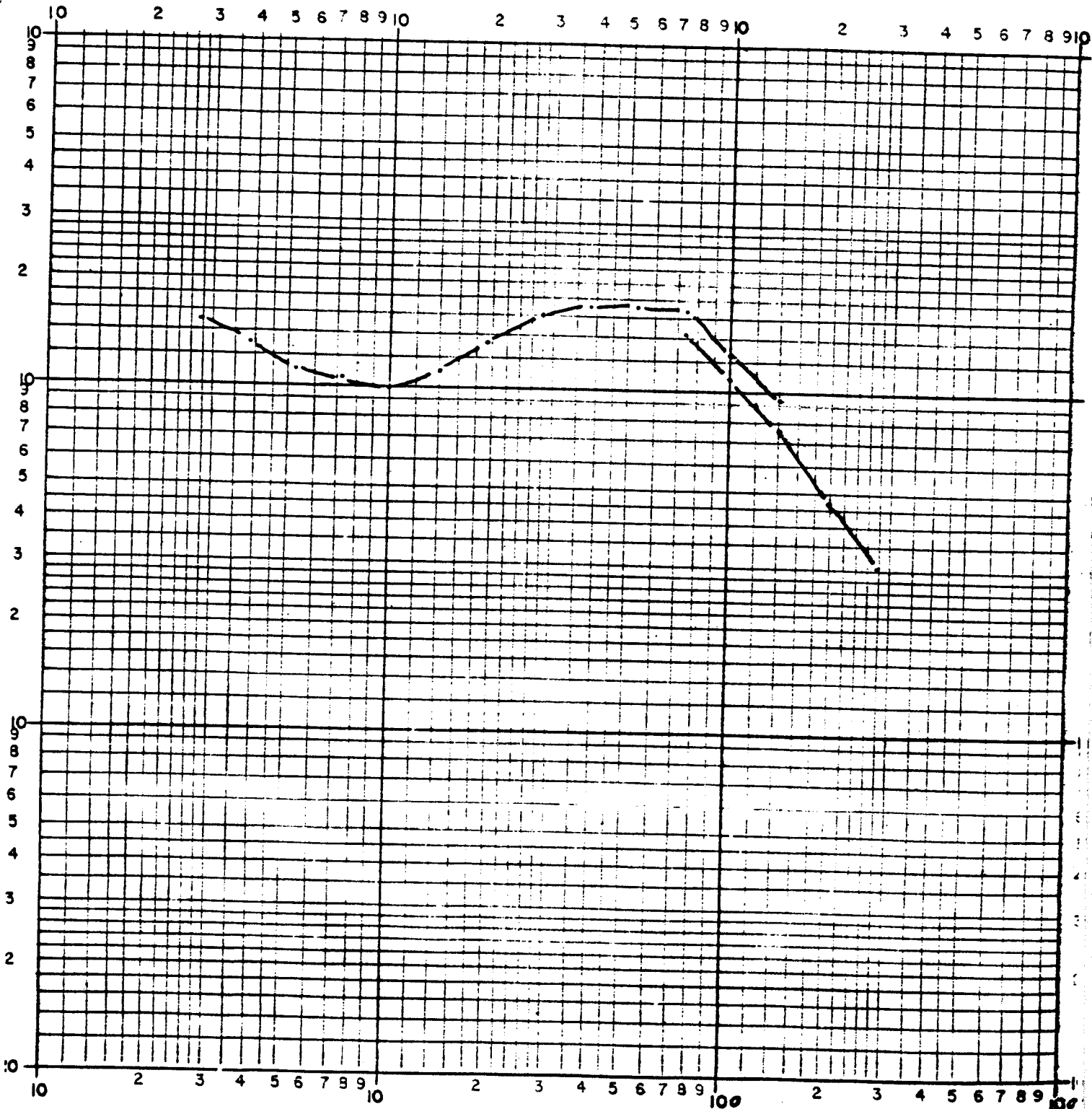
S.E.V. 9

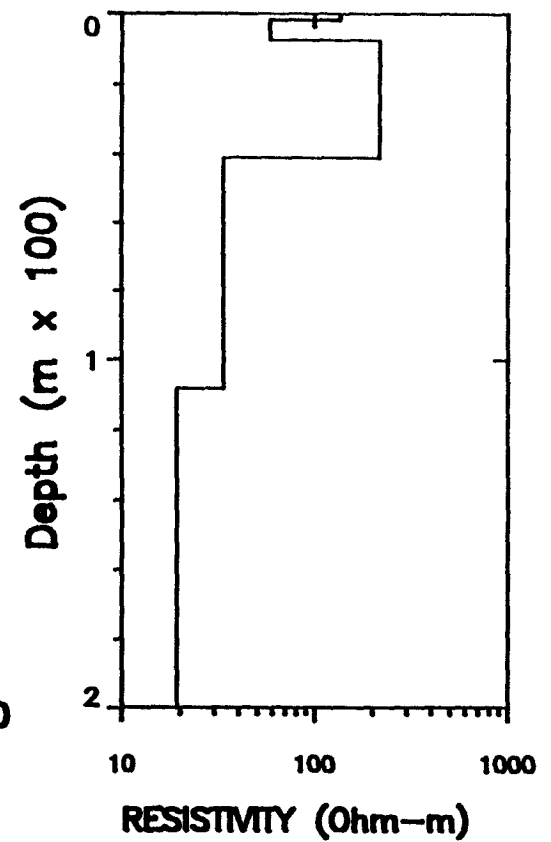
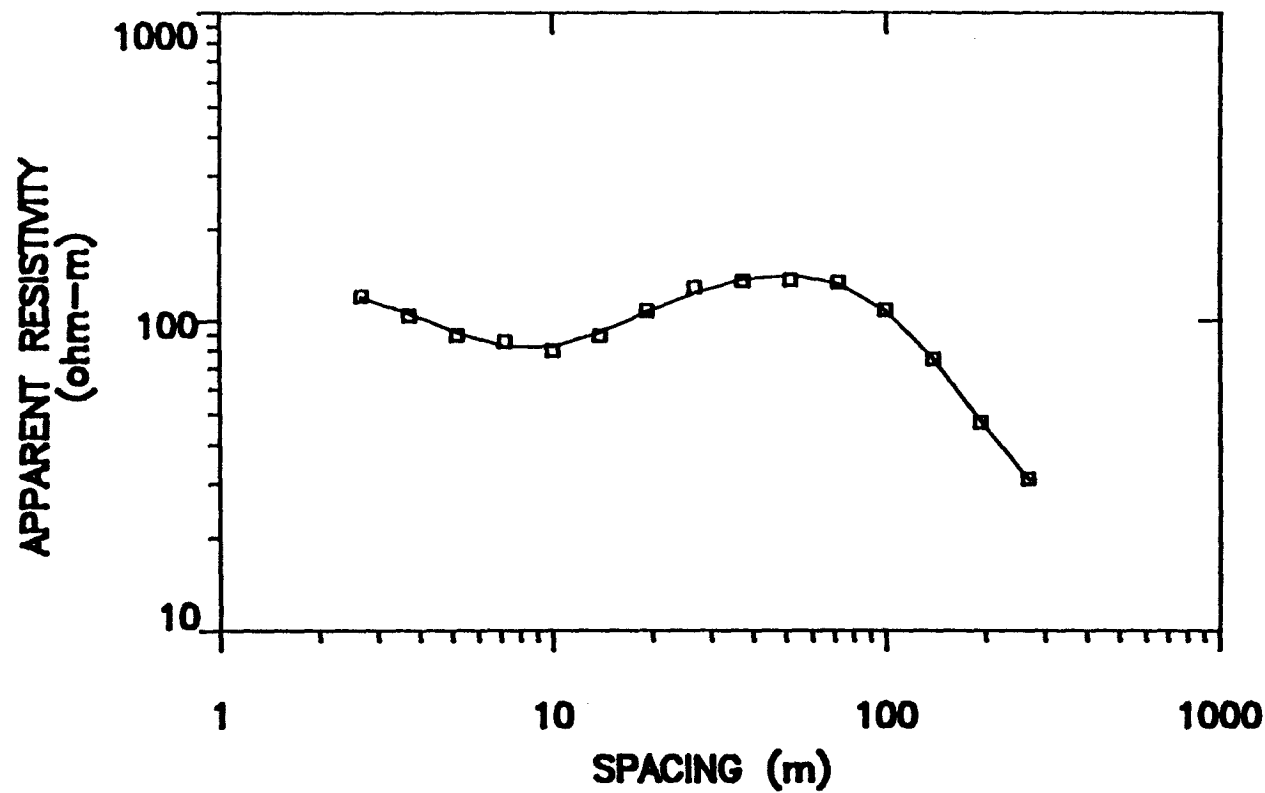
Fecha 30-01-91 Rumbo AB E-W

PERFIL III

Interpretación

Observaciones:





for: ITGE		SEGURA
by: ADARO		ORCE (GR)
Data Set: 9111	Date: 91	Azimuth: E-W
Equipment: ADARO	Sounding: 9111	

## DATA SET: 101V

CLIENT: ITGE  
 LOCATION: ORCE  
 COUNTY: (GR)  
 PROJECT: SEGURA  
 ELEVATION: 1020.00

DATE: 91  
 SOUNDING: 101V  
 AZIMUTH: E-W  
 EQUIPMENT: ADARO

SOUNDING COORDINATES: X: 555980.0000 Y: 4170900.0000

Schlumberger Configuration

FITTING ERROR: 2.130 PERCENT

L #	RESISTIVITY (ohm-m)	CHARGEABILITY (pfe)	THICKNESS (meters)	ELEVATION (meters)	CONDUCTANCE (Siemens)
1	296.9		1.97	1020.0	
2	749.9		2.73	1018.0	0.00667
3	150.2		7.79	1015.2	0.00364
4	590.2		30.19	1007.4	0.0519
5	40.22			977.2	0.0511

ALL PARAMETERS ARE FREE

No.	Spacing (m)	PA DATA	(ohm-m) SYNTHETIC	DIFFERENCE (percent)
1	2.68	341.0	337.3	1.06
2	3.73	364.0	367.8	-1.04
3	5.18	389.0	396.9	-2.03
4	7.20	410.0	406.6	0.807
5	10.00	397.0	384.7	3.07
6	13.90	338.0	339.9	-0.579
7	19.30	290.0	302.0	-4.16
8	26.80	301.0	295.3	1.89
9	37.30	318.0	312.7	1.65
10	51.80	329.0	324.7	1.28
11	72.00	297.0	305.7	-2.93
12	100.0	243.0	247.4	-1.82
13	139.0	172.0	166.3	3.31
14	193.0	95.00	96.29	-1.35
15	268.0	58.00	58.03	-0.0662

PARAMETER RESOLUTION MATRIX:

\*

ADARO

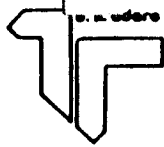
\*



"F" INDICATES FIXED PARAMETER

	P 1	P 2	P 3	P 4	P 5	T 1	T 2	T 3	T 4
P 1	0.65								
P 2	-0.01	0.68							
P 3	0.03	0.04	0.64						
P 4	-0.01	0.01	0.03	0.70					
P 5	0.00	0.00	0.03	-0.05	0.96				
T 1	-0.10	-0.18	0.10	-0.04	-0.01	0.67			
T 2	0.02	0.37	0.11	-0.05	-0.01	0.20	0.42		
T 3	0.02	0.03	-0.38	-0.14	0.01	0.08	0.12	0.45	
T 4	0.01	-0.02	-0.01	0.33	0.06	0.03	0.06	0.17	0.62

ADDED



Proyecto: .....  
 Zona: *Oca - Granada*  
 Observador: *Juan Cu. Cuartines*  
 Situación: .....

COORDENADAS  
 X *555.980*  
 Y *4170.900*  
 Z *1020*

mV: *Aclaro - 01*  
 mA: *GEV N° 328*  
 S.E.V. *10*

Rumbo *AD*  
*E-W*  
 Perfil: *IV*

CONSTANTES PARA DISPOSITIVO SCHULUMBERGER SIMETRICO MN

Estación	AB/2	MN	I (mA)	Esc. Volt.	V (mV)	ρ (Ωm)	MN	I (mA)	Esc. Volt.	V (mV)	ρ (Ωm)	OBSERVACIONES	SIMETRICO MN				
													1 m	10 m	50 m	100 m	
1	2.68	<i>1</i>	<i>110</i>	<i>3V</i>	<i>1720</i>	<i>341</i>											
2	3.73		<i>230</i>	<i>"</i>	<i>1950</i>	<i>364</i>											
3	5.18		<i>245</i>	<i>"</i>	<i>1140</i>	<i>389</i>											
4	7.2		<i>255</i>	<i>1V</i>	<i>645</i>	<i>410</i>											
5	10		<i>205</i>	<i>"</i>	<i>260</i>	<i>397</i>											
6	13.9		<i>215</i>	<i>300uV</i>	<i>120</i>	<i>338</i>											
7	19.3		<i>310</i>	<i>100uV</i>	<i>77</i>	<i>390</i>											
8	26.8		<i>330</i>	<i>"</i>	<i>44</i>	<i>301</i>											
9	37.3		<i>330</i>	<i>"</i>	<i>24</i>	<i>318</i>											
10	51.8		<i>320</i>	<i>30uV</i>	<i>12.5</i>	<i>329</i>	<i>10</i>	<i>320</i>	<i>300uV</i>	<i>127</i>	<i>331</i>						
11	72	<i>10</i>	<i>330</i>	<i>100uV</i>	<i>60.5</i>	<i>397</i>											
12	100		<i>465</i>	<i>"</i>	<i>36</i>	<i>243</i>											
13	139		<i>580</i>	<i>30uV</i>	<i>16.5</i>	<i>172</i>											
14	193		<i>460</i>	<i>10uV</i>	<i>3.75</i>	<i>95</i>											
15	268		<i>470</i>	<i>3uV</i>	<i>1.2</i>	<i>58</i>											
16	373																
17	518																
18	720																
19	1.000																
20	1.390																
21	1.930																
22	2.680																
23	3.730																
24	5.180																
25	7.200																
26	10.000																

OBSERVACIONES:

FECHA: *30-01-91*



Departamento de Geofísica

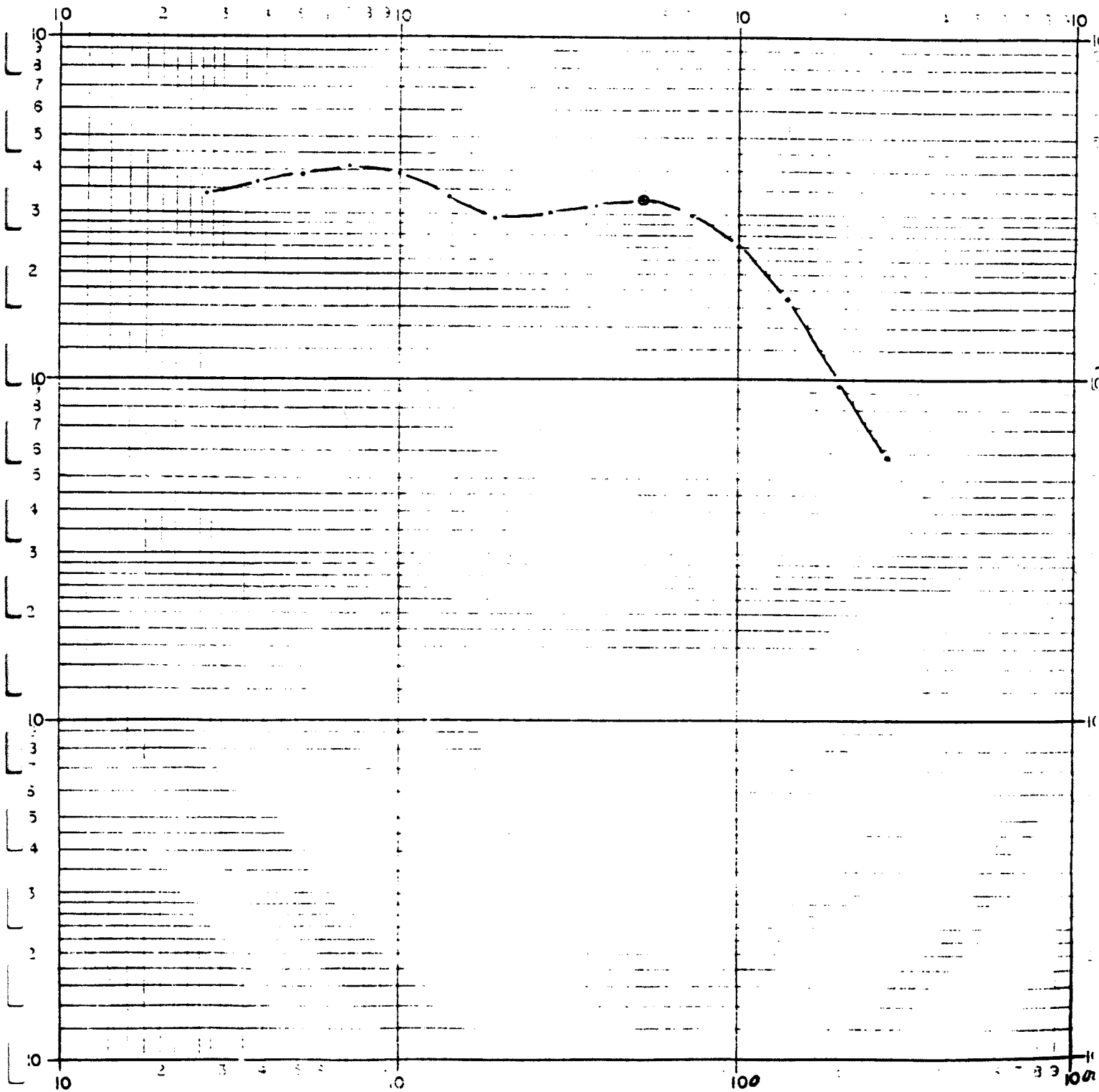
Estudio *Orece - Granada*

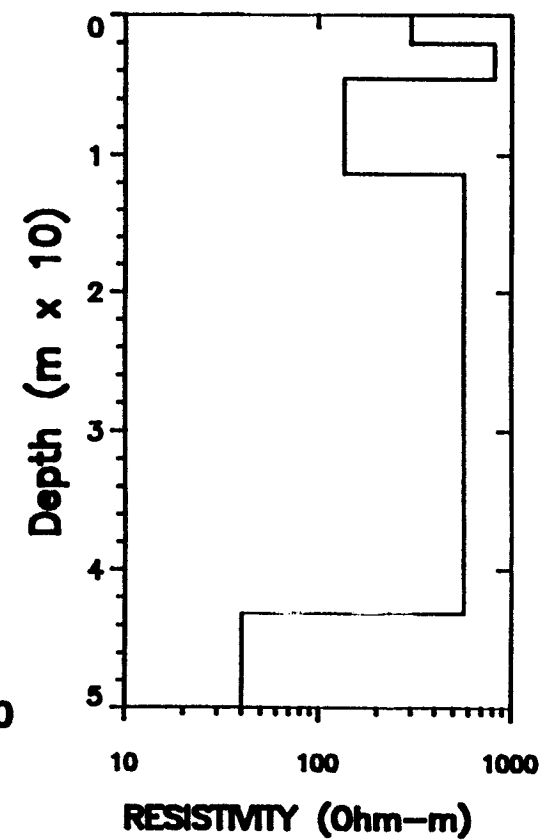
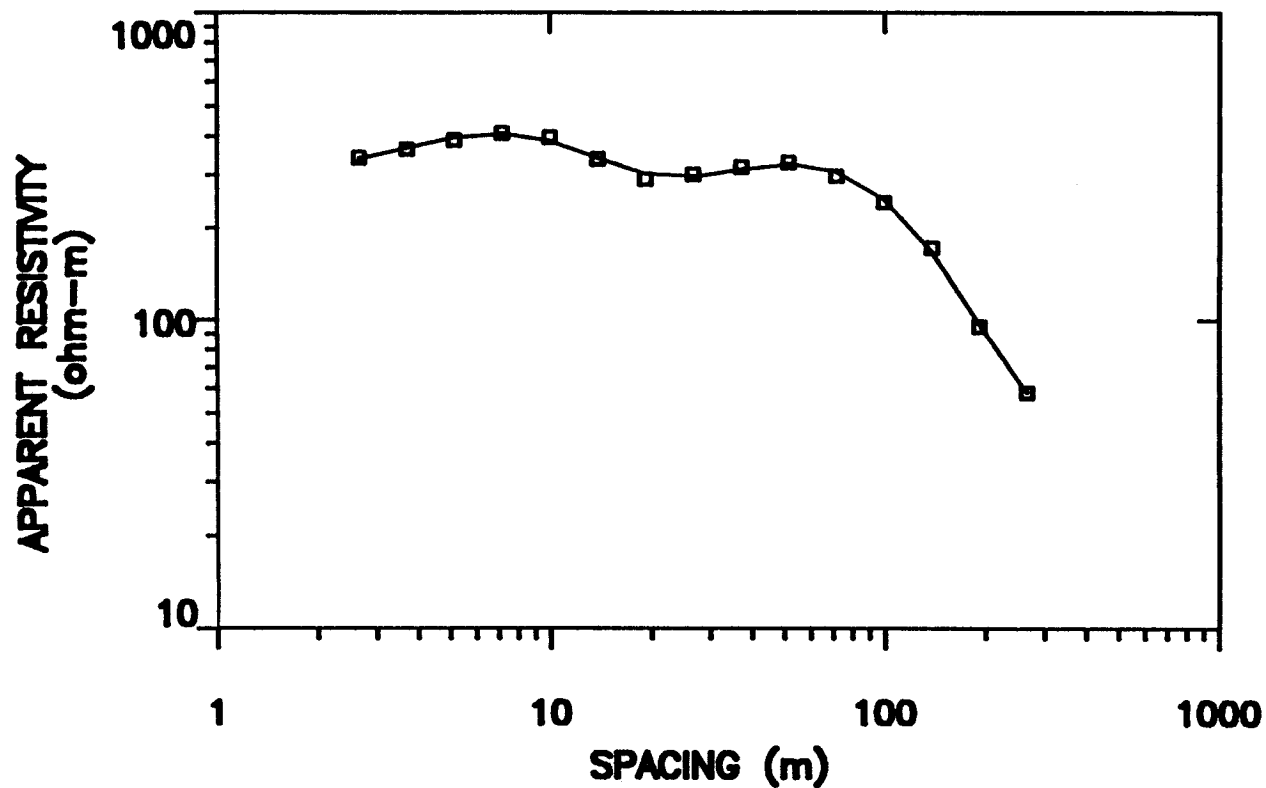
S.E.V. *10*

