

4. *Geophysical Survey*

Data 4.1.1 Photographs of VES Survey

Field Survey Photograph (Geophysical Drospecting)



Berta/Meki BH-2 (Survey point selection)



Oyne-Umbure-Chefo BH-3(Preparation of stakes for the horizontal electric profiling)



Oyne Umbure BH-3(Preparation of wooden stake for the horizontal electric profiling)



Beresa BH-9 (Setting of survey line of the horizontal electric profiling)



Oyne Umbure BH-3
(Watering of electrodes to reduce contact resistance)



Chancho BH-4
(Electrode spreading)



Oyne Umbure BH-3
(Electrode installation)



Oyne Umbure BH-3
(Electric investigation measurement)

Data 4.1.1 Photographs of VES Survey



Oyne Umbure BH-3
(Electric investigation measurement)



Fango Damot BH-5
(Electric investigation measurement)



Walesa BH-8
(Movement between the survey point)



Fango Damot BH-5
(4WD stuck in mud)



Beresa BH-9
(Access problem for the 4WD)



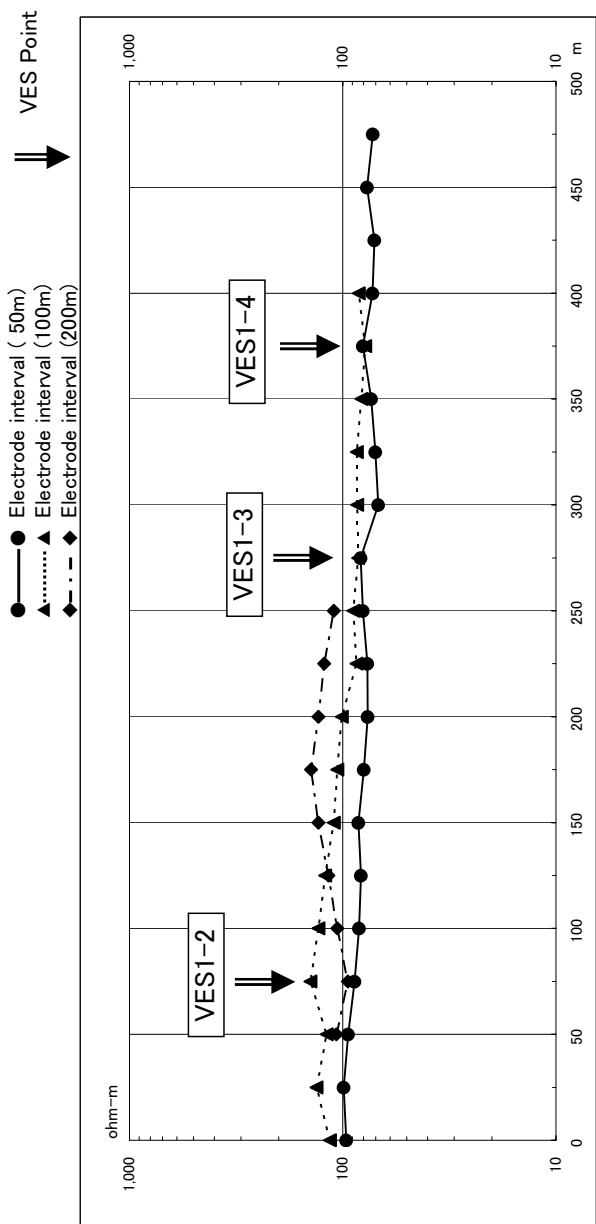
Brindar BH-10 (River flood around the survey area,
vehicles impassable)



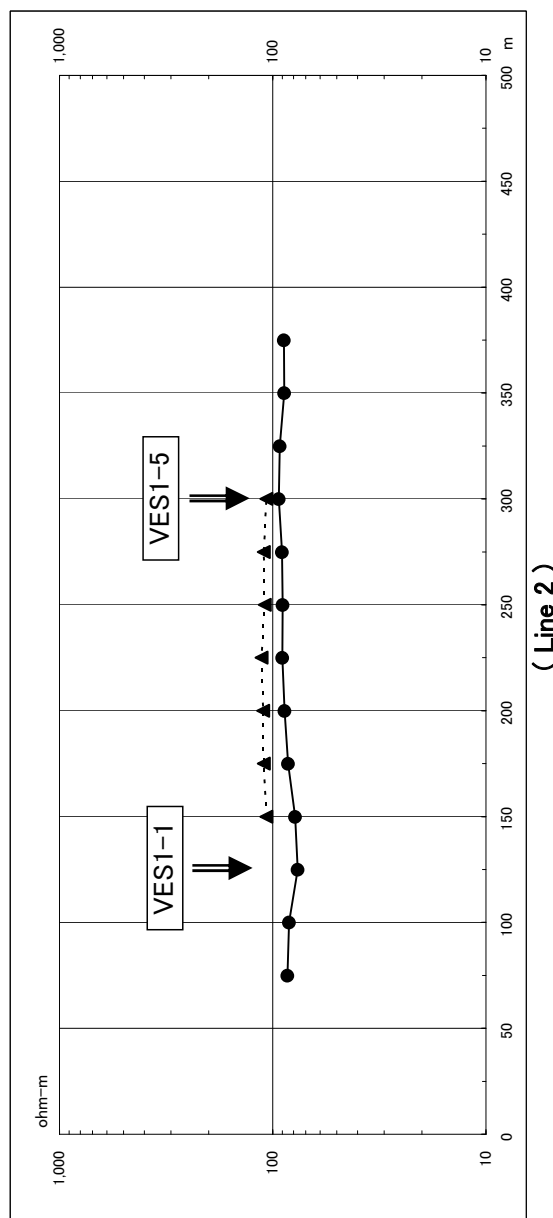
Brindar BH-10 (flooded survey area,
vehicle impassable)



Sodo ~ Arbaminch road
(Flooded culvert)

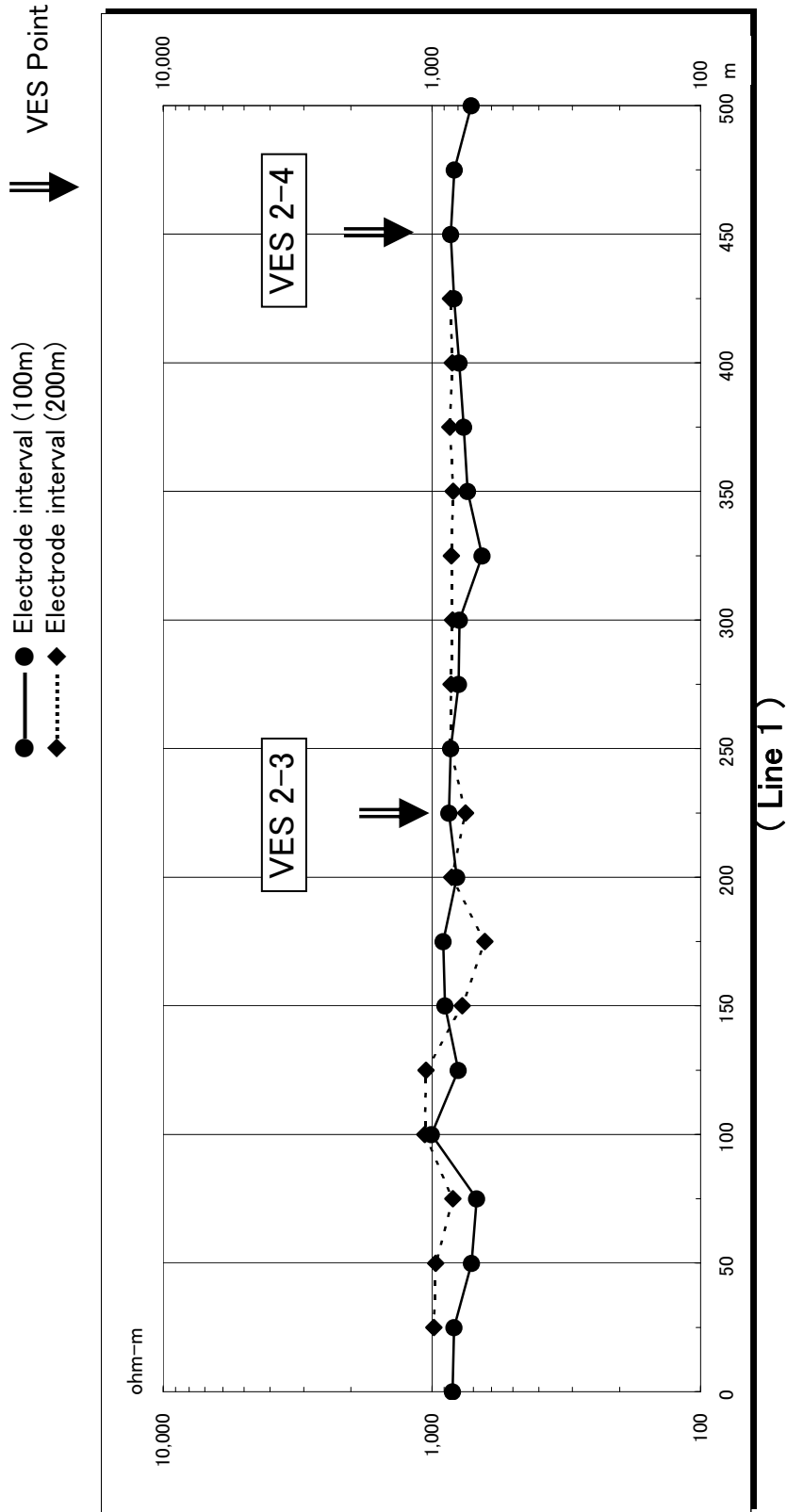


(Line 1)

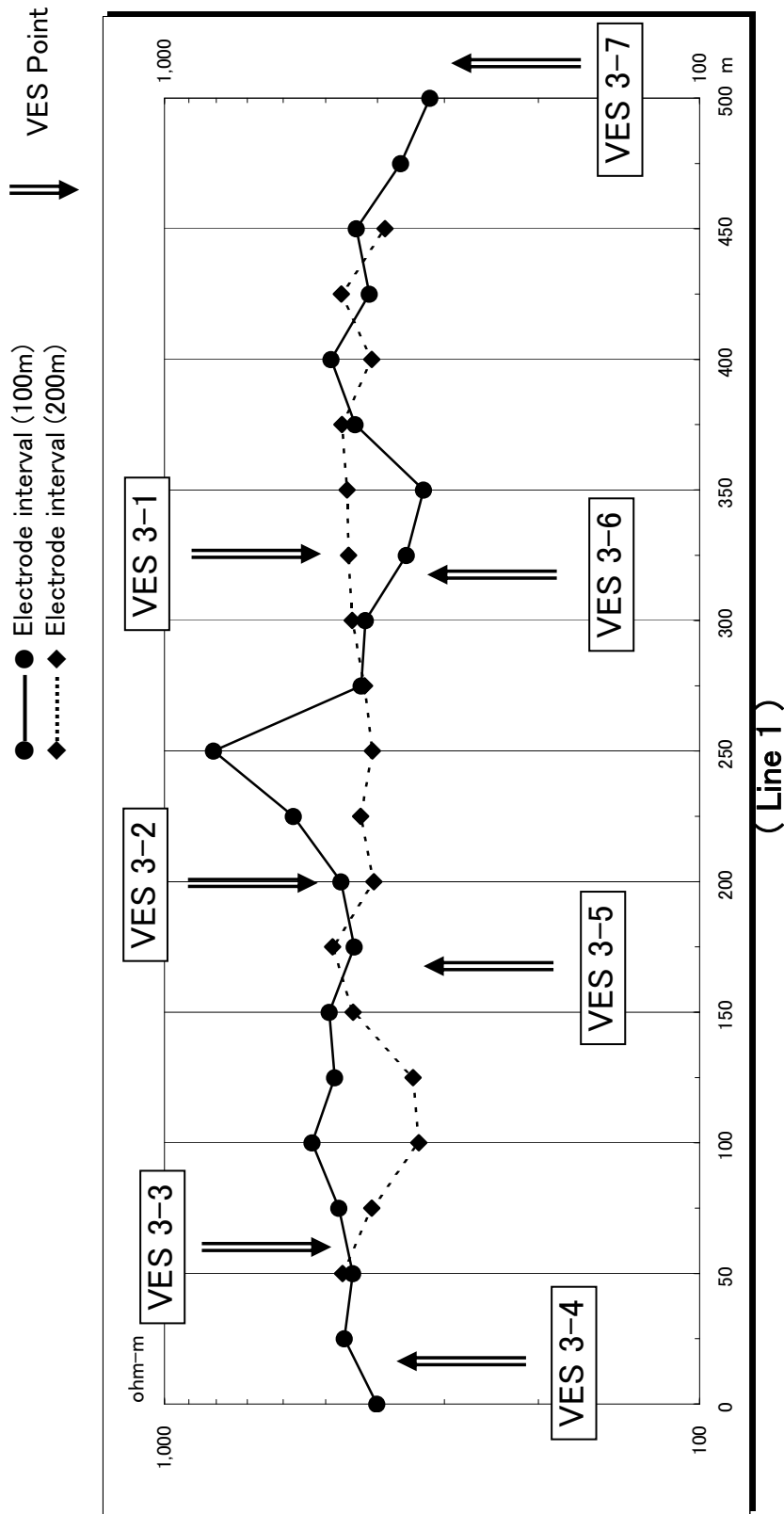


(Line 2)

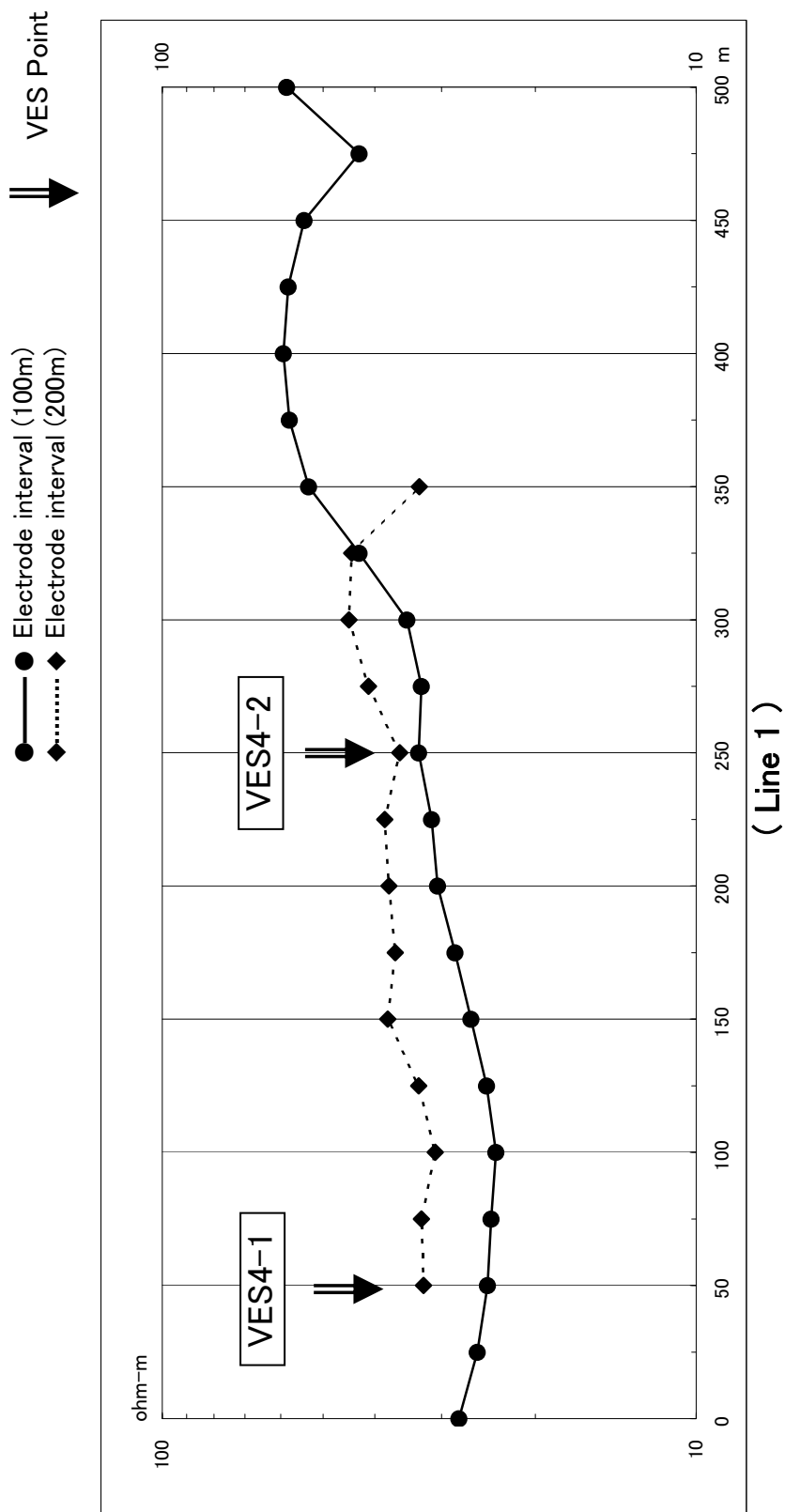
DUJ4.1.2 Apparent Resistivity Profiling (RVS BH-1)



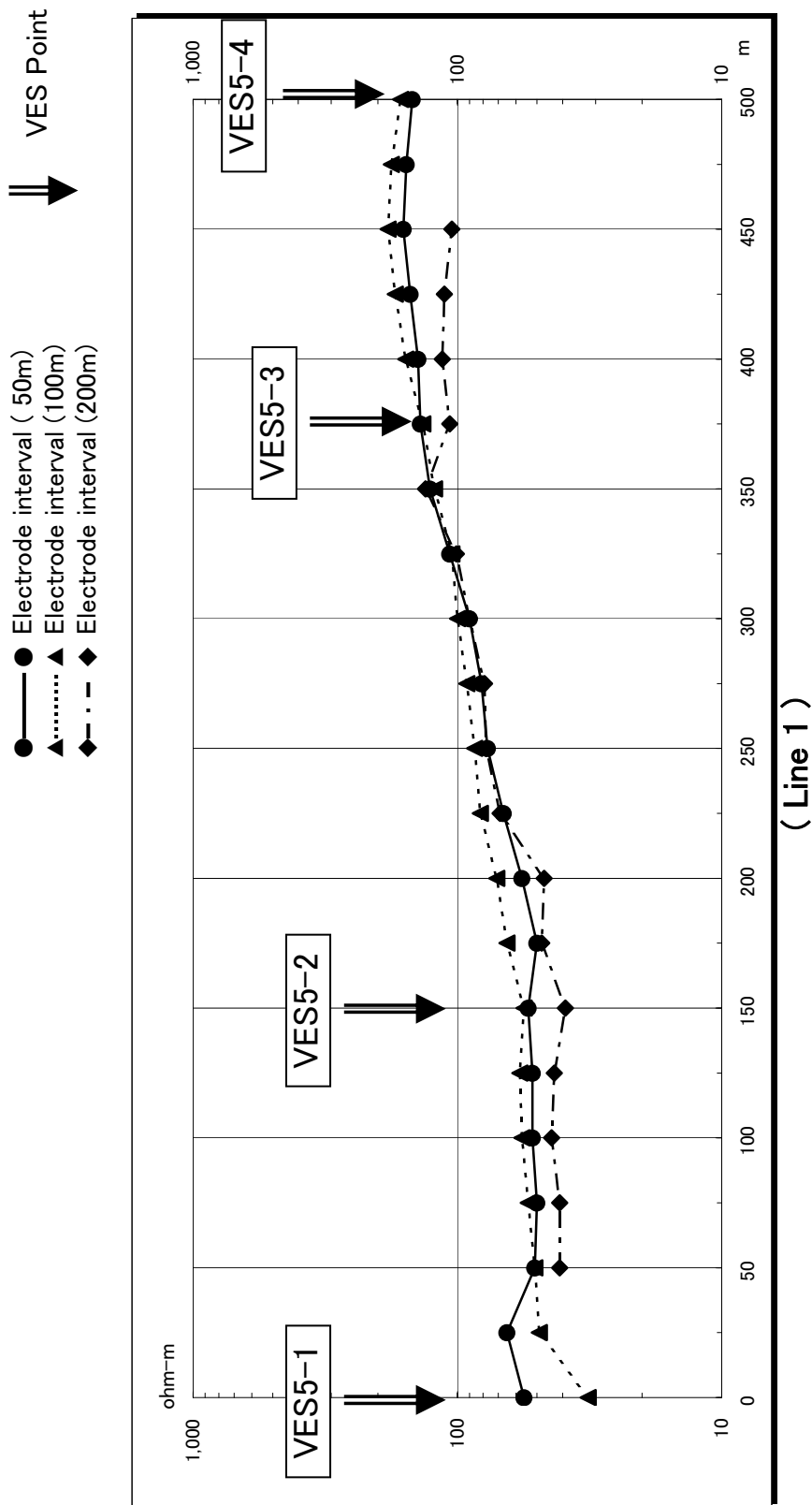
DUHJ 4.1.2 Apparent Resistivity Profiling (RVS BH-2)
 (Line 1)



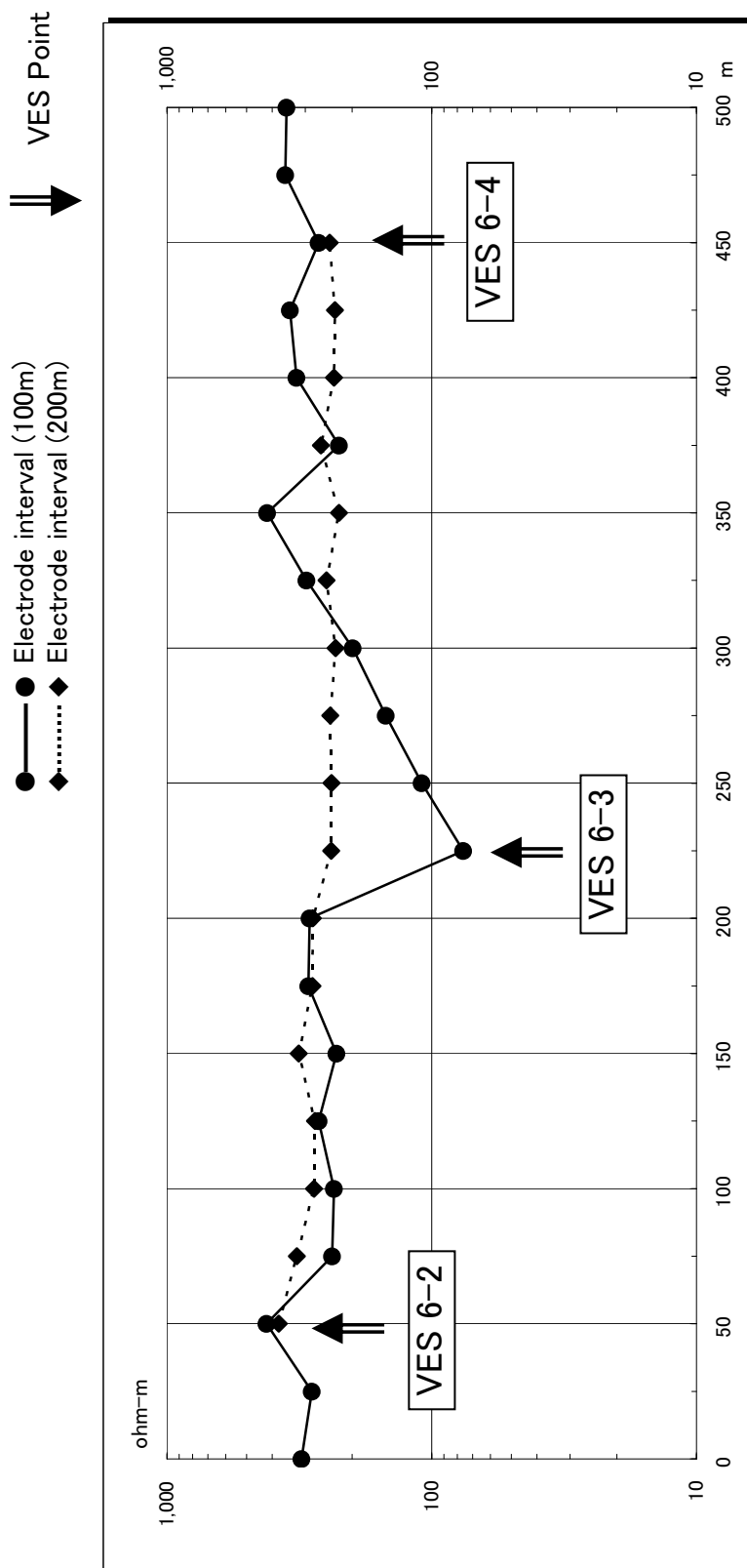
DUJ4.1.2 Apparent Resistivity Profiling (RVS BH-3)



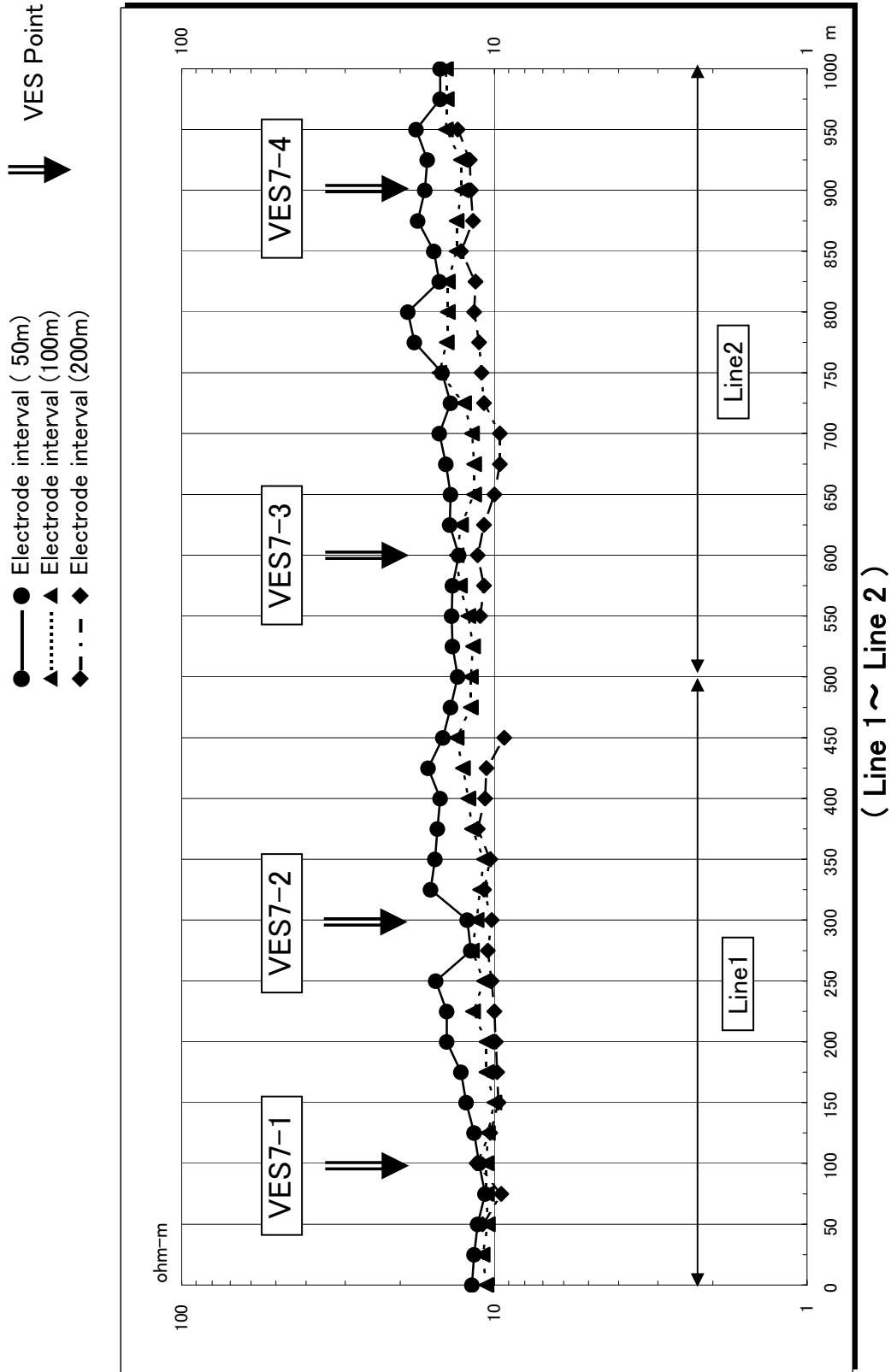
DUJ4.1.2 Apparent Resistivity Profiling (RVS BH-4)
(Line 1)



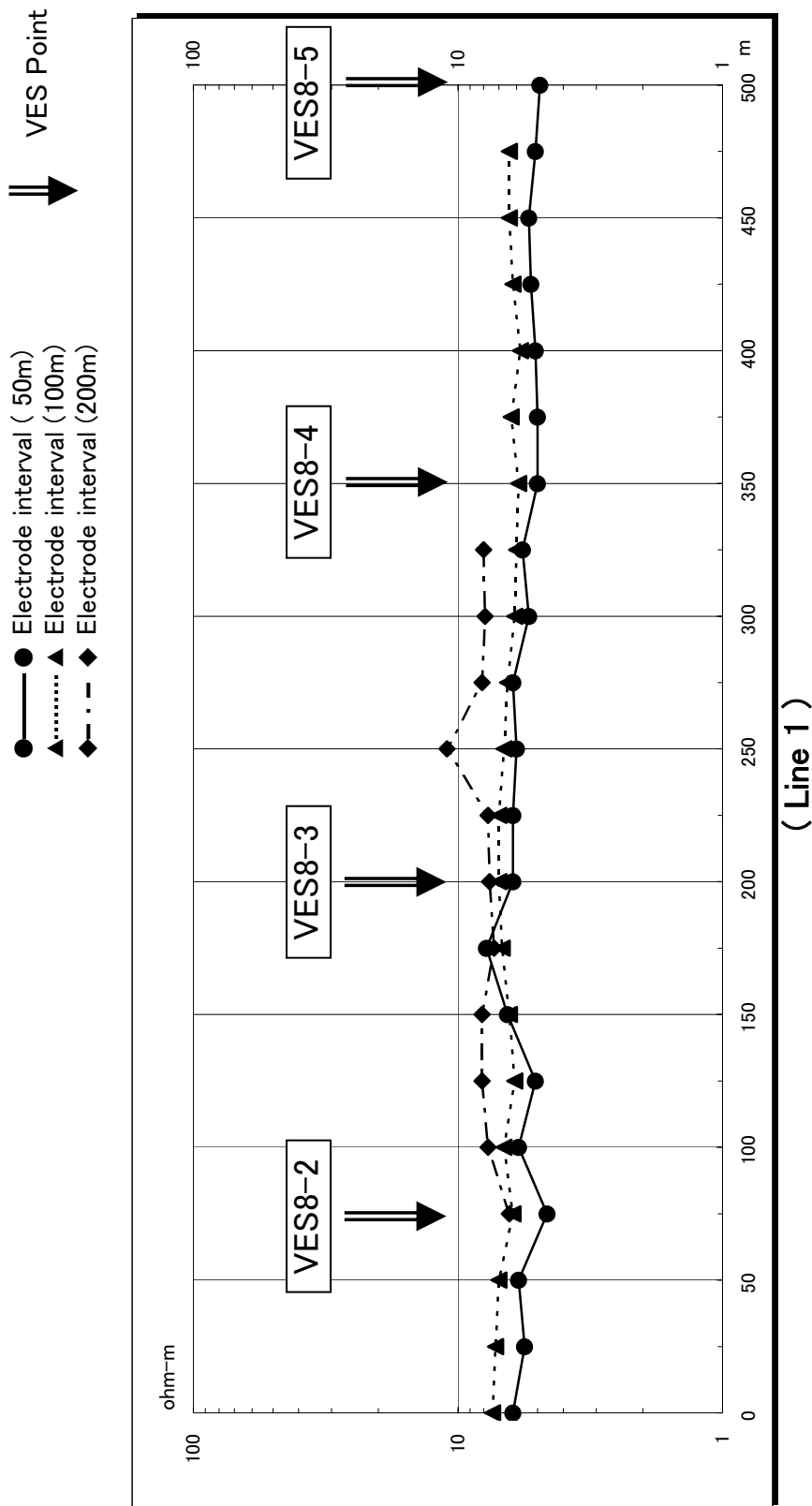
DUJ4.1.2 Apparent Resistivity Profiling (RVS BH-5)
(Line 1)



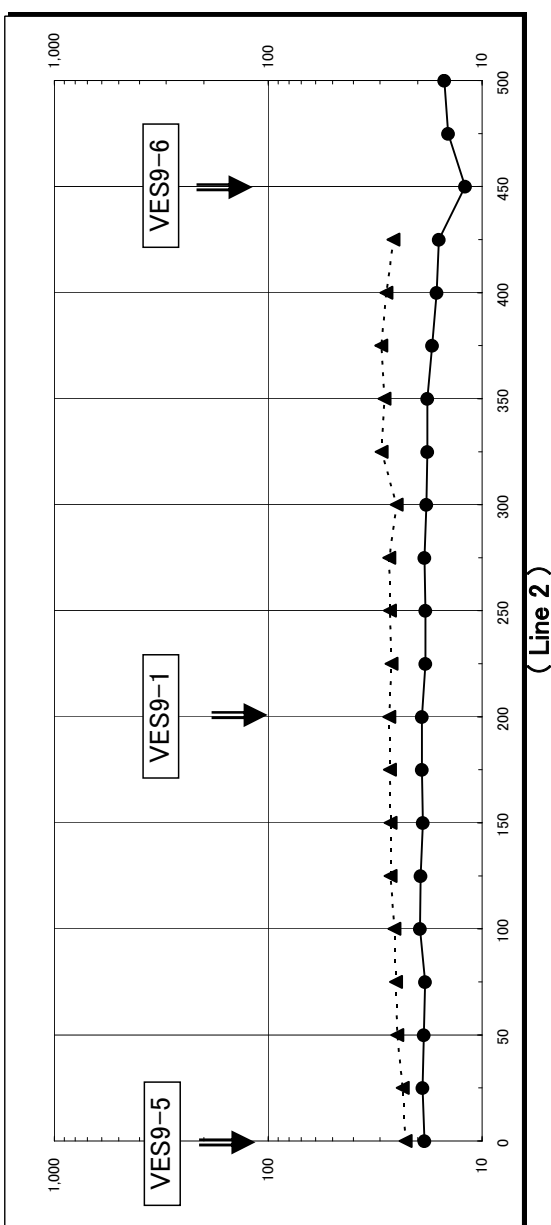
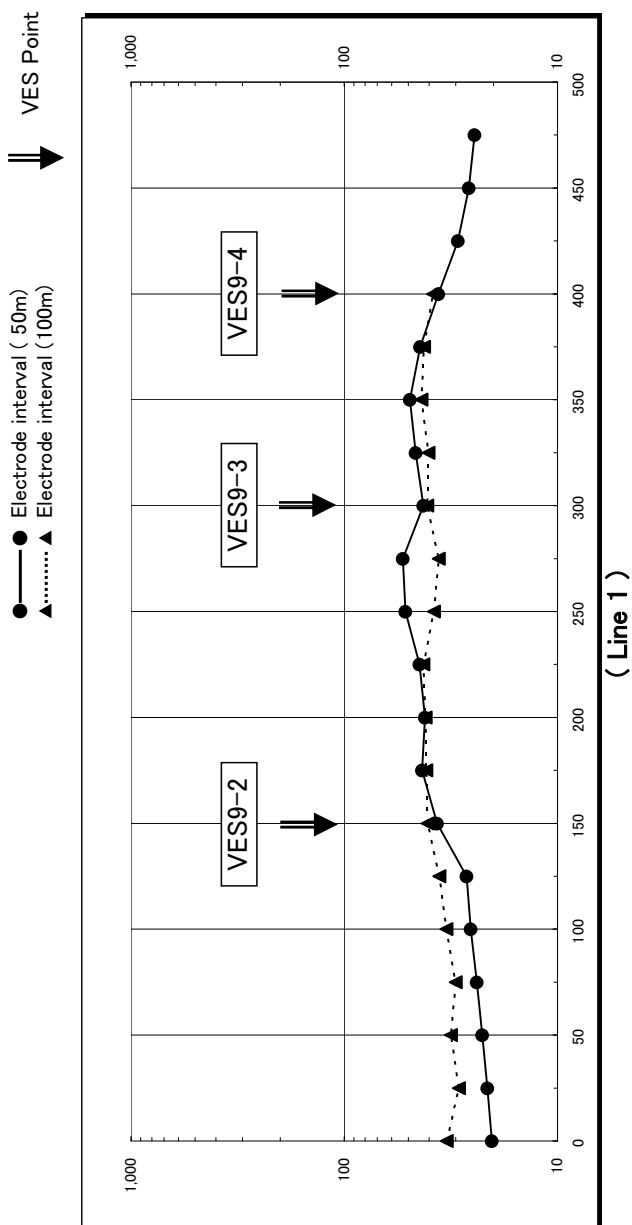
(Line 1)
DUJ 4.1.2 Apparent Resistivity Profiling (RVS BH-6)



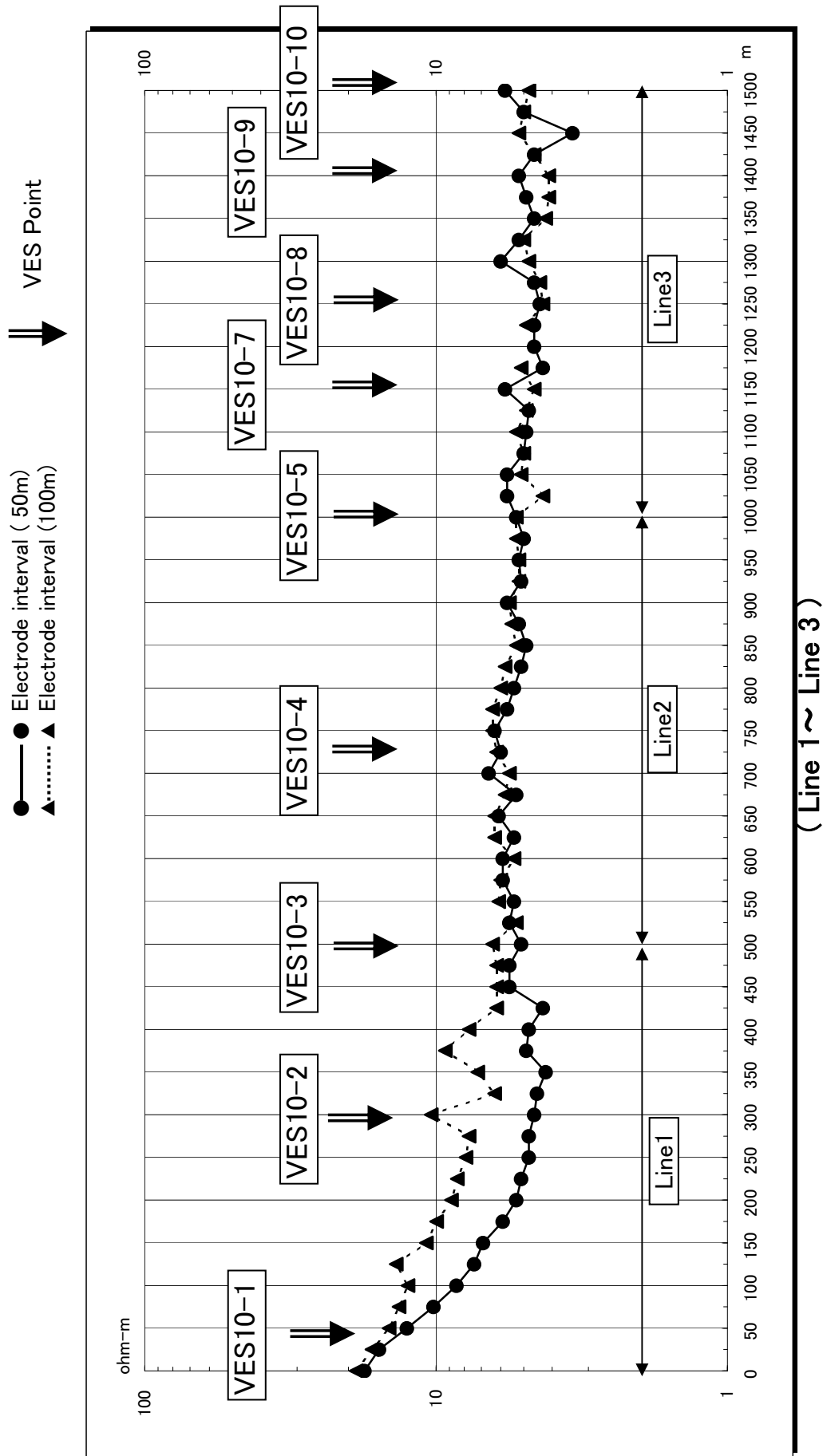
DUJU 4.1.2 Apparent Resistivity Profiling (RVS BH-7)
(Line 1 ~ Line 2)



DUHJ 4.1.2 Apparent Resistivity Profiling (RVS BH-8)
(Line 1)



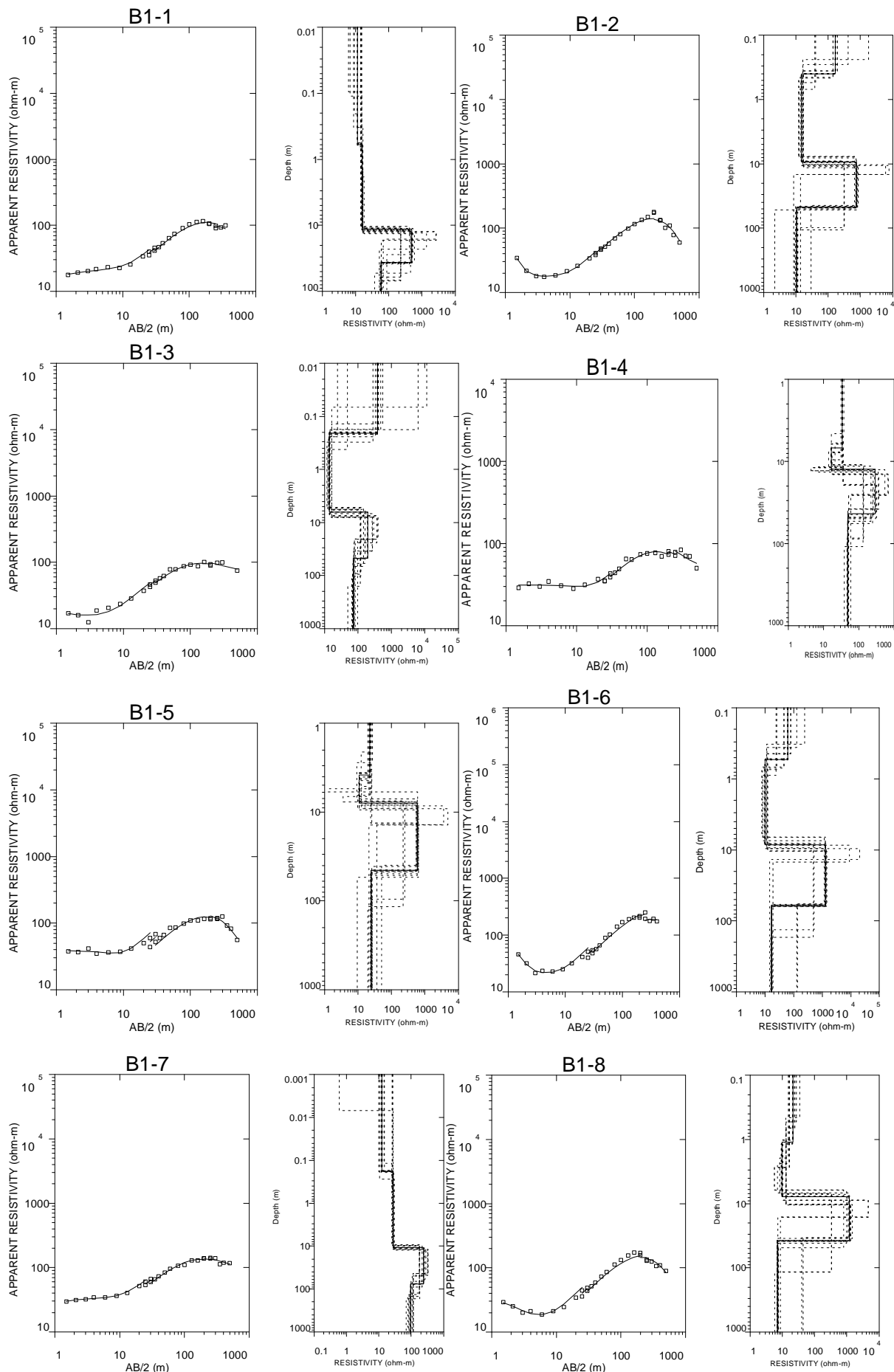
Data 4.1.2 Apparent Resistivity Profiling (RVS BH-9)

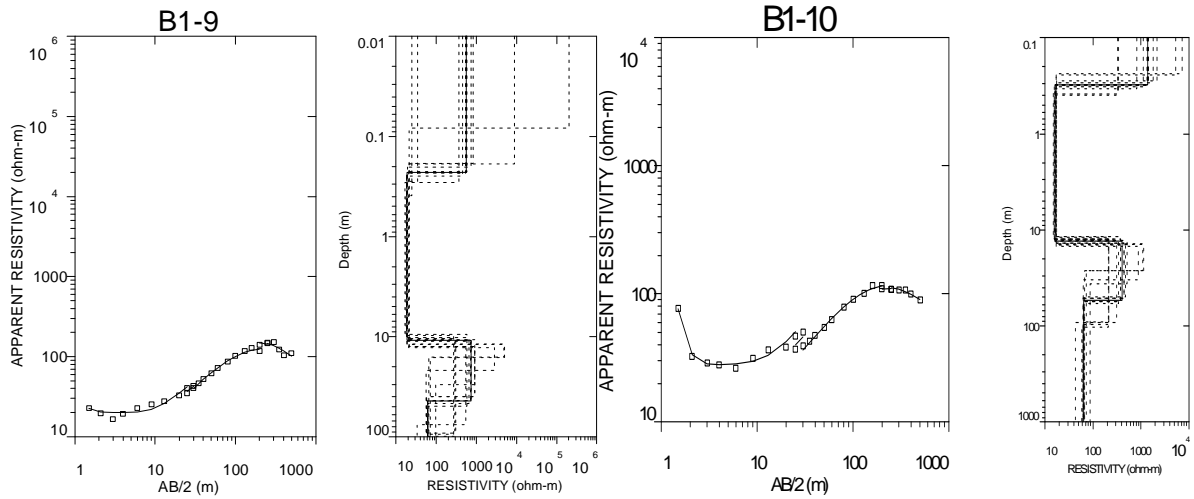


(Line 1 ~ Line 3)

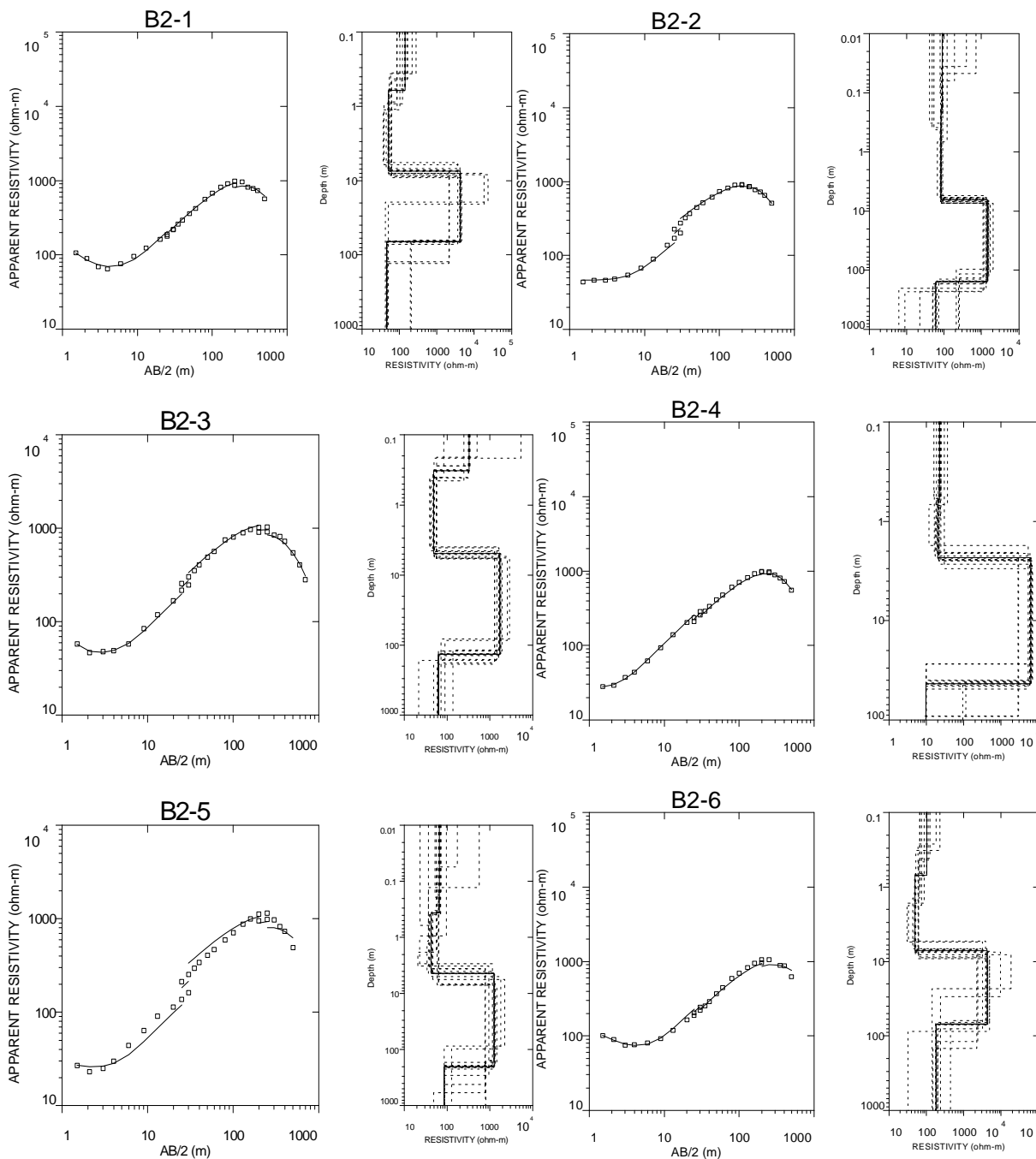
Data 4.1.2 Apparent Resistivity Profiling (RVS BH-10)

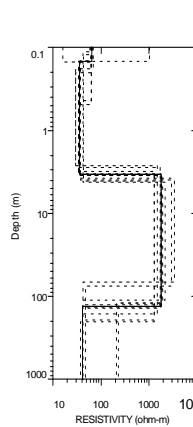
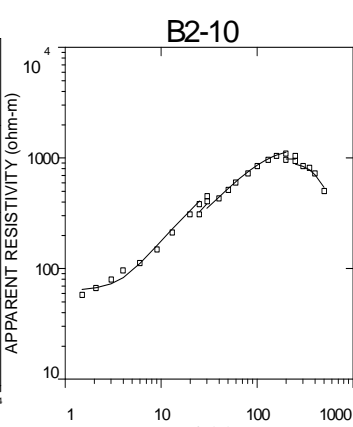
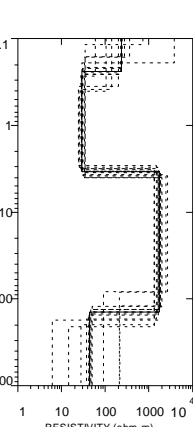
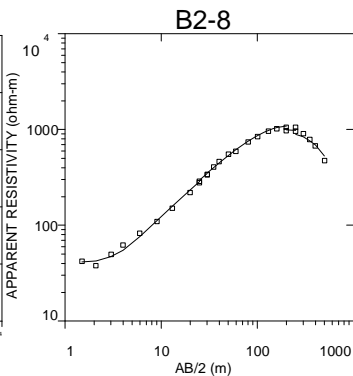
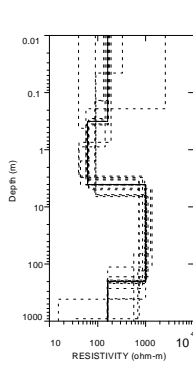
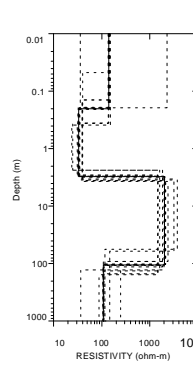
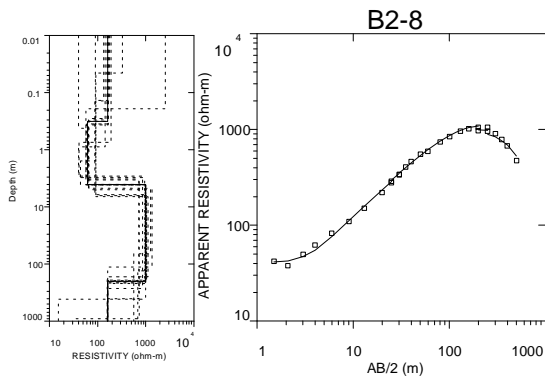
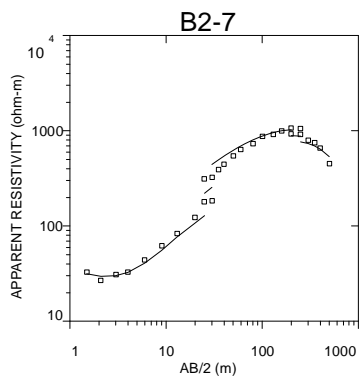
Borehole No.1



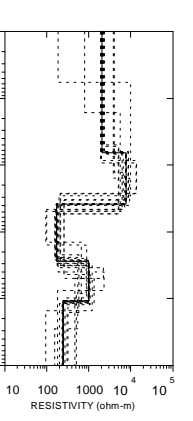
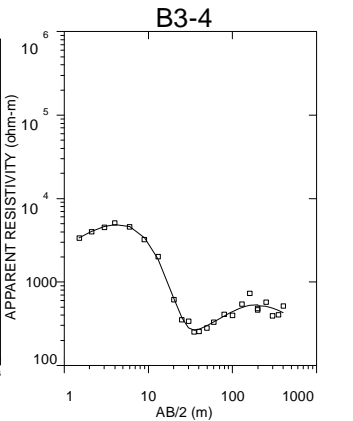
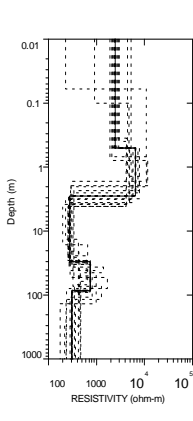
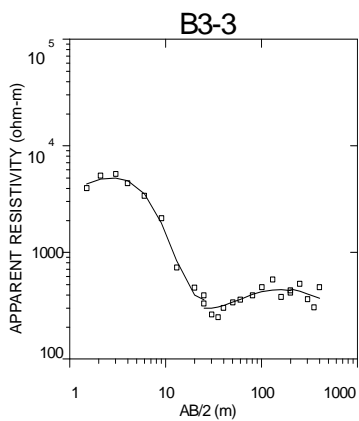
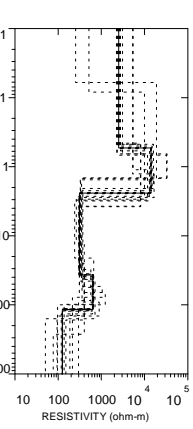
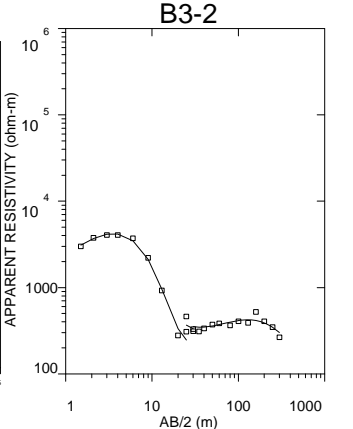
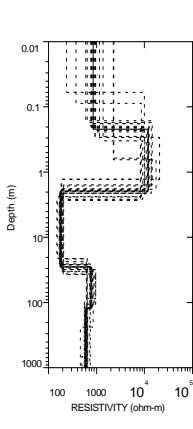
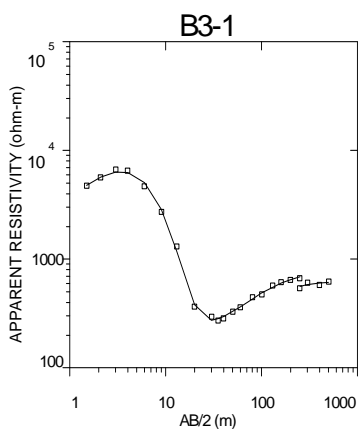


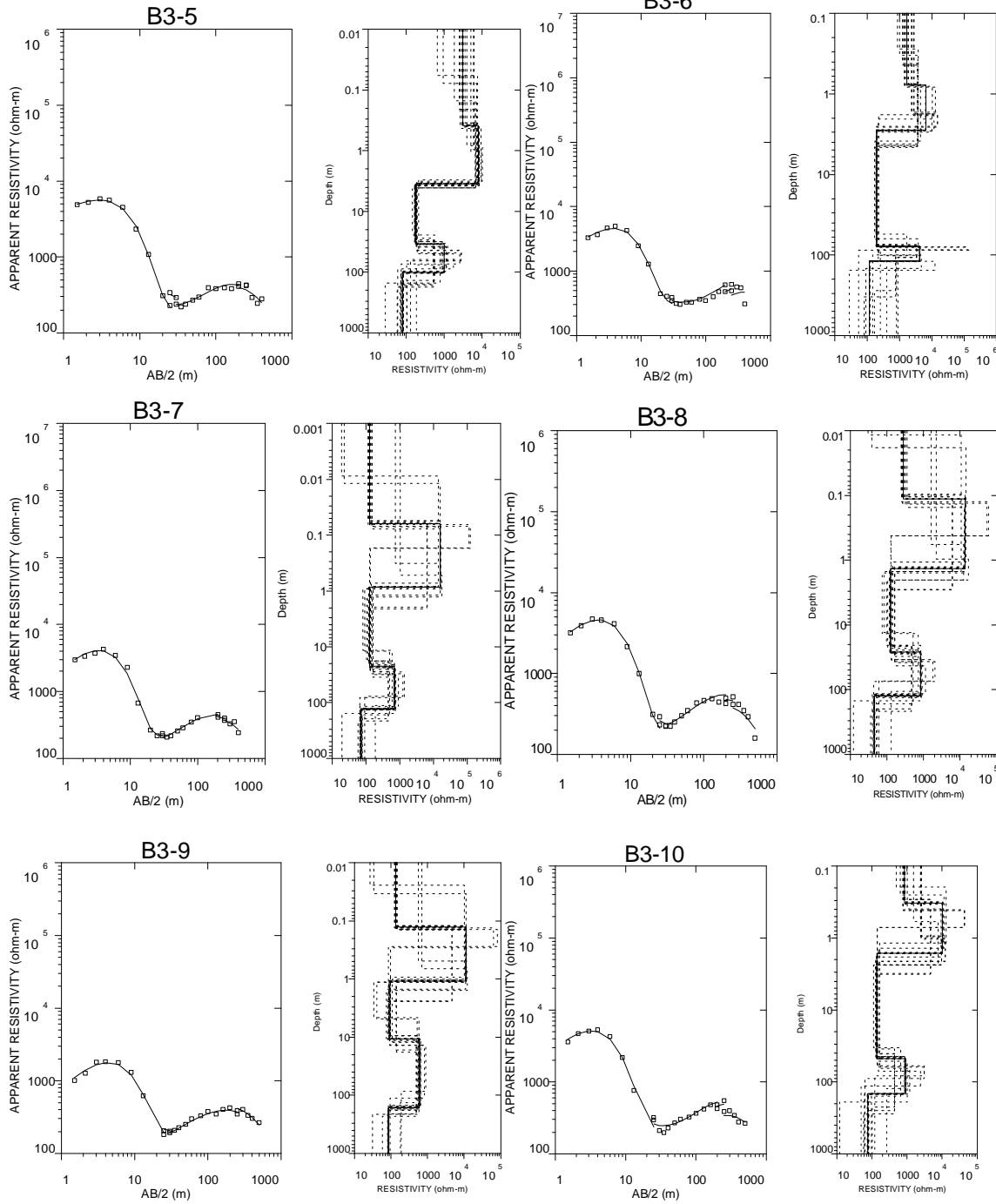
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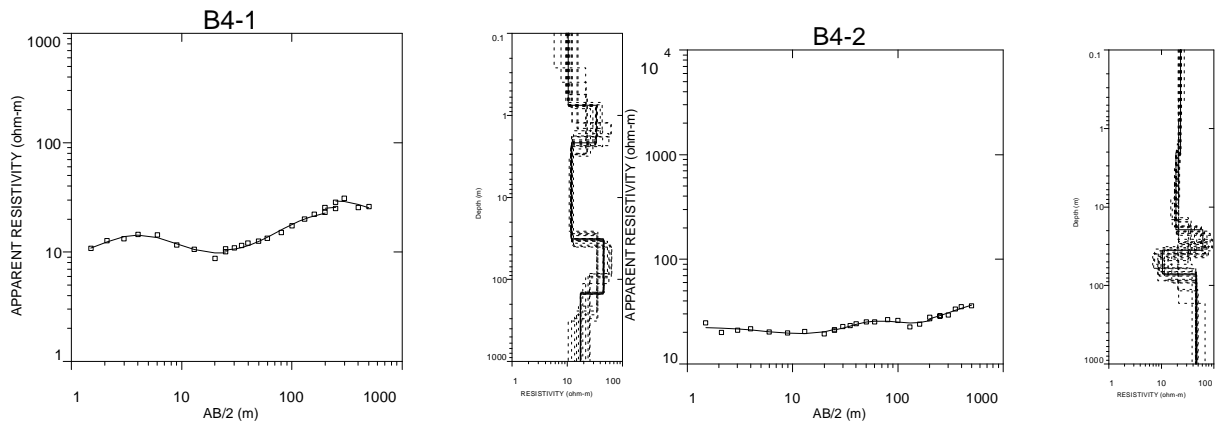


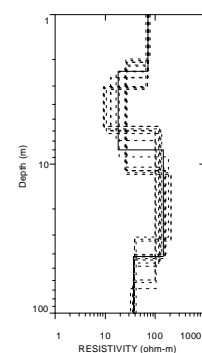
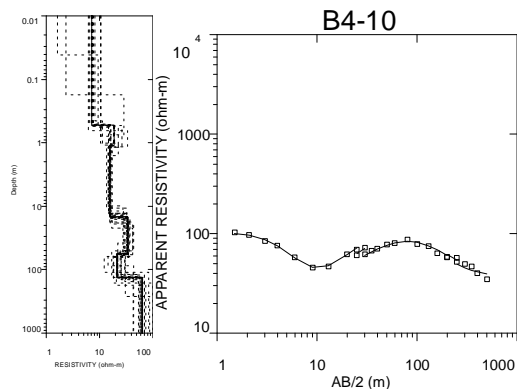
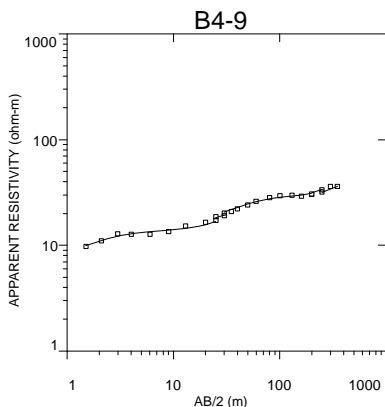
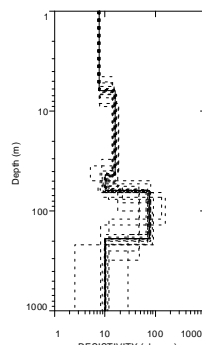
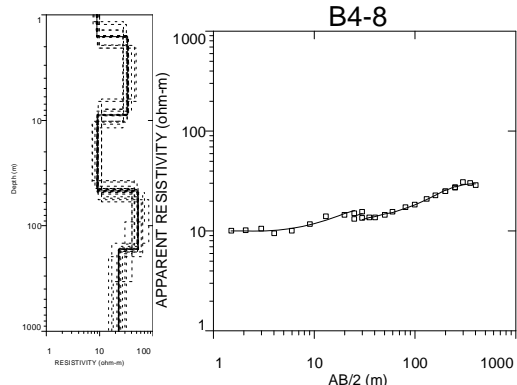
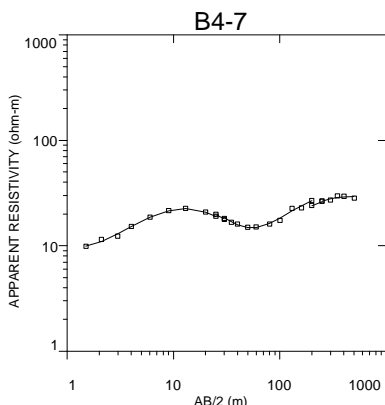
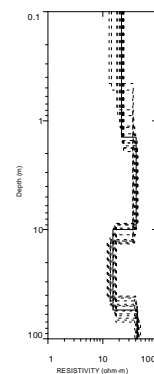
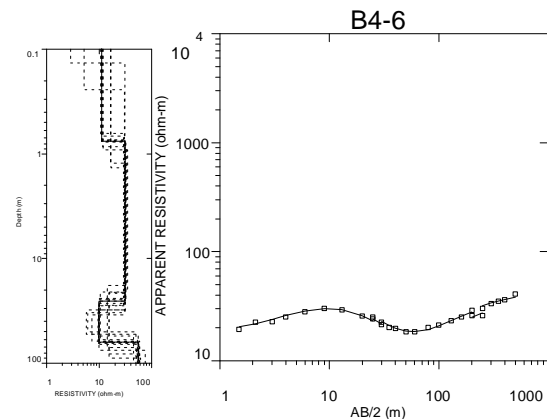
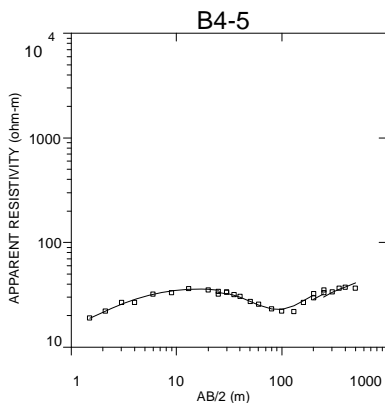
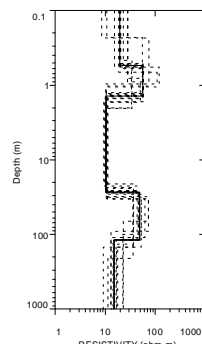
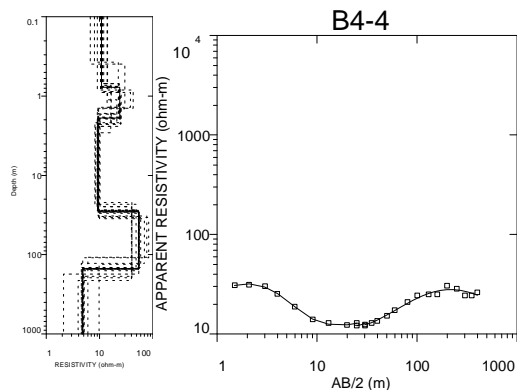
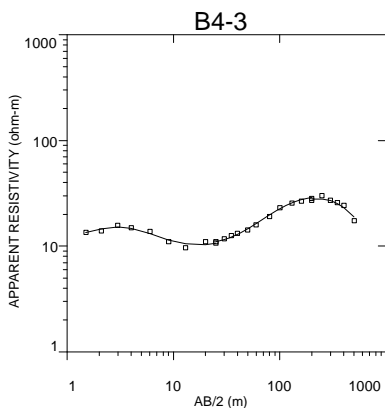
Borehole No.3



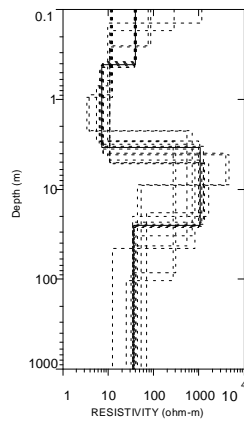
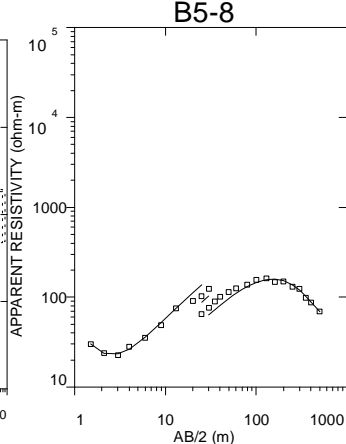
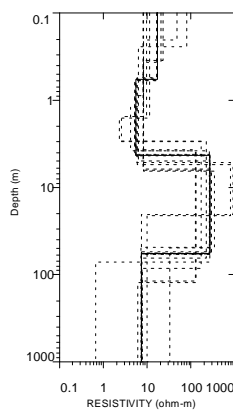
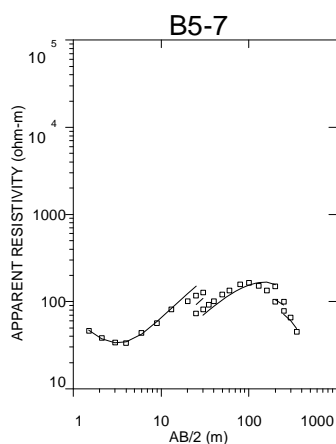
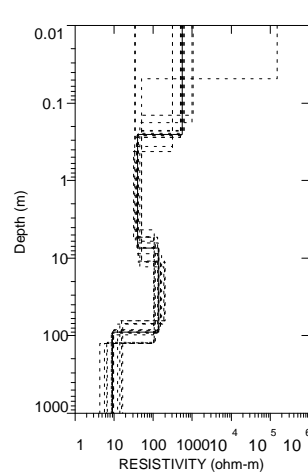
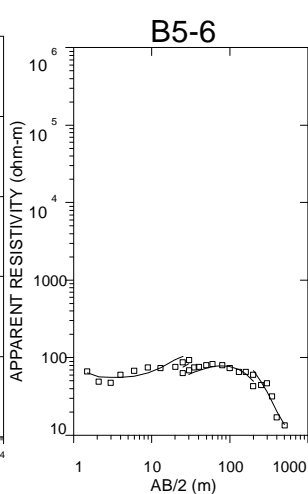
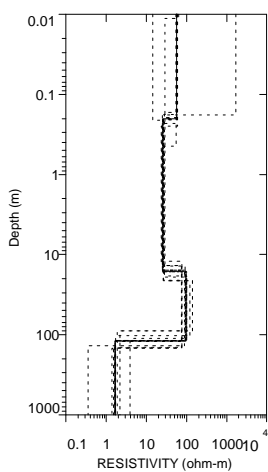
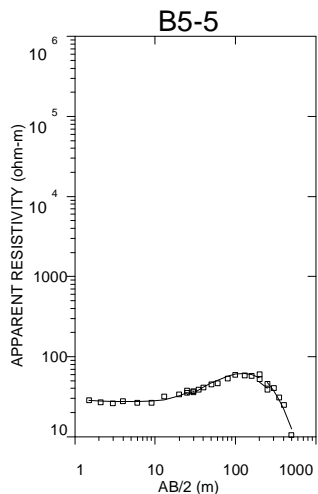
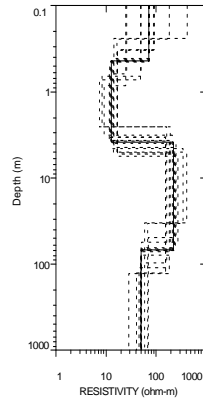
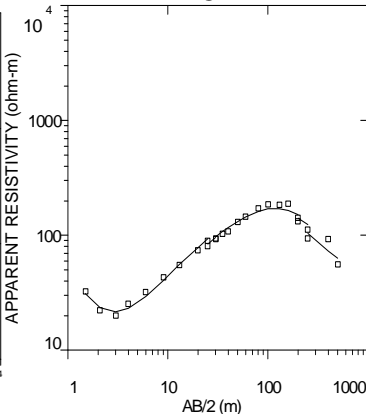
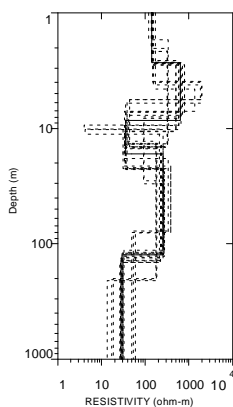
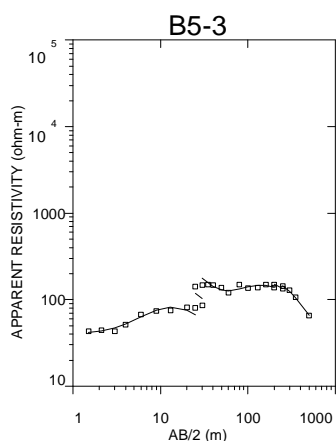
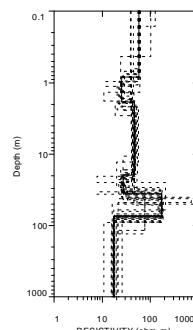
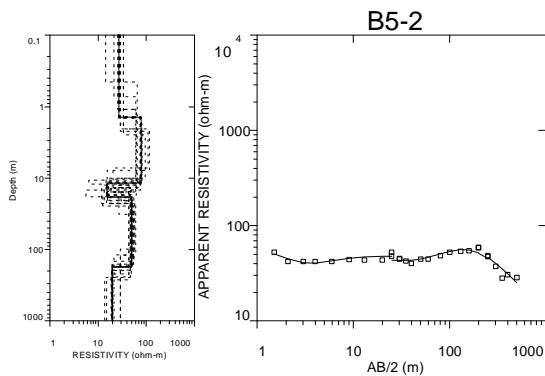
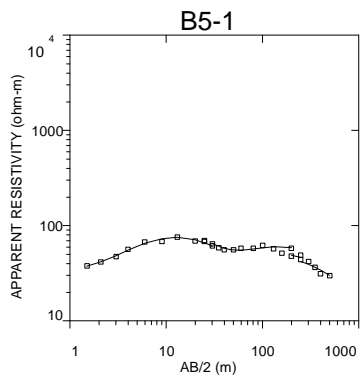


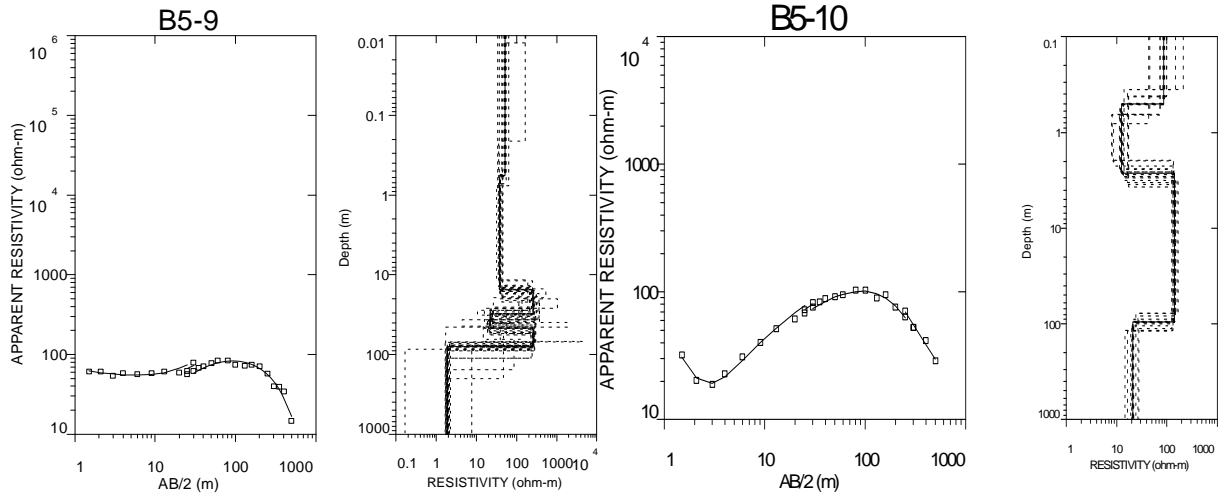
Borehole No.4



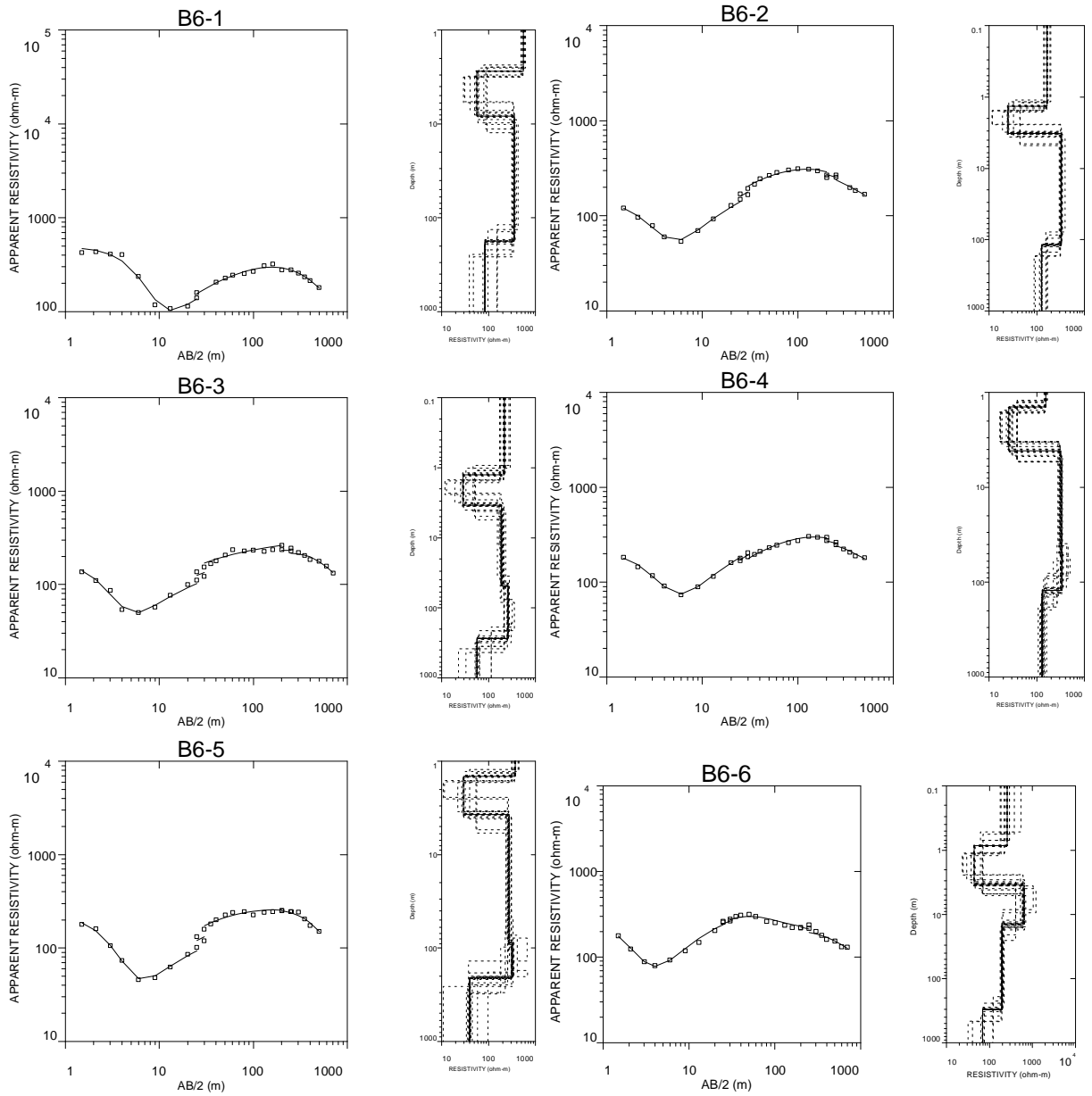


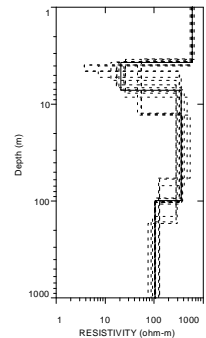
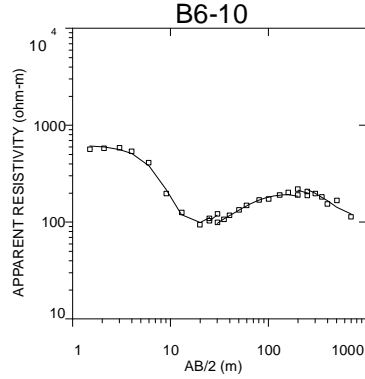
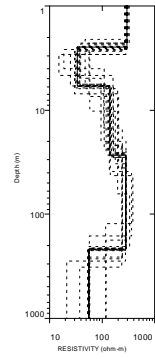
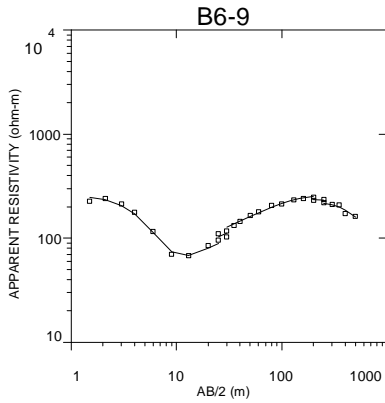
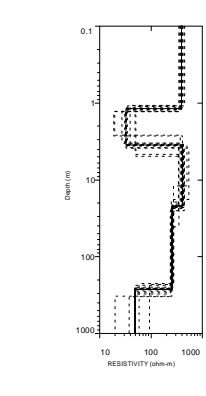
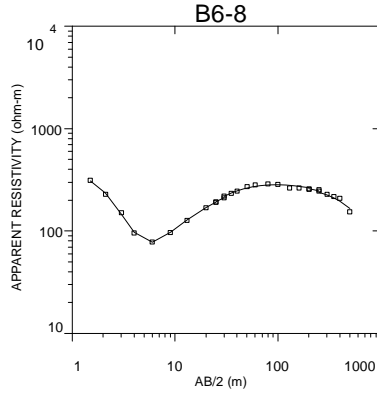
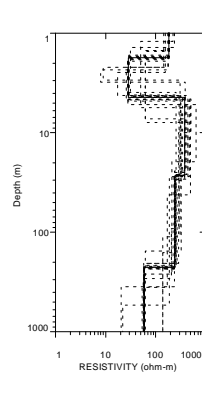
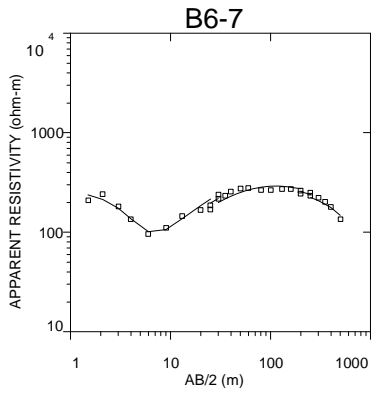
Borehole No.5



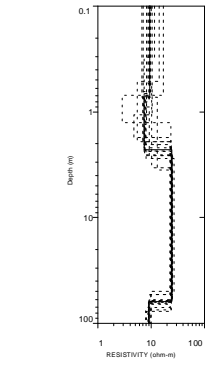
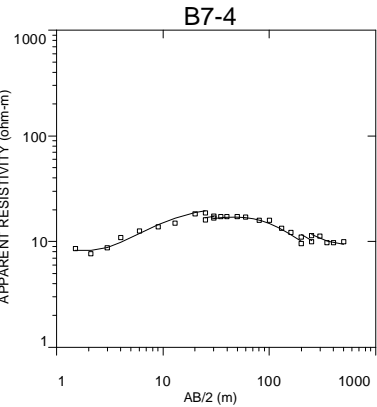
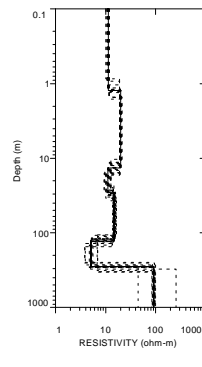
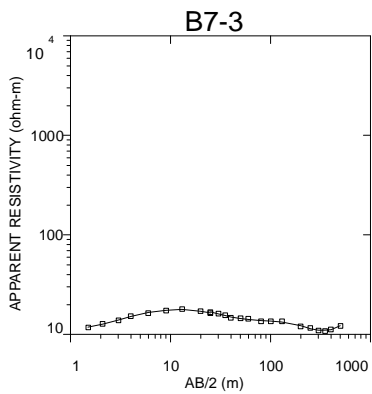
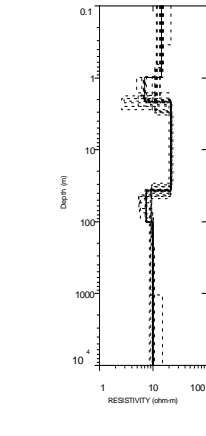
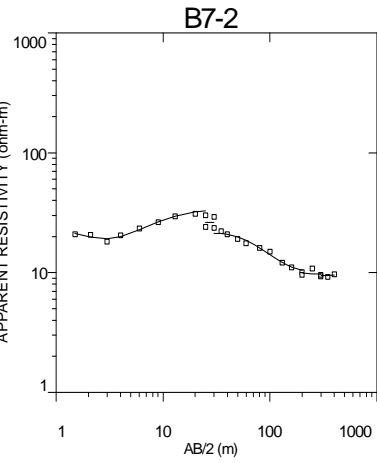
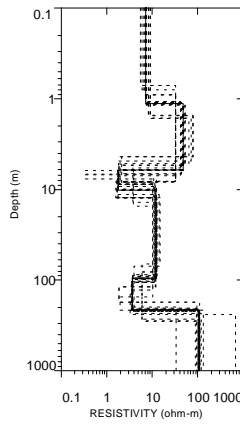
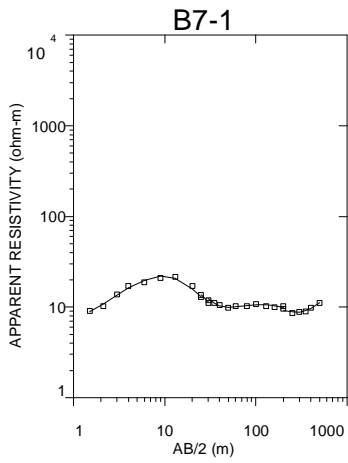


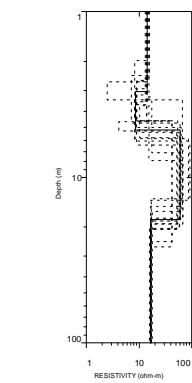
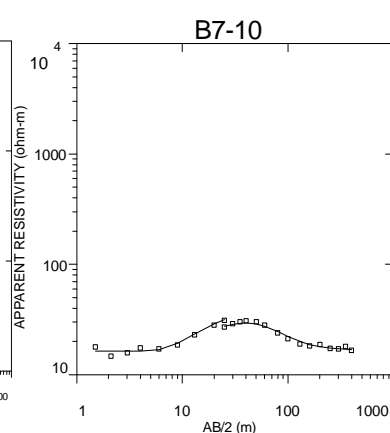
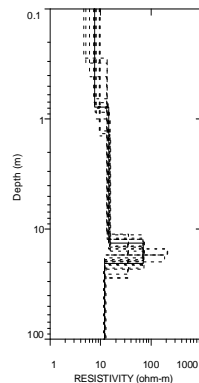
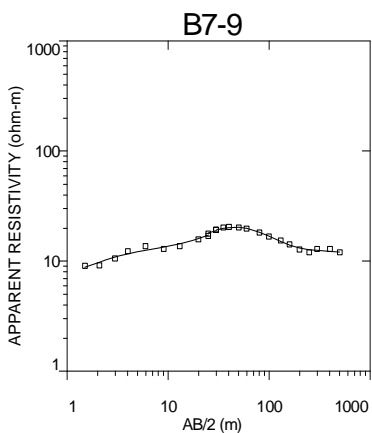
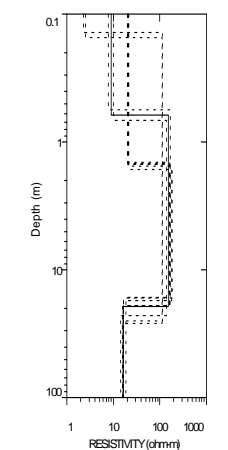
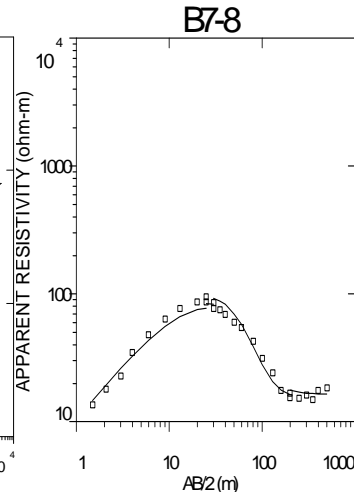
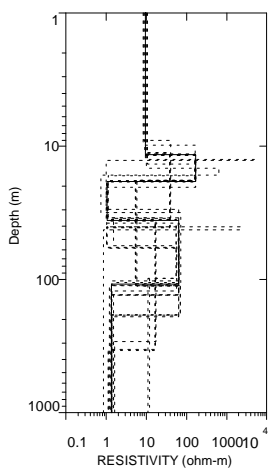
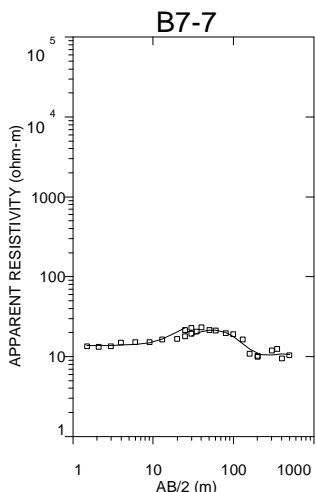
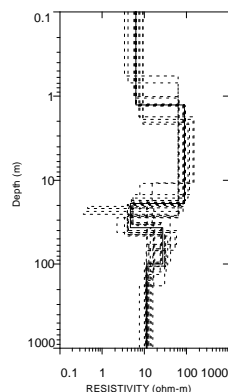
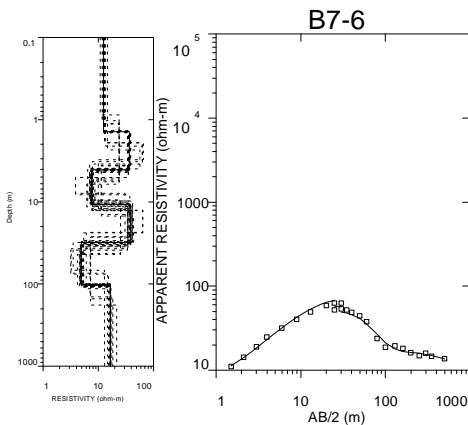
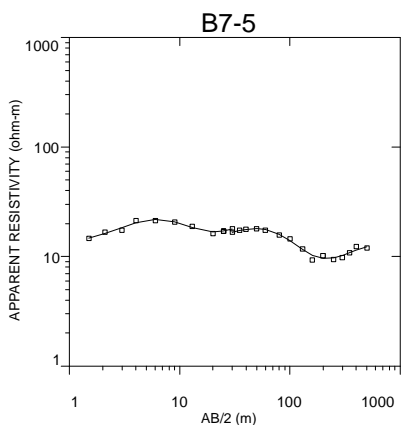
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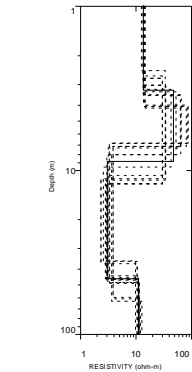
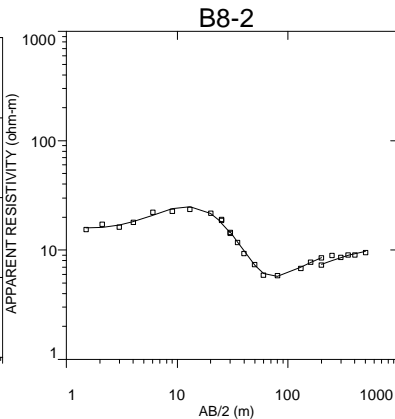
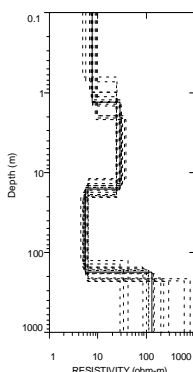
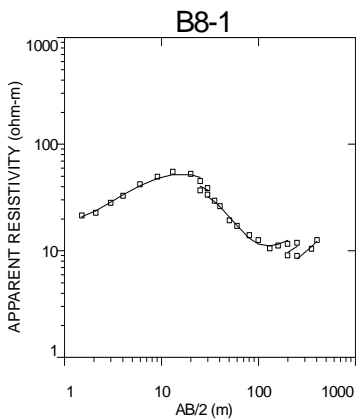


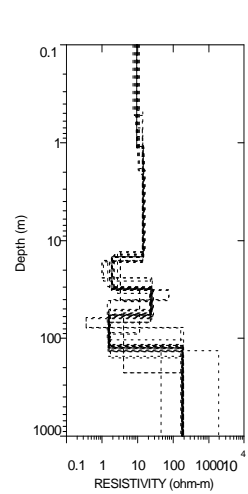
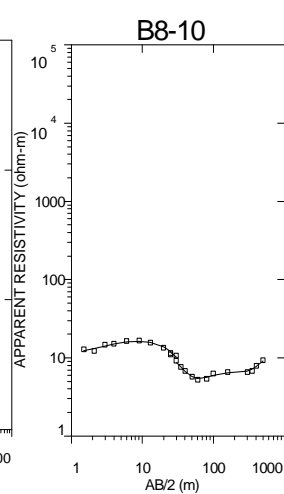
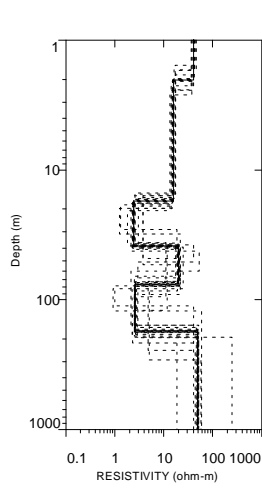
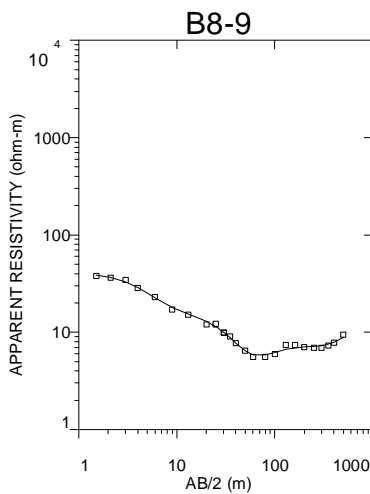
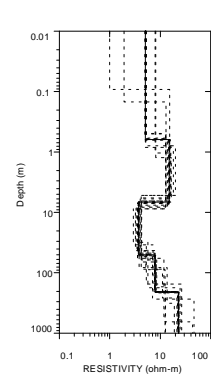
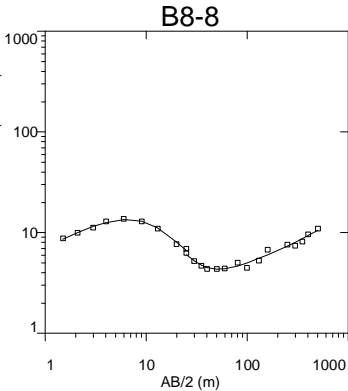
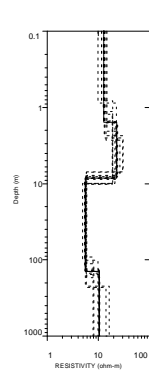
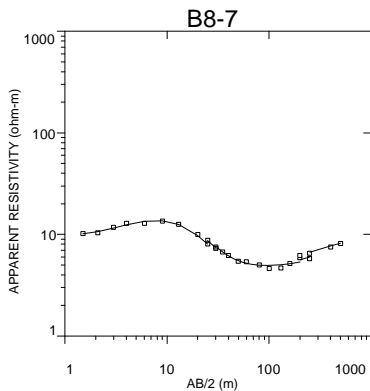
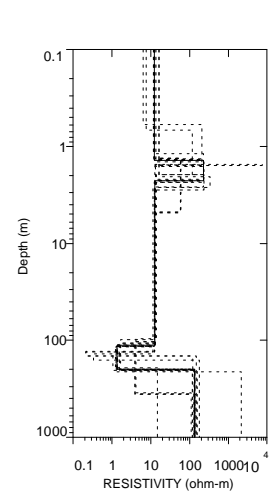
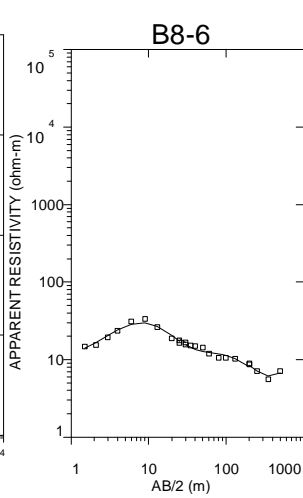
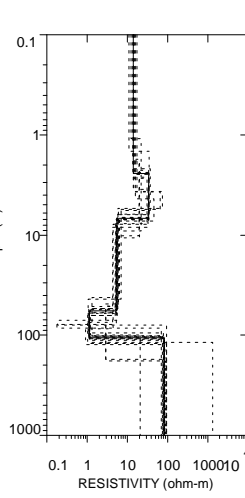
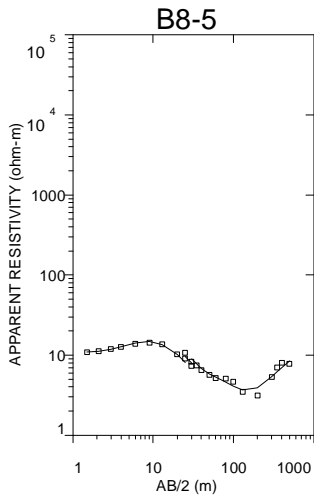
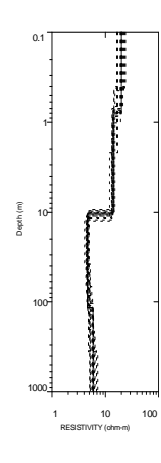
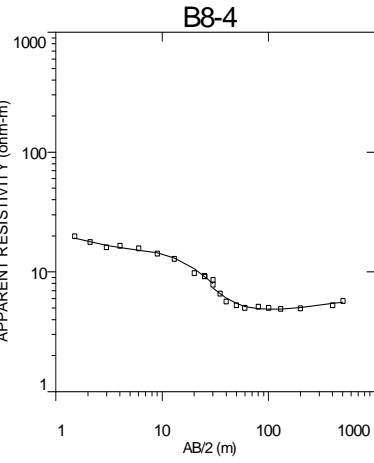
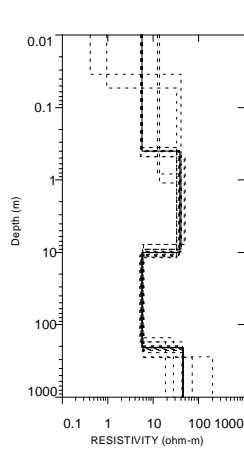
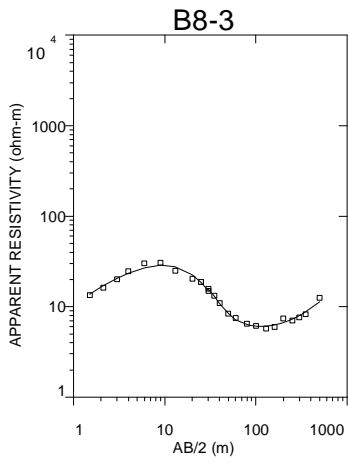
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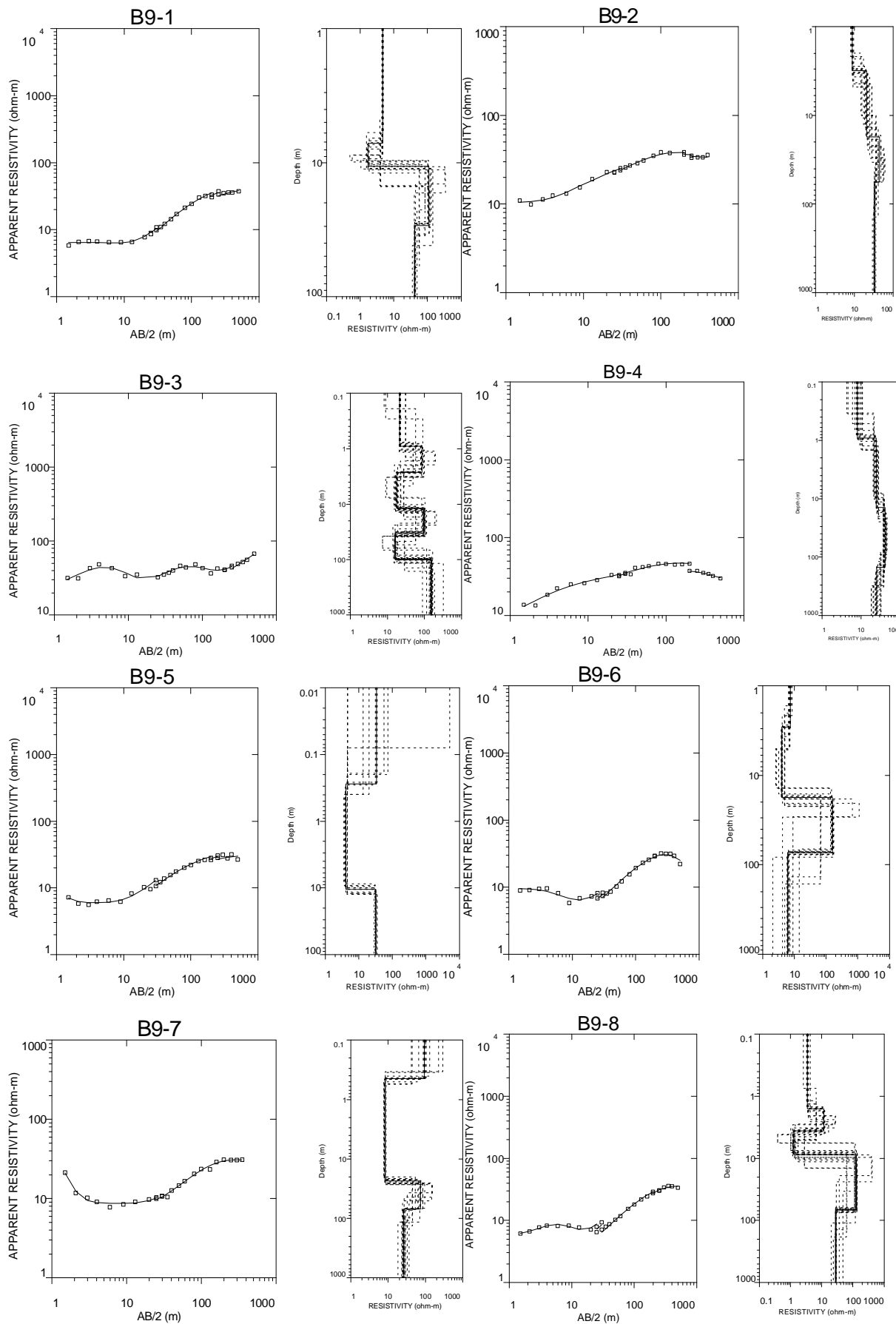


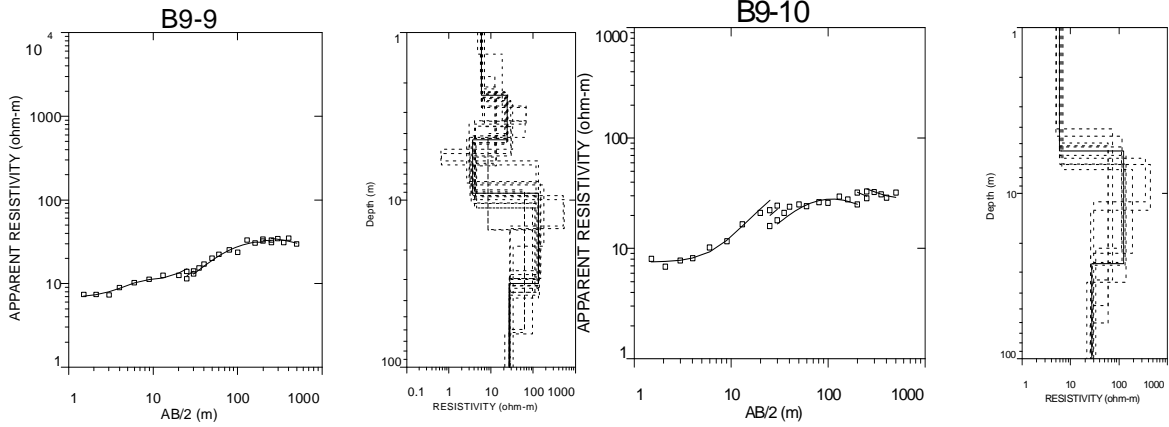
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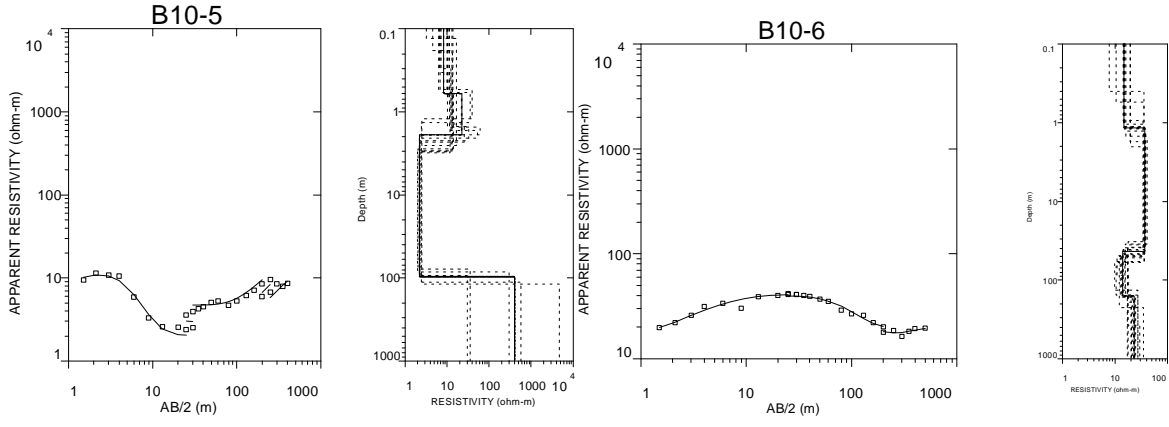
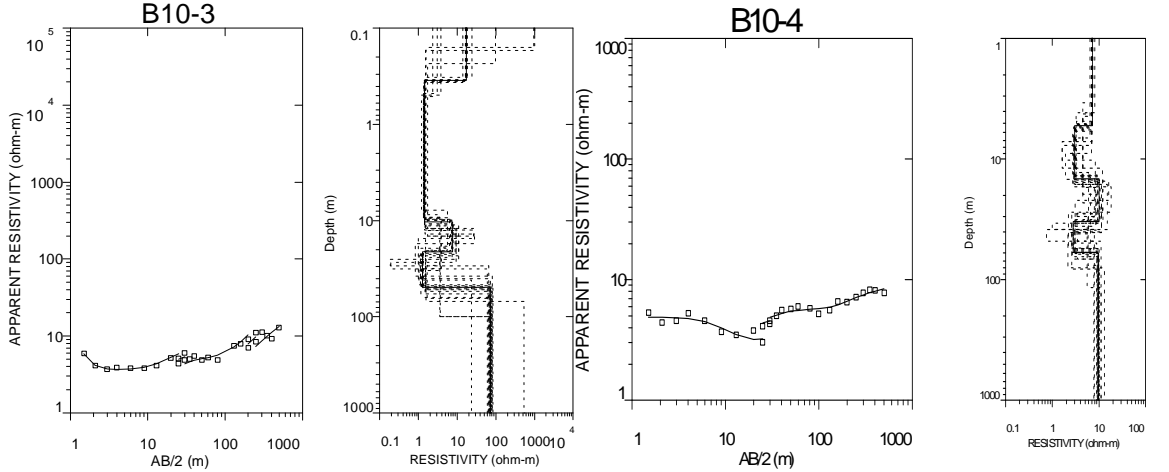
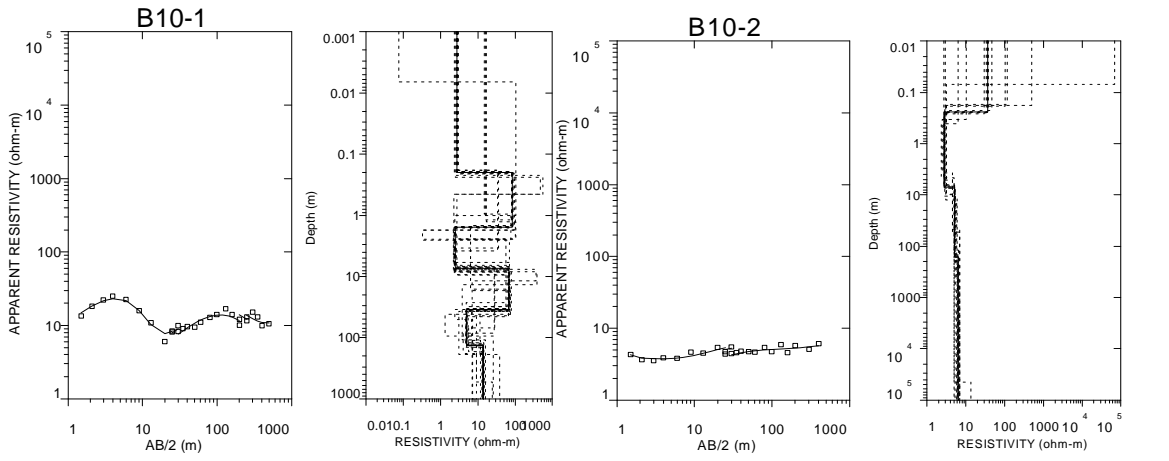


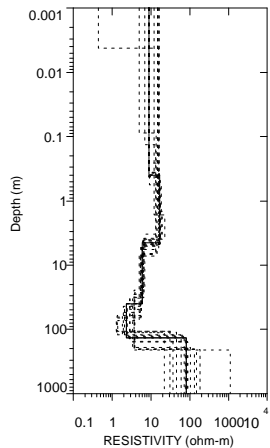
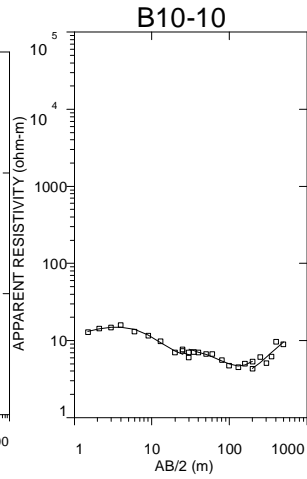
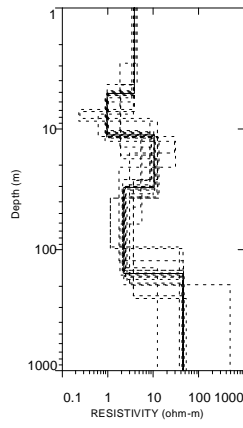
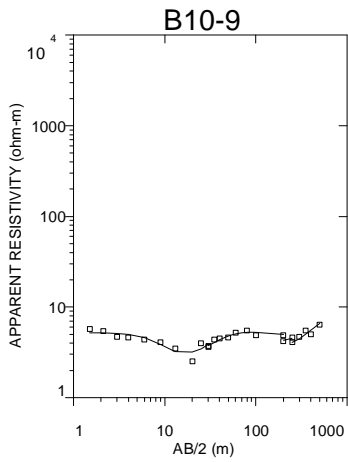
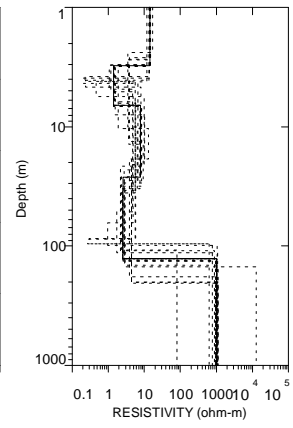
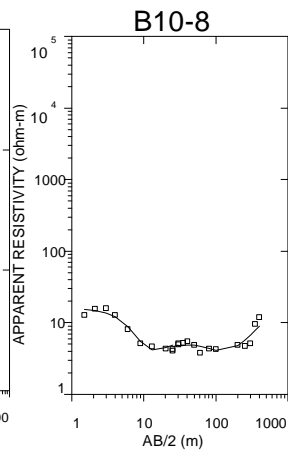
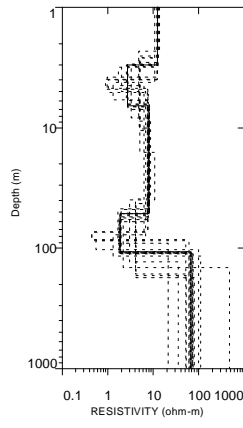
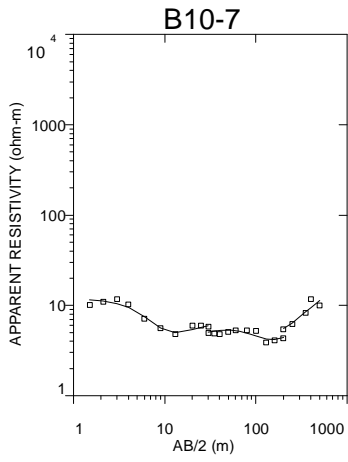
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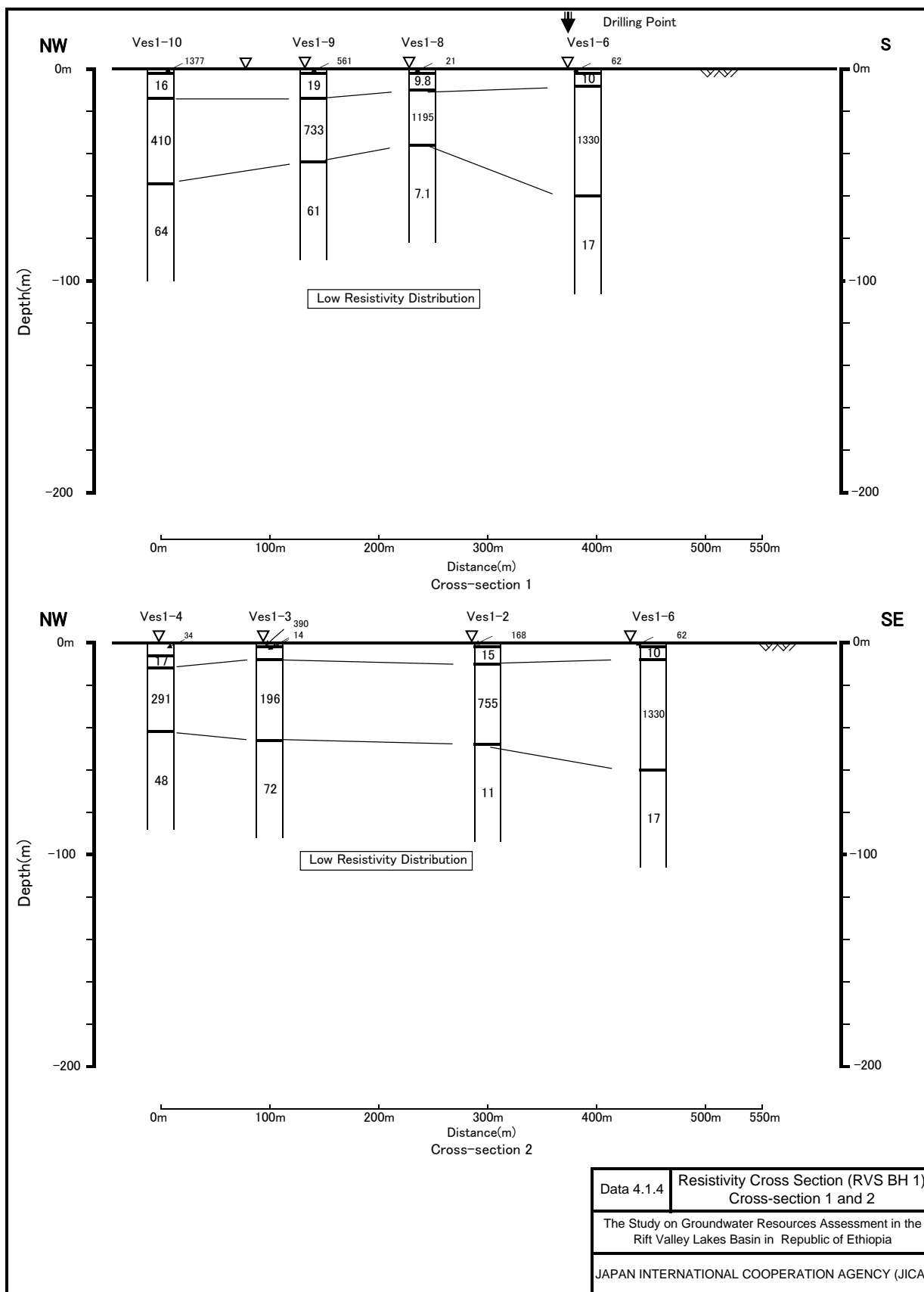


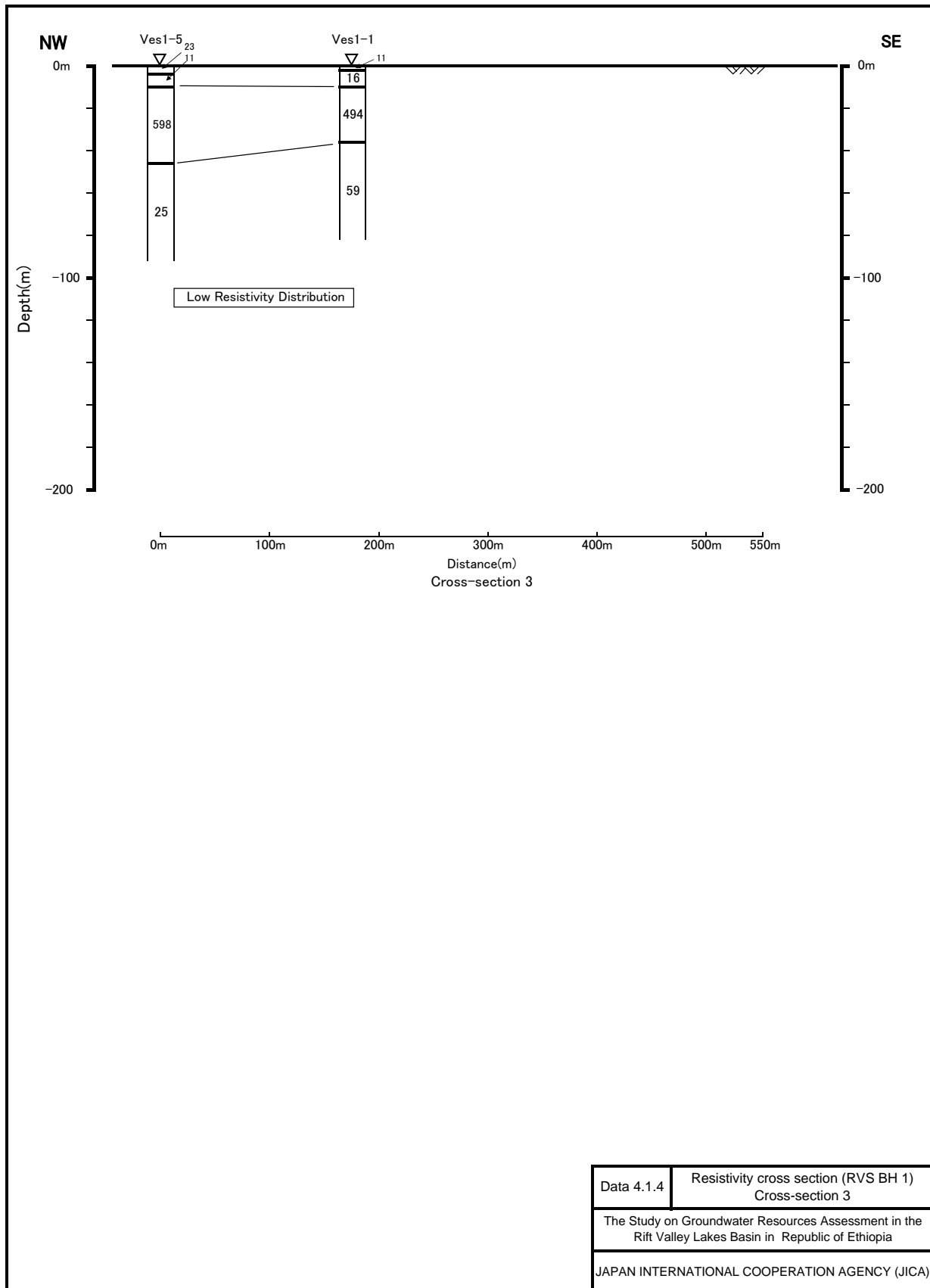


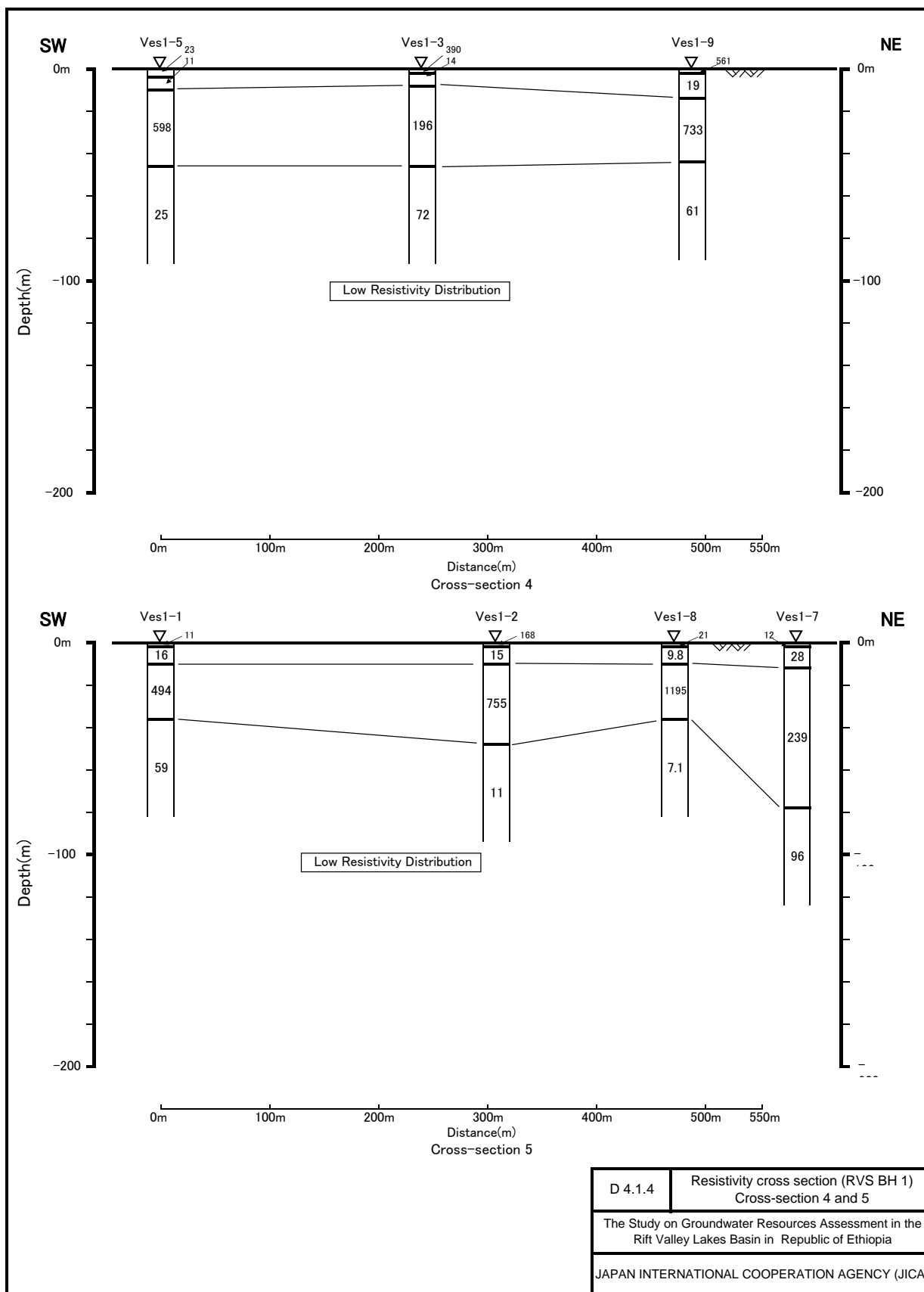
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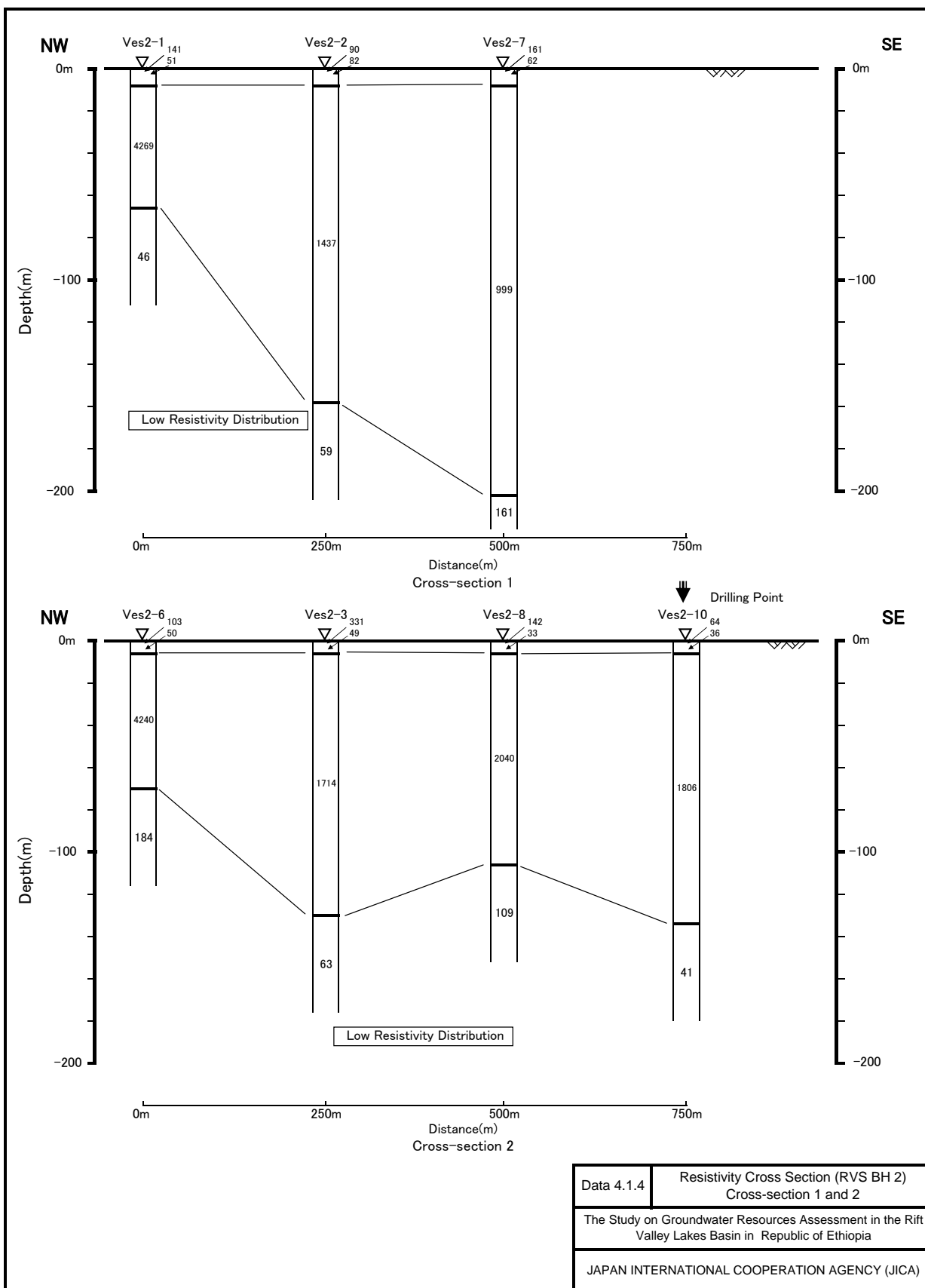




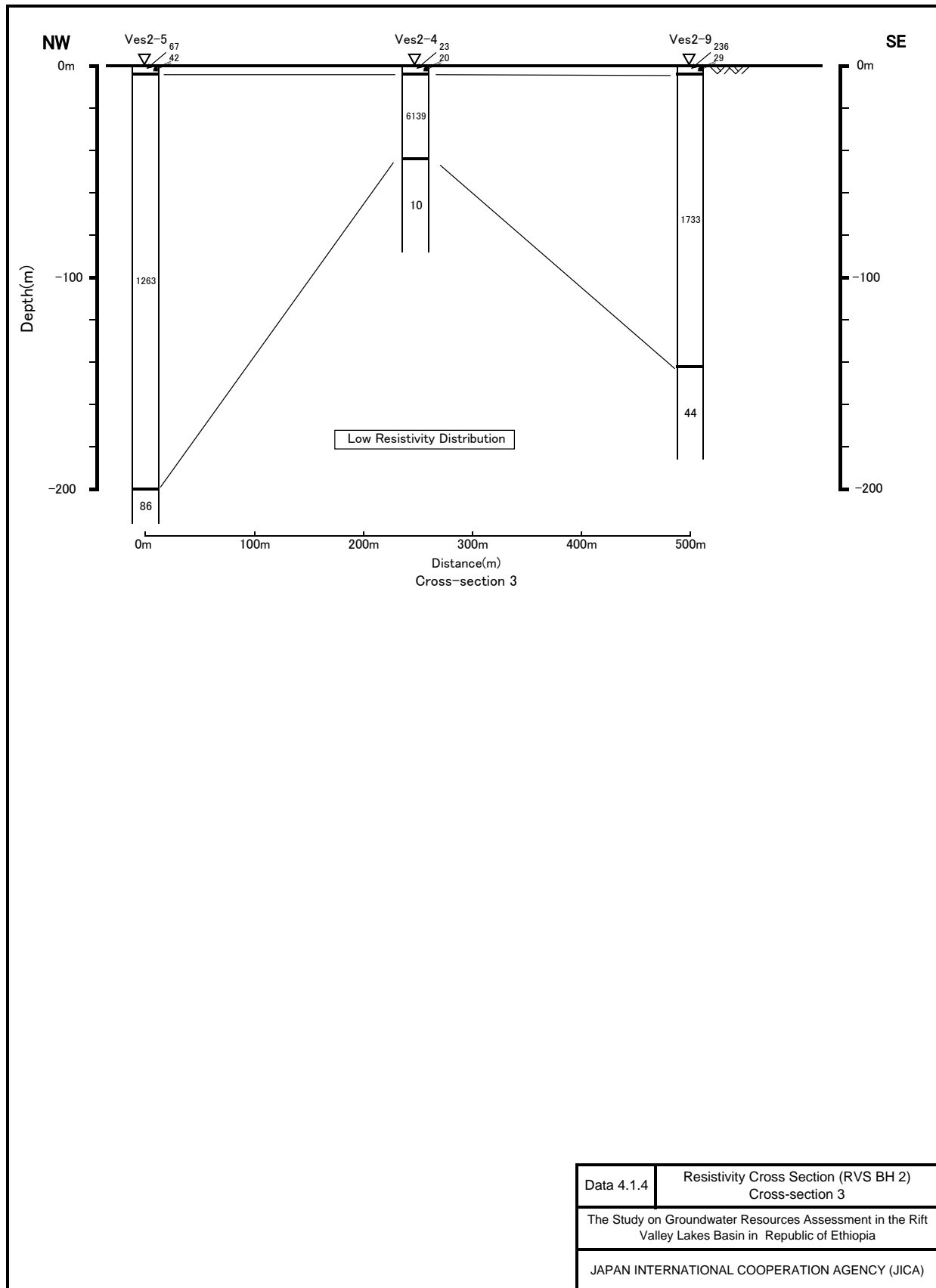




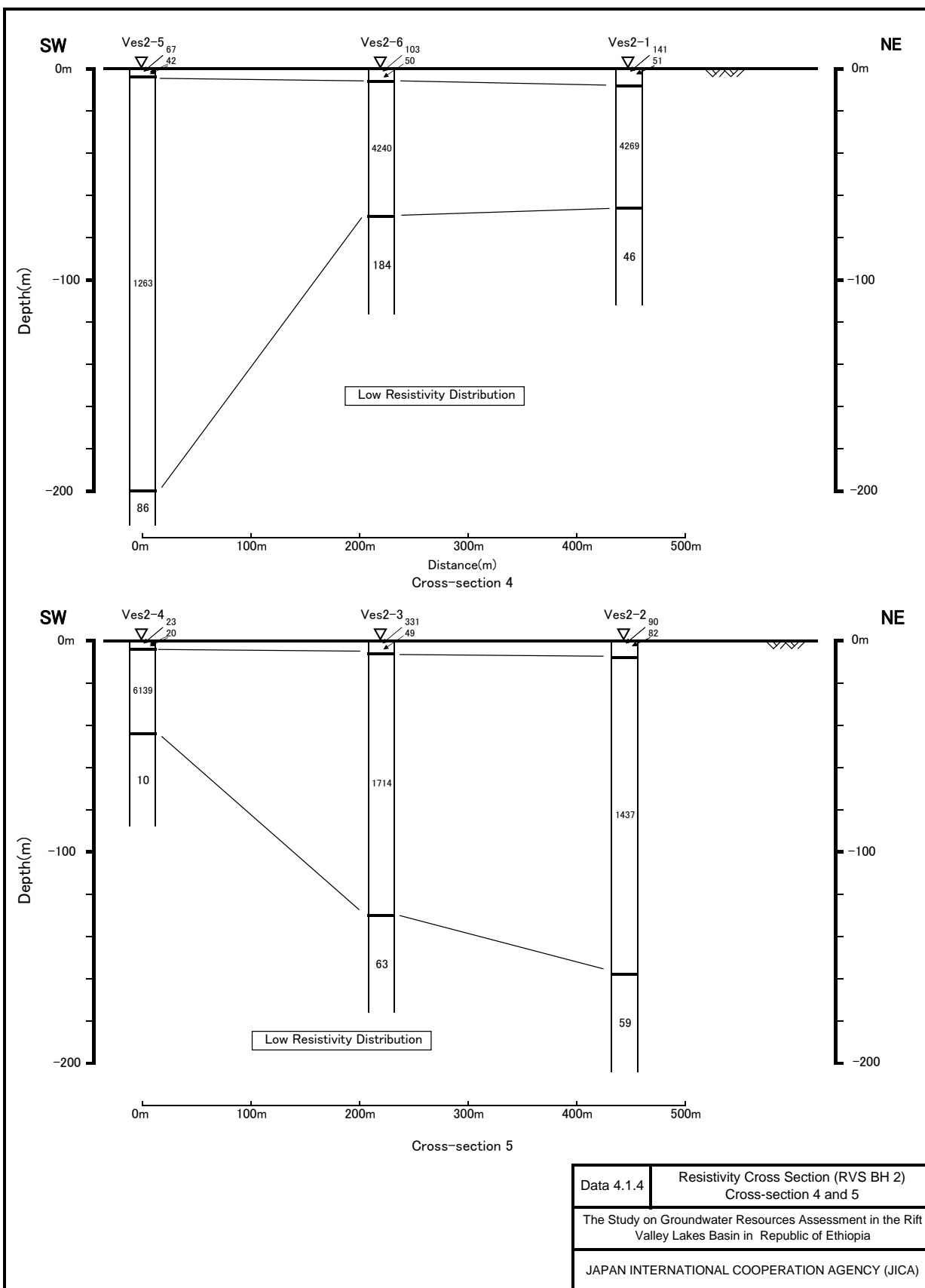
D 4.1.4	Resistivity cross section (RVS BH 1) Cross-section 4 and 5
The Study on Groundwater Resources Assessment in the Rift Valley Lakes Basin in Republic of Ethiopia	
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	

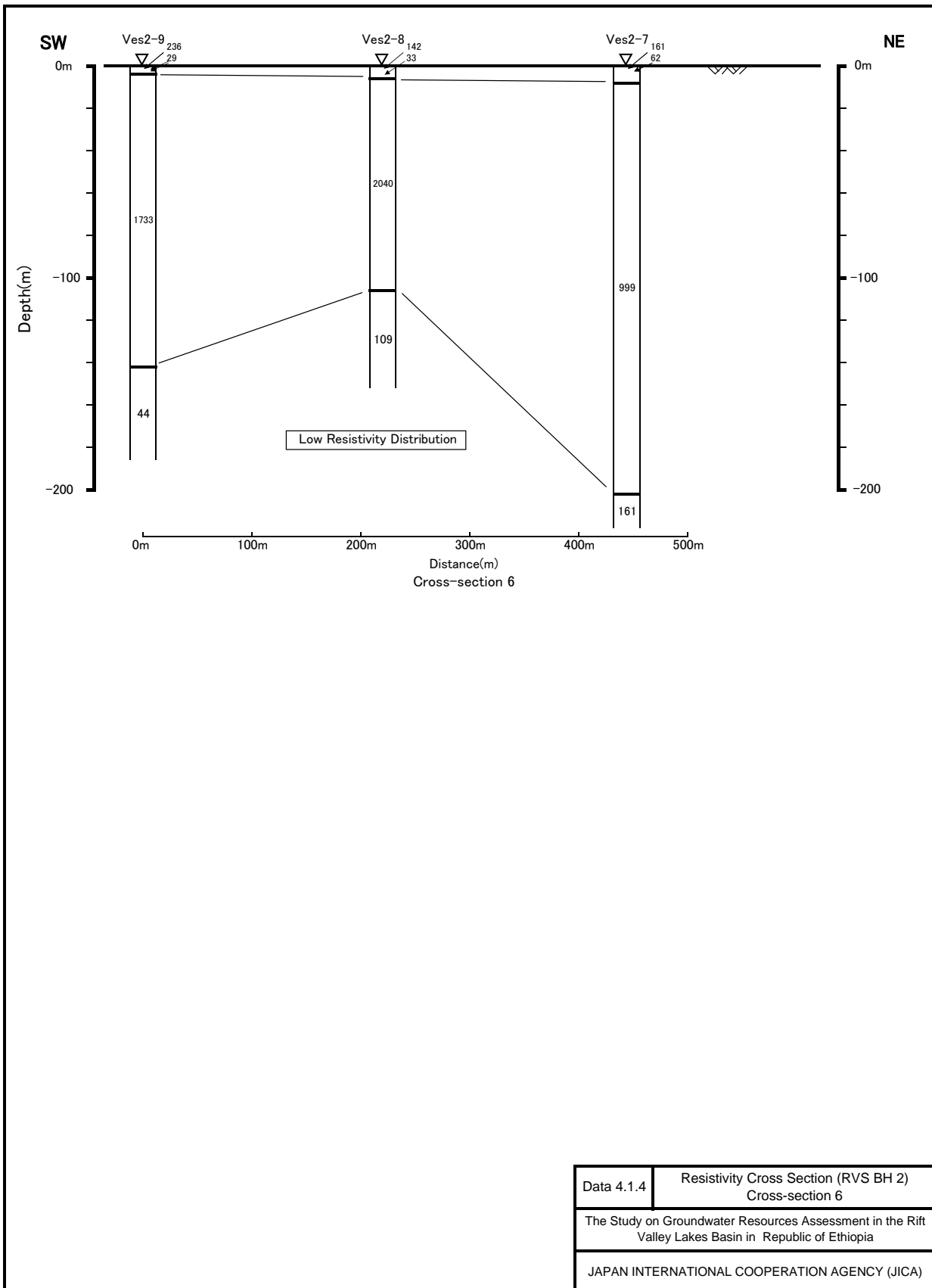


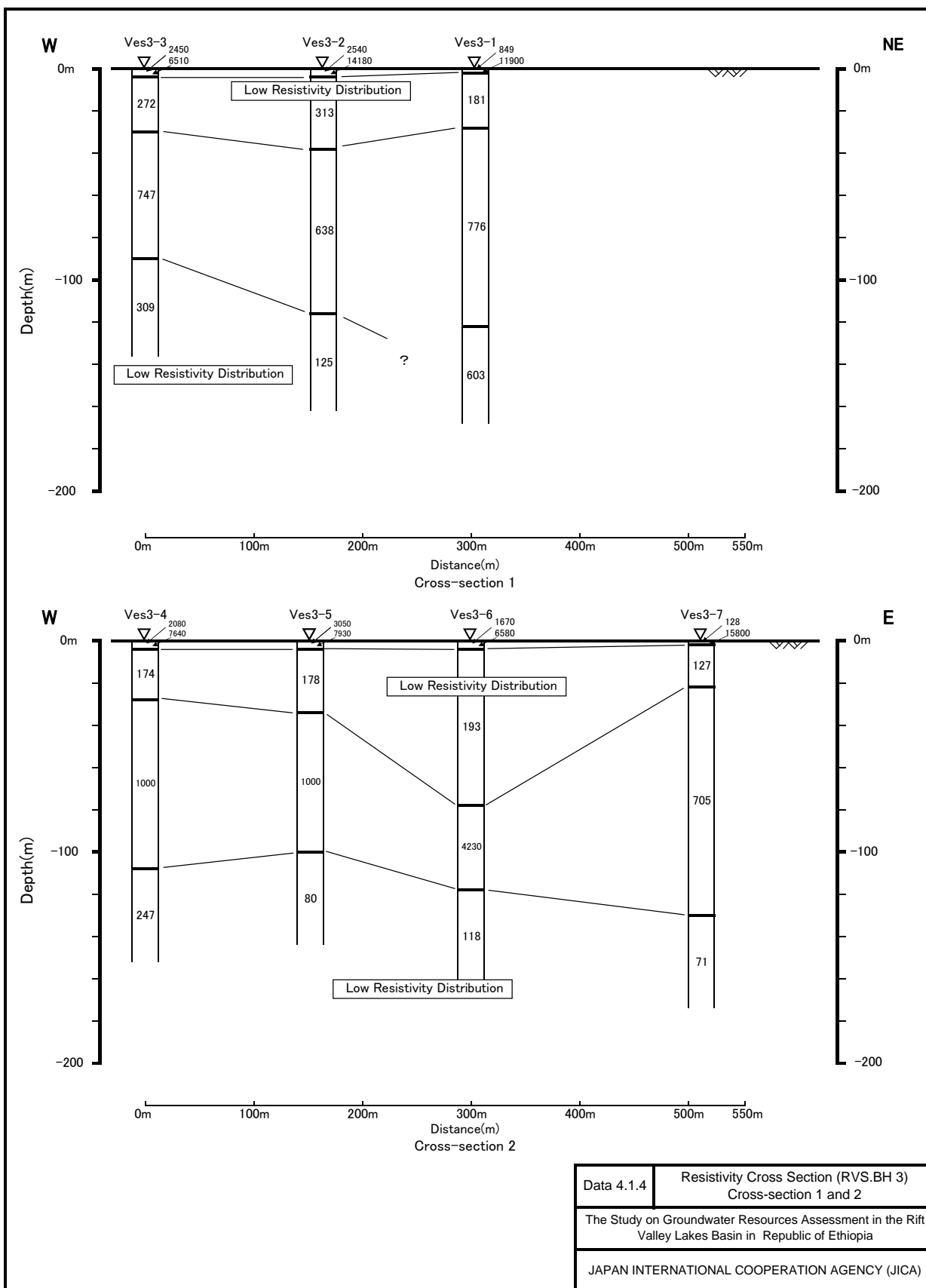
Data 4.1.4	Resistivity Cross Section (RVS BH 2) Cross-section 1 and 2
The Study on Groundwater Resources Assessment in the Rift Valley Lakes Basin in Republic of Ethiopia	
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	



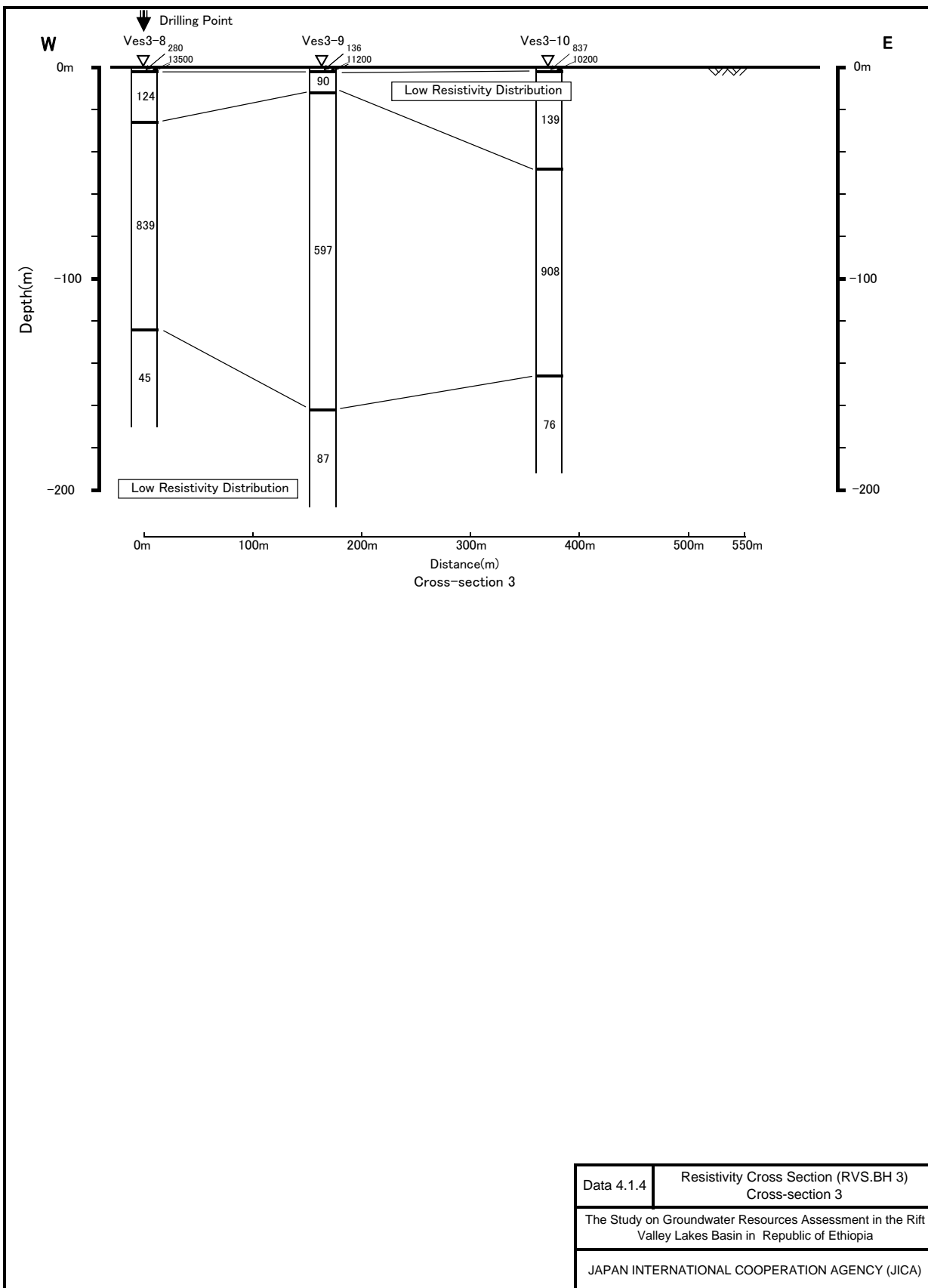
Data 4.1.4	Resistivity Cross Section (RVS BH 2) Cross-section 3
The Study on Groundwater Resources Assessment in the Rift Valley Lakes Basin in Republic of Ethiopia	
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	

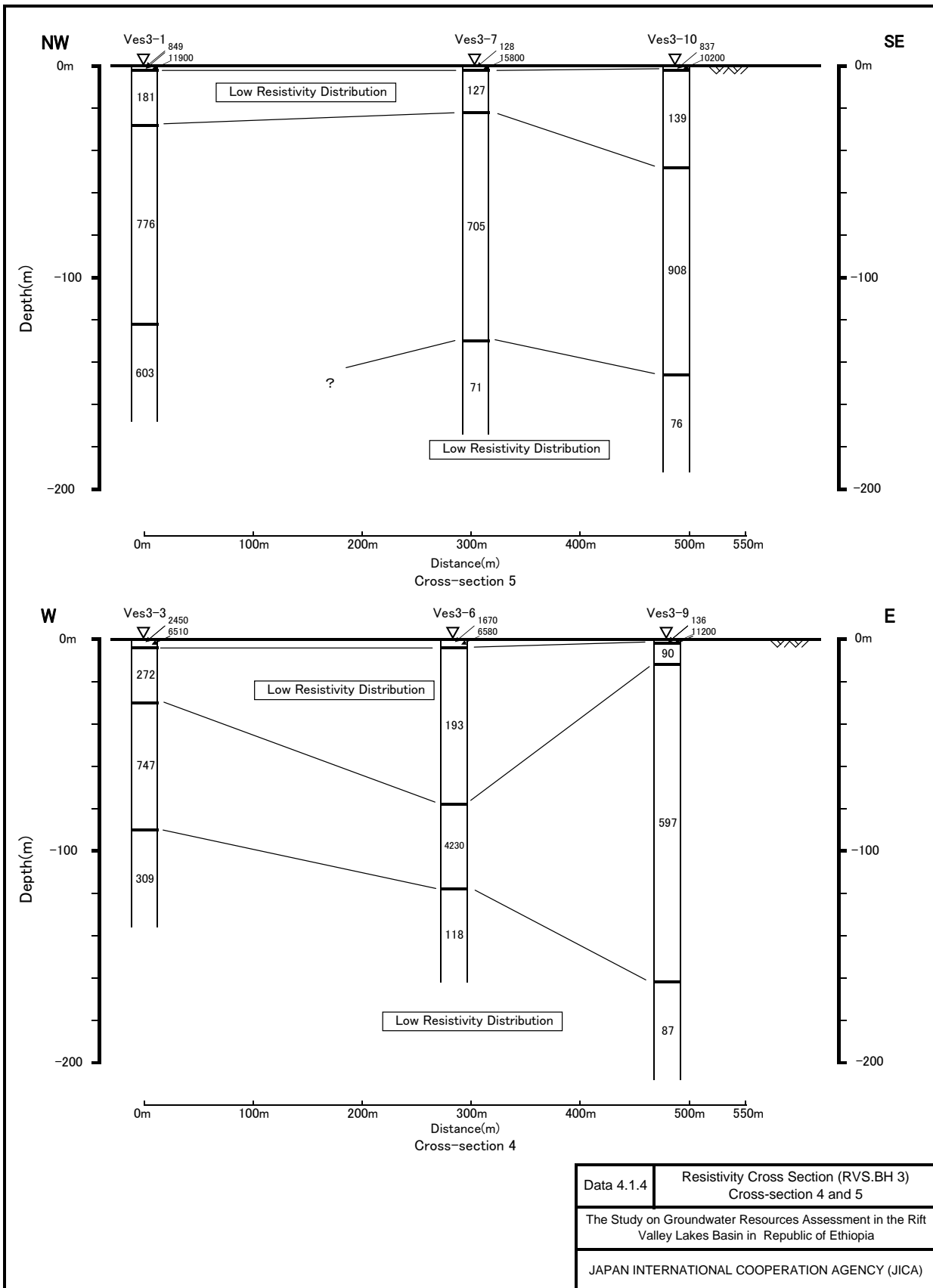




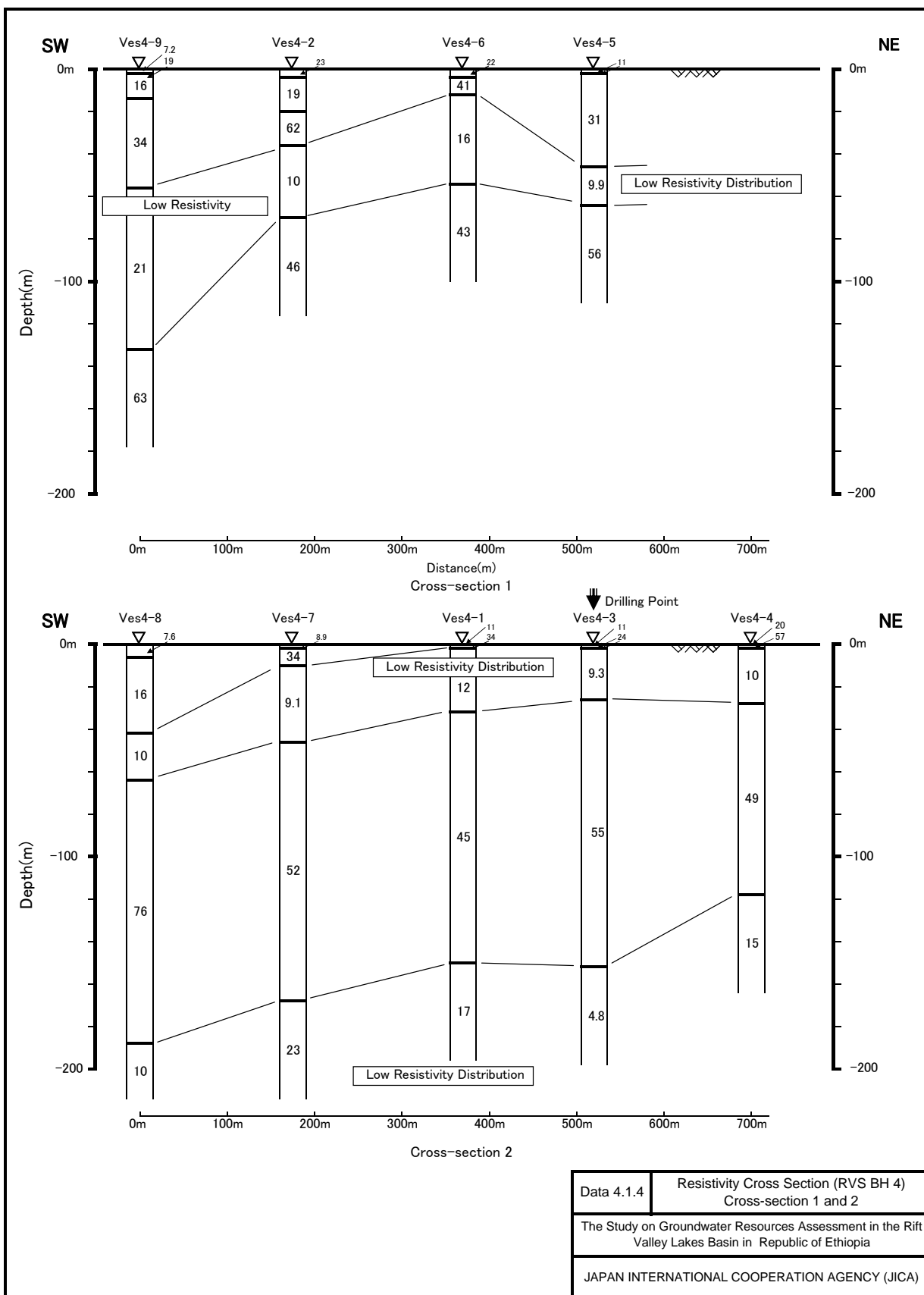


Data 4.1.4	Resistivity Cross Section (RVS.BH 3) Cross-section 1 and 2
The Study on Groundwater Resources Assessment in the Rift Valley Lakes Basin in Republic of Ethiopia	
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	

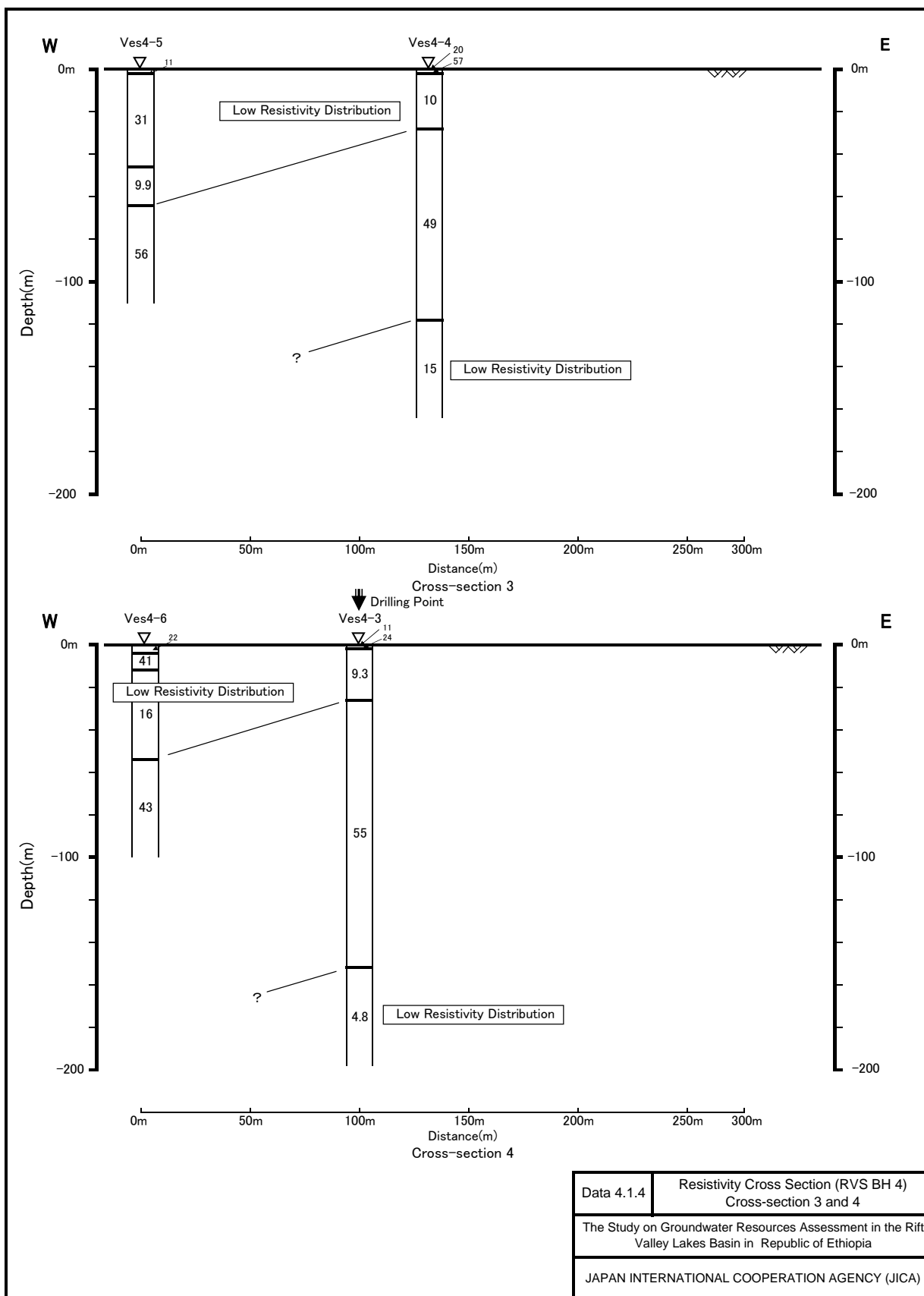


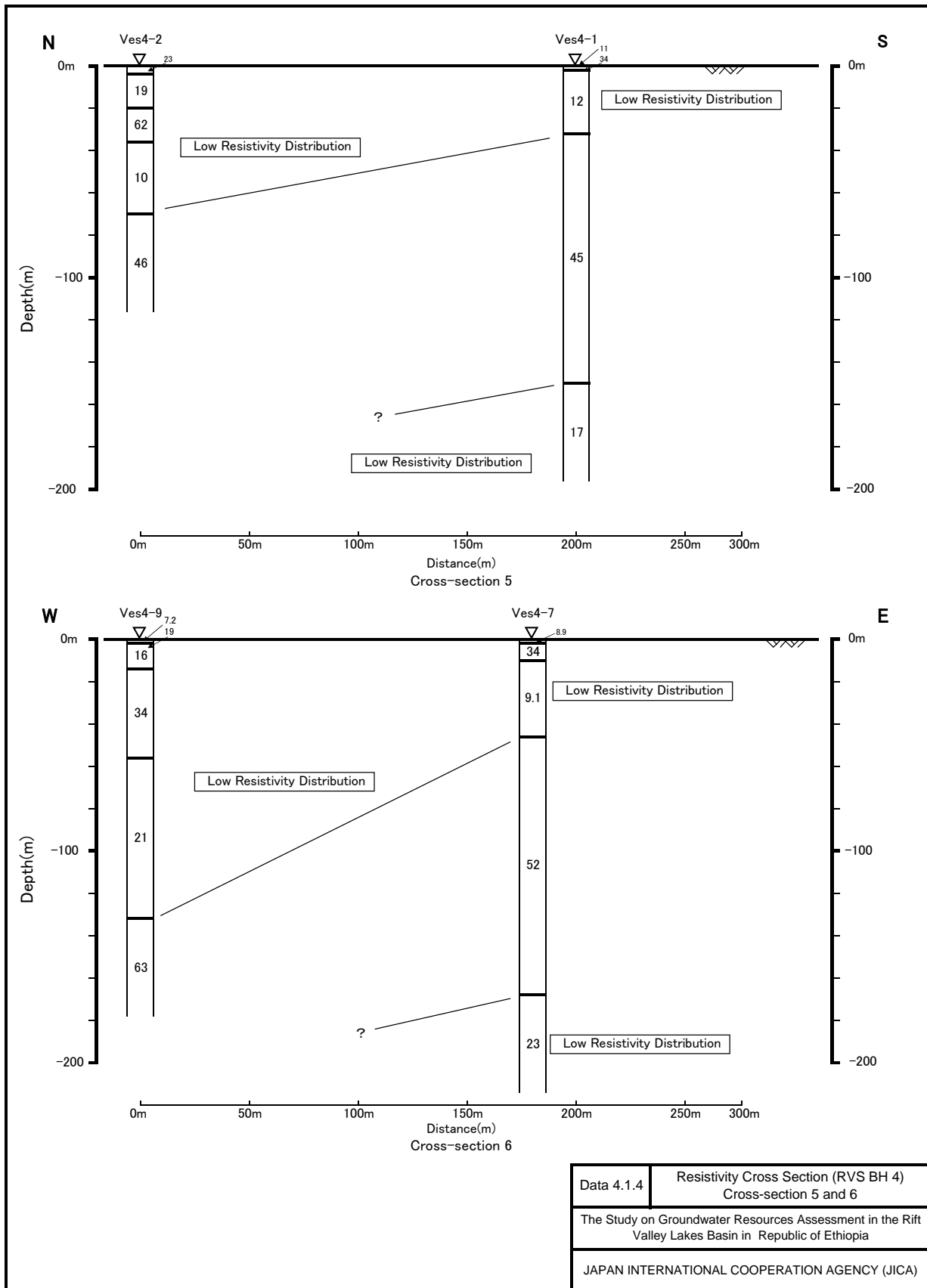


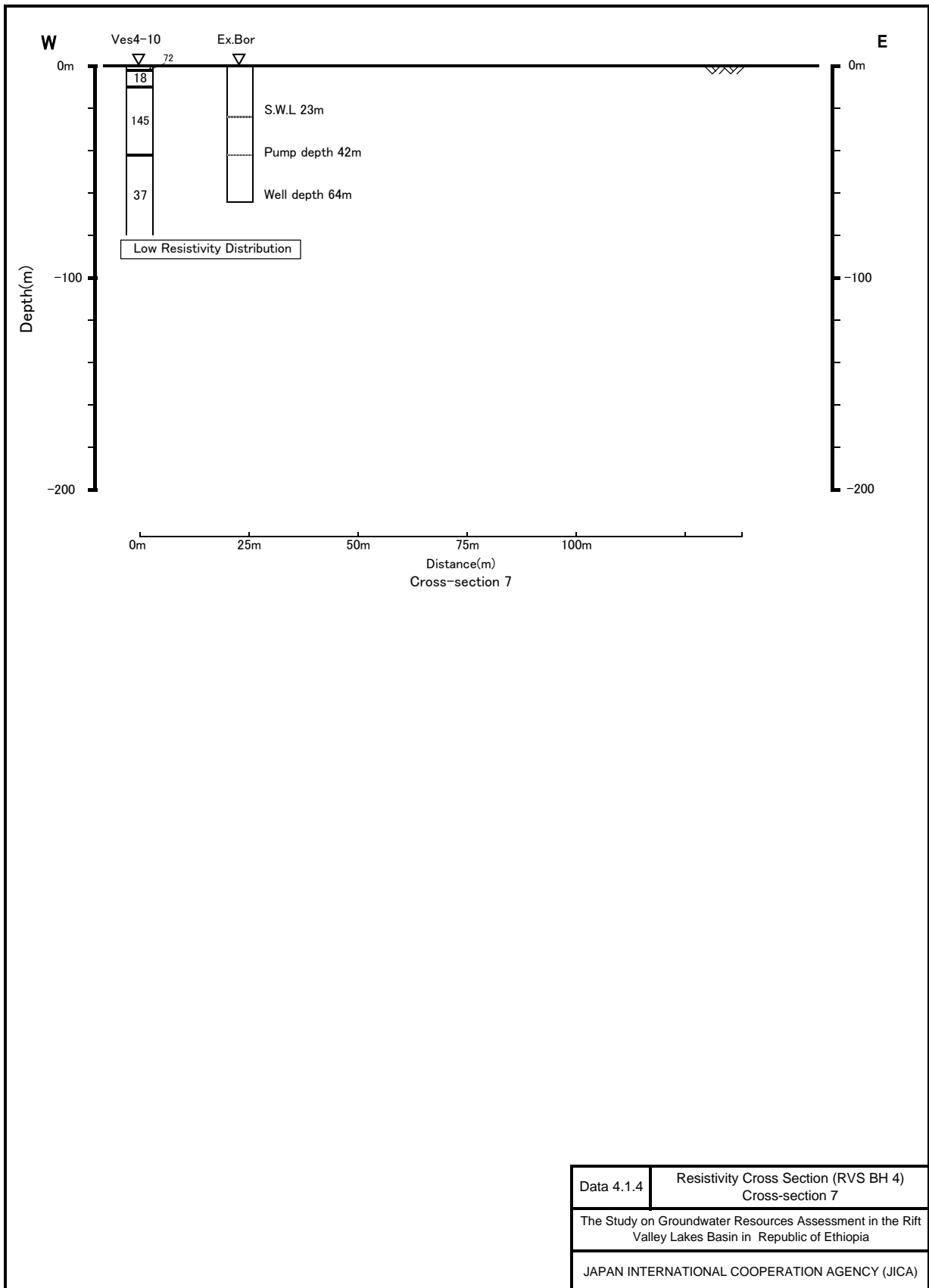
Data 4.1.4	Resistivity Cross Section (RVS.BH 3) Cross-section 4 and 5
The Study on Groundwater Resources Assessment in the Rift Valley Lakes Basin in Republic of Ethiopia	
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	