Fecha *30-01-91* Rumbo AB *E-W*

PERFIL *IV*

Interpretación	Observaciones:
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for: ITGE		SEGURA
by: ADARO		ORCE (GR)
Data Set: 10V	Date: 91	Azimuth: E-W
Equipment: ADARO	Sounding: 10V	

DATA SET: 111V

CLIENT: ITGE  
 LOCATION: ORCE  
 COUNTY: (GR)  
 PROJECT: SEGURIA  
 ELEVATION: 790.00  
 SOUNDING COORDINATES: X: 557050.0000 Y: 4172420.0000  
 DATE: 91  
 SOUNDING: 111V  
 AZIMUTH: E-W  
 EQUIPMENT: ADARO

Schlumberger Configuration

FITTING ERROR: 2.020 PERCENT

L #	RESISTIVITY (ohm-m)	CHARGEABILITY (pfa)	THICKNESS (meters)	ELEVATION (meters)	CONDUCTANCE (Siemens)
1	317.5		1.25	990.0	0.00398
2	85.72		4.42	988.7	0.0515
3	37.68		30.00	984.3	0.796
4	102.3		30.14	954.3	0.796
5	38.52			894.1	0.587

ALL PARAMETERS ARE FREE

No.	Spacing (m)	DATA	PA (ohm-m) SYNTHETIC	DIFFERENCE (percent)
1	2.68	192.0	193.9	-0.990
2	8.73	148.0	143.4	3.05
3	5.18	102.0	106.5	-4.50
4	7.20	87.00	83.85	3.61
5	10.00	67.00	68.16	-1.74
6	18.90	56.00	55.67	0.562
7	19.30	47.00	47.33	-0.703
8	26.80	44.00	43.67	0.728
9	37.60	44.00	43.90	0.223
10	51.80	47.00	47.20	-0.435
11	72.00	52.00	52.70	-1.35
12	100.0	60.00	58.49	2.51
13	139.0	61.00	62.07	-1.76
14	193.0	62.00	61.61	0.619
15	268.0	57.00	57.15	-0.268

PARAMETER RESOLUTION MATRIX:

\* \* ADARO \*

"F" INDICATES FIXED PARAMETER

P 1	0.91								
P 2	-0.06	0.93							
P 3	-0.01	-0.02	0.98						
P 4	0.00	-0.01	-0.02	0.75					
P 5	0.01	0.01	0.02	0.07	0.72				
T 1	0.09	0.07	0.02	0.01	-0.01	0.90			
T 2	0.04	0.07	0.04	0.03	-0.03	-0.06	0.68		
T 3	-0.03	-0.05	-0.05	-0.18	0.11	0.04	0.11	0.77	
T 4	0.00	0.00	0.00	0.29	0.24	0.00	0.00	0.12	0.23
	P 1	P 2	P 3	P 4	P 5	T 1	T 2	T 3	T 4



Proyecto: .....  
 Zona: *Oreca - Grauada*  
 Observador: *Juan Cu. Quintana*  
 Situación: .....

COORDENADAS  
 X *557050*  
 Y *4172480*  
 Z *990*

m V: *Adaro - 01*  
 mA: *650 N° 328*

Tipo AB  
*E-W*

S.E.V. *11*

Perfil: *IV*

CONSTANTES PARA DISPOSITIVO SCHULUMBERGER  
 SIMETRICO  
 MN

Estación	AB/2	MN	I (mA)	Esc. Volt.	V (mV)	$\rho$ ( $\Omega$ m)	MN	I (mA)	Esc. Volt.	V (mV)	$\rho$ ( $\Omega$ m)	OBSERVACIONES	1 m	10 m	50 m	100 m
1	2.68		100	1V	880	192							21.78			
2	3.73		110	"	380	148							42.92			
3	5.18		120	30mV	147	102							83.51			
4	7.2		120	100mV	64	87							182.1			
5	10		163	"	35	67							313.4			
6	13.9		175	30mV	16.2	56							606.2			
7	19.3		175	100mV	7.1	47	10	175	100mV	82	51		1.169	109.2		
8	26.8		160	"	3.1	44		160	"	34.5	47		2.256	217.8		
9	37.3		175	30mV	1.75	44		175	"	18.5	45		4.370	429.2		
10	51.8	10	275	30mV	15.5	47							8.429	835.1		
11	72		360	"	11.5	52							16.290	1.621		
12	100		420	30mV	8	60							31.420	3.134		
13	139		405	100mV	4.1	61							60.700	6.062	1.175	
14	193		380	"	2.0	62								11.690	2.301	
15	268		570	30mV	1.45	57								22.560	4.474	
16	373													43.700	8.702	4.292
17	518													84.290	16.820	8.351
18	720													162.900	32.530	16.210
19	1.000														62.790	31.340
20	1.390														121.400	60.620
21	1.930														234.000	116.900
22	2.680														451.200	225.600
23	3.730															437.000
24	5.180															842.880
25	7.200															1.628.520
26	10.000															3.141.510

OBSERVACIONES:

FECHA: *30-01-91*



Departamento de Geofísica

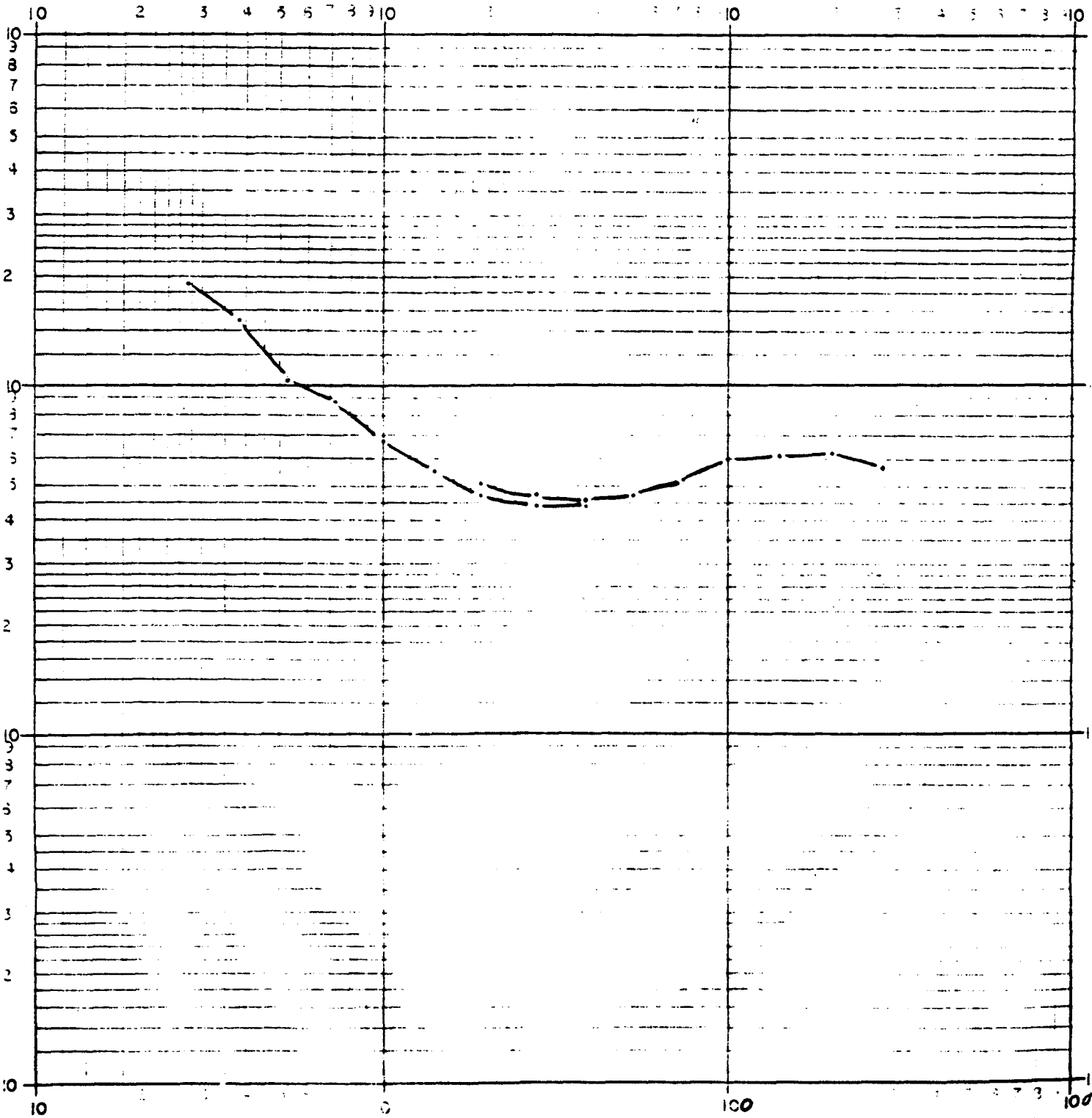
Estudio Oce - Guamada

S.E.V. 11

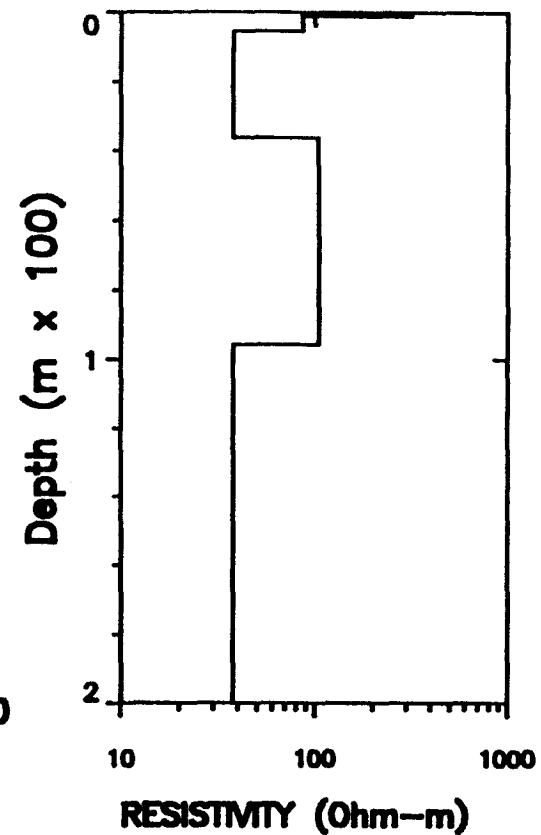
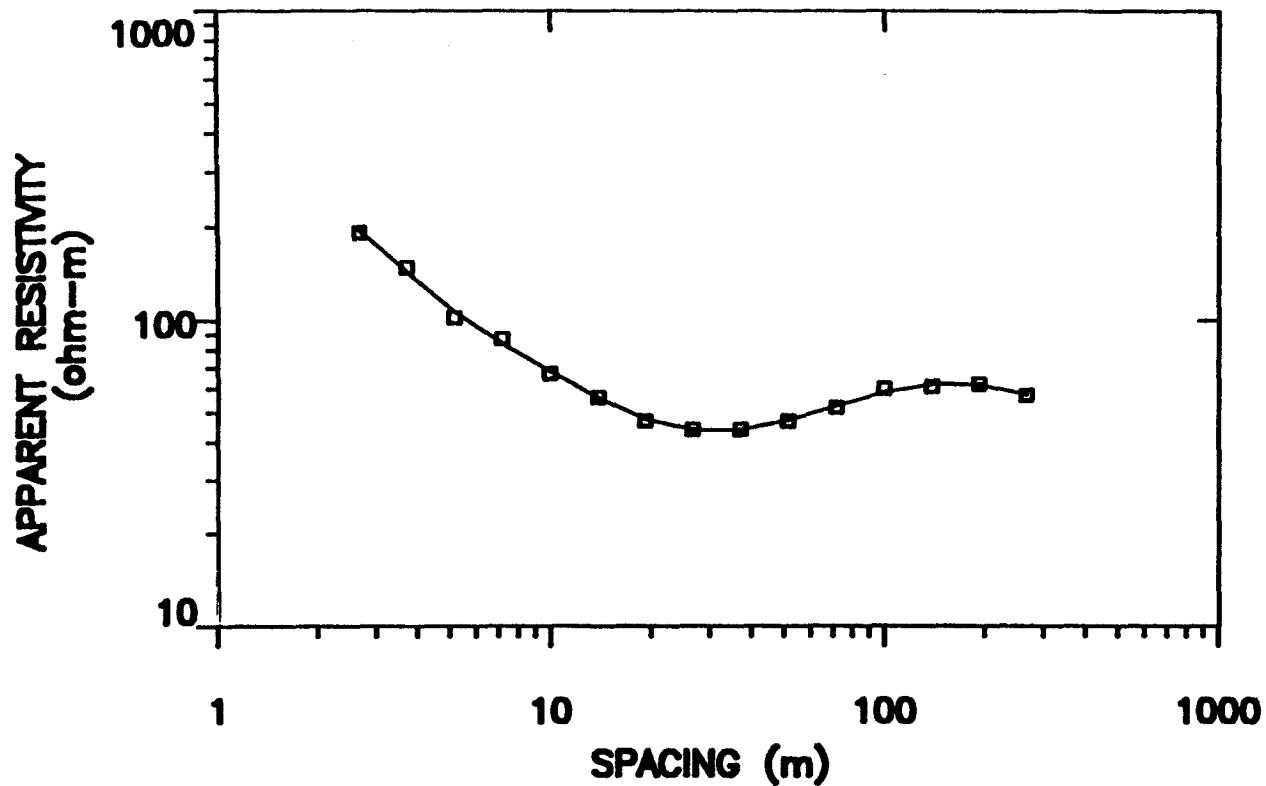
Fecha 30-01-91 Rumbo AB E-W

PERFIL IV

Interpretación	Observaciones:
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for: ITGE		SEGURA
by: ADARO		ORCE (GR)
Data Set: 11V	Date: 91	Azimuth: E-W
Equipment: ADARO	Sounding: 11V	

DATA SET: 121V

CLIENT: ITGE DATE: 91  
 LOCATION: ORCE SOUNDING: 121V  
 COUNTY: (GR) AZIMUTH: E-W  
 PROJECT: SEGURA EQUIPMENT: ADARO  
 ELEVATION: 990.00  
 SOUNDING COORDINATES: X: 557870.0000 Y: 4174470.0000

Schlumberger Configuration

FITTING ERROR: 3.117 PERCENT

L #	RESISTIVITY (ohm-m)	CHARGEABILITY (pfe)	THICKNESS (meters)	ELEVATION (meters)	CONDUCTANCE (Siemens)
1	87.65		0.900	990.0	0.0102
2	559.7		1.45	989.0	0.00260
3	27.14		36.95	987.6	1.36
4	15.59		64.17	950.6	4.11
5	52.67			886.5	

ALL PARAMETERS ARE FREE

No.	Spacing (m)	DATA	PA (ohm-m) SYNTHETIC	DIFFERENCE (percent)
1	2.68	164.0	165.9	-1.16
2	3.73	179.0	193.2	-2.38
3	5.18	179.0	182.5	-1.98
4	7.20	170.0	157.9	7.10
5	10.00	120.0	114.9	4.21
6	13.90	67.00	71.02	-6.00
7	19.20	42.00	42.76	-1.81
8	26.50	32.00	31.16	2.59
9	37.30	27.00	27.53	-1.98
10	51.80	26.00	25.61	1.48
11	72.00	24.00	23.80	0.825
12	100.0	22.00	22.51	-2.33
13	139.0	23.00	22.72	1.19
14	193.0	25.00	25.03	-0.130
15	258.0	29.00	29.00	-0.00241

PARAMETER RESOLUTION MATRIX:

\* ADARO \*

"F" INDICATES FIXED PARAMETER

P 1	0.76								
P 2	-0.04	0.59							
P 3	0.01	-0.01	1.00						
P 4	0.02	-0.01	-0.01	0.87					
P 5	-0.02	0.01	0.00	-0.06	0.83				
T 1	-0.23	-0.14	0.01	0.02	-0.02	0.66			
T 2	0.07	0.43	0.01	0.01	-0.01	0.17	0.54		
T 3	-0.05	0.02	0.01	0.13	0.02	-0.05	-0.02	0.84	
T 4	0.03	-0.01	-0.01	-0.26	-0.23	0.03	0.01	0.24	0.40
	P 1	P 2	P 3	P 4	P 5	T 1	T 2	T 3	T 4

ADARD \*



Proyecto: .....  
 Zona: *Orce - Granada*  
 Observador: *Juan Cu. Cuartines*  
 Situación: .....

COORDENADAS  
 X *557870*  
 Y *4174470*  
 Z *990*

mV: *Scales - 01*  
 mA: *600 N = 328*

Libro A  
*E - W*

S.E.V. *12*

Perfil: *IV*

CONSTANTES PARA DISPOSITIVO SCHULUMBERGER  
SIMETRICO  
MN

Estación	AB/2	MN	I (mA)	Esc. Volt.	V (mV)	P (Ωm)	MN	I (mA)	Esc. Volt.	V (mV)	P (Ωm)	OBSERVACIONES	SIMETRICO MN			
													1 m	10 m	50 m	100 m
1	2.68	1	55	1V	415	164							21.78			
2	3.73		165	"	690	179							42.92			
3	5.18		170	"	365	179							83.51			
4	7.2		260	"	272	170							162.1			
5	10		300	300uV	115	120							313.4			
6	13.9		270	100uV	30	67							606.2			
7	19.3		280	30uV	10	42							1.169	109.2		
8	26.8		310	10uV	4.4	32	10	310	100uV	48.5	34		2.256	217.8		
9	37.3		290	3uV	1.8	27		290	"	19.2	29		4.370	429.2		
10	51.8	10	355	3uV	11.2	26							8.429	835.1		
11	72		310	10uV	4.5	24							16.290	1.621		
12	100		575	"	4.0	22							31.420	3.134		
13	139		390	3uV	1.45	23							60.700	6.062	1.175	
14	193		430	"	0.91	25								11.690	2.301	
15	268		615	"	0.78	29								22.560	4.474	
16	373													43.700	8.702	4.292
17	518													84.290	16.820	8.351
18	720													162.900	32.530	16.210
19	1.000														62.790	31.340
20	1.390														121.400	60.620
21	1.930														234.000	116.900
22	2.680														451.200	225.600
23	3.730															437.000
24	5.180															842.880
25	7.200															1.628.520
26	10.000															3.141.510

OBSERVACIONES:

FECHA: *31-01-91*



Departamento de Geofísica

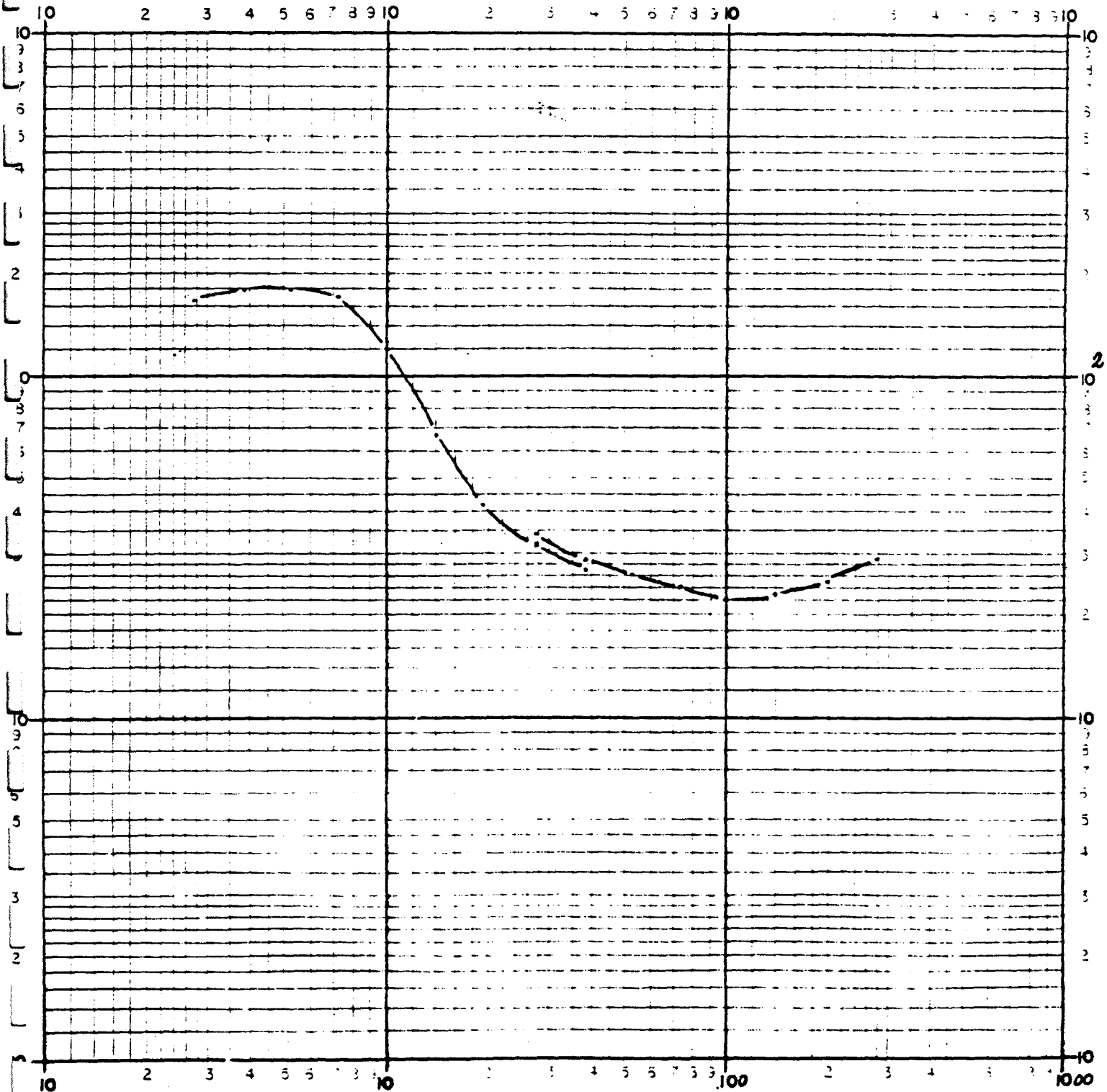
Estudio *Oxe - Gramada*

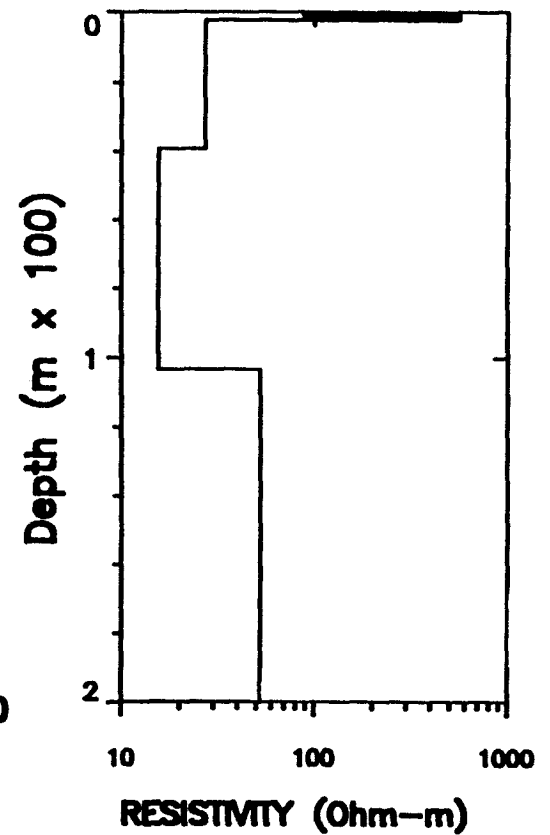
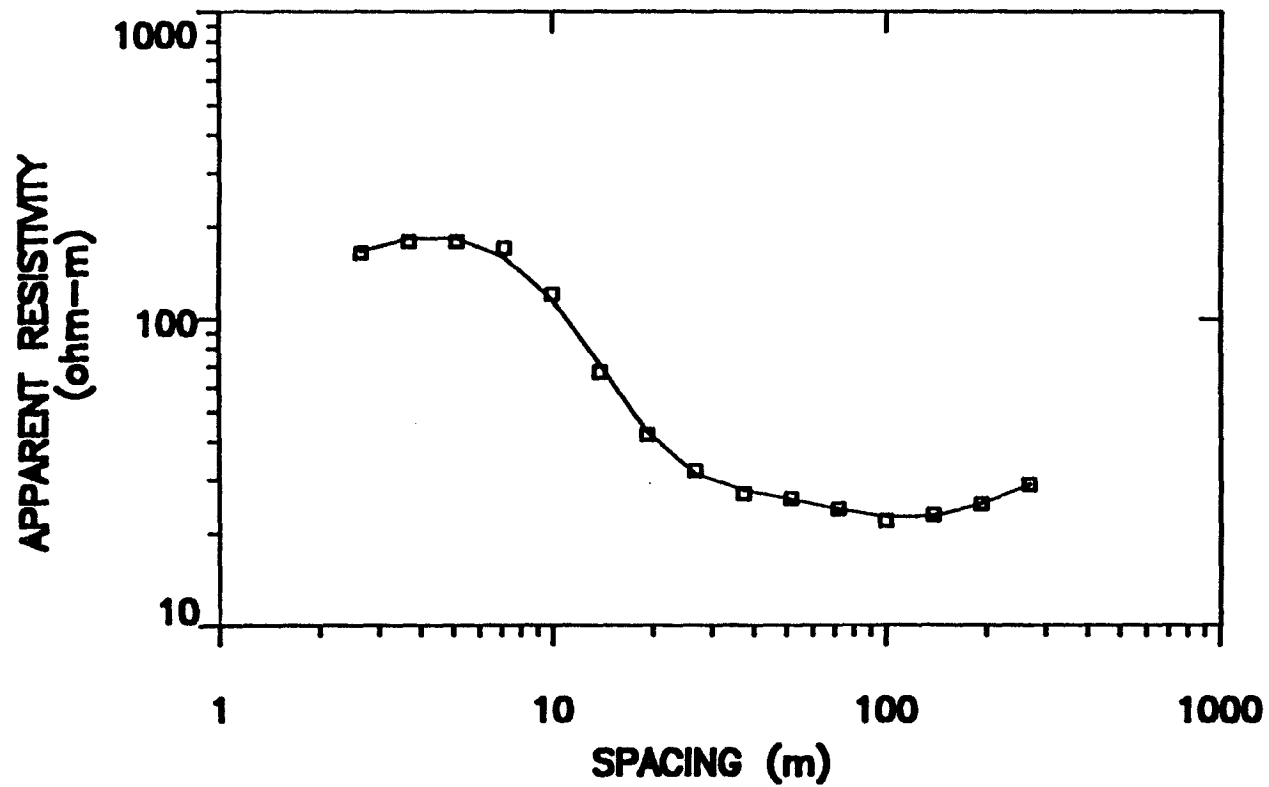
S.E.V. *12*

Fecha *31-01-91* Rumbo AB. *E-W*

PERFIL *IV*

Interpretación	Observaciones:
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for: ITGE		SEGURA
by: ADARO		ORCE (GR)
Data Set: 12V	Date: 91	
Equipment: ADARO	Sounding: 12V	Azimuth: E-W

DATA SET: 13V

CLIENT: ITGE  
 LOCATION: OFCE  
 COUNTY: (GR)  
 PROJECT: SEGURA  
 ELEVATION: 1035.00  
 SOUNDING COORDINATES: X: 557850.0000 Y: 4169750.0000

DATE: 91  
 SOUNDING: 13V  
 AZIMUTH: E-W  
 EQUIPMENT: ADARO

Schlumberger Configuration

FITTING ERROR: 2.530 PERCENT

#	RESISTIVITY (ohm-m)	CHARGEABILITY (pfe)	THICKNESS (meters)	ELEVATION (meters)	CONDUCTANCE (Siemens)
1	282.3			1035.0	
2	689.5		0.517	1034.4	0.00183
3	525.3		8.05	1025.4	0.0116
4	178.1		46.64	979.7	0.0886

ALL PARAMETERS ARE FREE

No.	Spacing (m)	PA DATA	(ohm-m) SYNTHETIC	DIFFERENCE (percent)
1	2.68	525.0	538.4	-2.55
2	3.73	613.0	585.0	4.55
3	5.18	625.0	619.5	1.03
4	7.20	612.0	640.3	-4.63
5	10.00	638.0	646.2	-1.29
6	13.90	663.0	636.3	4.02
7	19.30	608.0	612.6	-0.763
8	26.80	587.0	581.0	1.01
9	37.30	529.0	546.5	-3.31
10	51.80	506.0	507.7	-0.345
11	72.00	471.0	455.6	3.25
12	100.0	381.0	385.1	-1.10
13	139.0	307.0	306.9	0.00460
14	193.0	242.0	243.7	-0.724
15	268.0	208.0	206.9	0.515

PARAMETER RESOLUTION MATRIX:  
 "F" INDICATES FIXED PARAMETER

P 1	0.58				
P 2	0.00	0.99			
P 3	0.00	0.00	0.99		
P 4	0.00	0.00	-0.01	0.98	
T 1	-0.47	-0.02	0.00	0.00	0.29
T 2	-0.02	0.04	0.06	0.02	0.08
T 3	0.00	0.00	0.01	0.02	-0.01
	P 1	P 2	P 3	P 4	T 1
					T 2
					T 3

ADARO





Proyecto: .....  
 Zona: *Oce - Granada*  
 Observador: *Juan Cu. Martínez*  
 Situación: .....

COORDENADAS  
 X *557.850*  
 Y *4169.750*  
 Z *1035*

m: *Act - 01*  
 mA: *500 N: 328*

nbo *E-W*

S.E.V. *13*

Perfil: *V*

CONSTANTES PARA DISPOSITIVO SCHULUMBERGER SIMETRICO MN

Estación	AB/2	MN	I (mA)	Esc. Volt.	V (mV)	$\rho$ ( $\Omega$ m)	MN	I (mA)	Esc. Volt.	V (mV)	$\rho$ ( $\Omega$ m)	OBSERVACIONES	1 m	10 m	50 m	100 m
1	2.68	1	82	3V	1975	525							21.78			
2	3.73		140	"	2000	613							42.92			
3	5.18		160	"	1200	626							83.51			
4	7.2		180	1V	680	612							182.1			
5	10		280	"	570	638							313.4			
6	13.9		320	"	350	663							606.2			
7	19.3		300	300uV	156	608							1.169	109.2		
8	26.8		340	100uV	62.5	587							2.256	217.8		
9	37.3		190	"	23	529							4.370	429.2		
10	51.8		170	30uV	10.2	506	10	170	300uV	105	515		8.429	836.1		
11	72		225	10uV	6.5	471		225	100uV	65	468		16.290	1.621		
12	100	10	300	100uV	36.5	381							31.420	3.134		
13	138		375	"	19	307							60.700	6.062	1.175	
14	193		370	10uV	7.65	242								11.690	2.301	
15	268		385	"	3.55	208								22.560	4.474	
16	373													43.700	8.702	4.292
17	518													84.290	16.820	8.351
18	720													162.900	32.530	16.210
19	1.000														62.790	31.340
20	1.380														121.400	60.620
21	1.930														234.000	116.900
22	2.680														451.200	225.600
23	3.730															437.000
24	5.180															842.880
25	7.200															1.628.520
26	10.000															3.141.510

OBSERVACIONES:

FECHA: *31-01-91*



Departamento de Geofísica

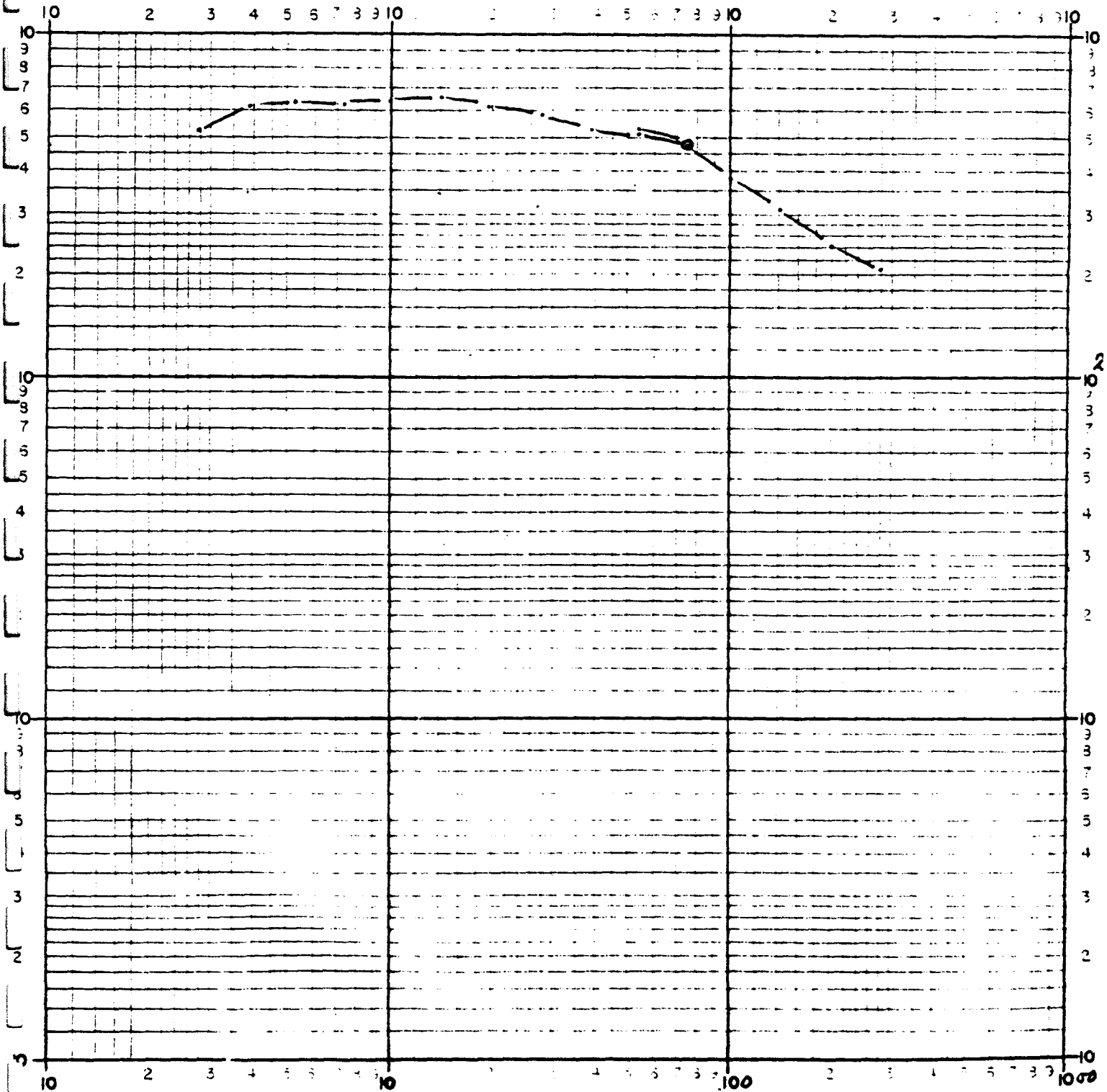
Estudio *Ozce - Granada*

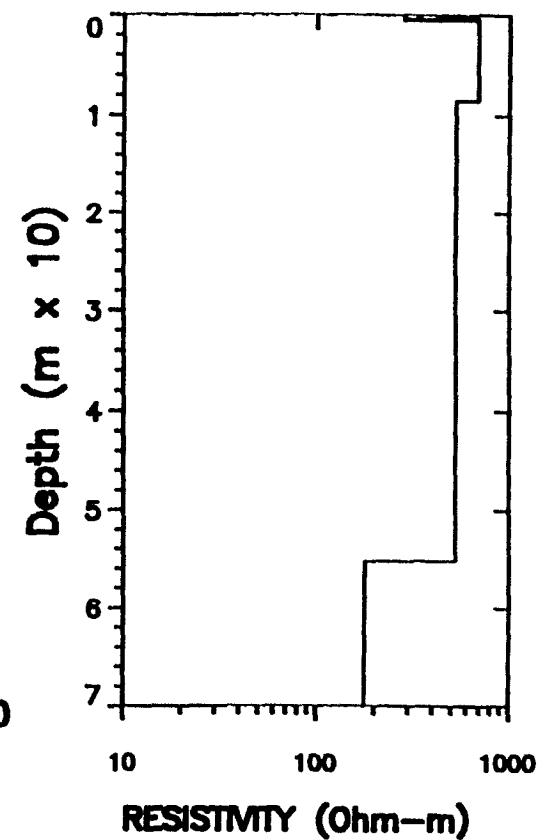
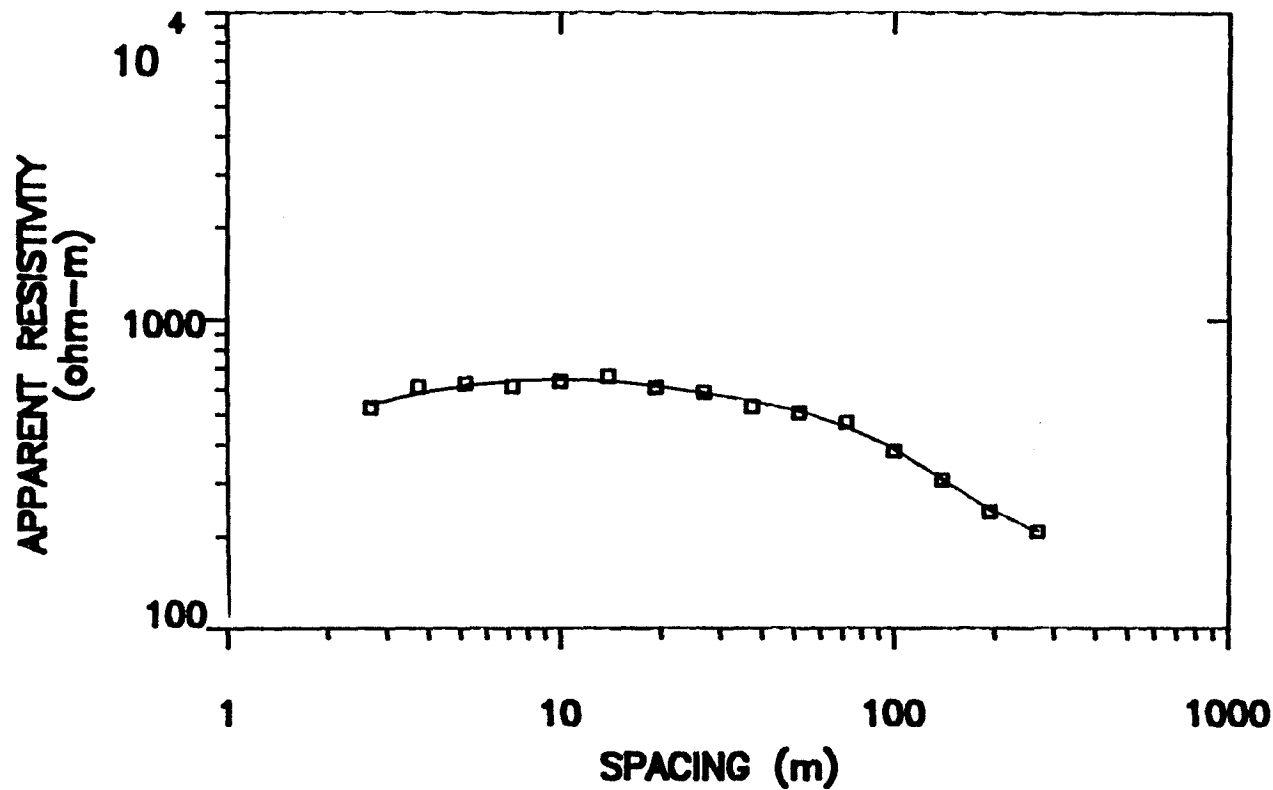
S.E.V. *13*

Fecha *31-01-91* Rumbo AB *E-W*

PERFIL *V*

Interpretación	Observaciones:
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for: ITGE		SEGURA
by: ADARO		ORCE (GR)
Data Set: 13V	Date: 91	
Equipment: ADARO	Sounding: 13V	Azimuth: E-W

## DATA SET: 14V

CLIENT: ITGE  
 LOCATION: ORCE  
 COUNTY: (GR)  
 PROJECT: SEGURA  
 ELEVATION: 1020.00  
 SOUNDING COORDINATES: X: 558750.0000 Y: 4171220.0000

DATE: 91  
 SOUNDING: 14V  
 AZIMUTH: E-W  
 EQUIPMENT: ADARO

## Schlumberger Configuration

FITTING ERROR: 2.739 PERCENT

L #	RESISTIVITY (ohm-m)	CHARGEABILITY (pfe)	THICKNESS (meters)	ELEVATION (meters)	CONDUCTANCE (Siemens)
				1020.0	
1	140.6		0.655	1019.3	0.00466
2	515.0		3.37	1015.9	0.00655
3	231.8		5.58	1010.3	0.0240
4	372.3		61.78	948.6	0.165
5	36.12				

ALL PARAMETERS ARE FREE

No.	Spacing (m)	PA DATA	RA (ohm-m) SYNTHETIC	DIFFERENCE (percent)
1	2.68	299.0	298.6	0.123
2	3.73	340.0	338.4	0.460
3	5.18	362.0	365.6	-1.00
4	7.20	370.0	373.6	-0.973
5	10.00	367.0	361.6	1.44
6	13.90	348.0	340.4	2.17
7	19.30	313.0	325.8	-4.10
8	26.80	223.0	224.7	-0.553
9	37.30	337.0	330.1	2.02
10	51.80	340.0	329.6	3.02
11	72.00	313.0	312.6	0.116
12	100.0	266.0	270.6	-1.73
13	139.0	192.0	203.1	-5.78
14	193.0	136.0	128.4	5.57
15	258.0	72.00	73.17	-1.63

PARAMETER RESOLUTION MATRIX:

\*

ADARO

\*

## "F" INDICATES FIXED PARAMETER

P 1	0.54								
P 2	0.04	0.88							
P 3	0.00	0.01	0.82						
P 4	0.00	0.01	0.02	0.98					
P 5	0.00	0.01	0.03	-0.03	0.84				
T 1	-0.44	-0.08	0.03	0.00	0.00	0.41			
T 2	-0.07	0.22	0.15	-0.03	-0.05	0.11	0.40		
T 3	-0.01	0.03	-0.27	-0.04	-0.06	0.02	0.12	0.19	
T 4	0.01	-0.02	-0.01	0.03	0.03	0.00	0.06	0.12	0.94
	P 1	P 2	P 3	P 4	P 5	T 1	T 2	T 3	T 4

\* ADARKO \*



Proyecto: .....  
 Zona: *Orce - Granada*  
 Observador: *Juan Cu. Cuartines*  
 Situación: .....

COORDENADAS  
 X *558.750*  
 Y *4171.220*  
 Z *1020*

mV: *Sdaro - 01*  
 mA: *GED N° 328*

Rumbo AB  
*E-W*

S.E.V. *14*

Perfil: *V*

CONSTANTES PARA DISPOSITIVO SCHULUMBERGER SIMETRICO MN

Estación	AB/2	MN	I (mA)	Esc. Volt.	V (mV)	$\rho$ ( $\Omega$ m)	MN	I (mA)	Esc. Volt.	V (mV)	$\rho$ ( $\Omega$ m)	OBSERVACIONES	1 m	10 m	50 m	100 m
1	2.68	1	120	3V	1650	299							21.78			
2	3.73		230	"	1820	340							42.92			
3	5.18		120	1V	520	362							83.51			
4	7.2		250	"	570	370							162.1			
5	10		290	"	340	367							313.4			
6	13.9		310	300uV	178	348							606.2			
7	19.3		340	100uV	91	313							1.169	109.2		
8	26.8		360	"	51.5	323							2.256	217.8		
9	37.3		305	"	23.5	337	10	305	300uV	257	362		4.370	429.2		
10	51.8		355	30uV	14.3	340		360	"	155	360		8.429	835.1		
11	72		245	10uV	4.7	313		245	100uV	48	318		16.290	1.621		
12	100	10	400	100uV	34	266							31.420	3.134		
13	139		600	30uV	19	192							60.700	6.062	1.175	
14	193		310	10uV	3.6	136								11.690	2.301	
15	268		380	3uV	1.22	72								22.560	4.474	
16	373													43.700	8.702	4.292
17	518													84.290	16.820	8.351
18	720													162.900	32.530	16.210
19	1.000														62.790	31.340
20	1.390														121.400	60.620
21	1.930														234.000	116.900
22	2.680														461.200	225.600
23	3.730															437.000
24	5.180															842.880
25	7.200															1.628.520
26	10.000															3.141.510

OBSERVACIONES:

FECHA: *31-01-91*



Departamento de Geofísica

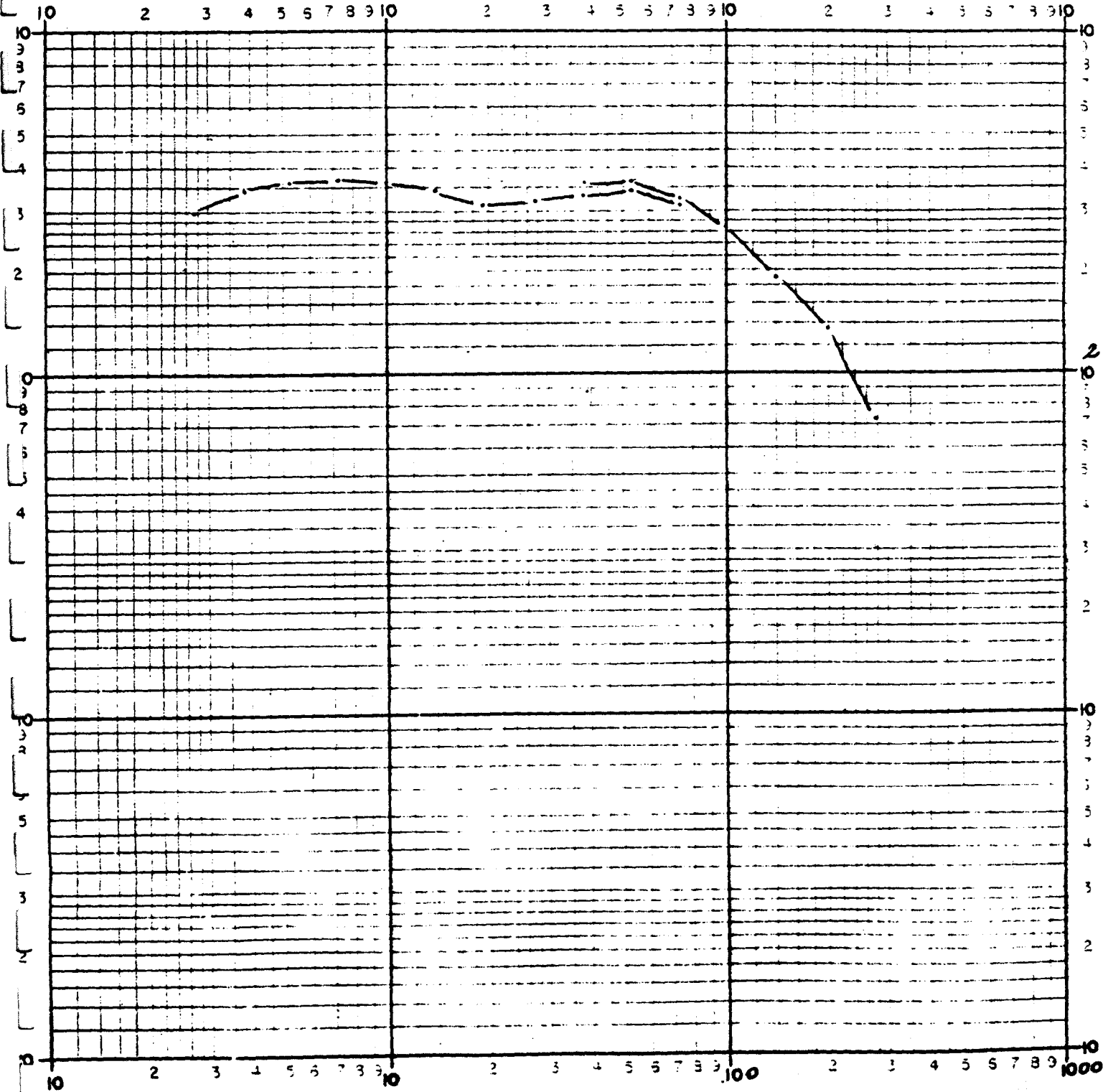
Estudio *Orce - Granada*

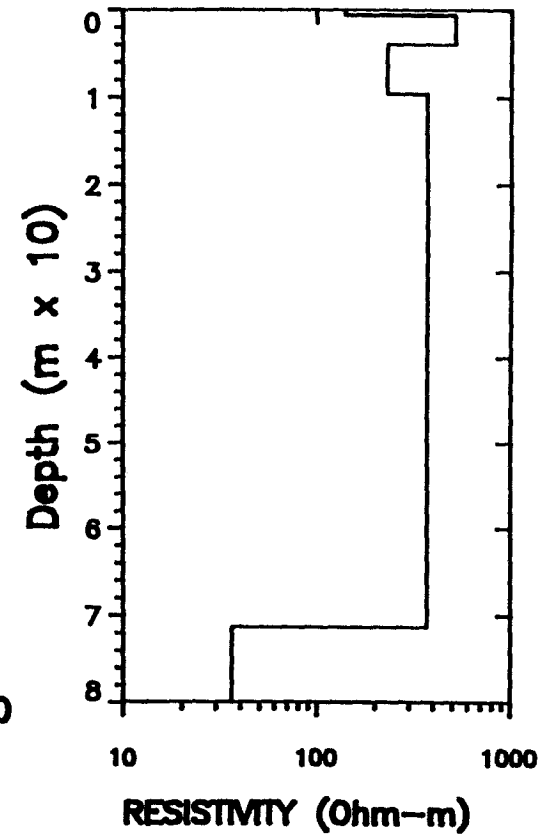
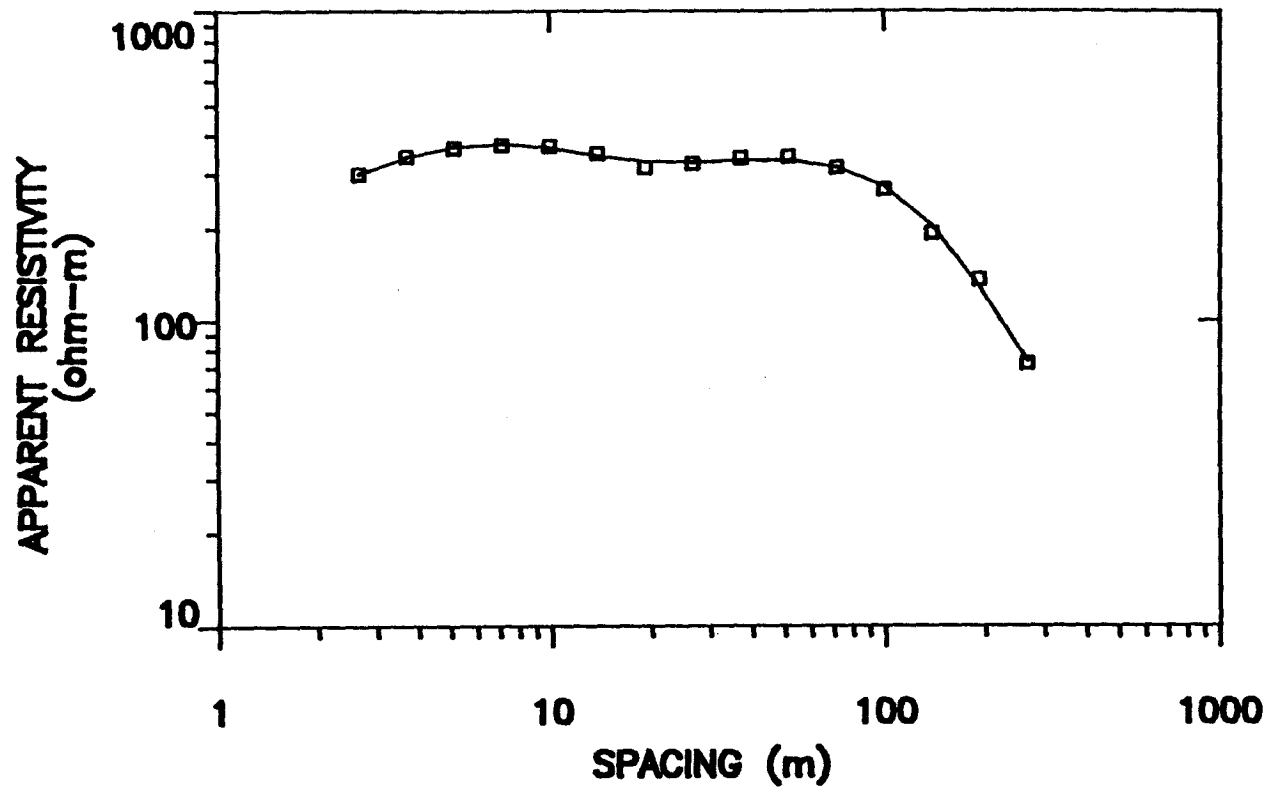
S.E.V. *14*

Fecha *31-01-91* Rumbo AB *E-W*

PERFIL *V*

Interpretación	Observaciones:
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for: ITGE		SEGURA
by: ADARO		ORCE (GR)
Data Set: 14V	Date: 91	
Equipment: ADARO	Sounding: 14V	Azimuth: E-W



## DATA SET: 15V

CLIENT: ITGE  
 LOCATION: ORCE  
 COUNTY: (GR)  
 PROJECT: SEGURA  
 ELEVATION: 995.00  
 SOUNDING COORDINATES: X: 559800.0000 Y: 4173100.0000

DATE: 91  
 SOUNDING: 15V  
 AZIMUTH: E-W  
 EQUIPMENT: ADARO

## Schlumberger Configuration

FITTING ERROR: 2.070 PERCENT

L #	RESISTIVITY (ohm-m)	CHARGEABILITY (pfe)	THICKNESS (meters)	ELEVATION (meters)	CONDUCTANCE (Siemens)
1	256.9		1.13	995.0	
2	59.89		2.35	993.8	0.00441
3	150.5		11.41	991.5	0.0392
4	52.04		52.25	980.1	0.0758
5	26.08			927.8	1.00

ALL PARAMETERS ARE FREE

No.	Spacing (m)	PA DATA	(ohm-m) SYNTHETIC	DIFFERENCE (percent)
1	2.68	137.0	140.0	-2.24
2	3.73	111.0	106.9	3.66
3	5.18	92.00	93.09	-1.18
4	7.20	93.00	95.37	-2.55
5	10.00	102.0	103.8	-1.81
6	13.90	114.0	110.7	2.82
7	19.30	115.0	111.7	2.82
8	26.80	105.0	104.5	0.475
9	37.30	88.00	89.95	-2.22
10	51.80	73.00	73.25	-0.354
11	72.00	58.00	59.20	-2.06
12	100.0	50.00	48.81	2.36
13	139.0	41.00	40.61	0.940
14	193.0	34.00	34.24	-0.713
15	268.0	30.00	30.12	-0.411

PARAMETER RESOLUTION MATRIX:

\* ADARO \*

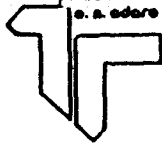
"F" INDICATES FIXED PARAMETER

P 1	0.29																		
P 2	0.02	0.55																	
P 3	0.01	0.12	0.71																
P 4	-0.01	-0.03	0.04	0.69															
P 5	0.00	0.01	-0.02	0.05	0.73														
T 1	0.31	0.17	-0.06	0.03	-0.01	0.64													
T 2	0.02	-0.30	-0.12	0.07	-0.01	0.05	0.24												
T 3	-0.01	-0.08	0.27	0.22	-0.02	0.04	0.10	0.29											
T 4	0.00	0.02	-0.04	0.18	0.24	-0.01	-0.02	-0.03	0.19										
		P 1	P 2	P 3	P 4	P 5	T 1	T 2	T 3	T 4									

ADARO

\*

\*



s. a. edara

Proyecto: .....  
 Zona: *Orce - Granada*  
 Observador: *Juan Cu. Cuartiver*  
 Situación: .....

COORDENADAS  
 X *559.800*  
 Y *4173.100*  
 Z *995*

m V: *Adaro - 01*  
 mA: *650 N° 328*

Rumbo AB  
*E-W*

S.E.V. *15*

Perfil: *V*

CONSTANTES PARA DISPOSITIVO SCHULUMBERGER  
 SIMETRICO  
 MN

Estación	AB/2	MN	I (mA)	Esc. Volt.	V (mV)	ρ (Ωm)	MN	I (mA)	Esc. Volt.	V (mV)	ρ (Ωm)	OBSERVACIONES	CONSTANTES PARA DISPOSITIVO SCHULUMBERGER SIMETRICO MN			
													1 m	10 m	50 m	100 m
1	2.68	1	108	1V	680	137							21.78			
2	3.73		185	"	480	111							42.92			
3	5.18		300	"	330	92							83.51			
4	7.2		295	30uV	170	93							182.1			
5	10		355	"	115	102							313.4			
6	13.9		130	100uV	24.5	114							606.2			
7	19.3		285	"	28	115							1.169	109.2		
8	26.8		315	30uV	14.7	105							2.256	217.8		
9	37.3		290	10uV	5.85	88	10	290	100uV	62	92		4.370	429.2		
10	51.8		330	"	2.85	73		330	"	29.5	75		8.429	836.1		
11	72	10	370	30uV	13.2	58							16.290	1.621		
12	100		460	10uV	8	55	50/						31.420	3.134		
13	139		450	"	3.05	41							60.700	6.062	1.175	
14	193		560	3uV	1.62	34								11.690	2.301	
15	268		470	"	0.62	30								22.560	4.474	
16	373													43.700	8.702	4.292
17	518													84.290	16.820	8.351
18	720													162.900	32.530	18.210
19	1.000														62.790	31.340
20	1.390														121.400	60.620
21	1.930														234.000	116.900
22	2.680														461.200	225.600
23	3.730															437.000
24	5.180															842.880
25	7.200															1.628.520
26	10.000															3.141.510

OBSERVACIONES:

FECHA: *31-01-91*



Departamento de Geofísico

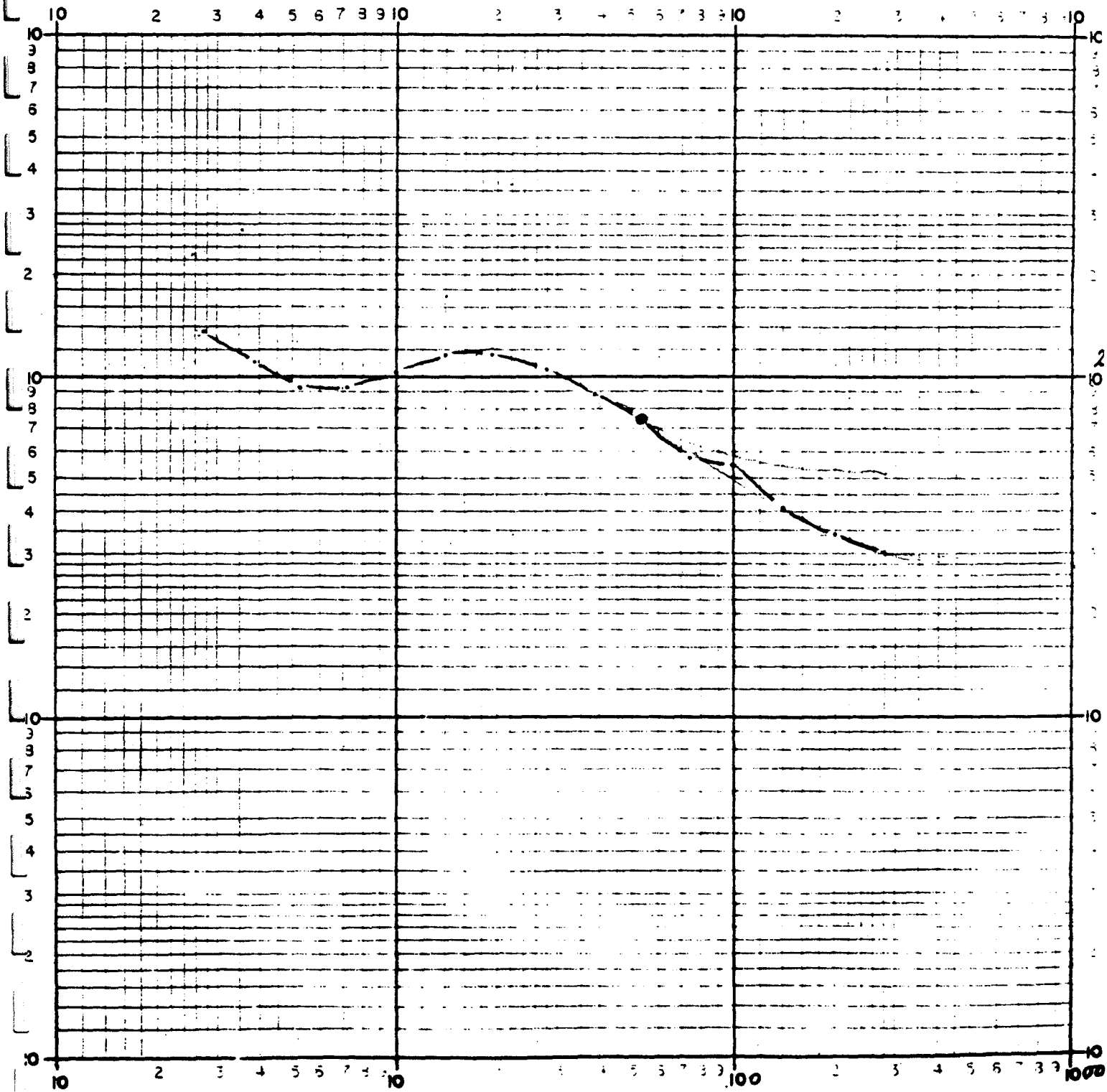
Estudio *Oree - Gramada*

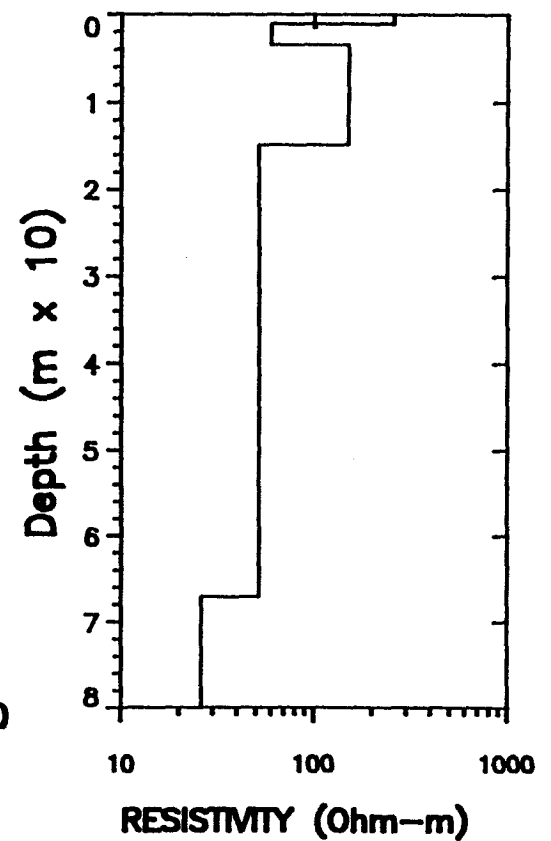
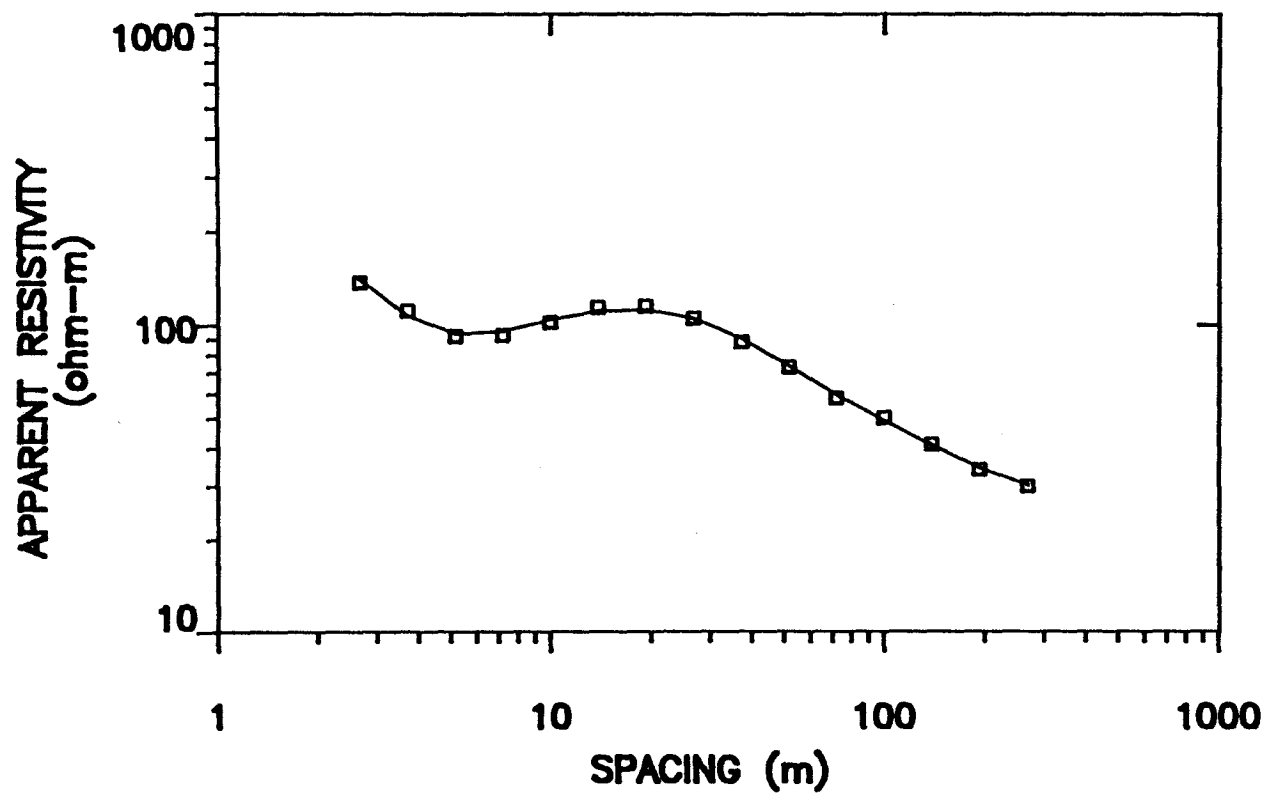
S.E.V. *15*

Fecha *31-01-91* Rumbo AB *E-W*

PERFIL *V*

Interpretación	Observaciones:
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for: ITGE		SEGURA
by: ADARO		
Data Set: 15V	Date: 91	ORCE (GR)
Equipment: ADARO	Sounding: 15V	
		Azimuth: E-W

DATA SET: 16V

CLIENT: ITGE  
LOCATION: ORCE  
COUNTY: (GR)  
PROJECT: SEGURA  
ELEVATION: 1010.00  
SOUNDING COORDINATES: X: 560800.0000 Y: 4175350.0000

DATE: 91  
SOUNDING: 16V  
AZIMUTH: E-W  
EQUIPMENT: ADARO

Schlumberger Configuration

FITTING ERROR: 4.719 PERCENT

L #	RESISTIVITY (ohm-m)	CHARGEABILITY (pfe)	THICKNESS (meters)	ELEVATION (meters)	CONDUCTANCE (Siemens)
				1010.0	
1	54.63		0.236	1009.7	0.00433
2	337.2		5.17	1004.5	0.0153
3	33.18		22.56	982.0	0.679
4	20.17				

ALL PARAMETERS ARE FREE

No.	Spacing (m)	FA DATA	(ohm-m) SYNTHETIC	DIFFERENCE (percent)
1	2.68	228.0	237.8	-4.33
2	3.73	274.0	258.9	5.50
3	5.18	273.0	265.9	2.58
4	7.20	254.0	251.4	0.985
5	10.00	195.0	210.5	-7.96
6	13.90	145.0	149.3	-2.99
7	19.30	100.0	89.96	10.03
8	26.80	49.00	51.99	-6.11
9	37.30	35.00	35.52	-1.49
10	51.80	30.00	29.10	2.97
11	72.00	26.00	25.34	2.53
12	100.0	22.00	22.89	-4.04
13	139.0	21.00	21.52	-2.50
14	193.0	21.00	20.82	0.812
15	268.0	21.00	20.48	2.43

PARAMETER RESOLUTION MATRIX:  
"F" INDICATES FIXED PARAMETER

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ADARO

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P 1	0.46						
P 2	0.02	0.97					
P 3	0.03	-0.02	0.95				
P 4	0.00	0.00	-0.01	1.00			
T 1	-0.45	-0.04	-0.01	0.00	0.46		
T 2	-0.03	0.04	0.04	0.00	0.05	0.94	
T 3	-0.03	0.03	0.09	0.02	0.02	-0.05	0.76
	P 1	P 2	P 3	P 4	T 1	T 2	T 3

ADARO

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Departamento de Geofísica

Estudio *Olla - Granada*

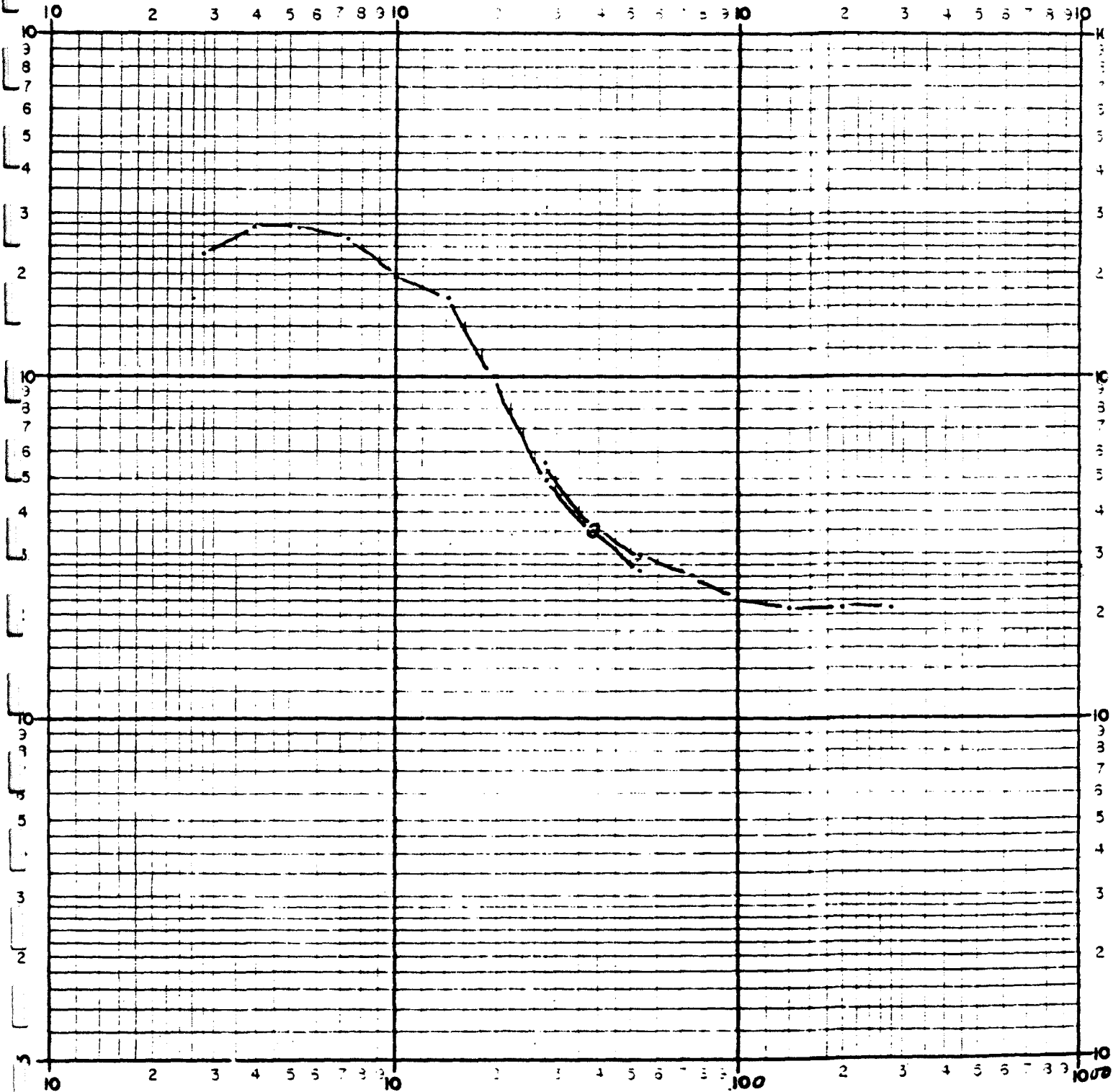
S.E.V. *16*

Fecha *31-01-91* Rumbo AB *E-W*

PERFIL *V*

Interpretación

Observaciones:







Proyecto: .....  
 Zona: Oce - Granada  
 Observador: Juan Cu. Martínez  
 Situación: .....

COORDENADAS  
 X 560 800  
 Y 4175350  
 Z 1010

m V: Sclero - 01  
 m A: Geo N: 328

mbo F - W

S.E.V. 16

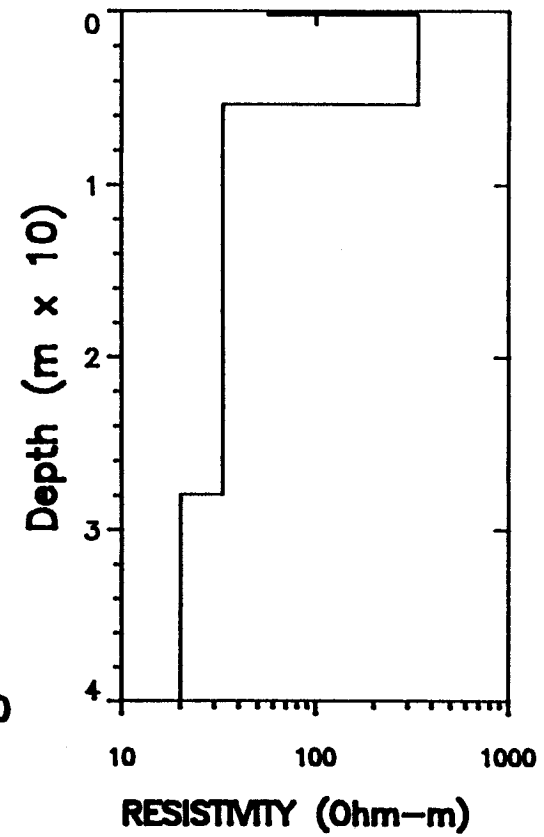
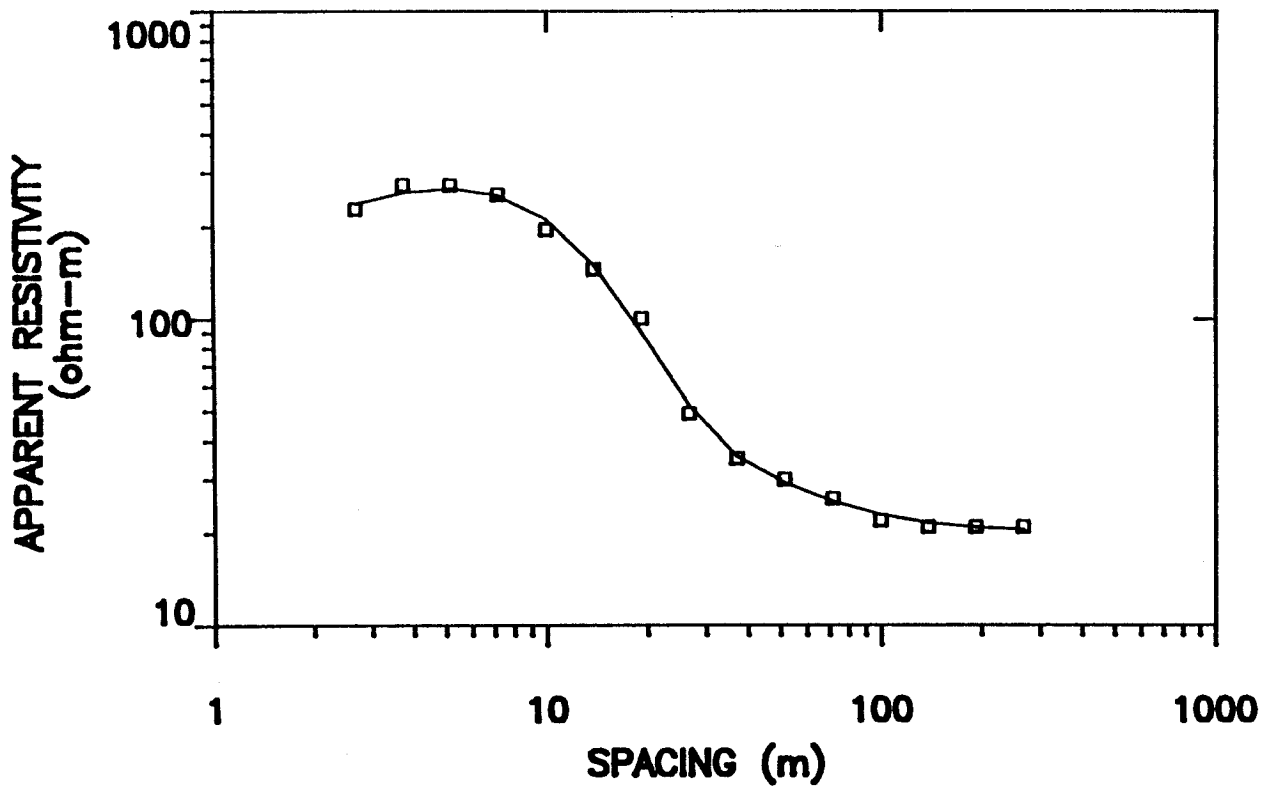
Perfil: V

CONSTANTES PARA DISPOSITIVO SCHULUMBERGER  
 SIMETRICO  
 MN

Estación	AB/2	MN	I (mA)	Esc. Volt.	V (mV)	P (Ωm)	MN	I (mA)	Esc. Volt.	V (mV)	P (Ωm)	OBSERVACIONES	CONSTANTES PARA DISPOSITIVO SCHULUMBERGER SIMETRICO MN			
													1 m	10 m	50 m	100 m
1	2.68	1	105	3V	1100	228							21.78			
2	3.73		80	1V	510	274							42.92			
3	5.18		170	"	555	273							83.51			
4	7.2		310	"	485	254							182.1			
5	10		290	300uV	180	195							313.4			
6	13.9		290	100uV	80.5	168	(145)						606.2			
7	19.3		245	"	21	100							1.169	109.2		
8	26.8		200	10uV	4.35	(49)	10	200	100uV	51	56		2.256	217.8		
9	37.3		100	2uV	0.80	(35)		100	10uV	8.4	36		4.370	429.2		
10	51.8		160	"	0.515	27		160	"	5.65	(30)		8.429	835.1		
11	72	10	170	10uV	2.7	26							16.290	1.621		
12	100		385	"	2.7	22							31.420	3.134		
13	139		315	2uV	1.1	21							60.700	6.062	1.175	
14	193		675	"	1.2	21								11.690	2.301	
15	268		870	"	0.81	21								22.560	4.474	
16	373													43.700	8.702	4.292
17	518															
18	720													84.290	16.820	8.351
19	1.000													162.900	32.530	16.210
20	1.380														62.790	31.340
21	1.930														121.400	60.620
22	2.680														234.000	116.900
23	3.730														451.200	225.600
24	5.180															437.000
25	7.200															842.880
26	10.000															1.628.520
27																3.141.510

OBSERVACIONES:

FECHA: 31-01-91



for: ITGE		SEGURA
by: ADARO		
Data Set: 16V	Date: 91	ORCE (GR)
Equipment: ADARO	Sounding: 16V	
		Azimuth: E-W

## DATA SET: 17VI

CLIENT: ITGE  
 LOCATION: QRCE  
 COUNTY: (GR)  
 PROJECT: SEGURA  
 ELEVATION: 1020.00  
 SOUNDING COORDINATES: X: 560570.0000 Y: 4170650.0000

DATE: 91  
 SOUNDING: 17VI  
 AZIMUTH: E-W  
 EQUIPMENT: ADARO

## Schlumberger Configuration

FITTING ERROR: 1.010 PERCENT

L #	RESISTIVITY (ohm-m)	CHARGEABILITY (pfe)	THICKNESS (meters)	ELEVATION (meters)	CONDUCTANCE (Siemens)
				1020.0	
1	153.5		1.04	1018.9	0.00681
2	619.7		2.43	1016.5	0.00393
3	209.6		9.97	1006.5	0.0475
4	507.1		45.17	961.3	0.0890
5	243.7				

ALL PARAMETERS ARE FREE

No.	Spacing (m)	PA DATA	(ohm-m) SYNTHETIC	DIFFERENCE (percent)
1	2.68	259.0	258.1	0.320
2	3.73	296.0	300.2	-1.42
3	5.18	338.0	332.2	1.70
4	7.20	344.0	344.5	-0.150
5	10.00	330.0	334.5	-1.38
6	13.90	318.0	312.8	1.61
7	19.30	295.0	299.1	-1.41
8	26.80	310.0	307.2	0.888
9	37.30	335.0	333.9	0.322
10	51.80	359.0	363.7	-1.31
11	72.00	384.0	382.3	0.442
12	100.0	383.0	380.3	0.679
13	139.0	356.0	356.8	-0.232
14	193.0	320.0	321.3	-0.409
15	268.0	289.0	288.3	0.232

PARAMETER RESOLUTION MATRIX:

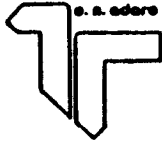
\*

ADARO

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"F" INDICATES FIXED PARAMETER

P 1	0.65									
P 2	-0.02	0.74								
P 3	0.04	0.00	0.87							
P 4	-0.01	0.02	-0.02	0.93						
P 5	0.00	0.00	0.01	-0.02	0.97					
T 1	-0.41	-0.13	0.06	0.00	0.00	0.45				
T 2	-0.01	0.35	0.12	-0.01	-0.01	0.12	0.40			
T 3	0.04	0.00	-0.22	-0.11	-0.01	0.07	0.19	0.52		
T 4	0.01	-0.03	0.04	0.17	0.10	0.01	0.03	0.22	0.51	
	P 1	P 2	P 3	P 4	P 5	T 1	T 2	T 3	T 4	



Proyecto: .....  
 Zona: Orce - Granada  
 Observador: Juan Cu. Cuatrecasas  
 Situación: .....