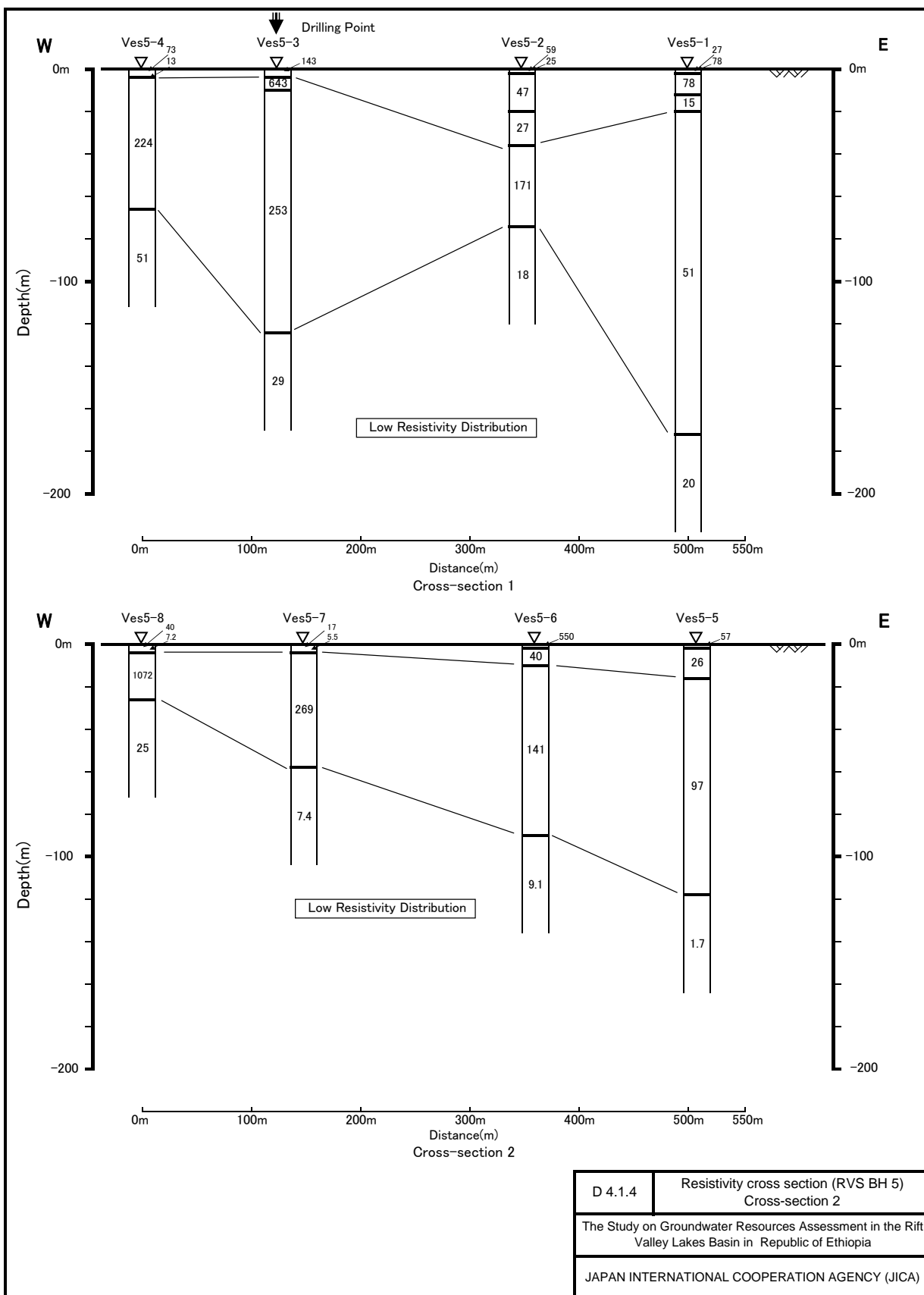


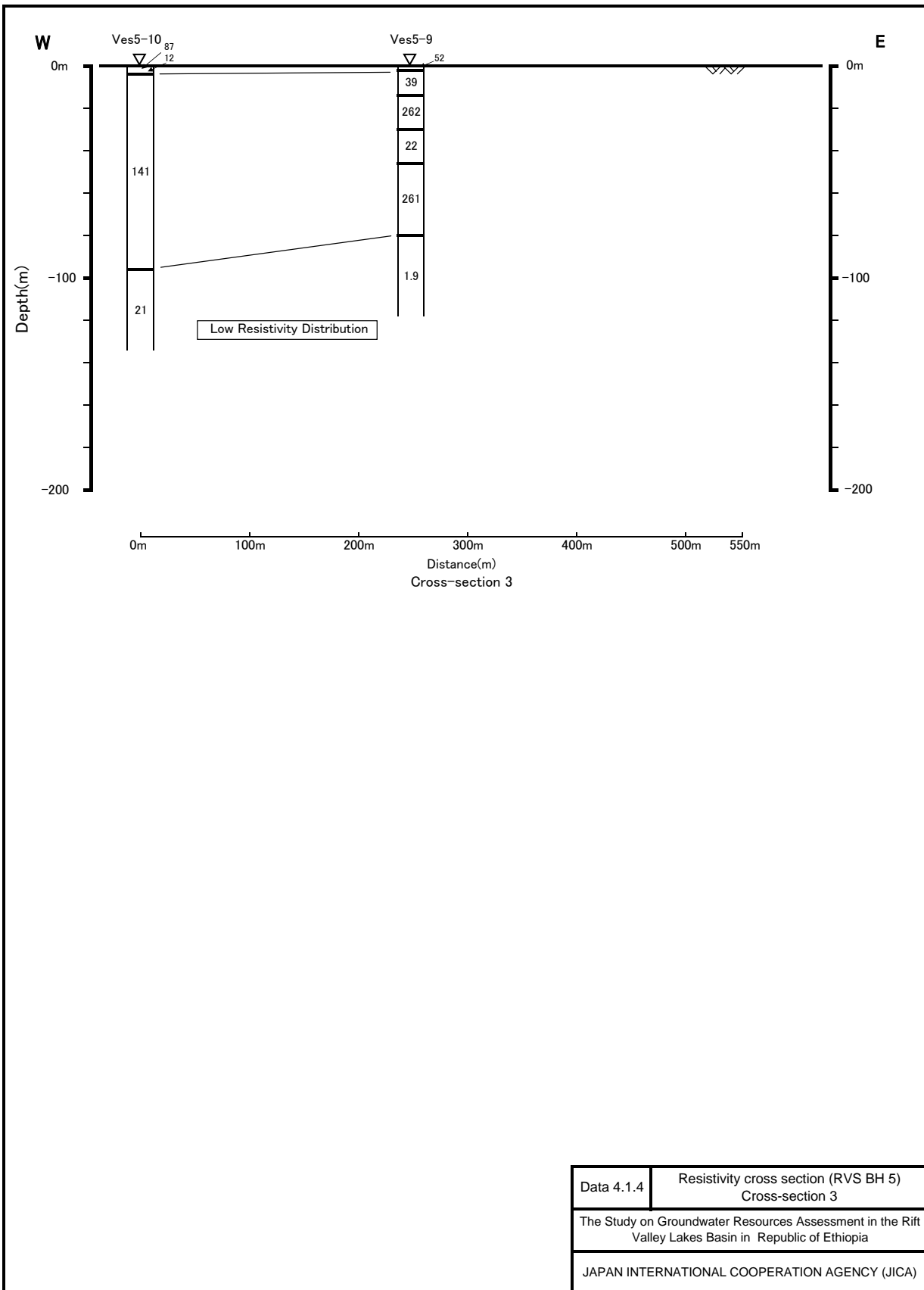
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The Study on Groundwater Resources Assessment in the Rift Valley Lakes Basin in Republic of Ethiopia	
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	

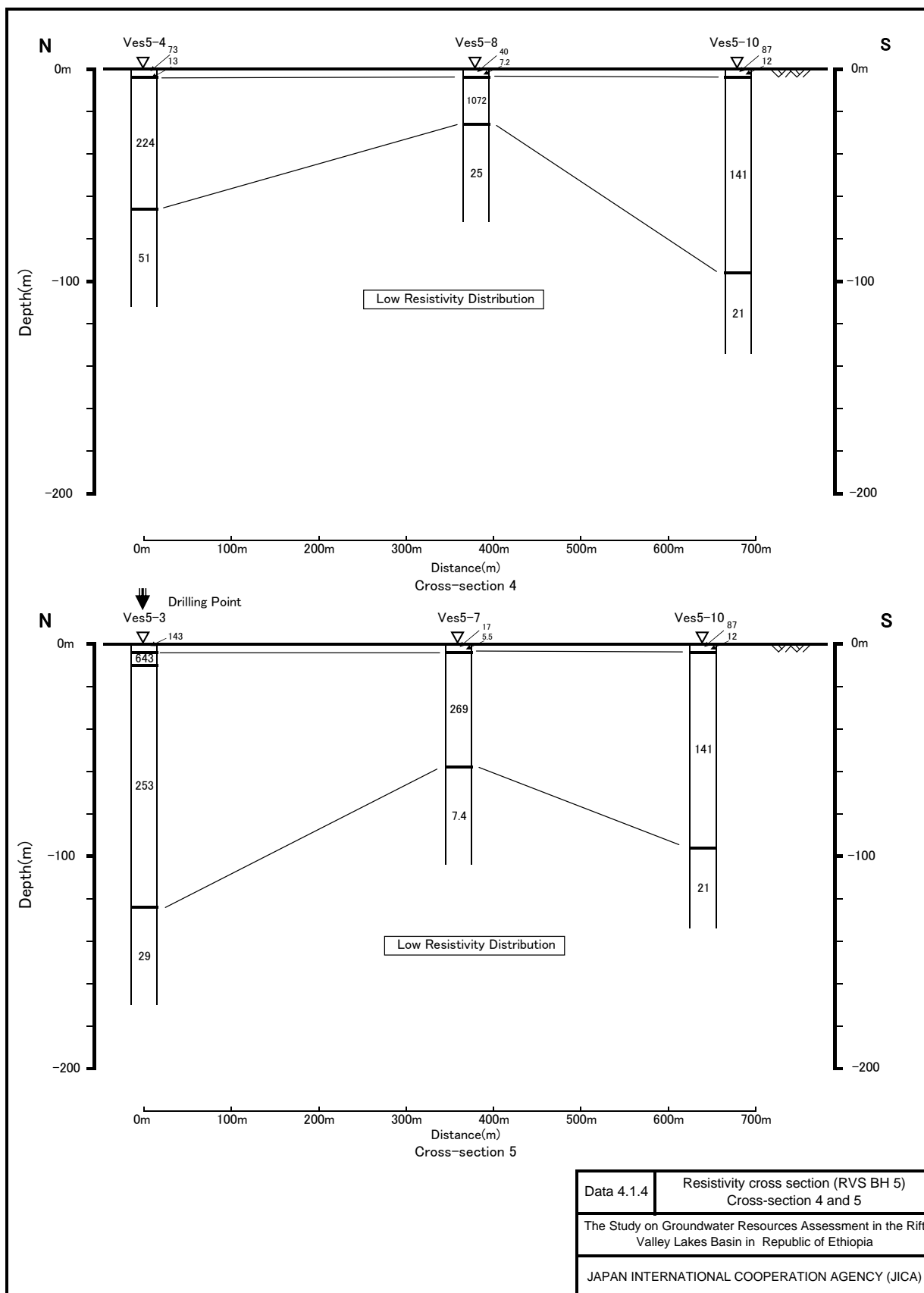


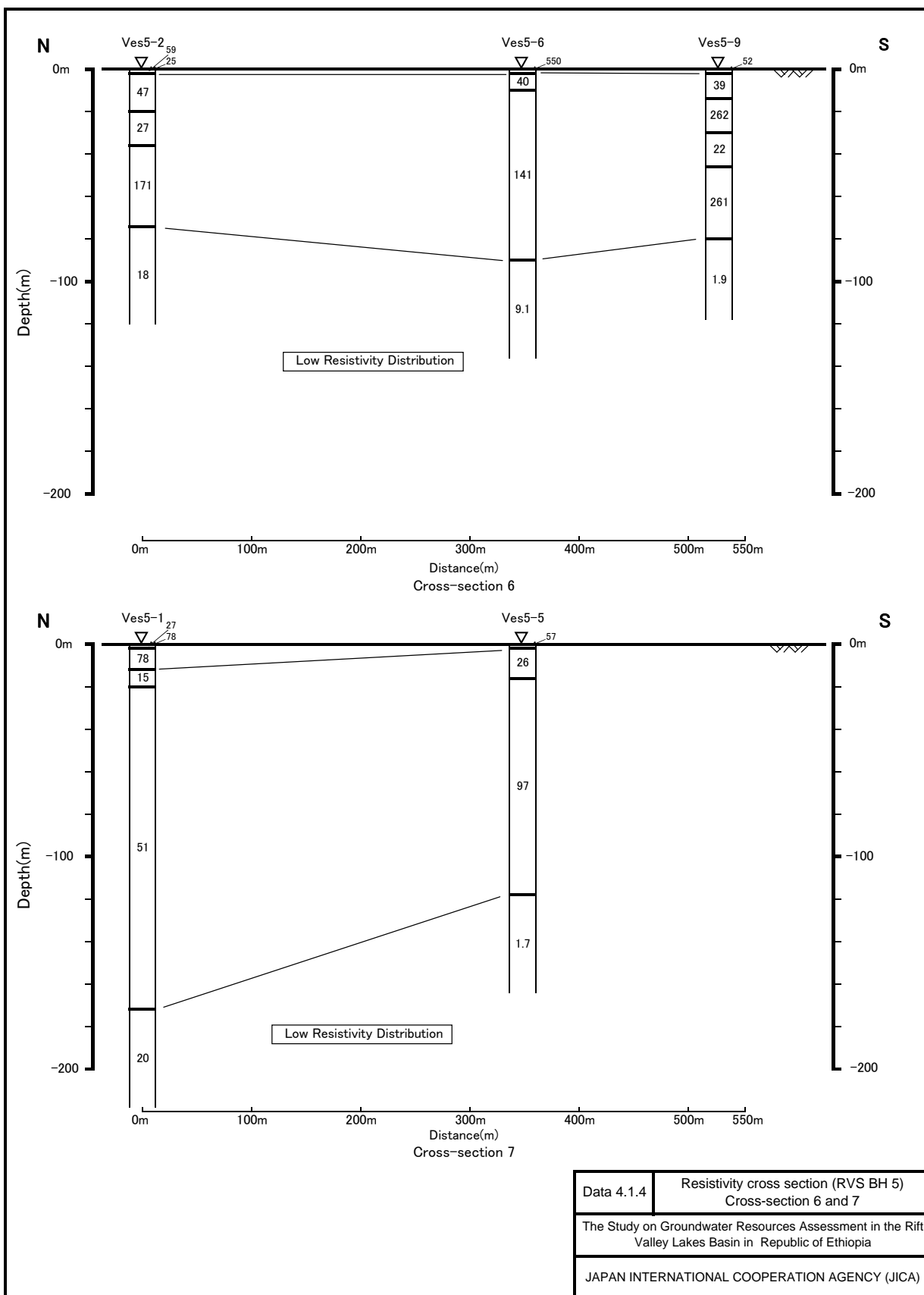


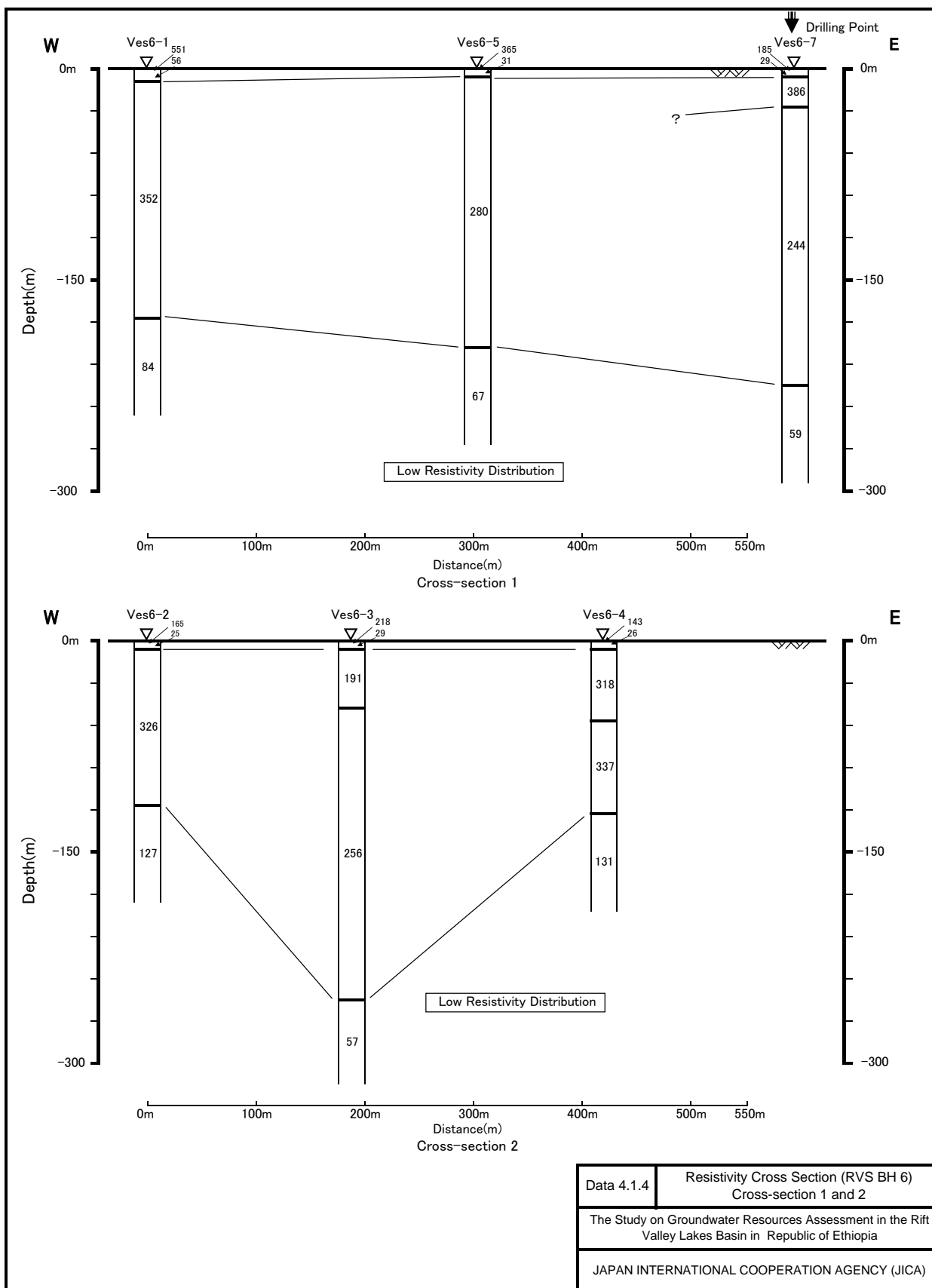




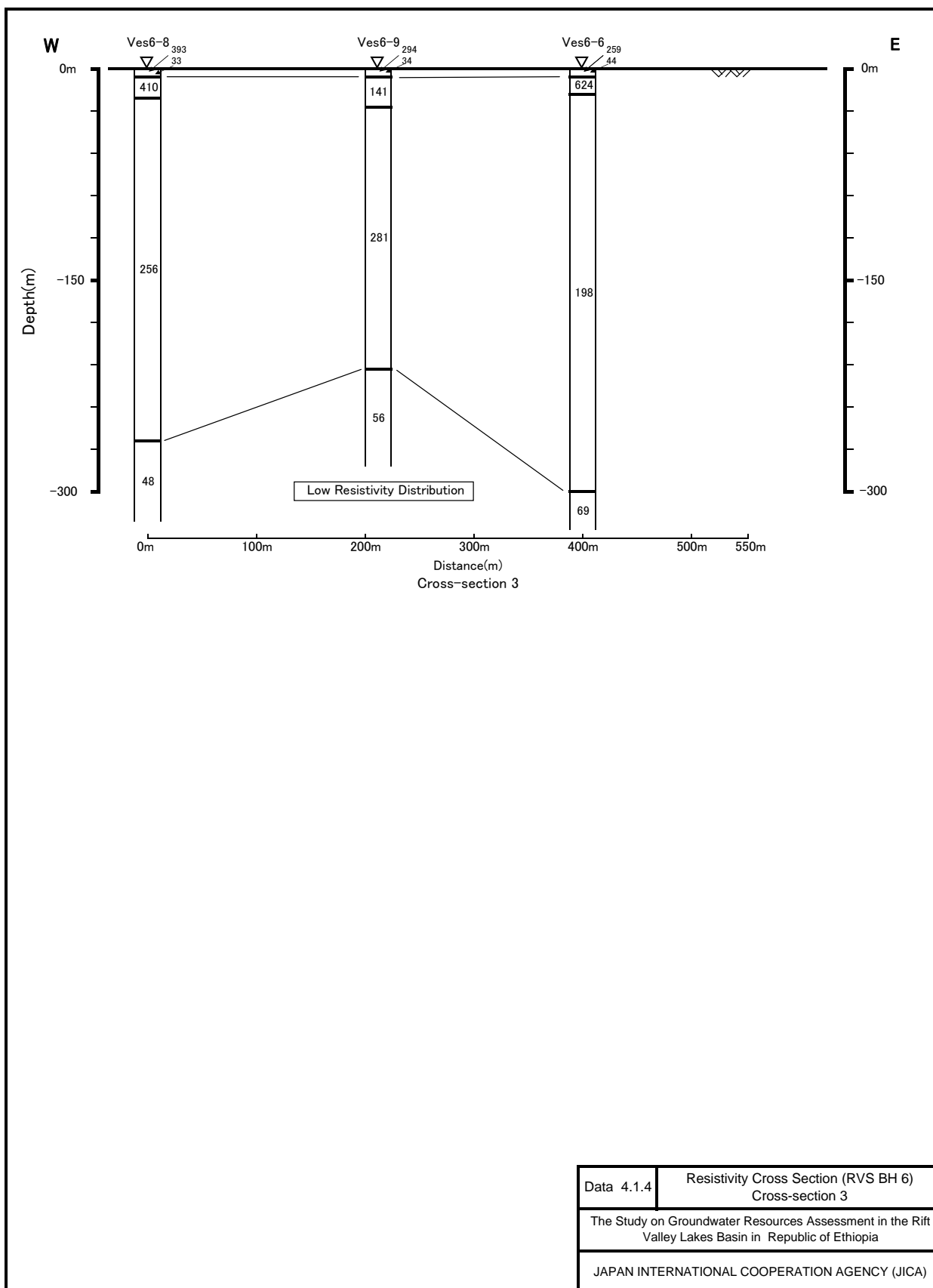


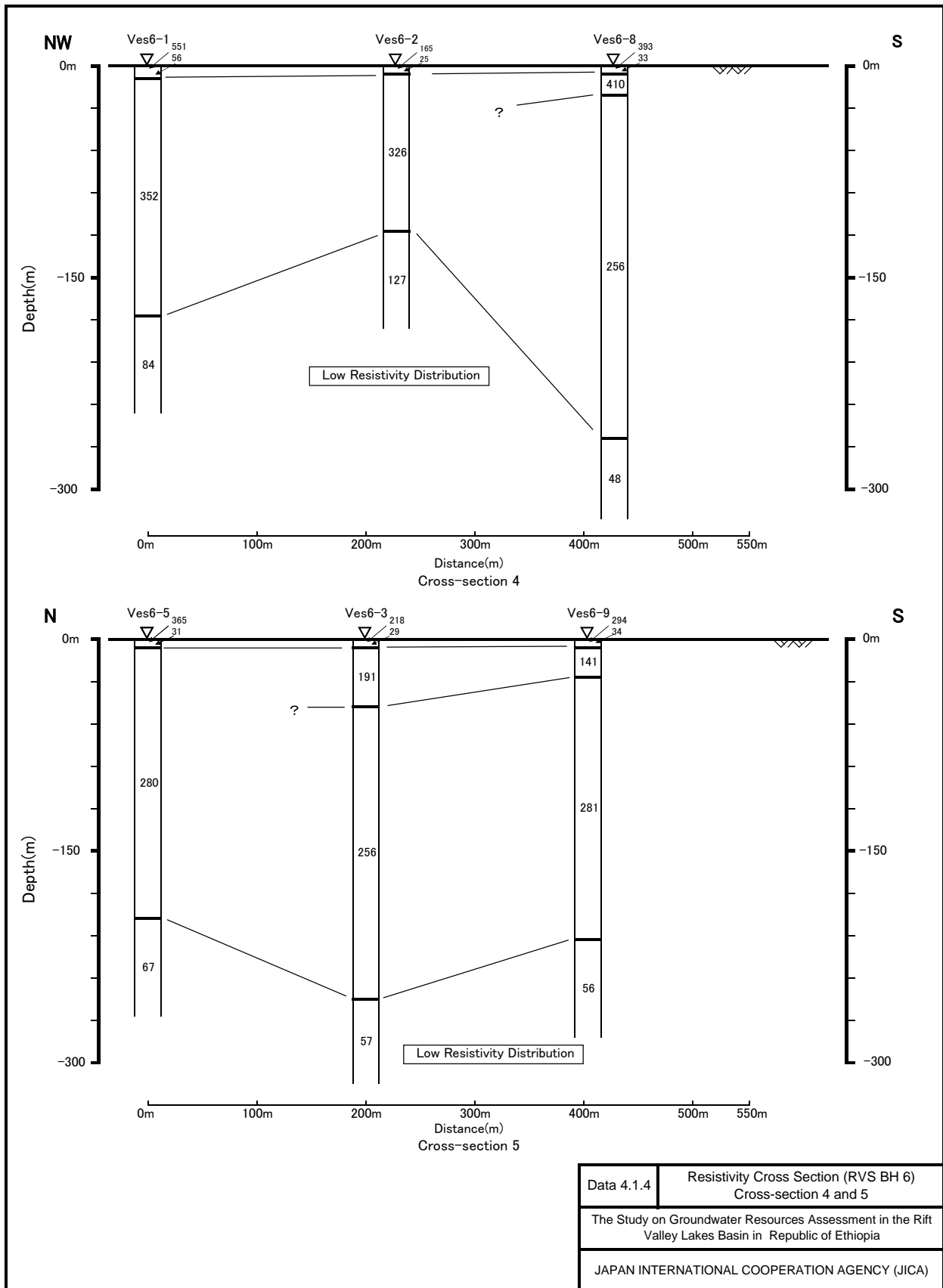


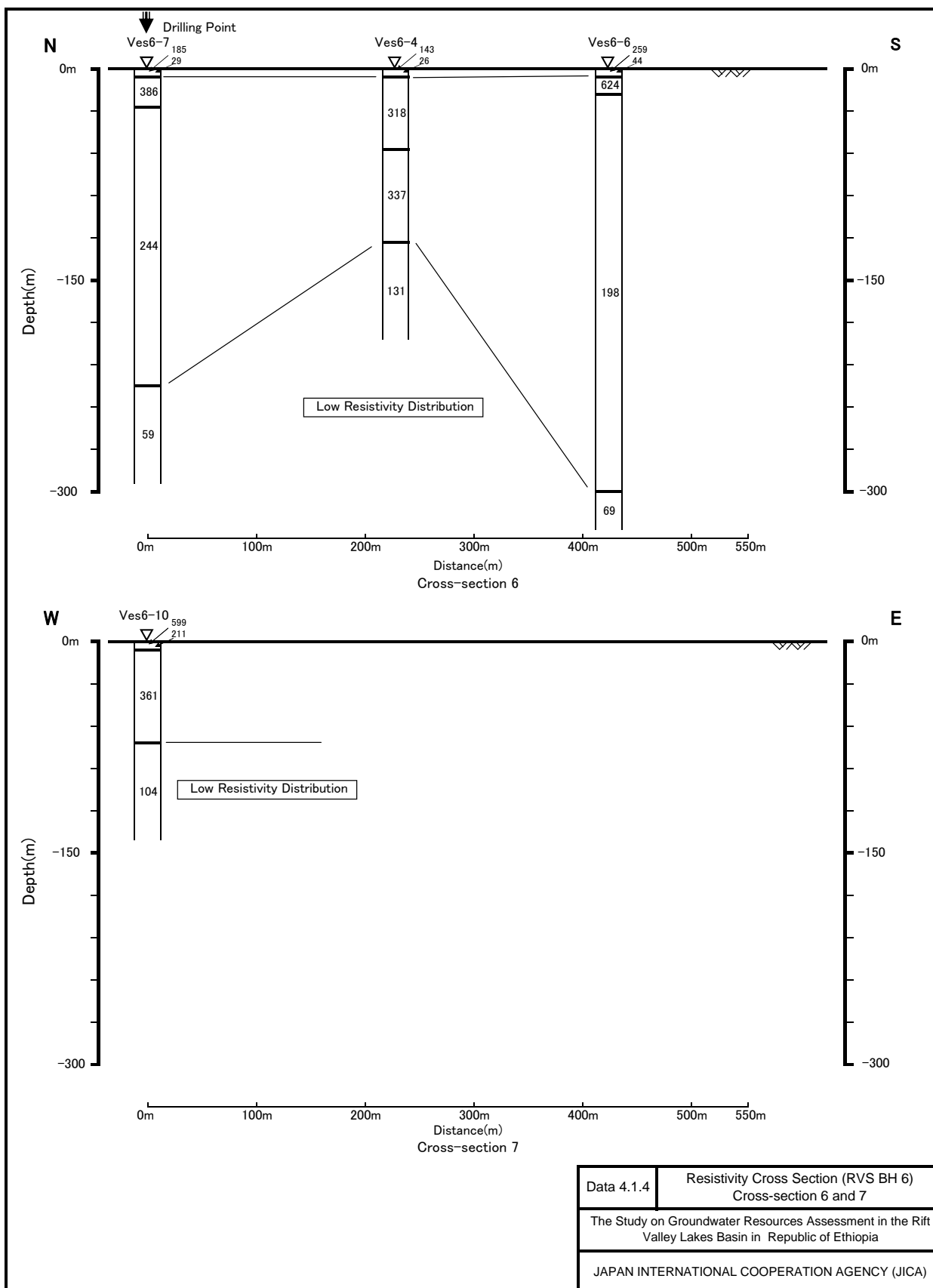


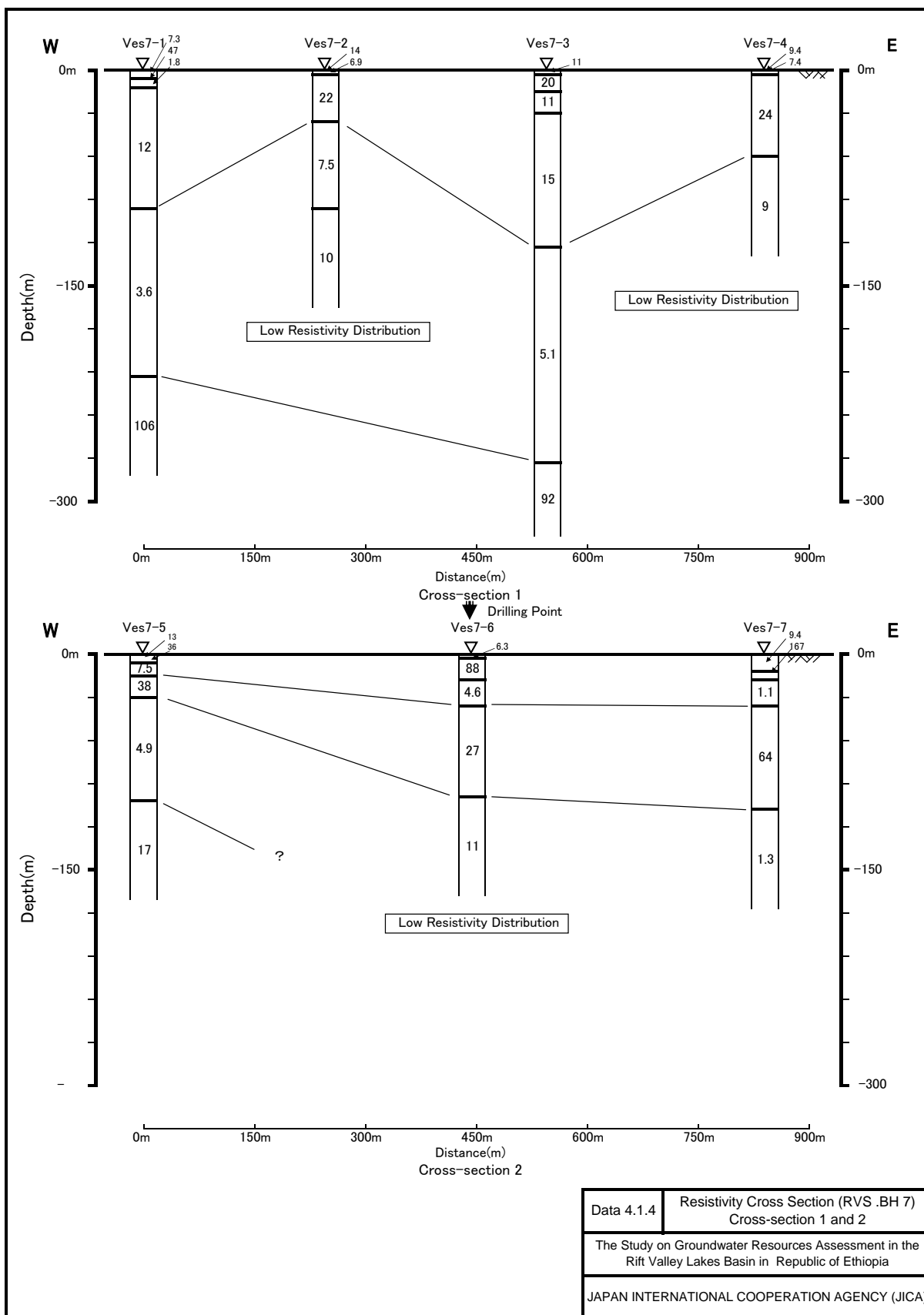


Data 4.1.4	Resistivity Cross Section (RVS BH 6) Cross-section 1 and 2
The Study on Groundwater Resources Assessment in the Rift Valley Lakes Basin in Republic of Ethiopia	
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	

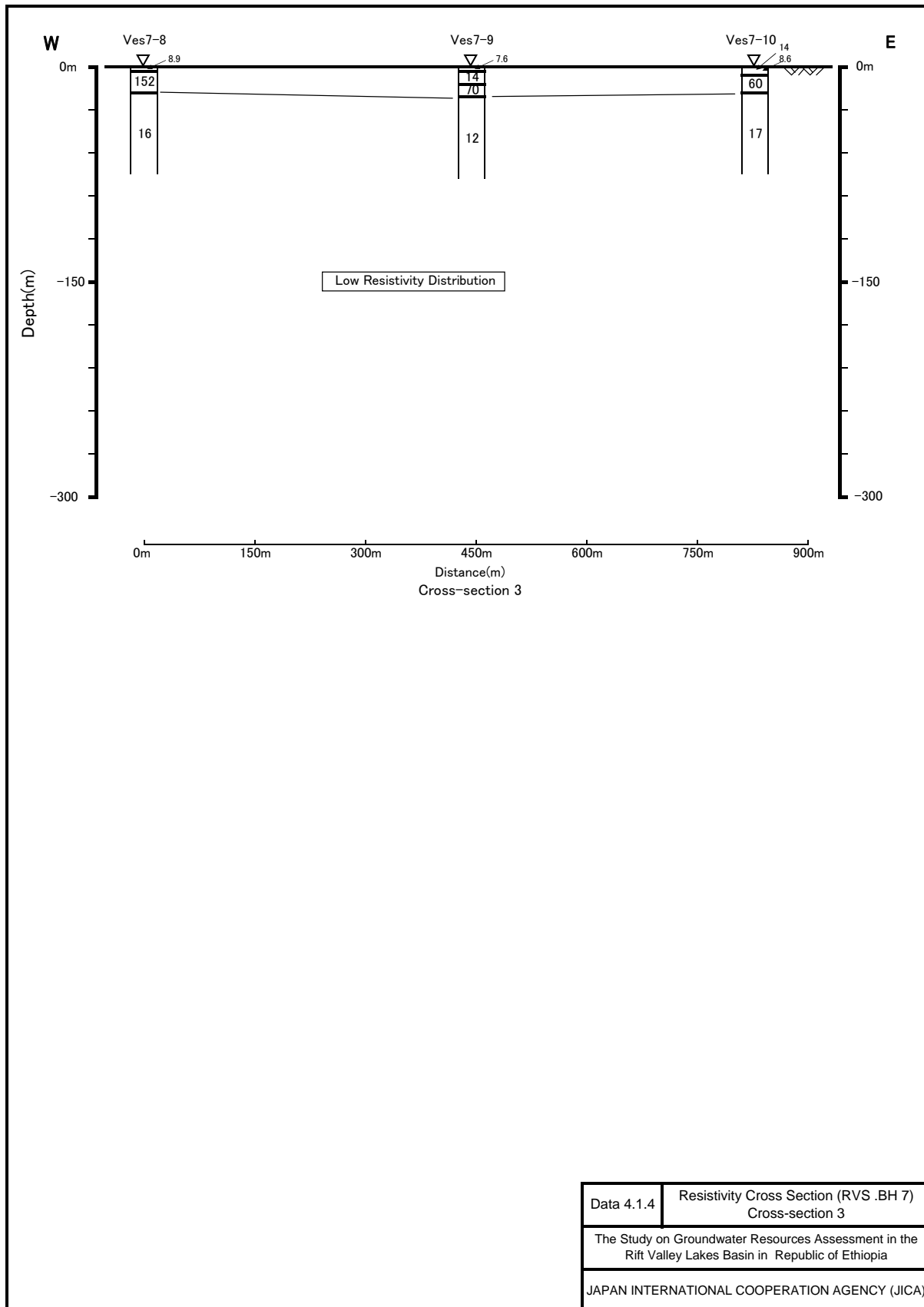


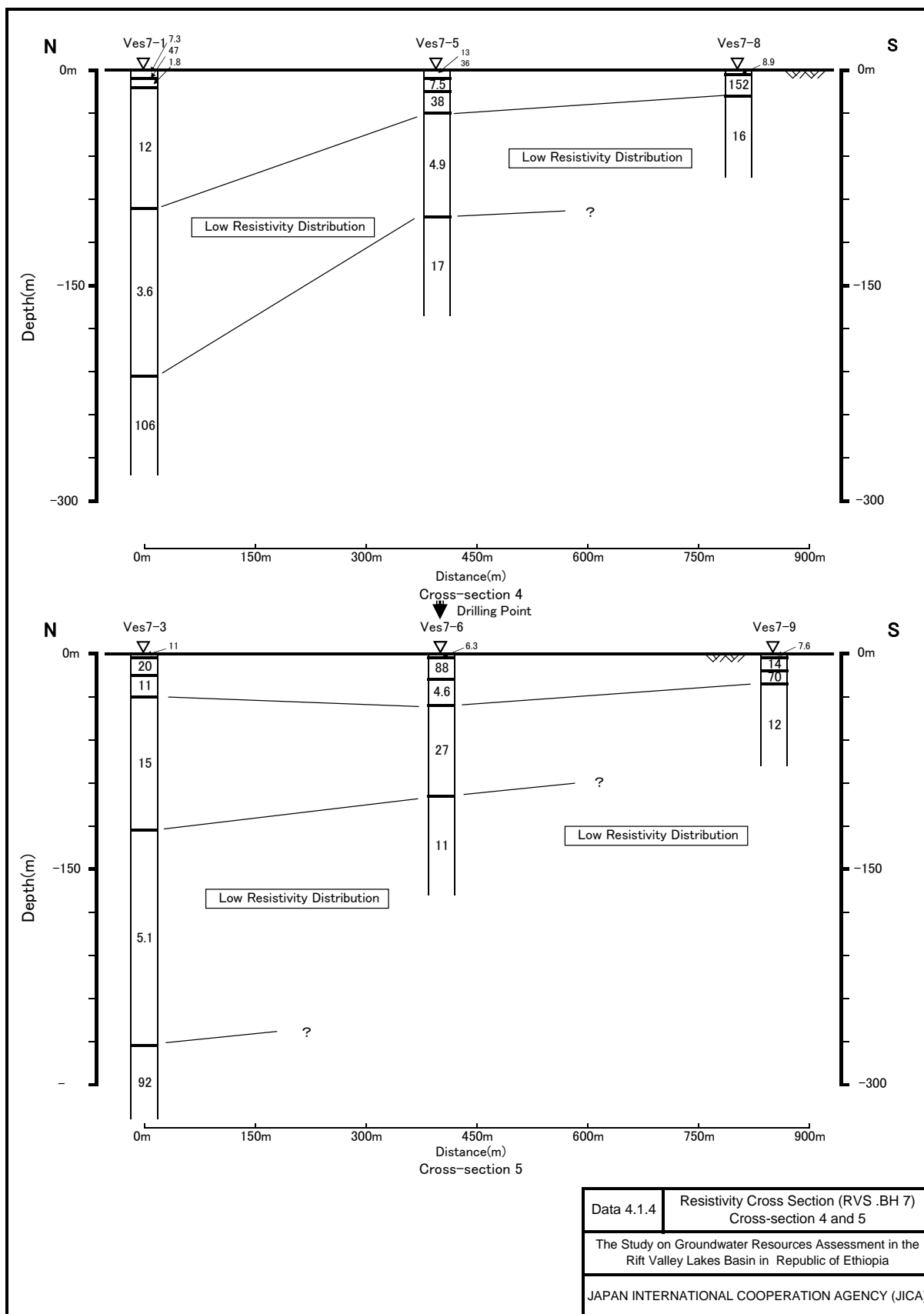


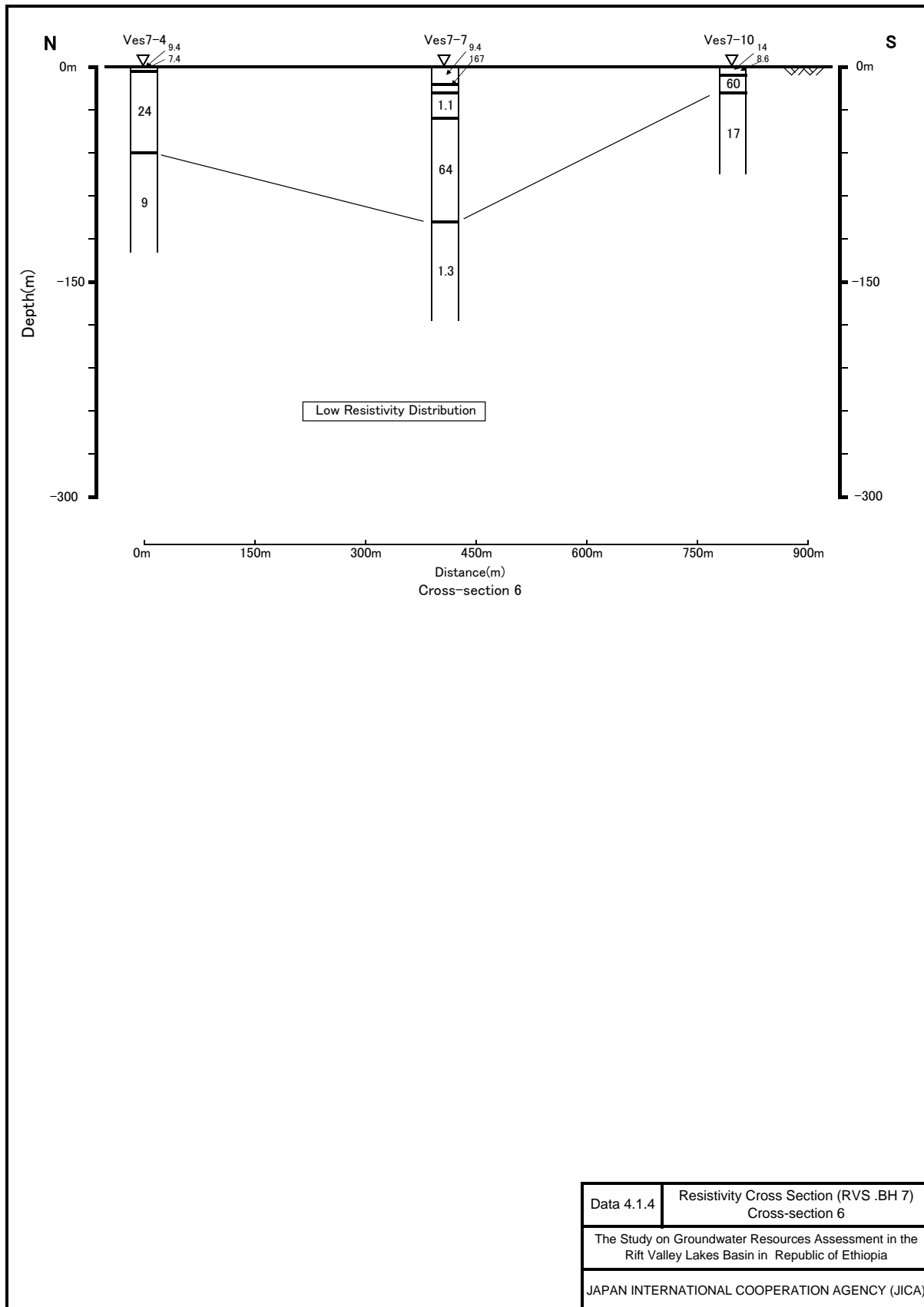


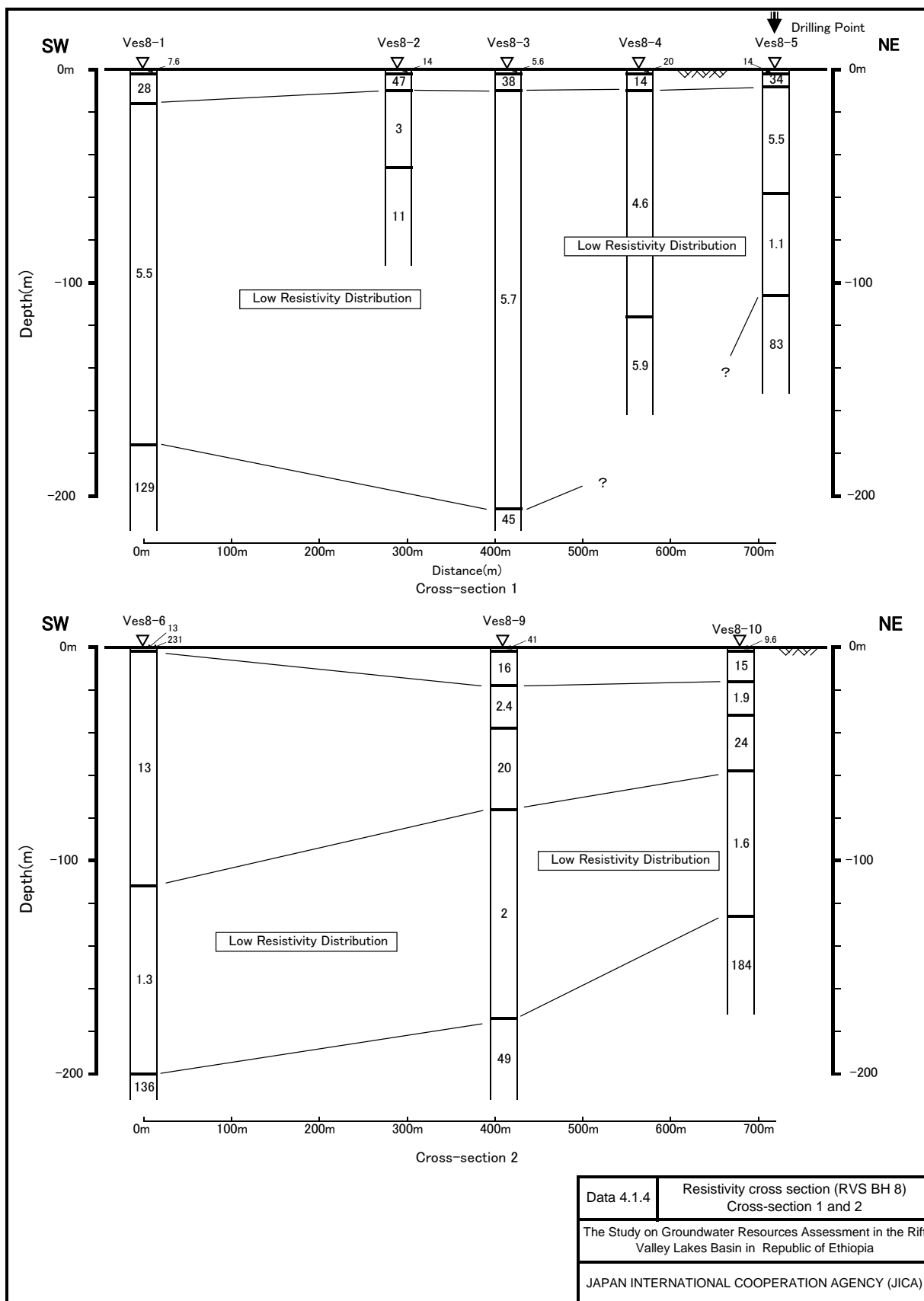


Data 4.1.4	Resistivity Cross Section (RVS .BH 7) Cross-section 1 and 2
The Study on Groundwater Resources Assessment in the Rift Valley Lakes Basin in Republic of Ethiopia	
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	

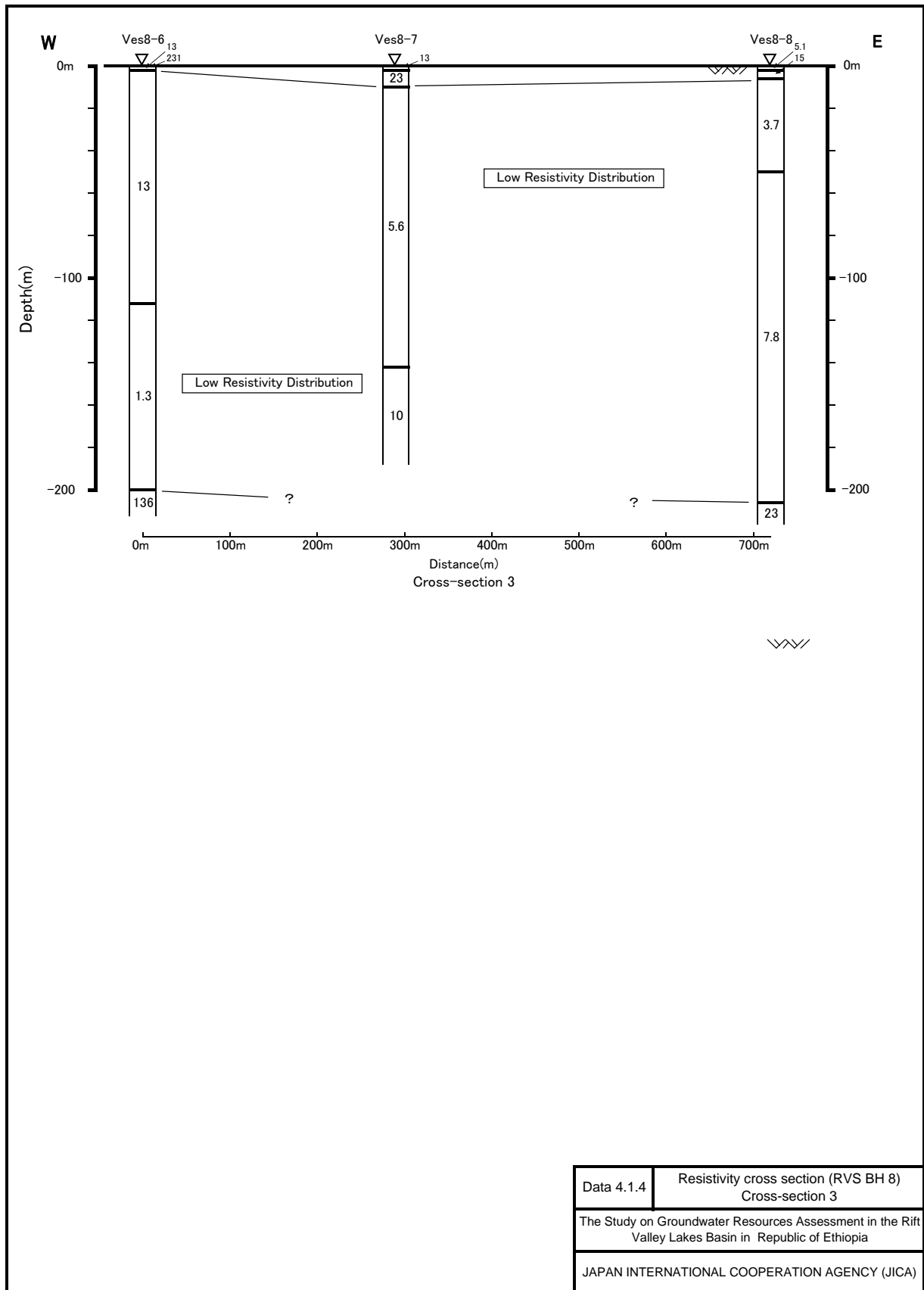


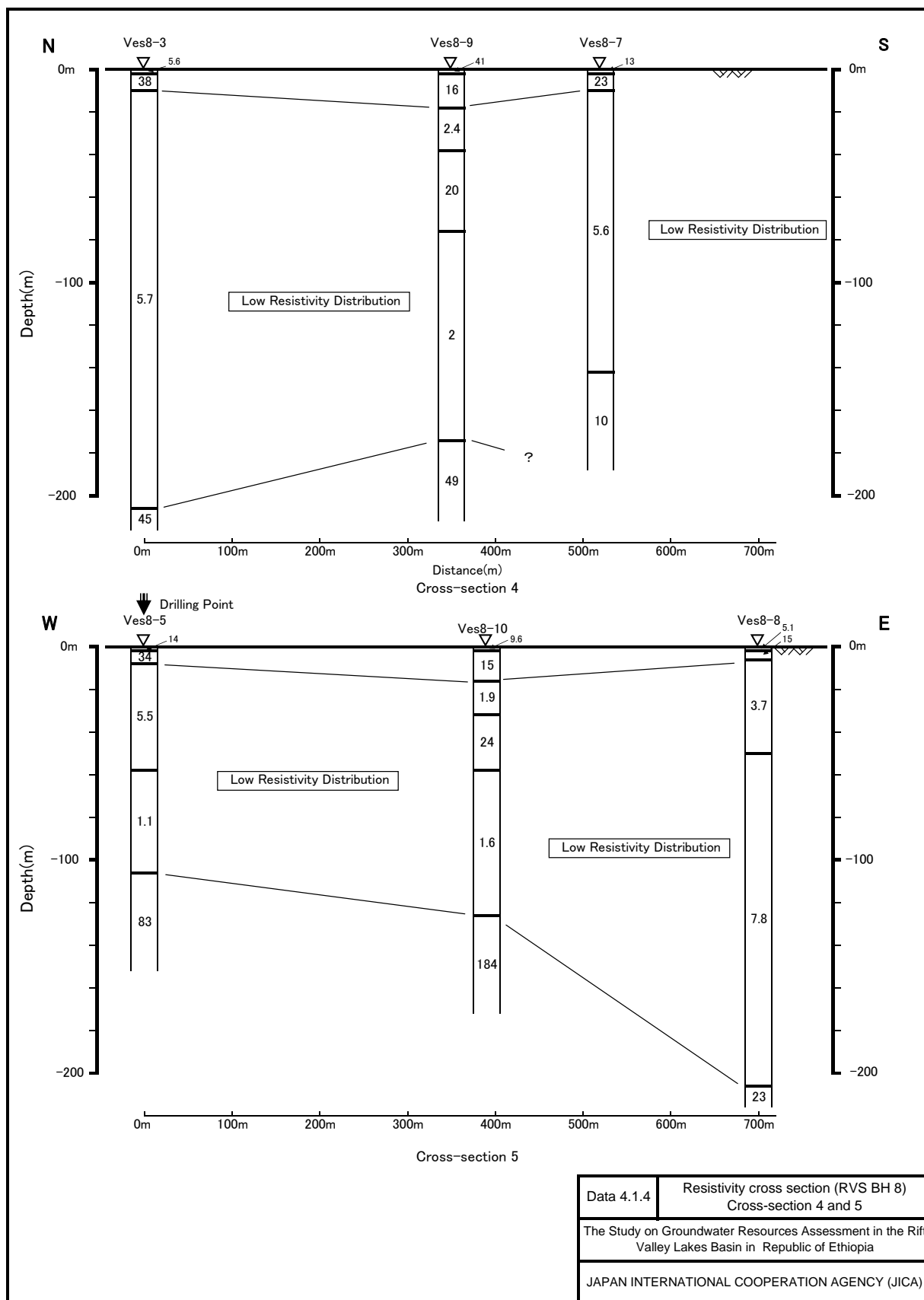


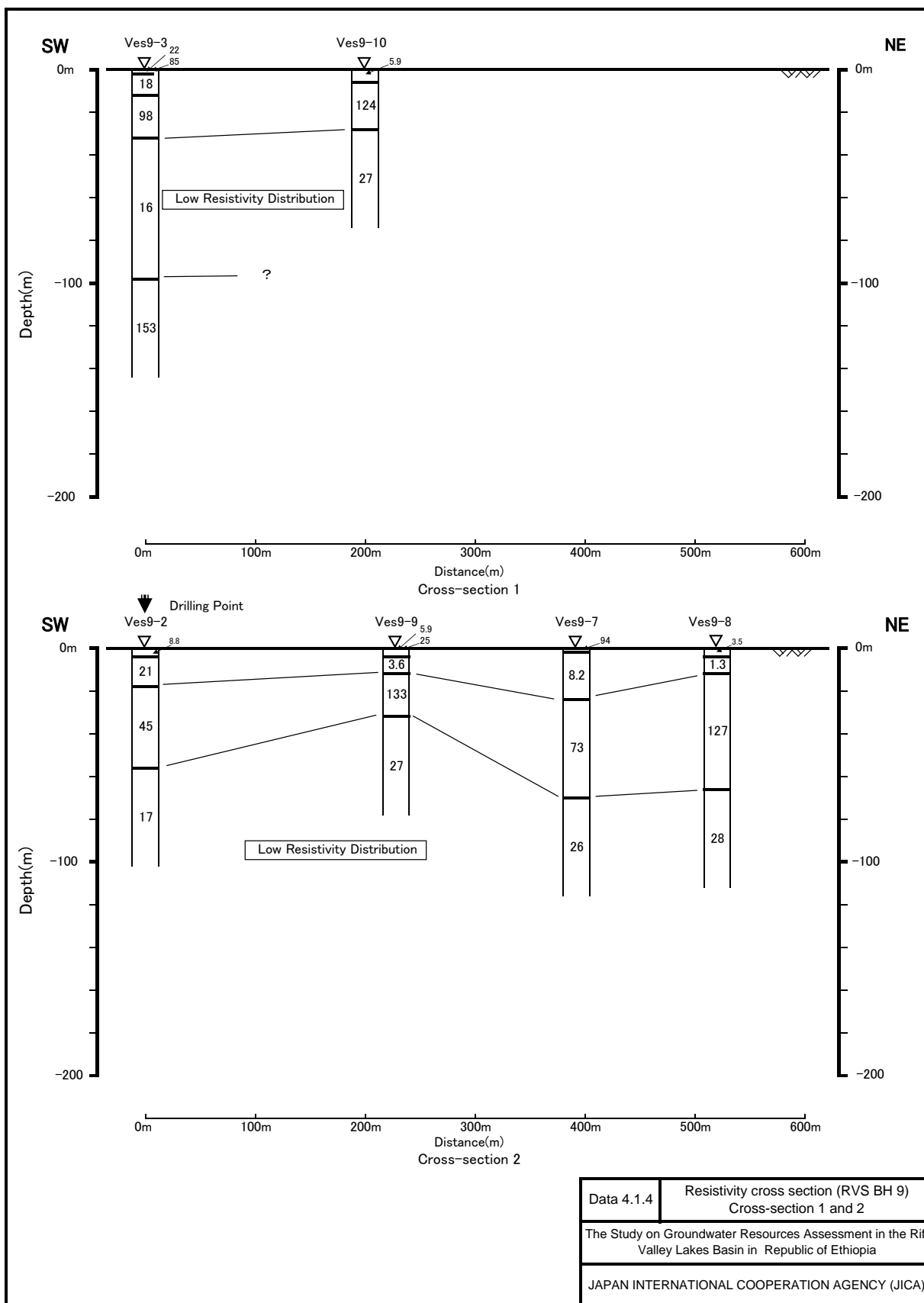


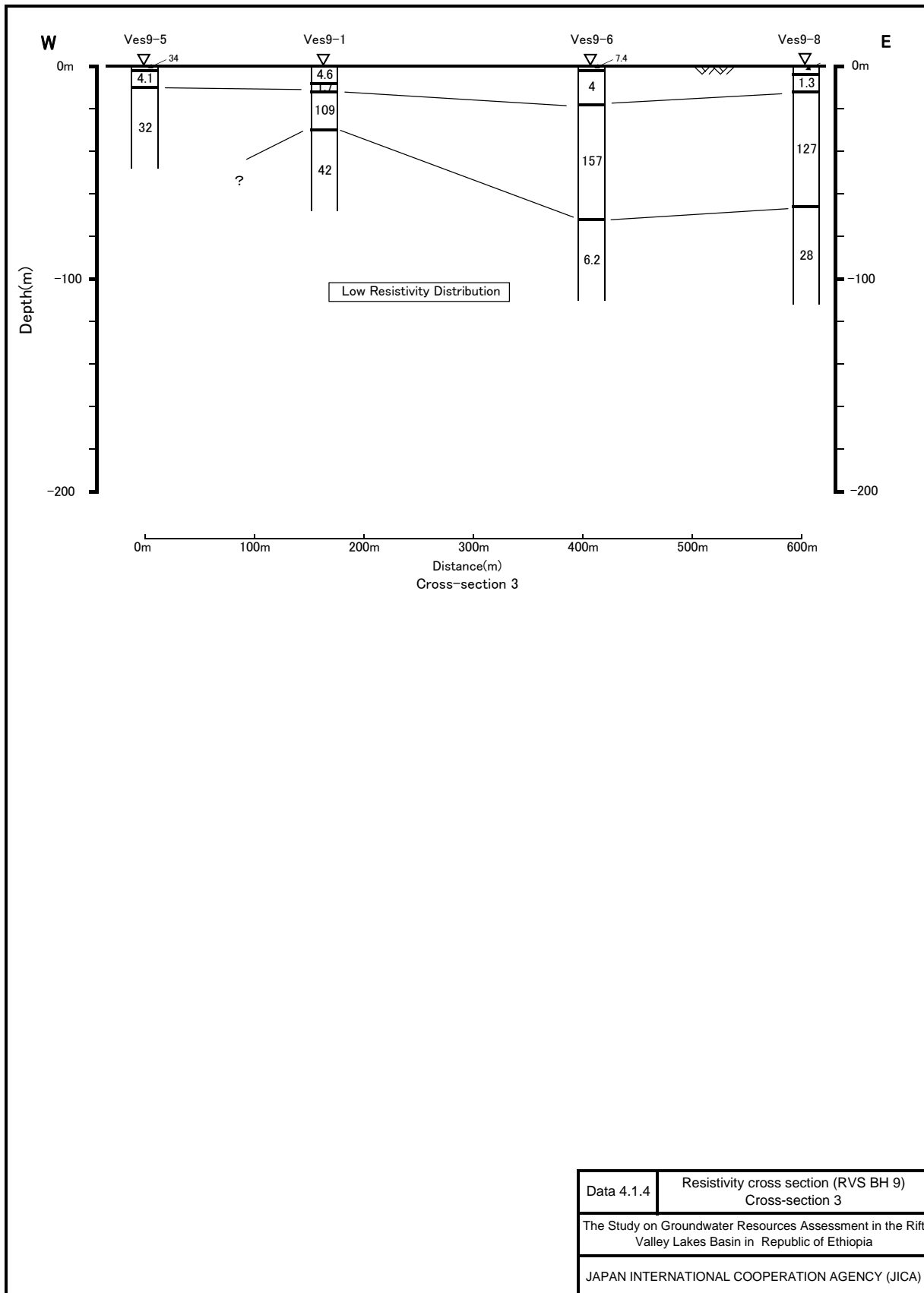


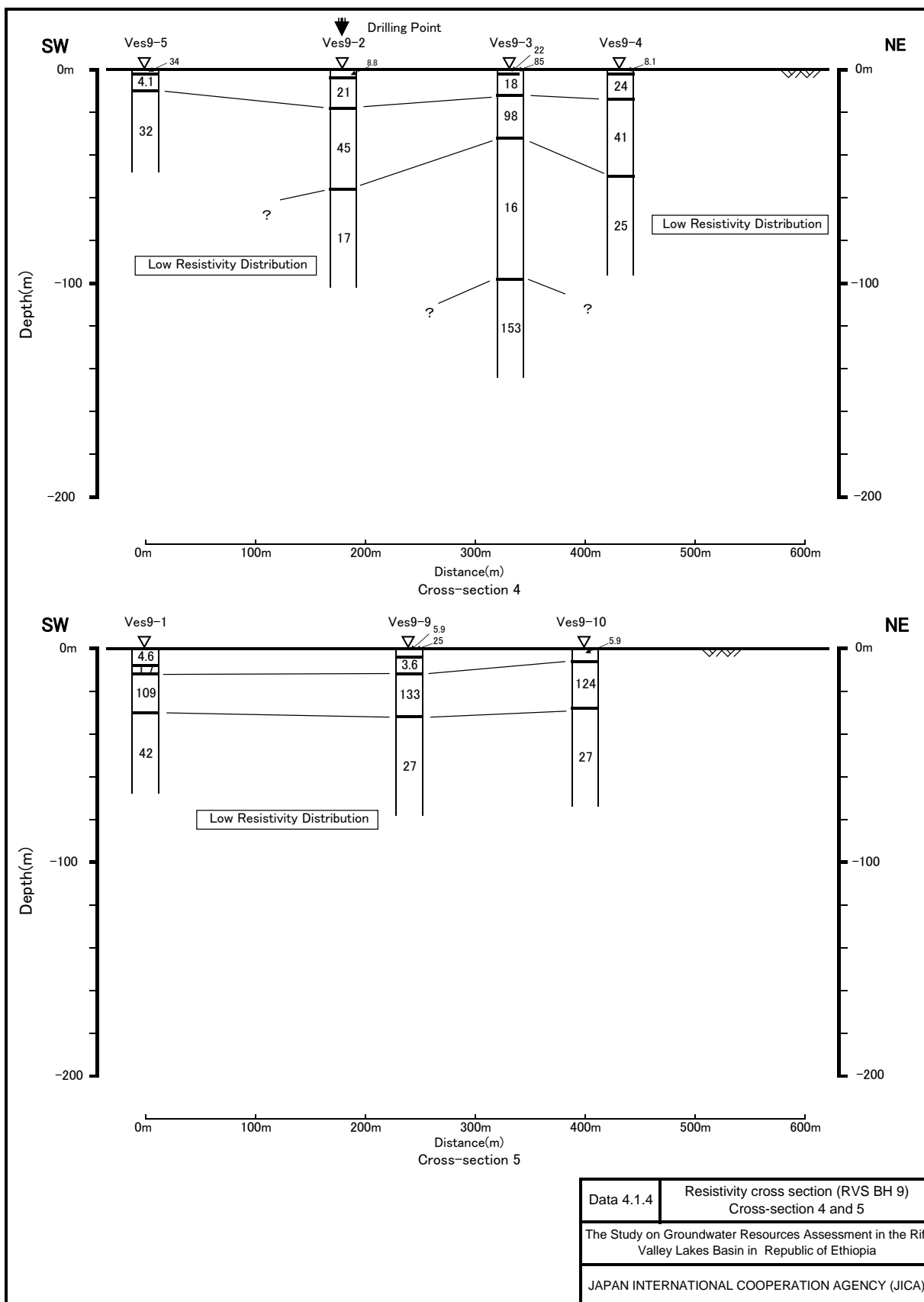
Data 4.1.4	Resistivity cross section (RVS BH 8) Cross-section 1 and 2
The Study on Groundwater Resources Assessment in the Rift Valley Lakes Basin in Republic of Ethiopia	
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	

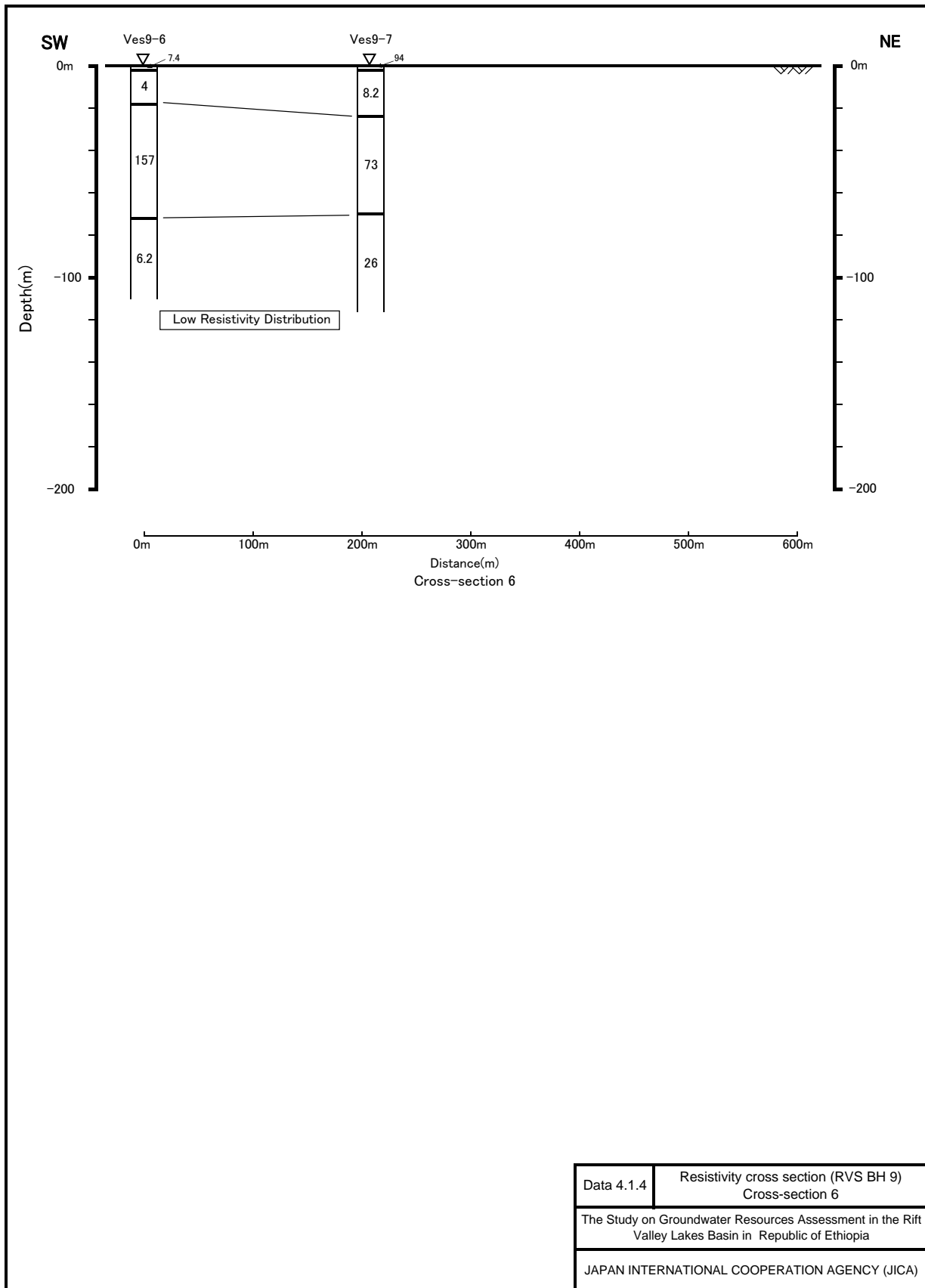




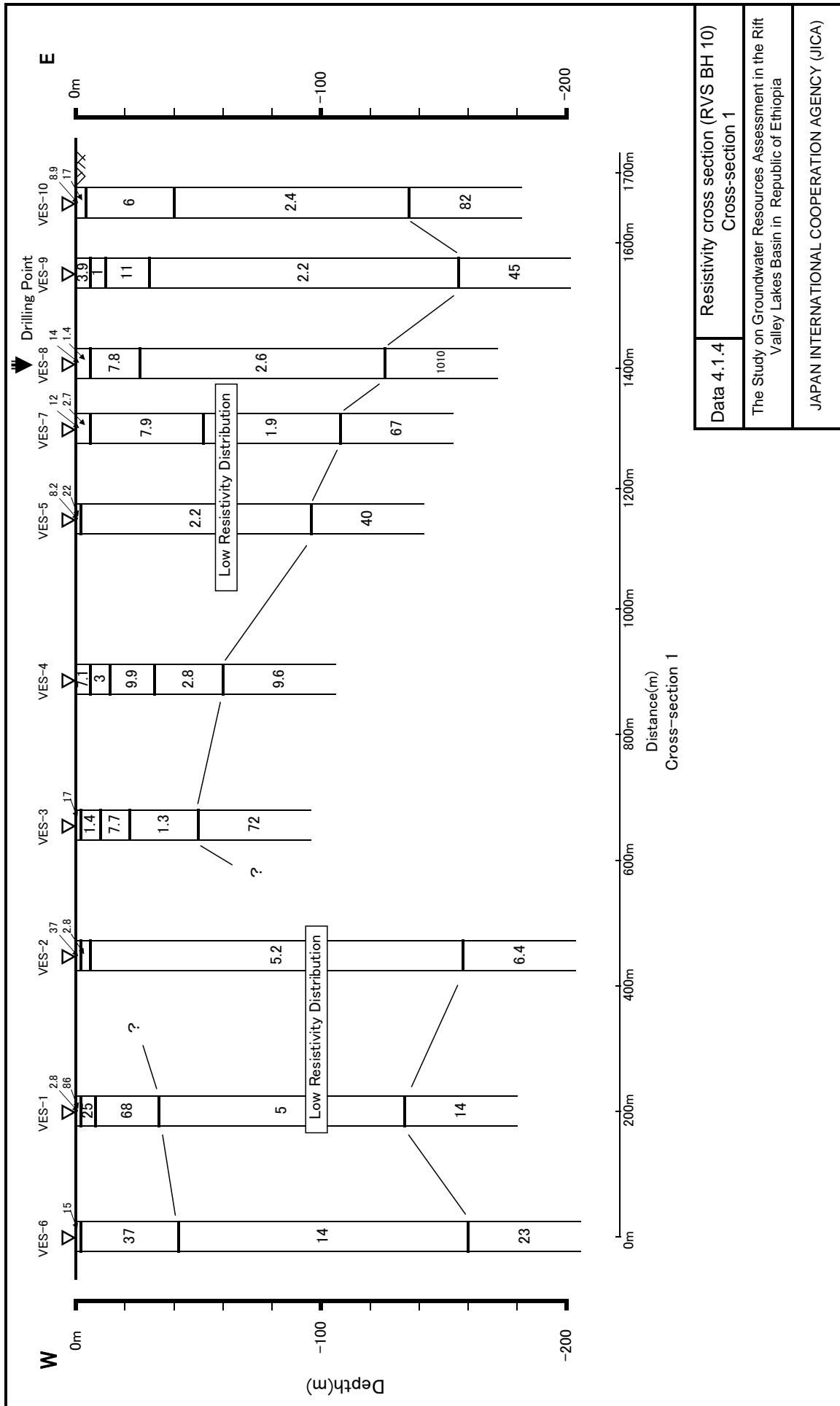








Data 4.1.4	Resistivity cross section (RVS BH 9) Cross-section 6
The Study on Groundwater Resources Assessment in the Rift Valley Lakes Basin in Republic of Ethiopia	
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Data 4.1.4
Resistivity cross section (RVS BH 10)
Cross-section 1

The Study on Groundwater Resources Assessment in the Rift Valley Lakes Basin in Republic of Ethiopia

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

Data 4.1.5 Geophysical Survey Data (Electrical Prospecting), (1/41)

RVSBH-1		EAST: 383212.00 ELEVATION: 1226.00		NORTH: 734744.00				
B1-1	SCHL 1226.000	0.000	1	B1-2	SCHL 1234.000	0.000	1	
383212.000	734542.000	(meters)		383449.000	734744.000	(meters)		
JICA	LAYER RESISTIVITY THICKNESS		LAYER RESISTIVITY THICKNESS		LAYER RESISTIVITY THICKNESS		LAYER RESISTIVITY THICKNESS	
April,2010	1 1.14800E+01 5.97643E-01		1 1.67991E+02 4.00299E-01		1 1.67991E+02 4.00299E-01		1 1.67991E+02 4.00299E-01	
Abaya Chokare	2 1.60741E+01 1.08785E+01		2 1.48824E+01 9.04317E+00		2 1.48824E+01 9.04317E+00		2 1.48824E+01 9.04317E+00	
South People Region Ethiopia	3 4.93587E+02 2.51404E+01		3 7.55515E+02 3.79347E+01		3 7.55515E+02 3.79347E+01		3 7.55515E+02 3.79347E+01	
Rift Valley Lakes Basin	4 5.85500E+01		4 1.05388E+01		4 1.05388E+01		4 1.05388E+01	
No.	SPACING	RHO-A	Sting R1	No.	SPACING	RHO-A	Sting R1	
1	15000	17.7000	1	1	15000	17.1000	1	
2	21000	19.1000		2	21000	16.0000		
3	30000	20.2000		3	30000	12.5000		
4	40000	21.6000		4	40000	18.6000		
5	60000	23.3000		5	60000	20.6000		
6	90000	22.7000		6	90000	23.5000		
7	130000	25.5000		7	130000	28.3000		
8	200000	34.0000		8	200000	37.0000		
9	250000	39.6000		9	250000	45.9000		
10	250000	35.5000		10	250000	42.7000		
11	300000	45.4000		11	300000	52.8000		
12	300000	41.3000		12	300000	49.5000		
13	350000	47.1000						
14	400000	53.7000						
15	500000	63.5000						
16	600000	73.8000						
17	800000	91.2000						
18	1000000	104.0000						
19	1300000	112.0000						
20	1600000	115.0000						
21	2000000	107.0000						
22	2000000	105.0000						
23	2500000	97.7000						
24	2500000	90.7000						
25	3000000	92.8000						
26	3500000	100.0000						
DATASET: B1-1		NORTH: 734542.00		DATASET: B1-2		NORTH: 734744.00		
383212.000		734542.000		383449.000		734744.000		
JICA				JICA				
April,2010				April,2010				
Abaya Chokare				Abaya Chokare				
South People Region Ethiopia				South People Region Ethiopia				
Rift Valley Lakes Basin				Rift Valley Lakes Basin				
No.	SPACING	RHO-A	Sting R1	No.	SPACING	RHO-A	Sting R1	
1	15000	17.7000	1	1	15000	17.1000	1	
2	21000	19.1000		2	21000	16.0000		
3	30000	20.2000		3	30000	12.5000		
4	40000	21.6000		4	40000	18.6000		
5	60000	23.3000		5	60000	20.6000		
6	90000	22.7000		6	90000	23.5000		
7	130000	25.5000		7	130000	28.3000		
8	200000	34.0000		8	200000	37.0000		
9	250000	39.6000		9	250000	45.9000		
10	250000	35.5000		10	250000	42.7000		
11	300000	45.4000		11	300000	52.8000		
12	300000	41.3000		12	300000	49.5000		
13	350000	47.1000						
14	400000	53.7000						
15	500000	63.5000						
16	600000	73.8000						
17	800000	91.2000						
18	1000000	104.0000						
19	1300000	112.0000						
20	1600000	115.0000						
21	2000000	107.0000						
22	2000000	105.0000						
23	2500000	97.7000						
24	2500000	90.7000						
25	3000000	92.8000						
26	3500000	100.0000						

Data 4.1.5 Geophysical Survey Data (Electrical Prospecting), (2/41)

13 35.0000 57.1000
 14 40.0000 62.0000
 15 50.0000 78.0000
 16 60.0000 77.7000
 17 80.0000 87.5000
 18 100.0000 91.4000
 19 130.0000 87.0000
 20 160.0000 101.0000
 21 200.0000 89.7000
 22 200.0000 93.3000
 23 250.0000 98.2000
 24 300.0000 99.9000
 25 500.0000 74.6000

DATASET: B1-3 NORTH: 734852.00
 EAST: 383283.00 ELEVATION: 1229.00
 (meters) LAYER RESISTIVITY THICKNESS
 1 3.90321E+02 2.07946E-01
 2 1.38666E+01 6.14174E+00
 3 1.95707E+02 4.10988E+01
 4 7.21805E+01

B1-4 SCHL 1223.000 0.000 1
 383187.000 734903.000
 JICA
 April, 2010
 Abaya Chokare
 South People Region Ethiopia
 Rift Valley Lakes Basin
 Sting R1
 RHO-A

7 13.0000 31.4000
 8 20.0000 36.9000
 9 25.0000 35.2000
 10 25.0000 34.9000
 11 30.0000 42.9000
 12 30.0000 39.0000
 13 35.0000 44.0000
 14 40.0000 49.1000
 15 50.0000 64.9000
 16 60.0000 63.7000
 17 80.0000 73.6000
 18 100.0000 75.6000
 19 130.0000 77.0000
 20 160.0000 69.6000
 21 200.0000 73.6000
 22 200.0000 80.1000
 23 250.0000 71.2000
 24 250.0000 78.2000
 25 300.0000 83.8000
 26 350.0000 70.7000
 27 400.0000 69.5000
 28 500.0000 50.1000

DATASET: B1-4 NORTH: 734903.00
 EAST: 383187.00 ELEVATION: 1223.00
 (meters) LAYER RESISTIVITY THICKNESS
 1 3.36955E+01 6.87173E+00
 2 1.66311E+01 5.59893E+00
 3 2.90692E+02 3.08188E+01
 4 4.84465E+01

B1-5 SCHL 1221.000 0.000 1
 383111.000 734684.000
 JICA
 April, 2010
 Abaya Chokare

South People Region Ethiopia
 Rift Valley Lakes Basin
 Sting R1
 RHO-A

No. SPACING
 1 1.5000 37.7000
 2 2.1000 36.6000
 3 3.0000 41.5000
 4 4.0000 34.9000
 5 6.0000 36.1000
 6 9.0000 37.1000
 7 13.0000 41.4000
 8 20.0000 50.1000
 9 25.0000 59.7000
 10 25.0000 43.5000
 11 30.0000 68.5000
 12 30.0000 52.0000
 13 35.0000 59.6000
 14 40.0000 66.9000
 15 50.0000 85.0000
 16 60.0000 86.3000
 17 80.0000 98.4000
 18 100.0000 109.0000
 19 130.0000 110.0000
 20 160.0000 116.0000
 21 200.0000 114.0000
 22 200.0000 119.0000
 23 250.0000 116.0000
 24 250.0000 119.0000
 25 300.0000 126.0000
 26 350.0000 91.4000
 27 400.0000 82.8000
 28 500.0000 56.0000

DATASET: B1-5 NORTH: 734684.00
 EAST: 383111.00 ELEVATION: 1221.00
 (meters) LAYER RESISTIVITY THICKNESS
 1 2.27834E+01 3.82053E+00

Data 4.1.5 Geophysical Survey Data (Electrical Prospecting), (3/41)

B1-6 383584.000 JICA April,2010 Abaya Chokare South People Region Ethiopia Rift Valley Lakes Basin	SCHL 1241.000 734695.000	0.000	1	26 350.0000 193.0000	27 400.0000 173.0000	18 100.0000 110.0000	19 130.0000 129.0000	20 160.0000 128.0000	21 200.0000 137.0000	22 200.0000 139.0000	23 250.0000 138.0000	24 250.0000 141.0000	25 300.0000 140.0000	26 350.0000 112.0000	27 400.0000 119.0000	28 500.0000 117.0000
DATASET: B1-6		NORTH: 734695.00		EAST: 383584.00		ELEVATION: 1241.00		LAYER RESISTIVITY THICKNESS								
(meters)		1 6.22341E+01		5.33337E-01		1										
2 1.00864E+01		7.96085E+00		1												
3 1.33043E+03		5.25169E+01		1												
4 1.67018E+01				1												
B1-7		SCHL 1237.000		0.000		1										
383672.000		734899.000		1												
JICA																
April,2010																
Abaya Chokare																
South People Region Ethiopia																
Rift Valley Lakes Basin																
No.		SPACING		RHO-A												
1		1.5000		29.6000												
2		2.1000		31.2000												
3		3.0000		32.2000												
4		4.0000		34.5000												
5		6.0000		34.5000												
6		9.0000		36.2000												
7		13.0000		40.1000												
8		20.0000		51.7000												
9		25.0000		60.8000												
10		25.0000		53.5000												
11		30.0000		66.2000												
12		30.0000		59.8000												
13		35.0000		66.0000												
14		40.0000		73.2000												
15		50.0000		84.1000												
16		60.0000		95.9000												
17		80.0000		107.0000												
18		100.0000														
19		130.0000														
20		160.0000														
21		200.0000														
22		200.0000														
23		250.0000														
24		250.0000														
25		300.0000														
DATASET: B1-7		NORTH: 734899.00		EAST: 383672.00		ELEVATION: 1237.00		LAYER RESISTIVITY THICKNESS								
(meters)		1 1.22481E+01		1.80809E-01		1										
2 2.75594E+01		1.05405E+01		1												
3 2.38887E+02		6.61197E+01		1												
4 9.56232E+01				1												
B1-8		SCHL 1226.000		0.000		1										
383569.000		734844.000		1												
JICA																
April,2010																
Abaya Chokare																
South People Region Ethiopia																
Rift Valley Lakes Basin																
No.		SPACING		RHO-A												
1		1.5000		29.3000												
2		2.1000		25.2000												
3		3.0000		20.0000												
4		4.0000		21.0000												
5		6.0000		18.8000												
6		9.0000		21.1000												
7		13.0000		24.4000												
8		20.0000		34.1000												

Data 4.1.5 Geophysical Survey Data (Electrical Prospecting), (4/41)