COORDENADAS  
 X 560570  
 Y 4170650  
 Z 1020

mV: Adura - 01  
 mA: GED N° 328

Rumbo AB  
E - W

S.E.V. 17

Perfil: VI

CONSTANTES PARA DISPOSITIVO SCHULUMBERGER  
 SIMETRICO  
 MN

Estación	AB/2	MN	I (mA)	Esc. Volt.	V (mV)	ρ (Ωm)	MN	I (mA)	Esc. Volt.	V (mV)	ρ (Ωm)	OBSERVACIONES	CONSTANTES PARA DISPOSITIVO SCHULUMBERGER SIMETRICO MN			
													1 m	10 m	50 m	100 m
1	2.68	1	21	300uV	250	259							21.78			
2	3.73		19	"	131	296							42.92			
3	5.18		19	100uV	77	338							83.51			
4	7.2		20	"	42.5	344							182.1			
5	10		93	"	98	330							313.4			
6	13.9		100	"	52.5	318							606.2			
7	18.3		180	"	45.5	295							1.189	109.2		
8	26.8		375	"	51.5	310							2.256	217.8		
9	37.3		200	300uV	15	328	10	205	300uV	160	335		4.370	429.2		
10	51.8		340	"	14	347		340	"	146	359		8.429	836.1		
11	72		350	100uV	7.85	365		350	100uV	83	384		16.290	1.621		
12	100	10	515	100uV	63	383							31.420	3.134		
13	139		460	"	27	356							60.700	6.062	1.175	
14	193		420	300uV	11.5	320								11.690	2.301	
15	268		555	100uV	7.1	289								22.560	4.474	
16	373													43.700	8.702	4.292
17	518													84.290	16.820	8.351
18	720													162.900	32.530	16.210
19	1.000														62.790	31.340
20	1.300														121.400	60.620
21	1.930														234.000	116.900
22	2.680														451.200	225.600
23	3.730															437.000
24	5.180															842.880
25	7.200															1.628.620
26	10.000															3.141.510

OBSERVACIONES:

FECHA: 1-02-91



Departamento de Geofísica

Estudio *Orca - Granada*

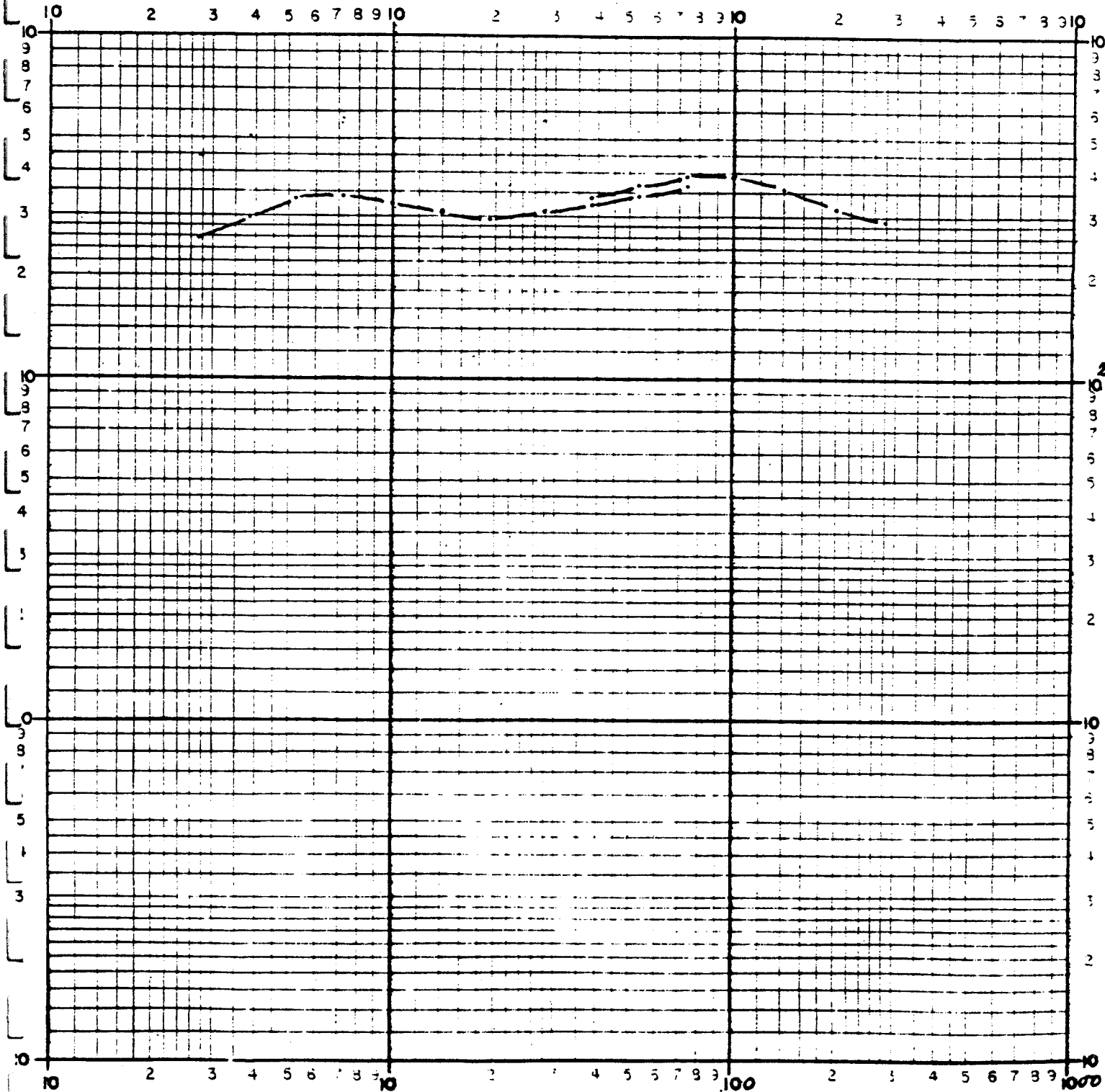
S.E.V. *17*

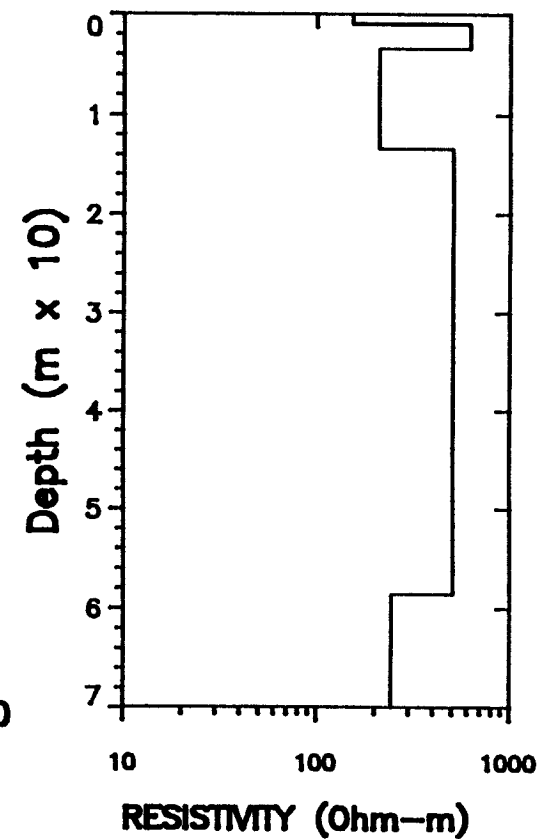
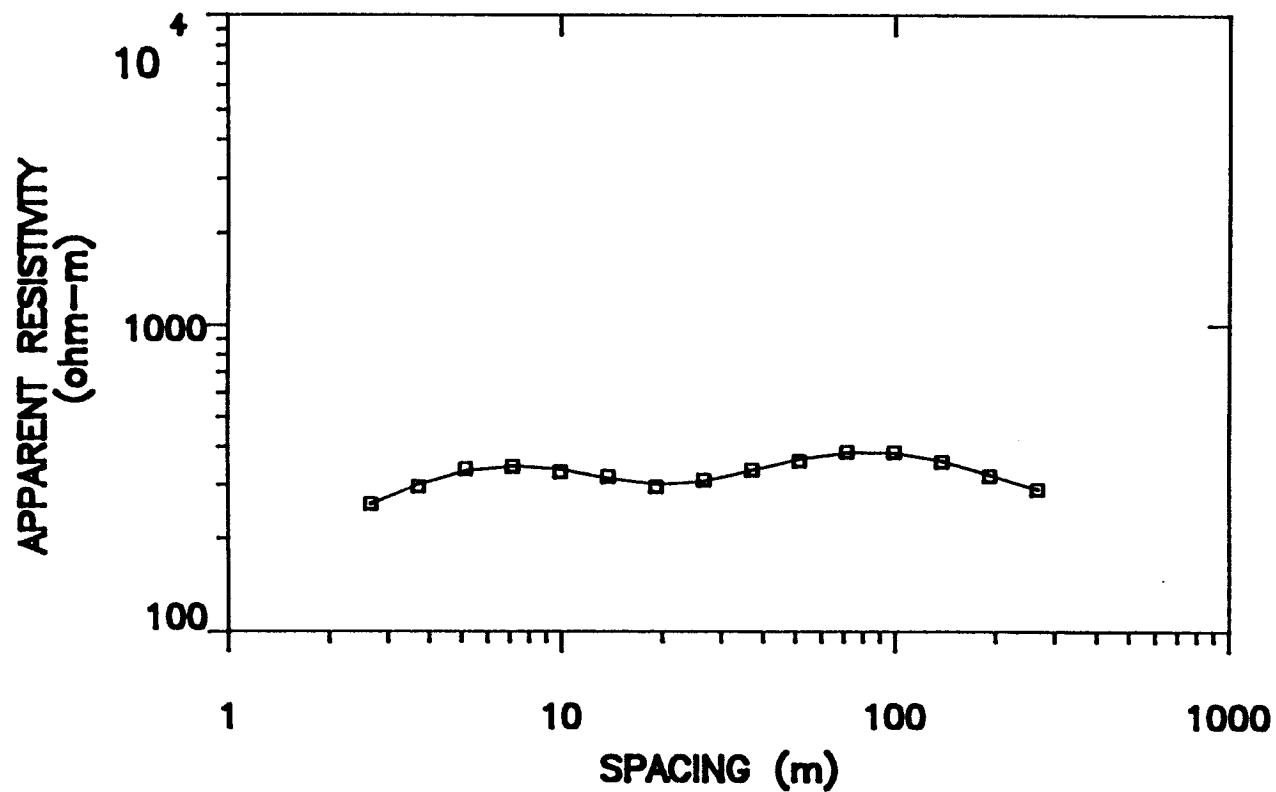
Fecha *1-02-91* Rumbo AB. *E-W*

PERFIL *VI*

Interpretación

Observaciones:





for: ITGE		SEGURA
by: ADARO		ORCE (GR)
Data Set: 17VI	Date: 91	
Equipment: ADARO	Sounding: 17VI	Azimuth: E-W

DATA SET: 18VI

CLIENT: ITGE	DATE: 91
LOCATION: ORCE	SOUNDING: 18VI
COUNTY: (GR)	AZIMUTH: E-W
PROJECT: SEGURA	EQUIPMENT: ADARO
ELEVATION: 1022.00	
SOUNDING COORDINATES: X: 561840.0000 Y: 4172200.0000	

Schlumberger Configuration

FITTING ERROR: 1.446 PERCENT

#	RESISTIVITY (ohm-m)	CHARGEABILITY (pfe)	THICKNESS (meters)	ELEVATION (meters)	CONDUCTANCE (Siemens)
				1022.0	
1	216.3		0.608	1021.3	0.00281
2	874.9		1.92	1019.4	0.00220
3	629.7		31.05	982.4	0.0493
4	258.9		80.30	908.1	0.310
5	61.33				

ALL PARAMETERS ARE FREE

No.	Spacing (m)	PA DATA	(ohm-m) SYNTHETIC	DIFFERENCE (percent)
1	2.68	494.6	495.7	-0.235
2	3.73	557.9	563.7	-1.03
3	5.18	634.6	614.9	3.10
4	7.20	636.8	644.0	-1.11
5	10.00	636.8	652.2	-2.42
6	13.90	663.5	646.9	2.50
7	19.30	627.9	634.0	-0.964
8	26.80	610.1	613.5	-0.550
9	37.30	579.0	578.7	0.0591
10	51.80	530.1	521.1	1.70
11	72.00	433.0	439.4	-1.48
12	100.0	349.0	348.0	0.285
13	139.0	263.0	263.0	-0.0298
14	193.0	190.0	189.8	0.0899
15	268.0	130.0	130.0	-0.0755

PARAMETER RESOLUTION MATRIX:

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ADARO

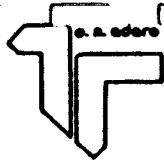
\*



## "F" INDICATES FIXED PARAMETER

P 1	0.53										
P 2	0.03	0.87									
P 3	0.00	0.01	0.99								
P 4	-0.01	0.02	-0.01	0.83							
P 5	0.00	0.00	0.00	-0.15	0.49						
T 1	-0.47	-0.07	0.01	0.01	0.00	0.43					
T 2	-0.08	0.25	0.02	0.04	0.01	0.07	0.13				
T 3	0.02	-0.04	0.02	0.14	0.08	-0.01	-0.01	0.95			
T 4	0.00	0.00	0.00	0.16	0.37	0.00	-0.01	-0.10	0.70		
	P 1	P 2	P 3	P 4	P 5	T 1	T 2	T 3	T 4		

\* ADARF \*



Proyecto: .....  
 Zona: Orce - Granada  
 Observador: Juan Cu. Cuartines  
 Situación: .....

COORDENADAS  
 X 561840  
 Y 4172200  
 Z 1022

mV: Adaro-01  
 mA: 560 N° 328

Rumbo  $\lambda$  E-W

S.E.V. 18

Perfil: VI

CONSTANTES PARA DISPOSITIVO SCHULUMBERGER SIMETRICO MN

Estación	AB/2	MN	I (mA)	Esc. Volt.	V (mV)	$\rho$ ( $\Omega$ m)	MN	I (mA)	Esc. Volt.	V (mV)	$\rho$ ( $\Omega$ m)	OBSERVACIONES	CONSTANTES PARA DISPOSITIVO SCHULUMBERGER SIMETRICO MN			
													1 m	10 m	50 m	100 m
1	2.68	1	72	3V	1470	445							21.78			
2	3.73		160	"	1870	502							42.92			
3	5.18		180	"	1230	571							83.51			
4	7.2		140	1V	495	573							162.1			
5	10		290	"	530	573							313.4			
6	13.9		340	"	335	597							606.2			
7	19.3		360	300uV	174	565							1.169	109.2		
8	26.8		380	"	92.5	549							2.256	217.8		
9	37.3		390	100uV	46.5	521							4.370	429.2		
10	51.8		380	"	21.5	477	10	380	300uV	237	521		8.429	836.1		
11	72		305	10uV	7.4	395		305	100uV	81.5	433		16.290	1.621		
12	100		490	"	4.9	314		485	"	54	349		31.420	3.134		
13	139		450	30uV	19.5	263							60.700	6.062	1.175	
14	193		515	10uV	8.35	190								11.690	2.301	
15	268		450	"	2.6	130								22.560	4.474	
16	373													43.700	8.702	4.292
17	518													84.290	16.820	8.351
18	720													162.900	32.530	16.210
19	1.000														62.790	31.340
20	1.390															121.400
21	1.930															60.620
22	2.680															234.000
23	3.730															451.200
24	5.180															225.600
25	7.200															437.000
26	10.000															842.880
																1.628.520
																3.141.510

OBSERVACIONES:

FECHA: 1-02-91



endinsa:

Departamento de Geofísico

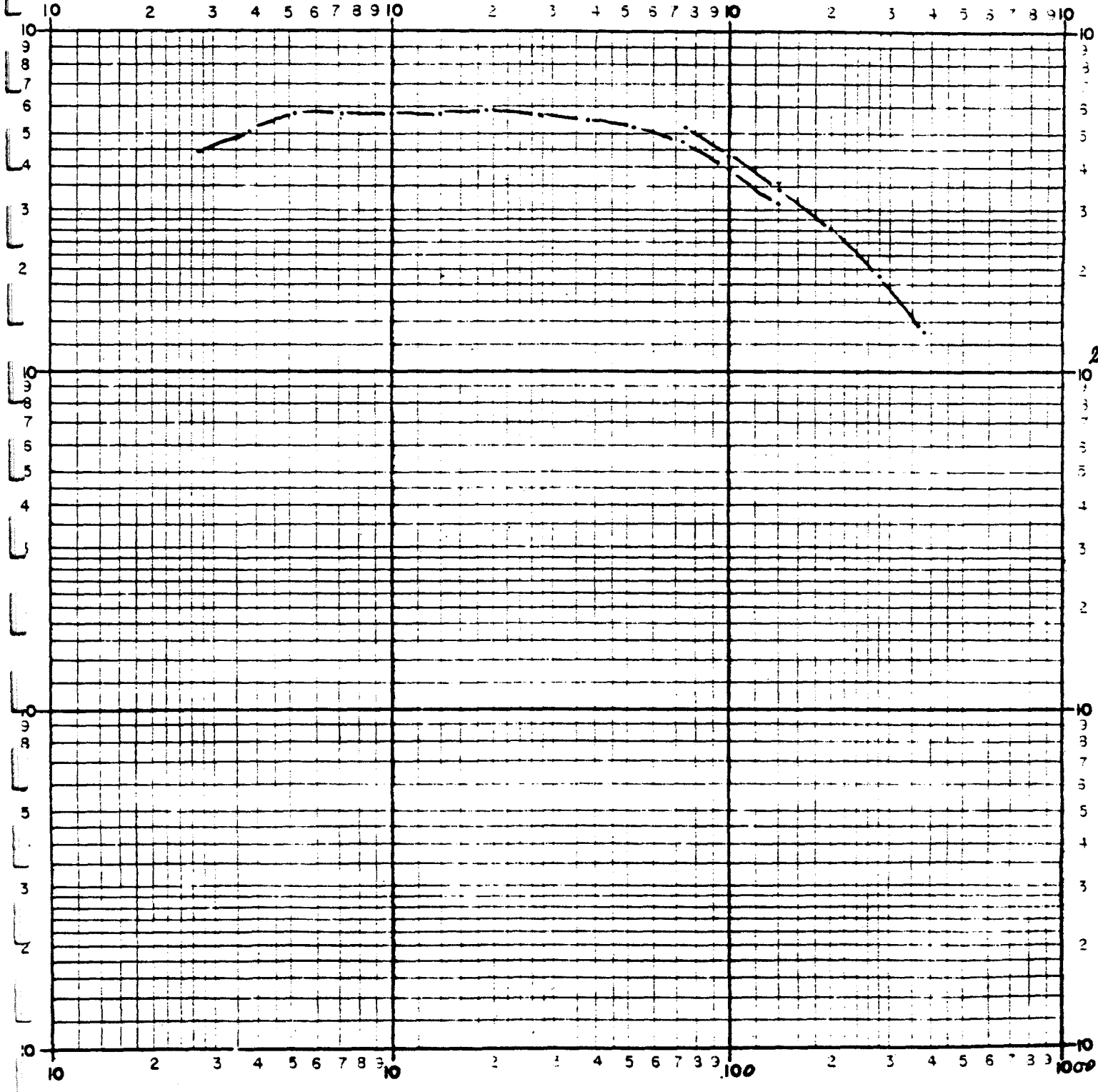
Estudio *Orce - Granada*

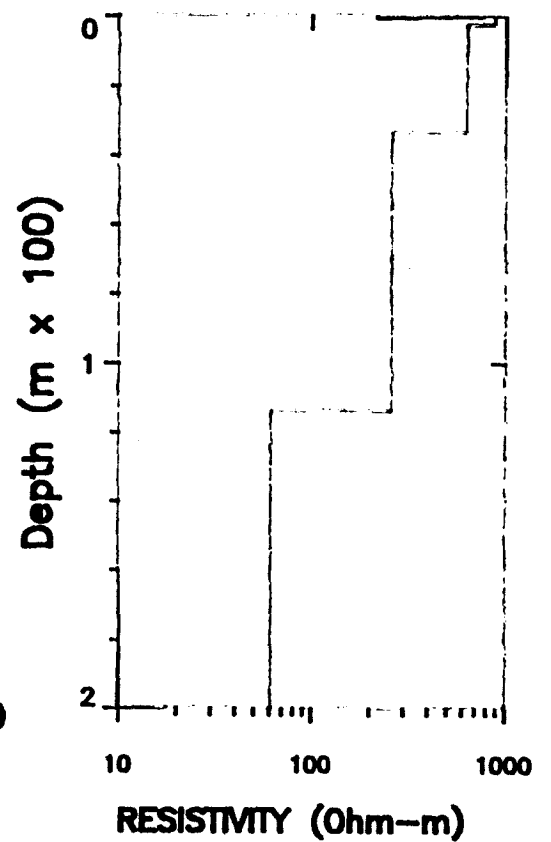
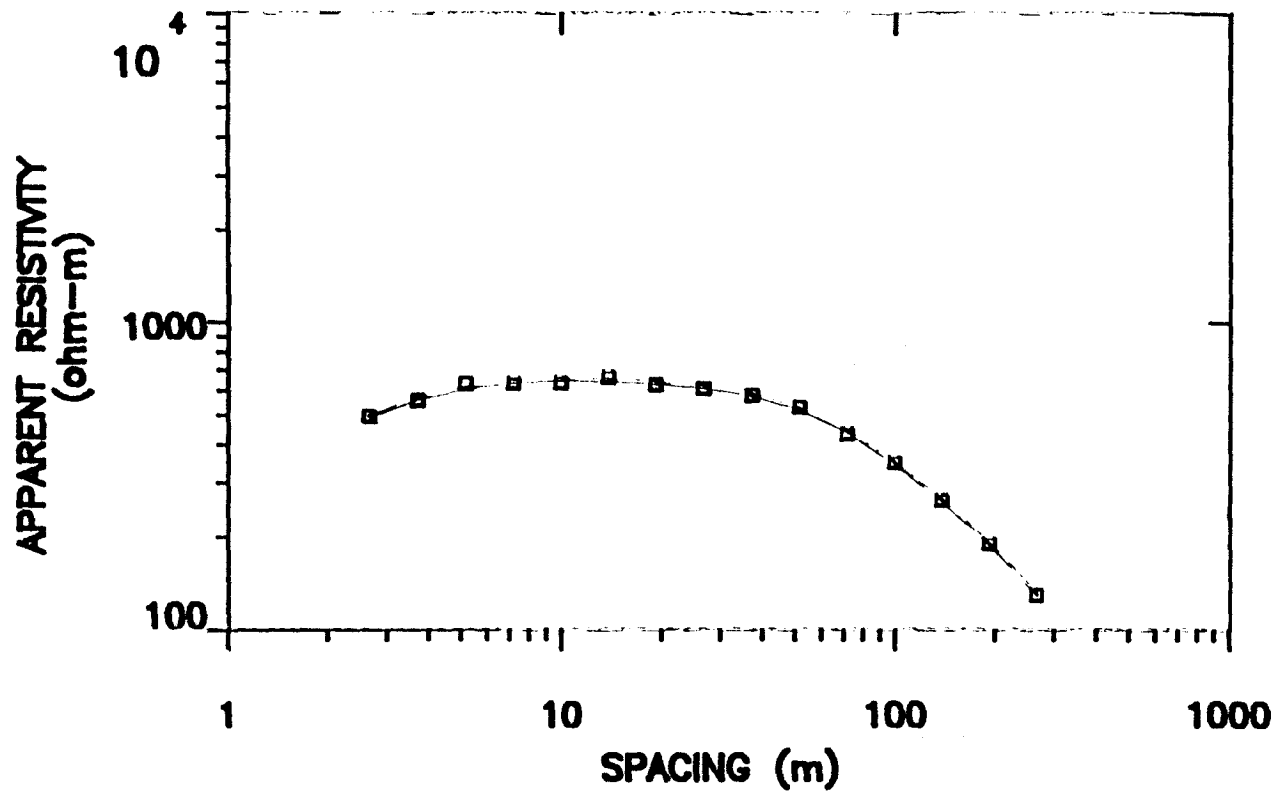
S.E.V. *18*

Fecha *1-02-91* Rumbo AB *E-W*

PERFIL *VI*

Interpretación	Observaciones:
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for: ITGE		SEGURA
by: ADARO		ORCE (GR)
Data Set: 18VI	Date: 91	Azimuth: E-W
Equipment: ADARO	Sounding: 18VI	

DATA SET: 19VI

CLIENT: ITGE  
 LOCATION: ORCE  
 COUNTY: (GR)  
 PROJECT: SEGURA  
 ELEVATION: 1040.00  
 SOUNDING COORDINATES: X: 562300.0000 Y: 4173850.0000

DATE: 91  
 SOUNDING: 19VI  
 AZIMUTH: E-W  
 EQUIPMENT: ADARO

Schlumberger Configuration

FITTING ERROR: 2.720 PERCENT

L #	RESISTIVITY (ohm-m)	CHARGEABILITY (pfe)	THICKNESS (meters)	ELEVATION (meters)	CONDUCTANCE (Siemens)
				1040.0	
1	249.1		0.815	1039.1	0.00327
2	49.01		1.47	1037.7	0.0301
3	644.5		4.15	1033.5	0.00645
4	76.89		26.37	1007.1	0.343
5	184.8		25.43	981.7	0.137
6	57.38				

ALL PARAMETERS ARE FREE

No.	Spacing (m)	DATA	PA (ohm-m)	DIFFERENCE (percent)
			SYNTHETIC	
1	2.68	108.8	107.5	1.24
2	3.73	102.4	105.4	-2.91
3	5.18	123.8	124.4	-0.550
4	7.20	150.4	152.8	-1.58
5	10.00	177.1	180.1	-1.69
6	13.90	204.9	197.8	3.46
7	19.30	208.1	198.1	4.80
8	26.80	182.5	179.0	1.86
9	37.30	140.8	148.6	-5.52
10	51.80	119.0	122.3	-2.79
11	72.00	111.0	108.4	2.30
12	100.0	105.0	102.0	2.82
13	139.0	93.00	94.06	-1.14
14	193.0	82.00	82.72	-0.881
15	268.0	72.00	71.84	0.218

\*

ADARO

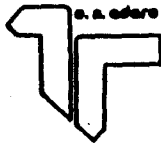
\*

PARAMETER RESOLUTION MATRIX:  
 "F" INDICATES FIXED PARAMETER

P 1	0.09										
P 2	0.09	0.51									
P 3	0.00	0.04	0.43								
P 4	0.00	-0.02	0.14	0.53							
P 5	0.00	0.01	-0.03	0.19	0.29						
P 6	0.00	0.00	0.01	-0.03	0.23	0.62					
T 1	0.22	0.12	-0.04	0.04	0.00	0.00	0.64				
T 2	-0.02	-0.44	-0.07	0.05	0.00	0.00	0.08	0.44			
T 3	0.00	-0.01	0.40	0.15	-0.03	0.01	-0.01	0.00	0.38		
T 4	0.00	0.00	0.01	-0.20	-0.04	0.11	-0.01	-0.01	0.01	0.11	
T 5	0.00	0.00	-0.02	0.08	0.20	0.21	0.00	0.00	-0.02	0.00	
	P 1	P 2	P 3	P 4	P 5	P 6	T 1	T 2	T 3	T 4	

SECOND PART OF RESOLUTION MATRIX:

T 5	0.15
	T 5



Proyecto: .....  
 Zona: Orece - Granada  
 Observador: Juan Cu. Quintanes  
 Situación: .....

COORDENADAS  
 X 562.300  
 Y 4173850  
 Z 1040

m V: Sdaro-01  
 m A: 550 N° 328  
 S.E.V. 19

Rumbo AB  
E-W  
 Perfil: VI

CONSTANTES PARA DISPOSITIVO SCHULUMBERGER  
 SIMÉTRICO  
 MN

Estación	AB/2	MN	I (mA)	Esc. Volt.	V (mV)	ρ (Ωm)	MN	I (mA)	Esc. Volt.	V (mV)	ρ (Ωm)	OBSERVACIONES	CONSTANTES PARA DISPOSITIVO SCHULUMBERGER SIMÉTRICO MN				
													1 m	10 m	50 m	100 m	
1	2.88	/	34	300mV	160	102							21.78				
2	3.73		88	"	196	96							42.92				
3	5.18		95	"	132	116							83.51				
4	7.2		305	"	265	141							162.1				
5	10		400	"	212	166							313.4				
6	13.9		370	"	117	192							606.2				
7	19.3		360	100mV	60	195							1.169	109.2			
8	26.8		350	"	26.5	171							2.256	217.8			
9	37.3		270	10mV	8.15	132	10	270	100mV	90	143		4.370	429.2			
10	51.8		340	"	4.5	112		340	"	48.5	119		8.429	835.1			
11	72		330	"	2.1	104		330	"	22.5	111		16.290	1.621			
12	100		500	30mV	16.7	105							31.420	3.134			
13	139		380	10mV	5.8	93							60.700	6.062	1.175		
14	193		500	"	3.5	82								11.690	2.301		
15	268		510	2mV	1.62	72								22.560	4.474		
16	373													43.700	8.702	4.292	
17	518													84.290	16.820	8.351	
18	720													162.900	32.530	16.210	
19	1.000														62.790	31.340	
20	1.390															121.400	60.620
21	1.930															234.000	116.900
22	2.680															451.200	225.600
23	3.730																437.000
24	5.180																842.880
25	7.200																1.628.520
26	10.000																3.141.510

OBSERVACIONES:

FECHA: 1-02-91



Departamento de Geofísica

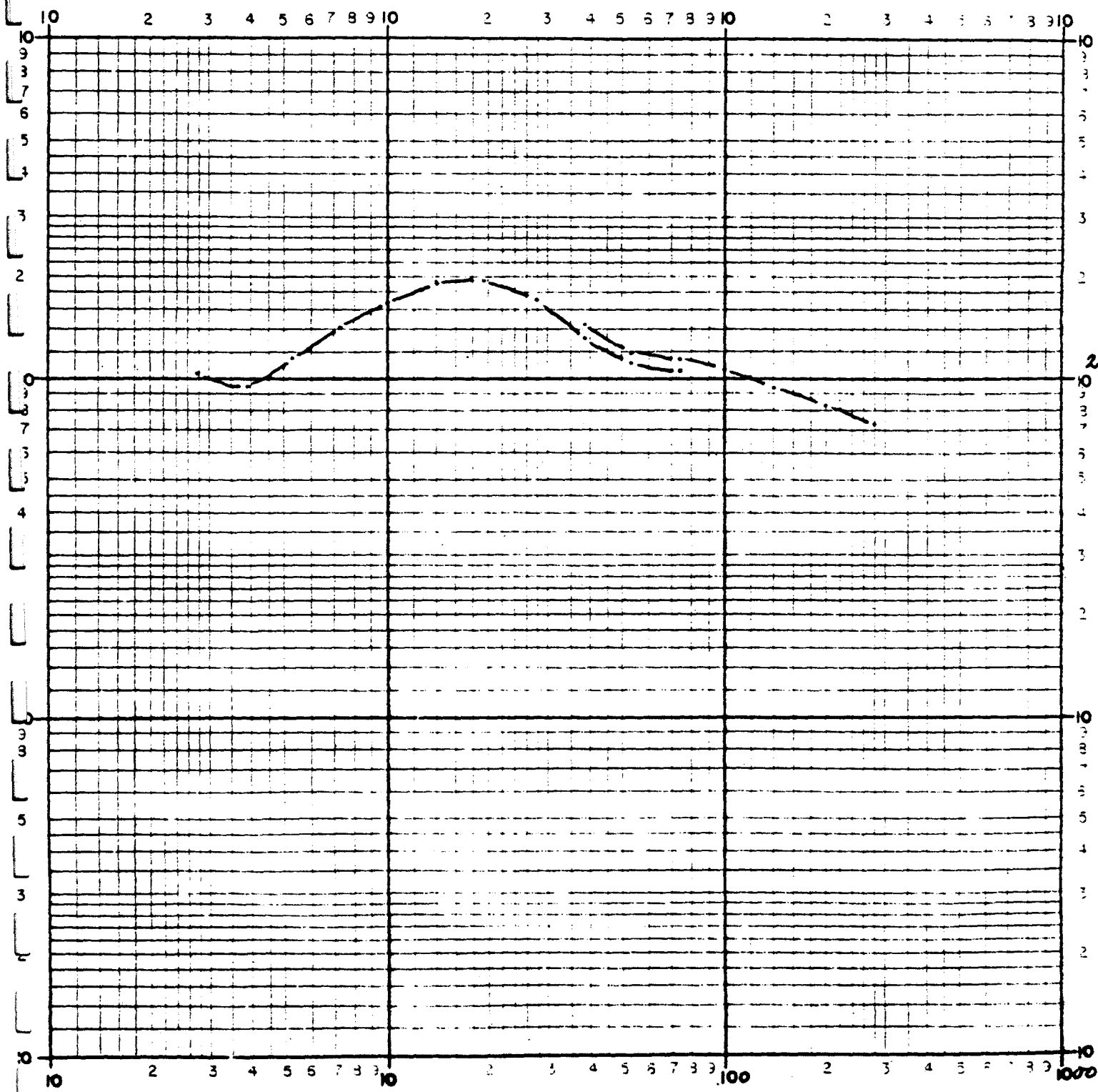
Estudio Orce - Gramada

S.E.V. 19

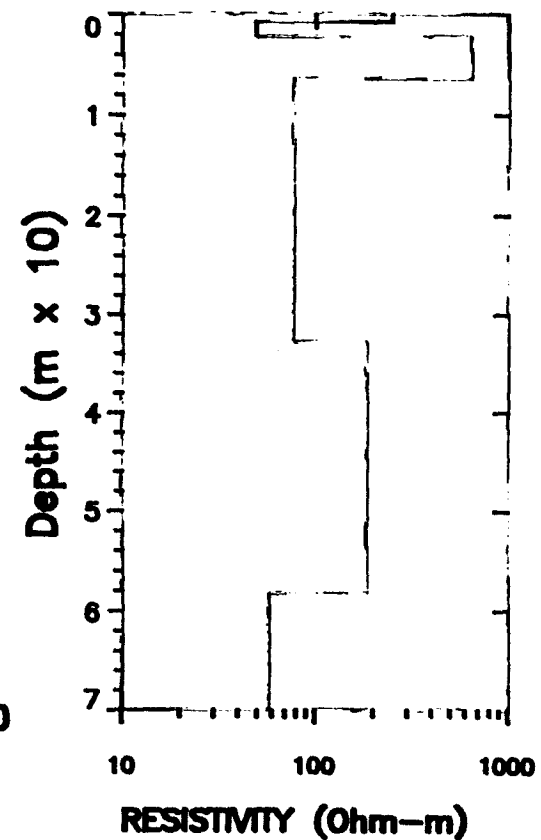
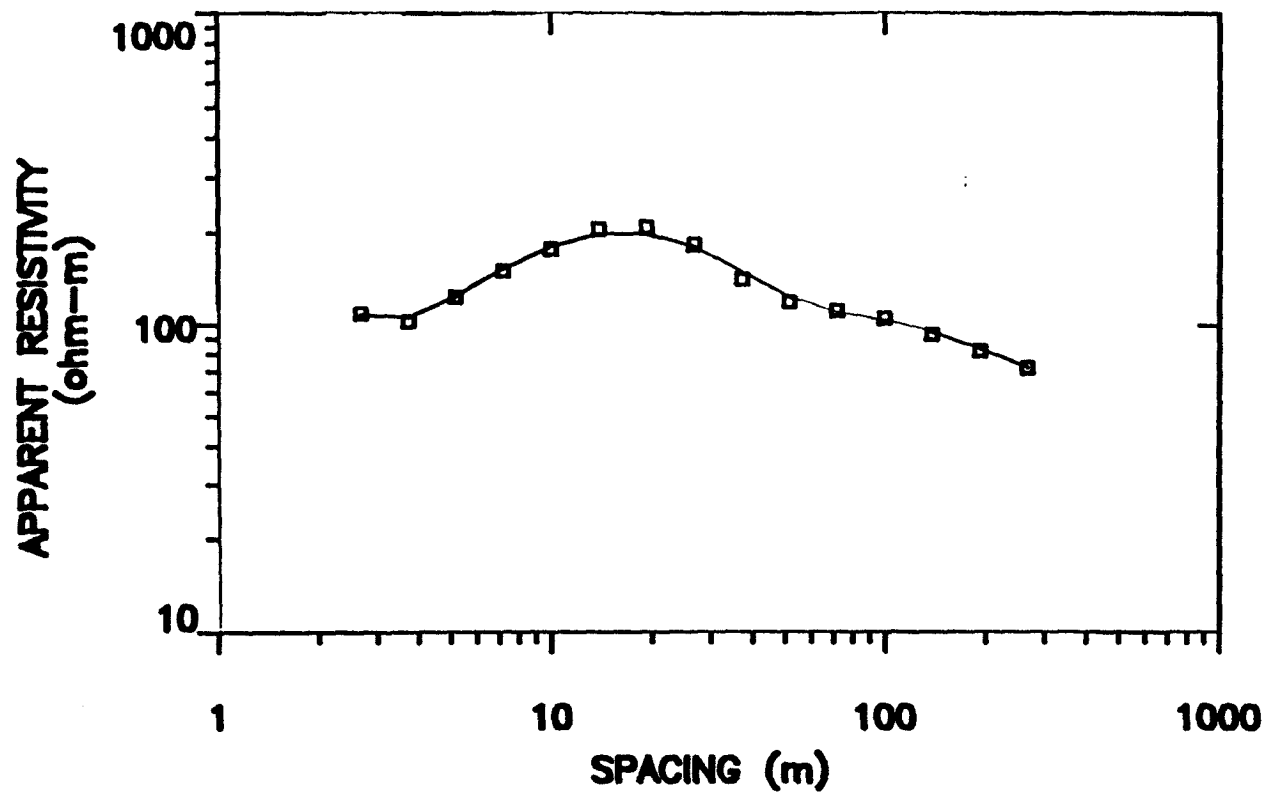
Fecha 1-02-91 Rumbo AB E-W

PERFIL VI

Interpretación	Observaciones:
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for:	ITGE	SEGURA
by:	ADARO	ORCE (GR)
Data Set: 19VI	Date: 91	
Equipment: ADARO	Sounding: 19VI	Azimuth: E-W

## DATA SET: 20VII

CLIENT: ITGE DATE: 91  
LOCATION: ORCE SOUNDING: 20VII  
COUNTY: (GR) AZIMUTH: E-W  
PROJECT: SEGURA EQUIPMENT: ADARO  
ELEVATION: 1062.00  
SOUNDING COORDINATES: X: 563000.0000 Y: 4170830.0000

## Schlumberger Configuration

FITTING ERROR: 2.868 PERCENT

L #	RESISTIVITY (ohm-m)	CHARGEABILITY (pfe)	THICKNESS (meters)	ELEVATION (meters)	CONDUCTANCE (Siemens)
1	225.0		11.09	1062.0	
2	128.2		41.59	1050.9	0.0493
3	267.8		57.01	1009.3	0.324
4	475.9			952.3	0.212

ALL PARAMETERS ARE FREE

No.	Spacing (m)	PA DATA	(ohm-m) SYNTHETIC	DIFFERENCE (percent)
1	2.68	221.0	224.8	-1.71
2	3.73	222.0	224.4	-1.10
3	5.18	223.0	223.6	-0.277
4	7.20	227.0	221.5	2.39
5	10.00	224.0	216.8	3.17
6	13.90	199.0	207.6	-4.36
7	19.30	198.0	192.8	2.59
8	26.80	174.0	174.7	-0.458
9	37.30	158.0	159.5	-0.971
10	51.80	152.0	153.1	-0.786
11	72.00	166.0	158.4	4.52
12	100.0	168.0	175.5	-4.47
13	139.0	200.0	202.7	-1.37
14	193.0	250.0	237.6	4.94
15	268.0	272.0	277.6	-2.08

PARAMETER RESOLUTION MATRIX:  
"F" INDICATES FIXED PARAMETER

\* ADARO \*

F 1	1.00							
F 2	0.00	0.96						
F 3	0.00	-0.01	0.47					
F 4	0.00	-0.02	0.11	0.76				
T 1	0.00	0.05	0.00	0.03	0.91			
T 2	0.00	-0.09	-0.40	0.02	0.11	0.47		
T 3	0.00	0.03	-0.15	-0.24	-0.03	0.05	0.12	
	F 1	F 2	F 3	F 4	T 1	T 2	T 3	

\* ADARO \*



Proyecto: .....  
 Zona: *Orce - Granada*  
 Observador: *Juan Cu. Cuartines*  
 Situación: .....