No.	SPACING	RHO-A
9	25.0000	44.2000
10	25.0000	35.6000
11	30.0000	48.5000
12	30.0000	43.9000
13	35.0000	51.5000
14	40.0000	59.2000
15	50.0000	73.3000
16	60.0000	86.5000
17	80.0000	113.0000
18	100.0000	132.0000
19	130.0000	155.0000
20	160.0000	174.0000
21	200.0000	170.0000
22	200.0000	158.0000
23	250.0000	134.0000
24	250.0000	129.0000
25	300.0000	126.0000
26	350.0000	106.0000
27	400.0000	109.0000
28	500.0000	89.0000

DATASET: B1-8		NORTH:	734844.00
EAST:	383569.00	ELEVATION:	1226.00
(meters)			
LAYER	RESISTIVITY	THICKNESS	
1	2.12291E+01	1.09356E+00	
2	9.79185E+00	6.69787E+00	
3	1.19456E+03	2.97233E+01	
4	7.11265E+00		

DATASET: B1-9		NORTH:	734936.00
EAST:	383521.00	ELEVATION:	1231.00
(meters)			
LAYER	RESISTIVITY	THICKNESS	
1	5.60991E+02	2.28664E-01	
2	1.89594E+01	1.07045E+01	
3	7.32604E+02	3.28955E+01	

DATASET: B1-10		NORTH:	735059.0000
EAST:	383453.0000	ELEVATION:	0.0000
(meters)			
LAYER	RESISTIVITY	THICKNESS	
1	1.5000	76.9000	
2	2.1000	32.7000	
3	3.0000	28.8000	
4	4.0000	27.8000	
5	6.0000	26.3000	
6	9.0000	31.3000	
7	13.0000	36.8000	
8	20.0000	38.5000	
9	25.0000	47.0000	
10	25.0000	37.1000	
11	30.0000	50.1000	
12	30.0000	39.4000	
13	35.0000	42.5000	
14	40.0000	47.2000	
15	50.0000	54.4000	
16	60.0000	63.2000	
17	80.0000	79.2000	
18	100.0000	90.8000	
19	130.0000	101.0000	
20	160.0000	117.0000	
21	200.0000	116.0000	
22	200.0000	110.0000	
23	250.0000	108.0000	
24	250.0000	109.0000	
25	300.0000	107.0000	
26	350.0000	107.0000	
27	400.0000	99.6000	

Data 4.1.5 Geophysical Survey Data (Electrical Prospecting), (5/41)

28 500.0000 90.3000
 DATASET: B1-10 NORTH: 735059.00
 EAST: 383453.00 ELEVATION: 1236.00
 LAYER RESISTIVITY THICKNESS
 (meters)
 1 1.37721E+03 3.08759E-01
 2 1.62642E+01 1.27656E+01
 3 4.09733E+02 4.06149E+01
 4 6.37487E+01

18 100.0000 675.0000
 19 130.0000 821.0000
 20 160.0000 913.0000
 21 200.0000 987.0000
 22 200.0000 864.0000
 23 250.0000 961.0000
 24 300.0000 814.0000
 25 350.0000 786.0000
 26 400.0000 730.0000
 27 500.0000 570.0000

10 25.0000 228.0000
 11 30.0000 200.0000
 12 30.0000 273.0000
 13 35.0000 321.0000
 14 40.0000 367.0000
 15 50.0000 445.0000
 16 60.0000 518.0000
 17 80.0000 618.0000
 18 100.0000 733.0000
 19 130.0000 822.0000
 20 160.0000 901.0000
 21 200.0000 917.0000
 22 200.0000 897.0000
 23 250.0000 849.0000
 24 250.0000 849.0000
 25 300.0000 772.0000
 26 350.0000 722.0000
 27 400.0000 648.0000
 28 500.0000 513.0000

RVS BH-2

B2-1 SCHL 1703.000 0.000 1
 486440.000 908215.000
 JICA
 Awra Godana
 Oromia Region Ethiopia
 Rift Valley Lakes Basin
 No. SPACING RHO-A
 1 1.5000 107.0000
 2 2.1000 90.0000
 3 3.0000 69.0000
 4 4.0000 65.0000
 5 6.0000 76.0000
 6 9.0000 96.0000
 7 13.0000 124.0000
 8 20.0000 162.0000
 9 25.0000 189.0000
 10 25.0000 178.0000
 11 30.0000 220.0000
 12 30.0000 219.0000
 13 35.0000 260.0000
 14 40.0000 295.0000
 15 50.0000 360.0000
 16 60.0000 424.0000
 17 80.0000 558.0000

DATASET: B2-1 NORTH: 908215.00 EAST:
 486440.00 ELEVATION: 1703.00
 LAYER RESISTIVITY THICKNESS (meters)
 1 1.40887E+02 6.04822E-01
 2 5.11636E+01 6.90606E+00
 3 4.26971E+03 5.89508E+01
 4 4.62034E+01

B2-2 SCHL 1703.000 0.000 1
 486650.000 908100.000
 JICA
 Awra Godana
 Oromia Region Ethiopia
 Rift Valley Lakes Basin
 No. SPACING RHO-A
 1 1.5000 44.0000
 2 2.1000 46.0000
 3 3.0000 46.0000
 4 4.0000 48.0000
 5 6.0000 54.0000
 6 9.0000 67.0000
 7 13.0000 89.0000
 8 20.0000 137.0000
 9 25.0000 171.0000

DATASET: B2-2 NORTH: 908100.00 EAST:
 486650.00 ELEVATION: 1703.00
 LAYER RESISTIVITY THICKNESS (meters)
 1 9.05499E+01 1.91333E-01
 2 8.19059E+01 6.25150E+00
 3 1.43708E+03 1.50239E+02
 4 5.89819E+01

B2-3 SCHL 1703.000 0.000 1
 486546.000 907905.000
 JICA
 Awra Godana
 Oromia Region Ethiopia
 Rift Valley Lakes Basin
 No. SPACING RHO-A
 1 1.5000 58.0000

Data 4.1.5 Geophysical Survey Data (Electrical Prospecting), (7/41)

20	160.0000	999.0000				
21	200.0000	1120.0000				
22	200.0000	957.0000				
23	250.0000	1148.0000				
24	250.0000	989.0000				
25	300.0000	972.0000				
26	350.0000	822.0000				
27	400.0000	735.0000				
28	500.0000	493.0000				

DATASET: B2-5 NORTH: 907830.00 EAST: 908030.00
 486230.00 ELEVATION: 1703.00
 LAYER RESISTIVITY THICKNESS (meters)
 1 6.65624E+01 3.63132E-01
 2 4.21914E+01 3.98608E+00
 3 1.26341E+03 1.97827E+02
 4 8.58139E+01

B2-6	SCHL	1703.000	0.000	1	
486340.000		908030.000			
JICA					March,2010
Awra Godana				1	
Oromia Region Ethiopia					
Rift Valley Lakes Basin					Sting R1
No.	SPACING		RHO-A		

1	1.5000	101.0000			
2	2.1000	90.0000			
3	3.0000	75.0000			
4	4.0000	76.0000			
5	6.0000	80.0000			
6	9.0000	92.0000			
7	13.0000	119.0000			
8	20.0000	165.0000			
9	25.0000	205.0000			
10	25.0000	187.0000			
11	30.0000	242.0000			

12	30.0000	220.0000			
13	35.0000	252.0000			
14	40.0000	290.0000			
15	50.0000	367.0000			
16	60.0000	447.0000			
17	80.0000	588.0000			
18	100.0000	697.0000			
19	130.0000	827.0000			
20	160.0000	945.0000			
21	200.0000	1061.0000			
22	200.0000	968.0000			
23	250.0000	1064.0000			
24	350.0000	891.0000			
25	400.0000	871.0000			
26	500.0000	628.0000			

DATASET: B2-6 NORTH: 908030.00 EAST: 907280.00
 486340.00 ELEVATION: 1703.00
 LAYER RESISTIVITY THICKNESS (meters)
 1 1.02761E+02 6.90241E-01
 2 4.96104E+01 6.43759E+00
 3 4.23941E+03 6.24922E+01
 4 1.83875E+02

B2-7	SCHL	1703.000	0.000	1	
486860.000		907280.000			
JICA					March,2010
Awra Godana				1	
Oromia Region Ethiopia					
Rift Valley Lakes Basin					Sting R1
No.	SPACING		RHO-A		

1	1.5000	33.0000			
2	2.1000	27.0000			
3	3.0000	31.0000			
4	4.0000	33.0000			

5	6.0000	44.0000			
6	9.0000	62.0000			
7	13.0000	84.0000			
8	20.0000	124.0000			
9	25.0000	181.0000			
10	25.0000	314.0000			
11	30.0000	185.0000			
12	30.0000	325.0000			
13	35.0000	394.0000			
14	40.0000	445.0000			
15	50.0000	548.0000			
16	60.0000	641.0000			
17	80.0000	731.0000			
18	100.0000	875.0000			
19	130.0000	921.0000			
20	160.0000	995.0000			
21	200.0000	1069.0000			
22	200.0000	930.0000			
23	250.0000	1061.0000			
24	250.0000	920.0000			
25	300.0000	796.0000			
26	350.0000	756.0000			
27	400.0000	662.0000			
28	500.0000	451.0000			

DATASET: B2-7 NORTH: 907280.00 EAST: 907280.00
 486860.00 ELEVATION: 1703.00
 LAYER RESISTIVITY THICKNESS (meters)
 1 1.61151E+02 3.18714E-01
 2 6.15252E+01 3.72840E+00
 3 9.98741E+02 1.98368E+02
 4 1.61009E+02

B2-8	SCHL	1703.000	0.000	1	
486760.000		907780.000			
JICA					March,2010

Data 4.1.5 Geophysical Survey Data (Electrical Prospecting), (9/41)

19	160.0000	1046.0000	10	35.0000	273.0000	7	13.0000	923.0000
20	200.0000	1100.0000	11	40.0000	285.0000	8	20.0000	279.0000
21	200.0000	963.0000	12	50.0000	328.0000	9	25.0000	309.0000
22	250.0000	1045.0000	13	60.0000	361.0000	10	25.0000	461.0000
23	250.0000	937.0000	14	80.0000	450.0000	11	30.0000	312.0000
24	300.0000	847.0000	15	100.0000	472.0000	12	30.0000	329.0000
25	350.0000	816.0000	16	130.0000	574.0000	13	35.0000	310.0000
26	400.0000	726.0000	17	160.0000	615.0000	14	40.0000	336.0000
27	500.0000	503.0000	18	200.0000	646.0000	15	50.0000	372.0000
			19	250.0000	667.0000	16	60.0000	386.0000
			20	250.0000	543.0000	17	80.0000	364.0000
			21	300.0000	609.0000	18	100.0000	406.0000
			22	400.0000	583.0000	19	130.0000	390.0000
			23	500.0000	622.0000	20	160.0000	521.0000
						21	200.0000	405.0000
						22	250.0000	347.0000
						23	300.0000	266.0000
<p> DATASET: B2-10 NORTH: 907660.00 EAST: 486980.00 ELEVATION: 1703.00 LAYER RESISTIVITY THICKNESS (meters) 1 6.37172E+01 1.48306E-01 2 3.55232E+01 3.23226E+00 3 1.80624E+03 1.29352E+02 4 4.13347E+01 </p>								
<p> DATASET: B3-1 NORTH: 796402.00 EAST: 448142.00 ELEVATION: 1812.00 LAYER RESISTIVITY THICKNESS (meters) 1 8.49626E+02 2.18511E-01 2 1.19167E+04 1.71635E+00 3 1.81073E+02 2.64209E+01 4 7.76419E+02 9.40140E+01 5 6.03324E+02 </p>								
<p> DATASET: B3-2 NORTH: 796293.00 EAST: 448035.00 ELEVATION: 1809.00 LAYER RESISTIVITY THICKNESS (meters) 1 2.53593E+03 5.37269E-01 2 1.41801E+04 1.87472E+00 3 3.13317E+02 3.47369E+01 4 6.37802E+02 7.90075E+01 5 1.25374E+02 </p>								
<p> DATASET: B3-3 NORTH: 796293.00 EAST: 447888.00 ELEVATION: 1809.00 LAYER RESISTIVITY THICKNESS (meters) 1 2.53593E+03 5.37269E-01 2 1.41801E+04 1.87472E+00 3 3.13317E+02 3.47369E+01 4 6.37802E+02 7.90075E+01 5 1.25374E+02 </p>								
<p> B3-1 SCHL 1812.000 0.000 1 1809.00 JICA Oyne Umbure Chefo March,2010 Oromia Region Ethiopia 1 Rift Valley Lakes Basin Sting R1 No. SPACING RHO-A 1 1.5000 4773.0000 2 2.1000 5636.0000 3 3.0000 6656.0000 4 4.0000 6502.0000 5 6.0000 4713.0000 6 9.0000 2720.0000 7 13.0000 1317.0000 8 20.0000 364.0000 9 30.0000 296.0000 </p>								
<p> B3-2 SCHL 1809.000 0.000 1 1809.00 JICA Oyne Umbure Chefo March,2010 Oromia Region Ethiopia 1 Rift Valley Lakes Basin Sting R1 No. SPACING RHO-A 1 1.5000 2994.0000 2 2.1000 3757.0000 3 3.0000 4048.0000 4 4.0000 4061.0000 5 6.0000 3709.0000 6 9.0000 2209.0000 </p>								
<p> B3-3 SCHL 1813.000 0.000 1 1809.00 JICA Oyne Umbure Chefo March,2010 Oromia Region Ethiopia 1 Rift Valley Lakes Basin Sting R1 No. SPACING RHO-A 1 1.5000 4007.0000 </p>								

Data 4.1.5 Geophysical Survey Data (Electrical Prospecting), (11/41)

26 350.0000 245.0000
27 400.0000 279.0000

448008.00 ELEVATION: 1814.00 NORTH: 796079.00 EAST:
1814.00

LAYER	RESISTIVITY	THICKNESS (meters)
1	3.05345E+03	3.85677E-01
2	7.93153E+03	3.10509E+00
3	1.78286E+02	3.07956E+01
4	1.00411E+03	6.60032E+01
5	7.99781E+01	

B3-6 SCHL 1808.000 0.000 1
448151.000 796116.000

JICA March,2010

Oyne Umbure Chefo 1
Oromia Region Ethiopia
Rift Valley Lakes Basin Sting R1

No.	SPACING	RHO-A
1	1.5000	3312.0000
2	2.1000	3693.0000
3	3.0000	4639.0000
4	4.0000	4941.0000
5	6.0000	4252.0000
6	9.0000	2456.0000
7	13.0000	1289.0000
8	20.0000	441.0000
9	25.0000	407.0000
10	30.0000	346.0000
11	30.0000	386.0000
12	35.0000	315.0000
13	40.0000	302.0000
14	50.0000	326.0000
15	60.0000	330.0000
16	80.0000	366.0000

17 100.0000 351.0000
18 130.0000 399.0000
19 160.0000 478.0000
20 200.0000 612.0000
21 200.0000 480.0000
22 250.0000 620.0000
23 250.0000 496.0000
24 300.0000 570.0000
25 350.0000 553.0000
26 400.0000 309.0000

448151.00 ELEVATION: 1808.00 NORTH: 796116.00 EAST:
1808.00

LAYER	RESISTIVITY	THICKNESS (meters)
1	1.66507E+03	7.78443E-01
2	6.57932E+03	2.04214E+00
3	1.92957E+02	7.48958E+01
4	4.22467E+03	4.08526E+01
5	1.17554E+02	

B3-7 SCHL 1818.000 0.000 1
448370.000 796145.000

JICA March,2010

Oyne Umbure Chefo 1
Oromia Region Ethiopia
Rift Valley Lakes Basin Sting R1

No.	SPACING	RHO-A
1	1.5000	2959.0000
2	2.1000	3364.0000
3	3.0000	3741.0000
4	4.0000	4299.0000
5	6.0000	3424.0000
6	9.0000	2293.0000
7	13.0000	672.0000
8	20.0000	264.0000

9 25.0000 218.0000
10 30.0000 236.0000
11 30.0000 217.0000
12 35.0000 209.0000
13 40.0000 219.0000
14 50.0000 259.0000
15 60.0000 285.0000
16 80.0000 350.0000
17 100.0000 403.0000
18 200.0000 451.0000
19 200.0000 414.0000
20 250.0000 401.0000
21 250.0000 373.0000
22 300.0000 330.0000
23 350.0000 353.0000
24 400.0000 243.0000

448370.00 ELEVATION: 1818.00 NORTH: 796145.00 EAST:
1818.00

LAYER	RESISTIVITY	THICKNESS (meters)
1	1.28492E+02	6.16929E-02
2	1.58848E+04	7.93498E-01
3	1.27126E+02	2.12820E+01
4	7.04551E+02	1.07438E+02
5	7.08093E+01	

B3-8 SCHL 1821.000 0.000 1
448131.000 795926.000

JICA March,2010

Oyne Umbure Chefo 1
Oromia Region Ethiopia
Rift Valley Lakes Basin Sting R1

No.	SPACING	RHO-A
1	1.5000	3200.0000
2	2.1000	3876.0000

Data 4.1.5 Geophysical Survey Data (Electrical Prospecting), (12/41)

448290.00 ELEVATION: 1819.00		448290.00		1819.000		0.000		1		March,2010	
LAYER	RESISTIVITY	THICKNESS	(meters)	B3-9	SCHL	1819.000	0.000	1	March,2010	1	March,2010
1	1.35597E+02	1.26610E-01		448290.000	795960.000				JICA		
2	1.11645E+04	9.46847E-01		Oyne Umbure Chefo					Oyne Umbure Chefo		
3	8.98004E+01	9.68465E+00		Oromia Region Ethiopia					Oromia Region Ethiopia		
4	5.97254E+02	1.52196E+02		Rift Valley Lakes Basin					Rift Valley Lakes Basin		
5	8.64586E+01			No.	SPACING	RHO-A			No.	SPACING	RHO-A
				1	1.5000	1012.0000			1	1.5000	3572.0000
				2	2.1000	1266.0000			2	2.1000	4692.0000
				3	3.0000	1803.0000			3	3.0000	5136.0000
				4	4.0000	1822.0000			4	4.0000	5296.0000
				5	6.0000	1777.0000			5	6.0000	4277.0000
				6	9.0000	1314.0000			6	9.0000	2177.0000
				7	13.0000	621.0000			7	13.0000	765.0000
				8	25.0000	181.0000			8	25.0000	295.0000
				9	25.0000	205.0000			9	25.0000	323.0000
				10	30.0000	203.0000			10	30.0000	212.0000
				11	30.0000	192.0000			11	35.0000	197.0000
				12	35.0000	208.0000			12	40.0000	229.0000
				13	40.0000	226.0000			13	50.0000	270.0000
				14	50.0000	252.0000			14	60.0000	302.0000
				15	60.0000	301.0000			15	80.0000	326.0000
				16	80.0000	328.0000			16	100.0000	367.0000
				17	100.0000	375.0000			17	130.0000	419.0000
				18	130.0000	349.0000			18	160.0000	482.0000
				19	160.0000	405.0000			19	200.0000	478.0000
				20	200.0000	424.0000			20	200.0000	427.0000
				21	250.0000	350.0000			21	250.0000	553.0000
				22	250.0000	387.0000					
				23	300.0000	402.0000					
				24	350.0000	335.0000					
				25	400.0000	303.0000					
				26	500.0000	264.0000					

448131.00 ELEVATION: 1821.00		448131.00		1821.00		0.000		1		March,2010	
LAYER	RESISTIVITY	THICKNESS	(meters)	B3-8	SCHL	1821.00	0.000	1	March,2010	1	March,2010
1	2.80481E+02	1.12390E-01		448131.000	795926.000				JICA		
2	1.35374E+04	1.24096E+00		Oyne Umbure Chefo					Oyne Umbure Chefo		
3	1.24172E+02	2.46579E+01		Oromia Region Ethiopia					Oromia Region Ethiopia		
4	8.38598E+02	9.76482E+01		Rift Valley Lakes Basin					Rift Valley Lakes Basin		
5	4.52994E+01			No.	SPACING	RHO-A			No.	SPACING	RHO-A
				1	1.5000	1012.0000			1	1.5000	3572.0000
				2	2.1000	1266.0000			2	2.1000	4692.0000
				3	3.0000	1803.0000			3	3.0000	5136.0000
				4	4.0000	1822.0000			4	4.0000	5296.0000
				5	6.0000	1777.0000			5	6.0000	4277.0000
				6	9.0000	1314.0000			6	9.0000	2177.0000
				7	13.0000	621.0000			7	13.0000	765.0000
				8	25.0000	181.0000			8	25.0000	295.0000
				9	25.0000	205.0000			9	25.0000	323.0000
				10	30.0000	203.0000			10	30.0000	212.0000
				11	30.0000	192.0000			11	35.0000	197.0000
				12	35.0000	208.0000			12	40.0000	229.0000
				13	40.0000	226.0000			13	50.0000	270.0000
				14	50.0000	252.0000			14	60.0000	302.0000
				15	60.0000	301.0000			15	80.0000	326.0000
				16	80.0000	328.0000			16	100.0000	367.0000
				17	100.0000	375.0000			17	130.0000	419.0000
				18	130.0000	349.0000			18	160.0000	482.0000
				19	160.0000	405.0000			19	200.0000	478.0000
				20	200.0000	424.0000			20	200.0000	427.0000
				21	250.0000	350.0000			21	250.0000	553.0000
				22	250.0000	387.0000					
				23	300.0000	402.0000					
				24	350.0000	335.0000					
				25	400.0000	303.0000					
				26	500.0000	264.0000					

Data 4.1.5 Geophysical Survey Data (Electrical Prospecting), (13/41)

22	250.0000	387.0000	12	35.0000	11.5000	4	4.0000	21.7000
23	300.0000	397.0000	13	40.0000	12.1000	5	6.0000	20.1000
24	350.0000	345.0000	14	50.0000	12.6000	6	9.0000	19.7000
25	400.0000	276.0000	15	60.0000	13.4000	7	13.0000	20.4000
26	500.0000	265.0000	16	80.0000	15.2000	8	20.0000	19.4000
			17	100.0000	17.4000	9	25.0000	21.3000
			18	130.0000	20.0000	10	25.0000	21.1000
			19	160.0000	22.2000	11	30.0000	22.8000
			20	200.0000	23.1000	12	35.0000	23.2000
			21	200.0000	25.6000	13	40.0000	24.1000
			22	250.0000	25.1000	14	50.0000	25.1000
			23	250.0000	28.5000	15	60.0000	25.2000
			24	300.0000	31.1000	16	80.0000	26.5000
			25	400.0000	25.6000	17	100.0000	25.9000
			26	500.0000	26.1000	18	130.0000	22.5000
						19	160.0000	24.0000
						20	200.0000	27.0000
						21	200.0000	27.9000
						22	250.0000	28.8000
						23	250.0000	28.8000
						24	300.0000	29.3000
						25	360.0000	33.5000
						26	400.0000	35.2000
						27	500.0000	36.1000
<p>DATASET: B3-10 NORTH: 796001.00 EAST: 424658.00 ELEVATION: 1817.00</p> <p>LAYER RESISTIVITY THICKNESS (meters)</p> <p>1 8.37480E+02 3.27879E-01</p> <p>2 1.01644E+04 1.29891E+00</p> <p>3 1.38614E+02 4.54951E+01</p> <p>4 9.08124E+02 9.91928E+01</p> <p>5 7.60129E+01</p>								
<p>RVS BH-4</p> <p>B4-1 SCHL 1639.000 0.000 1</p> <p>424849.000 745299.000</p> <p>JICA</p> <p>April,2010</p> <p>Chancho</p> <p>South People Region Ethiopia</p> <p>Rift Valley Lakes Basin</p> <p>String R1</p> <p>No. SPACING RHO-A</p> <p>1 1.5000 10.8000</p> <p>2 2.1000 12.7000</p> <p>3 3.0000 13.2000</p> <p>4 4.0000 14.5000</p> <p>5 6.0000 14.4000</p> <p>6 9.0000 11.6000</p> <p>7 13.0000 10.6000</p> <p>8 20.0000 8.8000</p> <p>9 25.0000 10.1000</p> <p>10 25.0000 10.7000</p> <p>11 30.0000 10.9000</p>								
<p>DATASET: B4-1 NORTH: 745299.00</p> <p>EAST: 424849.00 ELEVATION: 1639.00</p> <p>LAYER RESISTIVITY THICKNESS</p> <p>(meters)</p> <p>1 1.05183E+01 7.57388E-01</p> <p>2 3.36644E+01 1.40185E+00</p> <p>3 1.18883E+01 2.97963E+01</p> <p>4 4.53875E+01 1.15994E+02</p> <p>5 1.74523E+01</p>								
<p>B4-2 SCHL 1640.000 0.000 1</p> <p>424658.000 745363.000</p> <p>JICA</p> <p>April,2010</p> <p>Chancho</p> <p>South People Region Ethiopia</p> <p>Rift Valley Lakes Basin</p> <p>String R1</p> <p>No. SPACING RHO-A</p> <p>1 1.5000 24.7000</p> <p>2 2.1000 20.0000</p> <p>3 3.0000 21.0000</p>								
<p>DATASET: B4-2 NORTH: 745363.00</p> <p>EAST: 424658.00 ELEVATION: 1640.00</p> <p>LAYER RESISTIVITY THICKNESS</p> <p>(meters)</p> <p>1 2.30430E+01 2.02392E+00</p> <p>2 1.90360E+01 1.74243E+01</p> <p>3 6.16412E+01 1.62930E+01</p> <p>4 1.04278E+01 3.57310E+01</p> <p>5 4.62844E+01</p>								
<p>B4-3 SCHL 1638.000 0.000 1</p> <p>424913.000 745428.000</p>								

Data 4.1.5 Geophysical Survey Data (Electrical Prospecting), (14/41)

JICA April,2010		1		Sting R1	
Chanco		RHO-A			
South People Region Ethiopia		SPACING		THICKNESS	
Rift Valley Lakes Basin		RHO-A			
No.	SPACING	RHO-A	THICKNESS		
1	1.5000	13.6000			
2	2.1000	13.9000			
3	3.0000	15.7000			
4	4.0000	14.9000			
5	6.0000	13.8000			
6	9.0000	11.0000			
7	13.0000	9.7000			
8	20.0000	11.0000			
9	25.0000	10.7000			
10	25.0000	11.0000			
11	30.0000	11.8000			
12	35.0000	12.6000			
13	40.0000	13.2000			
14	50.0000	14.3000			
15	60.0000	15.9000			
16	80.0000	19.1000			
17	100.0000	23.1000			
18	130.0000	25.6000			
19	160.0000	26.7000			
20	200.0000	28.4000			
21	200.0000	27.2000			
22	250.0000	30.1000			
23	300.0000	27.3000			
24	350.0000	25.8000			
25	400.0000	24.3000			
26	500.0000	17.5000			
DATASET: B4-3		NORTH: 745428.00			
EAST: 424913.00		ELEVATION: 1638.00			
LAYER		RESISTIVITY	THICKNESS		
(meters)					

JICA April,2010		1		Sting R1	
Chanco		RHO-A			
South People Region Ethiopia		SPACING		THICKNESS	
Rift Valley Lakes Basin		RHO-A			
No.	SPACING	RHO-A	THICKNESS		
1	1.5000	30.9000			
2	2.1000	31.5000			
3	3.0000	30.4000			
4	4.0000	25.3000			
5	6.0000	18.9000			
6	9.0000	14.0000			
7	13.0000	13.0000			
8	20.0000	12.3000			
9	25.0000	13.0000			
10	25.0000	12.2000			
11	30.0000	12.5000			
12	30.0000	12.2000			
13	35.0000	13.0000			
14	40.0000	13.6000			
15	50.0000	15.2000			
16	60.0000	17.3000			
17	80.0000	21.1000			
18	100.0000	24.4000			
19	130.0000	25.0000			
20	160.0000	25.2000			
21	200.0000	30.6000			
22	250.0000	28.6000			
23	300.0000	24.6000			
DATASET: B4-4		NORTH: 745614.00			
EAST: 424971.00		ELEVATION: 1642.00			
LAYER		RESISTIVITY	THICKNESS		
(meters)					

JICA April,2010		1		Sting R1	
Chanco		RHO-A			
South People Region Ethiopia		SPACING		THICKNESS	
Rift Valley Lakes Basin		RHO-A			
No.	SPACING	RHO-A	THICKNESS		
1	1.5000	19.0000			
2	2.1000	22.0000			
3	3.0000	26.8000			
4	4.0000	26.9000			
5	6.0000	32.2000			
6	9.0000	33.3000			
7	13.0000	36.2000			
8	20.0000	35.1000			
9	25.0000	34.0000			
10	25.0000	32.3000			
11	30.0000	33.5000			
12	30.0000	33.8000			
13	35.0000	31.7000			
14	40.0000	30.5000			
15	50.0000	27.4000			
16	60.0000	25.8000			
DATASET: B4-5		NORTH: 745625.000			
EAST: 424839.000		ELEVATION: 1642.000			
LAYER		RESISTIVITY	THICKNESS		
(meters)					

Data 4.1.5 Geophysical Survey Data (Electrical Prospecting), (15/41)

		Rift Valley Lakes Basin		Sting R1	
		No.	SPACING	RHO-A	
17	80.0000	23.2000	20.0000	25.8000	
18	100.0000	22.1000	25.0000	24.1000	
19	130.0000	21.8000	25.0000	25.1000	
20	160.0000	26.8000	30.0000	21.5000	
21	200.0000	32.5000	30.0000	22.5000	
22	200.0000	29.6000	35.0000	20.2000	
23	250.0000	35.1000	40.0000	19.7000	
24	250.0000	33.0000	50.0000	18.5000	
25	300.0000	33.7000	60.0000	18.4000	
26	350.0000	36.7000	80.0000	20.1000	
27	400.0000	37.3000	100.0000	21.3000	
28	500.0000	36.8000	130.0000	23.2000	
DATASET: B4-5		NORTH: 745625.00			
EAST: 424839.00		ELEVATION: 1642.00			
(meters)					
LAYER RESISTIVITY THICKNESS					
1	1.12386E+01	7.52548E-01			
2	3.14484E+01	2.48641E+01			
3	9.92322E+00	3.69669E+01			
4	5.56243E+01				
B4-6		SCHL 1642.000	0.000	1	
424829.000		745472.000			
JICA					
April,2010					
Chancho					
South People Region Ethiopia					
Rift Valley Lakes Basin					
No.		SPACING	RHO-A		
1	1.5000	19.3000			
2	2.1000	22.5000			
3	3.0000	22.9000			
4	4.0000	25.2000			
5	6.0000	28.2000			
6	9.0000	30.4000			
7	13.0000	29.4000			
DATASET: B4-6		NORTH: 745472.00			
EAST: 424829.00		ELEVATION: 1642.00			
(meters)					
LAYER RESISTIVITY THICKNESS					
1	2.20818E+01	1.41097E+00			
2	4.11177E+01	8.56740E+00			
3	1.55010E+01	4.43155E+01			
4	4.34927E+01				
B4-7		SCHL 1634.000	0.000	1	
424754.000		745130.000			
JICA					
April,2010					
Chancho					
South People Region Ethiopia					
Rift Valley Lakes Basin					
No.		SPACING	RHO-A		
1	1.5000	19.3000			
2	2.1000	22.5000			
3	3.0000	22.9000			
4	4.0000	25.2000			
5	6.0000	28.2000			
6	9.0000	30.4000			
7	13.0000	29.4000			
DATASET: B4-7		NORTH: 745130.00			
EAST: 424754.00		ELEVATION: 1634.00			
(meters)					
LAYER RESISTIVITY THICKNESS					
1	8.82479E+00	1.59751E+00			
2	3.38102E+01	7.28080E+00			

Data 4.1.5 Geophysical Survey Data (Electrical Prospecting), (16/41)

B4-8	SCHL	1637.000	0.000	1	
3	9.09486E+00	3.77994E+01			
4	5.24181E+01	1.20856E+02			
5	2.27255E+01				
DATASET: B4-8 NORTH: 755005.00 EAST: 424642.00 ELEVATION: 1637.00 LAYER RESISTIVITY THICKNESS (meters)					
1	7.57014E+00	6.21542E+00			
2	1.57340E+01	3.71010E+01			
3	1.01890E+01	1.91108E+01			
4	7.58602E+01	1.25963E+02			
5	1.00392E+01				
DATASET: B4-9 NORTH: 745208.00 EAST: 424589.00 ELEVATION: 1638.00 LAYER RESISTIVITY THICKNESS (meters)					
1	7.15298E+00	5.27066E-01			
2	1.87867E+01	5.76101E-01			
3	1.55235E+01	1.34231E+01			
4	3.39837E+01	4.14177E+01			
5	2.13990E+01	7.66287E+01			
6	6.33293E+01				
DATASET: B4-10 NORTH: 745208.00 EAST: 424417.00 ELEVATION: 745488.00 LAYER RESISTIVITY THICKNESS (meters)					
1	7.15298E+00	5.27066E-01			
2	1.87867E+01	5.76101E-01			
3	1.55235E+01	1.34231E+01			
4	3.39837E+01	4.14177E+01			
5	2.13990E+01	7.66287E+01			
6	6.33293E+01				
DATASET: B4-10 NORTH: 745208.00 EAST: 424417.00 ELEVATION: 745488.00 LAYER RESISTIVITY THICKNESS (meters)					
1	7.15298E+00	5.27066E-01			
2	1.87867E+01	5.76101E-01			
3	1.55235E+01	1.34231E+01			
4	3.39837E+01	4.14177E+01			
5	2.13990E+01	7.66287E+01			
6	6.33293E+01				

Data 4.1.5 Geophysical Survey Data (Electrical Prospecting), (17/41)

8	20.0000	62.0000	Fango Damot	1
9	25.0000	69.0000	Oromia Region Ethiopia	
10	25.0000	61.0000	Rift Valley Lakes Basin	Sting R1
11	30.0000	73.0000	No.	RHO-A
12	30.0000	62.0000	SPACING	
13	35.0000	68.0000	1	1.5000
14	40.0000	71.0000	2	2.1000
15	50.0000	78.0000	3	3.0000
16	60.0000	81.0000	4	4.0000
17	80.0000	88.0000	5	6.0000
18	100.0000	79.0000	6	9.0000
19	130.0000	75.0000	7	13.0000
20	160.0000	64.0000	8	20.0000
21	200.0000	58.0000	9	25.0000
22	200.0000	59.0000	10	25.0000
23	250.0000	57.0000	11	30.0000
24	250.0000	52.0000	12	30.0000
25	300.0000	50.0000	13	35.0000
26	350.0000	47.0000	14	40.0000
27	400.0000	40.0000	15	50.0000
28	500.0000	35.0000	16	60.0000
			17	80.0000
			18	100.0000
			19	130.0000
			20	160.0000
			21	200.0000
			22	200.0000
			23	250.0000
			24	250.0000
			25	300.0000
			26	350.0000
			27	400.0000
			28	500.0000
DATASET: B4-10 NORTH: 745488.00				
EAST: 424417.00 ELEVATION: 1654.00				
LAYER RESISTIVITY THICKNESS				
(meters)				
	1	7.24318E+01	2.39648E+00	
	2	1.80935E+01	5.63832E+00	
	3	1.44590E+02	3.35524E+01	
	4	3.73613E+01		
RVS BH-5				
	B5-1	SCHL 1477.000	0.000	1
	40318.000	763713.000		
	JICA			
	May,2010			
DATASET: B5-1 NORTH: 763713.00				
EAST: 40318.00 ELEVATION: 1477.00				
LAYER RESISTIVITY THICKNESS				
(meters)				
	1	2.71787E+01	1.40631E+00	
	2	7.79779E+01	1.02705E+01	
	3	1.52644E+01	6.83410E+00	
	4	5.05317E+01	1.54658E+02	
	5	1.97683E+01		
	B5-2	SCHL 1483.000	0.000	1
	402963.000	763727.000		
	JICA			
	May,2010			
Fango Damot 1				
Oromia Region Ethiopia				
Rift Valley Lakes Basin				
No. SPACING RHO-A				
	1	1.5000	52.5000	
	2	2.1000	42.1000	
	3	3.0000	42.0000	
	4	4.0000	42.3000	
	5	6.0000	42.4000	
	6	9.0000	44.2000	
	7	13.0000	43.8000	
	8	20.0000	43.8000	
	9	25.0000	52.8000	
	10	25.0000	48.2000	
	11	30.0000	45.2000	
	12	30.0000	44.9000	
	13	35.0000	42.9000	
	14	40.0000	40.1000	
	15	50.0000	45.0000	
	16	60.0000	44.6000	
	17	80.0000	48.8000	
	18	100.0000	52.8000	
	19	130.0000	54.3000	
	20	160.0000	54.5000	
	21	200.0000	59.5000	
	22	200.0000	59.0000	
	23	250.0000	47.2000	

Data 4.1.5 Geophysical Survey Data (Electrical Prospecting), (18/41)

24	250.0000	48.6000
25	300.0000	37.5000
26	350.0000	28.3000
27	400.0000	30.5000
28	500.0000	28.4000

DATASET: B5-2 NORTH: 763727.00
 EAST: 402963.00 ELEVATION: 1483.00
 LAYER RESISTIVITY THICKNESS
 (meters)

1	5.85804E+01	8.34525E-01
2	2.51418E+01	1.03556E+00
3	4.66461E+01	1.76884E+01
4	2.70840E+01	1.61295E+01
5	1.70564E+02	3.81170E+01
6	1.74500E+01	

B5-3	SCHL	1487.000	0.000	1
402743.000	763735.000			
JICA				
May,2010				
Fango Damot				1
Oromia Region Ethiopia				
Rift Valley Lakes Basin				String R1
No.	SPACING		RHO-A	
1	1.5000	43.4000		
2	2.1000	44.6000		
3	3.0000	43.2000		
4	4.0000	51.2000		
5	6.0000	67.0000		
6	9.0000	73.8000		
7	13.0000	75.4000		
8	20.0000	80.9000		
9	25.0000	80.4000		
10	25.0000	141.0000		
11	30.0000	86.1000		
12	30.0000	147.0000		

4	4.0000	25.3000
5	6.0000	32.3000
6	9.0000	43.3000
7	13.0000	55.6000
8	20.0000	74.0000
9	25.0000	89.4000
10	25.0000	81.2000
11	30.0000	93.5000
12	30.0000	93.8000
13	35.0000	104.0000
14	40.0000	109.0000
15	50.0000	131.0000
16	60.0000	145.0000
17	80.0000	171.0000
18	100.0000	187.0000
19	130.0000	185.0000
20	160.0000	190.0000
21	200.0000	143.0000
22	200.0000	133.0000
23	250.0000	112.0000
24	250.0000	93.6000
25	400.0000	92.9000
26	500.0000	56.3000

DATASET: B5-4 NORTH: 763758.00
 EAST: 402620.00 ELEVATION: 1490.00
 LAYER RESISTIVITY THICKNESS
 (meters)

1	7.20694E+01	4.34099E-01
2	1.26292E+01	3.42812E+00
3	2.23528E+02	6.49650E+01
4	5.06917E+01	

B5-5 SCHL 1475.000 0.000 1
 403136.000 763369.000
 JICA
 May,2010

Data 4.1.5 Geophysical Survey Data (Electrical Prospecting), (19/41)

Fango Damot		1		Sting R1		RHO-A	
No.	SPACING	B5-6	SCHL	1484.000	0.000	1	
1	1.5000	402983.000	763373.000				
2	2.1000	JICA					
3	3.0000	May,2010					
4	4.0000	Fango Damot					
5	6.0000	Oromia Region Ethiopia					
6	9.0000	Rift Valley Lakes Basin					
7	13.0000	No.	SPACING				
8	20.0000	1	1.5000	66.8000			
9	25.0000	2	2.1000	49.3000			
10	25.0000	3	3.0000	47.9000			
11	30.0000	4	4.0000	59.9000			
12	30.0000	5	6.0000	67.3000			
13	35.0000	6	9.0000	74.5000			
14	40.0000	7	13.0000	73.5000			
15	40.0000	8	20.0000	75.6000			
16	50.0000	9	25.0000	86.9000			
17	60.0000	10	25.0000	63.0000			
18	80.0000	11	30.0000	93.2000			
19	100.0000	12	30.0000	68.4000			
20	130.0000	13	35.0000	74.5000			
21	160.0000	14	40.0000	76.1000			
22	200.0000	15	50.0000	80.3000			
23	250.0000	16	60.0000	83.4000			
24	300.0000	17	80.0000	80.4000			
25	350.0000	18	100.0000	73.4000			
26	400.0000	19	130.0000	65.6000			
27	400.0000	20	160.0000	66.0000			
28	500.0000	21	200.0000	43.1000			
		22	200.0000	59.8000			
		23	250.0000	44.6000			
		24	300.0000	46.5000			

Oromia Region Ethiopia		1		Sting R1		RHO-A	
No.	SPACING	B5-7	SCHL	1487.000	0.000	1	
1	1.5000	402779.000	763379.000				
2	2.1000	JICA					
3	3.0000	May,2010					
4	4.0000	Fango Damot					
5	6.0000	Oromia Region Ethiopia					
6	9.0000	Rift Valley Lakes Basin					
7	13.0000	No.	SPACING				
8	20.0000	1	1.5000	46.5000			
9	25.0000	2	2.1000	38.1000			
10	25.0000	3	3.0000	33.8000			
11	30.0000	4	4.0000	33.6000			
12	30.0000	5	6.0000	43.5000			
13	35.0000	6	9.0000	56.3000			
14	40.0000	7	13.0000	80.9000			
15	40.0000	8	20.0000	101.0000			
16	50.0000	9	25.0000	118.0000			
17	60.0000	10	25.0000	73.3000			
18	80.0000	11	30.0000	127.0000			
19	100.0000	12	30.0000	81.4000			
20	130.0000	13	35.0000	91.5000			
21	160.0000	14	40.0000	101.0000			
22	200.0000	15	50.0000	120.0000			
23	250.0000	16	60.0000	135.0000			

DATASET: B5-6 NORTH: 763373.00
 EAST: 402983.00 ELEVATION: 1484.00
 LAYER RESISTIVITY THICKNESS
 (meters)

DATASET: B5-5 NORTH: 763369.00
 EAST: 403136.00 ELEVATION: 1475.00
 LAYER RESISTIVITY THICKNESS
 (meters)

Data 4.1.5 Geophysical Survey Data (Electrical Prospecting), (20/41)

17	80.0000	158.0000	10	25.0000	64.9000	3	3.0000	54.4000
18	100.0000	165.0000	11	30.0000	123.0000	4	4.0000	58.1000
19	130.0000	152.0000	12	30.0000	75.9000	5	6.0000	56.5000
20	160.0000	135.0000	13	35.0000	89.6000	6	9.0000	58.3000
21	200.0000	150.0000	14	40.0000	101.0000	7	13.0000	61.4000
22	200.0000	100.0000	15	50.0000	114.0000	8	20.0000	59.6000
23	250.0000	100.0000	16	60.0000	125.0000	9	25.0000	62.5000
24	250.0000	77.9000	17	80.0000	138.0000	10	25.0000	56.4000
25	300.0000	65.9000	18	100.0000	156.0000	11	30.0000	78.6000
26	350.0000	44.8000	19	130.0000	163.0000	12	30.0000	62.5000
			20	160.0000	147.0000	13	35.0000	68.4000
			21	200.0000	149.0000	14	40.0000	71.6000
			22	250.0000	130.0000	15	50.0000	78.5000
			23	300.0000	124.0000	16	60.0000	84.4000
			24	350.0000	97.8000	17	80.0000	84.0000
			25	400.0000	87.0000	18	100.0000	74.3000
			26	500.0000	68.9000	19	130.0000	71.7000
						20	160.0000	74.6000
						21	200.0000	71.2000
						22	250.0000	57.9000
						23	300.0000	39.8000
						24	350.0000	39.4000
						25	400.0000	34.3000
						26	500.0000	14.6000
DATASET: B5-7 NORTH: 763379.00								
EAST: 402779.00 ELEVATION: 1487.00								
(meters) LAYER RESISTIVITY THICKNESS								
	1	1.69855E+01	5.77598E-01					
	2	5.50589E+00	3.71369E+00					
	3	2.68874E+02	5.27229E+01					
	4	7.43020E+00						
B5-8	SCHL	1494.000	0.000	1				
402627.000		763379.000						
JICA								
May,2010								
Fango Damot								
Oromia Region Ethiopia								
Rift Valley Lakes Basin								
No.	SPACING	RHO-A						
1	1.5000	30.1000						
2	2.1000	24.0000						
3	3.0000	22.5000						
4	4.0000	28.1000						
5	6.0000	35.4000						
6	9.0000	48.6000						
7	13.0000	75.2000						
8	20.0000	91.1000						
9	25.0000	102.0000						
DATASET: B5-8 NORTH: 763379.00								
EAST: 402627.00 ELEVATION: 1494.00								
(meters) LAYER RESISTIVITY THICKNESS								
	1	3.97639E+01	4.10536E-01					
	2	7.19067E+00	2.98964E+00					
	3	1.07165E+03	2.18624E+01					
	4	3.70031E+01						
B5-9	SCHL	1481.000	0.000	1				
402973.000		763189.000						
JICA								
May,2010								
Fango Damot								
Oromia Region Ethiopia								
Rift Valley Lakes Basin								
No.	SPACING	RHO-A						
1	1.5000	61.0000						
2	2.1000	61.5000						
DATASET: B5-9 NORTH: 763189.00								
EAST: 402973.00 ELEVATION: 1481.00								
(meters) LAYER RESISTIVITY THICKNESS								
	1	5.19259E+01	5.68087E-01					
	2	3.87392E+01	1.49596E+01					
	3	2.62075E+02	1.54201E+01					
	4	2.18401E+01	1.60752E+01					
	5	2.60609E+02	3.28419E+01					
	6	1.89718E+00						
B5-10	SCHL	1481.000	0.000	1				

Data 4.1.5 Geophysical Survey Data (Electrical Prospecting), (21/41)

402737.000	763103.000				
JICA					
May,2010					
Fango Damot					1
Oromia Region Ethiopia					Sting R1
Rift Valley Lakes Basin					RHO-A
No.	SPACING				
1	1.5000	32.3000			
2	2.1000	20.2000			
3	3.0000	18.8000			
4	4.0000	22.9000			
5	6.0000	31.1000			
6	9.0000	40.1000			
7	13.0000	51.4000			
8	20.0000	61.6000			
9	25.0000	72.6000			
10	25.0000	68.1000			
11	30.0000	82.6000			
12	30.0000	76.1000			
13	35.0000	83.4000			
14	40.0000	88.3000			
15	50.0000	92.3000			
16	60.0000	95.4000			
17	80.0000	104.0000			
18	100.0000	104.0000			
19	130.0000	89.4000			
20	160.0000	95.0000			
21	200.0000	76.5000			
22	250.0000	64.1000			
23	250.0000	71.3000			
24	300.0000	52.7000			
25	300.0000	52.6000			
26	400.0000	41.7000			
27	500.0000	29.0000			
DATASET: B5-10 NORTH: 763103.00					
EAST: 402737.00 ELEVATION: 1481.00					

LAYER	RESISTIVITY	THICKNESS
1	8.68890E+01	5.05309E-01
2	1.24770E+01	2.18182E+00
3	1.41339E+02	9.30493E+01
4	2.10121E+01	

(meters)

RVS BH-6

B6-1 SCHL 1878.000 0.000 1

419595.000 807110.000

JICA

March,2010

Lajo 1

South People Region Ethiopia

Rift Valley Lakes Basin

No. SPACING RHO-A

1 1.5000 425.0000

2 2.1000 435.0000

3 3.0000 409.0000

4 4.0000 406.0000

5 6.0000 238.0000

6 9.0000 118.0000

7 13.0000 108.0000

8 20.0000 114.0000

9 25.0000 140.0000

10 25.0000 160.0000

11 40.0000 206.0000

12 50.0000 229.0000

13 60.0000 244.0000

14 80.0000 256.0000

15 100.0000 268.0000

16 130.0000 310.0000

17 160.0000 320.0000

18 200.0000 278.0000

19 250.0000 278.0000

20 300.0000 258.0000

21	350.0000	234.0000
22	400.0000	215.0000
23	500.0000	181.0000

DATASET: B6-1 NORTH: 807110.00

EAST: 419595.00 ELEVATION: 1878.00

LAYER RESISTIVITY THICKNESS

(meters)

1 5.51264E+02 2.74292E+00

2 5.64997E+01 5.50914E+00

3 3.52481E+02 1.69746E+02

4 8.37803E+01

B6-2 SCHL 1878.000 0.000 1

419804.000 806969.000

JICA

March,2010

Lajo 1

South People Region Ethiopia

Rift Valley Lakes Basin

No. SPACING RHO-A

1 1.5000 121.0000

2 2.1000 97.0000

3 3.0000 79.0000

4 4.0000 60.0000

5 6.0000 54.0000

6 9.0000 70.0000

7 13.0000 93.0000

8 20.0000 129.0000

9 25.0000 149.0000

10 25.0000 170.0000

11 30.0000 168.0000

12 30.0000 195.0000

13 35.0000 216.0000

14 40.0000 245.0000

15 50.0000 267.0000

16 60.0000 285.0000

Data 4.1.5 Geophysical Survey Data (Electrical Prospecting), (22/41)

17	80.0000	305.0000	112.0000
18	100.0000	315.0000	137.0000
19	130.0000	311.0000	122.0000
20	160.0000	299.0000	154.0000
21	200.0000	270.0000	167.0000
22	200.0000	254.0000	180.0000
23	250.0000	270.0000	206.0000
24	250.0000	255.0000	236.0000
25	350.0000	198.0000	228.0000
26	400.0000	185.0000	234.0000
27	500.0000	169.0000	226.0000
DATASET: B6-2 NORTH: 806969.00			
EAST: 419804.00 ELEVATION: 1878.00			
(meters)	LAYER	RESISTIVITY	THICKNESS
1	1.65157E+02	1.34081E+00	
2	2.47887E+01	1.88509E+00	
3	3.25954E+02	1.15379E+02	
4	1.27115E+02		
B6-3 SCHL 1880.000 0.000 1			
419973.000 807026.000			
JICA			
March,2010			
Lajo	1		
South People Region Ethiopia			
Rift Valley Lakes Basin			
No.	SPACING	RHO-A	String R1
1	1.5000	137.0000	
2	2.1000	111.0000	
3	3.0000	87.0000	
4	4.0000	54.0000	
5	6.0000	50.0000	
6	9.0000	57.0000	
7	13.0000	77.0000	
8	20.0000	100.0000	

9	25.0000	112.0000	
10	25.0000	137.0000	
11	30.0000	122.0000	
12	30.0000	154.0000	
13	35.0000	167.0000	
14	40.0000	180.0000	
15	50.0000	206.0000	
16	60.0000	236.0000	
17	80.0000	228.0000	
18	100.0000	234.0000	
19	130.0000	226.0000	
20	160.0000	235.0000	
21	200.0000	265.0000	
22	200.0000	236.0000	
23	250.0000	246.0000	
24	250.0000	229.0000	
25	300.0000	220.0000	
26	350.0000	205.0000	
27	400.0000	185.0000	
28	500.0000	178.0000	
29	600.0000	158.0000	
30	700.0000	132.0000	
DATASET: B6-3 NORTH: 807026.00			
EAST: 419973.00 ELEVATION: 1880.00			
(meters)	LAYER	RESISTIVITY	THICKNESS
1	2.18462E+02	1.24939E+00	
2	2.88715E+01	2.15491E+00	
3	1.90785E+02	4.50520E+01	
4	2.58947E+02	2.26223E+02	
5	5.72152E+01		
B6-4 SCHL 1880.000 0.000 1			
420187.000 807098.000			
JICA			
March,2010			
Lajo	1		
South People Region Ethiopia			
Rift Valley Lakes Basin			
No.	SPACING	RHO-A	String R1
1	1.5000	184.0000	
2	2.1000	146.0000	
3	3.0000	117.0000	
4	4.0000	91.0000	
5	6.0000	74.0000	
6	9.0000	89.0000	
7	13.0000	115.0000	
8	20.0000	160.0000	
9	25.0000	180.0000	
10	25.0000	169.0000	
11	30.0000	204.0000	
12	30.0000	186.0000	
13	35.0000	197.0000	
14	40.0000	211.0000	
15	50.0000	231.0000	
16	60.0000	246.0000	
17	80.0000	260.0000	
18	100.0000	276.0000	
19	130.0000	305.0000	
20	160.0000	298.0000	
21	200.0000	297.0000	
22	200.0000	276.0000	
23	250.0000	263.0000	
24	250.0000	248.0000	
25	300.0000	224.0000	
26	350.0000	208.0000	
27	400.0000	189.0000	
28	500.0000	181.0000	
DATASET: B6-4 NORTH: 807098.00			
EAST: 420187.00 ELEVATION: 1880.00			
(meters)	LAYER	RESISTIVITY	THICKNESS

Data 4.1.5 Geophysical Survey Data (Electrical Prospecting), (23/41)

1	1.53276E+02	1.41907E+00	24	250.0000	245.0000	14	40.0000	312.0000
2	2.61647E+01	2.69795E+00	25	300.0000	243.0000	15	50.0000	317.0000
3	3.17687E+02	5.19532E+01	26	350.0000	204.0000	16	60.0000	299.0000
4	3.33634E+02	6.64369E+01	27	400.0000	175.0000	17	80.0000	264.0000
5	1.30748E+02		28	500.0000	152.0000	18	100.0000	255.0000
19			19	130.0000		19	130.0000	237.0000
20			20	160.0000		20	160.0000	222.0000
21			21	200.0000		21	200.0000	224.0000
22			22	200.0000		22	200.0000	220.0000
23			23	250.0000		23	250.0000	238.0000
24			24	250.0000		24	250.0000	217.0000
25			25	300.0000		25	300.0000	200.0000
26			26	350.0000		26	350.0000	180.0000
27			27	400.0000		27	400.0000	162.0000
28			28	500.0000		28	500.0000	155.0000
29			29	600.0000		29	600.0000	132.0000
30			30	700.0000		30	700.0000	131.0000

DATASET: B6-5					NORTH: 807200.00
EAST: 419900.00					ELEVATION: 1873.00
LAYER RESISTIVITY THICKNESS					
(meters)					
	1	3.66913E+02	1.44220E+00		
	2	2.94715E+01	2.25863E+00		
	3	2.69847E+02	8.48465E+01		
	4	3.19790E+02	1.20363E+02		
	5	3.99940E+01			
B6-6 SCHL 1889.000 0.000 1					
420175.000 806900.000					
JICA					
March, 2010					
Lajo					
South People Region Ethiopia					
Rift Valley Lakes Basin					
RHO-A					
No.			SPACING		RHO-A
1	1.5000	179.0000		178.0000	
2	2.1000	161.0000		125.0000	
3	3.0000	106.0000		89.0000	
4	4.0000	74.0000		80.0000	
5	6.0000	46.0000		93.0000	
6	9.0000	48.0000		119.0000	
7	13.0000	63.0000		150.0000	
8	20.0000	86.0000		205.0000	
9	25.0000	102.0000		257.0000	
10	25.0000	132.0000		263.0000	
11	30.0000	120.0000		267.0000	
12	30.0000	159.0000		279.0000	
13	35.0000	182.0000		301.0000	
14	40.0000	200.0000			
15	50.0000	226.0000			
16	60.0000	240.0000			
17	80.0000	246.0000			
18	100.0000	227.0000			
19	130.0000	242.0000			
20	160.0000	245.0000			
21	200.0000	253.0000			
22	200.0000	250.0000			
23	250.0000	246.0000			

DATASET: B6-6					NORTH: 806900.00
EAST: 420175.00					ELEVATION: 1889.00
LAYER RESISTIVITY THICKNESS					
(meters)					
	1	2.58819E+02	8.48645E-01		
	2	4.43526E+01	2.56571E+00		
	3	6.23704E+02	1.10544E+01		
	4	1.97655E+02	2.85614E+02		
	5	6.91522E+01			
B6-7 SCHL 1882.000 0.000 1					
420185.000 807295.000					
JICA					
March, 2010					
Lajo					
South People Region Ethiopia					
Rift Valley Lakes Basin					
RHO-A					
No.			SPACING		RHO-A
1	1.5000	178.0000		178.0000	
2	2.1000	125.0000		125.0000	
3	3.0000	89.0000		89.0000	
4	4.0000	80.0000		80.0000	
5	6.0000	93.0000		93.0000	
6	9.0000	119.0000		119.0000	
7	13.0000	150.0000		150.0000	
8	20.0000	205.0000		205.0000	
9	25.0000	257.0000		257.0000	
10	25.0000	263.0000		263.0000	
11	30.0000	267.0000		267.0000	
12	30.0000	279.0000		279.0000	
13	35.0000	301.0000		301.0000	

Data 4.1.5 Geophysical Survey Data (Electrical Prospecting), (24/41)

No.	B6-8		SCHL	1877.000	0.000	1	DATASET: B6-8	NORTH: 806775.00
	419800.000	806775.000						
2	2.1000	242.0000						
3	3.0000	183.0000						
4	4.0000	135.0000						
5	6.0000	96.0000						
6	9.0000	111.0000						
7	13.0000	146.0000						
8	20.0000	167.0000						
9	25.0000	186.0000						
10	25.0000	169.0000						
11	30.0000	240.0000						
12	30.0000	219.0000						
13	35.0000	235.0000						
14	40.0000	257.0000						
15	50.0000	275.0000						
16	60.0000	279.0000						
17	80.0000	267.0000						
18	100.0000	267.0000						
19	130.0000	271.0000						
20	160.0000	274.0000						
21	200.0000	264.0000						
22	200.0000	245.0000						
23	250.0000	251.0000						
24	250.0000	234.0000						
25	300.0000	223.0000						
26	350.0000	203.0000						
27	400.0000	181.0000						
28	500.0000	135.0000						

No.	B6-9		SCHL	1884.000	0.000	1	DATASET: B6-9	NORTH: 806775.00
	420000.000	806840.000						
1	1.5000	312.0000						
2	2.1000	229.0000						
3	3.0000	151.0000						
4	4.0000	96.0000						
5	6.0000	78.0000						
6	9.0000	97.0000						
7	13.0000	128.0000						
8	20.0000	169.0000						
9	25.0000	191.0000						
10	25.0000	192.0000						
11	30.0000	212.0000						
12	30.0000	219.0000						
13	35.0000	233.0000						
14	40.0000	245.0000						
15	50.0000	272.0000						
16	60.0000	283.0000						
17	80.0000	289.0000						
18	100.0000	286.0000						
19	130.0000	265.0000						
20	160.0000	264.0000						
21	200.0000	259.0000						
22	200.0000	255.0000						
23	250.0000	254.0000						
24	250.0000	245.0000						
25	300.0000	228.0000						
26	350.0000	218.0000						
27	400.0000	209.0000						
28	500.0000	155.0000						

No.	B6-7		SCHL	1882.00	0.000	1	DATASET: B6-7	NORTH: 807295.00
	420185.000	1882.00						
1	1.84768E+02	1.76212E+00						
2	2.85458E+01	2.66085E+00						
3	3.85626E+02	2.22602E+01						
4	2.43912E+02	1.97473E+02						
5	5.88236E+01							

Data 4.1.5 Geophysical Survey Data (Electrical Prospecting), (25/41)

19	130.0000	234.0000	110.0000	
20	160.0000	240.0000	103.0000	
21	200.0000	249.0000	122.0000	
22	200.0000	232.0000	100.0000	
23	250.0000	235.0000	107.0000	
24	250.0000	220.0000	118.0000	
25	300.0000	212.0000	134.0000	
26	350.0000	209.0000	149.0000	
27	400.0000	173.0000	169.0000	
28	500.0000	163.0000	174.0000	
DATASET: B6-9 NORTH: 806840.00 EAST: 420000.00 ELEVATION: 1884.00 (meters) LAYER RESISTIVITY THICKNESS				
1	2.94391E+02	2.47924E+00		
2	3.41226E+01	3.38950E+00		
3	1.40684E+02	2.11017E+01		
4	2.81247E+02	1.89278E+02		
5	5.58194E+01			
B6-10	SCHL	1901.000	0.000	1
418712.000		805176.000		
DATASET: B6-10 NORTH: 805176.00 EAST: 418712.00 ELEVATION: 1901.00 (meters) LAYER RESISTIVITY THICKNESS				
1	5.99222E+02	3.67393E+00		
2	2.07943E+01	3.48228E+00		
3	3.60520E+02	9.11962E+01		
4	1.03823E+02			
DATASET: B7-1 NORTH: 670539.00 EAST: 341465.00 ELEVATION: 1203.00 (meters) LAYER RESISTIVITY THICKNESS				
1	7.28040E+00	1.12354E+00		

RVS BH-7
 B7-1 SCHL 1203.000 0.000 1
 341465.000 670539.000
 JICA
 April,2010

Data 4.1.5 Geophysical Survey Data (Electrical Prospecting), (26/41)

24	300.0000	9.6400	DATASET: B7-2 NORTH: 670519.00		
25	300.0000	9.3000	EAST: 341711.00 ELEVATION: 1203.00		
26	350.0000	9.2000	LAYER RESISTIVITY THICKNESS		
27	400.0000	9.7000	(meters)		
	1	1.44135E+01	9.81271E-01		
	2	6.93243E+00	1.14949E+00		
	3	2.17921E+01	3.42569E+01		
	4	7.48231E+00	6.38074E+01		
	5	9.91421E+00			
B7-2 SCHL 1203.000 0.000 1			B7-3 SCHL 1203.000 0.000 1		
341711.000 670519.000			342009.000 670498.000		
JICA			JICA		
April,2010			April,2010		
Arbaminch			Arbaminch		
South People Region Ethiopia			South People Region Ethiopia		
Rift Valley Lakes Basin			Rift Valley Lakes Basin		
No.	SPACING	RHO-A	No.	SPACING	RHO-A
1	1.5000	21.0000	1	1.5000	11.8000
2	2.1000	20.7000	2	2.1000	12.8000
3	3.0000	18.1000	3	3.0000	13.9000
4	4.0000	20.4000	4	4.0000	15.3000
5	6.0000	23.4000	5	6.0000	16.4000
6	9.0000	26.4000	6	9.0000	17.5000
7	13.0000	29.5000	7	13.0000	18.1000
8	20.0000	31.0000	8	20.0000	17.1000
9	25.0000	30.0000	9	25.0000	16.4000
10	25.0000	24.0000	10	25.0000	16.8000
11	30.0000	29.2000	11	30.0000	16.3000
12	30.0000	23.7000	12	35.0000	15.7000
13	35.0000	22.2000	13	40.0000	14.7000
14	40.0000	21.0000	14	50.0000	14.5000
15	50.0000	19.0000			
16	60.0000	17.6000			
17	80.0000	16.0000			
18	100.0000	14.9000			
19	130.0000	12.1000			
20	160.0000	11.0000			
21	200.0000	10.1000			
22	200.0000	9.6300			
23	250.0000	10.8000			

15	60.0000	14.4000	DATASET: B7-3 NORTH: 670498.00		
16	80.0000	13.5000	EAST: 342009.00 ELEVATION: 1203.00		
17	100.0000	13.6000	LAYER RESISTIVITY THICKNESS		
18	130.0000	13.6000	(meters)		
19	200.0000	12.0000			
20	250.0000	11.7000			
21	300.0000	11.0000			
22	350.0000	10.9000			
23	400.0000	11.3000			
24	500.0000	12.2000			
B7-4 SCHL 1203.000 0.000 1			B7-4 SCHL 1203.000 0.000 1		
342306.000 670477.000			342306.000 670477.000		
JICA			JICA		
April,2010			April,2010		
Arbaminch			Arbaminch		
South People Region Ethiopia			South People Region Ethiopia		
Rift Valley Lakes Basin			Rift Valley Lakes Basin		
No.	SPACING	RHO-A	No.	SPACING	RHO-A
1	1.5000	8.5700	1	1.5000	8.5700
2	2.1000	7.7100	2	2.1000	7.7100
3	3.0000	8.7500	3	3.0000	8.7500
4	4.0000	10.9000	4	4.0000	10.9000
5	6.0000	12.6000	5	6.0000	12.6000
6	9.0000	13.8000	6	9.0000	13.8000
7	13.0000	14.9000	7	13.0000	14.9000

Data 4.1.5 Geophysical Survey Data (Electrical Prospecting), (27/41)

		Rift Valley Lakes Basin			Sting R1	
		No.	SPACING	RHO-A		
8	20.0000	1	1.5000	14.7000		
9	25.0000	2	2.1000	16.7000		
10	25.0000	3	3.0000	17.5000		
11	30.0000	4	4.0000	21.4000		
12	30.0000	5	6.0000	21.4000		
13	35.0000	6	9.0000	20.6000		
14	40.0000	7	13.0000	18.9000		
15	50.0000	8	20.0000	16.3000		
16	60.0000	9	25.0000	17.1000		
17	80.0000	10	25.0000	17.1000		
18	100.0000	11	30.0000	18.0000		
19	130.0000	12	30.0000	16.8000		
20	160.0000	13	35.0000	17.4000		
21	200.0000	14	40.0000	17.7000		
22	200.0000	15	50.0000	17.9000		
23	250.0000	16	60.0000	17.5000		
24	250.0000	17	80.0000	15.7000		
25	300.0000	18	100.0000	14.6000		
26	350.0000	19	130.0000	11.8000		
27	400.0000	20	160.0000	9.3100		
28	500.0000	21	200.0000	10.2000		
DATASET: B7-4		NORTH: 670477.00				
EAST: 342306.00		ELEVATION: 1203.00				
(meters)						
1	9.40758E+00	7.13558E-01				
2	7.44076E+00	1.55787E+00				
3	2.43238E+01	5.97272E+01				
4	8.97715E+00					
DATASET: B7-5		NORTH: 670150.00				
EAST: 341440.00		ELEVATION: 1203.00				
(meters)						
1	1.25418E+01	1.40033E+00				
2	3.64468E+01	2.69426E+00				
3	7.50868E+00	6.66540E+00				
DATASET: B7-6		NORTH: 670150.00				
EAST: 341440.00		ELEVATION: 1203.00				
(meters)						
1	1.5000	11.1000				
2	2.1000	14.3000				
3	3.0000	18.9000				
4	4.0000	24.7000				
5	6.0000	31.6000				
6	9.0000	40.5000				
7	13.0000	49.5000				
8	20.0000	58.6000				
9	25.0000	62.6000				
10	25.0000	52.5000				
11	30.0000	63.2000				
12	30.0000	53.5000				
13	35.0000	52.2000				
14	40.0000	48.8000				
15	50.0000	44.3000				
16	60.0000	37.8000				
17	80.0000	23.8000				
18	100.0000	18.6000				
19	130.0000	19.5000				
20	160.0000	18.3000				
21	200.0000	16.1000				
22	250.0000	14.8000				
23	300.0000	15.9000				
24	350.0000	14.7000				
25	500.0000	13.8000				
DATASET: B7-7		NORTH: 670150.00				
EAST: 341440.00		ELEVATION: 1203.00				
(meters)						
1	1.5000	11.1000				
2	2.1000	14.3000				
3	3.0000	18.9000				
4	4.0000	24.7000				
5	6.0000	31.6000				
6	9.0000	40.5000				
7	13.0000	49.5000				
8	20.0000	58.6000				
9	25.0000	62.6000				
10	25.0000	52.5000				
11	30.0000	63.2000				
12	30.0000	53.5000				
13	35.0000	52.2000				
14	40.0000	48.8000				
15	50.0000	44.3000				
16	60.0000	37.8000				
17	80.0000	23.8000				
18	100.0000	18.6000				
19	130.0000	19.5000				
20	160.0000	18.3000				
21	200.0000	16.1000				
22	250.0000	14.8000				
23	300.0000	15.9000				
24	350.0000	14.7000				
25	500.0000	13.8000				

Data 4.1.5 Geophysical Survey Data (Electrical Prospecting), (28/41)

DATASET: B7-6		NORTH: 670110.00	
EAST: 341880.00		ELEVATION: 1203.00	
LAYER	RESISTIVITY	THICKNESS	
(meters)			
1	6.34410E+00	1.28129E+00	
2	8.78247E+01	1.77216E+01	
3	4.64046E+00	1.76612E+01	
4	2.72395E+01	6.27850E+01	
5	1.14611E+01		
B7-7		SCHL 1203.000	0.000 1
342270.000		670070.000	
JICA			
April,2010			
Arbaminch			
South People Region Ethiopia			
Rift Valley Lakes Basin		Sting R1	
No.	SPACING	RHO-A	
1	1.5000	13.5000	
2	2.1000	13.2000	
3	3.0000	13.4000	
4	4.0000	15.0000	
5	6.0000	15.1000	
6	9.0000	15.3000	
7	13.0000	16.4000	
8	20.0000	16.7000	
9	25.0000	21.4000	
10	25.0000	18.0000	
11	30.0000	23.0000	
12	30.0000	19.5000	
13	35.0000	20.6000	
14	40.0000	23.3000	
15	50.0000	21.4000	
16	60.0000	21.3000	
17	80.0000	19.6000	
18	100.0000	19.0000	
DATASET: B7-7		NORTH: 670070.00	
EAST: 342270.00		ELEVATION: 1203.00	
LAYER	RESISTIVITY	THICKNESS	
(meters)			
1	9.41493E+00	1.15821E+01	
2	1.66990E+02	6.75494E+00	
3	1.05019E+00	1.76142E+01	
4	6.40725E+01	7.28761E+01	
5	1.35544E+00		
B7-8		SCHL 1203.000	0.000 1
341410.000		669760.000	
JICA			
April,2010			
Arbaminch			
South People Region Ethiopia			
Rift Valley Lakes Basin		Sting R1	
No.	SPACING	RHO-A	
1	1.5000	13.5000	
2	2.1000	18.1000	
3	3.0000	22.8000	
4	4.0000	35.1000	
5	6.0000	48.2000	
6	9.0000	63.5000	
7	13.0000	77.3000	
8	20.0000	86.5000	
9	25.0000	86.6000	
10	25.0000	94.9000	
DATASET: B7-8		NORTH: 669760.00	
EAST: 341410.00		ELEVATION: 1203.00	
LAYER	RESISTIVITY	THICKNESS	
(meters)			
1	8.88518E+00	6.14835E-01	
2	1.51805E+02	1.87301E+01	
3	1.63181E+01		
B7-9		SCHL 1203.000	0.000 1
341850.000		669720.000	
JICA			
April,2010			
Arbaminch			
South People Region Ethiopia			
Rift Valley Lakes Basin		Sting R1	
No.	SPACING	RHO-A	
1	1.5000	9.0700	
2	2.1000	9.2000	
3	3.0000	10.6000	

Data 4.1.5 Geophysical Survey Data (Electrical Prospecting), (29/41)

		South People Region Ethiopia Rift Valley Lakes Basin			South People Region Ethiopia Rift Valley Lakes Basin				
		No.	SPACING	RHO-A	No.	SPACING	RHO-A		
4	4.0000	1	1.5000	17.8000	1	1.5000	21.6000		
5	6.0000	2	2.1000	14.8000	2	2.1000	22.9000		
6	9.0000	3	3.0000	15.9000	3	3.0000	28.3000		
7	13.0000	4	4.0000	17.5000	4	4.0000	33.0000		
8	20.0000	5	6.0000	17.1000	5	6.0000	42.3000		
9	25.0000	6	9.0000	18.6000	6	9.0000	49.9000		
10	25.0000	7	13.0000	23.0000	7	13.0000	55.2000		
11	30.0000	8	20.0000	28.3000	8	20.0000	52.5000		
12	30.0000	9	25.0000	27.0000	9	25.0000	45.1000		
13	35.0000	10	30.0000	29.2000	10	25.0000	37.2000		
14	40.0000	11	30.0000	30.4000	11	30.0000	38.9000		
15	50.0000	12	40.0000	31.0000	12	30.0000	33.8000		
16	60.0000	13	35.0000	30.2000	13	35.0000	29.5000		
17	80.0000	14	50.0000	30.2000	14	40.0000	26.2000		
18	100.0000	15	60.0000	28.3000	15	50.0000	19.3000		
19	130.0000	16	80.0000	23.9000	16	60.0000	17.2000		
20	160.0000	17	100.0000	21.2000	17	80.0000	14.0000		
21	200.0000	18	130.0000	18.9000	18	100.0000	12.6000		
22	250.0000	19	160.0000	18.3000	19	130.0000	10.6000		
23	300.0000	20	200.0000	18.8000	20	160.0000	11.3000		
24	400.0000	21	250.0000	17.4000	21	200.0000	11.7000		
		22	300.0000	17.2000	22	200.0000	9.0500		
		23	350.0000	18.1000	23	250.0000	11.9000		
		24	400.0000	16.7000	24	250.0000	9.0100		
		DATASET: B7-9 NORTH: 669720.00				DATASET: B7-10 NORTH: 669680.00			
		EAST: 341850.00 ELEVATION: 1203.00				EAST: 342230.00 ELEVATION: 1203.00			
		(meters)				LAYER RESISTIVITY THICKNESS			
		1 7.63941E+00 7.79616E-01				1 1.42913E+01 3.03797E+00			
		2 1.44871E+01 1.25448E+01				2 8.66491E+00 2.14119E+00			
		3 7.01768E+01 7.03347E+00				3 6.02753E+01 1.28373E+01			
		4 1.20283E+01				4 1.67099E+01			
		B7-10 SCHL 1203.000 0.000 1				B7-10 SCHL 1157.000 0.000 1			
		342230.000 669680.000				630924.000			
		JICA				JICA			
		April,2010				April,2010			
		Atbaminch				Atbaminch			
		1				1			

Data 4.1.5 Geophysical Survey Data (Electrical Prospecting), (30/41)

DATASET: B8-1 NORTH: 630924.00
 EAST: 327372.00 ELEVATION: 1157.00
 LAYER RESISTIVITY THICKNESS
 (meters)

1 7.62097E+00 1.31735E+00
 2 2.83855E+01 1.48320E+01
 3 5.45254E+00 1.59413E+02
 4 1.29044E+02

B8-2 SCHL 1160.000 0.000 1
 327541.000 630500.000
 JICA
 April,2010
 Walesa
 South People Region Ethiopia
 Rift Valley Lakes Basin
 Sting R1

No. SPACING RHO-A
 1 1.5000 15.5000
 2 2.1000 17.2000
 3 3.0000 16.3000
 4 4.0000 18.0000
 5 6.0000 22.3000
 6 9.0000 22.7000
 7 13.0000 23.6000
 8 20.0000 21.8000
 9 25.0000 19.0000
 10 25.0000 18.7000
 11 30.0000 14.2000
 12 30.0000 14.5000
 13 35.0000 11.8000
 14 40.0000 9.3500
 15 50.0000 7.4000
 16 60.0000 5.9000
 17 80.0000 5.8200
 18 130.0000 6.8000
 19 160.0000 7.7700
 20 200.0000 8.4600

DATASET: B8-2 NORTH: 630500.00
 EAST: 327541.00 ELEVATION: 1160.00
 LAYER RESISTIVITY THICKNESS
 (meters)

1 1.36927E+01 3.24678E+00
 2 4.72432E+01 5.54672E+00
 3 3.01776E+00 3.68040E+01
 4 1.11807E+01

B8-3 SCHL 1160.000 0.000 1
 327620.000 530591.000
 JICA
 April,2010
 Walesa
 South People Region Ethiopia
 Rift Valley Lakes Basin
 Sting R1

No. SPACING RHO-A
 1 1.5000 13.4000
 2 2.1000 16.1000
 3 3.0000 20.1000
 4 4.0000 24.7000
 5 6.0000 30.2000
 6 9.0000 30.4000
 7 13.0000 25.0000
 8 20.0000 20.3000
 9 25.0000 18.8000
 10 25.0000 18.9000
 11 30.0000 14.9000
 12 30.0000 15.7000
 13 35.0000 13.2000

14 40.0000 10.9000
 15 50.0000 8.3300
 16 60.0000 7.4800
 17 80.0000 6.5000
 18 100.0000 6.1700
 19 130.0000 5.7500
 20 160.0000 5.9800
 21 200.0000 7.4200
 22 250.0000 7.0000
 23 300.0000 7.6000
 24 350.0000 8.3000
 25 500.0000 12.5000

DATASET: B8-3 NORTH: 530591.00
 EAST: 327620.00 ELEVATION: 1160.00
 LAYER RESISTIVITY THICKNESS
 (meters)

1 5.60700E+00 3.98578E-01
 2 3.83775E+01 9.56742E+00
 3 5.67192E+00 1.96653E+02
 4 4.47122E+01

B8-4 SCHL 1155.000 0.000 1
 327740.000 630664.000
 JICA
 April,2010
 Walesa
 South People Region Ethiopia
 Rift Valley Lakes Basin
 Sting R1

No. SPACING RHO-A
 1 1.5000 19.8000
 2 2.1000 17.7000
 3 3.0000 16.1000
 4 4.0000 16.6000
 5 6.0000 15.7000
 6 9.0000 14.2000
 7 13.0000 12.9000

Data 4.1.5 Geophysical Survey Data (Electrical Prospecting), (31/41)

8	20.0000	9.7800
9	25.0000	9.2000
10	25.0000	9.2300
11	30.0000	8.6000
12	30.0000	7.8500
13	35.0000	6.6000
14	40.0000	5.6900
15	50.0000	5.3000
16	60.0000	5.0000
17	80.0000	5.1000
18	100.0000	5.0000
19	130.0000	4.9000
20	200.0000	4.9800
21	400.0000	5.3000
22	500.0000	5.7000

DATASET: B8-4 NORTH: 630664.00
 EAST: 327740.00 ELEVATION: 1155.00
 LAYER RESISTIVITY THICKNESS
 (meters)

- 1 1.99492E+01 7.79672E-01
- 2 1.38314E+01 9.73317E+00
- 3 4.64113E+00 1.05424E+02
- 4 5.91566E+00

B8-5 SCHL 1150.000 0.000 1
 327884.000 630726.000
 JICA
 April,2010
 Walesa

South People Region Ethiopia		Sting R1
Rift Valley Lakes Basin		RHO-A
No.	SPACING	
1	1.5000	10.9000
2	2.1000	11.2000
3	3.0000	12.0000
4	4.0000	12.7000

5	6.0000	13.9000
6	9.0000	14.3000
7	13.0000	13.6000
8	20.0000	10.2000
9	25.0000	9.0900
10	25.0000	10.7000
11	30.0000	7.3000
12	30.0000	8.2800
13	35.0000	7.5000
14	40.0000	6.5200
15	50.0000	5.6500
16	60.0000	5.1400
17	80.0000	5.1000
18	100.0000	4.6600
19	130.0000	3.4600
20	200.0000	3.1400
21	300.0000	5.3000
22	350.0000	6.9600
23	400.0000	8.0500
24	500.0000	7.8000

DATASET: B8-5 NORTH: 630726.00
 EAST: 327884.00 ELEVATION: 1150.00
 LAYER RESISTIVITY THICKNESS
 (meters)

- 1 1.42474E+01 2.42030E+00
- 2 3.38657E+01 4.43523E+00
- 3 5.47639E+00 5.01862E+01
- 4 1.12800E+00 4.89818E+01
- 5 8.25499E+01

B8-6 SCHL 1154.000 0.000 1
 327374.000 630169.000
 JICA
 April,2010
 Walesa
 South People Region Ethiopia

Rift Valley Lakes Basin		Sting R1
No.		RHO-A
1	1.5000	14.7000
2	2.1000	15.4000
3	3.0000	19.3000
4	4.0000	23.6000
5	6.0000	31.0000
6	9.0000	33.7000
7	13.0000	26.3000
8	20.0000	18.7000
9	25.0000	16.5000
10	25.0000	17.8000
11	30.0000	16.6000
12	30.0000	15.7000
13	35.0000	15.3000
14	40.0000	15.0000
15	50.0000	14.2000
16	60.0000	12.0000
17	80.0000	10.5000
18	100.0000	10.5000
19	130.0000	10.3000
20	200.0000	8.6000
21	200.0000	9.0000
22	250.0000	7.1000
23	350.0000	5.6000
24	500.0000	7.1000

DATASET: B8-6 NORTH: 630169.00
 EAST: 327374.00 ELEVATION: 1154.00
 LAYER RESISTIVITY THICKNESS
 (meters)

- 1 1.25153E+01 1.38090E+00
- 2 2.30786E+02 8.68189E-01
- 3 1.26821E+01 1.10960E+02
- 4 1.34282E+00 8.71646E+01
- 5 1.35906E+02

Data 4.1.5 Geophysical Survey Data (Electrical Prospecting), (32/41)

B8-7	SCHL	1145.000	0.000	1					
327654.000	630123.000								
JICA									
April,2010									
Walesa									
South People Region Ethiopia									
Rift Valley Lakes Basin									
No.	SPACING	RHO-A		Sting R1					
1	1.5000	10.2000							
2	2.1000	10.4000							
3	3.0000	11.8000							
4	4.0000	12.9000							
5	6.0000	12.9000							
6	9.0000	13.5000							
7	13.0000	12.6000							
8	20.0000	10.0000							
9	25.0000	8.1000							
10	25.0000	8.8000							
11	30.0000	7.3000							
12	30.0000	7.5400							
13	35.0000	6.7300							
14	40.0000	6.1800							
15	50.0000	5.4200							
16	60.0000	5.4000							
17	80.0000	5.0000							
18	100.0000	4.6500							
19	130.0000	4.6700							
20	160.0000	5.2000							
21	200.0000	5.9100							
22	200.0000	6.2200							
23	250.0000	5.8000							
24	250.0000	6.5000							
25	400.0000	7.5000							
26	500.0000	8.2000							
DATASET: B8-7					NORTH:	630123.00			
EAST:					327654.00	ELEVATION:	1145.00		

B8-8	SCHL	1144.000	0.000	1					
328071.000	630050.000								
JICA									
April,2010									
Walesa									
South People Region Ethiopia									
Rift Valley Lakes Basin									
No.	SPACING	RHO-A		Sting R1					
1	1.5000	8.7700							
2	2.1000	9.9600							
3	3.0000	11.2000							
4	4.0000	12.9000							
5	6.0000	13.8000							
6	9.0000	13.0000							
7	13.0000	11.0000							
8	20.0000	7.7000							
9	25.0000	6.9000							
10	25.0000	6.2700							
11	30.0000	5.2200							
12	35.0000	4.6700							
13	40.0000	4.3600							
14	50.0000	4.3700							
15	60.0000	4.4000							
16	80.0000	5.0400							
17	100.0000	4.5000							
18	130.0000	5.3000							
19	160.0000	6.8000							
20	250.0000	7.6000							
21	300.0000	7.4000							
22	350.0000	8.2000							

B8-9	SCHL	1145.000	0.000	1					
327750.000	630264.000								
JICA									
April,2010									
Walesa									
South People Region Ethiopia									
Rift Valley Lakes Basin									
No.	SPACING	RHO-A		Sting R1					
1	1.5000	37.8000							
2	2.1000	36.5000							
3	3.0000	34.7000							
4	4.0000	28.5000							
5	6.0000	22.9000							
6	9.0000	17.2000							
7	13.0000	15.2000							
8	20.0000	12.0000							
9	25.0000	12.1000							
10	25.0000	12.2000							
11	30.0000	9.9000							
12	30.0000	10.0000							
13	35.0000	9.0300							
14	40.0000	7.6800							
15	50.0000	6.4400							
16	60.0000	5.5600							

Data 4.1.5 Geophysical Survey Data (Electrical Prospecting), (33/41)

17	80.0000	5.5700
18	100.0000	6.0000
19	130.0000	7.4500
20	160.0000	7.4000
21	200.0000	7.0000
22	250.0000	6.9000
23	300.0000	6.9000
24	350.0000	7.2800
25	400.0000	7.8000
26	500.0000	9.5000

DATASET: B8-9 NORTH: 630264.00
EAST: 327750.00 ELEVATION: 1145.00

LAYER RESISTIVITY THICKNESS		
(meters)		
1	4.08950E+01	2.01403E+00
2	1.55394E+01	1.52618E+01
3	2.41296E+00	2.11360E+01
4	2.01144E+01	3.71825E+01
5	2.57615E+00	9.90053E+01
6	4.93205E+01	

B8-10 SCHL 1145.000 0.000 1
328010.000 630351.000

JICA
April,2010
Walesa

South People Region Ethiopia
Rift Valley Lakes Basin

No. SPACING RHO-A

1	1.5000	12.9000
2	2.1000	12.3000
3	3.0000	14.7000
4	4.0000	15.2000
5	6.0000	16.3000
6	9.0000	16.6000
7	13.0000	15.7000

8	20.0000	13.5000
9	25.0000	11.5000
10	25.0000	11.1000
11	30.0000	10.7000
12	30.0000	9.1700
13	35.0000	7.6700
14	40.0000	6.7500
15	50.0000	5.7500
16	60.0000	5.2500
17	80.0000	5.3800
18	100.0000	6.3000
19	160.0000	6.6000
20	300.0000	6.6000
21	350.0000	6.8000
22	400.0000	7.9000
23	500.0000	9.4000