COORDENADAS  
 X *563000*  
 Y *4170830*  
 Z *1062*

mV: *Adoro-01*  
 mA: *GEV N° 328*  
 S.E.V. *20*

Rumbo AB  
*E-W*  
 Perfil: *VII*

CONSTANTES PARA DISPOSITIVO SCHULUMBERGER  
 SIMETRICO  
 MN

Estación	AB/2	MN	I (mA)	Esc. Volt.	V (mV)	$\rho$ ( $\Omega$ m)	MN	I (mA)	Esc. Volt.	V (mV)	$\rho$ ( $\Omega$ m)	OBSERVACIONES	1 m	10 m	50 m	100 m
1	2.68	1	75	1V	760	221							21.78			
2	3.73		180	"	930	222							42.92			
3	5.18		180	"	480	223							83.51			
4	7.2		300	"	420	227							182.1			
5	10		220	300uV	157	224							313.4			
6	13.9		280	100uV	82	199							606.2			
7	19.3		290	"	49.0	198							1.169	109.2		
8	26.8		390	"	30	174							2.256	217.8		
9	37.3		320	300uV	11.6	158	10	320	300uV	120	161		4.370	429.2		
10	51.8	10	330	100uV	60	152							8.429	836.1		
11	72		315	"	32.2	166							16.290	1.621		
12	100		200	300uV	10.7	168							31.420	3.134		
13	139		490	"	16.2	200							60.700	6.062	1.175	
14	193		515	"	11	250								11.690	2.301	
15	268		390	100uV	4.7	272								22.560	4.474	
16	373													43.700	8.702	4.292
17	518													84.290	16.820	8.351
18	720													182.900	32.530	16.210
19	1.000														62.790	31.340
20	1.390														121.400	60.620
21	1.930														234.000	116.900
22	2.680														451.200	225.600
23	3.730															437.000
24	5.180															842.880
25	7.200															1.628.520
26	10.000															3.141.510

OBSERVACIONES:

FECHA: *1-02-91*



Departamento de Geofísica

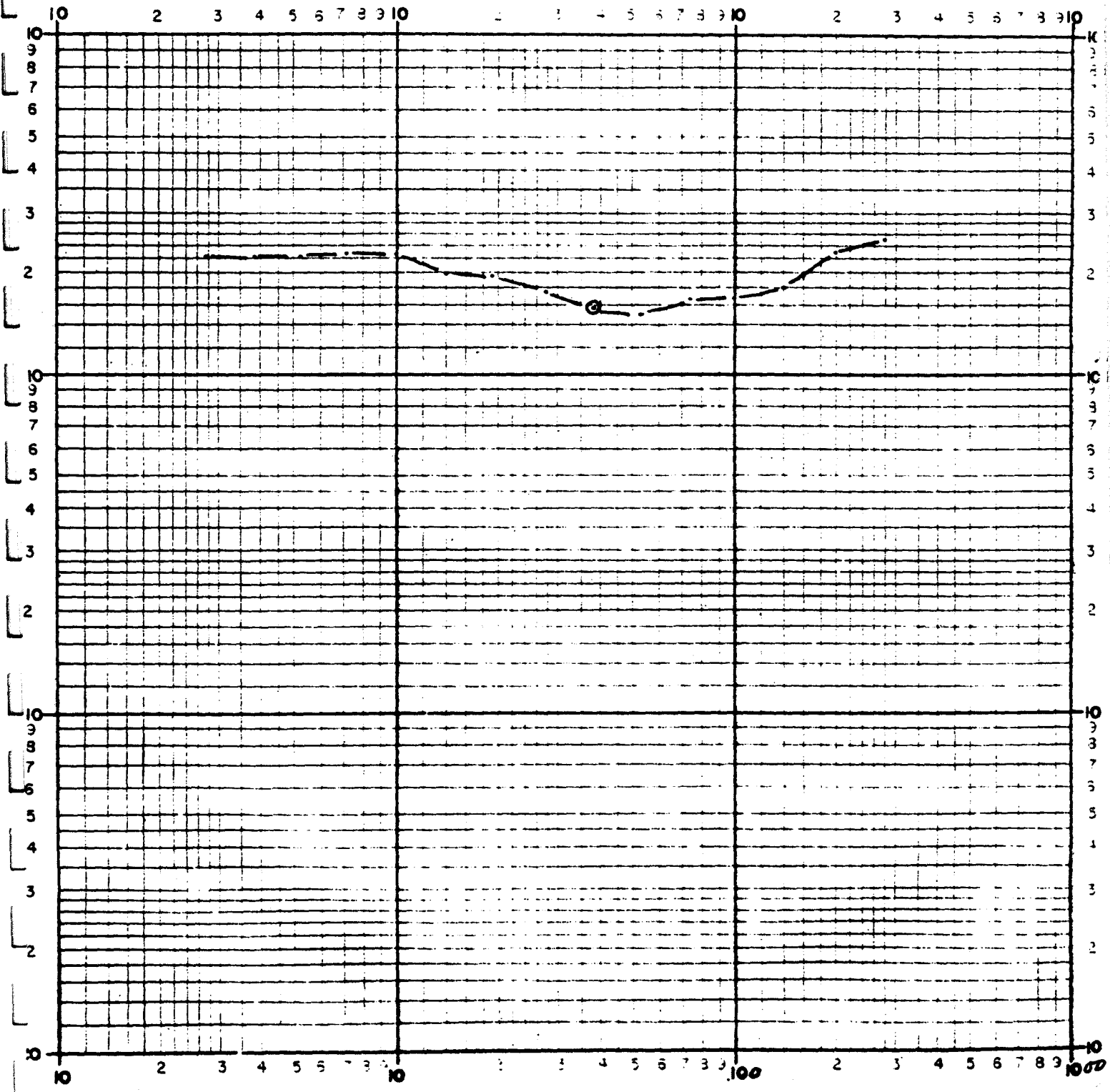
Estudio *Orce - Granada*

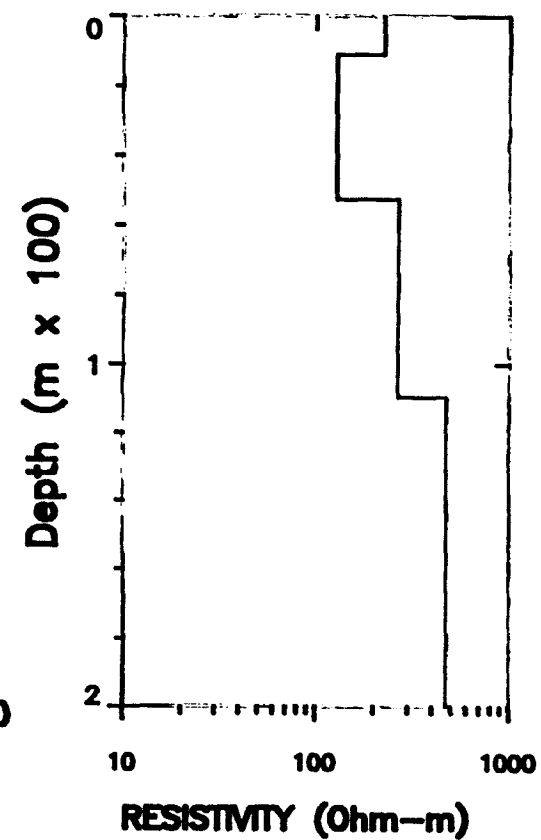
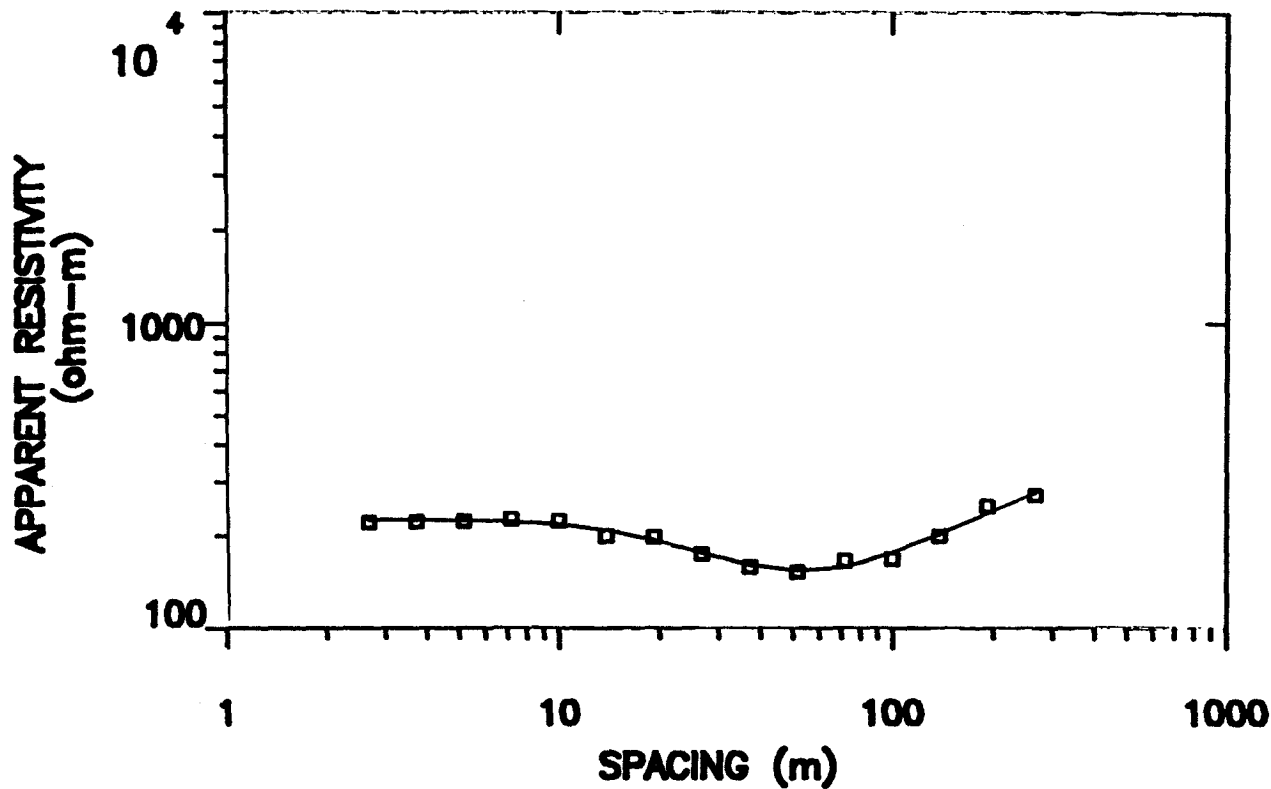
S.E.V. *20*

Fecha *1-02-91* Rumbo AB. *E-W*

PERFIL *VII*

Interpretación	Observaciones:
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for: ITGE		SEGURA
by: ADARO		ORCE (GR)
Data Set: 20VII	Date: 91	
Equipment: ADARO	Sounding: 20VII	Azimuth: E-W

DATA SET: 21VII

CLIENT: ITGE	DATE: 91
LOCATION: ORCE	SOUNDING: 21VII
COUNTY: (GR)	AZIMUTH: E-W
PROJECT: SEGURA	EQUIPMENT: ADARO
ELEVATION: 1080.00	
SOUNDING COORDINATES: X: 564100.0000 Y: 4172825.0000	

Schlumberger Configuration

FITTING ERROR: 2.495 PERCENT

L #	RESISTIVITY (ohm-m)	CHARGEABILITY (pfe)	THICKNESS (meters)	ELEVATION (meters)	CONDUCTANCE (Siemens)
				1080.0	
1	109.6		0.712	1079.2	0.00650
2	713.7		25.66	1053.5	0.0359
3	945.6		123.4	930.1	0.130
4	795.2				

ALL PARAMETERS ARE FREE

No.	Spacing (m)	FA DATA	(ohm-m) SYNTHETIC	DIFFERENCE (percent)
1	2.68	279.0	279.9	-0.324
2	3.73	332.6	344.0	-3.44
3	5.18	415.7	411.8	0.930
4	7.20	502.6	479.8	4.53
5	10.00	561.7	542.8	3.35
6	13.90	581.1	597.7	-2.85
7	19.30	642.1	642.8	-0.118
8	26.80	678.1	680.7	-0.377
9	37.30	710.4	716.5	-0.857
10	51.80	744.6	755.2	-1.42
11	72.00	811.0	797.7	1.63
12	100.0	862.0	837.7	2.81
13	139.0	931.0	867.8	-4.43
14	193.0	902.0	882.4	2.17
15	268.0	876.0	879.9	-0.454

PARAMETER RESOLUTION MATRIX:  
"F" INDICATES FIXED PARAMETER

\*

ADARO

\*

P 1	0.55							
P 2	-0.01	1.00						
P 3	0.00	0.00	0.98					
P 4	0.00	0.00	0.05	0.80				
T 1	-0.47	-0.02	0.00	0.00	0.51			
T 2	-0.04	-0.02	-0.08	0.17	-0.06	0.53		
T 3	0.00	0.00	0.02	0.13	0.00	0.05	0.02	
	P 1	P 2	P 3	P 4	T 1	T 2	T 3	

\*

ADARO

\*





Proyecto: .....  
 Zona: *Orce - Granada*  
 Observador: *Juan Cu. Cuartines.*  
 Situación: .....

COORDENADAS  
 X *564100*  
 Y *4172825*  
 Z *1080*

mV: *Adaro-01*  
 mA: *GEO N°-328*

Rumbo AB  
*E-W*

S.E.V. *21*

Perfil: *VII*

CONSTANTES PARA DISPOSITIVO SCHULUMBERGER SIMETRICO MN

Estación	AB/2	MN	I (mA)	Esc. Volt.	V (mV)	P (Ωm)	MN	I (mA)	Esc. Volt.	V (mV)	P (Ωm)	OBSERVACIONES	CONSTANTES PARA DISPOSITIVO SCHULUMBERGER SIMETRICO MN			
													1 m	10 m	50 m	100 m
1	2.68	1	72	3V	1000	302							21.78			
2	3.73		78	N	655	360							42.92			
3	5.18		155	"	835	450							83.51			
4	7.2		170	"	570	544							182.1			
5	10		165	"	320	608							313.4			
6	13.9		185	300uV	192	629							606.2			
7	19.3		190	"	113	695							1.189	109.2		
8	26.8		295	"	96	734							2.256	217.8		
9	37.3		250	100uV	44	769							4.370	429.2		
10	51.8		220	"	21	806	10	220	300uV	199	751		8.429	836.1		
11	72		220	30uV	11.7	866		220	"	110	811		16.290	1.621		
12	100		320	"	9.5	933		320	100uV	88	862		31.420	3.134		
13	139	10	400	100uV	55	834							60.700	6.062	1.175	
14	193		285	"	22	902								11.690	2.301	
15	268		515	"	20	876								22.560	4.474	
16	373													43.700	8.702	4.292
17	518													84.290	16.820	8.351
18	720													162.900	32.530	16.210
19	1.000														62.790	31.340
20	1.390														121.400	60.620
21	1.930														234.000	116.900
22	2.680														451.200	225.600
23	3.730															437.000
24	5.180															842.880
25	7.200															1.628.520
26	10.000															3.141.510

OBSERVACIONES:

FECHA: *1-02-91*



Departamento de Geofísica

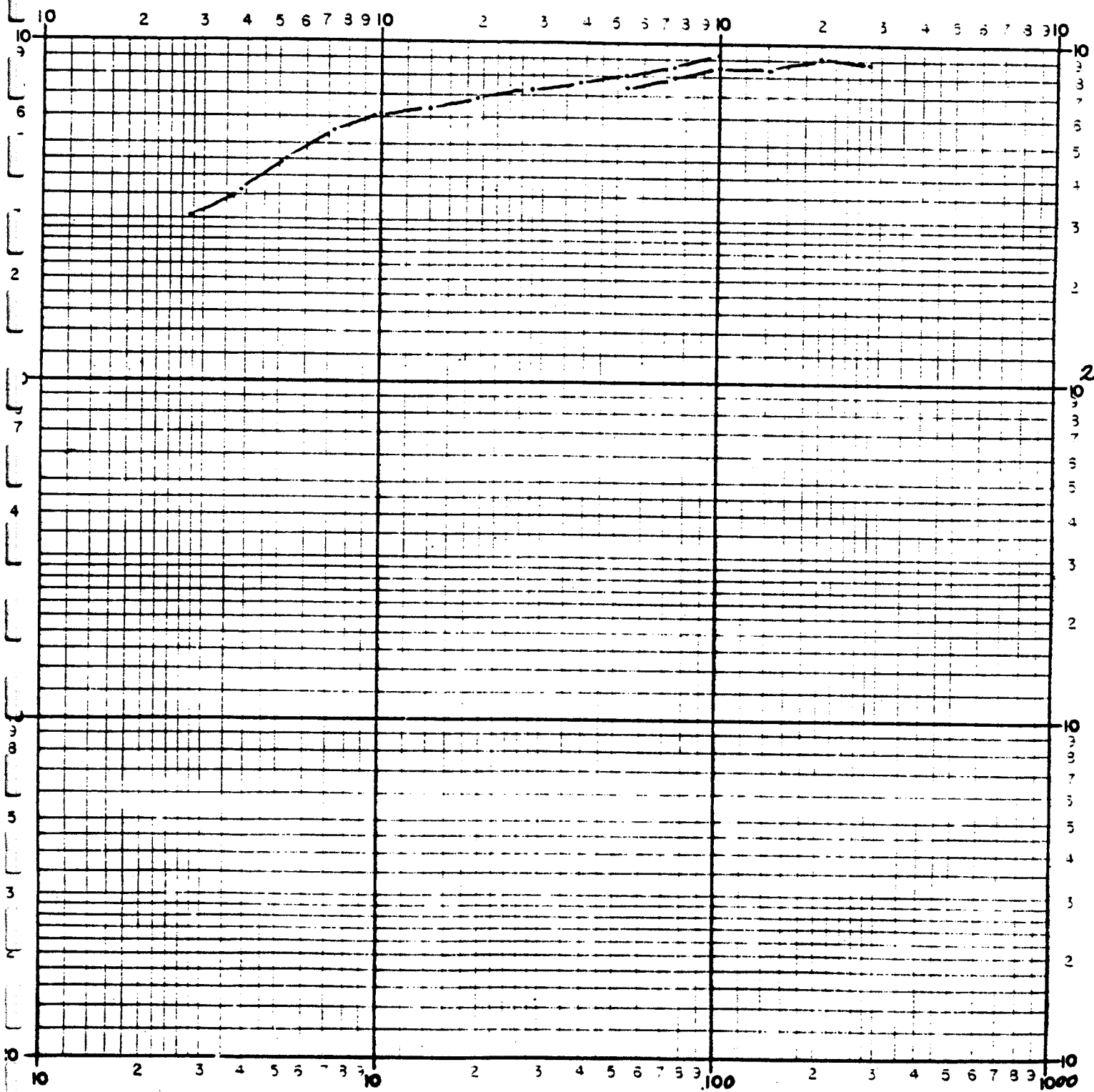
Estudio *Oze - Granada*

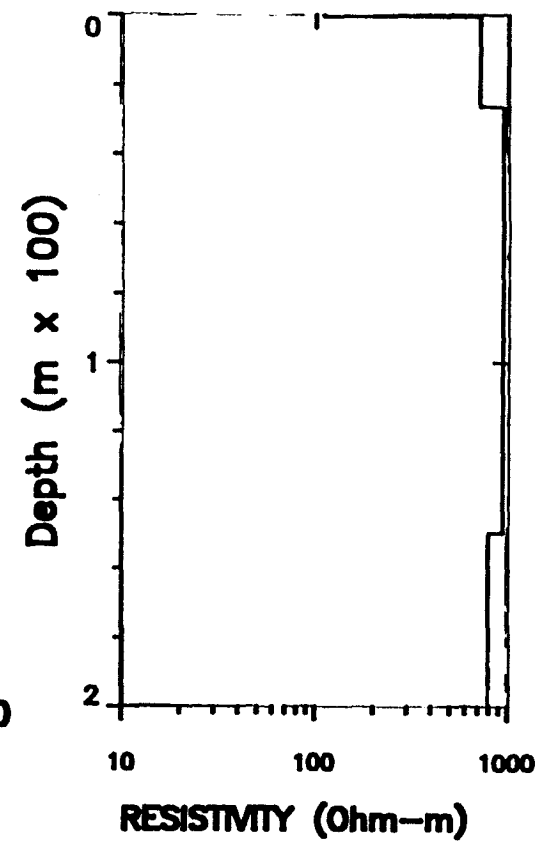
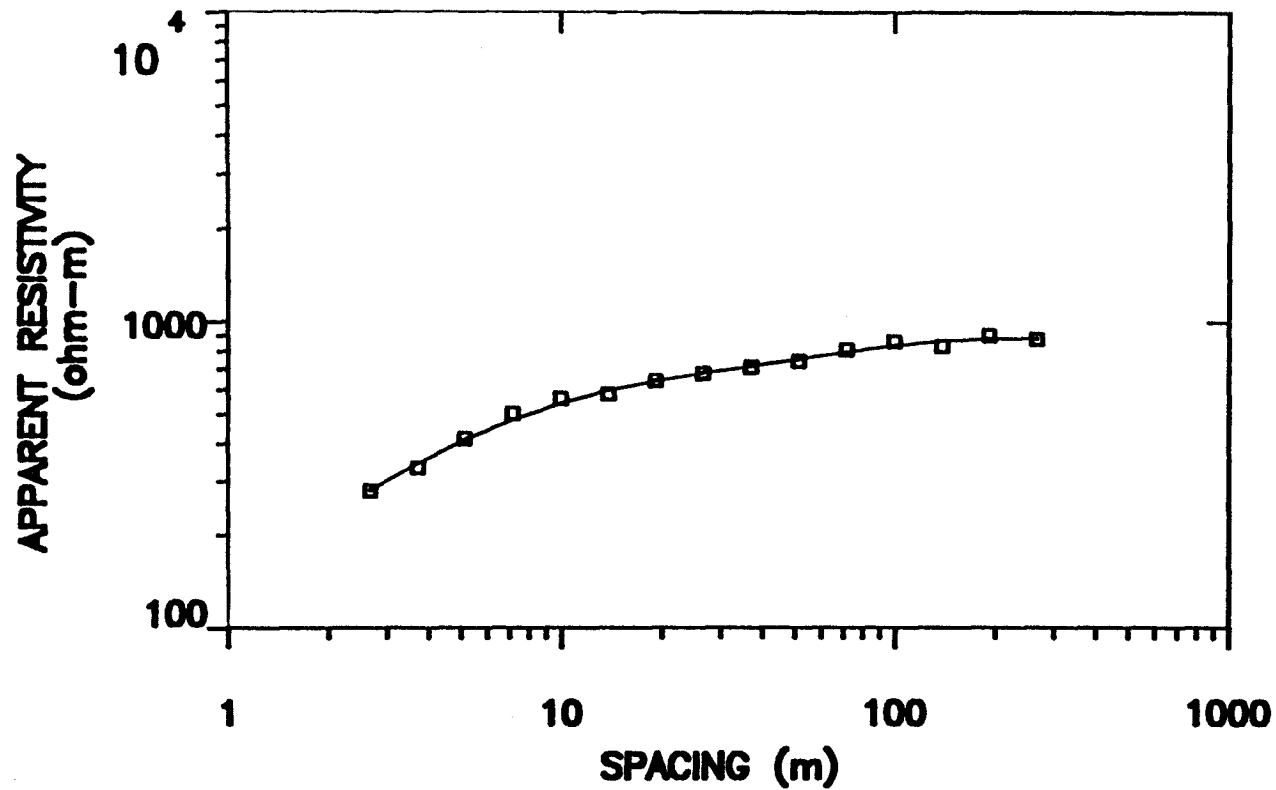
S.E.V. *21*

Fecha *1-02-91* Rumbo AB *E-W*

PERFIL *VII*

Interpretación	Observaciones:
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for: ITGE		SEGURA
by: ADARO		ORCE (GR)
Data Set: 21VI	Date: 91	Azimuth: E-W
Equipment: ADARO	Sounding: 21VI	