DATASET: B8-10 NORTH: 630351.00
EAST: 328010.00 ELEVATION: 1145.00

LAYER RESISTIVITY THICKNESS		
(meters)		
1	9.56298E+00	1.09359E+00
2	1.46503E+01	1.36135E+01
3	1.90719E+00	1.62270E+01
4	2.41025E+01	2.70232E+01
5	1.57236E+00	6.74523E+01
6	1.83858E+02	

RVS BH-9

B9-1 SCHL 1200.000 0.000 1
330444.000 596847.000

JICA
May,2010
Beresia
South People Region Ethiopia
Rift Valley Lakes Basin

String R1

No.	SPACING	RHO-A
1	1.5000	5.7800
2	2.1000	6.5700
3	3.0000	6.7100
4	4.0000	6.6100
5	6.0000	6.4300
6	9.0000	6.4400
7	13.0000	6.6000
8	20.0000	7.7000
9	25.0000	8.8900
10	25.0000	8.6100
11	30.0000	10.8000
12	30.0000	9.8100
13	35.0000	11.0000
14	40.0000	12.2000
15	50.0000	14.4000
16	60.0000	17.1000
17	80.0000	21.1000
18	100.0000	24.3000
19	130.0000	30.2000
20	160.0000	31.8000
21	200.0000	33.3000
22	200.0000	30.6000
23	250.0000	37.5000
24	250.0000	33.4000
25	300.0000	35.0000
26	350.0000	36.0000
27	400.0000	35.8000
28	500.0000	37.6000

DATASET: B9-1 NORTH: 596847.00
EAST: 330444.00 ELEVATION: 1200.00

LAYER RESISTIVITY THICKNESS
(meters)

1	4.64268E+00	7.16355E+00
2	1.71477E+00	3.46268E+00
3	1.09368E+02	1.87955E+01

Data 4.1.5 Geophysical Survey Data (Electrical Prospecting), (34/41)

B9-2		SCHL		1196.000		0.000		1		
330474.000		597037.000						Sting R1		
JICA										
May,2010										
Beres										
South People Region Ethiopia										
Rift Valley Lakes Basin										
No.	SPACING	RHO-A								
1	1.5000	10.9000								
2	2.1000	9.8600								
3	3.0000	11.3000								
4	4.0000	12.5000								
5	6.0000	13.1000								
6	9.0000	15.4000								
7	13.0000	19.1000								
8	20.0000	23.0000								
9	25.0000	23.0000								
10	25.0000	22.6000								
11	30.0000	25.4000								
12	30.0000	24.2000								
13	35.0000	25.9000								
14	40.0000	27.2000								
15	50.0000	28.8000								
16	60.0000	31.1000								
17	80.0000	34.9000								
18	100.0000	38.2000								
19	130.0000	37.8000								
20	200.0000	38.2000								
21	200.0000	36.3000								
22	250.0000	35.0000								
23	250.0000	33.4000								
24	300.0000	33.7000								
25	350.0000	33.6000								
26	400.0000	35.8000								

B9-3		SCHL		1181.000		0.000		1		
330545.000		597164.000						Sting R1		
JICA										
May,2010										
Beres										
South People Region Ethiopia										
Rift Valley Lakes Basin										
No.	SPACING	RHO-A								
1	1.5000	31.8000								
2	2.1000	31.3000								
3	3.0000	43.2000								
4	4.0000	48.4000								
5	6.0000	43.0000								
6	9.0000	33.6000								
7	13.0000	35.4000								
8	25.0000	32.5000								
9	30.0000	35.5000								
10	35.0000	37.7000								
11	40.0000	40.2000								
12	50.0000	46.6000								
13	60.0000	44.3000								
14	80.0000	48.8000								
15	100.0000	43.4000								
16	130.0000	36.5000								
17	160.0000	42.5000								
18	200.0000	41.1000								
19	200.0000	40.8000								
20	250.0000	46.2000								

B9-4		SCHL		1187.000		0.000		1		
330600.000		597249.000						Sting R1		
JICA										
May,2010										
Beres										
South People Region Ethiopia										
Rift Valley Lakes Basin										
No.	SPACING	RHO-A								
1	1.5000	13.8000								
2	2.1000	13.5000								
3	3.0000	18.5000								
4	4.0000	22.4000								
5	6.0000	25.1000								
6	9.0000	26.0000								
7	13.0000	28.5000								
8	20.0000	33.1000								
9	25.0000	33.0000								
10	25.0000	31.7000								
11	30.0000	34.2000								
12	30.0000	35.1000								

B9-3		SCHL		1181.000		0.000		1		
330545.000		597164.000						Sting R1		
JICA										
May,2010										
Beres										
South People Region Ethiopia										
Rift Valley Lakes Basin										
No.	SPACING	RHO-A								
1	1.5000	31.8000								
2	2.1000	31.3000								
3	3.0000	43.2000								
4	4.0000	48.4000								
5	6.0000	43.0000								
6	9.0000	33.6000								
7	13.0000	35.4000								
8	25.0000	32.5000								
9	30.0000	35.5000								
10	35.0000	37.7000								
11	40.0000	40.2000								
12	50.0000	46.6000								
13	60.0000	44.3000								
14	80.0000	48.8000								
15	100.0000	43.4000								
16	130.0000	36.5000								
17	160.0000	42.5000								
18	200.0000	41.1000								
19	200.0000	40.8000								
20	250.0000	46.2000								

Data 4.1.5 Geophysical Survey Data (Electrical Prospecting), (35/41)

13	35.0000	33.8000	5	6.0000	6.5000	South People Region Ethiopia	Sting R1
14	40.0000	41.1000	6	9.0000	6.2000	Rift Valley Lakes Basin	RHO-A
15	50.0000	41.8000	7	13.0000	8.3000	No.	SPACING
16	60.0000	43.3000	8	20.0000	10.3000	1	1.5000
17	80.0000	46.4000	9	25.0000	9.6000	2	2.1000
18	100.0000	45.6000	10	30.0000	13.0000	3	3.0000
19	130.0000	45.1000	11	30.0000	10.7000	4	4.0000
20	160.0000	45.3000	12	35.0000	12.2000	5	6.0000
21	200.0000	46.3000	13	40.0000	13.7000	6	9.0000
22	200.0000	37.3000	14	50.0000	15.6000	7	13.0000
23	250.0000	37.3000	15	60.0000	17.6000	8	20.0000
24	300.0000	35.1000	16	80.0000	20.2000	9	25.0000
25	350.0000	34.2000	17	100.0000	22.0000	10	25.0000
26	400.0000	32.1000	18	130.0000	25.2000	11	30.0000
27	500.0000	30.1000	19	160.0000	26.4000	12	30.0000
			20	200.0000	28.3000	13	35.0000
			21	200.0000	26.4000	14	40.0000
			22	250.0000	30.7000	15	50.0000
			23	250.0000	28.0000	16	60.0000
			24	300.0000	31.6000	17	80.0000
			25	350.0000	27.9000	18	100.0000
			26	400.0000	31.7000	19	130.0000
			27	500.0000	26.6000	20	160.0000
						21	200.0000
						22	200.0000
						23	250.0000
						24	300.0000
						25	350.0000
						26	400.0000
						27	500.0000
DATASET: B9-4 NORTH: 597249.00 EAST: 330600.00 ELEVATION: 1187.00 (meters) LAYER RESISTIVITY THICKNESS 1 8.07040E+00 9.05918E-01 2 2.44476E+01 1.30939E+01 3 4.14810E+01 1.35400E+02 4 2.53122E+01							
B9-5 SCHL 1202.000 0.000 1 1 330314.000 596946.000 JICA May,2010 Beresa							
DATASET: B9-5 NORTH: 596946.00 EAST: 330314.00 ELEVATION: 1202.00 (meters) LAYER RESISTIVITY THICKNESS 1 3.36824E+01 2.74335E-01 2 4.07214E+00 1.02009E+01 3 3.19192E+01							
B9-6 SCHL 1202.000 0.000 1 1 330662.000 596731.000 JICA May,2010 Beresa							
DATASET: B9-6 NORTH: 596731.00 EAST: 330662.00 ELEVATION: 1202.00 (meters) LAYER RESISTIVITY THICKNESS 1 7.37469E+00 2.87910E+00 2 3.97478E+00 1.47979E+01							

Data 4.1.5 Geophysical Survey Data (Electrical Prospecting), (36/41)

330823.000		330823.00 ELEVATION: 1200.00		330823.00 ELEVATION: 1200.00	
JICA		EAST: 5.50733E+01		EAST: 5.50733E+01	
May,2010		NORTH: 596853.00		NORTH: 596853.00	
B9-7		SCHL 1200.000		SCHL 1205.000	
Rift Valley Lakes Basin		596853.000		596750.000	
RHO-A		0.000		0.000	
SPACING		1		1	
No.		1		1	
1		1.5000		1.5000	
2		2.1000		2.1000	
3		3.0000		3.0000	
4		4.0000		4.0000	
5		6.0000		6.0000	
6		9.0000		9.0000	
7		13.0000		13.0000	
8		20.0000		20.0000	
9		25.0000		25.0000	
10		25.0000		25.0000	
11		30.0000		30.0000	
12		30.0000		30.0000	
13		35.0000		35.0000	
14		40.0000		40.0000	
15		50.0000		50.0000	
16		60.0000		60.0000	
17		80.0000		80.0000	
18		100.0000		100.0000	
19		130.0000		130.0000	
20		160.0000		160.0000	
21		200.0000		200.0000	
22		250.0000		250.0000	
23		300.0000		300.0000	
24		350.0000		350.0000	
B9-8		SCHL 1205.000		SCHL 1199.000	
Rift Valley Lakes Basin		596750.000		596923.000	
RHO-A		0.000		0.000	
SPACING		1		1	
No.		1		1	
1		1.5000		1.5000	
2		2.1000		2.1000	
3		3.0000		3.0000	
4		4.0000		4.0000	
5		6.0000		6.0000	
6		9.0000		9.0000	
7		13.0000		13.0000	
8		20.0000		20.0000	
9		25.0000		25.0000	
10		25.0000		25.0000	
11		30.0000		30.0000	
12		30.0000		30.0000	
13		35.0000		35.0000	
14		40.0000		40.0000	
15		50.0000		50.0000	
16		60.0000		60.0000	
17		80.0000		80.0000	
18		100.0000		100.0000	
19		130.0000		130.0000	
20		160.0000		160.0000	
21		200.0000		200.0000	
22		250.0000		250.0000	
23		300.0000		300.0000	
24		350.0000		350.0000	

Data 4.1.5 Geophysical Survey Data (Electrical Prospecting), (37/41)

12	30.0000	13.1000
13	35.0000	15.4000
14	40.0000	17.1000
15	50.0000	20.0000
16	60.0000	22.5000
17	80.0000	25.3000
18	100.0000	23.8000
19	130.0000	33.2000
20	160.0000	30.5000
21	200.0000	32.2000
22	200.0000	34.1000
23	250.0000	30.9000
24	250.0000	33.3000
25	300.0000	34.3000
26	350.0000	30.8000
27	400.0000	35.1000
28	500.0000	29.8000

DATASET: B9-9 NORTH: 596923.00

EAST: 330674.00 ELEVATION: 1199.00

(meters)
LAYER RESISTIVITY THICKNESS

1	5.93759E+00	2.36313E+00
2	2.45446E+01	2.00900E+00
3	3.63962E+00	4.75077E+00
4	1.32529E+02	2.25141E+01
5	2.72800E+01	

B9-10	SCHL	1200.000	0.000	1
330723.000		597073.000		

JICA
May,2010

Bersa
South People Region Ethiopia
Rift Valley Lakes Basin

No. SPACING RHO-A

1	1.5000	8.1100
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RVS BH-10				
B10-1	SCHL	890.000	0.000	1
348801.000		566688.000		
JICA				
May,2010				
Birindar				1
Oromia Region Ethiopia				
Rift Valley Lakes Basin				Sting R1
No.	SPACING		RHO-A	
1	1.5000	13.4000		
2	2.1000	18.3000		
3	3.0000	22.1000		
4	4.0000	25.2000		
5	6.0000	22.7000		
6	9.0000	15.8000		
7	13.0000	10.9000		
8	20.0000	6.0000		
9	25.0000	8.4000		
10	25.0000	8.1000		
11	30.0000	9.9000		
12	30.0000	8.3000		
13	35.0000	9.1000		
14	40.0000	9.6000		
15	50.0000	9.5000		
16	60.0000	11.0000		
17	80.0000	12.9000		
18	100.0000	14.0000		
19	130.0000	17.0000		
20	160.0000	14.0000		
21	200.0000	10.1000		
22	200.0000	12.1000		
23	250.0000	11.5000		
24	250.0000	13.0000		
25	300.0000	15.1000		
26	350.0000	13.0000		
27	400.0000	10.0000		
28	500.0000	10.5000		

DATASET: B9-10 NORTH: 597073.00

EAST: 330723.00 ELEVATION: 1200.00

(meters)
LAYER RESISTIVITY THICKNESS

1	5.91281E+00	5.54929E+00
2	1.23691E+02	2.10204E+01
3	2.73611E+01	

Data 4.1.5 Geophysical Survey Data (Electrical Prospecting), (38/41)

DATASET: B10-1 NORTH: 566688.00 EAST: 348801.00 ELEVATION: 890.00 LAYER RESISTIVITY THICKNESS (meters)		DATASET: B10-2 NORTH: 566601.00 EAST: 349030.00 ELEVATION: 887.00 LAYER RESISTIVITY THICKNESS (meters)		DATASET: B10-3 NORTH: 566526.00 EAST: 349214.00 ELEVATION: 887.00 LAYER RESISTIVITY THICKNESS (meters)	
1	2.77700E+00	1.97604E-01	1	3.68208E+01	2.42435E-01
2	8.58148E+01	1.35896E+00	2	2.78985E+00	6.88141E+00
3	2.47894E+00	5.81875E+00	3	5.20139E+00	1.51916E+02
4	6.78084E+01	2.74663E+01	4	6.35792E+00	
5	4.95552E+00	9.78174E+01			
6	1.39003E+01				
B10-2 SCHL 887.000 0.000 1 349030.000 566601.000 JICA May,2010		B10-3 SCHL 887.000 0.000 1 349214.000 566526.000 JICA May,2010		B10-4 SCHL 887.000 0.000 1 349420.000 566443.000 JICA May,2010	
Birindar Oromia Region Ethiopia Rift Valley Lakes Basin No. SPACING RHO-A 1 1.5000 4.3300 2 2.1000 3.6400 3 3.0000 3.5500 4 4.0000 3.8900 5 6.0000 3.8000 6 9.0000 4.6200 7 13.0000 4.5100 8 20.0000 5.4000 9 25.0000 4.7000 10 25.0000 4.4000 11 30.0000 5.4600 12 30.0000 4.4200 13 35.0000 4.6000 14 40.0000 4.7800 15 50.0000 4.7000 16 60.0000 4.6400 17 80.0000 5.4000		Birindar Oromia Region Ethiopia Rift Valley Lakes Basin No. SPACING RHO-A 1 1.5000 5.9000 2 2.1000 4.1000 3 3.0000 3.7000 4 4.0000 3.8600 5 6.0000 3.8200 6 9.0000 3.8300 7 13.0000 4.1000 8 20.0000 5.2100 9 25.0000 5.1000 10 25.0000 4.3500 11 30.0000 6.0300 12 30.0000 4.8600 13 35.0000 4.9900		Birindar Oromia Region Ethiopia Rift Valley Lakes Basin No. SPACING RHO-A 1 1.71168E+01 3.49299E-01 2 1.41908E+00 9.93156E+00 3 7.67713E+00 1.07241E+01 4 1.27724E+00 2.86059E+01 5 7.20709E+01	

Data 4.1.5 Geophysical Survey Data (Electrical Prospecting), (39/41)

B10-6		SCHL		892.000		0.000		1	
348611.000		566764.000							
JICA									
May,2010									
Birindar								1	
Oromia Region Ethiopia								Siting R1	
Rift Valley Lakes Basin								RHO-A	
No.	SPACING								
1	1.5000	19.7000							
2	2.1000	22.2000							
3	3.0000	25.9000							
4	4.0000	31.4000							
5	6.0000	33.8000							
6	9.0000	30.2000							
7	13.0000	38.9000							
8	20.0000	40.1000							
9	25.0000	41.9000							
10	25.0000	40.8000							
11	30.0000	41.2000							
12	30.0000	41.0000							
13	35.0000	40.2000							
14	40.0000	39.5000							
15	50.0000	37.2000							
16	60.0000	35.2000							
17	80.0000	29.2000							
18	100.0000	26.8000							
19	130.0000	26.1000							
20	160.0000	22.2000							
21	200.0000	20.1000							
22	200.0000	17.9000							
23	250.0000	18.6000							
24	300.0000	16.3000							
25	350.0000	18.2000							

B10-5		SCHL		887.000		0.000		1	
349678.000		566343.000							
JICA									
May,2010									
Birindar								1	
Oromia Region Ethiopia								Siting R1	
Rift Valley Lakes Basin								RHO-A	
No.	SPACING								
1	1.5000	9.4000							
2	2.1000	11.4000							
3	3.0000	10.8000							
4	4.0000	10.5000							
5	6.0000	5.9000							
6	9.0000	3.3000							
7	13.0000	2.6000							
8	20.0000	2.5500							
9	25.0000	2.4000							
10	25.0000	3.5600							
11	30.0000	2.5000							
12	30.0000	3.9100							
13	35.0000	4.2400							
14	40.0000	4.5100							
15	50.0000	5.1000							
16	60.0000	5.3000							
17	80.0000	4.7000							
18	100.0000	5.3000							
19	130.0000	6.1500							
20	160.0000	7.1000							
21	200.0000	8.5000							
22	200.0000	5.9800							
23	250.0000	9.6000							
24	250.0000	6.7000							
25	300.0000	8.5000							
26	350.0000	7.9600							
27	400.0000	8.6000							

DATASET: B10-4 NORTH: 566443.00
 EAST: 349420.00 ELEVATION: 887.00
 LAYER RESISTIVITY THICKNESS
 (meters)

1	7.11996E+00	5.28612E+00
2	3.02412E+00	9.26628E+00
3	9.90495E+00	1.82033E+01
4	2.81744E+00	2.63109E+01
5	9.60071E+00	

DATASET: B10-5 NORTH: 566343.00
 EAST: 349678.00 ELEVATION: 887.00
 LAYER RESISTIVITY THICKNESS
 (meters)

1	8.32162E+00	6.00808E-01
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Data 4.1.5 Geophysical Survey Data (Electrical Prospecting), (40/41)

26 400.0000 19.3000
27 500.0000 19.6000

DATASET: B10-6 NORTH: 566764.00
EAST: 348611.00 ELEVATION: 892.00

LAYER RESISTIVITY THICKNESS
(meters)

1	1.49773E+01	1.15842E+00
2	3.69130E+01	4.20429E+01
3	1.39505E+01	1.16899E+02
4	2.30562E+01	

B10-7 SCHL 887.000 0.000 1
349826.000 566285.000

JICA
May,2010

Birindar
Oromia Region Ethiopia
Rift Valley Lakes Basin
Sting R1

18 130.0000 3.9000
19 160.0000 4.1000
20 200.0000 4.3000
21 200.0000 5.4000
22 250.0000 6.2000
23 350.0000 8.3000
24 400.0000 11.8000
25 500.0000 10.0000

DATASET: B10-7 NORTH: 566285.00
EAST: 349826.00 ELEVATION: 887.00

LAYER RESISTIVITY THICKNESS
(meters)

1	1.24713E+01	3.00684E+00
2	2.73368E+00	3.55120E+00
3	7.94648E+00	4.47780E+01
4	1.87245E+00	5.60843E+01
5	6.74475E+01	

B10-8 SCHL 887.000 0.000 1
349915.000 566249.000

JICA
May,2010

Birindar
Oromia Region Ethiopia
Rift Valley Lakes Basin
Sting R1

11 30.0000 5.2000
12 30.0000 4.9000
13 35.0000 5.3000
14 40.0000 5.5000
15 50.0000 4.9000
16 60.0000 3.8000
17 80.0000 4.4000
18 100.0000 4.3300
19 200.0000 4.9000
20 250.0000 4.7500
21 300.0000 5.2000
22 350.0000 9.6000
23 400.0000 12.0000

DATASET: B10-8 NORTH: 566249.00
EAST: 349915.00 ELEVATION: 887.00

LAYER RESISTIVITY THICKNESS
(meters)

1	1.43594E+01	3.06716E+00
2	1.42244E+00	3.54161E+00
3	7.81542E+00	1.98878E+01
4	2.55606E+00	1.00021E+02
5	1.00968E+03	

B10-9 SCHL 887.000 0.000 1
350055.000 566191.000

JICA
May,2010

Birindar
Oromia Region Ethiopia
Rift Valley Lakes Basin
Sting R1

No. SPACING RHO-A

1	1.5000	10.1000
2	2.1000	11.0000
3	3.0000	11.8000
4	4.0000	10.2000
5	6.0000	7.1000
6	9.0000	5.6000
7	13.0000	4.8000
8	20.0000	6.0000
9	25.0000	6.0000
10	30.0000	5.8000
11	30.0000	4.9600
12	35.0000	4.9000
13	40.0000	4.8000
14	50.0000	5.1000
15	60.0000	5.3000
16	80.0000	5.3000
17	100.0000	5.2000

No. SPACING RHO-A

1	1.5000	12.9000
2	2.1000	15.7000
3	3.0000	15.9000
4	4.0000	12.9000
5	6.0000	8.1000
6	9.0000	5.2000
7	13.0000	4.7000
8	20.0000	4.4000
9	25.0000	4.3000
10	25.0000	4.1000

No. SPACING RHO-A

1	1.5000	5.7000
2	2.1000	5.4000
3	3.0000	4.7000
4	4.0000	4.6000
5	6.0000	4.4000

Data 4.1.5 Geophysical Survey Data (Electrical Prospecting), (41/41)

		Rift Valley Lakes Basin		Sting R1	
		No.	SPACING	RHO-A	
6	9.0000	1	1.5000	12.9000	
7	13.0000	2	2.1000	14.4000	
8	20.0000	3	3.0000	14.8000	
9	25.0000	4	4.0000	15.9000	
10	30.0000	5	6.0000	13.1000	
11	30.0000	6	9.0000	11.6000	
12	35.0000	7	13.0000	9.8000	
13	40.0000	8	20.0000	7.0000	
14	50.0000	9	25.0000	7.3000	
15	60.0000	10	25.0000	7.7000	
16	80.0000	11	30.0000	6.0000	
17	100.0000	12	30.0000	7.0000	
18	200.0000	13	35.0000	7.1000	
19	200.0000	14	40.0000	7.0000	
20	250.0000	15	50.0000	6.7000	
21	250.0000	16	60.0000	6.7000	
22	300.0000	17	80.0000	5.6000	
23	350.0000	18	100.0000	4.7000	
24	400.0000	19	130.0000	4.5000	
25	500.0000	20	160.0000	5.0000	
EAST: 350055.00 ELEVATION: 887.00		21	200.0000	5.3000	
(meters)		22	200.0000	4.3000	
DATASET: B10-9 NORTH: 566191.00		23	250.0000	6.1000	
EAST: 350055.00 ELEVATION: 887.00		24	300.0000	5.1000	
(meters)		25	350.0000	6.2000	
DATASET: B10-10 NORTH: 566157.00		26	400.0000	9.6000	
EAST: 350148.00 ELEVATION: 887.00		27	500.0000	9.0000	
(meters)		DATASET: B10-10 NORTH: 566157.00		EAST: 350148.00 ELEVATION: 887.00	
B10-10 SCHL 887.000 0.000 1		LAYER RESISTIVITY THICKNESS		LAYER RESISTIVITY THICKNESS	
350148.000 566157.000		(meters)		(meters)	
JICA		1	3.88482E+00	5.06377E+00	1
May,2010		2	9.69262E-01	6.08806E+00	
Birindar		3	1.06268E+01	1.93977E+01	
Oromia Region Ethiopia		4	2.24998E+00	1.26393E+02	
		5	4.54939E+01		

Data 4.2.1 Field Survey Photos of TEM Survey (1/2)



TEM instrument kept with EWTEC



Preparation of TEM (Tora area)



Measurement of a position of a transmitting loop (BH9N)



Set up of loop (BH10N)



Induction coil installation (BH6)



Electric-magnetic measurement (BH3)



Transmitter and generator (Tora area)



Electric-magnetic measurement (Tora area)

Data 4.2.1 Field Survey Photos of TEM Survey (2/2)



Training of the EWTEC underground water course (BH6)



Guide plate of WS



Lecture scenery (WS)



Lecture scenery (WS)



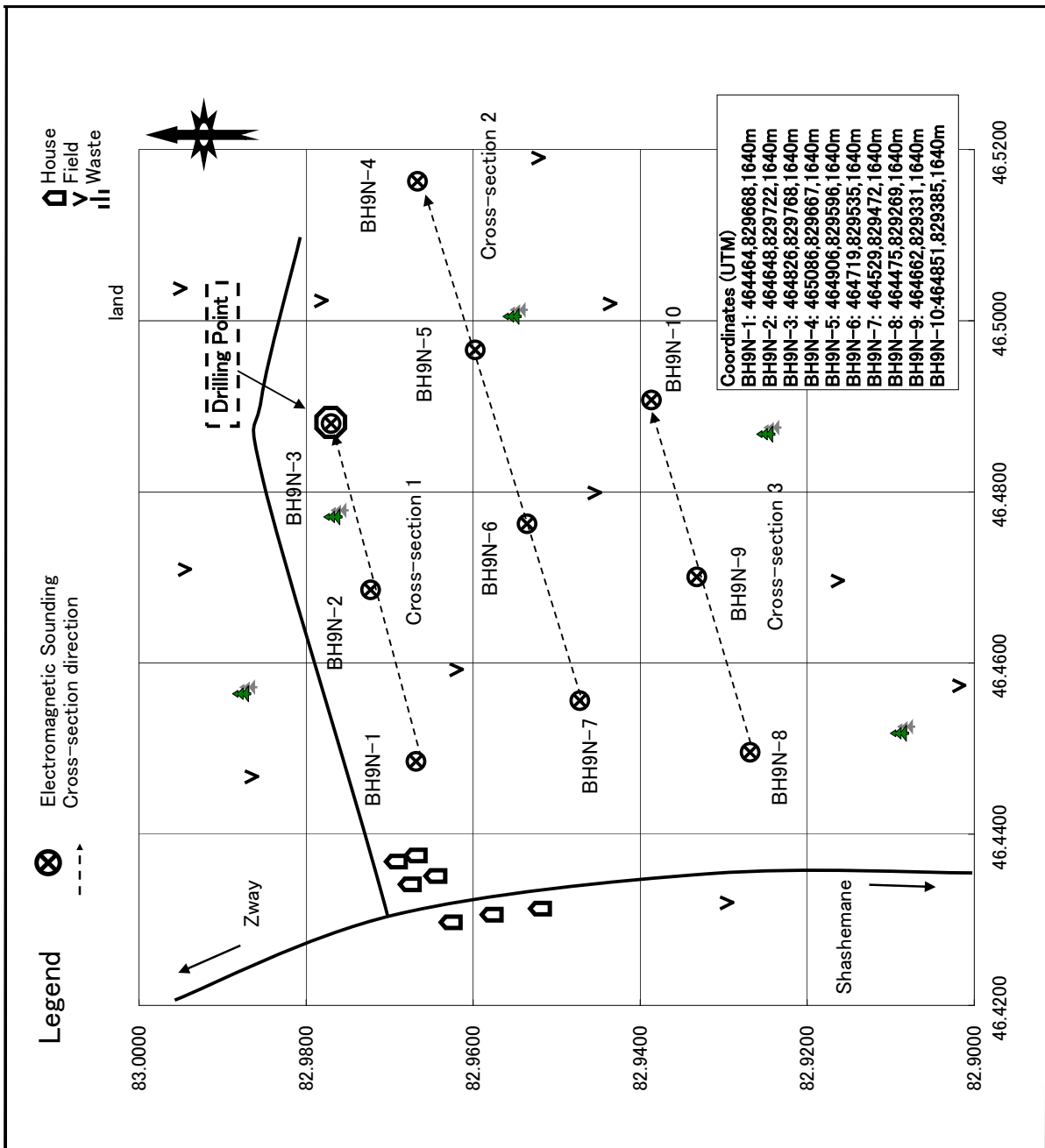
Practical training of TEM (WS)



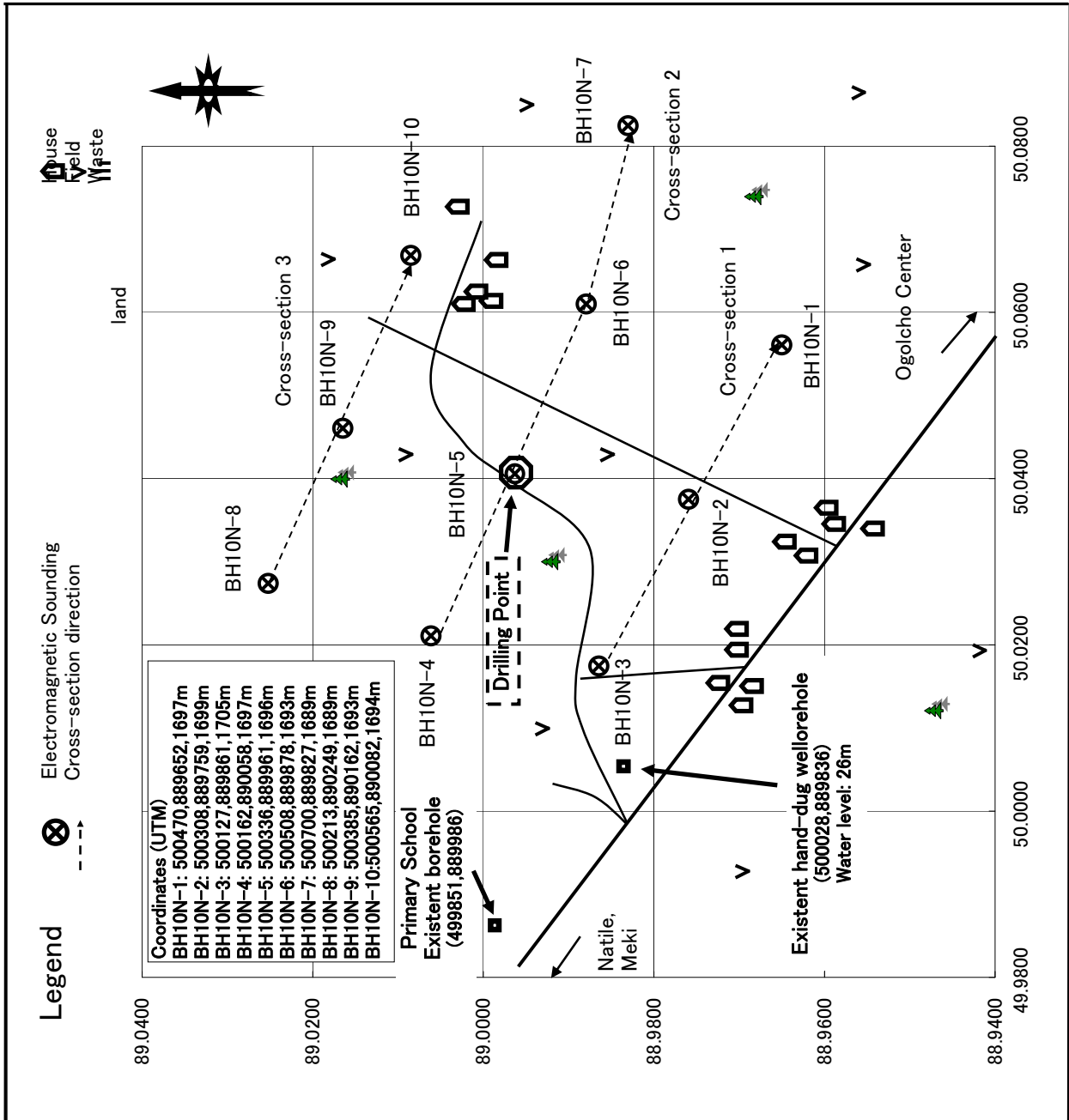
Practical training of TEM (WS)



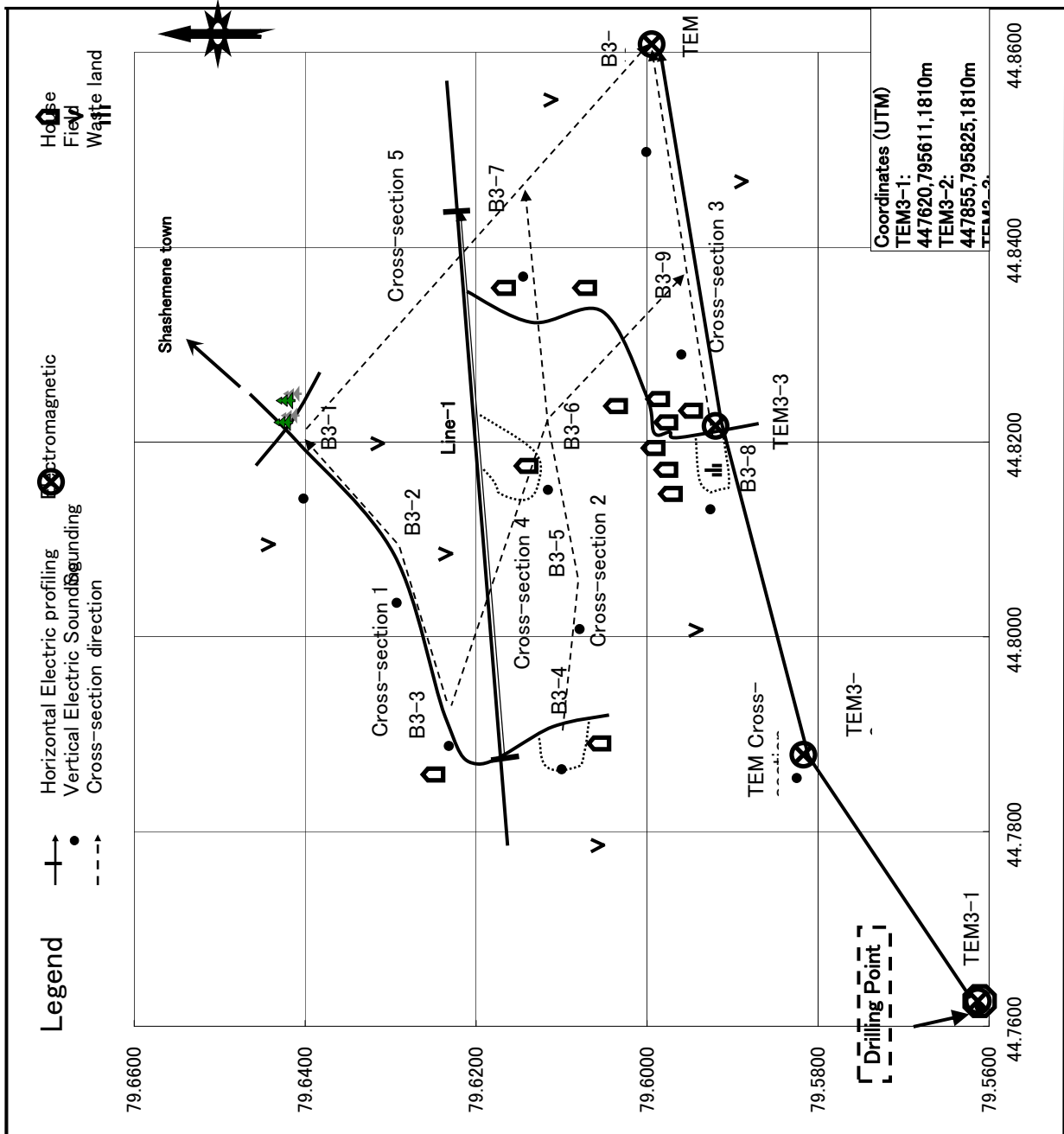
Training of the data analysis (WS)



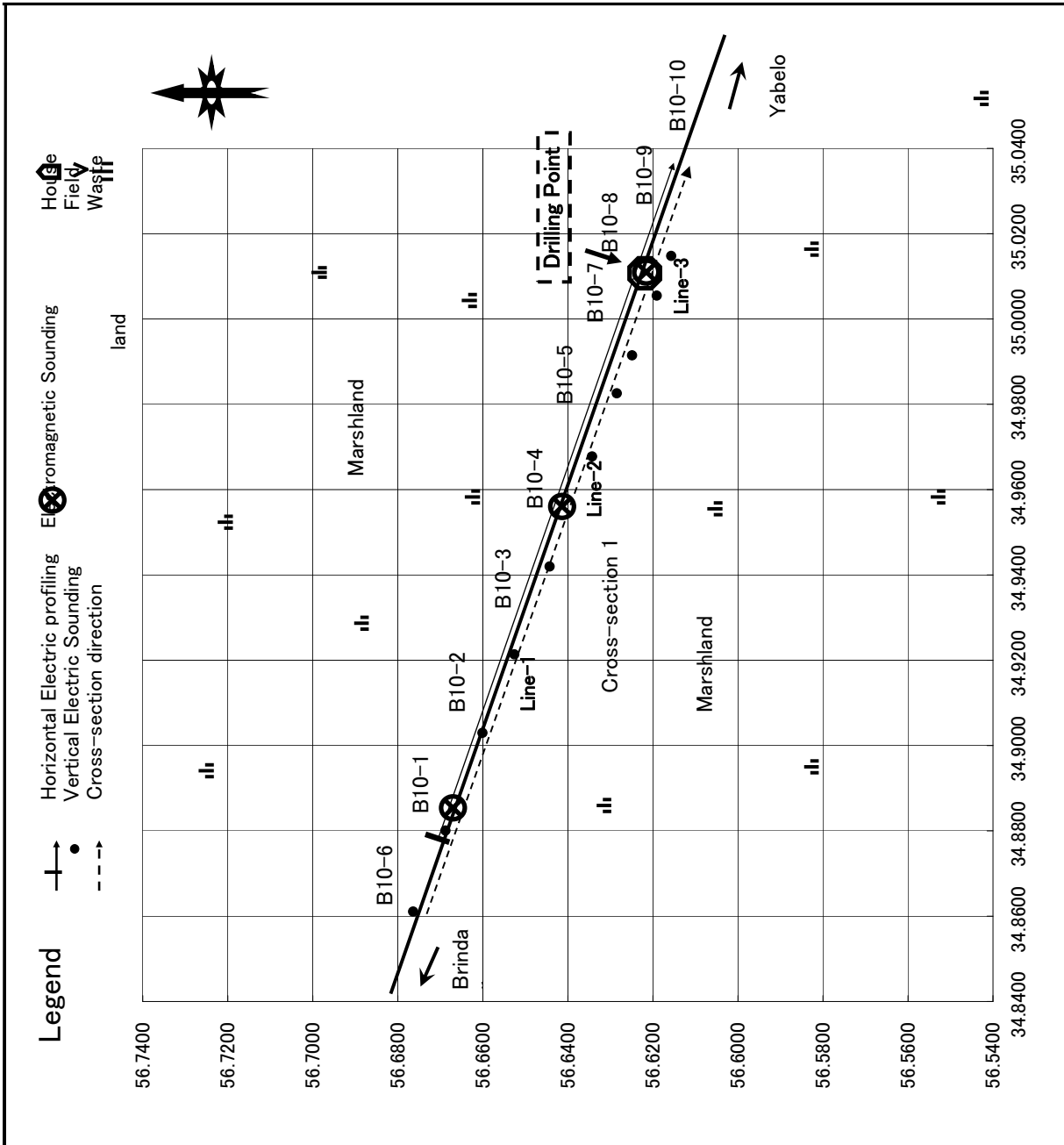
Data 4.2.2 Locations of TEM Survey Points and Lines (RVS BH-9N : Hadda Bosso/Dole)



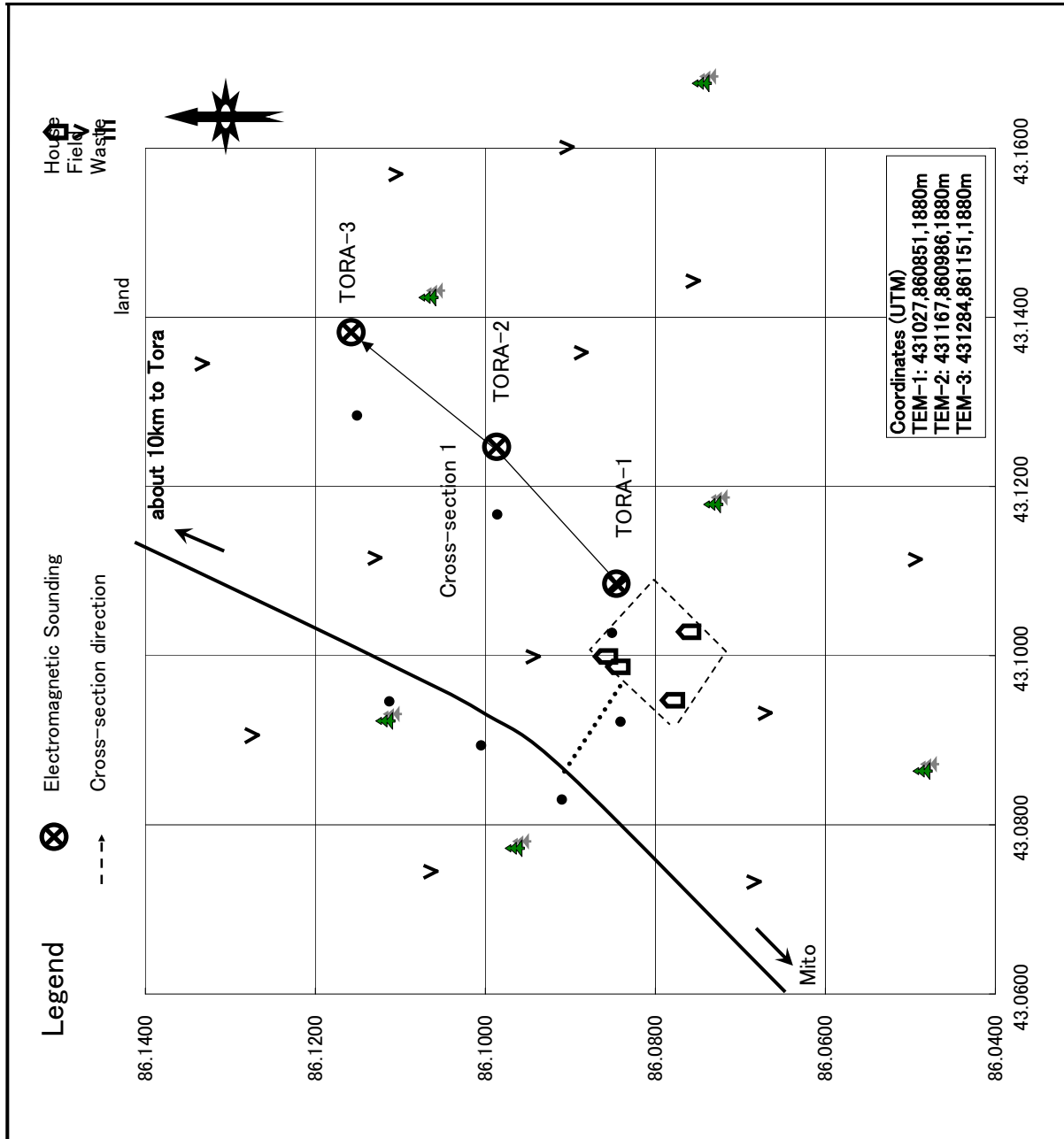
Data 4.2.2 Locations of TEM Survey Points and Lines (RVS BH-10N : Ubo Bericca/Ogolcho)



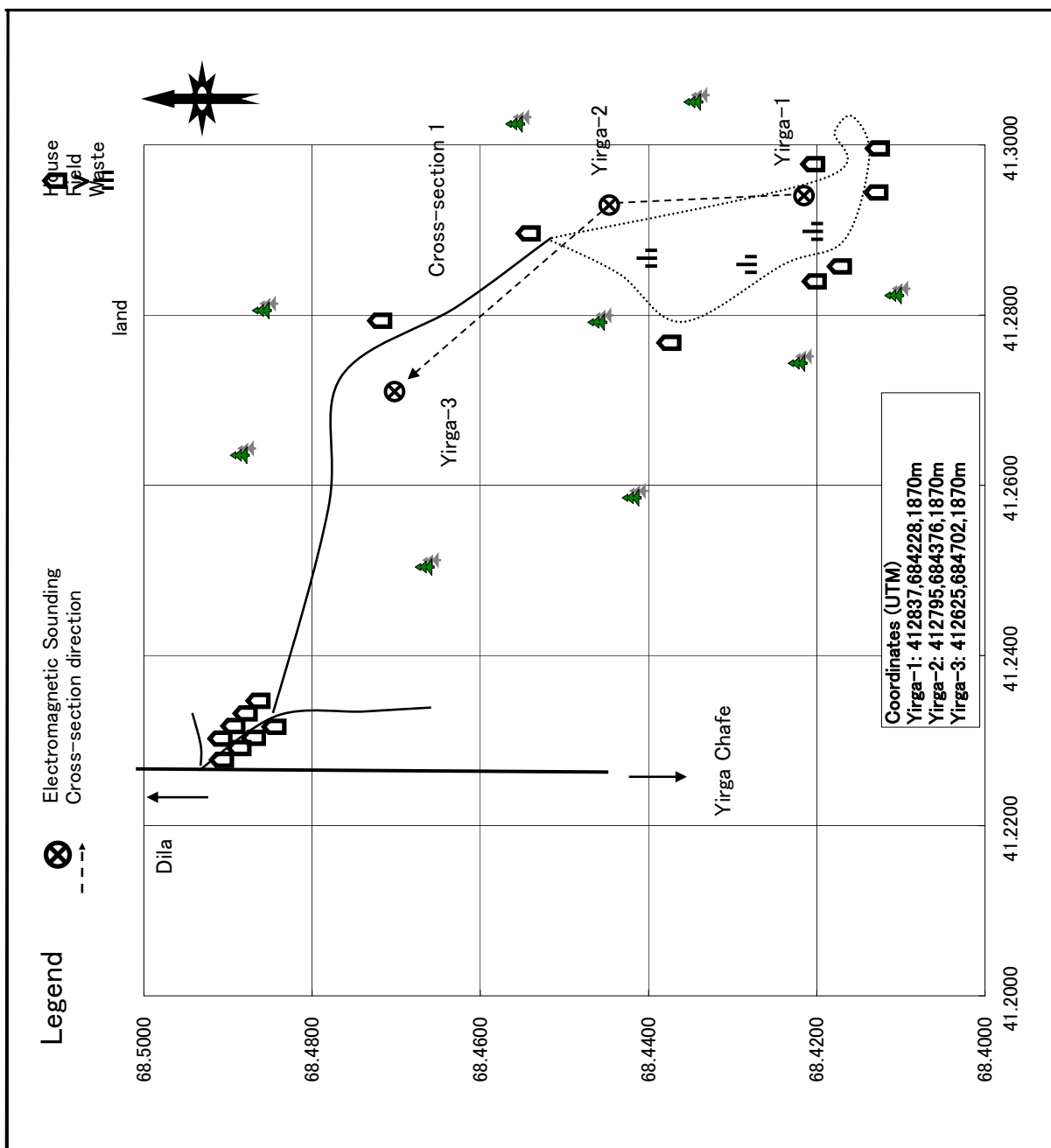
Data 4.2.2 Locations of TEM Survey Points and Lines (RVS BH-3 Meja Dema)



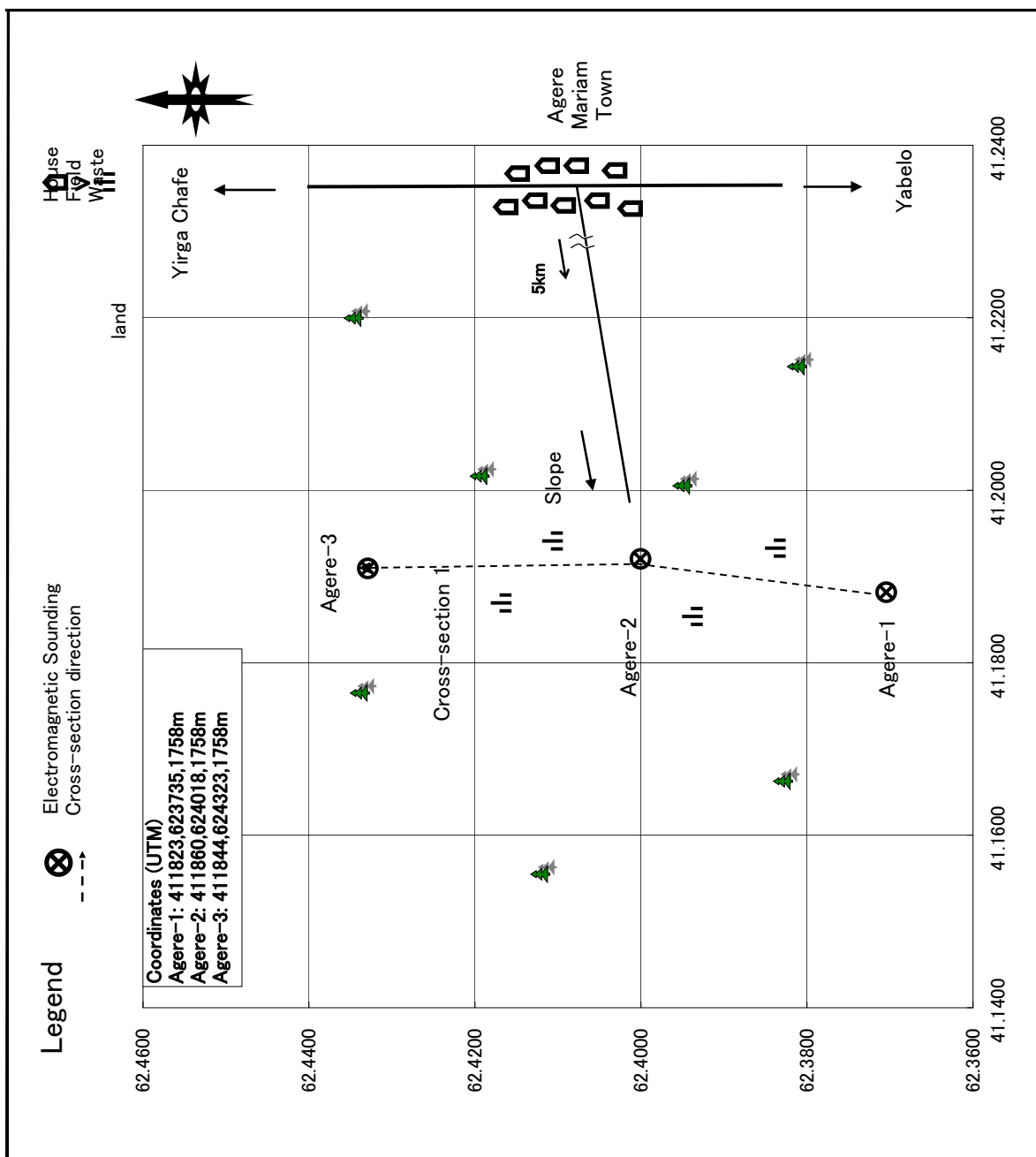
Data 4.2.2 Locations of TEM Survey Points and Lines (RVS BH-10 : Brindar)



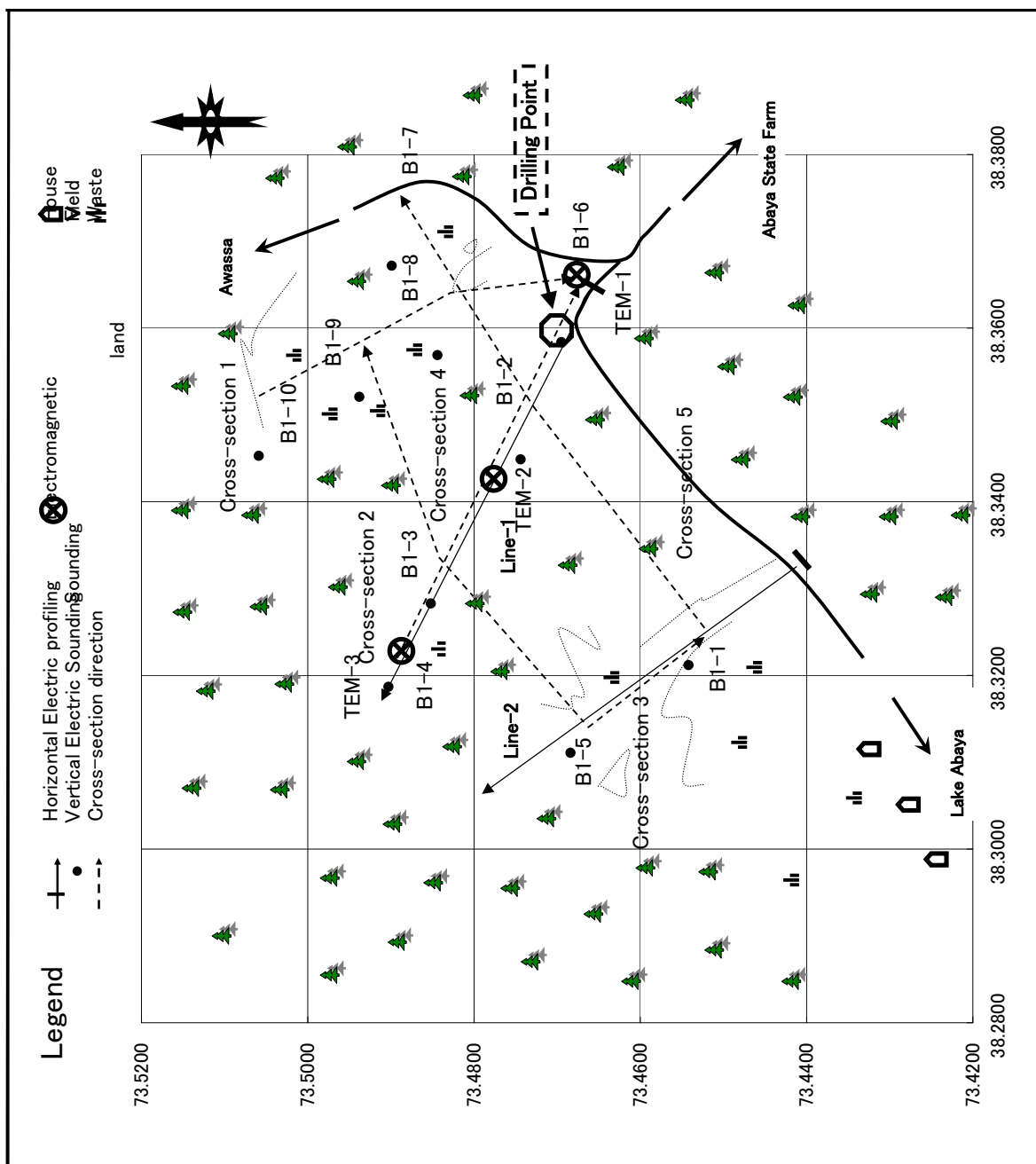
Data 4.2.2 Locations of TEM Survey Points and Lines (Tora area Meded Gageboo/Anshebeso Kuchi)



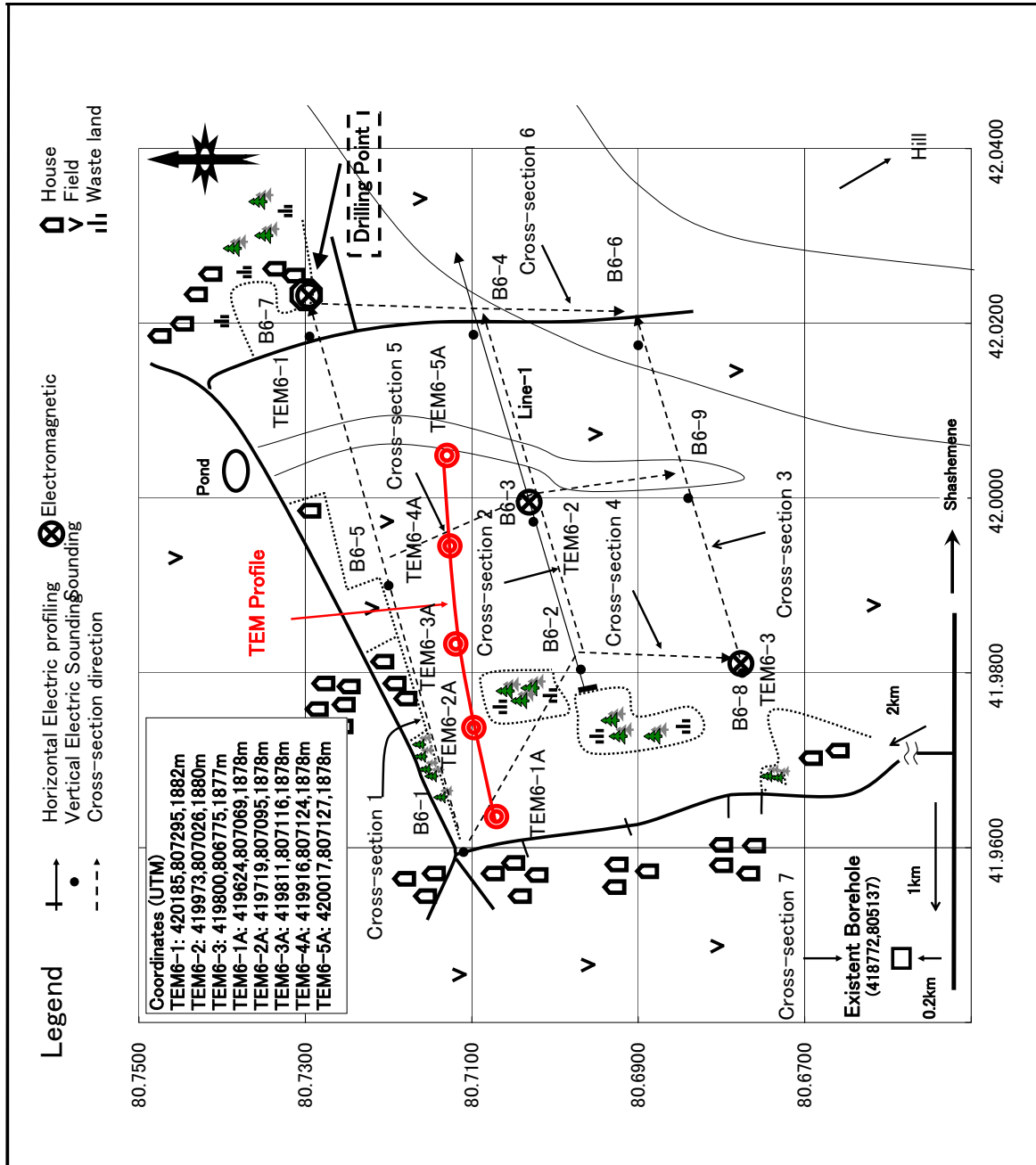
Data 4.2.2 Locations of TEM Survey Points and Lines (Yirga Chefe area Budukisa/Worago)



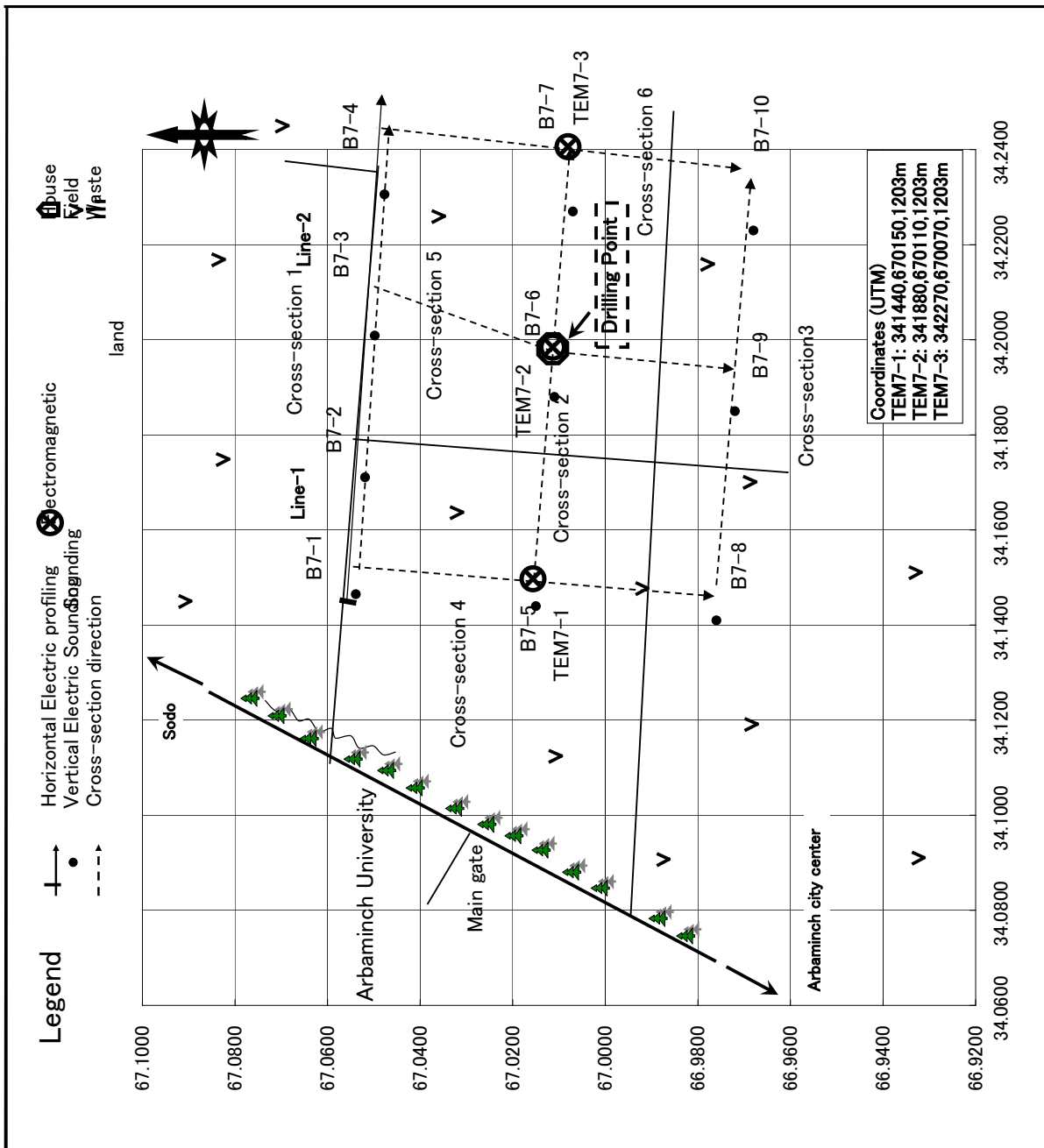
Data 4.2.2 Locations of TEM Survey Points and Lines (Agere Mariam area, Bule Kagna)



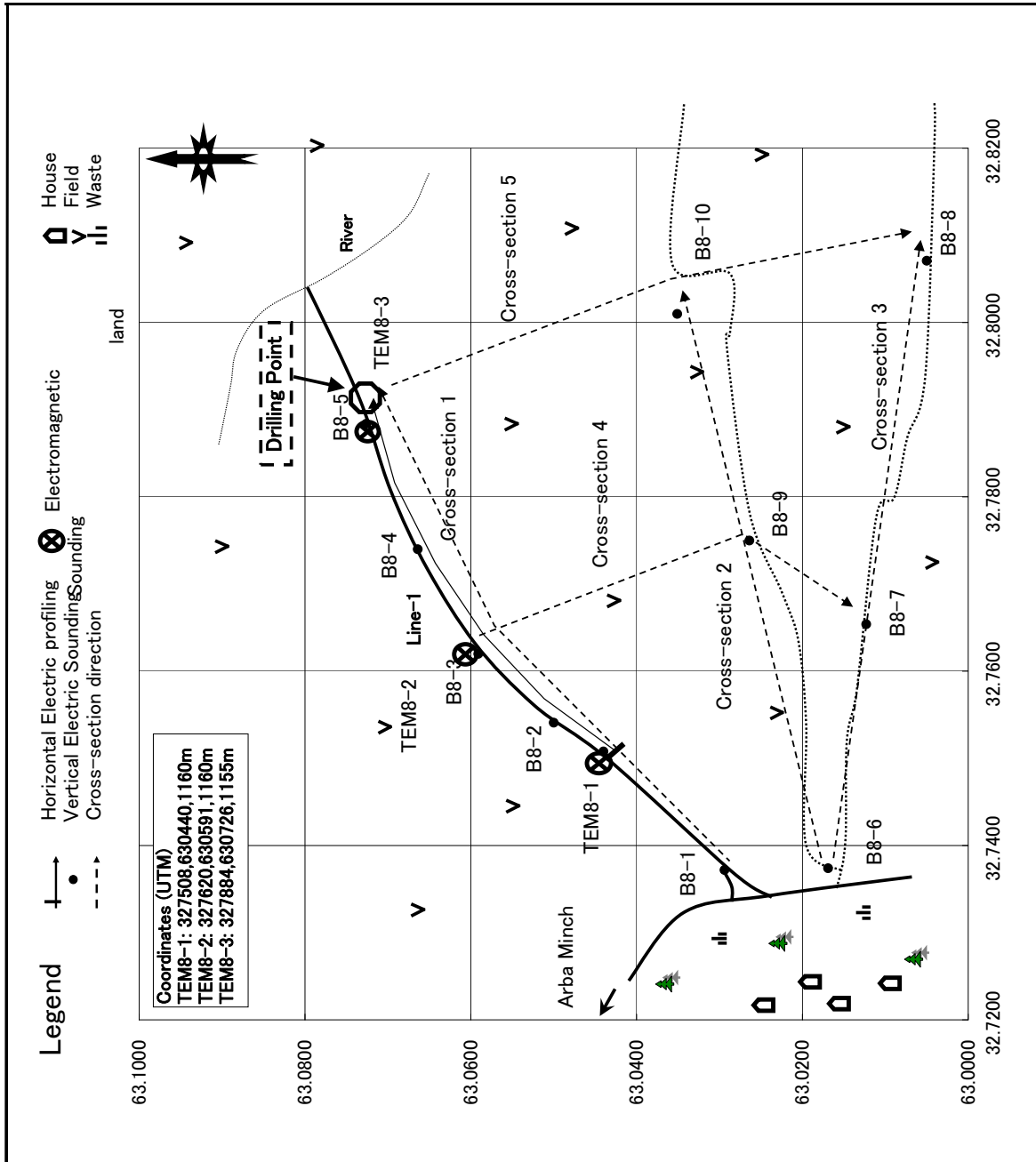
Data 4.2.2 Locations of TEM Survey Points and Lines (RVS BH-1 : Abaya Chokane)



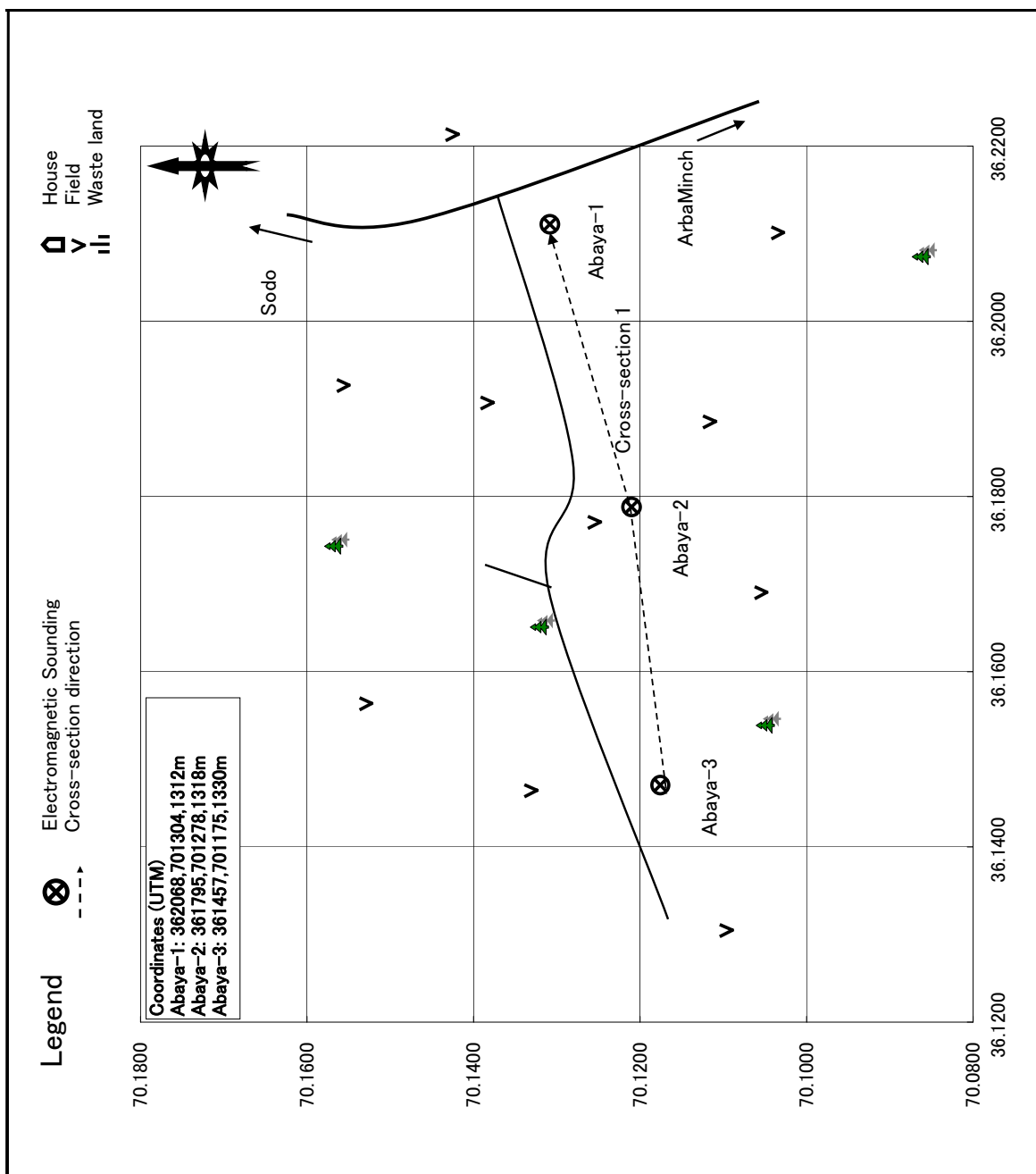
Data 4.2.2 Locations of TEM Survey Points and Lines (RVS BH-6 : Yeye Alaba/Lajo)



Data 4.2.2 Locations of TEM Survey Points and Lines (RVS BH-7 : Waz/Arbaminch)

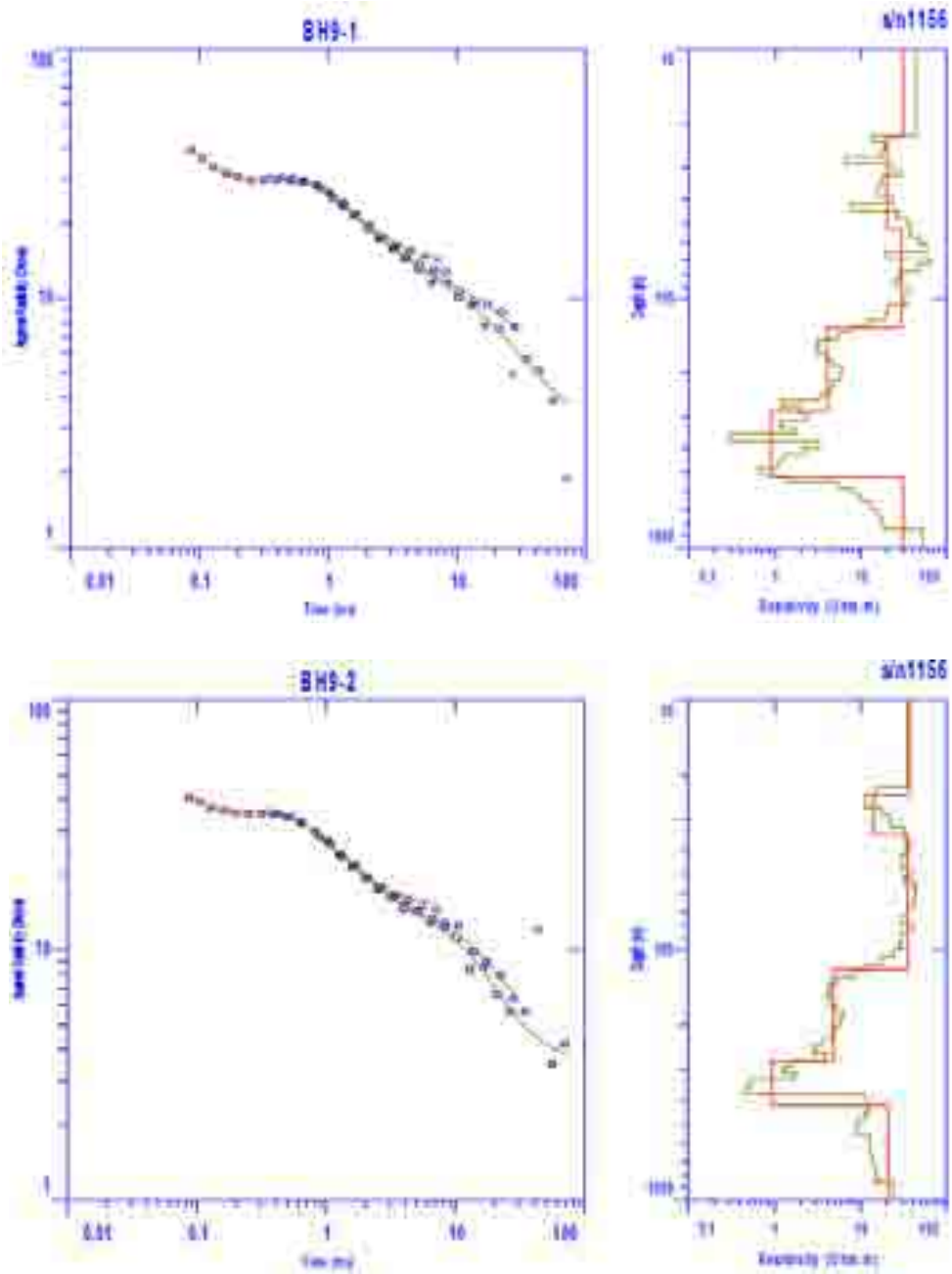


Data 4.2.2 Locations of TEM Survey Points and Lines (RVS BH-8 : Walesa)

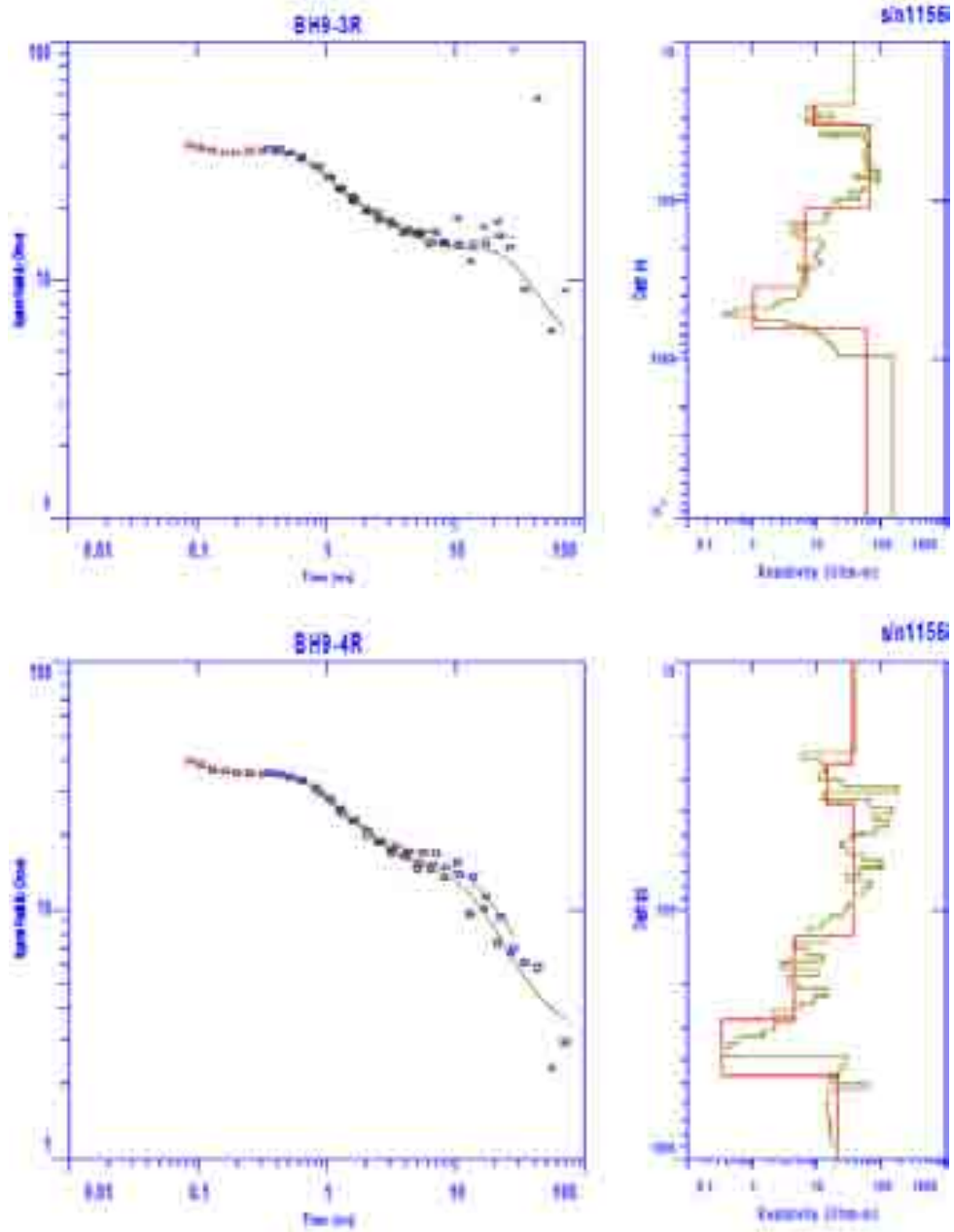


Data 4.2.2 Locations of TEM Survey Points and Lines (Mirab Abaya area, Fetle Doronje)

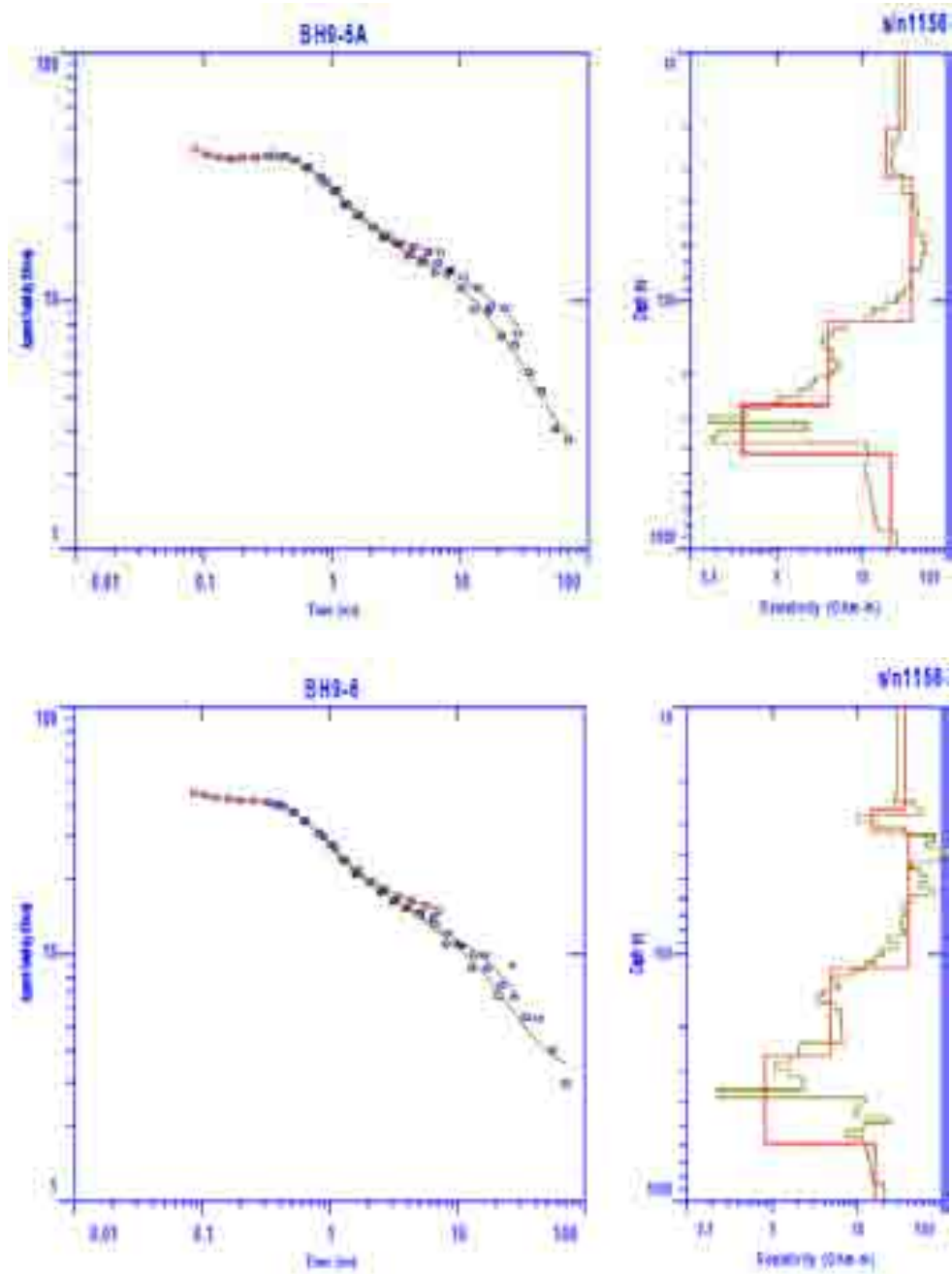
RVS BH-9N



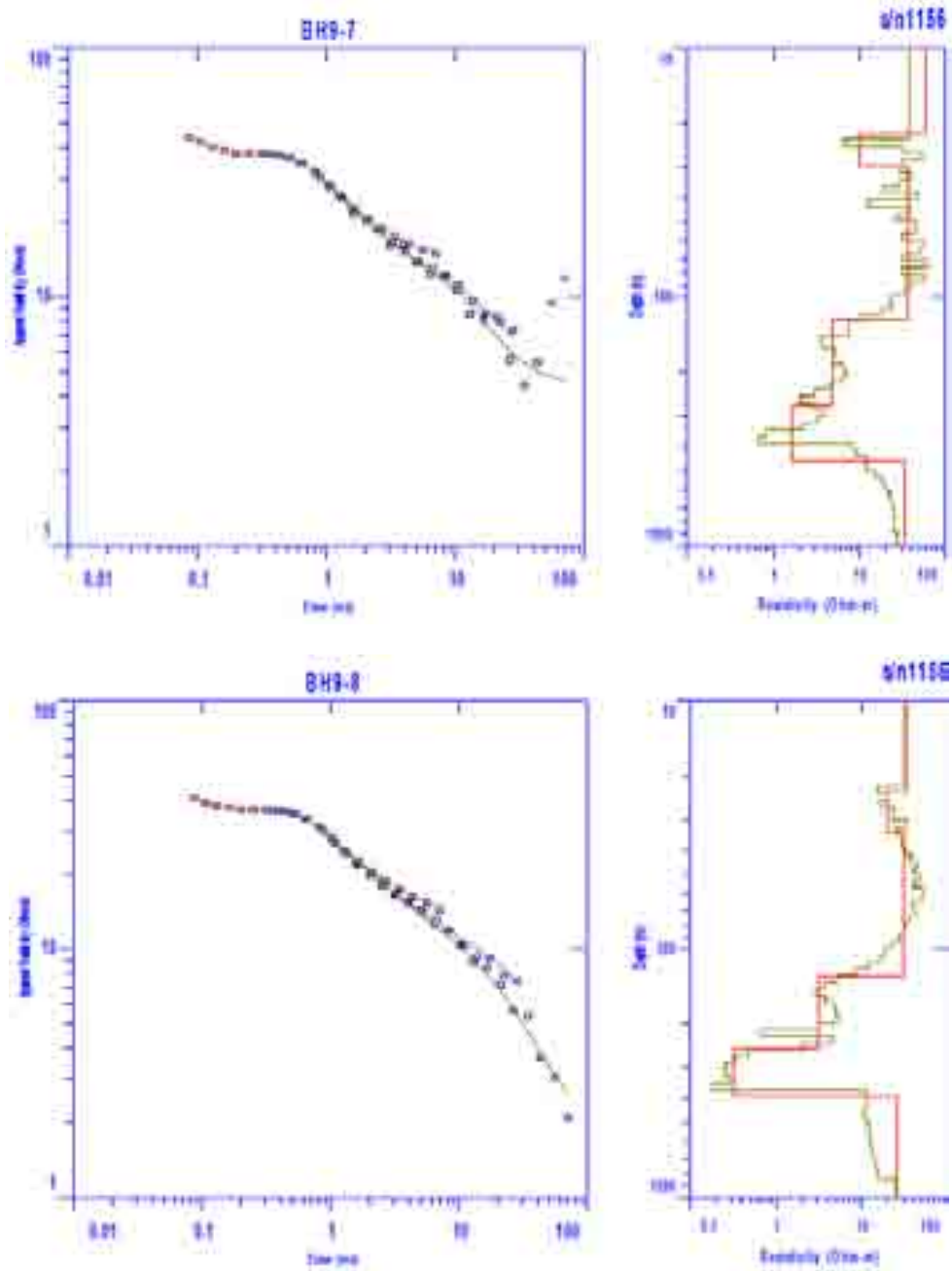
Data 4.2.3 Apparent Resistivity Curve and Analysis Results for TEM Survey (1/28)



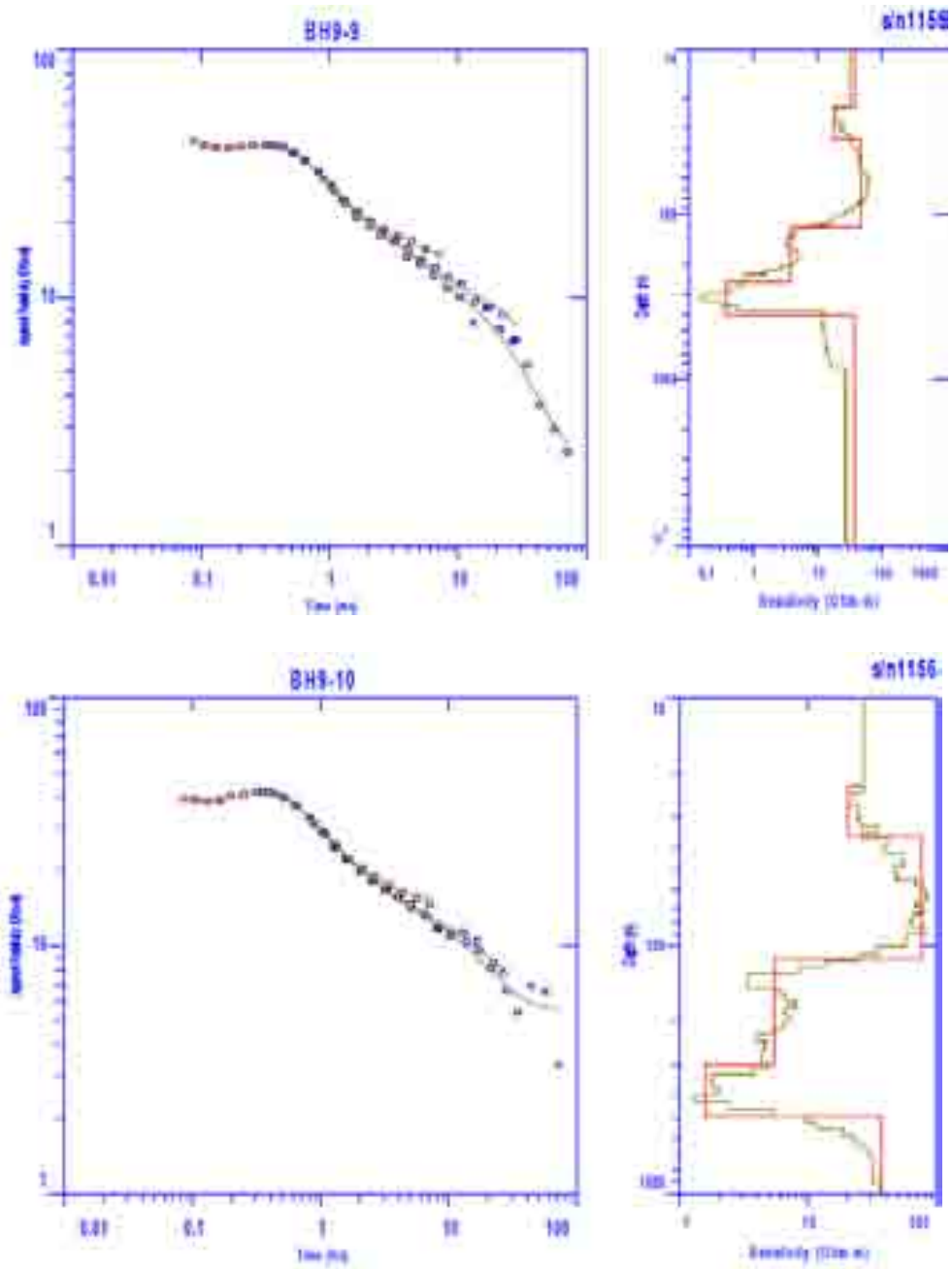
Data 4.2.3 Apparent Resistivity Curve and Analysis Results for TEM Survey (2/28)



Data 4.2.3 Apparent Resistivity Curve and Analysis Results for TEM Survey (3/28)

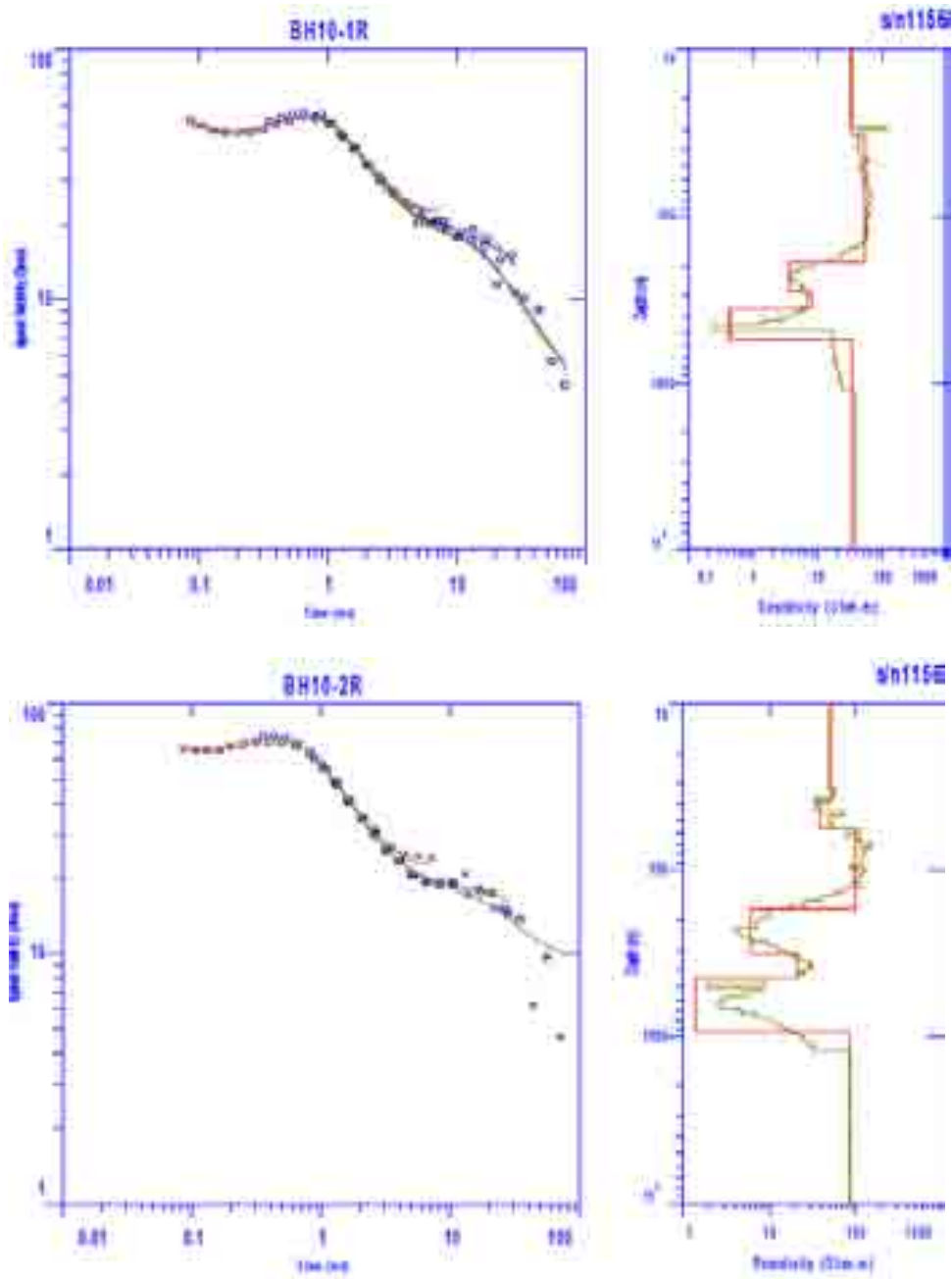


Data 4.2.3 Apparent Resistivity Curve and Analysis Results for TEM Survey (4/28)

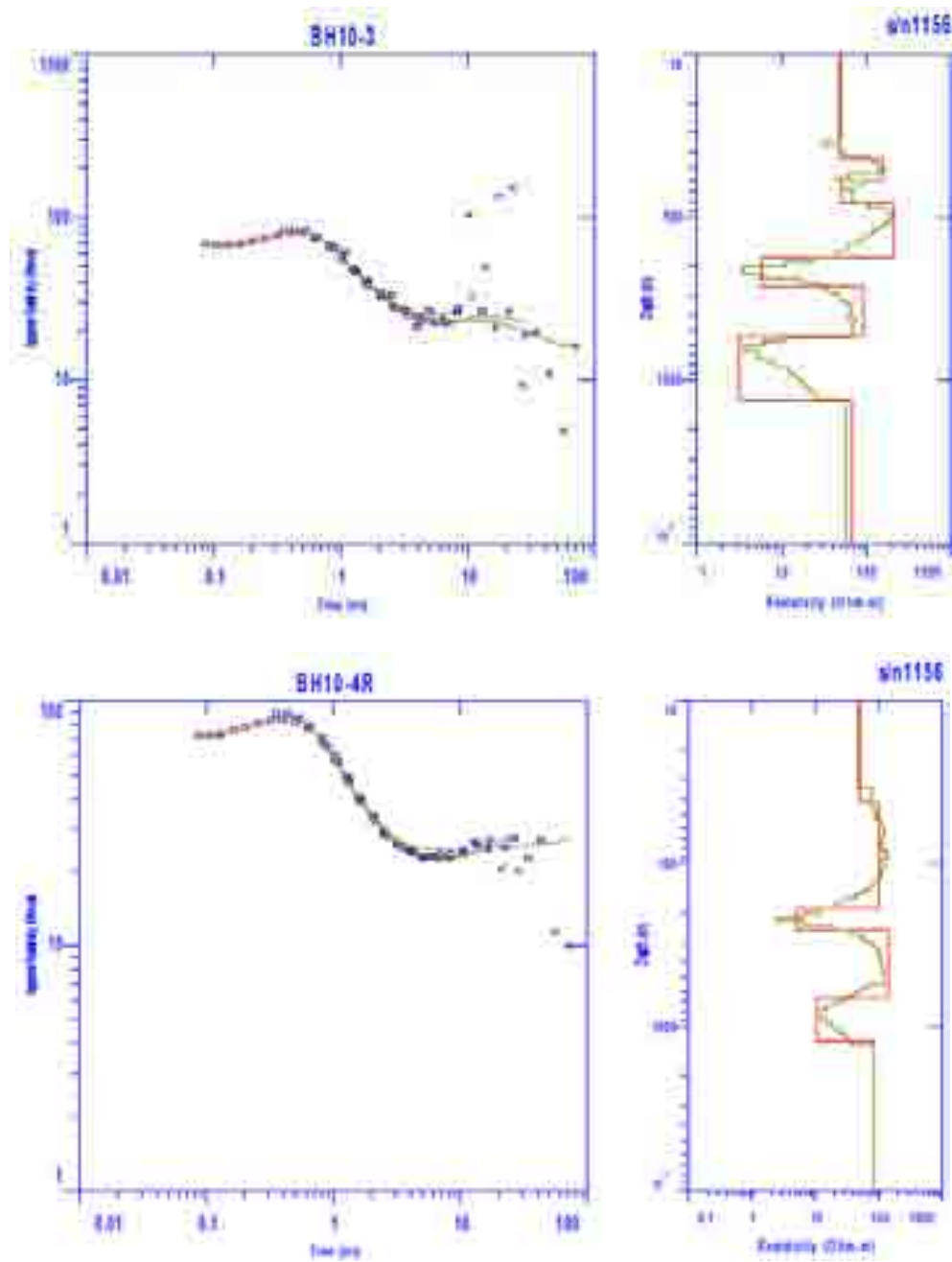


Data 4.2.3 Apparent Resistivity Curve and Analysis Results for TEM Survey (5/28)

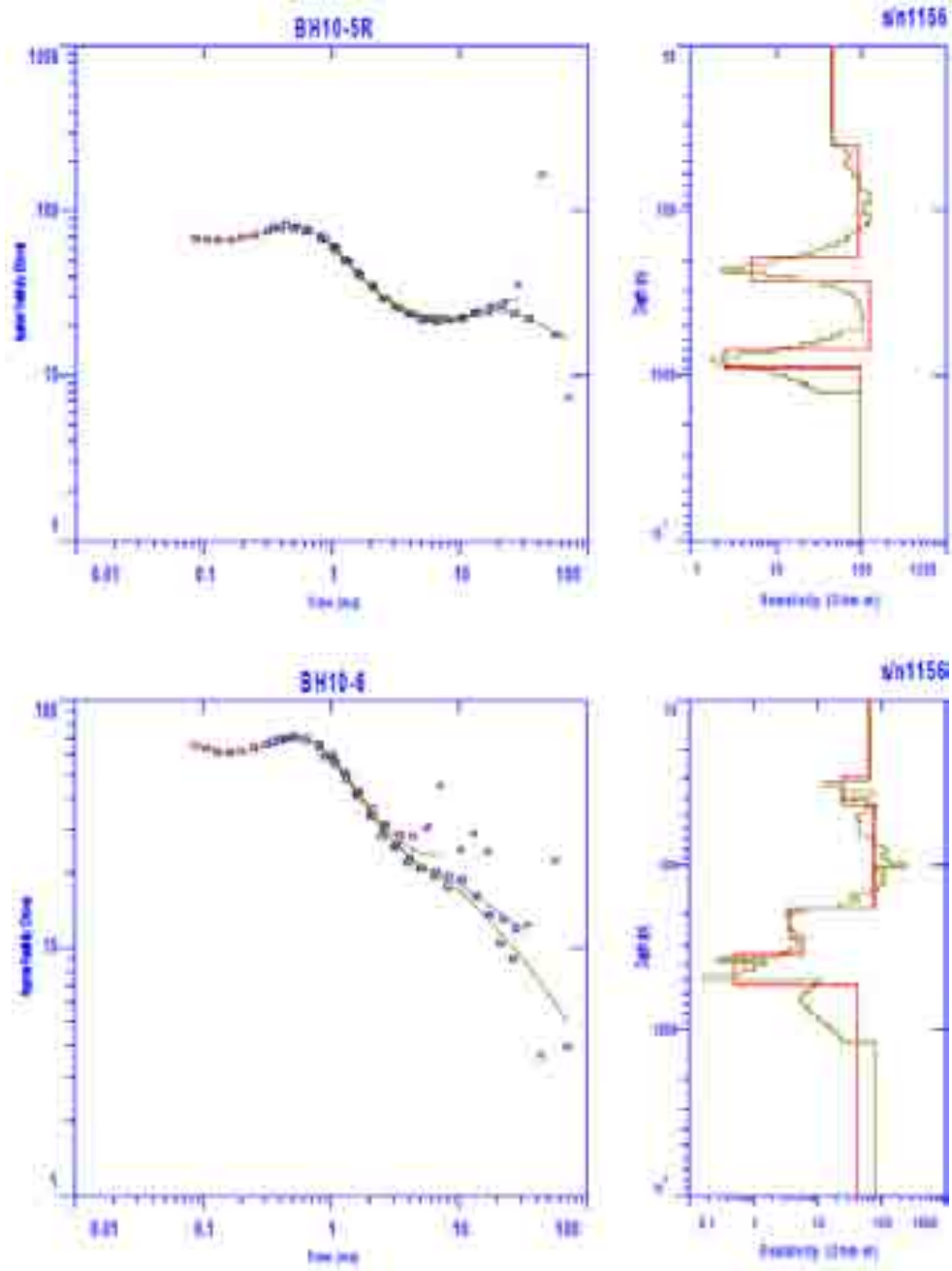
RVS BH-10N



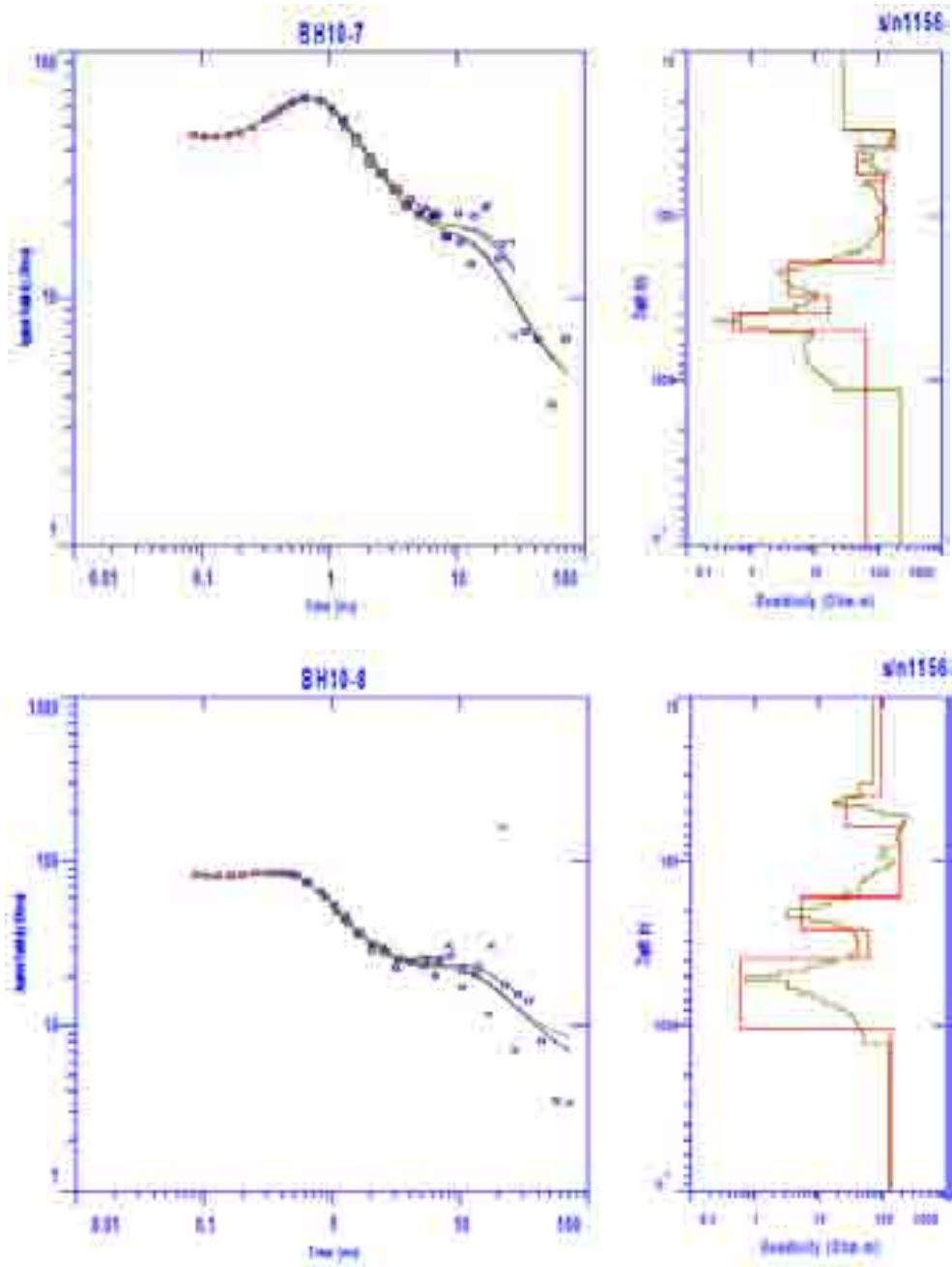
Data 4.2.3 Apparent Resistivity Curve and Analysis Results for TEM Survey (6/28)



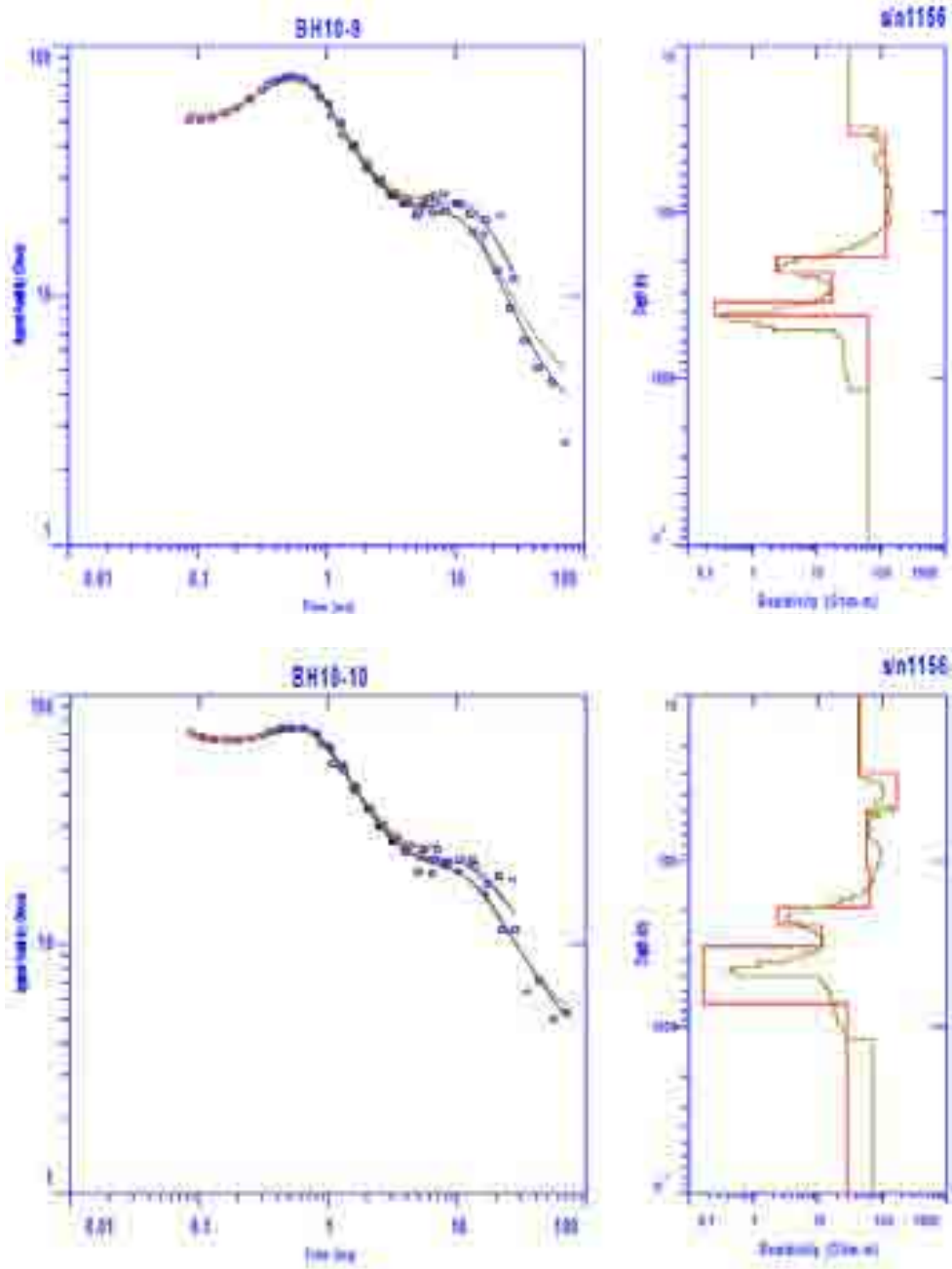
Data 4.2.3 Apparent Resistivity Curve and Analysis Results for TEM Survey (7/28)



Data 4.2.3 Apparent Resistivity Curve and Analysis Results for TEM Survey (8/28)

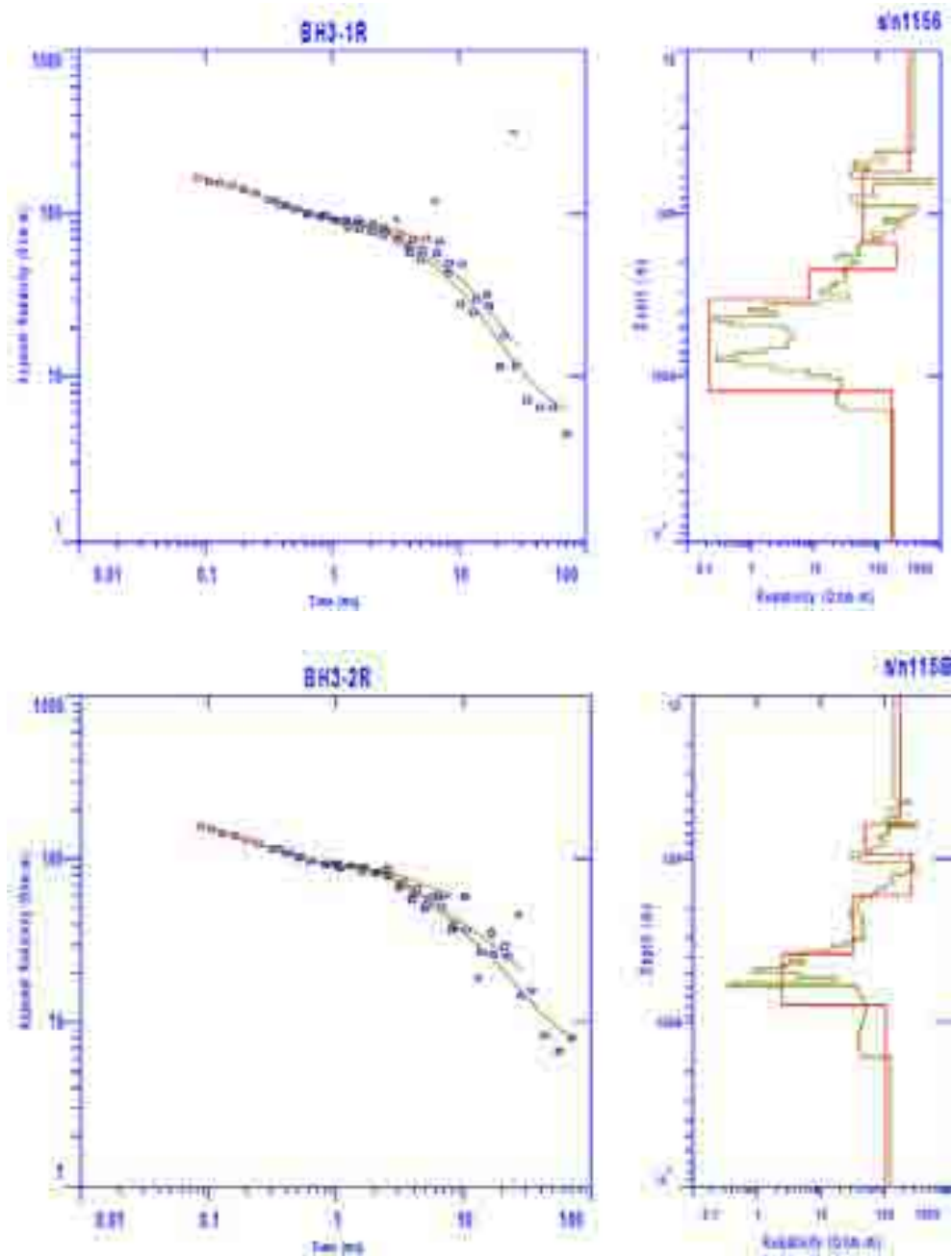


Data 4.2.3 Apparent Resistivity Curve and Analysis Results for TEM Survey (9/28)

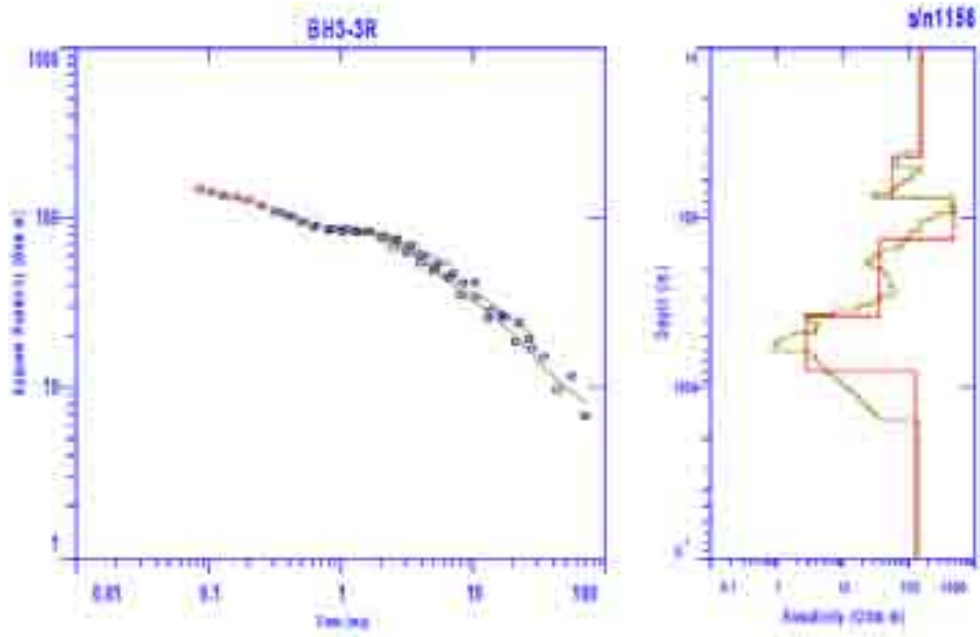


Data 4.2.3 Apparent Resistivity Curve and Analysis Results for TEM Survey (10/28)

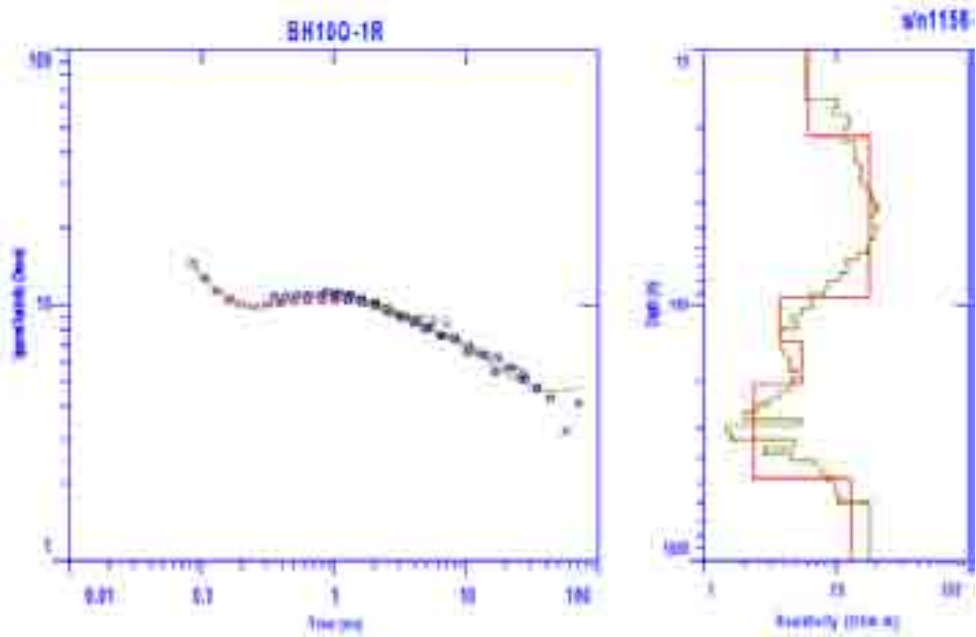
BH3



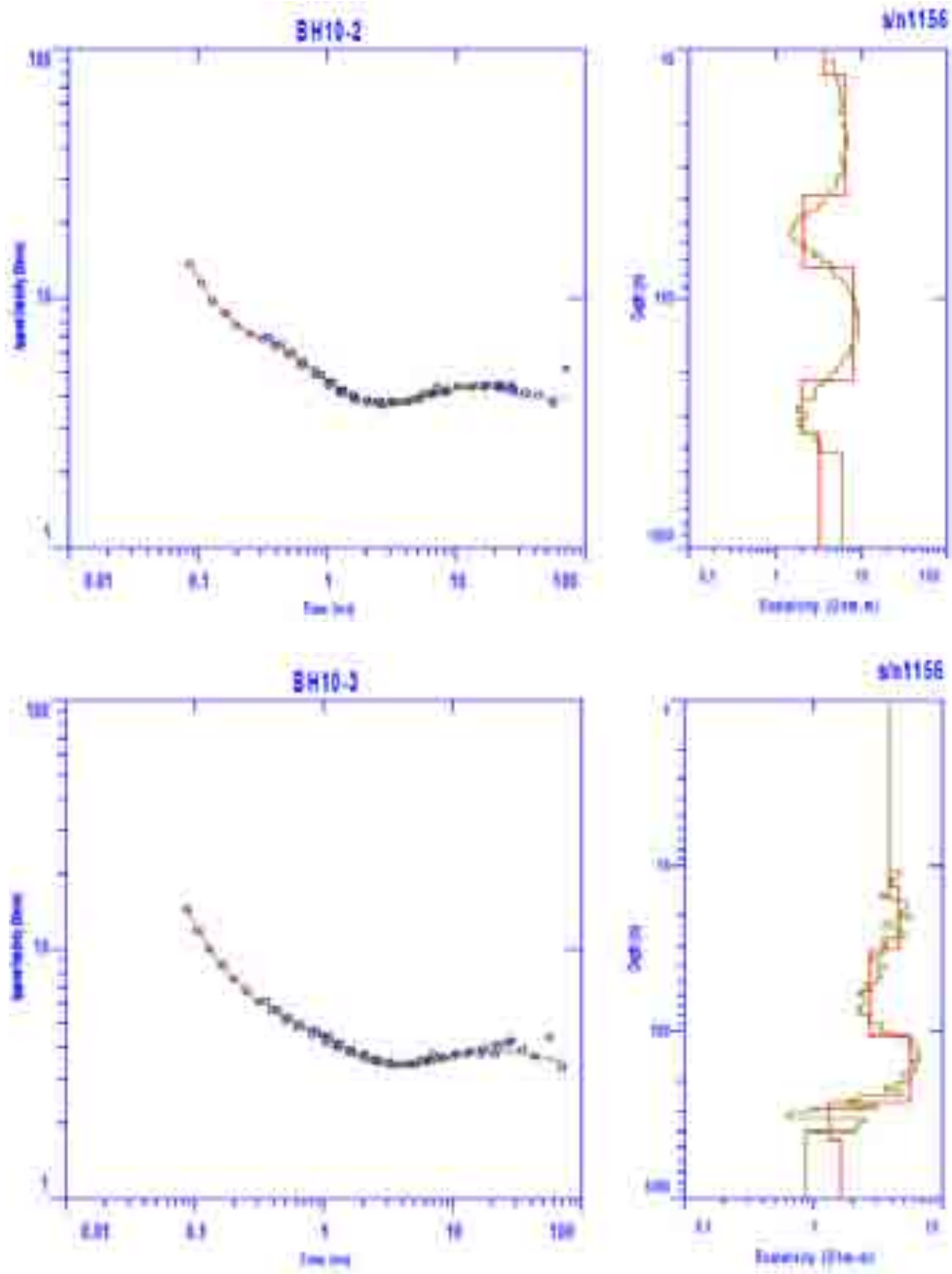
Data 4.2.3 Apparent Resistivity Curve and Analysis Results for TEM Survey (11/28)



RVS BH-10

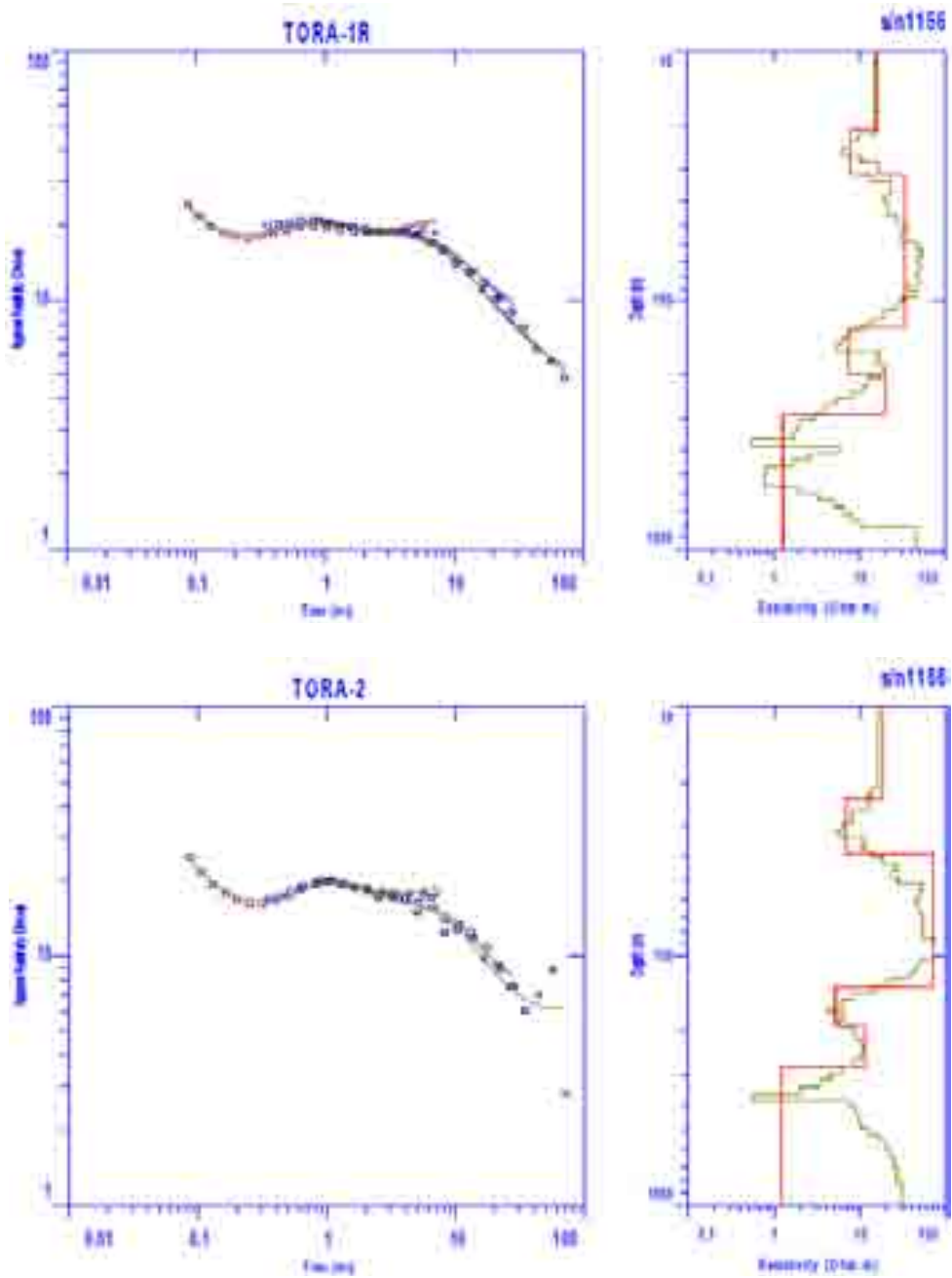


Data 4.2.3 Apparent Resistivity Curve and Analysis Results for TEM Survey (12/28)

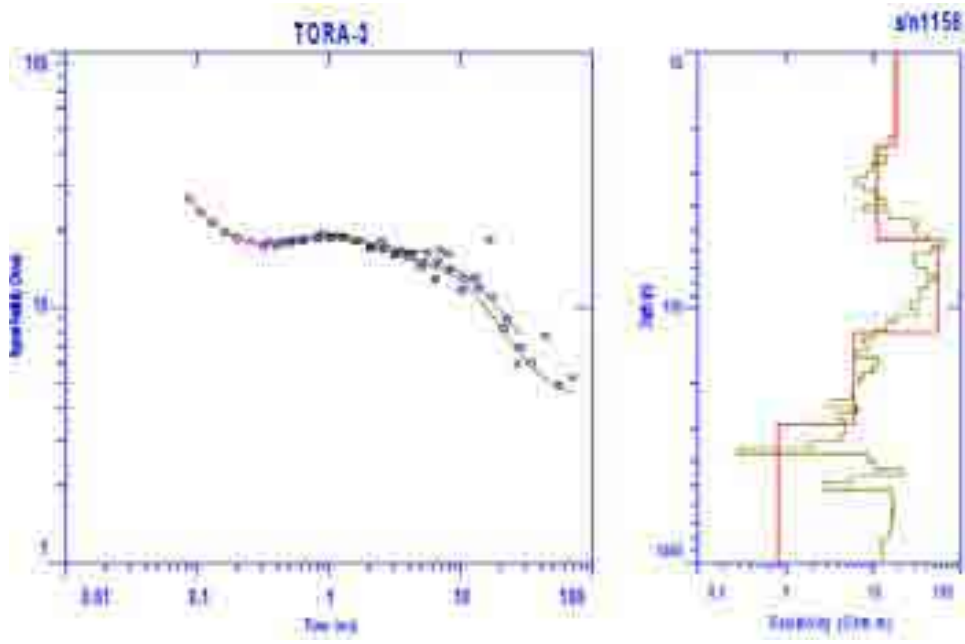


Data 4.2.3 Apparent Resistivity Curve and Analysis Results for TEM Survey (13/28)

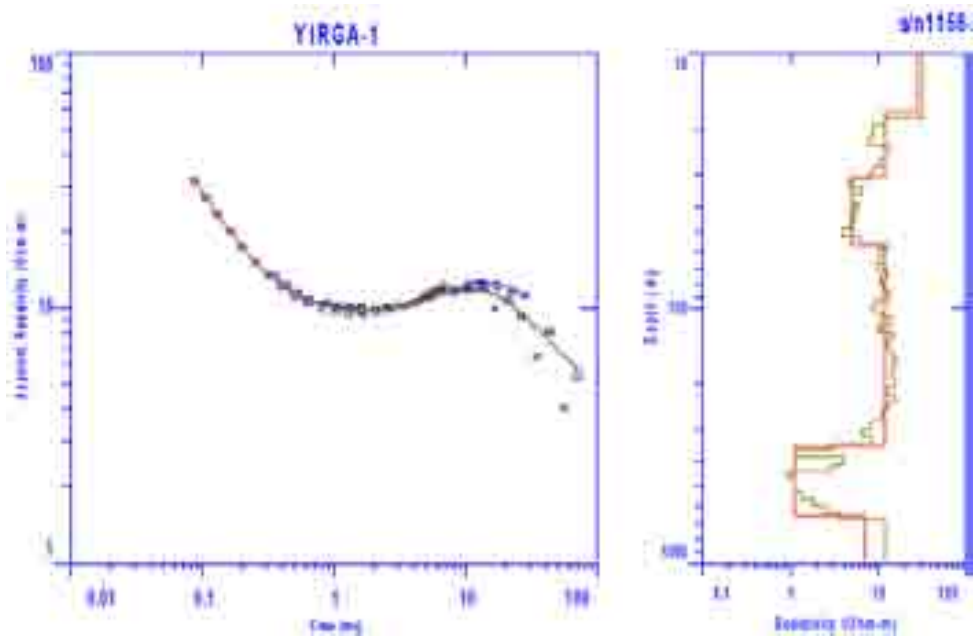
Tora Area



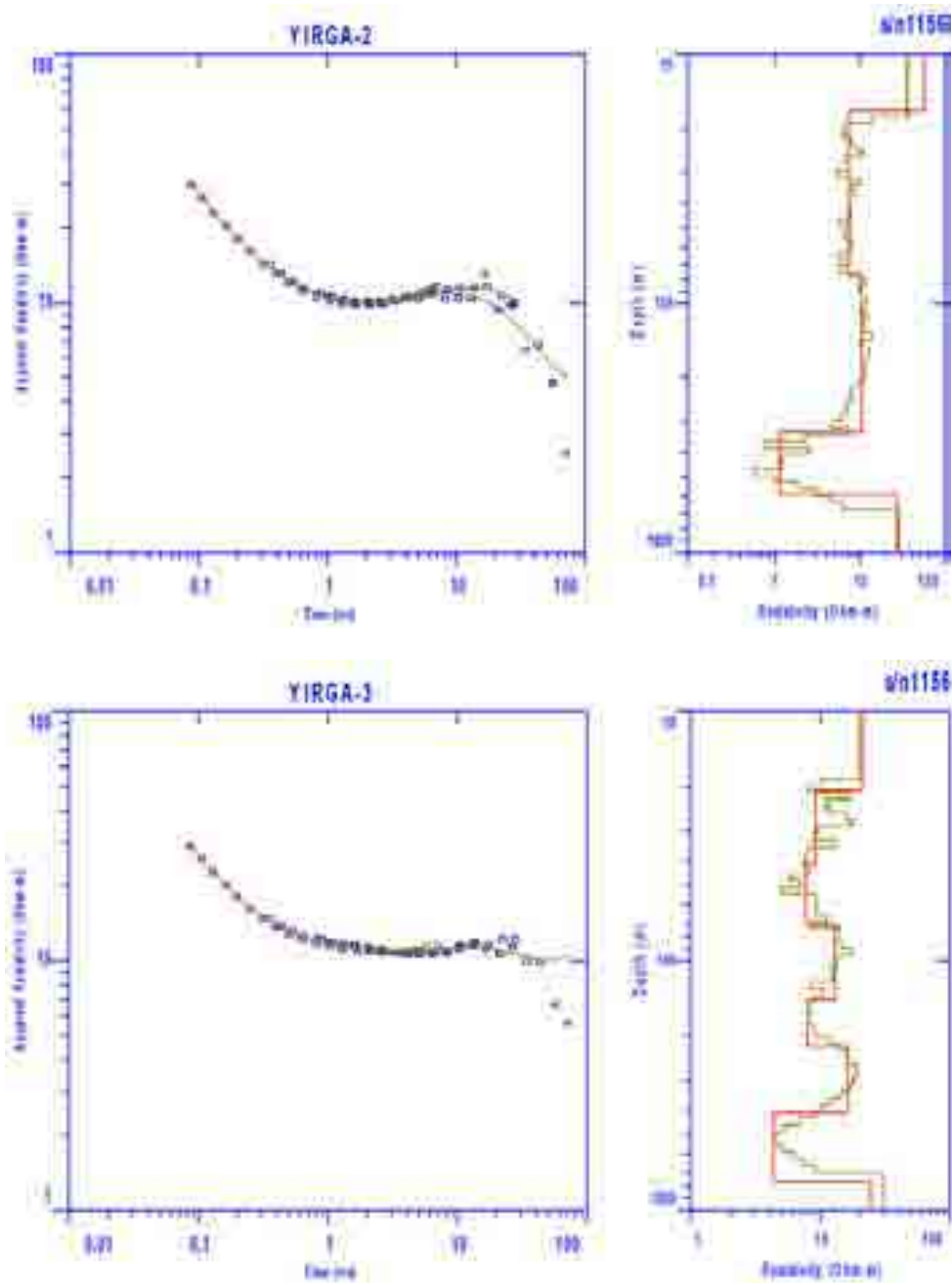
Data 4.2.3 Apparent Resistivity Curve and Analysis Results for TEM Survey (14/28)



Yirga chefe Area

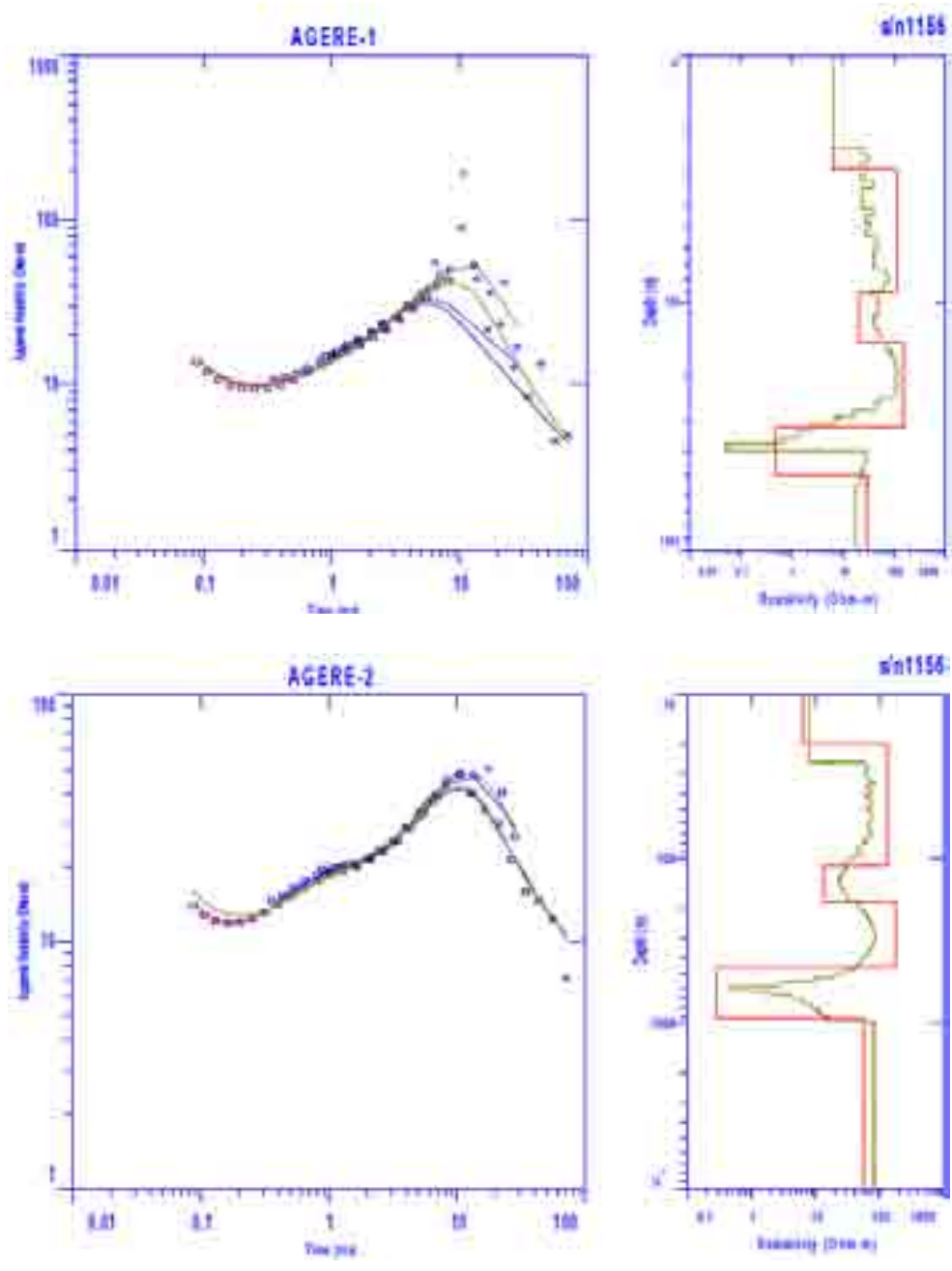


Data 4.2.3 Apparent Resistivity Curve and Analysis Results for TEM Survey (15/28)

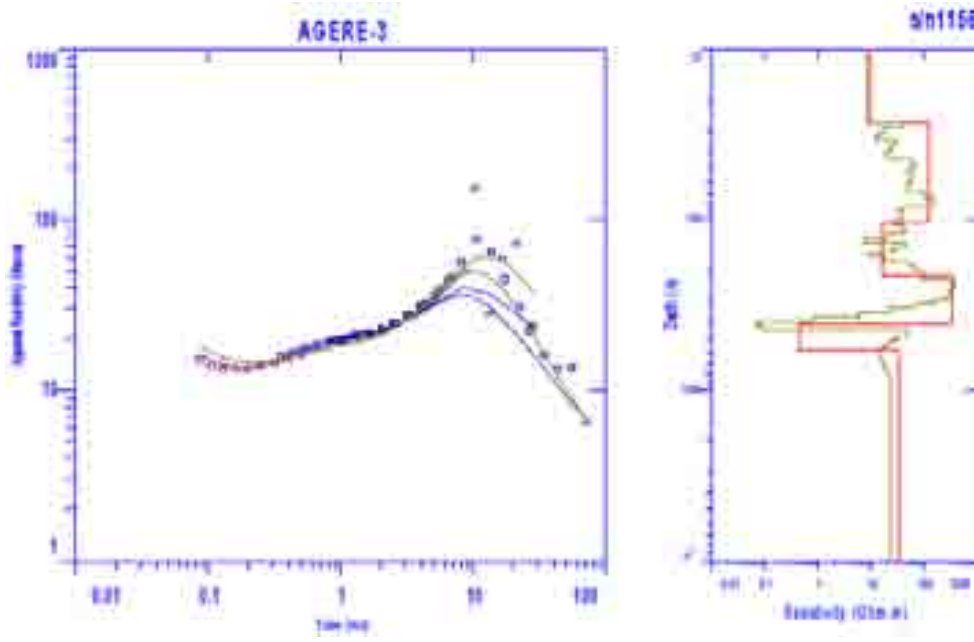


Data 4.2.3 Apparent Resistivity Curve and Analysis Results for TEM Survey (16/28)

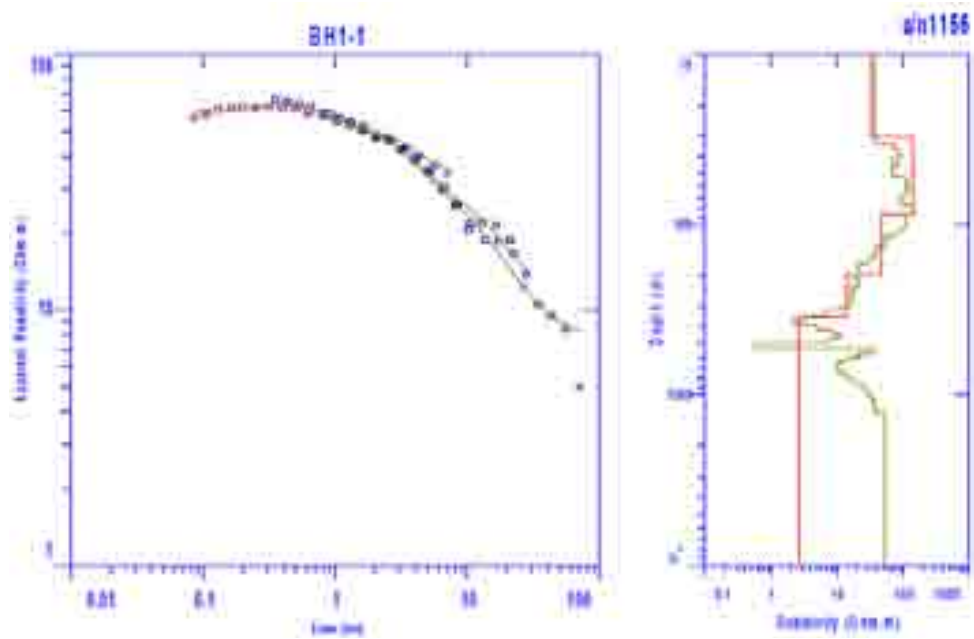
Agere Maryam Area



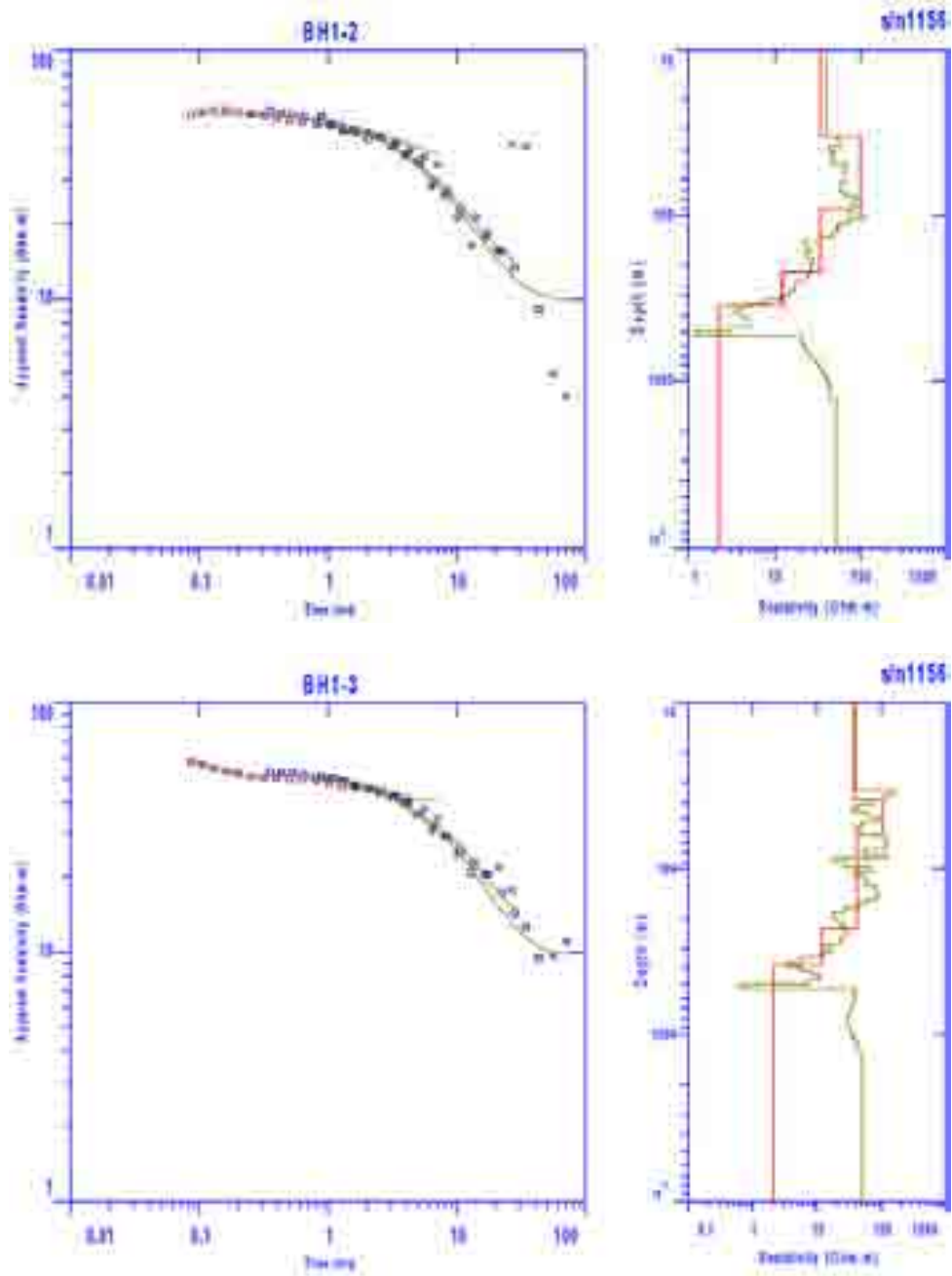
Data 4.2.3 Apparent Resistivity Curve and Analysis Results for TEM Survey (17/28)



RVS BH-1

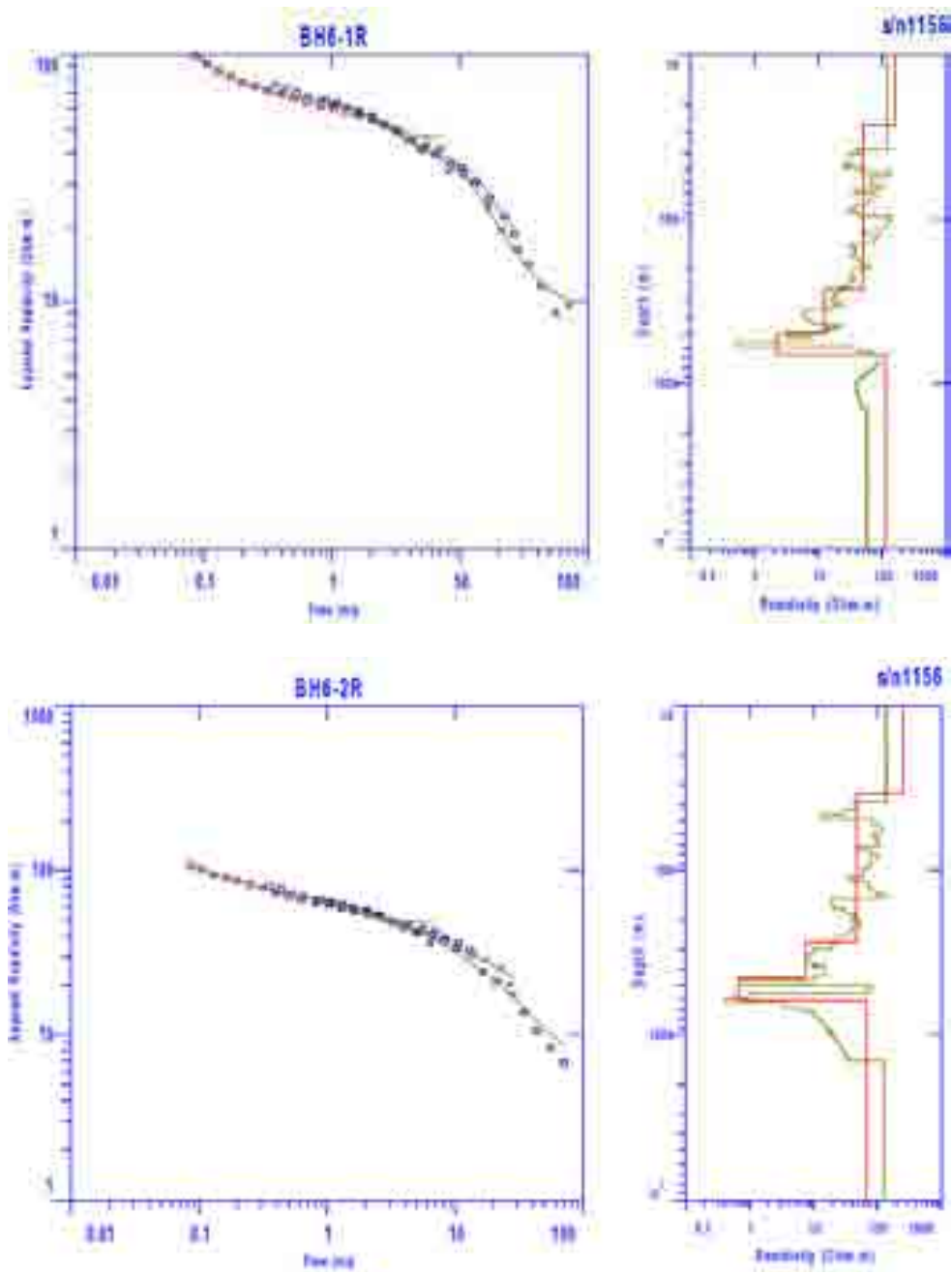


Data 4.2.3 Apparent Resistivity Curve and Analysis Results for TEM Survey (18/28)

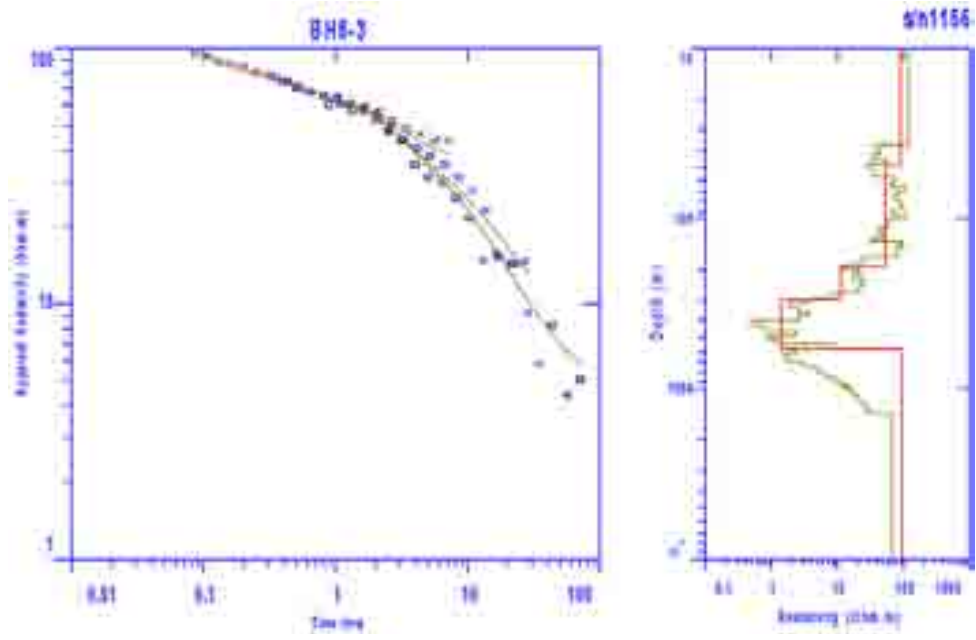


Data 4.2.3 Apparent Resistivity Curve and Analysis Results for TEM Survey (19/28)

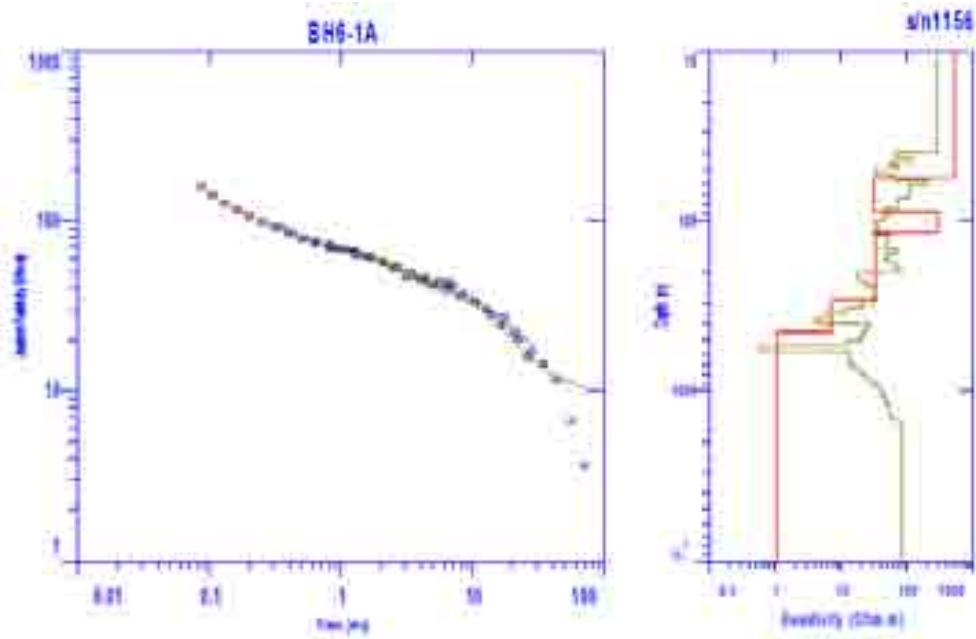
RVS BH-6



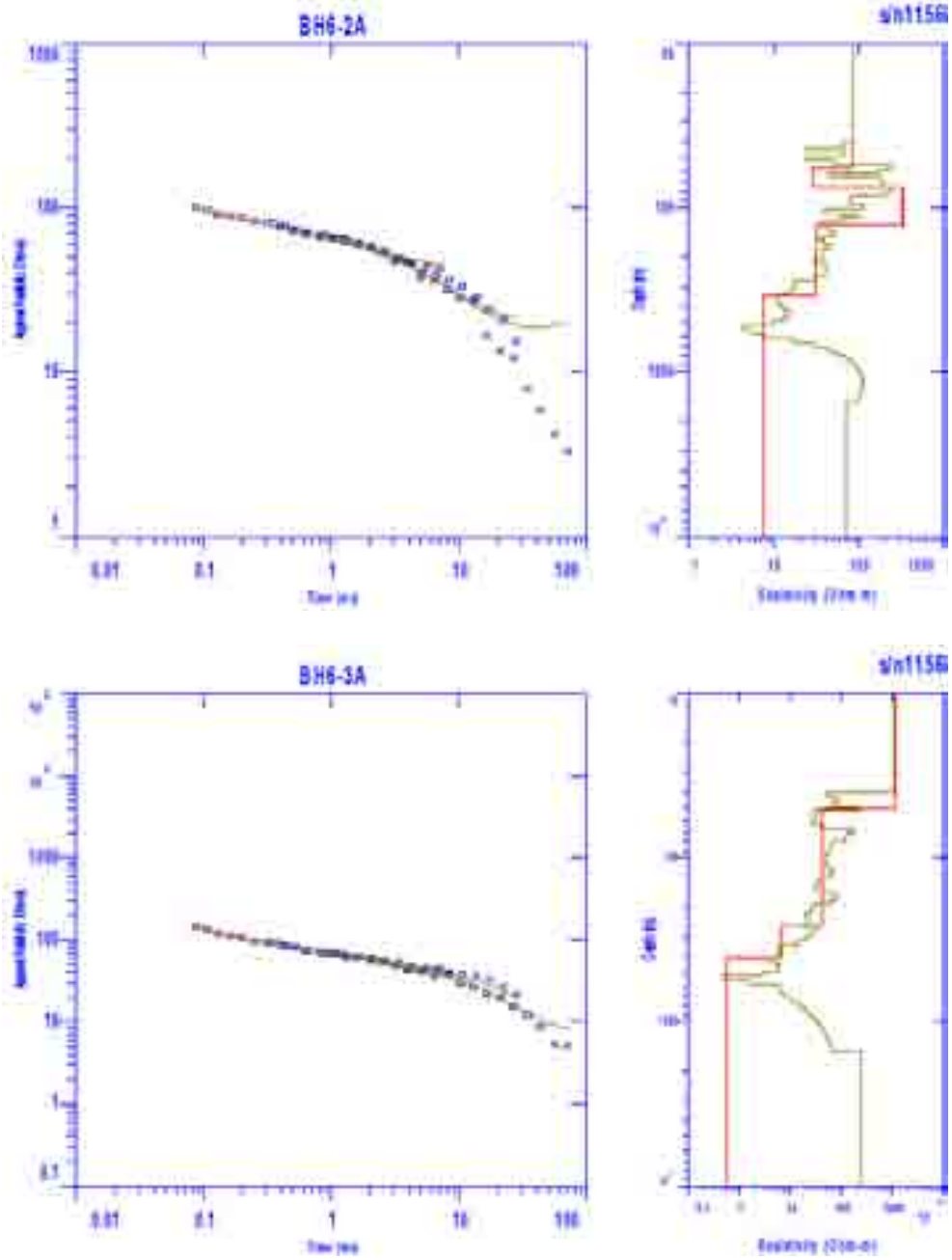
Data 4.2.3 Apparent Resistivity Curve and Analysis Results for TEM Survey (20/28)



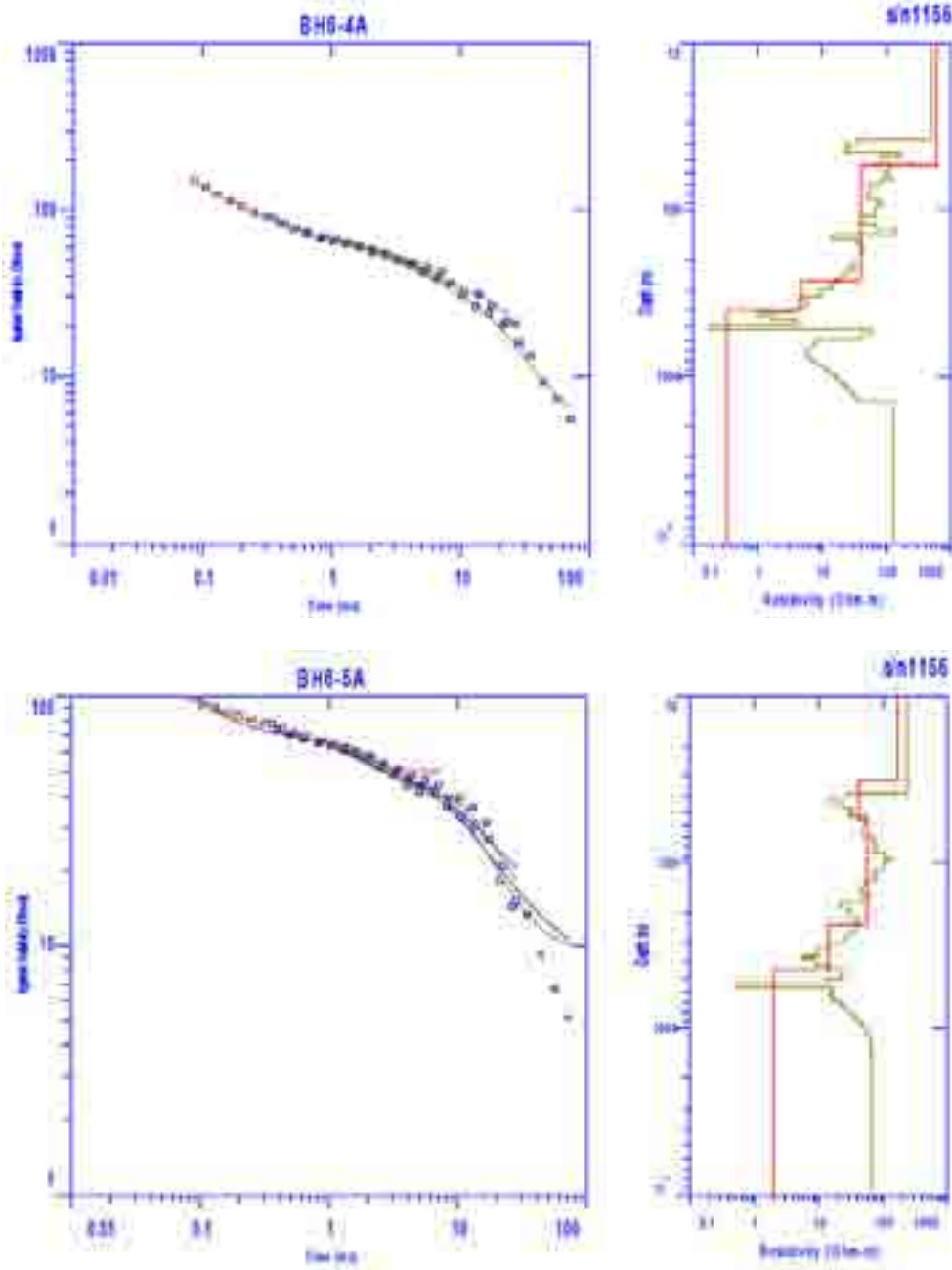
RVS BH-6 (EWTEC Underground Investigation Short Course)



Data 4.2.3 Apparent Resistivity Curve and Analysis Results for TEM Survey (21/28)

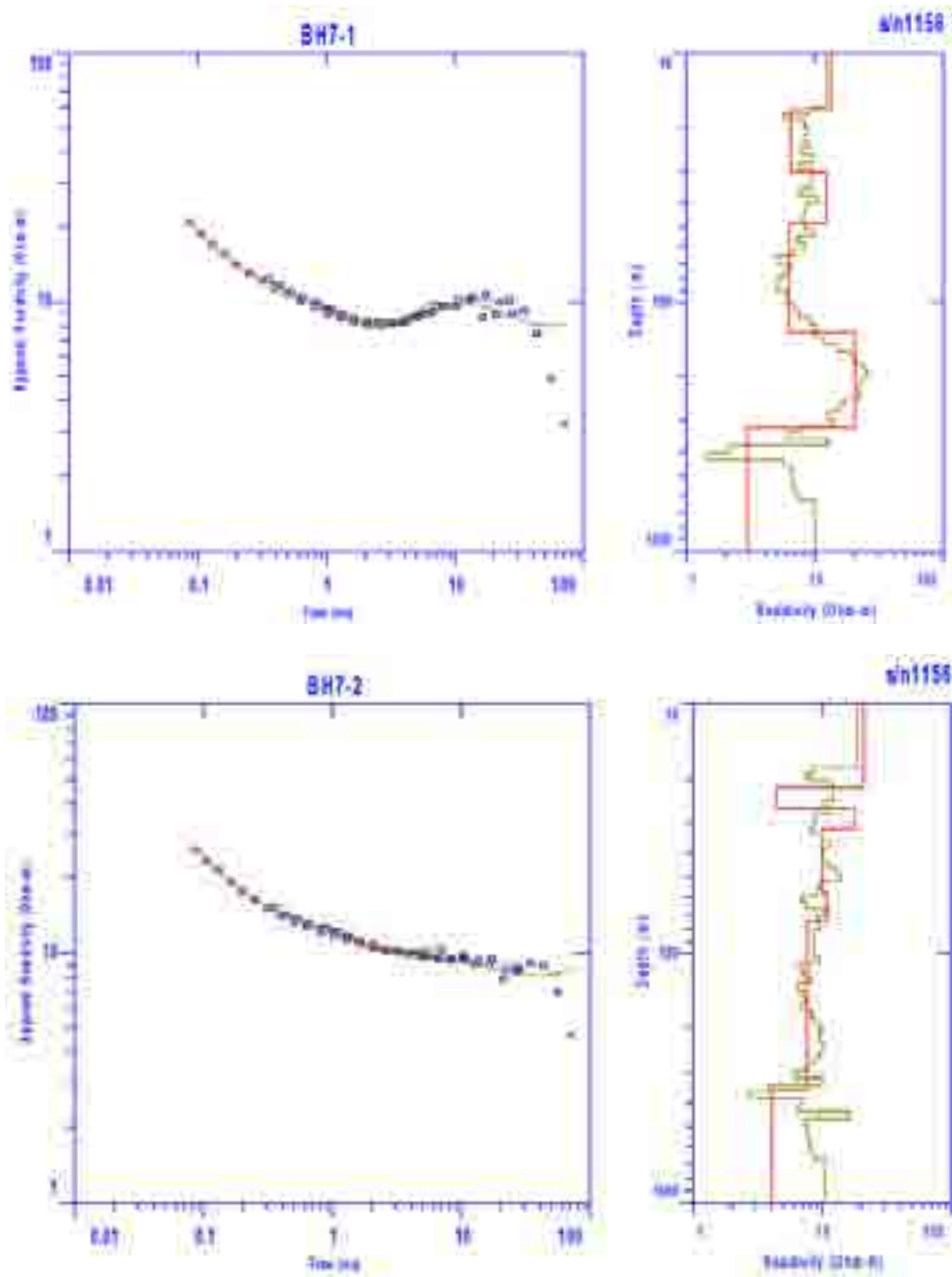


Data 4.2.3 Apparent Resistivity Curve and Analysis Results for TEM Survey (22/28)

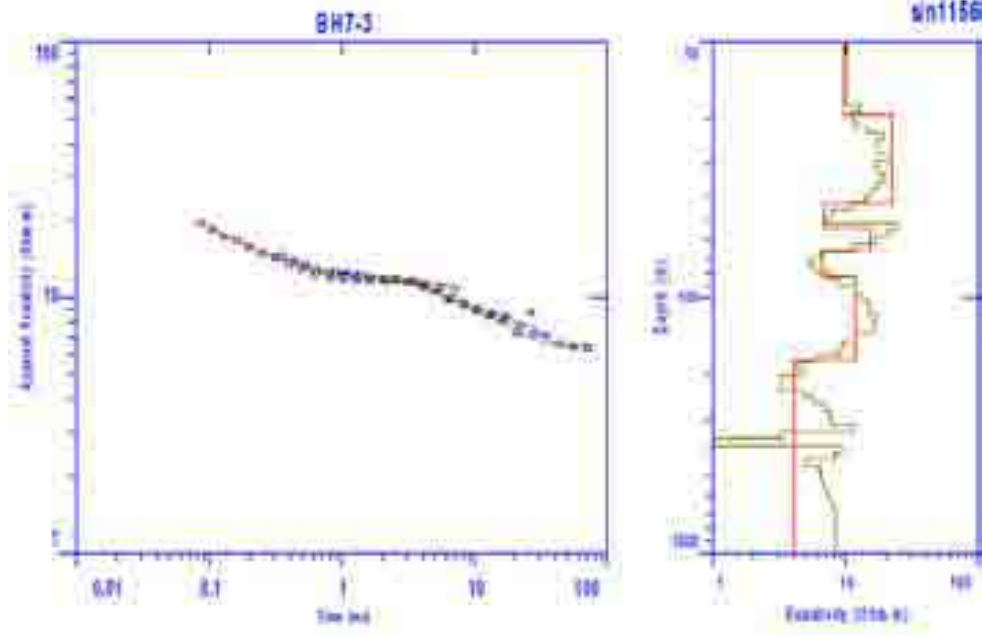


Data 4.2.3 Apparent Resistivity Curve and Analysis Results for TEM Survey (23/28)

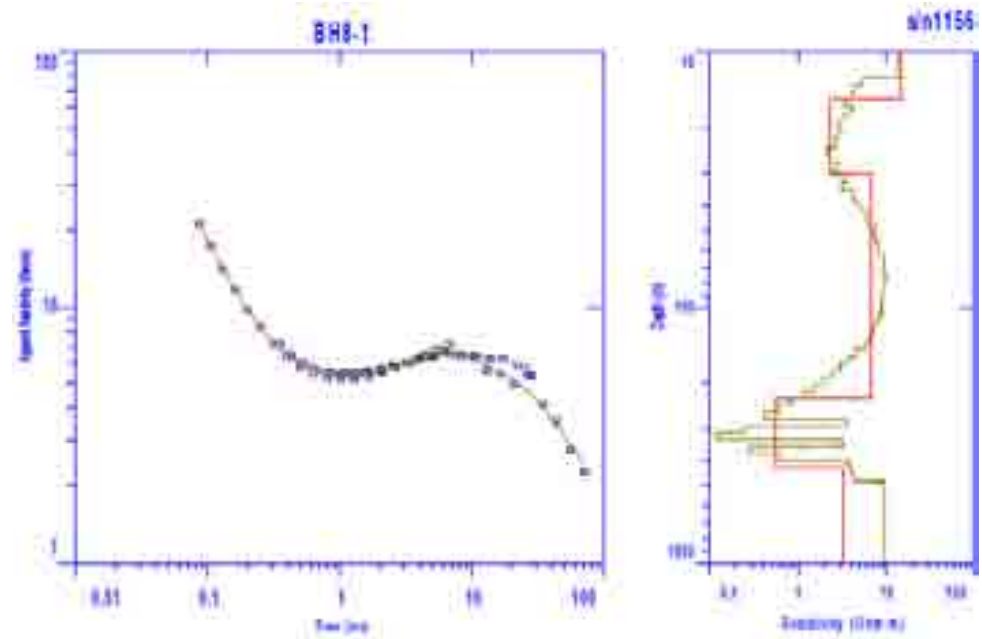
RVS BH-7



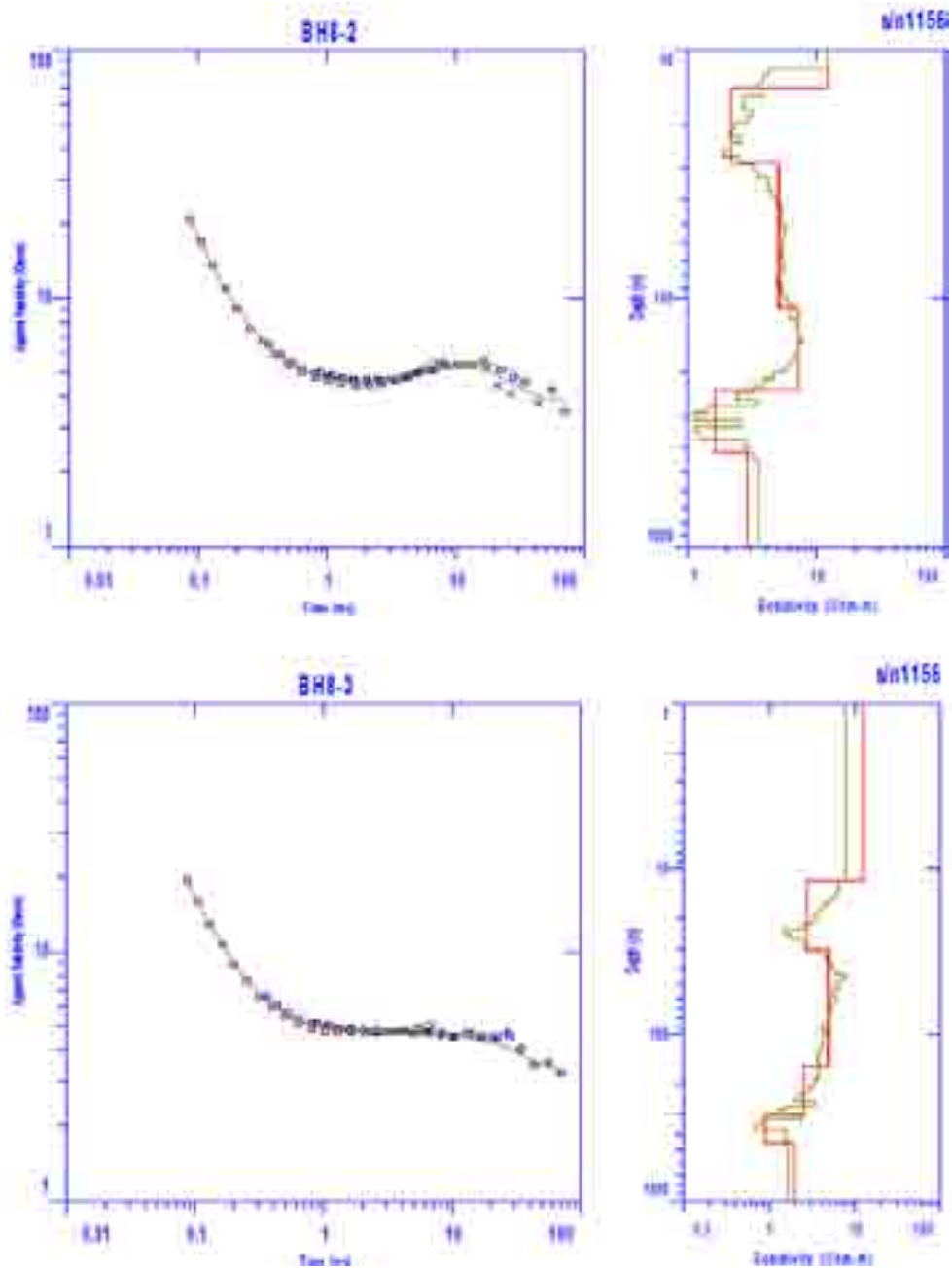
Data 4.2.3 Apparent Resistivity Curve and Analysis Results for TEM Survey (24/28)



RVS BH-8

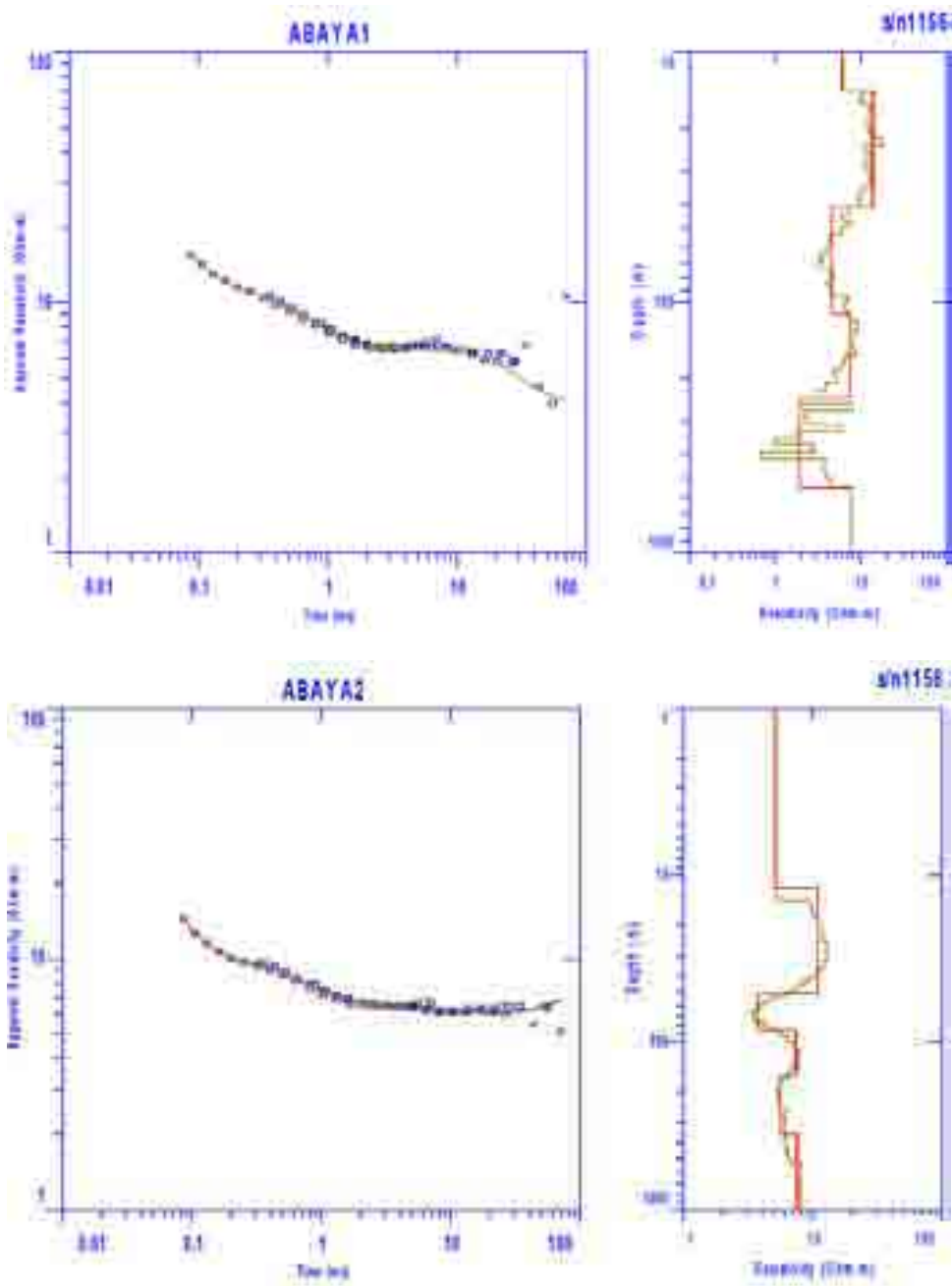


Data 4.2.3 Apparent Resistivity Curve and Analysis Results for TEM Survey (25/28)

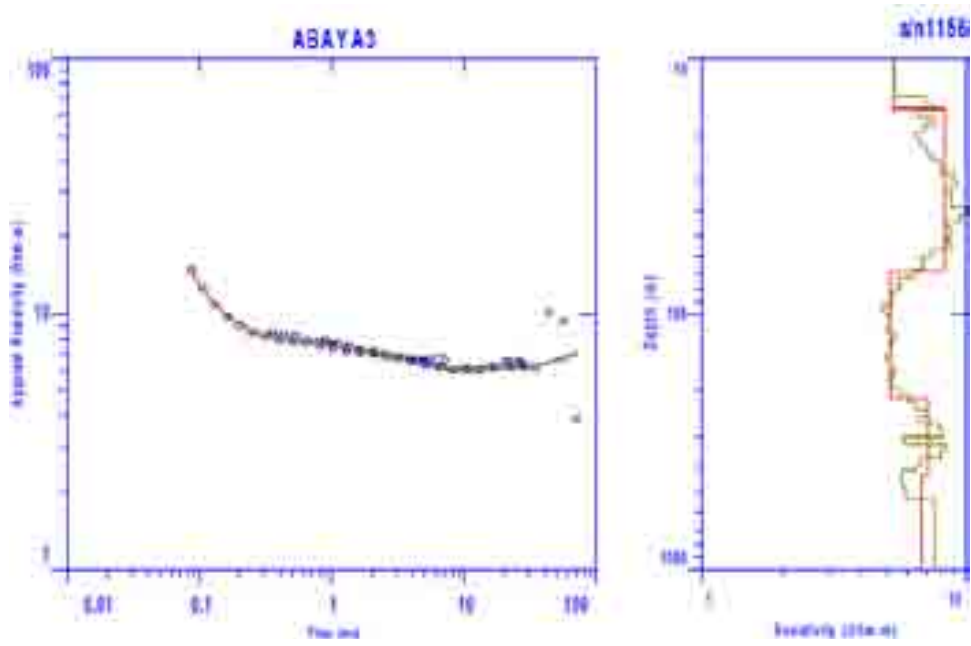


Data 4.2.3 Apparent Resistivity Curve and Analysis Results for TEM Survey (26/28)

Mirab Abaya Area



Data 4.2.3 Apparent Resistivity Curve and Analysis Results for TEM Survey (27/28)



Data 4.2.3 Apparent Resistivity Curve and Analysis Results for TEM Survey (28/28)

5. Observation Well Drilling

WELL DRILLING GEOLOGICAL LOG DATA for Site No-1

Well No.	RVS BH No-1	Drilling Diameter	254 mm	Static Water Level	47.35 m	
Location	Abaya North, Walayta	Casing Diameter	156 mm	Water Struck at	66.00 m	
Easting	383508	Drilling Depth	150.00 m	Drilling method	DTH	
Northing	734719	Well Depth	150.00 m			
Altitude	1688 m					
Depth	Geology	Colour	Drill time (min/rod)	Well Structure	Remark	Depth
0	Top soil crumbling clay - silt	Yellowish beige	9.5		Surface casing 12" to 4m Cement ground to 6m	0
5	Pumice tuff weathered sample: silt - clay size contain some fragments of grey welded tuff, max 1.5cm	Beige	5			5
10			3.2			10
15	Pumice fresh - slightly weathered 17 - 18m :fine (silty) beige 19 - 20m: fine (silty) beige	Grey -beige	2.2			15
20	Sample: mostly fragments of pumice max 2cm		1.6		Gravel filled up to 23m	20
25			1.2			25
30	Tuff 31 - 34m: fine (silt -clay) pale yellowish white	Grey - beige white	6.4			30
35	36 - 37m: sample coarse sand size, volcanic, feldsper, obsidian grains		3.2			35
40			4			40
45	Sand Sample: silt - fine sand very uniform, well sorted grains: pumice and acidic volcanic	Greysh brown	8.1			45
			14		Static water level ▽	
50	Welded tuff					50

Data 5.1 Well Drilling Geological Log Data for Site No-1 (1/3)

WELL DRILLING GEOLOGICAL LOG DATA for Site No-1

Well No.	RVS BH No-1	Drilling Diameter	254 mm	Static Water Level	47.35 m	
Location	Abaya North, Walayta	Casing Diameter	156 mm	Water Struck at	66.00 m	
Easting	383508	Drilling Depth	150.00 m	Drilling method	DTH	
Northing	734719	Well Depth	150.00 m			
Altitude	1688 m					
Depth	Geology	Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth
50	slightly weathered sample: coarse sand - gravel size	Greenish grey	37			50
55			11			55
60			10			60
65			4		water struck at 66m	65
70	Sand with gravel Coarse sand with gravel matrix: yellowish tuff of fine sand up to 70 m	Yellowish grey	5			70
75	gravel and sand: dark grey hard pumice pumice with little pore gravel : angular - subangular	Dark grey	3			75
80			4			80
85	Gravel with sand gravel : max 2cm, dark grey pumice contain little fine		5			85
90			13			90
94	Welded tuff sample: coarse sand - gravel max 3cm, contain little fine	Grey	14			94
95	some fragments yellowish in color contain small amount of crystals (to 10%)	ome greenist				95
100	contain no obsidean, some orange tuff fragments		15	Scr	Screen top at 96m	100

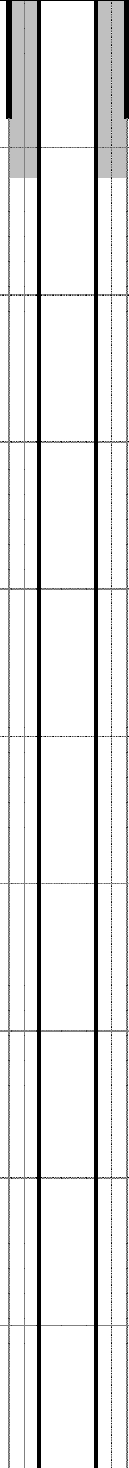
Data 5.1 Well Drilling Geological Log Data for Site No-1 (2/3)

WELL DRILLING GEOLOGICAL LOG DATA for Site No-1

Well No.	RVS BH No-1	Drilling Diameter	254 mm	Static Water Level	47.35 m	
Location	Abaya North, Walayta	Casing Diameter	156 mm	Water Struck at	66.00 m	
Easting	383508	Drilling Depth	150.00 m	Drilling method	DTH	
Northing	734719	Well Depth	150.00 m			
Altitude	1688 m					
Depth	Geology	Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth
100						100
105			17			105
110			17			110
115			18	Scr		115
120			14			120
125			18		warm water struck	125
130	Rhyolite (breccia) sample: coarse sand - gravel with 1 little fine	Pale orange - Purple grey	20		screen botom at 126m	130
135	Fragments of crystalline acidic volcanic color dark reddish purple the rock contains 50% feldspar with minor mafic mineral (mica, amphibole)		60			135
140	max 5 cm fragments		70			140
145			51			145
150			80			150
150			91		End of drilling at 150m	150


Data 5.1 Well Drilling Geological Log Data for Site No-1 (3/3)

WELL DRILLING GEOLOGICAL LOG DATA for Site No-2

Well No.	RVS BH No-2	Drilling Diameter	254 mm	Static Water Level	92.20 m	
Location	Meki, East Shoa	Casing Diameter	156 mm	Water Struck at	101.00 m	
Easting	486367	Drilling Depth	172.00 m	Drilling method	DTH, Mud rotary	
Northing	907630	Well Depth	147.00 m			
Altitude	1694					
Depth	Geology	Colour	Drill time (min/rod)	Well Structure	Remark	Depth
0						0
2	Top soil top soil, silty clay	Yellowish Brown	2.3		surface casing 12" up to 4m cement grout up to 6m	
5	Weathered tuff contain max 1.5cm pumice fragments	Yellowish				
10	Pumice tuff highly weathered pumice with tuff	Yellowish	6.2		at 9.2m, 3 m collapse	10
15	Fresh tuff with pumice	grey	6.6			15
20	Pumice with little sand sample all pumice fragments, pale grey max 3cm	Greyish white				
25	some fragments slightly weathered		4.6			25
30	samples all contain gravel size fragments, uniform looking		1.6			30
35	pumice have fine elongated micropores contain small Qz, felds in 1% ratio		4			35
40			3.1			40
45			1.6			45
46			1.5			46
50	Sand with pumice pumice with sand samole gravel size 40% coarse sand with gravel	Yellowish grey	3.5			50

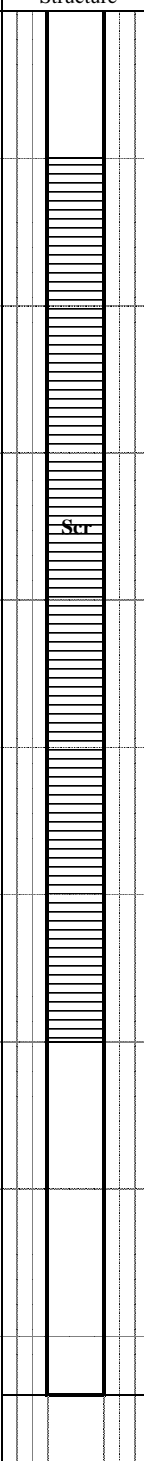
Data 5.1 Well Drilling Geological Log Data for Site No-2 (1/4)

WELL DRILLING GEOLOGICAL LOG DATA for Site No-2

Well No.	RVS BH No-2		Drilling Diameter	254 mm	Static Water Level	92.20 m
Location	Meki, East Shoa		Casing Diameter	156 mm	Water Struck at	101.00 m
Easting	486367		Drilling Depth	172.00 m	Drilling method	DTH, Mud rotary
Northing	907630		Well Depth	147.00 m		
Altitude	1694					
Depth	Geology	Colour	Drill Rate (min/rod)	Well Structure		Depth
50	no rounded gravel, max 1cm					50
			3.1			
55						55
			4.2			
60					at 59m, bit stuck	60
61						61
	Gravel with sand gravel with coarse sand with little fine subrounded gravel of volcanic rocks 40% rounded gravel max 2cm	Grey	4.1			
65						65
	Pumice with gravel pumice max 2cm, gravel max 8mm of reddish & greenish volcanic (5%)	Grey	5.2			
70						70
71	Welded tuff welded tuff and volcanic fragments fragments max 1cm	Pale green	13			
74						74
75		Pale green				75
	highly welded tuff fragments samples in well sorted angular frag. some are greyish micro pores develop, few crystals seen		14			
80			16		Top of gravel at 80m	80
85			18			85
90	Welded tuff	Greenish	3			90
	sample: sand size gravel of volcanic max 1.5cm, angular subangular welded tuff and dark purple volcanic		11		at 92m, 8m collapse Static water level 	
94						94
95	gravel with sand					95
	gravel of welded tuff and associated rock of max 1.5cm, angular contains more greenish fragments towards the bottom.		12			
100	contain tiny pieces of obsidian					100

Data 5.1 Well Drilling Geological Log Data for Site No-2 (2/4)

WELL DRILLING GEOLOGICAL LOG DATA for Site No-2

Well No.	RVS BH No-2	Drilling Diameter	254 mm	Static Water Level	92.20 m		
Location	Meki, East Shoa	Casing Diameter	156 mm	Water Struck at	101.00 m		
Easting	486367	Drilling Depth	172.00 m	Drilling method	DTH, Mud rotary		
Northing	907630	Well Depth	147.00 m				
Altitude	1694						
Depth	Geology	Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth	
100	Gravel with sand subangular - subround gravel of greenish, white, dark grey volcanics	Greenish grey	2.4		Water struck at 101m at 101m, 4m collapse	100	
105						105	
108	gravel max 2cm, angular in sand basaltic and redish volcanics		2.4				108
110	Pumice 110-111m pumice with gravel	Grey					110
115	pumice fragments max 4cm with little fine greenish white pumice		2.3				115
120	116-117m with volcanic fragments max 5mm		1.1				120
125			1.5				125
127	Pumice with gravel		1.3				127
130	Sand with pumice fragments pumice max 4cm, atio 30% sand : greenish grey, moderately sorted	greenish grey				at 128m, 13m collapse	130
133			4.5				133
135	Sand with pumice pumice max 10mm	Grey					135
140	Coarse to medium sand		4.4				140
145			4.5				145
150	Sand Coarse sand	Greenish grey	5.2			at 147m, 2m collapse End of casing at 147m	150
			7.5				

Data 5.1 Well Drilling Geological Log Data for Site No-2 (3/4)

WELL DRILLING GEOLOGICAL LOG DATA for Site No-2

Well No.	RVS BH No-2	Drilling Diameter	254 mm	Static Water Level	92.20 m	
Location	Meki, East Shoa	Casing Diameter	156 mm	Water Struck at	101.00 m	
Easting	486367	Drilling Depth	172.00 m	Drilling method	DTH, Mud rotary	
Northing	907630	Well Depth	147.00 m			
Altitude	1694					
Depth	Geology	Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth
150						150
	Sand medium - fine, moderately sorted very loose sand grain: subangular, subrounded	greenish grey	8.2			
155						155
	rounded grain up to 30% 158-161m contain some pumice frag. max 1.5cm, 30%		16		at 156m, 20m collapse drill bit stuck	
160						160
			21			
165						165
			7.3			
170						170
					End of drilling	
175						175
180						180
185						185
190						190
195						195
200						200

Data 5.1 Well Drilling Geological Log Data for Site No-2 (4/4)

WELL DRILLING GEOLOGICAL LOG DATA for Site No-3

Well No.	RVS BH No-3	Drilling Diameter	254 mm	Static Water Level	171.00 m	
Location	Sheshemene, West Arsi	Casing Diameter	156 mm	Water Struck at	203.00 m	
Easting	447623	Drilling Depth	250.00 m	Drilling method	Rotary, DTH	
Northing	795610	Well Depth	247.00 m			
Altitude	1801 m					
Depth	Geology	Colour	Drill time (min/rod)	Well Structure	Remark	Depth
0	Top soil weatehered pumice, clay - silt with some pumice fragments and some gravel	Dark brown	9		Drill by air up to 97m	0
5	Tuff with pumice pumice fragment 10% slightly weathered sample: fine - medium sand size pumice : fresh, grey	Yellowish greenish grey	3.8		up to 41m drilled with wing bit by rotary cement grout up to 6m at 9.6m, 3m collapse	5
10			5			10
15			3		at 23.4m, 19m collapse	15
20	Pumice with tuff Pumice : fresh, grey, max 4cm, 50%		3			20
25			3			25
30	Tuff with pumice sample : fine - coarse sand size		2.8			30
35			3.2			35
40			3.6			35
40			12		36 to 41 m cemented	40
45	contain some gravel of grey welded tuff around 40m Fresh around the bottom	Yellowish White	8			45
46	Acidic tuff slightly welded clistaline feldsper, quartz grains 30%	Grey Pale grey	21		at 47m, 19m collapse	45
50						50

Data 5.1 Well Drilling Geological Log Data for Site No-3 (1/5)

WELL DRILLING GEOLOGICAL LOG DATA for Site No-3

Well No.	RVS BH No-3	Drilling Diameter	254 mm	Static Water Level	171.00 m	
Location	Sheshemene, West Arsi	Casing Diameter	156 mm	Water Struck at	203.00 m	
Easting	447623	Drilling Depth	250.00 m	Drilling method	Rotary, DTH	
Northing	795610	Well Depth	247.00 m			
Altitude	1801 m					
Depth	Geology	Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth
50						50
	sample medium - coarse sand size bad sorted, max size 0.3cm of Qz and hard vol rock fragments of white and reddish grey a few pumice		24			
55			19			55
60						60
61			15			
65		Yellowish				65
	67-68m contains yellowish welded tuff sample: fine gravel size with little sand fragments (max 1cm), 30%	grey	11			
70	Peleo soil fine sand with yellowish welded	brown				70
71	tuff fragments		5			
75	Tuff + sand with gravel sample: silt - medium sand size	Yellowish white				75
80	with fragments of pumice and volcanic rocks of max 4 mm volcanic frag. (reddish, greysh acidic) Some quartz and pumice subrounded fragment ratio : 5 - 30 %		3			80
85	very uniform look samples sample: coarse sand size from 75m down made of rounded grains of acidic volcanic rock (grey - white). well sorted sample		2			85
90			3			90
94						
95			4			95
	96-98m contains larger fragments of acidic volcanic rock (max 3cm) reddish, grey, greenish					
100	Welded tuff	Greenish	30		at 99m, bit stuck	100

Data 5.1 Well Drilling Geological Log Data for Site No-3 (2/5)

WELL DRILLING GEOLOGICAL LOG DATA for Site No-3

Well No.	RVS BH No-3	Drilling Diameter	254 mm	Static Water Level	171.00 m	
Location	Sheshemene, West Arsi	Casing Diameter	156 mm	Water Struck at	203.00 m	
Easting	447623	Drilling Depth	250.00 m	Drilling method	Rotary, DTH	
Northing	795610	Well Depth	247.00 m			
Altitude	1801 m					
Depth	Geology	Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth
100	pale greenish, slightly weathered sample contain fines, monomictic sample : fine gravel size	grey				100
105	Acidic tuff - breccia slightly weathered sample coarse sand - fine gravel size bad sorted with some fine	Greenish grey	33			105
110			31			110
115			35			115
120			27			120
125			23		at 124m, 24 m collapse occurred from upper section	125
127			26			127
130	Welded tuff - Ryiolite abandant yellowish Qz-Flds crystals abandent obsidean fragments	greyish white	21			130
133	133m slightly weathreed and fine	Yellowish				133
135	Weathered tuff silt size (soil)	Dark orange				135
140	136m contains greenish welded tuff uniform looking samples	brown	11			140
145	Tuff breccia sample gravel and sand size gravel of acidic volcanic (grey, redish) max 1cm sample contain little fines	Yellowish grey	6			145
150			11			150

Data 5.1 Well Drilling Geological Log Data for Site No-3 (3/5)

WELL DRILLING GEOLOGICAL LOG DATA for Site No-3

Well No.	RVS BH No-3	Drilling Diameter	254 mm	Static Water Level	171.00 m	
Location	Sheshemene, West Arsi	Casing Diameter	156 mm	Water Struck at	203.00 m	
Easting	447623	Drilling Depth	250.00 m	Drilling method	Rotary, DTH	
Northing	795610	Well Depth	247.00 m			
Altitude	1801 m					
Depth	Geology	Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth
150		greysh				150
155			16			155
160		Yellowish orange vari-color	12			160
165	Tuff breccia sample coarse sand with some gravel	Orange grey	11			165
170			6			170
175	Tuff breccia sample gravel with sand contains more yellowish - orange colored gravel of subangular	Orange	9		Static water level ▽	175
180			5			180
185	80-84m sample: sand size		8			185
190	Tuff breccia sample sand with gravel contain crumbling crust of tuff (40%), max 1.5cm fine silt - med sand size gravel of volcanic max 5mm	Yellowish orange	6			190
195	(reddish volcanic fragments) 5 - 40%		5			195
200	96m below: more volcanic fragments "(40%) Tuff breccia sample gravel with little sand		6			200
200			8			200

Data 5.1 Well Drilling Geological Log Data for Site No-3 (4/5)

WELL DRILLING GEOLOGICAL LOG DATA for Site No-3

Well No.	RVS BH No-3	Drilling Diameter	254 mm	Static Water Level	171.00 m	
Location	Sheshemene, West Arsi	Casing Diameter	156 mm	Water Struck at	203.00 m	
Easting	447623	Drilling Depth	250.00 m	Drilling method	Rotary, DTH	
Northing	795610	Well Depth	247.00 m			
Altitude	1801 m					
Depth	Geology	Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth
200						200
	203m contain crystalline volcanic of dark purple, sample in block max 5cm		9		Water struck at 203m	
205	Tuff breccia sample gravel with sand gravel of reddish volcanic max 2cm slightly weathered/alterned	Yellowish	8			205
210	contain typically orange colored weathered pumice fragments (30%)		5			210
215						215
220	216-221m contain grains and gravel all covered with orange - dark brown fines sample: sand size	Dark brown	4			220
225	Tuff breccia (crystalline sand with gravel) sample coarse sand with some gravel gravel subangular-angular sand contains many crystals (50-80%) with little fine gravel reddish volcanic & obsidian	grey	4			225
230	Tuff breccia sample: coarse sand with gravel slightly weathered	Yellowish orange	6			230
235	contain yellow fragments of weathered pumice up to 237 strong yellow in color after that paler		5			235
240	sample relatively uniform looking throughout this section	pale yellow	7			240
245			7			245
250			6			250

Data 5.1 Well Drilling Geological Log Data for Site No-3 (5/5)

WELL DRILLING GEOLOGICAL LOG DATA for Site No-4

Well No.	RVS BH-4	Drilling Diameter	254 mm	Static Water Level	7.80 m	
Location	Yirga Alem	Casing Diameter	156 mm	Water Struck at	42 and 96 m	
Easting	424918	Drilling Depth	247.00 m	Drilling method	DTH and Mud Rotary	
Northing	745467	Well Depth	244.00 m			
Altitude	1643 m					
Depth	Geology	Colour	Drill time (min/rod)	Well Structure	Remark	Depth
0						0
1	Top soil , black cotton soil	Black	20		Surface casing up to 45 m	
2	Acidic tuff very fine	Greenish grey				
5	Black clay Uniform clay	Black				
5	no crystals, rock fragments contained wet sample		4		Static water level ∇ 7.8m	5
10						10
11	Clay and silt contain small crystals of Pl and >>Qz	Brown	3			11
15			5.3			15
20			10		Small amount of water struck	20
25			27.5			25
30			6			30
33	Weathered basalt highly weatehred porous basalt bloc crumbling, max 7cm block came out Pl crystals weathered to yellowish	Yellowish grey	4			33
35	Silt and clay contain tiny grains of Qz and obsidia max 1mm more clay than 11-30m section	Yellowish brown	4			35
40			31			40
44			67		Large amount of water struck at 42m	44
45	Welded tuff slightly weathered, partly highly we fine grained, contain fresh elongated Pl, Qz	Greenish grey	82			45
50						50

Data 5.1 Well Drilling Geological Log Data for Site No-4 (1/5)

WELL DRILLING GEOLOGICAL LOG DATA for Site No-4

Well No.	RVS BH-4	Drilling Diameter	254 mm	Static Water Level	7.80 m	
Location	Yirga Alem	Casing Diameter	156 mm	Water Struck at	42 and 96 m	
Easting	424918	Drilling Depth	247.00 m	Drilling method	DTH and Mud Rotary	
Northing	745467	Well Depth	244.00 m			
Altitude	1643 m					
Depth	Geology	Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth
50			86			50
55			90			55
56	Welded tuff sample in sand size, max 2cm more crystalline than above section contain greenish, grey rock fragments	Pale green	30			60
60						
65			33			65
70			45			70
75	Welded tuff sample coarse sand size up to 83m smaller grain size after 83m crushed angular pieces of dark grey to greenish volcanic rocks with small crystals badly sorted, max size 3cm	Bluish grey	31			75
80						
85			41			85
90			36			90
95			16			95
96			21			96
97			22		Large amount of water struck at 96 m	97
100	Slightly weathered welded tuff more cristaline, brownish alteration Coarse grain size sample	Grey				100

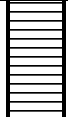
Data 5.1 Well Drilling Geological Log Data for Site No-4 (2/5)

WELL DRILLING GEOLOGICAL LOG DATA for Site No-4

Well No.	RVS BH-4	Drilling Diameter	254 mm	Static Water Level	7.80 m	
Location	Yirga Alem	Casing Diameter	156 mm	Water Struck at	42 and 96 m	
Easting	424918	Drilling Depth	247.00 m	Drilling method	DTH and Mud Rotary	
Northing	745467	Well Depth	244.00 m			
Altitude	1643 m					
Depth	Geology	Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth
100						100
102	Inclusions of weathered pumice and vol rock		19			
105	Volcanic Sand Poorly sorted Coarse to med grain with no fine					
106	Contain pebble size angular to subangular greenish or redish volcanic fragments altered Pl crystal contained		23			
110	Basaltic Breccia	Reddish grey				
115	Congregaed with no fine as matrix Black angular basalt and redish basaltic rock of max 4cm chunk 112- 113m sample sand size 114-115m contain small amount of greenish rounded welded tuff grain sample gravel size		18			
120			13			
125	120 - 127 m contains weathered yellowish tuff (crumbling) pieces		20			
129			55			
130	Crystalline basalt lava	Dark grey	160			
135	Sample , gravel with coarse sand size Angular crystalline basalt frag. 70% max 2cm Reddish welded tuff with glass piece and some crystals, 30%		108			
140			165			
145			85			
150	After 150 m, basalt frag 90%		144			

Data 5.1 Well Drilling Geological Log Data for Site No-4 (3/5)

WELL DRILLING GEOLOGICAL LOG DATA for Site No-4

Well No.	RVS BH-4	Drilling Diameter	254 mm	Static Water Level	7.80 m	
Location	Yirga Alem	Casing Diameter	156 mm	Water Struck at	42 and 96 m	
Easting	424918	Drilling Depth	247.00 m	Drilling method	DTH and Mud Rotary	
Northing	745467	Well Depth	244.00 m			
Altitude	1643 m					
Depth	Geology	Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth
150	Sample uniform and well sorted fragments		98			150
155	Sand and Gravel 70 % sand 30 % Gravel Gravel angular to sub-rounded in shape Sand is fine grained	Brownish				155
160	Sand Fine grained Well sorted	Brownish	320			160
165			418			165
170			124			170
175	Sand Medium to Coarse grained probably tuff origin	Light Grey	123			175
180			192			180
185			139			185
190			74			190
195	Sand Fine grained Some volcanic materials like quartz, feldspar and glassy materials probably rhyolitic origin	Light grey	133			195
200			115			200

Data 5.1 Well Drilling Geological Log Data for Site No-4 (4/5)

WELL DRILLING GEOLOGICAL LOG DATA for Site No-4

Well No.	RVS BH-4	Drilling Diameter	254 mm	Static Water Level	7.80 m
Location	Yirga Alem	Casing Diameter	156 mm	Water Struck at	42 and 96 m
Easting	424918	Drilling Depth	247.00 m	Drilling method	DTH and Mud Rotary
Northing	745467	Well Depth	244.00 m		
Altitude	1643 m				

Depth	Geology	Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth
200						200
205			90			205
210			97			210
215			44			215
220			132			220
225			189			225
230			139			230
235			137			235
240			267			240
244					End of the casing	244
245			144			245
247			128			247

Data 5.1 Well Drilling Geological Log Data for Site No-4 (5/5)

WELL DRILLING GEOLOGICAL LOG DATA at Site No-5

Well No.	RVS BH-5	Drilling Diameter	254 mm	Static Water Level	54.80 m	
Location	Dimitu	Casing Diameter	NA mm	Water Struck at	64.00 m	
Easting	424611	Drilling Depth	83.00 m	Drilling method	DTH	
Northing	763729	Well Depth	NA m			
Altitude	1482 m					
Depth	Geology	Colour	Drill time (min/rod)	Well Structure	Remark	Depth
0						0
3	Top soil Pale brown, clay - silt	Yellowish Pale brown	14.3		Surface casing 10" to 71m	
5	Weathered pumice Pumice frag. Max 2cm	Pale brown grey				
9	Fresh pumice Pumice frag. Max 5cm Tuff : 20 - 30% volume	greyish white	2.4			
11	Wethered tuff	Pale orange				10
11	Silt - clay, 10-11m include some pumice					
15	Slightly weathered pumice and tuff Pumice frag. Ave. 5mm, max 1cm 14-15m: ave. 1cm, max 4cm	Brawnish grey	5.4			15
18	Pumice (weathered tuff) Pumice is fresh (greyish white), max 2cm Matrix is brown tuff	Pale brown	4.5			
20	Ditto Pumice frag. Laeger : max 4cm	Paler	3.2			20
22	Weathered tuff with pumice with small pumice frag. (10%)	Pale brown				
24	Ditto Pumice 60-80%, max 1.5cm	Pale brown				
25	Slightly weathered pumice sand	Pale brown	3.4			25
30	Sand to pebble size pumice frag. moderately sorted some pumice fragments subrounded 28 - 29m: small amount of obsedian	- pale grey	4.2			30
35			2.5			35
40	37 - 51m : this section is specially well sorted, coarse sand size		4.5			40
45			3.3			
50			2.1			45
50						50

Data 5.1 Well Drilling Geological Log Data for Site No-5 (1/2)

WELL DRILLING GEOLOGICAL LOG DATA at Site No-5

Well No.	RVS BH-5	Drilling Diameter	254 mm	Static Water Level	54.80 m	
Location	Dimitu	Casing Diameter	NA mm	Water Struck at	64.00 m	
Easting	424611	Drilling Depth	83.00 m	Drilling method	DTH	
Northing	763729	Well Depth	NA m			
Altitude	1482 m					
Depth	Geology	Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth
50						50
52	52 m small black basalt frag. Contained		1.3			
55	Pumice with rock fragments Slightly weathered pumice with volcanic rock fragments (rhyolite, obsidian)	Varicolor			Static water level ▽	55
56	Pumice frag.: Max 3cm, 20%		1.3		54.8m	
60	Ditto This section contain more fine, clayey smaller pumice frag. Max 2cm					60
63			2.5			
65	Ditto more volcanic frag. (50%), max 3cm				water struck at 64m	65
69	Basalt (blocky) blocky, perforated, slightly weathered yellowish alteration mineral in pores frag. Max 3cm, no fine	Grey-black	4.3			
70	Fresh basalt (blocky) porous max frag. 3cm, yellowish alteration in pores	Grey-black	500			70
73	Fresh basalt lave (massive) Fresh basalt fragments of coarse sand size: ave. 1-3mm, max 1cm uniform and no fines	Grey-black	61			75
80			79			80
82						
83	Volcanic sand Coarse sand size with little fine	Varicolor			End of borehole 31 Jan. 2011	
85	45% fresh basalt fragment (angular)					85
90	50% pale orange acidic tuff/rhyolite fragments (angular) 5% yellowish white pumice fragments sub-rounded, small amount feld cry. max size 7mm					90
95						95
100						100

Data 5.1 Well Drilling Geological Log Data for Site No-5 (2/2)

WELL DRILLING GEOLOGICAL LOG DATA for Site No-5N

Well No.	RVS BH-5N	Drilling Diameter	254 mm	Static Water Level	NA m	
Location	Dimtu	Casing Diameter	NA mm	Water Struck at	NA m	
Easting	404286	Drilling Depth	42.00 m	Drilling method	Mud rotary	
Northing	7656582	Well Depth	NA m			
Altitude	1483 m					
Depth	Geology	Colour	Drill time (min/rod)	Well Structure	Remark	Depth
0	Top soil Pumiceous clay - silt	Yellowish white	15			0
4						
5	Weathered basalt Slightly weathered black basalt cutting fragments max 5mm	black	20			5
10						10
13						
15	Coarse sand subangular basalt and feldspar grains of max 3mm	Grey	35			15
18						
20	Coarse sand increased ratio of basalt grains	Dark grey	35			20
24						
25	Slightly weathered basalt black basalt cutting fragments max 5mm	Black	60			25
27						
30	Weathered basalt black basalt frag, and crumbling veige color frag. Ratio (50 : 50)	Dark grey	420			30
35	Weathered basalt same as above 95% basalt fragment	Dark grey varicolor	20			35
40	Fresh massive basalt slightly flattened black basalt frag. max 1cm	Black				40
45						45
50						50

Data 5.1 Well Drilling Geological Log Data for Site No-5N (1/1)

WELL DRILLING GEOLOGICAL LOG DATA for Site No-5N (Complete)

Well No.	RVS BH 5N	Drilling Diameter	256 mm	Static Water Level	Artesian	
Location	Dimitu	Casing Diameter	156 mm	Water Struck at	5,35 & 90 m	
Easting	404289	Drilling Depth	250.00 m	Drilling method	Mud rotary & DTH	
Northing	7656582	Well Depth	250.00 m			
Altitude	1485 m					
Depth	Geology	Colour	Drill time (min/rod)	Well Structure	Remark	Depth
0	Soil	yellowish			11" in diameter 19 meters length surface	0
3						
5	Tuff Slightly welded	yellowish				5
	Some quartz (5 %) Highly weathered		2			
10						10
			6			
15						15
17						
	Vesicular Basalt massive	Greyish	5			
20	fine grained Quartz viens					20
			7			
25						25
	Vesicular Basalt coarse grained moderately weathred and fractured Max. grain size 2 cm	Dark grey				
30			13			30
	Vesicular Basalt fine grained massive	Dark Grey				
35						35
	Vesicular Basalt coarse grained moderately fractured Max. grain size 2-3 cm	Grayish	5			
40						40
			14			
45						45
			36			
50						50

Data 5.1 Well Drilling Geological Log Data for Site No-5N complete (1/5)

Depth		Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth
50						50
53			54			53
55	Vesicular Basalt Medium to coarse grained	Reddish				55
57	Moderately weathered Slightly fractured					57
60	Vesicular Basalt Medium to coarse grained Moderately weathered Slightly fractured	Greyish	93			60
65						65
70			134			70
75						75
78			74			78
80	Vesicular Basalt medium to fine grained Slightly fractured and weathered	Greyish reddish	90			80
82						82
85	Basalt (bolder like) volcanic materials (quartz and glassy materials) fine grained highly weathered	Greyish	20			85
87						87
88	Vesicular Basalt coarse grained, large gravel of basalt moderately fractured	Greyish				88
90			17			90
95	Tuff moderately welded 80% whitish 20% yellowish	whitish reddish				95
100	Tuff moderately welded 80 % yellowish in color 20 % whitish in color with some volcanic materials		20			100

Data 5.1 Well Drilling Geological Log Data for Site No-5N complete (2/5)

Depth 100	Geology	Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth 100
	quartz ,feldspar ,glassy materials		17			
105			10			
110			9			
114	Rhyolitic tuff	Whitish				
115	with some volcanic materials medium to fine grained slightly fractured moderately weathered containing altered pumice frag		16			
120			7			
125			22			
130	Ignimbrite	Greenish				
135	highly weathered moderately fractured almost changed to clay containing fragments of obsidian tuff, pumice and Qz crystals		9			
140			10			
145	Tuff	Light grey				
150	moderately welded highly weathered rounded sand sized grains Max. grain size 2 cm		96			

Data 5.1 Well Drilling Geological Log Data for Site No-5N complete (3/5)

Depth 150	Geology	Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth 150
155						155
160	Weathered tuff Qz rich tuff frag of coarse sand siz	Yellowish white	136			160
164			9			164
165	welded tuff	Dark green				165
170	Highly weathered decomposed to clay sticky Frag : obsideian, tuff , pumice max 1cm		50			170
175			45			175
180			20			180
185			6			185
190			18			190
195						195
196						196
200	Tuff slightly welded highly weathered altered to clay	Dark green	7			200

Data 5.1 Well Drilling Geological Log Data for Site No-5N complete (4/5)

Depth 200	Geology	Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth 200
	sticky (wet)					
205	Tuff weathered tuff more basic looking of samples more volcanic clay produced	Greenish grey	38			205
210			37			210
215			77			215
220			18			220
225			17			225
230			18			230
235			62			235
240			58			240
245						245
246	Ignimbrite moderately weathered slightly fractured coarse to medium grain	Dark grey				246
250			70			250

Data 5.1 Well Drilling Geological Log Data for Site No-5N complete (5/5)

WELL DRILLING GEOLOGICAL LOG DATA for Site No-6

Well No.	RVS BH 6	Drilling Diameter	256 mm	Static Water Level	247 m	
Location	Kenche	Casing Diameter	156 mm	Water Struck at	274 & 310 m	
Easting	0420139	Drilling Depth	400.00 m	Drilling method	DTH	
Northing	0807171	Well Depth	356.00 m			
Altitude	1868 m					
Depth	Geology	Colour	Drill time (min/rod)	Well Structure	Remark	Depth
0	Top Soil Clayey in color	Dark Brown			11" in diameter 6 m length surface casing	0
5	Volcanic ash (tuff) highly weathered very fine grained	Yellowish	15			5
10			4			10
14						14
15	Pumice tuff fragmented, highly weathered Max. grain size 3-4 cm sub rounded in shape, crumbling	Greyish yellowish	3			15
20						20
25	Pumice Highly weathered with some volcanic materials like quartz, rhyolite	Yellowish	10			25
27	Welded Tuff highly weathered and fractured Max. grain size 2-3 cm	Yellowish				27
30	Rhyolite Highly crystalline (feldspar) moderately fractured Max. grain size 2 cm	Dark Grey reddish	24			30
35			43			35
38						38
40	Tuff Breccia Max grain size 4 cm In composition pumice, Ignimbrite and volcanic sand	Greyish	14			40
42						42
44	Rhyolite moderately weathered and fracture Max frag. size 2 cm, contain flaky glass	Dark grey				44
45	Volcanic Sand poorly sorted 60 % rounded, 40 % angular	light Greyish	9			45
50	Tuff Breccia Reddish 50% & light grey 50 % color					50

Data 5.1 Well Drilling Geological Log Data for Site No-6 (1/8)

Well No.	RVS BH 6	Drilling Diameter	256 mm	Static Water Level	247 m	
Location	Kenche	Casing Diameter	156 mm	Water Struck at	274 & 310 m	
Easting	0420139	Drilling Depth	400.00 m	Drilling method	DTH	
Northing	0807171	Well Depth	356.00 m			
Altitude	1868 m					
Depth		Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth
50						50
	Welded Tuff Weathered moderately fractured Max. frag size 3 cm Flattened fragments	Yellowish slightly green	12			
55						55
	Moderately to weakly welded including small rock fragments and some obsidian (flattened)					
60			12			60
	Acidic tuff angular in shape highly fractured volcanic material Rhyolite tuff and pumice	light grey Pale pink				
65						65
	other volcanic materials Slightly yellowish matrix with crystal and rock fragments max frag. Size 4cm, angular		12			
70						70
72			10			
	Lapili tuff moderately sorted sand 80 %	Yellowish				
75						75
	gravel 20 % in composition Altered medium grain tuff with angular dark grey volcanic fragments		14			
79						
80	Altered acidic tuff	Yellowish				80
	small gravel size Medium grain altered tuff, yellowish flattened fragments contain some crystals		19			
85						85
87						
	Tuff breccia Max. grain size 2-3 cm	Light Grey				
90			13			90
91						
	Sand with gravel moderately sorted sub rounded grains fine to medium sand 90 %	Light Grey yellowish				
95						95
	gravel 10 %, crystal grains 30% Volcanic fragments of yellowish, reddish green, reddish, yellowish large tuff frag		15			
100						100

Data 5.1 Well Drilling Geological Log Data for Site No-6 (2/8)

Well No.	RVS BH 6	Drilling Diameter	256 mm	Static Water Level	247 m	
Location	Kenche	Casing Diameter	156 mm	Water Struck at	274 & 310 m	
Easting	0420139	Drilling Depth	400.00 m	Drilling method	DTH	
Northing	0807171	Well Depth	356.00 m			
Altitude	1868 m					
Depth 100	Geology	Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth 100
			11			
105	Volcanic Sand poorly sorted Max. grain size 0.5 cm volcanic materials crystal less than 5%	Dark Grey to Black	7			105
110	Fine to medium sand 20 % grains sub-angular - sub-rounded uniform looking sample		11			110
115						115
120			12			120
125						125
130	Volcanic Sand and Gravel Sand 70 % Gravel 30 % Max. grain size 1 cm compositionally quartz ,pumice and rhyolite(dark grey to purple) Flattened fragments 10% sub-rounded sand grain	Dark grey	14			130
135			7			135
140			11			140
145			10			145
150			13			150

Data 5.1 Well Drilling Geological Log Data for Site No-6 (3/8)

Well No.	RVS BH 6	Drilling Diameter	256 mm	Static Water Level	247 m	
Location	Kenche	Casing Diameter	156 mm	Water Struck at	274 & 310 m	
Easting	0420139	Drilling Depth	400.00 m	Drilling method	DTH	
Northing	0807171	Well Depth	356.00 m			
Altitude	1868 m					
Depth	Geology	Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth
150						150
153						
155	Gravel Max. grain size 1cm	Grey				155
156	tuff and Rhyolitic in origin		10			
160	Sand and gravel fine in grain size, max 1cm moderately sorted some volcanic materials like quartz,tuff and rhyolite	Light Grey				160
165	at 156m many pumice fragments		14			165
168						
170	Crystalline Sand and gravel coarse in grain size	Greyish	15			170
175	sub-angular moderately sorted some altered volcanic materials		6			175
180	volcanic rock fragments Dark grey acidic rock, Yellowish welded tuff Mostly angular sand grains		16			180
185						
190			30			190
195			12			195
200	Sand with gravel grain Qz, felds cystatals Yellowish grey acidic vol rock max 1cm		12			200

Data 5.1 Well Drilling Geological Log Data for Site No-6 (4/8)

Well No.	RVS BH 6	Drilling Diameter	256 mm	Static Water Level	247 m	
Location	Kenche	Casing Diameter	156 mm	Water Struck at	274 & 310 m	
Easting	0420139	Drilling Depth	400.00 m	Drilling method	DTH	
Northing	0807171	Well Depth	356.00 m			
Altitude	1868 m					
Depth	Geology	Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth
200						200
			33			
205						205
			24			
210						210
			11			
215						215
			17			
220	Qz, Feldspar rick sand med-fine sand, poorly sorted angular to sub-angular grains	Greyish white				220
223	Welded Tuff Moderately fractured	Greenish				225
225	max. grain size 3 cm Pale greenish grey, coarse grain, welded Abandunt qz crystals		22			
230						230
			28			
235						235
			28			
240						240
			16			
245					SWL ▽	245
250						250

Data 5.1 Well Drilling Geological Log Data for Site No-6 (5/8)

Well No.	RVS BH 6		Drilling Diameter	256 mm	Static Water Level	247 m
Location	Kenche		Casing Diameter	156 mm	Water Struck at	274 & 310 m
Easting	0420139		Drilling Depth	400.00 m	Drilling method	DTH
Northing	0807171		Well Depth	356.00 m		
Altitude	1868 m					
Depth	Geology	Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth
250						250
252			6			
255	Sand (crystalline) coarse grain size poorly sorted	yellowish				255
257	rounded in shape 50% crystal grains					
260	Welded tuff Highly weathered moderately fractured	Yellowish	13			260
265	Max. grain size 2 cm sample sand and gravel size Yellowish, weakly welded tuff crumbling		14			265
269						
270	Welded Tuff	Grey	18			270
275	Moderately fractured slightly weathered Max. grain size 1.5 cm containing many feldspar crystals				First water strike zone	274 275
279			23			
280	Welded Tuff	Grey				280
285	Moderately weathered moderately fractured Max. grain size 2 cm		61			285
290			66			290
294			11			295
295	Tuff	Yellowish				295
	Shlightly welded with welded tuff f highly weathered highly fractured Max. grain size 2 cm	Greyish				
300			9			300

Data 5.1 Well Drilling Geological Log Data for Site No-6 (6/8)

Well No.	RVS BH 6		Drilling Diameter	256 mm	Static Water Level	247 m
Location	Kenche		Casing Diameter	156 mm	Water Struck at	274 & 310 m
Easting	0420139		Drilling Depth	400.00 m	Drilling method	DTH
Northing	0807171		Well Depth	356.00 m		
Altitude	1868 m					
Depth	Geology	Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth
300						300
301	Sand with gravel Coarse grain size 60 % rounded in shape 40 % angular in shape	Yellowish grey Grey				
305	pumice in origin with some volcanic materials rounded pumice and welded tuff gravel sand grain of grey color containing angular crystals		10			305
310			11		Second water strike zone(bigger amount of water)	310
315						315
317	Pumice fragmented,max. gain size 3 cm	Greyish white	8			
320	Gravel angular in shape max. grain size 4 cm	Light Grey White				320
325	Angular volcanic rock frag subangular pumice and welded tuff frag (grey to white)		25			325
330			15			330
335	Pumice and sand - gravel Max. grain size 3 cm the sand is consolidated pumice max. grain size 3 cm sand max. grain size 2-2.5 cm	Dark Grey				335
340	Gravel subangular greyish white pumice sand 50% rock frag, 50% crystals		18			340
345			12			345
348			13			
350	Gravel with sand 80 % sub rounded in shape	Dark grey				350

Data 5.1 Well Drilling Geological Log Data for Site No-6 (7/8)

Well No.	RVS BH 6		Drilling Diameter	256 mm	Static Water Level	247 m
Location	Kenche		Casing Diameter	156 mm	Water Struck at	274 & 310 m
Easting	0420139		Drilling Depth	400.00 m	Drilling method	DTH
Northing	0807171		Well Depth	356.00 m		
Altitude	1868 m					
Depth	Geology	Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth
350	20 % angular in shape moderately sorted max. grain size 1cm Black crumbling gravel of sub-rounded		17		End of casing	350
355			355			
357	Gravel with Sand gravel 70 % (black and altered) sand 30 %	Dark Grey Black	19			360
360			360			
365	gravel sub rounded in shape the sand very fine grained poorly sorted 90% black altered sand		31			365
366			366			
370	Sand fine grained - med grain well sorted	Light grey Dark grey	64			370
375			375			
380	Black sand, poorly sorted		25			380
385			385			
390	Dark grey with more Qz and Felds grains moderately sorted		20			385
395			390			
400			54			390
395			395			
400			62			395
400			400			
400			47			400

Data 5.1 Well Drilling Geological Log Data for Site No-6 (8/8)

WELL DRILLING GEOLOGICAL LOG DATA for Site No-7

Well No.	RVS BH-7	Drilling Diameter	254 mm	Static Water Level	4.89 m	
Location	Arba Minch	Casing Diameter	NA mm	Water Struck at	NA m	
Easting	341712	Drilling Depth	200.00 m	Drilling method	Mud rotary	
Northing	670506	Well Depth	200.00 m			
Altitude	1149 m					
Depth	Geology	Colour	Drill time (hrs/ m)	Well Structure	Remark	Depth
0	Top Soil, fine sand and silt	Brown			Surface Casing 12" 1 long	0
	Fine sand moderately sorted angular to subangular grains of fine sand of volcanic rocks and Qz and Pl crystals	Geyish				
5					SWL ▽	5
	6 m below, silt - fine sand		16 hrs (0-15m)			
10						10
15						15
18						18
20	Sand poorly sorted fine sand Subangular to subrounded contain less crystal than 5m sample Coarser toward the bottom, Med sand	greyish varicolor	8 hrs (15-29m)			20
25						25
27						27
30	Sand with gravel Med to coarse sand, rounded to subr some volcanic materials quartz , obsidian ,feldspar Max. grain size ϕ 0.3 cm 80% dark grey basalt + Qz	Page grey with white, yellowish sponts	11 hrs (29-33m)			30
33	Basalt weathered Max. Grain size 3mm sample mid sand size	Black				35
40	Sand Coarse sand with some pebble size grains, moderately sorted angular to subangular 60% grey basalt	greyish with white spots	10 hrs (33-52m)			40
45	Sand quartz ,obsidian and feldspart some altered volcanic materials 80 % angular in shape 20 % rounded in shape (basalt) sample coarse sand size	Pale grey veige varicolor				45
50						50


Data 5.1 Well Drilling Geological Log Data for Site No-7 (1/4)

WELL DRILLING GEOLOGICAL LOG DATA for Site No-7

Well No.	RVS BH-7	Drilling Diameter	254 mm	Static Water Level	4.89 m	
Location	Arba Minch	Casing Diameter	NA mm	Water Struck at	NA m	
Easting	341712	Drilling Depth	200.00 m	Drilling method	Mud rotary	
Northing	670506	Well Depth	200.00 m			
Altitude	1149 m					
Depth	Geology	Colour	Drill Rate (hrs/ m)	Well Structure	Remark	Depth
50	angular pcs are white rhyolite					50
55	around 55 m very coarse max 8mm					55
60			17 hrs (52-61m)			60
61						61
65	Clay silty clay with some sand grains of rounded shape	yellowish grey	12 hrs (61-69m)			65
70	sample as mud cake (due to drillmud ?)					70
71						71
75	Tuff and pumice Highly to moderately weathered silt containing coarse sand to pebble size weathered pumice	Brownish white				75
80			8 hrs (69-88m)			80
85						85
90	Sand with gravel Coarse sand with some pebble similar to 50m section but more basalt grains (90%) 40% rounded, 60% angular	Dark grey				90
95	Poorly to moderately sorted max 5mm size		7 hrs (88-100m)			95
100						100

Data 5.1 Well Drilling Geological Log Data for Site No-7 (2/4)

WELL DRILLING GEOLOGICAL LOG DATA for Site No-7

Well No.	RVS BH-7	Drilling Diameter	254 mm	Static Water Level	4.89 m			
Location	Arba Minch	Casing Diameter	NA mm	Water Struck at	NA m			
Easting	341712	Drilling Depth	200.00 m	Drilling method	Mud rotary			
Northing	670506	Well Depth	200.00 m					
Altitude	1149 m							
Depth	Geology	Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth		
100	Fine gravel relatively well sorted subrounded to rounded grains max 5mm, 80% black basalt, 20% white rhyolite	Dark grey	45			100		
105			145			105		
110	Qz tuff, reddish vol rock		35					110
115			52					115
120			108					120
123	Medium gravel same composition as above max 2 cm gravel	Dark grey	96					123
125			91					125
127	Fine gravel same as section 100-123m	Dark grey	63					127
130			104					130
135			128					135
140	Coarse sand poorly to moderately sorted max 3 mm 50% subrounded grains 50% angular to subangular		69					140
145								145
150								150

Data 5.1 Well Drilling Geological Log Data for Site No-7 (3/4)

WELL DRILLING GEOLOGICAL LOG DATA for Site No-7

Well No.	RVS BH-7	Drilling Diameter	254 mm	Static Water Level	4.89 m			
Location	Arba Minch	Casing Diameter	NA mm	Water Struck at	NA m			
Easting	341712	Drilling Depth	200.00 m	Drilling method	Mud rotary			
Northing	670506	Well Depth	200.00 m					
Altitude	1149 m							
Depth	Geology	Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth		
150	fresh black basalt 30% weathered basalt 10 to 20% Other grains (white, reddish, green welded tuff)	Dark grey	113			150		
155			54			155		
160			104			160		
165			146			165		
170			162			170		
173			Sample lost (clay ?) circulation maintained	162			173	
175							175	
180			Coarse sand sample recovered from this depth Moderately sorted, Max size 1 mm 70% grain rounded. 30% subangular same composition as upper sands		189			180
185					204			185
190					94			190
195	68					195		
200			79			200		

Data 5.1 Well Drilling Geological Log Data for Site No-7 (4/4)

WELL DRILLING GEOLOGICAL LOG DATA for Site No-8

Well No.	RVS BH-8	Drilling Diameter	254 mm	Static Water Level	15.30 m	
Location	Chamo South	Casing Diameter	156 mm	Water Struck at	25 and 50 m	
Easting	327946	Drilling Depth	150.00 m	Drilling method	Mud	
Northing	630717	Well Depth	152.00 m			
Altitude	1156 m					
Depth	Geology	Colour	Drill time (min/rod)	Well Structure	Remark	Depth
0						0
5	Fine Sand with Silt Moderately sorted 60 % rounded 40 % angular	Yellowish brown	154.8		Surface casing 12" to 1.1m	5
10			126			10
13						
15	Clay with some silt 70 % clay 30 % silt	Yellowish	123		SWL ▽	15
20			198			20
24						
25	Coarse Sand	Dark grey	300			25
30	90 % basalt Well sorted 70 % rounded 30 % angular few crystals		192			30
35	Sticky Clay wet	Reddish brown	300			35
36						
39	Basalt Slightly weathered , uniform sample Max. grain size 1 cm , massive	Dark Grey				
40	Basalt Massive,fresh (41-42 m clay) fine grained compered to the above sand size		720			40
44						
45	Clay	Reddish	540			45
47	Fine Sand 30 % rounded, 70 % angular, uniform	Greyish				
49	Silty Caly wet	Yellowish				
50	Sand	Greyish	84			50

Data 5.1 Well Drilling Geological Log Data for Site No-8 (1/3)

Well No.	RVS BH-8	Drilling Diameter	254 mm	Static Water Level	15.30 m	
Location	Chamo South	Casing Diameter	156 mm	Water Struck at	25 and 50 m	
Easting	327946	Drilling Depth	150.00 m	Drilling method	Mud	
Northing	630717	Well Depth	152.00 m			
Altitude	1156 m					
Depth	Geology	Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth
50	medium to coarse in grain size 80 % well rounded volcanic materials basalt ,quartz and feldspar	Black Yellowish brown				50
55			249		55	
58	Clay Sticky,wet	Brownish			60	
60	Basalt Moderately weathered ,slightly fractured Max. 0.5 cm grain Fine grined (coarse sand size)	Dark Grey	300		65	
64					68	
65	Gravel	Greyish	258		70	
68	well sorted 50 % sub-rounded 5 % angular Max. grain size 1 cm Basaltic origin (> 95 %)		372		74	
70	Clay with gravel 60 % clay in composition (sticky) 40 % gravel	Brownish			75	
74			420		76	
75	Basalt	Dark Grey			80	
76	moderately weathered & fractured Max. grain size 0.5-1 cm				85	
80	Clay with gravel contain 10 % gravel, mostly rounded high water content	Brownish	267		88	
85	Gravel		558		90	
88					93	
90	Basalt Highly weathered to moderately fractured Max. grain size 2 cm	Dark Grey	360		95	
93				100		
95	Clay and gravel 80 % clay -Sticky ,brownish in color 20 % gravel - rounded ,basaltic origin 50% sub-rounded 50% sub-angular	Brownish	192			
100			252			

Data 5.1 Well Drilling Geological Log Data for Site No-8 (2/3)

Well No.	RVS BH-8	Drilling Diameter	254 mm	Static Water Level	15.30 m	
Location	Chamo South	Casing Diameter	156 mm	Water Struck at	25 and 50 m	
Easting	327946	Drilling Depth	150.00 m	Drilling method	Mud	
Northing	630717	Well Depth	152.00 m			
Altitude	1156 m					
Depth	Geology	Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth
100						100
105			306			105
109						
110	Basalt	Dark Grey	552			110
	Moderately weathered slightly fractured Max. grain size 2cm					
115	20% sub-rounded grains		570			115
	contain 10% yellowish white weathered fragments					
120			132			120
124						
125	Clay with some basalt	Brownish	246			125
	sticky, 5 % basalt					
127						
128	Basalt	Dark grey				
	moderately weathered					
130	Clay with gravel	Brownish	424.2			130
131	the gravel basaltic origin					
132	sub rounded in shape, clustered sample					
	max . grain size 1.5 cm					
134	60 % clay					
135	40 % gravel		504			135
	Basalt	Greyish				
	moderately weathered					
	Clay with gravel					
	the same as 128-131 meters					
140	basalt the same as 127-128 meters		378			140
	Clay with gravel					
	the same as 128-131 meters					
144						
145	Gravel	Greyish	252			145
	basaltic origin					
	angular to sub angular in shape					
	moderately sorted					
150	max. 2cm, 40% sub-rounded					150
152			552			152

Data 5.1 Well Drilling Geological Log Data for Site No-8 (3/3)


WELL DRILLING GEOLOGICAL LOG DATA for Site No-9N

Well No.	RVS BH 9-N	Drilling Diameter	256 mm	Static Water Level	44.70 m	
Location	Langano SW	Casing Diameter	156 mm	Water Struck at	89and 100 m	
Easting	464826	Drilling Depth	201.00 m	Drilling method	Mud rotary	
Northing	829769	Well Depth	201.00 m			
Altitude	1629 m					
Depth	Geology	Colour	Drill time (min/rod)	Well Structure	Remark	Depth
0						0
	Alluvial Sand poorly sorted angular grain, coarse sand	Yellowish	6			
4					10inch surface casing up to 28.23m	
5	Tuff	Yellowish				5
7	Weathered, crumbling, contain 5% volcanic materials, quartz cristal		18			
10	Tuff Slightly welded Weathered to highly weathered moderately fractured	Yellowish white				10
15	Max. fragmentation size 3 cm tuff frag. containg fresh Pl crystals and volcanic rock grains		25			15
20	17 m - 20 m Highly weathered, crumbling	Yellow	25			20
25	Tuff Highly weathered Almost Decomposed to soil	Yellowish				25
30			22			30
32			26			32
35	Tuff (Ditto) containing more crystals and rock fragments		18			35
40						40
45	Tuff Highly weathered and fractured Slightly welded Max. fragment size 3cm contain large crystals	Yellowish white	8		SWL ▽	45
50	sample un-uniform look, aggregates of corase fragments Tuff fragments develop small bescules of up to a few mm		6			50

Data 5.1 Well Drilling Geological Log Data for Site No- 9N(1/4)

Well No.	RVS BH 9-N	Drilling Diameter	256 mm	Static Water Level	44.70 m	
Location	Langano SW	Casing Diameter	156 mm	Water Struck at	89 and 100 m	
Easting	464826	Drilling Depth	201.00 m	Drilling method	Mud rotary	
Northing	829769	Well Depth	201.00 m			
Altitude	1629 m					
Depth		Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth
50						50
51						
55	Tuff breccia obsidian fragments ,pebbles and gravels angular with sharpe edges	Grey				55
58	max. fragment size 2cm of grey to pale green welded tuff and reddish vol.		9			
60	samples relatively uniform look Below 58m, sample size smaller greyish rhyolite fragments	Grey	78			60
65						65
67						
70	Welded Tuff (Ignimbrite) massive up to 75m ,medium grained	Greenish with Dark grey	321			70
75			456			75
80	sample max 1cm, slightly elongated and flattened with sharpe edges contain tiny pieces of obsidian		30			80
85	Welded Tuff (Ignimbrite) massive	Greenish to grayish	455			85
87	sample max 1cm. Some subrounded pieces of welded tuff, Pl up to 3mm					
89						
90	Tuff and Volcanic sand	Greyish	6		Water Strike point 89 meters	90
95	Volcanic sand (Obsidian ,glassy and material) Mixture of green tuff (weakly weleded) max 1.5cm and grey, hard welded tuff angular -subangular mx 5mm + pl crystals					95
96	Tuff breccia (Ditto) with some volcanic sand (5%) rounded ,max. fragment size 1.5cm crumbling welded tuff frag (60%)	Greyish	7			
100						100

Data 5.1 Well Drilling Geological Log Data for Site No- 9N(2/4)

Well No.	RVS BH 9-N	Drilling Diameter	256 mm	Static Water Level	44.70 m	
Location	Langano SW	Casing Diameter	156 mm	Water Struck at	89 and 100 m	
Easting	464826	Drilling Depth	201.00 m	Drilling method	Mud rotary	
Northing	829769	Well Depth	201.00 m			
Altitude	1629 m					
Depth	Geology	Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth
100						100
102	Pumice gravel Grey fresh subrounded to rounded pumice gravel of max 3cm	White	6			
105	Poorly sorted pumice with very fine vesicles 105 - 108 m angular coarse sand		5			
110						
114	Sand Angular grains of various materials poorly sorted, similar to 90 - 95m section	Grey	9		Possible end of water bearing zone	
115	Tuff and sand Very sticky, clay sized mixture of crumbling green tuff pieces and vol rock fragments of sand size	Greenish to gray			↑	115
119						
120	Pumice gravel with fine sand	Grey	6			120
125						125
130	Silty clay sticky (wet) contain small amount of sand grains Probably decalated tuff	Greenish grey	10			130
	Sample wet		9			
135						135
140			7			140
145			9			145
150			14			150

Data 5.1 Well Drilling Geological Log Data for Site No- 9N(3/4)

Well No.	RVS BH 9-N	Drilling Diameter	256 mm	Static Water Level	44.70 m	
Location	Langano SW	Casing Diameter	156 mm	Water Struck at	89and 100 m	
Easting	464826	Drilling Depth	201.00 m	Drilling method	Mud rotary	
Northing	829769	Well Depth	201.00 m			
Altitude	1629 m					
Depth	Geology	Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth
150						150
151						
155	Tuff fine grained ash sample dry and uniform look	Pale greish white				
157			11			
160	Silty fine sand decalyed tuff	Greenish grey				
165			18			
170			13			
175			10			
180			11			
184						
185	184-189m Sample clayey		58			
189						
190						
195			88			
196	Silty clay	Gery	80			
200			4			200

Data 5.1 Well Drilling Geological Log Data for Site No- 9N(4/4)

WELL DRILLING GEOLOGICAL LOG DATA for Site No-10N

Well No.	RVS BH 10-N	Drilling Diameter	256 mm	Static Water Level	25.60 m	
Location	Ziway East, Ogolcho	Casing Diameter	156 mm	Water Struck at	66 and 92 m	
Easting	500516	Drilling Depth	202.00 m	Drilling method	Mud rotary	
Northing	889860	Well Depth	202.00 m			
Altitude	1685 m					
Depth	Geology	Colour	Drill time (min/rod)	Well Structure	Remark	Depth
0	Top soil Clay and silt containing vol rock pieces	Yellowish brown Dark grey	5			0
5	Weathered tuff with pumice fragment (whitish) obsidian, 6-7m paler color	Yellowish	19		10inch surface casing up to 21m	5
10	Pumice sample in one chunk contain small amount of greenish welded tuff 14-15m: sample fragmented	Greyish white	23			10
15	Pumice and acidic tuff tuff is greenish white contain small amount of dark brown weathred tuff	Greyish white	73		Small amount of water sruck at 16 m	15
20						20
21	Pumice and acidic tuff same as above but less green pumice up to 3cm pumice fragment		11			21
25					SWL ▽	25
30			9			30
35	Pumice and acidic tuff, weathered max 2cm of crumbling tuff of reddish brown, white, pale green, contain obsidian, feldspar cristals	Grey and brown	8			35
36						36
37	Volcanic sand Coase grained, mostly pumice pieces some rounded. Vol rock, obsidian pcs	Grey				37
38						38
40	Pumice and acidic tuff, weathered Acidic tuff greenish white tuff, max 3cm pieces fine grained some pieces pale green	Grey and brown Greyish brown	11			40
45						45
50			10			50



Data 5.1 Well Drilling Geological Log Data for Site No-10N (1/4)

WELL DRILLING GEOLOGICAL LOG DATA for Site No-10N

Well No.	RVS BH 10-N	Drilling Diameter	256 mm	Static Water Level	25.60 m	
Location	Ziway East, Ogolcho	Casing Diameter	156 mm	Water Struck at	66 and 92 m	
Easting	500516	Drilling Depth	202.00 m	Drilling method	Mud rotary	
Northing	889860	Well Depth	202.00 m			
Altitude	1685 m					
Depth		Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth
50			6			50
55			7			55
60			6			60
61						
65	Sand and gravel mostly angular with small rounded pumice pieces contain obsidian, black basaltic pieces	Grey varicolor	6			65
66	tuff (whitish) pieces flaky big (max 2cm) weathered black glass pcs from welded tuff				Large amount of water struck at 66 m up to 86 m ↓	66
70			7			70
75			7			75
80						80
83	Weathered welded tuff slightly weathered, weakly welded sample piece max 2cm of white and green varicolored tuff with Pl cristal	Green	4			83
85	Sand and gravel same as 61-80m, coarse sand size	Grey varicolor				85
86					Possible bottom of water zone ↑	86
90	Fractured welded tuff strongly welded pale green sample amount is less than in other sections contain Pl cristals	Page green	5			90
92					Large amount of water struck at 92 m up to 122 m ↓	92
95			6			95
98						98
100	Weathered welded tuff	Greenish grey				100

Data 5.1 Well Drilling Geological Log Data for Site No-10N (2/4)

WELL DRILLING GEOLOGICAL LOG DATA for Site No-10N

Well No.	RVS BH 10-N	Drilling Diameter	256 mm	Static Water Level	25.60 m	
Location	Ziway East, Ogolcho	Casing Diameter	156 mm	Water Struck at	66 and 92 m	
Easting	500516	Drilling Depth	202.00 m	Drilling method	Mud rotary	
Northing	889860	Well Depth	202.00 m			
Altitude	1685 m					
Depth	Geology	Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth
100	greenish with white spots moderately welded, crumbling contain fresh Pl crystals sample max 2cm		5			100
105			5			105
110			5			110
115			5			115
120			11			120
122					Possible end of 2nd water zone↑	122
125	Welded tuff Massive, less fractured sample pieces smaller	greenish grey				125
128	30 % whitish tuff contain obsidian fragments		240			128
130	Weathered welded tuff same as 98 - 122 m					130
133	green welded tuff fragments contain black and reddish vol rock pieces		11			133
135			12			135
140			12			140
145	Sample lost due to excessive mud loss		3			145
150			13			150

Data 5.1 Well Drilling Geological Log Data for Site No-10N (3/4)

WELL DRILLING GEOLOGICAL LOG DATA for Site No-10N

Well No.	RVS BH 10-N	Drilling Diameter	256 mm	Static Water Level	25.60 m	
Location	Ziway East, Ogolcho	Casing Diameter	156 mm	Water Struck at	66 and 92 m	
Easting	500516	Drilling Depth	202.00 m	Drilling method	Mud rotary	
Northing	889860	Well Depth	202.00 m			
Altitude	1685 m					
Depth	Geology	Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth
150		greysh				150
155			6			155
160			9			160
165			4			165
170			4			170
175			5			175
180			3			180
185			3			185
190			3			190
195			3			195
200						200

Data 5.1 Well Drilling Geological Log Data for Site No-10N (4/4)

Data 5.2 Borehole Logging Data for Site No-1 (1/2)

Well No: RVS BH No-1

Date: June 3, 2010

Depth (GL-m)	Resistance(Ohm)		Resistivity (Ohm-m)		SP(mv)
	Short Normal	Long Normal	Short Normal	Long Normal	
48	264	374	1346.4	7629.6	
49	200	72.8	1020.0	1485.1	-13.3
50	35	28.1	178.5	573.2	16.2
51	23	28	117.3	571.2	15.8
52	11.4	27.8	58.1	567.1	15.2
53	10	27	51.0	550.8	14.5
54	9.2	26	46.9	530.4	14.2
55	15	29.4	76.5	599.8	15.7
56	20.3	32.8	103.5	669.1	15.2
57	33	36	168.3	734.4	14.7
58	46.4	39.1	236.6	797.6	15.2
59	39	31	198.9	632.4	14.7
60	31.6	22.5	161.2	459.0	14.3
61	29	19	147.9	387.6	13.3
62	26.9	15.1	137.2	308.0	12.8
63	24	14.5	122.4	295.8	12.7
64	20.2	13.9	103.0	283.6	13.4
65	20.7	14	105.6	285.6	13.1
66	21.2	13.6	108.1	277.4	14.4
67	17.3	13.9	88.2	283.6	12.6
68	13.3	14.1	67.8	287.6	12.1
69	16.8	14.7	85.7	299.9	11.8
70	20.3	15.3	103.5	312.1	12.9
71	19	14.9	96.9	304.0	12.4
72	18.8	14.4	95.9	293.8	12.1
73	19.4	14.33	98.9	292.3	9.2
74	20.1	14.1	102.5	287.6	9.4
75	21	15.5	107.1	316.2	11.7
76	21.8	16.9	111.2	344.8	10.6
77	20.9	16.2	106.6	330.5	12.3
78	20	15.5	102.0	316.2	10.8
79	19	14.5	96.9	295.8	13.7
80	19	13.4	96.9	273.4	17.2
81	21.3	15	108.6	306.0	18.4
82	23.6	16.5	120.4	336.6	16.3
83	22	16	112.2	326.4	14.2
84	20.3	15.4	103.5	314.2	12.9
85	21	15	107.1	306.0	15.3
86	21.1	14.5	107.6	295.8	16
87	19	13.3	96.9	271.3	16.2
88	16.3	12	83.1	244.8	18.4
89	15	12	76.5	244.8	19
90	14.6	11.98	74.5	244.4	19.5
91	14	10.8	71.4	220.3	18.9
92	13.7	9.6	69.9	195.8	20.8
93	15	11	76.5	224.4	18.9
94	17.3	12.5	88.2	255.0	18.9
95	19	14.4	96.9	293.8	19.5
96	21.7	16.2	110.7	330.5	18.7
97	20.2	15.5	103.0	316.2	18
98	18.7	14.8	95.4	301.9	19.5
99	18.8	14.7	95.9	299.9	21.4
100	19	14.6	96.9	297.8	18.1
101	18.5	14.8	94.4	301.9	17.1
102	18	14.9	91.8	304.0	14.6
103	17.3	14.1	88.2	287.6	9.8
104	16.6	13.4	84.7	273.4	9.7
105	17.33	14.6	88.4	297.8	7.7
106	17.9	15.8	91.3	322.3	5.5
107	17	14.3	86.7	291.7	10.3
108	16.2	12.8	82.6	261.1	13.3
109	15.6	12.9	79.6	263.2	5

Data 5.2 Borehole Logging Data for Site No-1 (2/2)

Well No: RVS BH No-1

Date: June 3, 2010

Depth (GL-m)	Resistance(Ohm)		Resistivity (Ohm-m)		SP(mv)
	Short Normal	Long Normal	Short Normal	Long Normal	
110	15.1	13	77.0	265.2	4.8
111	16.7	14.3	85.2	291.7	5.8
112	18.3	15.5	93.3	316.2	6.9
113	17.7	15.2	90.3	310.1	4
114	17.1	14.9	87.2	304.0	2.6
115	15.6	13.6	79.6	277.4	3
116	14.1	12.3	71.9	250.9	10.3
117	13.3	10.9	67.8	222.4	6.2
118	12.4	9.5	63.2	193.8	9.6
119	12.7	10.2	64.8	208.1	15.9
120	13	10.8	66.3	220.3	14.6
121	13.6	11.7	69.4	238.7	14.3
122	14.2	12.5	72.4	255.0	12.3
123	13.8	13	70.4	265.2	9.3
124	13.4	13.6	68.3	277.4	7.6
125	15.5	12.3	79.1	250.9	7.6
126	17.9	11	91.3	224.4	7.9
127	16.9	11.6	86.2	236.6	11.4
128	15.8	12.2	80.6	248.9	11.8
129	18.8	16.8	95.9	342.7	7.9
130	21.7	21.4	110.7	436.6	6.9
131	22.3	22.9	113.7	467.2	6.4
132	22.9	24.4	116.8	497.8	14.5
133	23.7	23	120.9	469.2	11.5
134	24.5	21.4	125.0	436.6	11.9
135	29.7	28	151.5	571.2	12.8
136	34.8	34.8	177.5	709.9	14.7
137	34.8	34	177.5	693.6	13.7
138	33.2	32.6	169.3	665.0	13.9
139	33.7	34.2	171.9	697.7	13.8
140	37	35.8	188.7	730.3	14.2
141	38	38.2	193.8	779.3	7.4
142	29.3	19.9	149.4	406.0	7.3
143	24.5	30	125.0	612.0	13.6
144	21.9	17.9	111.7	365.2	11.8
145	22.5	20.6	114.8	420.2	12.9
146	28.5	29.6	145.4	603.8	9.4
147	38.9	42.9	198.4	875.2	11.9
148	38.3	43.3	195.3	883.3	10.4
149	38.8	43.2	197.9	881.3	8.8
150	39.5	42.9	201.5	875.2	7.8
151	39.6	42.8	202.0	873.1	4.7

Data 5.2 Borehole Logging Data for Site No-2 (1/1)

Well No: RVS BH No-2

Date: May 21, 2010

Depth (GL-m)	Resistance(Ohm)		Resistivity (Ohm-m)		SP(mv)
	Short Normal	Long Normal	Short Normal	Long Normal	
90					-17.2
91					-16.5
92	20.6	16.22	105.06	330.89	-15.3
93	12.4	13.4	63.24	273.36	-15.7
94	13.3	18	67.83	367.20	-13.6
95	17.2	19.6	87.72	399.84	-13.7
96	28	33.8	142.80	689.52	-13.9
97	39.1	47.1	199.41	960.84	-11.6
98	39.2	48.1	199.92	981.24	-19.66
99	29.5	41.4	150.45	844.56	-20.5
100	14.3	20.6	72.93	420.24	-19.8
101	11	14.4	56.10	293.76	-17
102	6.17	8.03	31.47	163.81	-17.2
103	4.63	6.07	23.61	123.83	-16.3
104	4.8	5.54	24.48	113.02	-15.4
105	4.59	5.17	23.41	105.47	-17.3
106	4.77	5.51	24.33	112.40	-19.1
107	4.49	5.02	22.90	102.41	-10.6
108	4.4	5.14	22.44	104.86	-9.7
109	4.22	4.86	21.52	99.14	-8.18
110	4.09	4.58	20.86	93.43	-13.3
111	4.3	4.89	21.93	99.76	-15.8
112	4.22	4.7	21.52	95.88	-20.6
113	4.11	4.62	20.96	94.25	-23
114	4.26	4.98	21.73	101.59	-23.95
115	4.06	4.59	20.71	93.64	-17.5
116	4.16	4.73	21.22	96.49	-17.4
117	4.13	4.69	21.06	95.68	-17.9
118	3.97	4.39	20.25	89.56	-14.9
119	4.09	4.64	20.86	94.66	-17.4
120	4.07	4.41	20.76	89.96	-20
121	3.96	4.32	20.20	88.13	-16.9
122	4.02	4.53	20.50	92.41	-18.7
123	3.59	3.95	18.31	80.58	-9.6
124	3.78	3.99	19.28	81.40	-14.12
125	3.77	3.97	19.23	80.99	-20.17
126	3.67	4.07	18.72	83.03	-21.7
127	3.72	3.98	18.97	81.19	-24.4
128	3.82	4.22	19.48	86.09	-15.8
129	4.96	4.72	25.30	96.29	-22.9
130	7.47	6.35	38.10	129.54	-24.4
131	7.24	6.23	36.92	127.09	-23.4
132	7.24	6.23	36.92	127.09	-21.3
133	7.25	6.23	36.98	127.09	-19.36
134	7.25	6.23	36.98	127.09	-14
135	7.25	6.23	36.98	127.09	-20.3
136	7.26	6.23	37.03	127.09	-23.57
137	7.26	6.23	37.03	127.09	-23.62
138	7.25	6.23	36.98	127.09	-23.64
139	7.25	6.23	36.98	127.09	-23.67
140	7.26	6.23	37.03	127.09	-23.69

Data 5.2 Borehole Logging Data for Site No-3 (1/1)

Well No: RVS BH No-3

Date: June 26, 2010

Depth (GL-m)	Resistance(Ohm)		Resistivity (Ohm-m)		SP(mv)
	Short Normal	Long Normal	Short Normal	Long Normal	
171					
172	24.8	138	126.5	2815.2	-134
173	17.3	10.3	88.2	210.1	-147
174	18	9.9	91.8	202.0	-155
175	17.4	10.3	88.7	210.1	-158
176	16.8	9.9	85.7	202.0	-161
177	16.5	10.4	84.2	212.2	-162
178	21.5	11.5	109.7	234.6	-160
179	25.5	12.1	130.1	246.8	-161
180	26.3	12.7	134.1	259.1	-167
181	26.5	13.7	135.2	279.5	-167
182	27.6	13.6	140.8	277.4	-166
183	26.5	13.6	135.2	277.4	-166
184	24.9	13.2	127.0	269.3	-166
185	12.2	12.6	62.2	257.0	-167
186	19.8	11.9	101.0	242.8	-169
187	12.3	10.3	62.7	210.1	-168
188	10.9	9.1	55.6	185.6	-167
189	10.8	9	55.1	183.6	-170
190	14.5	9.3	74.0	189.7	-174
191	11.6	9.5	59.2	193.8	-174
192	17.7	13.5	90.3	275.4	-171
193	20.5	16.4	104.6	334.6	-183
194	24.8	23.8	126.5	485.5	-186
195	23.3	25.7	118.8	524.3	-187
196	22.6	25.8	115.3	526.3	-189
197	22.5	26.2	114.8	534.5	-190
198	22.6	26.1	115.3	532.4	-191
199	22.4	26.4	114.2	538.6	-192
200	24.4	26.7	124.4	544.7	-192
201	23	26.9	117.3	548.8	-193
202	24.2	26.9	123.4	548.8	-192
203	25.3	27.2	129.0	554.9	-192
204	22.3	27.3	113.7	556.9	-192
205	22.2	27.4	113.2	559.0	-176
206	22.2	27.5	113.2	561.0	-177
207	22.2	27.8	113.2	567.1	-178
208	22	27.8	112.2	567.1	-177
209	22	28	112.2	571.2	-177
210	22	28.1	112.2	573.2	-177
211	22	28.3	112.2	577.3	-177
212	21.9	28.4	111.7	579.4	-177
213	21.9	28.6	111.7	583.4	-177
214	21.9	28.6	111.7	583.4	-177
215	21.9	28.8	111.7	587.5	-177
216	21.8	28.9	111.2	589.6	-177
217	21.8	29.1	111.2	593.6	-178
218	21.9	29.2	111.7	595.7	-177
219	21.9	29.4	111.7	599.8	-177
220	21.8	29.4	111.2	599.8	-178
221	21.8	29.6	111.2	603.8	-178
222	21.6	29.6	110.2	603.8	-178
223	21.6	29.9	110.2	610.0	-178
224	21.4	29.9	109.1	610.0	-178
225	21.4	30.2	109.1	616.1	-179
226	21	30.2	107.1	616.1	-179
227	21	30.5	107.1	622.2	-179
228	20.9	30.6	106.6	624.2	-179
229	21	31	107.1	632.4	-178
230	20.8	30.9	106.1	630.4	-178

Data 5.2 Borehole Logging Data for Site No-4 (1/4)

Well No: RVS BH-4

Date: Oct. 27, 2011

Depth (GL-m)	Resistance(Ohm)		Resistivity (Ohm-m)		SP(mv)
	Short Normal	Long Normal	Short Normal	Long Normal	
46	0.165	0.191	1.0362	2.3990	150.4
47	0.17	0.242	1.0676	3.0395	151.4
48	0.194	0.224	1.2183	2.8134	150.4
49	0.182	0.204	1.1430	2.5622	148.4
50	0.154	0.174	0.9671	2.1854	149.4
51	0.042	1.67	0.2638	20.9752	162.5
52	1	1.5	6.2800	18.8400	162.5
53	1.23	1.9	7.7244	23.8640	164.5
54	1.11	3.14	6.9708	39.4384	164.5
55	1.54	4.37	9.6712	54.8872	166.6
56	2.2	5.37	13.8160	67.4472	167.6
57	2.59	6.76	16.2652	84.9056	166.6
58	3	8.48	18.8400	106.5088	167.6
59	3.28	9.71	20.5984	121.9576	167.6
60	3.38	8.56	21.2264	107.5136	166.6
61	3.33	7.45	20.9124	93.5720	166.6
62	3.08	7.12	19.3424	89.4272	165.5
63	2.61	6.77	16.3908	85.0312	166.6
64	2.75	6.38	17.2700	80.1328	167.6
65	2.75	6	17.2700	75.3600	167.6
66	2.7	6.29	16.9560	79.0024	167.6
67	2.76	6.39	17.3328	80.2584	166.6
68	2.91	6.67	18.2748	83.7752	166.6
69	3.26	7.18	20.4728	90.1808	166.6
70	4	9.1	25.1200	114.2960	165.5
71	4.45	13	27.9460	163.2800	165.5
72	5.55	16	34.8540	200.9600	165.5
73	5.2	14.21	32.6560	178.4776	167.6
74	6	13.21	37.6800	165.9176	166.6
75	6.42	15.22	40.3176	191.1632	166.6
76	7.48	20.47	46.9744	257.1032	167.6
77	9.27	25.21	58.2156	316.6376	167.6
78	10.48	27.36	65.8144	343.6416	166.5
79	10.28	25.41	64.5584	319.1496	166.6
80	9.54	22.08	59.9112	277.3248	166.6
81	9.77	20.69	61.3556	259.8664	166.6
82	9.62	21.78	60.4136	273.5568	166.6
83	8.11	18.91	50.9308	237.5096	165.5
84	7.25	19.26	45.5300	241.9056	165.5
85	8.23	18.95	51.6844	238.0120	164.5
86	8.34	18.25	52.3752	229.2200	164.5
87	8.78	21.78	55.1384	273.5568	163.5
88	9	21.88	56.5200	274.8128	163.5
89	9.54	19	59.9112	238.6400	164.5
90	8.76	21.27	55.0128	267.1512	162.5
91	9.39	21.58	58.9692	271.0448	162.5
92	10.28	24.2	64.5584	303.9520	160.5
93	11.49	25.71	72.1572	322.9176	159.5
94	11.9	31.26	74.7320	392.6256	160.5
95	1.84	5.15	11.5552	64.6840	161.5
96	1.59	2.59	9.9852	32.5304	158.5
97	1.51	2.13	9.4828	26.7528	158.5
98	1.6	2.89	10.0480	36.2984	158.5
99	1.9	10.69	11.9320	134.2664	157.5
100	5	21.27	31.4000	267.1512	156.5
101	7.69	21.59	48.2932	271.1704	157.5
102	6.75	17.14	42.3900	215.2784	156.5

Data 5.2 Borehole Logging Data for Site No-4 (2/4)

Well No: RVS BH-4

Date: Oct. 27, 2011

Depth (GL-m)	Resistance(Ohm)		Resistivity (Ohm-m)		SP(mv)
	Short Normal	Long Normal	Short Normal	Long Normal	
103	5.45	9.18	34.2260	115.3008	156.5
104	4.34	6.74	27.2552	84.6544	152.4
105	3.78	6.87	23.7384	86.2872	152.4
106	4	7.59	25.1200	95.3304	150.4
107	4.23	8.87	26.5644	111.4072	148.4
108	4.99	11.29	31.3372	141.8024	147.4
109	5.92	17.95	37.1776	225.4520	147.4
110	8.89	29.34	55.8292	368.5104	149.4
111	12.5	32.17	78.5000	404.0552	150.4
112	13.51	28.23	84.8428	354.5688	150.2
113	11.09	27.33	69.6452	343.2648	149
114	11.39	28	71.5292	351.6800	148
115	11.59	27.73	72.7852	348.2888	145
116	14	39.93	87.9200	501.5208	136
117	13.51	32.87	84.8428	412.8472	135
118	8.37	16.43	52.5636	206.3608	134
119	4.84	9.58	30.3952	120.3248	104
120	2.32	4.6	14.5696	57.7760	94
121	1.38	2.75	8.6664	34.5400	134
122	0.807	1.35	5.0680	16.9560	125
123	0.584	0.901	3.6675	11.3166	124
124	0.49	0.712	3.0772	8.9427	121
125	0.469	0.64	2.9453	8.0384	91.77
126	0.505	0.781	3.1714	9.8094	103.8
127	0.547	1	3.4352	12.5600	137.1
128	0.57	1.2	3.5796	15.0720	136.1
129	0.712	2.7	4.4714	33.9120	133.1
130	2.5	2.6	15.7000	32.6560	130
131	1.13	1.88	7.0964	23.6128	126
132	1.34	1.88	8.4152	23.6128	120
133	1.24	3.5	7.7872	43.9600	116.9
134	1.16	3.57	7.2848	44.8392	102.8
135	0.827	2.28	5.1936	28.6368	75.23
136	1.18	2.2	7.4104	27.6320	88.14
137	0.922	2.16	5.7902	27.1296	112.9
138	0.875	3.28	5.4950	41.1968	106.9
139	1.4	5	8.7920	62.8000	100.2
140	1.31	4.6	8.2268	57.7760	85.72
141	1.86	3.5	11.6808	43.9600	52.84
142	1.47	4.17	9.2316	52.3752	52.64
143	1.38	8.2	8.6664	102.9920	53.45
144	1.96	6.19	12.3088	77.7464	56.08
145	1.56	3.6	9.7968	45.2160	55.56
146	1.5	3	9.4200	37.6800	55.66
147	1.54	5.85	9.6712	73.4760	56.87
148	1.73	6.26	10.8644	78.6256	60.3
149	1.36	3.65	8.5408	45.8440	62.72
150	1.48	9.65	9.2944	121.2040	67.56
151	0.726	1.95	4.5593	24.4920	73.8
152	0.58	1.19	3.6424	14.9464	123
153	0.695	1.17	4.3646	14.6952	115.9
154	0.684	1.59	4.2955	19.9704	121
155	0.279	2.19	1.7521	27.5064	119
156	0.967	2.53	6.0728	31.7768	117.9
157	1.16	3.53	7.2848	44.3368	113.9
158	0.955	2.45	5.9974	30.7720	110.9
159	0.839	1.6	5.2689	20.0960	106.9
160	0.643	1.55	4.0380	19.4680	102.8

Data 5.2 Borehole Logging Data for Site No-4 (3/4)

Well No: RVS BH-4

Date: Oct. 27, 2011

Depth (GL-m)	Resistance(Ohm)		Resistivity (Ohm-m)		SP(mv)
	Short Normal	Long Normal	Short Normal	Long Normal	
161	0.705	1.6	4.4274	20.0960	98.63
162	0.704	1.87	4.4211	23.4872	93.99
163	0.757	1.25	4.7540	15.7000	87.63
164	0.715	1.53	4.4902	19.2168	77.69
165	0.812	1.48	5.0994	18.5888	59.7
166	0.684	1.62	4.2955	20.3472	34.89
167	0.795	1.64	4.9926	20.5984	35.09
168	0.732	1.87	4.5970	23.4872	35.14
169	1.63	1.84	10.2364	23.1104	35.6
170	1.12	1.61	7.0336	20.2216	36.2
171	1.61	4.16	10.1108	52.2496	36.7
172	0.735	1.55	4.6158	19.4680	37.11
173	0.64	1.38	4.0192	17.3328	35.19
174	0.683	1.13	4.2892	14.1928	34.69
175	0.698	0.93	4.3834	11.6808	35.19
176	0.529	0.893	3.3221	11.2161	34.89
177	0.605	0.865	3.7994	10.8644	33.68
178	0.436	1.1	2.7381	13.8160	34.49
179	0.499	0.753	3.1337	9.4577	34.08
180	0.573	0.804	3.5984	10.0982	34.48
181	0.423	0.776	2.6564	9.7466	33.28
182	0.01	0.759	0.0628	9.5330	33.17
183	0.407	0.794	2.5560	9.9726	33.23
184	0.429	1	2.6941	12.5600	32.33
185	0.624	1.34	3.9187	16.8304	31.76
186	0.628	1.51	3.9438	18.9656	31.66
187	0.65	1.5	4.0820	18.8400	31.86
188	0.696	1.53	4.3709	19.2168	31.56
189	0.95	1.6	5.9660	20.0960	31.66
190	0.509	1.67	3.1965	20.9752	31.16
191	0.863	1.66	5.4196	20.8496	30.55
192	0.435	1.66	2.7318	20.8496	30.55
193	0.666	1.6	4.1825	20.0960	30.25
194	1.17	1.84	7.3476	23.1104	30.05
195	0.617	1.55	3.8748	19.4680	30.86
196	0.625	1.46	3.9250	18.3376	32.77
197	0.742	1.44	4.6598	18.0864	31.36
198	0.583	1.2	3.6612	15.0720	31.36
199	0.556	1.13	3.4917	14.1928	31.36
200	0.55	1.24	3.4540	15.5744	31.56
201	0.571	1.34	3.5859	16.8304	31.56
202	0.494	1.27	3.1023	15.9512	31.06
203	0.362	1.23	2.2734	15.4488	30.65
204	0.488	0.937	3.0646	11.7687	30.86
205	0.555	0.904	3.4854	11.3542	31.26
206	0.46	1	2.8888	12.5600	31.06
207	0.554	1.27	3.4791	15.9512	30.96
208	0.557	1.4	3.4980	17.5840	30.75
209	0.584	1.37	3.6675	17.2072	30.75
210	0.604	0.608	3.7931	7.6365	30.65
211	0.545	1.47	3.4226	18.4632	30.55
212	0.603	1.43	3.7868	17.9608	29.95
213	0.606	1.35	3.8057	16.9560	30.15
214	0.596	1.39	3.7429	17.4584	30.45
215	1.4	0.847	8.7920	10.6383	30.31
216	0.55	1.8	3.4540	22.6080	29.75
217	0.525	1.27	3.2970	15.9512	30.05
218	0.479	1.2	3.0081	15.0720	29.44

Data 5.2 Borehole Logging Data for Site No-4 (4/4)

Well No: RVS BH-4

Date: Oct. 27, 2011

Depth (GL-m)	Resistance(Ohm)		Resistivity (Ohm-m)		SP(mv)
	Short Normal	Long Normal	Short Normal	Long Normal	
219	0.411	1	2.5811	12.5600	29.34
220	0.42	0.864	2.6376	10.8518	29.04
221	0.339	0.792	2.1289	9.9475	28.74
222	0.427	0.683	2.6816	8.5785	30.25
223	0.371	0.68	2.3299	8.5408	29.94
224	0.384	0.893	2.4115	11.2161	29.34
225	0.352	0.935	2.2106	11.7436	28.64
226	0.463	0.755	2.9076	9.4828	28.64
227	0.35	0.609	2.1980	7.6490	29.54
228	0.36	0.577	2.2608	7.2471	29.75
229	0.431	0.615	2.7067	7.7244	29.44
230	0.719	1.3	4.5153	16.3280	29.54
231	0.937	3.6	5.8844	45.2160	29.34
232	2	6	12.5600	75.3600	28.54
233	2.45	7	15.3860	87.9200	38.33

Data 5.2 Borehole Logging Data for Site No-5N (1/4)

Well No: RVS BH - 5N

Date: July 31, 2011

Depth (GL-m)	Resistance(Ohm)		Resistivity (Ohm-m)		SP(mv)
	Short Normal	Long Normal	Short Normal	Long Normal	
21	4.1	4.4	25.75	55.26	342
22	11.4	11.45	71.59	143.81	343
23	19.9	20.2	124.97	253.71	343
24	22.58	23.1	141.80	290.14	343
25	24.5	24.9	153.86	312.74	347
26	25.5	26.7	160.14	335.35	365
27	27.4	27.9	172.07	350.42	364
28	29.7	30.3	186.52	380.57	366
29	29.7	30.6	186.52	384.34	366
30	29.9	30.7	187.77	385.59	365
31	31.4	32.2	197.19	404.43	365
32	31.3	32.35	196.56	406.32	367
33	27.8	28.5	174.58	357.96	366
34	11.8	11.87	74.10	149.09	367
35	6.72	7.07	42.20	88.80	368
36	6.19	6.23	38.87	78.25	369
37	7.83	7.82	49.17	98.22	369
38	10.9	11.12	68.45	139.67	347
39	11.4	11.47	71.59	144.06	367
40	13.35	13.75	83.84	172.70	361
41	17.61	17.74	110.59	222.81	362
42	23.6	24	148.21	301.44	361
43	32.12	32.64	201.71	409.96	363
44	36.15	37.06	227.02	465.47	362
45	36.6	37.9	229.85	476.02	362
46	38.09	38.64	239.21	485.32	362
47	37.9	38.46	238.01	483.06	363
48	30.68	31.3	192.67	393.13	364
49	28.5	29.1	178.98	365.50	363
50	31.1	31.7	195.31	398.15	364
51	29.25	29.39	183.69	369.14	363
52	27.04	27.43	169.81	344.52	358
53	28.35	29	178.04	364.24	357
54	31.6	32.1	198.45	403.18	355
55	32.8	33.5	205.98	420.76	356
56	22.7	23.14	142.56	290.64	356
57	9.69	9.78	60.85	122.84	311
58	9.6	9.7	60.29	121.83	311
59	9.6	9.68	60.29	121.58	312
60	9.61	9.67	60.35	121.46	311
61	9.62	9.67	60.41	121.46	309
62	9.66	9.66	60.66	121.33	309
63	9.49	9.66	59.60	121.33	309
64	23.34	23.82	146.58	299.18	307
65	22.9	23.43	143.81	294.28	306
66	14.7	23.2	92.32	291.39	307
67	17.1	23.9	107.39	300.18	307
68	15.8	23	99.22	288.88	307
69	17.5	23.2	109.90	291.39	307
70	15.5	23.4	97.34	293.90	306
71	23.2	23.3	145.70	292.65	306
72	24.9	25.3	156.37	317.77	305
73	15.14	27.13	95.08	340.75	304
74	28.8	31	180.86	389.36	305
75	33.8	36.6	212.26	459.70	304
76	29.4	39.3	184.63	493.61	303
77	28.9	39	181.49	489.84	302
78	28.1	36	176.47	452.16	299
79	25.3	35.1	158.88	440.86	300
80	22.6	34	141.93	427.04	298
81	18.9	33.6	118.69	422.02	297
82	14.6	25.14	91.69	315.76	296
83	13.5	18.2	84.78	228.59	295
84	7	13	43.96	163.28	294

Data 5.2 Borehole Logging Data for Site No-5N (2/4)

Well No: RVS BH - 5N

Date: July 31, 2011

Depth (GL-m)	Resistance(Ohm)		Resistivity (Ohm-m)		SP(mv)
	Short Normal	Long Normal	Short Normal	Long Normal	
85	9	15.9	56.52	199.70	294
86	14.6	27.8	91.69	349.17	295
87	24.4	36.9	153.23	463.46	294
88	20.3	38.5	127.48	483.56	293
89	21.4	36.5	134.39	458.44	292
90	19.4	34.5	121.83	433.32	292
91	3.8	9.7	23.86	121.83	292
92	2.2	4.2	13.82	52.75	290
93	2.3	4	14.44	50.24	289
94	2.4	4.1	15.07	51.50	288
95	1.96	4.1	12.31	51.50	289
96	2.6	3.8	16.33	47.73	289
97	2.2	3.6	13.82	45.22	289
98	2.6	4.05	16.33	50.87	287
99	2.7	5	16.96	62.80	291
100	3.2	6	20.10	75.36	290
101	3.1	6.45	19.47	81.01	291
102	3.6	6.56	22.61	82.39	287
103	2.8	6.97	17.58	87.54	287
104	2.47	7.5	15.51	94.20	287
105	4.5	8.2	28.26	102.99	297
106	2.14	11.5	13.44	144.44	283
107	4.46	11.77	28.01	147.83	290
108	3.95	12	24.81	150.72	289
109	5	11.9	31.40	149.46	290
110	6.6	12.1	41.45	151.98	351
111	6.5	12.2	40.82	153.23	350
112	11.9	12.35	74.73	155.12	351
113	5.2	12	32.66	150.72	352
114	8.7	11.2	54.64	140.67	351
115	12.4	8.7	77.87	109.27	351
116	11.9	4.82	74.73	60.54	350
117	6.8	4.3	42.70	54.01	350
118	7.2	4.5	45.22	56.52	350
119	2.97	4.58	18.65	57.52	350
120	3	4.9	18.84	61.54	350
121	1.56	4.9	9.80	61.54	352
122	1.5	5.6	9.42	70.34	350
123	2.3	5.4	14.44	67.82	351
124	1.7	5.55	10.68	69.71	351
125	2.3	6.2	14.44	77.87	351
126	1.8	6.2	11.30	77.87	351
127	2.25	7.5	14.13	94.20	346
128	2.7	7.1	16.96	89.18	346
129	3.34	7.1	20.98	89.18	246
130	4.1	7.3	25.75	91.69	345
131	3.8	7.43	23.86	93.32	345
132	3.5	8	21.98	100.48	345
133	3.67	6.78	23.05	85.16	345
134	3.9	5.7	24.49	71.59	345
135	4	6.9	25.12	86.66	346
136	3.26	7	20.47	87.92	346
137	2.1	4.6	13.19	57.78	347
138	3.9	4.4	24.49	55.26	347
139	2.65	7.6	16.64	95.46	348
140	2.17	9.7	13.63	121.83	350
141	2.1	9.9	13.19	124.34	351
142	3.3	8.8	20.72	110.53	349
143	1	6.7	6.28	84.15	349
144	4.6	6.9	28.89	86.66	349
145	2.9	7.1	18.21	89.18	349
146	4.9	5.5	30.77	69.08	348
147	2.7	3.9	16.96	48.98	348
148	3.8	3.8	23.86	47.73	347
149	2.4	3.4	15.07	42.70	349

Data 5.2 Borehole Logging Data for Site No-5N (3/4)

Well No: RVS BH - 5N

Date: July 31, 2011

Depth (GL-m)	Resistance(Ohm)		Resistivity (Ohm-m)		SP(mv)
	Short Normal	Long Normal	Short Normal	Long Normal	
150	1.5	3.9	9.42	48.98	348
151	1.2	4.8	7.54	60.29	348
152	1.3	4.77	8.16	59.91	348
153	0.87	4.2	5.46	52.75	348
154	1.9	2.87	11.93	36.05	348
155	1.9	2.5	11.93	31.40	348
156	1.7	2.4	10.68	30.14	348
157	0.7	0.9	4.40	11.30	348
158	0.87	0.94	5.46	11.81	348
159	0.84	0.69	5.28	8.67	348
160	0.2	2.1	1.26	26.38	347
161	0.23	2.1	1.44	26.38	347
162	0.17	3.2	1.07	40.19	346
163	0.89	7.32	5.59	91.94	345
164	0.7	8	4.40	100.48	343
165	0.1	8.2	0.63	102.99	347
166	2.7	8.3	16.96	104.25	347
167	3.3	8.5	20.72	106.76	345
168	3.4	8.4	21.35	105.50	344
169	4.9	6.8	30.77	85.41	346
170	3.67	3.2	23.05	40.19	343
171	4.15	2.4	26.06	30.14	343
172	2.76	2.5	17.33	31.40	343
173	1.17	2.9	7.35	36.42	343
174	0.8	3	5.02	37.68	342
175	0.8	2.5	5.02	31.40	341
176	1.04	2.6	6.53	32.66	346
177	1.1	2.4	6.91	30.14	346
178	0.8	2.16	5.02	27.13	345
179	1	2.1	6.28	26.38	345
180	0.6	2	3.77	25.12	345
181	0.7	2.03	4.40	25.50	345
182	0.55	2.12	3.45	26.63	344
183	0.6	2.22	3.77	27.88	342
184	0.39	2.7	2.45	33.91	345
185	0.9	3.67	5.65	46.10	343
186	1.27	4.33	7.98	54.38	341
187	1.4	2.85	8.79	35.80	341
188	1.75	2.2	10.99	27.63	343
189	1.8	2.1	11.30	26.38	342
190	1.16	2.98	7.28	37.43	340
191	0.89	1.96	5.59	24.62	342
192	0.83	2.2	5.21	27.63	341
193	1.96	2.56	12.31	32.15	341
194	1.52	2.98	9.55	37.43	339
195	1.03	2.89	6.47	36.30	339
196	1.9	2.82	11.93	35.42	339
197	2.93	3.2	18.40	40.19	339
198	1.63	2.8	10.24	35.17	338
199	0.75	0.81	4.71	10.17	340
200	1.2	2.7	7.54	33.91	340
201	0.98	2.95	6.15	37.05	342
202	0.77	3.77	4.84	47.35	341
203	1.27	3.76	7.98	47.23	340
204	1.05	2.93	6.59	36.80	337
205	2.4	3.64	15.07	45.72	337
206	3	4.16	18.84	52.25	336
207	2.91	5	18.27	62.80	338
208	3.62	4.58	22.73	57.52	338
209	2.7	3.69	16.96	46.35	336
210	4.99	3.88	31.34	48.73	337
211	4.15	3.23	26.06	40.57	337
212	3.4	2.65	21.35	33.28	337
213	2.52	2.35	15.83	29.52	337
214	2.84	2.8	17.84	35.17	336

Data 5.2 Borehole Logging Data for Site No-5N (4/4)

Well No: RVS BH - 5N

Date: July 31, 2011

Depth (GL-m)	Resistance(Ohm)		Resistivity (Ohm-m)		SP(mv)
	Short Normal	Long Normal	Short Normal	Long Normal	
215	2.43	2.7	15.26	33.91	336
216	2.25	2.52	14.13	31.65	338
217	2.31	2.22	14.51	27.88	338
218	2.33	2	14.63	25.12	338
219	1.98	2	12.43	25.12	338
220	1.84	2.22	11.56	27.88	338
221	1.95	2.36	12.25	29.64	337
222	1.98	2.34	12.43	29.39	337
223	2.16	2.75	13.56	34.54	338
224	2.33	2.99	14.63	37.55	338
225	2.18	2.85	13.69	35.80	337
226	1.58	2.6	9.92	32.66	341
227	2.7	2.67	16.96	33.54	340
228	2.45	2.86	15.39	35.92	340
229	2.82	2.81	17.71	35.29	339
230	2.6	2.61	16.33	32.78	335
231	2.67	2.43	16.77	30.52	334
232	2.82	2.47	17.71	31.02	335
233	2.75	2.4	17.27	30.14	337
234	2.52	2.3	15.83	28.89	339
235	2.37	2.37	14.88	29.77	331
236	1.23	2.47	7.72	31.02	330
237	1.49	2.5	9.36	31.40	329
238	1.75	2.8	10.99	35.17	329
239	1.4	3.42	8.79	42.96	329
240	2.45	4.57	15.39	57.40	328
241	2	4.6	12.56	57.78	330
242	2.76	4.76	17.33	59.79	328
243	3.3	4	20.72	50.24	323
244	4.55	3	28.57	37.68	320
245	4.5	2.65	28.26	33.28	319
246	3.78	2.65	23.74	33.28	318

Data 5.2 Borehole Logging Data for Site No-6 (1/3)

Well No: RVS BH - 6

Date: September 7, 2011

Depth (GL-m)	Resistance(Ohm)		Resistivity (Ohm-m)		SP(mv)
	Short Normal	Long Normal	Short Normal	Long Normal	
250	31.09	70.77	195.25	888.87	
251	35.84	80.06	225.08	1005.55	
252	36.24	79.96	227.59	1004.30	
253	37.25	74.81	233.93	939.61	
254	32.1	71.99	201.59	904.19	
255	31.5	77.04	197.82	967.62	
256	28.67	76.83	180.05	964.98	
257	33.11	83.19	207.93	1044.87	
258	34.32	66.94	215.53	840.77	
259	32.31	55.83	202.91	701.22	
260	20.29	56.54	127.42	710.14	
261	20.59	60.58	129.31	760.88	
262	18.67	54.82	117.25	688.54	
263	14.53	63.61	91.25	798.94	
264	16.76	48.48	105.25	608.91	
265	15.24	42.6	95.71	535.06	
266	13.63	50.08	85.60	629.00	
267	14.02	52.1	88.05	654.38	
268	12.21	69.16	76.68	868.65	
269	18.27	70.17	114.74	881.34	
270	21.4	68.45	134.39	859.73	
271	20.59	69.66	129.31	874.93	
272	22.71	77.94	142.62	978.93	
273	22.61	78.64	141.99	987.72	
274	25.14	83.09	157.88	1043.61	
275	26.35	92.99	165.48	1167.95	
276	30.08	99.79	188.90	1253.36	
277	30.19	89.25	189.59	1120.98	
278	30.59	100.09	192.11	1257.13	
279	30.59	105	192.11	1318.80	
280	35.64	124	223.82	1557.44	15.67
281	45.53	144.3	285.93	1812.41	32.07
282	47.55	145.3	298.61	1824.97	21.1
283	48.97	170.6	307.53	2142.74	35.32
284	56.84	179.7	356.96	2257.03	38.4
285	59.77	184.7	375.36	2319.83	38.32
286	64.82	198.9	407.07	2498.18	43
287	66.53	198.9	417.81	2498.18	32.59
288	70.88	209	445.13	2625.04	40.82
289	72.9	166.6	457.81	2092.50	93.53
290	45.33	127.2	284.67	1597.63	85.47
291	39.58	124.1	248.56	1558.70	86.42
292	31.9	120.1	200.33	1508.46	91.74
293	35.64	119.1	223.82	1495.90	85.48
294	30.79	120.1	193.36	1508.46	87.32
295	35.84	118.1	225.08	1483.34	89.57
296	35.44	113	222.56	1419.28	93.79
297	30.69	116.1	192.73	1458.22	89.79
298	35.54	118.1	223.19	1483.34	83.42
299	37.45	121.1	235.19	1521.02	87.28
300	36.95	114	232.05	1431.84	84.86
301	38.57	111	242.22	1394.16	80.81
302	28.06	113	176.22	1419.28	93.54
303	35.44	108	222.56	1356.48	124.51
304	34.53	120.1	216.85	1508.46	102.72
305	33.92	115.1	213.02	1445.66	108.5
306	31.3	112	196.56	1406.72	117.12
307	28.67	108	180.05	1356.48	116.34
308	37.45	99.65	235.19	1251.60	92.31
309	30.39	65.83	190.85	826.82	96.94
310	19.68	63.3	123.59	795.05	106.17
311	18.88	53.81	118.57	675.85	97.12
312	15.85	54.22	99.54	681.00	128.31
313	15.85	63.61	99.54	798.94	95.86

Data 5.2 Borehole Logging Data for Site No-6 (2/3)

Well No: RVS BH - 6

Date: September 7, 2011

Depth (GL-m)	Resistance(Ohm)		Resistivity (Ohm-m)		SP(mv)
	Short Normal	Long Normal	Short Normal	Long Normal	
314	17.97	56.94	112.85	715.17	106.21
315	19.28	57.14	121.08	717.68	100.58
316	17.46	57.65	109.65	724.08	101.69
317	17.46	58.76	109.65	738.03	108.44
318	15.44	61.49	96.96	772.31	93.79
319	14.33	61.49	89.99	772.31	116.21
320	21	67.85	131.88	852.20	105.2
321	21.6	70.07	135.65	880.08	100
322	22.11	64.11	138.85	805.22	110.7
323	21.8	64.25	136.90	806.98	115.38
324	19.89	65.02	124.91	816.65	105.27
325	18.89	66.33	118.63	833.10	91.16
326	17.77	64.01	111.60	803.97	107.54
327	17.87	54.01	112.22	678.37	112.1
328	19.99	53.91	125.54	677.11	98.29
329	19.48	63.61	122.33	798.94	96.63
330	19.68	61.28	123.59	769.68	73.52
331	19.38	62.29	121.71	782.36	98.89
332	19	61.49	119.32	772.31	117.98
333	18.47	60.98	115.99	765.91	110.97
334	16.66	60.27	104.62	756.99	110.56
335	16.25	55.37	102.05	695.45	75.3
336	15.44	56.44	96.96	708.89	96.28
337	16.68	56.43	104.75	708.76	107.34
338	17.97	53.71	112.85	674.60	64.57
339	18.57	61.99	116.62	778.59	81.85
340	16.15	57.75	101.42	725.34	92.45
341	18.34	57.17	115.18	718.06	88.3
342	18.37	63.1	115.36	792.54	62.96
343	19.08	62.7	119.82	787.51	76.38
344	15.44	58.15	96.96	730.36	75.81
345	17.66	55.33	110.90	694.94	63.34
346	15.04	56	94.45	703.36	42.82
347	16.35	53.21	102.68	668.32	74.03
348	15.24	54.82	95.71	688.54	89.74
349	15.04	44.42	94.45	557.92	72.35
350	15.65	44.12	98.28	554.15	76.05
351	15.34	48.44	96.34	608.41	84.35
352	14.43	45.43	90.62	570.60	77.91
353	14.23	44.72	89.36	561.68	81.28
354	15.24	45.53	95.71	571.86	78.76
355	15.75	46.24	98.91	580.77	94.27
356	15.34	47.45	96.34	595.97	84.17
357	14.74	47.15	92.57	592.20	93.73
358	15.44	44.93	96.96	564.32	42.88
359	15.54	45.33	97.59	569.34	44.25
360	14.43	47.15	90.62	592.20	81.84
361	14.64	49.87	91.94	626.37	97.63
362	15.95	51.79	100.17	650.48	48.28
363	14.64	58.28	91.94	732.00	68.39
364	13.83	49.47	86.85	621.34	82.17
365	15.14	50.98	95.08	640.31	77.85
366	14.64	51.26	91.94	643.83	73.18
367	15.34	50.28	96.34	631.52	87.49
368	15.75	51.49	98.91	646.71	74.22
369	15.14	50.38	95.08	632.77	84.31
370	15.14	50.76	95.08	637.55	87.96
371	15.44	51.49	96.96	646.71	85.16
372	15.65	51.49	98.28	646.71	66.79
373	15.04	51.29	94.45	644.20	90.91
374	15.85	51.79	99.54	650.48	88.64
375	15.85	52.7	99.54	661.91	66.51
376	15.95	54.01	100.17	678.37	70.91
377	16.96	55.93	106.51	702.48	95.59
378	16.15	56.03	101.42	703.74	91.17

Data 5.2 Borehole Logging Data for Site No-6 (3/3)

Well No: RVS BH - 6

Date: September 7, 2011

Depth (GL-m)	Resistance(Ohm)		Resistivity (Ohm-m)		SP(mv)
	Short Normal	Long Normal	Short Normal	Long Normal	
379	15.85	56.64	99.54	711.40	80.84
380	15.14	56.03	95.08	703.74	61.98
381	16.25	56.03	102.05	703.74	84.45
382	16.25	56.24	102.05	706.37	63.14
383	15.54	56.13	97.59	704.99	93.81
384	16.66	58.46	104.62	734.26	66.07
385	18.08	56.94	113.54	715.17	69.05
386	17.56	56.13	110.28	704.99	68.15
387	17.46	53.51	109.65	672.09	84.41
388	17.06	54.62	107.14	686.03	94.06
389	17.06	55.12	107.14	692.31	80.75
390	18.88	58.86	118.57	739.28	80.75
391	18.47	62.9	115.99	790.02	
392	18.67	63.4	117.25	796.30	
393	21.1	63.91	132.51	802.71	
394	20.79	64.92	130.56	815.40	
395	19.08	59.26	119.82	744.31	
396	18.17	62.9	114.11	790.02	

Data 5.2 Borehole Logging Data for Site No-7 (1/4)

Well No: RVS BH - 7

Date: July 12, 2011

Depth (GL-m)	Resistance(Ohm)		Resistivity (Ohm-m)		SP(mv)
	Short Normal	Long Normal	Short Normal	Long Normal	
2	0.056	0.131	0.35	1.65	
3	0.114	0.121	0.72	1.52	366
4	0.166	12.8	1.04	160.77	366
5	12.66	11.98	79.50	150.47	365
6	11.87	11.94	74.54	149.97	364
7	11.81	11.96	74.17	150.22	364
8	11.8	11.04	74.10	138.66	365
9	10.92	12.84	68.58	161.27	365
10	12.74	17.69	80.01	222.19	365
11	17.59	17.5	110.47	219.80	365
12	17.53	16.5	110.09	207.24	364
13	16.37	18.93	102.80	237.76	364
14	18.8	12.5	118.06	157.00	364
15	12.37	11.93	77.68	149.84	364
16	11.77	11.51	73.92	144.57	364
17	11.38	10.77	71.47	135.27	364
18	10.59	10.56	66.51	132.63	364
19	10.39	10.18	65.25	127.86	364
20	10.07	11.32	63.24	142.18	364
21	11.18	12.82	70.21	161.02	364
22	12.71	12.82	79.82	161.02	364
23	12.68	12.34	79.63	154.99	366
24	12.91	11.11	81.07	139.54	366
25	10.85	10.47	68.14	131.50	366
26	10.24	10.64	64.31	133.64	366
27	10.49	10.56	65.88	132.63	366
28	10.42	9.55	65.44	119.95	366
29	9.42	9.4	59.16	118.06	366
30	9.25	10.22	58.09	128.36	366
31	10.12	10.43	63.55	131.00	365
32	10.29	10.8	64.62	135.65	364
33	10.74	18.95	67.45	238.01	365
34	18.76	17.74	117.81	222.81	364
35	17.62	21.78	110.65	273.56	364
36	21.71	20.19	136.34	253.59	365
37	22	10.26	138.16	128.87	365
38	10.15	9.32	63.74	117.06	365
39	9.19	8.99	57.71	112.91	353
40	8.86	8.56	55.64	107.51	362
41	8.47	8.73	53.19	109.65	362
42	8.62	9.25	54.13	116.18	362
43	9.11	10.15	57.21	127.48	363
44	10.05	15.4	63.11	193.42	366
45	15.33	18.2	96.27	228.59	365
46	18.13	11.92	113.86	149.72	363
47	10.09	9.73	63.37	122.21	365
48	9.6	9.45	60.29	118.69	365
49	9.34	9.82	58.66	123.34	365
50	9.71	9.38	60.98	117.81	364
51	9.26	8.29	58.15	104.12	364
52	8.24	8.71	51.75	109.40	364
53	8.61	8.21	54.07	103.12	364
54	8.05	9.11	50.55	114.42	364
55	9.04	9.35	56.77	117.44	364
56	9.21	8.22	57.84	103.24	363
57	8.11	8.06	50.93	101.23	363
58	7.95	8.45	49.93	106.13	363
59	8.32	8.57	52.25	107.64	363
60	9.46	9.81	59.41	123.21	363
61	9.72	9.01	61.04	113.17	364
62	8.89	8.93	55.83	112.16	365
63	8.81	8.48	55.33	106.51	367
64	8.35	8.98	52.44	112.79	366
65	8.88	10.25	55.77	128.74	363

Data 5.2 Borehole Logging Data for Site No-7 (2/4)

Well No: RVS BH - 7

Date: July 12, 2011

Depth (GL-m)	Resistance(Ohm)		Resistivity (Ohm-m)		SP(mv)
	Short Normal	Long Normal	Short Normal	Long Normal	
66	10.17	11.3	63.87	141.93	362
67	11.21	8.6	70.40	108.02	362
68	8.43	7.91	52.94	99.35	363
69	7.9	8.31	49.61	104.37	362
70	8.3	8.4	52.12	105.50	362
71	8.27	7.49	51.94	94.07	361
72	7.38	7.95	46.35	99.85	361
73	7.81	8.72	49.05	109.52	362
74	8.59	8.69	53.95	109.15	363
75	8.59	8.12	53.95	101.99	361
76	7.98	7.93	50.11	99.60	360
77	7.86	8.36	49.36	105.00	355
78	8.26	8.97	51.87	112.66	358
79	8.95	14.78	56.21	185.64	359
80	14.58	9.19	91.56	115.43	359
81	9.1	9.2	57.15	115.55	359
82	9.1	8.53	57.15	107.14	359
83	8.51	8.96	53.44	112.54	359
84	8.9	9.55	55.89	119.95	359
85	9.45	9.39	59.35	117.94	359
86	9.28	9.64	58.28	121.08	359
87	9.54	9.92	59.91	124.60	359
88	9.8	12.24	61.54	153.73	359
89	12.17	11.85	76.43	148.84	358
90	11.74	8.73	73.73	109.65	358
91	8.82	8.52	55.39	107.01	359
92	8.41	7.94	52.81	99.73	360
93	7.82	7.54	49.11	94.70	359
94	7.41	8	46.53	100.48	359
95	7.92	8.58	49.74	107.76	360
96	8.49	8.53	53.32	107.14	362
97	8.42	8.41	52.88	105.63	360
98	8.26	8.12	51.87	101.99	359
99	8.1	8.53	50.87	107.14	359
100	8.41	8.66	52.81	108.77	359
101	8.53	8.92	53.57	112.04	359
102	8.81	8.64	55.33	108.52	359
103	8.51	8.56	53.44	107.51	359
104	8.45	8.85	53.07	111.16	359
105	8.72	9.69	54.76	121.71	359
106	9.59	8.59	60.23	107.89	359
107	8.47	7.97	53.19	100.10	359
108	7.86	7.61	49.36	95.58	359
109	7.19	7.27	45.15	91.31	357
110	7.15	7.32	44.90	91.94	357
111	8.28	8.38	52.00	105.25	357
112	7.5	8.15	47.10	102.36	357
113	7.77	7.61	48.80	95.58	357
114	9.26	7.89	58.15	99.10	357
115	8.1	9.36	50.87	117.56	357
116	9.61	9.6	60.35	120.58	357
117	8.59	9.73	53.95	122.21	357
118	7.62	8.71	47.85	109.40	357
119	7.6	7.73	47.73	97.09	357
120	8.4	7.7	52.75	96.71	357
121	8.54	8.42	53.63	105.76	357
122	7.13	8.71	44.78	109.40	355
123	6.75	7.24	42.39	90.93	355
124	7	6.86	43.96	86.16	354
125	7.96	7.13	49.99	89.55	355
126	7.39	8.1	46.41	101.74	355
127	7	7.45	43.96	93.57	354
128	8.68	7.2	54.51	90.43	354
129	8.97	8.8	56.33	110.53	354
130	9.72	9	61.04	113.04	354

Data 5.2 Borehole Logging Data for Site No-7 (3/4)

Well No: RVS BH - 7

Date: July 12, 2011

Depth (GL-m)	Resistance(Ohm)		Resistivity (Ohm-m)		SP(mv)
	Short Normal	Long Normal	Short Normal	Long Normal	
131	9.89	9.6	62.11	120.58	354
132	9.04	9.99	56.77	125.47	354
133	8.61	9.17	54.07	115.18	354
134	8.84	8.75	55.52	109.90	354
135	8.81	8.88	55.33	111.53	354
136	8.1	8.93	50.87	112.16	354
137	8.26	8.24	51.87	103.49	354
138	8.46	8.36	53.13	105.00	345
139	8.41	8.56	52.81	107.51	353
140	10.01	8.52	62.86	107.01	353
141	8.37	10.16	52.56	127.61	354
142	8.8	8.48	55.26	106.51	353
143	8.11	8.9	50.93	111.78	353
144	6.68	8.22	41.95	103.24	353
145	6.64	6.79	41.70	85.28	353
146	7.72	6.75	48.48	84.78	353
147	8.134	7.82	51.08	98.22	353
148	7.24	8.25	45.47	103.62	353
149	7.31	7.34	45.91	92.19	353
150	7.44	7.42	46.72	93.20	353
151	7	7.55	43.96	94.83	353
152	6.92	7.16	43.46	89.93	352
153	7.76	7	48.73	87.92	353
154	7.54	7.87	47.35	98.85	353
155	7.12	7.64	44.71	95.96	352
156	8.49	7.22	53.32	90.68	352
157	7.75	8.61	48.67	108.14	348
158	7.71	7.86	48.42	98.72	347
159	7.97	7.83	50.05	98.34	348
160	7.1	8	44.59	100.48	347
161	7.16	7.19	44.96	90.31	348
162	7.21	7.28	45.28	91.44	346
163	6.91	7.31	43.39	91.81	346
164	6.94	7	43.58	87.92	348
165	6.87	7	43.14	87.92	346
166	6.79	6.89	42.64	86.54	344
167	6.99	6.92	43.90	86.92	343
168	7	7.11	43.96	89.30	342
169	7.18	7.13	45.09	89.55	345
170	7.19	7.29	45.15	91.56	343
171	8.4	7.28	52.75	91.44	344
172	8.89	8.47	55.83	106.38	344
173	8.86	8.96	55.64	112.54	344
174	9.17	8.93	57.59	112.16	344
175	8.61	9.18	54.07	115.30	344
176	8.64	8.76	54.26	110.03	344
177	9.1	8.75	57.15	109.90	344
178	9.22	9.15	57.90	114.92	344
179	8.95	9.33	56.21	117.18	344
180	8.41	9.1	52.81	114.30	344
181	8.18	9.51	51.37	119.45	344
182	8.17	8.26	51.31	103.75	338
183	8.16	8.25	51.24	103.62	334
184	8.2	8.24	51.50	103.49	327
185	10	15.34	62.80	192.67	338
186	12	25.12	75.36	315.51	335
187	11	16	69.08	200.96	337
188	10	12	62.80	150.72	336
189	15	19	94.20	238.64	335
190	20	30	125.60	376.80	334
191	25	35	157.00	439.60	330
192	21	31	131.88	389.36	330
193	23	33	144.44	414.48	330
194	27	34	169.56	427.04	330
195	15	25	94.20	314.00	331

Data 5.2 Borehole Logging Data for Site No-7 (4/4)

Well No: RVS BH - 7

Date: July 12, 2011

Depth (GL-m)	Resistance(Ohm)		Resistivity (Ohm-m)		SP(mv)
	Short Normal	Long Normal	Short Normal	Long Normal	
196	12	25	75.36	314.00	332
197	16	28	100.48	351.68	330
198	12	22	75.36	276.32	328
199	12	22	75.36	276.32	327
200			0.00	0.00	326

Data 5.2 Borehole Logging Data for Site No-8 (1/3)

Well No: RVS BH - 8

Date: August 15, 2011

Depth (GL-m)	Resistance(Ohm)		Resistivity (Ohm-m)		SP(mv)
	Short Normal	Long Normal	Short Normal	Long Normal	
6	5.7	8.99	35.80	112.91	119
7	6.96	9.83	43.71	123.46	110
8	6.67	9.55	41.89	119.95	116
9	5.76	8.8	36.17	110.53	119
10	5.7	8.9	35.80	111.78	127
11	5.32	8.43	33.41	105.88	122
12	4.43	7.69	27.82	96.59	118
13	4.13	7.69	25.94	96.59	129
14	4.05	7.64	25.43	95.96	131
15	4.14	7.6	26.00	95.46	125
16	4.23	7.39	26.56	92.82	122
17	4.24	7.52	26.63	94.45	127
18	4.16	7.46	26.12	93.70	124
19	4.31	7.43	27.07	93.32	120
20	4.44	7.4	27.88	92.94	125
21	4.35	7.39	27.32	92.82	124
22	4.31	7.28	27.07	91.44	127
23	4.46	7.54	28.01	94.70	129
24	4.51	7.46	28.32	93.70	139
25	4.57	7.45	28.70	93.57	134
26	4.59	7.64	28.83	95.96	133
27	4.64	7.44	29.14	93.45	129
28	4.94	7.75	31.02	97.34	136
29	4.78	7.39	30.02	92.82	165
30	4.88	7.03	30.65	88.30	174
31	5.17	7.6	32.47	95.46	171
32	7.05	8.55	44.27	107.39	165
33	8.74	9.74	54.89	122.33	175
34	11.11	12.61	69.77	158.38	166
35	12.02	12.04	75.49	151.22	160
36	11.8	12.66	74.10	159.01	179
37	6.96	8.99	43.71	112.91	170
38	5.07	7.02	31.84	88.17	161
39	5.65	7.63	35.48	95.83	162
40	5.83	7.33	36.61	92.06	167
41	6.03	7.31	37.87	91.81	142
42	6	7.53	37.68	94.58	141
43	5.83	6.91	36.61	86.79	147
44	5.87	6.66	36.86	83.65	140
45	5.41	6.67	33.97	83.78	149
46	5.41	6.47	33.97	81.26	144
47	4.66	5.78	29.26	72.60	150
48	4.44	5.34	27.88	67.07	151
49	4.44	5.36	27.88	67.32	149
50	4.51	5.24	28.32	65.81	146
51	4.58	5.31	28.76	66.69	147
52	4.66	5.15	29.26	64.68	140
53	6.52	7.47	40.95	93.82	141
54	7.13	11.26	44.78	141.43	142
55	7.84	11.04	49.24	138.66	145
56	7.34	9.99	46.10	125.47	144
57	5.56	6.19	34.92	77.75	143
58	4.9	4.81	30.77	60.41	144
59	4.63	4.67	29.08	58.66	146
60	1.09	4.23	6.85	53.13	149
61	4.43	4.52	27.82	56.77	145
62	1.09	4.41	6.85	55.39	161
63	0.23	4.34	1.44	54.51	141
64	3.62	4.33	22.73	54.38	146
65	2.75	4.48	17.27	56.27	148
66	0.631	5.46	3.96	68.58	141
67	0.234	8.4	1.47	105.50	140
68	2.77	5.69	17.40	71.47	140
69	0.138	1.24	0.87	15.57	141

Data 5.2 Borehole Logging Data for Site No-8 (2/3)

Well No: RVS BH - 8

Date: August 15, 2011

Depth (GL-m)	Resistance(Ohm)		Resistivity (Ohm-m)		SP(mv)
	Short Normal	Long Normal	Short Normal	Long Normal	
70	0.939	4.3	5.90	54.01	143
71	3.43	4.26	21.54	53.51	140
72	0.126	0.174	0.79	2.19	145
73	0.028	0.953	0.18	11.97	154
74	0.021	4.62	0.13	58.03	151
75	3.41	3.7	21.41	46.47	153
76	2.96	3.26	18.59	40.95	140
77	0.931	1.81	5.85	22.73	141
78	1.65	3.27	10.36	41.07	143
79	0.016	3.25	0.10	40.82	147
80	5.12	16.5	32.15	207.24	140
81	8.14	31.87	51.12	400.29	179
82	10.44	35.09	65.56	440.73	176
83	11.32	38.17	71.09	479.42	171
84	10.3	36.57	64.68	459.32	170
85	12.13	21.6	76.18	271.30	176
86	13.01	23.01	81.70	289.01	172
87	9.57	22.42	60.10	281.60	177
88	11.33	22.2	71.15	278.83	179
89	8.71	19.55	54.70	245.55	170
90	7.93	18.69	49.80	234.75	170
91	9	17.29	56.52	217.16	171
92	11.43	14.77	71.78	185.51	174
93	6.589	14.07	41.38	176.72	169
94	7.21	16.53	45.28	207.62	167
95	8.25	17.49	51.81	219.67	150
96	8	18.83	50.24	236.50	154
97	9.18	15.48	57.65	194.43	145
98	11	14.39	69.08	180.74	143
99	7	9.46	43.96	118.82	161
100	6.45	12.43	40.51	156.12	149
101	7.15	17.84	44.90	224.07	146
102	8.24	16.11	51.75	202.34	176
103	6.69	14.13	42.01	177.47	174
104	4.51	14.03	28.32	176.22	174
105	6	14.83	37.68	186.26	175
106	5.4	14.96	33.91	187.90	167
107	3.64	11.57	22.86	145.32	170
108	5.49	116.82	34.48	1467.26	171
109	2.14	90.85	13.44	1141.08	169
110	9.51	106.81	59.72	1341.53	177
111	11.5	105.54	72.22	1325.58	175
112	9.46	136.65	59.41	1716.32	175
113	5.09	153.38	31.97	1926.45	178
114	4.4	59.44	27.63	746.57	174
115	4.37	184.71	27.44	2319.96	174
116	4.47	239.26	28.07	3005.11	176
117	4.33	157.4	27.19	1976.94	177
118	4.67	171.78	29.33	2157.56	180
119	4.39	224.64	27.57	2821.48	181
120	4.47	264.8	28.07	3325.89	167
121	6.78	284.44	42.58	3572.57	167
122	9.64	224.03	60.54	2813.82	166
123	5.5	243.39	34.54	3056.98	162
124	5.53	277.72	34.73	3488.16	163
125	4.78	314.63	30.02	3951.75	176
126	4.48	211.71	28.13	2659.08	177
127	4.39	384.5	27.57	4829.32	178
128	5.24	270.46	32.91	3396.98	167
129	4.77	265.25	29.96	3331.54	176
130	4.61	280.28	28.95	3520.32	174
131	4.55	353.43	28.57	4439.08	176
132	4.59	307.4	28.83	3860.94	178
133	4.33	377.16	27.19	4737.13	174
134	4.26	236.16	26.75	2966.17	184

Data 5.2 Borehole Logging Data for Site No-8 (3/3)

Well No: RVS BH - 8

Date: August 15, 2011

Depth (GL-m)	Resistance(Ohm)		Resistivity (Ohm-m)		SP(mv)
	Short Normal	Long Normal	Short Normal	Long Normal	
135	4.36	267.16	27.38	3355.53	176
136	4.45	266.82	27.95	3351.26	180
137	4.35	135.58	27.32	1702.88	172
138	4.71	148.6	29.58	1866.42	170
139	5	87.32	31.40	1096.74	160
140	4.85	170.4	30.46	2140.22	170
141	4.78	170.4	30.02	2140.22	170
142	4.78	170.4	30.02	2140.22	150
143	4.78	170.4	30.02	2140.22	110
144	4.78	170.4	30.02	2140.22	97
145	4.78	170.4	30.02	2140.22	

Data 5.2 Borehole Logging Data for Site No-9N (1/3)

Well No: RVS BH - 9N

Date: May 15, 2011

Depth (GL-m)	Resistance(Ohm)		Resistivity (Ohm-m)		SP(mv)
	Short Normal	Long Normal	Short Normal	Long Normal	
29	2.60	6.50	26	425	450.8
30	4.52	4.54	45	297	458.3
31	4.81	4.84	48	316	450.8
32	4.80	4.83	48	315	458.3
33	4.75	4.80	48	313	440.9
34	4.64	4.70	47	307	441.2
35	4.72	4.74	47	310	450.2
36	4.71	4.73	47	309	442.1
37	4.74	4.82	48	315	453.2
38	5.11	5.13	51	335	466.6
39	5.41	5.42	54	354	453.4
40	5.37	5.76	54	376	444.3
41	4.92	4.93	49	322	462.0
42	4.57	4.59	46	300	467.8
43	4.47	4.50	45	294	467.3
44	4.56	4.58	46	299	442.1
45	4.77	4.79	48	313	459.2
46	5.06	5.09	51	332	453.2
47	5.77	5.79	58	378	468.0
48	7.29	7.30	73	477	462.3
49	9.64	9.69	97	633	444.2
50	11.02	11.96	111	781	465.3
51	10.89	10.91	109	713	456.0
52	10.61	10.63	107	694	457.3
53	10.60	10.62	107	694	456.0
54	10.40	10.42	104	681	454.4
55	9.80	9.83	98	642	454.3
56	9.30	11.02	93	720	466.0
57	8.57	8.62	86	563	460.9
58	8.63	8.73	87	570	454.2
59	9.34	9.35	94	611	450.3
60	9.09	9.11	91	595	457.2
61	9.46	9.47	95	619	451.3
62	10.85	10.91	109	713	460.1
63	12.57	12.00	126	784	454.2
64	15.65	63.00	157	4115	456.3
65	20.10	15.81	202	1033	422.6
66	24.26	20.14	244	1315	379.4
67	30.25	24.46	304	1598	412.3
68	35.76	30.31	359	1980	357.5
69	36.29	35.83	365	2340	474.0
70	32.71	36.32	329	2372	431.6
71	27.58	34.83	277	2275	295.3
72	25.70	27.64	258	1805	351.8
73	25.83	25.70	260	1679	348.4
74	29.67	25.86	298	1689	350.0
75	35.91	29.82	361	1948	338.3
76	44.05	36.13	443	2360	401.7
77	54.75	44.25	550	2890	451.8
78	64.84	55.30	652	3612	458.7
79	72.08	65.54	724	4281	466.0
80	73.48	72.31	738	4723	467.1
81	73.14	73.52	735	4802	467.7
82	64.37	73.20	647	4781	467.2
83	47.80	65.96	480	4308	467.0
84	33.51	47.90	337	3128	462.4
85	21.83	34.98	219	2285	456.7
86	10.54	21.90	106	1430	458.3
87	10.11	10.60	102	692	460.3
88	11.32	10.26	114	670	461.5
89	11.56	11.33	116	740	463.3
90	11.54	11.57	116	756	465.6
91	11.11	11.55	112	754	465.0

Data 5.2 Borehole Logging Data for Site No-9N (2/3)

Well No: RVS BH - 9N

Date: May 15, 2011

Depth (GL-m)	Resistance(Ohm)		Resistivity (Ohm-m)		SP(mv)
	Short Normal	Long Normal	Short Normal	Long Normal	
92	11.24	11.12	113	726	464.5
93	10.11	11.25	102	735	465.2
94	9.41	10.22	95	667	462.7
95	9.40	9.42	94	615	463.7
96	9.40	9.42	94	615	465.0
97	9.40	9.42	94	615	464.6
98	8.04	9.42	81	615	462.6
99	8.64	8.68	87	567	461.6
100	7.40	8.76	74	572	462.0
101	7.43	7.45	75	487	462.6
102	6.30	7.82	63	511	463.6
103	6.66	6.33	67	413	465.2
104	10.30	8.94	103	584	451.8
105	5.72	10.61	57	693	449.2
106	5.53	5.88	56	384	449.0
107	6.17	5.54	62	362	449.5
108	7.32	6.25	74	408	452.5
109	7.39	7.47	74	488	460.8
110	5.71	7.40	57	483	455.0
111	5.99	5.76	60	376	455.9
112	6.36	6.03	64	394	449.1
113	6.95	6.39	70	417	453.1
114	8.15	7.00	82	457	454.1
115	9.11	8.20	92	536	465.9
116	9.48	9.15	95	598	455.0
117	8.16	9.57	82	625	462.6
118	5.88	9.00	59	588	460.5
119	6.40	5.90	64	385	453.9
120	7.65	6.52	77	426	462.5
121	4.55	7.67	46	501	461.7
122	3.20	4.65	32	304	459.8
123	2.92	3.21	29	210	455.6
124	3.23	3.00	32	196	453.0
125	3.50	3.40	35	222	462.1
126	5.43	3.68	55	240	459.0
127	8.23	5.58	83	364	462.6
128	5.63	8.24	57	538	465.8
129	3.65	5.74	37	375	465.8
130	5.69	3.72	57	243	466.3
131	6.69	5.84	67	381	449.7
132	6.56	6.78	66	443	462.7
133	5.48	6.64	55	434	456.5
134	7.16	5.55	72	362	455.0
135	3.32	7.25	33	474	458.4
136	3.18	3.63	32	237	462.8
137	3.20	3.20	32	209	463.3
138	2.80	3.20	28	209	462.1
139	2.93	2.81	29	184	460.0
140	3.65	2.94	37	192	447.7
141	11.65	3.93	117	257	457.6
142	9.56	11.95	96	780	461.7
143	5.63	9.65	57	630	460.3
144	2.96	5.68	30	371	456.4
145	2.50	2.98	25	195	456.5
146	2.79	2.52	28	165	453.6
147	4.84	2.80	49	183	455.6
148	7.13	4.88	72	319	453.6
149	6.26	7.19	63	470	451.3
150	7.44	6.30	75	411	450.2
151	9.62	7.47	97	488	459.2
152	8.46	9.66	85	631	459.6
153	2.71	8.50	27	555	458.5
154	2.45	2.72	25	178	457.7
155	2.46	2.47	25	161	457.4
156	3.10	2.48	31	162	457.3

Data 5.2 Borehole Logging Data for Site No-9N (3/3)

Well No: RVS BH - 9N

Date: May 15, 2011

Depth (GL-m)	Resistance(Ohm)		Resistivity (Ohm-m)		SP(mv)
	Short Normal	Long Normal	Short Normal	Long Normal	
157	2.83	3.17	28	207	458.8
158	2.55	2.85	26	186	459.6
159	2.63	2.57	26	168	459.8
160	2.85	2.65	29	173	459.7
161	3.10	2.88	31	188	460.6
162	3.05	3.11	31	203	460.5
163	3.60	3.07	36	201	457.6
164	5.16	3.61	52	236	455.6
165	5.95	5.21	60	340	451.7
166	7.52	6.00	76	392	436.6
167	11.28	7.66	113	500	436.7
168	11.85	11.43	119	747	437.0
169	11.25	11.90	113	777	443.3
170	8.96	11.30	90	738	456.2
171	3.80	9.00	38	588	455.5
172	3.43	3.85	34	251	451.9
173	3.83	3.44	38	225	451.0
174	3.12	3.84	31	251	451.1
175	3.10	3.13	31	204	449.9
176	3.02	3.11	30	203	448.1
177	2.80	3.02	28	197	446.3
178	2.64	2.90	27	189	442.5
179	3.29	2.66	33	174	441.0
180	3.28	3.99	33	261	450.0
181	3.04	3.29	31	215	447.3
182	2.68	3.04	27	199	442.8
183	2.70	2.70	27	176	452.3
184	2.99	2.71	30	177	452.8
185	3.71	3.02	37	197	452.9
186	3.06	3.72	31	243	451.6
187	2.82	3.07	28	201	451.2
188	2.88	2.83	29	185	450.7
189	2.80	2.89	28	189	451.3
190	2.74	2.81	28	184	450.0
191	2.94	2.75	30	180	450.3
192	3.08	2.95	31	193	448.9
193	2.68	3.09	27	202	449.2
194	2.90	3.42	29	223	452.4

Data 5.2 Borehole Logging Data for Site No-10N (1/3)

Well No: RVS BH - 10N

Date: February 18, 2011

Depth (GL-m)	Resistance(Ohm)		Resistivity (Ohm-m)		SP(mv)
	Short Normal	Long Normal	Short Normal	Long Normal	
21	23.49	23.50	236	1535	399
22	17.15	17.18	172	1122	396
23	13.39	13.38	135	874	429
24	12.08	12.10	121	790	491
25	12.64	12.63	127	825	511
26	11.00	11.00	111	718	443
27	7.67	7.69	77	502	508
28	9.46	9.42	95	615	494
29	19.84	19.82	199	1294	448
30	24.32	24.31	244	1588	425
31	24.30	24.29	244	1586	425
32	23.12	23.11	232	1509	423
33	24.54	24.70	247	1613	407
34	18.16	18.17	182	1187	416
35	17.44	17.45	175	1140	500
36	18.04	18.03	181	1178	522
37	17.55	17.54	176	1146	524
38	18.30	18.29	184	1195	528
39	20.36	20.34	205	1328	529
40	18.76	18.77	189	1226	523
41	18.23	18.22	183	1190	523
42	16.84	16.85	169	1101	522
43	11.40	11.38	115	743	521
44	11.08	11.07	111	723	520
45	14.19	14.10	143	921	519
46	12.06	14.18	121	926	518
47	14.39	12.08	145	789	516
48	13.95	14.19	140	927	514
49	13.05	14.09	131	920	513
50	15.44	13.04	155	852	512
51	15.61	15.45	157	1009	514
52	13.38	15.60	134	1019	514
53	14.39	13.39	145	875	511
54	13.33	14.38	134	939	512
55	21.18	18.26	213	1193	509
56	22.88	21.13	230	1380	512
57	24.19	22.85	243	1492	507
58	26.06	24.20	262	1581	507
59	25.80	26.07	259	1703	513
60	25.00	25.89	251	1691	513
61	24.41	25.02	245	1634	512
62	22.21	24.39	223	1593	512
63	23.23	22.20	233	1450	510
64	27.00	23.07	271	1507	511
65	33.44	27.11	336	1771	514
66	34.76	33.35	349	2178	516
67	33.63	34.75	338	2270	516
68	32.27	33.64	324	2197	518
69	31.42	32.38	316	2115	519
70	29.67	31.42	298	2052	520
71	26.89	29.86	270	1950	520
72	22.79	26.90	229	1757	518
73	22.91	22.80	230	1489	519
74	17.21	18.93	173	1236	522
75	16.55	17.22	166	1125	524
76	15.86	16.54	159	1080	528
77	15.15	15.84	152	1035	532
78	14.33	15.16	144	990	536
79	13.76	13.78	138	900	538
80	14.33	14.34	144	937	540
81	13.76	13.78	138	900	542
82	13.43	13.44	135	878	545
83	13.78	13.79	138	901	545

Data 5.2 Borehole Logging Data for Site No-10N (2/3)

Well No: RVS BH - 10N

Date: February 18, 2011

Depth (GL-m)	Resistance(Ohm)		Resistivity (Ohm-m)		SP(mv)
	Short Normal	Long Normal	Short Normal	Long Normal	
84	13.80	13.79	139	901	549
85	13.00	13.00	131	849	549
86	12.44	12.45	125	813	553
87	14.00	14.01	141	915	555
88	15.81	15.82	159	1033	556
89	16.69	16.68	168	1089	557
90	16.94	16.96	170	1108	560
91	16.87	16.88	170	1102	561
92	16.64	16.67	167	1089	561
93	16.53	16.54	166	1080	560
94	16.41	16.42	165	1072	559
95	16.18	16.59	163	1084	559
96	16.08	16.09	162	1051	559
97	16.17	16.16	162	1055	560
98	16.51	16.55	166	1081	559
99	17.13	17.15	172	1120	559
100	17.50	17.52	176	1144	560
101	17.52	17.53	176	1145	560
102	17.42	17.44	175	1139	560
103	17.44	17.45	175	1140	559
104	17.52	17.53	176	1145	559
105	17.81	17.83	179	1165	559
106	19.95	17.96	200	1173	560
107	17.90	17.92	180	1170	561
108	17.75	17.81	178	1163	561
109	17.77	17.76	179	1160	561
110	17.80	17.82	179	1164	562
111	17.91	17.90	180	1169	561
112	18.63	18.64	187	1217	561
113	21.47	21.48	216	1403	557
114	25.98	25.99	261	1697	556
115	28.22	28.23	284	1844	555
116	29.90	29.92	300	1954	556
117	31.27	31.28	314	2043	556
118	32.49	31.24	326	2040	555
119	34.17	34.18	343	2232	557
120	36.85	36.84	370	2406	557
121	40.46	40.47	407	2643	559
122	45.71	45.72	459	2986	561
123	52.04	52.05	523	3399	561
124	62.77	62.78	631	4100	560
125	73.00	73.02	734	4769	557
126	73.17	73.18	735	4780	556
127	66.89	66.97	672	4374	556
128	53.12	53.13	534	3470	556
129	43.76	43.77	440	2859	557
130	41.40	41.41	416	2705	559
131	39.99	40.00	402	2612	556
132	37.28	37.29	375	2435	558
133	32.58	32.59	327	2129	557
134	27.72	27.74	279	1812	557
135	25.12	25.13	252	1641	556
136	27.82	27.83	280	1818	556
137	34.93	34.95	351	2283	556
138	34.73	35.74	349	2334	558
139	33.05	32.09	332	2096	561
140	30.55	30.56	307	1996	563
141	27.95	27.97	281	1827	562
142	25.53	25.54	257	1668	561
143	22.94	22.95	231	1499	563
144	20.71	20.73	208	1354	564
145	15.01	15.02	151	981	562
146	10.72	10.73	108	701	561
147	10.54	10.55	106	689	559
148	9.84	9.84	99	643	564

Data 5.2 Borehole Logging Data for Site No-10N (3/3)

Well No: RVS BH - 10N

Date: February 18, 2011

Depth (GL-m)	Resistance(Ohm)		Resistivity (Ohm-m)		SP(mv)
	Short Normal	Long Normal	Short Normal	Long Normal	
149	8.07	8.08	81	528	562
150	7.04	7.05	71	460	562
151	6.42	6.43	65	420	561
152	6.08	6.09	61	398	561
153	8.03	8.02	81	524	562
154	8.25	8.27	83	540	562
155	8.28	8.27	83	540	561
156	6.85	6.85	69	447	560
157	6.50	6.51	65	425	561
158	7.15	7.15	72	467	560
159	6.68	6.68	67	436	560
160	6.15	6.16	62	402	559
161	6.06	6.06	61	396	560
162	6.05	6.06	61	396	560
163	6.00	6.01	60	393	560
164	6.03	6.04	61	394	560
165	5.88	5.89	59	385	560
166	5.84	5.84	59	381	560
167	5.91	5.92	59	387	560
168	5.98	5.98	60	391	559
169	5.94	5.93	60	387	559
170	5.77	5.78	58	378	558
171	5.85	5.86	59	383	558
172	5.95	5.96	60	389	557
173	5.84	5.85	59	382	556
174	5.91	5.90	59	385	555
175	5.92	5.93	59	387	557
176	5.85	5.87	59	383	557
177	5.88	5.89	59	385	558
178	5.87	5.88	59	384	555
179	5.78	5.78	58	378	553
180	5.78	5.79	58	378	552
181	5.74	5.75	58	376	551
182	5.69	5.70	57	372	548
183	5.78	5.76	58	376	542
184	5.71	5.70	57	372	560
185	5.64	5.65	57	369	560
186	5.58	5.59	56	365	559
187	5.56	5.57	56	364	560
188	5.46	5.49	55	359	559
189	5.77	5.78	58	378	558
190	5.76	5.75	58	376	558
191	5.72	5.73	57	374	557
192	5.77	5.78	58	378	557
193	5.64	5.65	57	369	557
194	5.55	5.55	56	362	560
195	5.48	5.49	55	359	559
196	5.33	5.34	54	349	558
197	5.27	5.28	53	345	558

Data 5.3 Pumping Test Data for Site No-1 (1/8)

STEP-DRAWDOWN TEST DATA SHEET

Date: 8 June 2010

SHEET No. : 1/5

Location: Abaya North, Walayta, SNNPRS

Site No.: RVS BH No-1

GPS Reading: 383508 E, 734719 N

Well No.: No-1 Well Depth: 150.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 94 - 124 m

Static Groundwater Level (FToC) 47.35 m Screen Length: 30.00 m

Pump Type: Submersible Casing stick up: 0.38 m

Pump Setting: 66.00 m, Discharge (Q): 8.00 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
8-Jun-10	10:30	0	0	47.35	0.00			
			1	50.76	3.41			
			2	51.00	3.65			
			4	51.10	3.75			
			6	51.14	3.79			
			8	51.12	3.77			
			10	51.12	3.77			
			12	51.14	3.79			
			14	51.15	3.80			
			16	51.18	3.83			
			18	51.21	3.86			
			20	51.22	3.87			
			25	51.23	3.88			
			30	51.22	3.87			
			35	51.22	3.87			
			40	51.22	3.87			
			45	51.23	3.88			
			50	51.23	3.88			
			55	51.23	3.88			
	11:30	1	60	51.23	3.88			
			70	51.23	3.88			
			80	51.23	3.88			
			90	51.23	3.88			
			100	51.23	3.88			
			110	51.23	3.88			
	12:30	2	120	51.23	3.88			

Data 5.3 Pumping Test Data for Site No-1 (2/8)

STEP-DRAWDOWN TEST DATA SHEET

Date: 8 June 2010

SHEET No. : 2/5

Location: Abaya North, Walayta, SNNPRS

Site No.: RVS BH No-1

GPS Reading: 383508 E, 734719 N

Well No.: No-1 Well Depth: 150.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 94 - 124 m

Static Groundwater Level (FToC) 47.35 m Screen Length: 30.00 m

Pump Type: Submersible Casing stick up: 0.38 m

Pump Setting: 66.00 m, Discharge (Q): 9 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
8-Jun-10	12:30	0	0	51.23	0.00			
			1	51.45	0.22			
			2	51.50	0.27			
			4	51.55	0.32			
			6	51.56	0.33			
			8	51.58	0.35			
			10	51.60	0.37			
			12	51.66	0.43			
			14	51.66	0.43			
			16	51.67	0.44			
			18	51.65	0.42			
			20	51.66	0.43			
			25	51.66	0.43			
			30	51.66	0.43			
			35	51.66	0.43			
			40	51.66	0.43			
			45	51.67	0.44			
			50	51.66	0.43			
			55	51.66	0.43			
	13:30	1	60	51.67	0.44			
			70	51.68	0.45			
			80	51.67	0.44			
			90	51.68	0.45			
			100	51.69	0.46			
			110	51.68	0.45			
	14:30	2	120	51.69	0.46			

Data 5.3 Pumping Test Data for Site No-1 (3/8)

STEP-DRAWDOWN TEST DATA SHEET

Date: 8 June 2010

SHEET No. : 3/5

Location: Abaya North, Walayta, SNNPRS

Site No.: RVS BH No-1

GPS Reading: 383508 E, 734719 N

Well No.: No-1 Well Depth: 150.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 94 - 124 m

Static Groundwater Level (FToC) 47.35 m Screen Length: 30.00 m

Pump Type: Submersible Casing stick up: 0.38 m

Pump Setting: 66.00 m, Discharge (Q): 11.5 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
8-Jun-10	14:30	0	0	51.69	0.00			
			1	52.40	0.71			
			2	52.30	0.61			
			4	52.45	0.76			
			6	52.52	0.83			
			8	52.54	0.85			
			10	52.56	0.87			
			12	52.58	0.89			
			14	52.56	0.87			
			16	52.58	0.89			
			18	52.56	0.87			
			20	52.57	0.88			
			25	52.59	0.90			
			30	52.58	0.89			
			35	52.58	0.89			
			40	52.58	0.89			
			45	52.58	0.89			
			50	52.58	0.89			
			55	52.58	0.89			
	15:30	1	60	52.58	0.89			
			70	52.58	0.89			
			80	52.58	0.89			
			90	52.58	0.89			
			100	52.58	0.89			
			110	52.58	0.89			
	16:30	2	120	52.58	0.89			

Data 5.3 Pumping Test Data for Site No-1 (4/8)

STEP-DRAWDOWN TEST DATA SHEET

Date: 8 June 2010

SHEET No. : 4/5

Location: Abaya North, Walayta, SNNPRS
GPS Reading: 383508 E, 734719 N

Site No.: **RVS BH No-1**

Well No.: No-1 Well Depth: 150.00 m, Well Diameter: ϕ 6.00 "
Screen Depth(s): 94 - 124 m
Static Groundwater Level (FToC) 47.35 m Screen Length: 30.00 m
Pump Type: Submersible Casing stick up: 0.38 m
Pump Setting: 66.00 m, Discharge (Q): 14.00 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
8-Jun-10	16:30	0	0	52.58	0.00			
			1	53.15	0.57			
			2	53.21	0.63			
			4	53.25	0.67			
			6	53.32	0.74			
			8	53.32	0.74			
			10	53.34	0.76			
			12	53.34	0.76			
			14	53.34	0.76			
			16	53.34	0.76			
			18	53.34	0.76			
			20	53.34	0.76			
			25	53.34	0.76			
			30	53.35	0.77			
			35	53.35	0.77			
			40	53.35	0.77			
			45	53.35	0.77			
			50	53.35	0.77			
			55	53.35	0.77			
	17:30	1	60	53.36	0.78			
			70	53.36	0.78			
			80	53.37	0.79			
			90	53.37	0.79			
			100	53.37	0.79			
			110	53.38	0.80			
	18:30	2	120	53.38	0.80			

Data 5.3 Pumping Test Data for Site No-1 (5/8)

STEP-DRAWDOWN TEST DATA SHEET

Date: 15 June 2010

SHEET No. : 5/5

Location: Abaya North, Walayta, SNNPRS
GPS Reading: 383508 E, 734719 N

Site No.: **RVS BH No-1**

Well No.: No-1 Well Depth: 150.00 m, Well Diameter: ϕ 6.00 "
Screen Depth(s): 94 - 124 m
Static Groundwater Level (FToC) 47.35 m Screen Length: 30.00 m
Pump Type: Submersible Casing stick up: 0.38 m
Pump Setting: 66.00 m, Discharge (Q): 16.00 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
15-Jun-10	18:30	0	0	53.38	0.00			
			1	54.35	0.97			
			2	54.37	0.99			
			4	54.42	1.04			
			6	54.48	1.10			
			8	54.50	1.12			
			10	54.52	1.14			
			12	54.56	1.18			
			14	54.57	1.19			
			16	54.57	1.19			
			18	54.58	1.20			
			20	54.58	1.20			
			25	54.58	1.20			
			30	54.58	1.20			
			35	54.58	1.20			
			40	54.58	1.20			
			45	54.58	1.20			
			50	54.59	1.21			
			55	54.59	1.21			
	19:30	1	60	54.59	1.21			
			70	54.60	1.22			
			80	54.60	1.22			
			90	54.60	1.22			
			100	54.60	1.22			
			110	54.60	1.22			
	20:30	2	120	54.60	1.22			

Data 5.3 Pumping Test Data for Site No-1 (6/8)

CONTINUOUS PUMPING TEST DATA SHEET

Date: 9 June 2010

SHEET No. : 1/2

Location: Abaya North, Walayta, SNNPRS

Site No.: RVS BH No-1

GPS Reading: 383508 E, 734719 N

Well No.: No-1 Well Depth: 150.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 94 - 124 m

Static Groundwater Level (FToC) 47.35 m Screen Length: 30.00 m

Pump Type: Submersible Casing stick up: 0.38 m

Pump Setting: 66.00 m, Discharge (Q): 12.00 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
9-Jun-10	12:30		0	47.31	0			
			1	52.02	4.71			
			2	52.23	4.92			
			3	52.30	4.99			
			4	52.35	5.04			
			5	52.40	5.09			
			6	52.45	5.14			
			8	52.52	5.21			
			10	52.58	5.27			
			15	52.60	5.29			
			20	52.63	5.32			
			25	52.67	5.36			
			30	52.68	5.37	54	7.19	31.6
			35	52.70	5.39			
			40	52.72	5.41			
			45	52.74	5.43			
			50	52.76	5.45			
			55	52.78	5.47	55	7.19	31
	13:30	1	60	52.81	5.50			
			70	52.82	5.51			
			80	52.83	5.52			
			90	52.84	5.53			
			100	52.86	5.55			
			110	52.88	5.57			
	14:30	2	120	52.89	5.58			
			140	52.90	5.59			
			160	52.91	5.60			

Data 5.3 Pumping Test Data for Site No-1 (7/8)

CONTINUOUS PUMPING TEST DATA SHEET

Date: 9 June 2010

SHEET No. : 2/2

Location: Abaya North, Walayta, SNNPRS

Site No.: RVS BH No-1

GPS Reading: 383508 E, 734719 N

Well No.: No-1 Well Depth: 150.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 94 - 124 m

Static Groundwater Level (FToC*) 47.35 m Screen Length: 30.00 m

Pump Type: Submersible Casing stick up: 0.38 m

Pump Setting: 66.00 m, Discharge (Q): 12.00 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
9-Jun-10	15:30	3	180	52.91	0			
			210	52.92	0.01			
		4	240	52.93	0.02			
			270	52.94	0.03			
		5	300	52.95	0.04	65	7.15	31.6
			330	52.96	0.05	64	7.24	30.4
		6	360	52.97	0.06	65	7.25	31.3
		7	420	53.10	0.19	65	7.23	30.6
		8	480	53.05	0.14	65	7.22	30.3
		9	540	53.06	0.15	64	7.23	32.0
		10	600	53.07	0.16	63	7.23	31.6
		11	660	53.08	0.17	64	7.22	32.4
10 June 2010	0:00	12	720	53.09	0.18	65	7.22	31.5
		13	780	53.10	0.19	64	7.23	32.5
		14	840	53.12	0.21	60	7.22	31.5
		15	900	53.13	0.22	55	7.2	31.4
		16	960	53.15	0.24	54	7.23	31.3
		18	1080	53.16	0.25	54	7.22	31.0
		20	1200	53.17	0.26	54	7.22	31.3
		21	1260	53.18	0.27	50	7.23	30.7
		22	1320	53.19	0.28	48	7.23	32.0
		24	1440	53.20	0.29	44	7.24	33.0

Data 5.3 Pumping Test Data for Site No-1 (8/8)

RECOVERY TEST DATA SHEET

Date: 10 June 2010

SHEET No. : 1/1

Location: Abaya North, Walayta, SNNPRS

Site No.: **RVS BH No-1**

GPS Reading: 383508 E, 734719 N

Well No.: No-1 Well Depth: 150.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 94 - 124 m

Static Groundwater Level (FToC) 47.35 m Screen Length: 30.00 m

Pump Type: Submersible Casing stick up: 0.38 m

Pump Setting: 66.00 m, Discharge (Q): NA L/s

* FToC: From Top of Casing

Date	Time	Time since Pumping Stopped, [t']		Time since Pumping Started, [t] (min)	Time Ratio, [t'/t]	Water Level (GL - m)	Residual Drawdown, [s'] (m)
		(hour)	(min)				
10-Jun-10	12:30		0	1440		53.20	5.85
			1	1441	1441	48.01	0.66
			2	1442	721	47.58	0.23
			4	1444	361	47.55	0.20
			6	1446	241	47.43	0.08
			8	1448	181	47.42	0.07
			10	1450	145	47.42	0.07
			12	1452	121	47.40	0.05
			14	1454	104	47.39	0.04
			16	1456	91	47.38	0.03
			18	1458	81	47.38	0.03
			20	1460	73	47.37	0.02
			25	1465	59	47.37	0.02
			30	1470	49	47.36	0.01
			35	1475	42	47.36	0.01
			40	1480	37	47.36	0.01
			45	1485	33	47.35	0.00
			50	1490	30	47.34	
	13:30	1	60	1500	25	47.33	
			70	1510	22		
			80	1520	19		
			90	1530	17		
			100	1540	100		
			110	1550	110		
		2	120	1560	120		
			150	1590	150		
		3	180	1620	9		
			210	1650	8		
		4	240	1680	7		

Data 5.3 Pumping Test Data for Site No-2 (1/7)

STEP-DRAWDOWN TEST DATA SHEET

Date: 31 May 2010

SHEET No. : 1/4

Location: Meki, West Shoa, Oromiya Site No.: **RVS BH No-2**

GPS Reading: 486788 E, 907743 N

Well No.: No-2 Well Depth: 147.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 99 - 135 m

Static Groundwater Level (FToC) 92.20 m Screen Length: 30.00 m

Pump Type: Submersible Casing stick up: 0.45 m

Pump Setting: 103.50 m, Discharge (Q): 7.70 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
31-May-10	17:30	0	0	92.20	0.00			
			1	92.25	0.05			
			2	92.26	0.06			
			4	92.27	0.07			
			6	92.28	0.08			
			8	92.28	0.08			
			10	92.29	0.09			
			12	92.30	0.10			
			14	92.31	0.11			
			16	92.32	0.12			
			18	92.33	0.13			
			20	92.34	0.14			
			25	92.37	0.17			
			30	92.39	0.19	134.2	8.6	32.2
			35	92.40	0.20			
			40	92.40	0.20			
			45	92.41	0.21			
			50	92.41	0.21			
			55	92.42	0.22			
	18:30	1	60	92.42	0.22	113.8	8.7	32.2
			70	92.42	0.22			
			80	92.43	0.23			
			90	92.43	0.23	133.6	8.4	32.2
			100	92.43	0.23			
			110	92.45	0.25			
	19:30	2	120	92.46	0.26	130	8.6	32.2

Data 5.3 Pumping Test Data for Site No-2 (2/7)

STEP-DRAWDOWN TEST DATA SHEET

Date: 31 May 2010

SHEET No. : 2/5

Location: Meki, West Shoa, Oromiya Site No.: **RVS BH No-2**

GPS Reading: 486788 E, 907743 N

Well No.: No-2 Well Depth: 147.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 99 - 135 m

Static Groundwater Level (FToC) 92.20 m Screen Length: 30.00 m

Pump Type: Submersible Casing stick up: 0.45 m

Pump Setting: 103.50 m, Discharge (Q): 8.00 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
31-May-10	19:30	0	0	92.46	0.00			
			1	92.50	0.04			
			2	92.52	0.06			
			4	92.53	0.07			
			6	92.53	0.07			
			8	92.54	0.08			
			10	92.54	0.08			
			12	92.56	0.10			
			14	92.57	0.11			
			16	92.58	0.12			
			18	92.58	0.12			
			20	92.59	0.13			
			25	92.60	0.14			
			30	92.61	0.15			
			35	92.61	0.15			
			40	92.62	0.16			
			45	92.62	0.16			
			50	92.63	0.17			
			55	92.63	0.17			
	20:30	1	60	92.65	0.19	124.6	8.5	32.2
			70	92.66	0.20			
			80	92.67	0.21			
			90	92.68	0.22	124.8	8.5	32.2
			100	92.69	0.23			
			110	92.69	0.23			
	21:30	2	120	92.73	0.27	130.7	8.5	32.2

Data 5.3 Pumping Test Data for Site No-2 (3/7)

STEP-DRAWDOWN TEST DATA SHEET

Date: 31 May 2010

SHEET No. : 3/5

Location: Meki, West Shoa, Oromiya Site No.: **RVS BH No-2**
 GPS Reading: 486788 E, 907743 N
 Well No.: No-2 Well Depth: 147.00 m, Well Diameter: ϕ 6.00 "
 Screen Depth(s): 99 - 135 m
 Static Groundwater Level (FToC) 92.20 m Screen Length: 30.00 m
 Pump Type: Submersible Casing stick up: 0.45 m
 Pump Setting: 103.50 m, Discharge (Q): 8.50 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
31-May-10	21:30	0	0	92.73	0.00			
			1	92.81	0.08			
			2	92.83	0.10			
			4	92.84	0.11			
			6	92.85	0.12			
			8	92.85	0.12			
			10	92.87	0.14			
			12	92.88	0.15			
			14	92.88	0.15			
			16	92.89	0.16			
			18	92.89	0.16			
			20	92.90	0.17			
			25	92.91	0.18			
			30	92.91	0.18	132.8	8.5	32.3
			35	92.92	0.19			
			40	92.92	0.19			
			45	92.93	0.20			
			50	92.94	0.21			
			55	92.95	0.22			
	22:30	1	60	92.96	0.23	131.1	8.5	32.1
			70	92.96	0.23			
			80	92.97	0.24			
			90	92.98	0.25	133.2	8.8	32.1
			100	92.98	0.25			
			110	92.99	0.26			
	23:30	2	120	93.00	0.27	124.5	8.28	32.3

Data 5.3 Pumping Test Data for Site No-2 (4/7)

STEP-DRAWDOWN TEST DATA SHEET

Date: 31 May 2010

SHEET No. : 4/5

Location: Meki, West Shoa, Oromiya Site No.: **RVS BH No-2**

GPS Reading: 486788 E, 907743 N

Well No.: No-2 Well Depth: 147.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 99 - 135 m

Static Groundwater Level (FToC) 92.20 m Screen Length: 30.00 m

Pump Type: Submersible Casing stick up: 0.45 m

Pump Setting: 103.50 m, Discharge (Q): 9.20 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
31-May-10	23:30	0	0	93.00	0.00			
			1	93.07	0.07			
			2	93.09	0.09			
			4	93.11	0.11			
			6	93.12	0.12			
			8	93.13	0.13			
			10	93.15	0.15			
			12	93.15	0.15			
			14	93.16	0.16			
			16	93.17	0.17			
			18	93.19	0.19			
			20	93.20	0.20			
			25	93.21	0.21			
			30	93.23	0.23	132	8.4	32.2
			35	93.23	0.23			
			40	93.24	0.24			
			45	93.25	0.25			
			50	93.26	0.26			
			55	93.27	0.27			
1-Jun-10	0:30	1	60	93.27	0.27	124.5	8.28	2.3
			70	93.28	0.28			
			80	93.29	0.29			
			90	93.29	0.29			
			100	93.30	0.30			
			110	93.31	0.31			
	1:30	2	120	93.32	0.32	124.2	8.24	32.2

Data 5.3 Pumping Test Data for Site No-2 (5/7)

CONTINUOUS PUMPING TEST DATA SHEET
SHEET No. : 1/2

Date: 1 June 2010

Location: Meki, West Shoa, Oromiya Site No.: **RVS BH No-2**
GPS Reading: 486788 E, 907743 N
Well No.: No-2 Well Depth: 147.00 m, Well Diameter: ϕ 6.00 "
Screen Depth(s): 99 - 135 m
Static Groundwater Level (FToC) 92.20 m Screen Length: 30.00 m
Pump Type: Submersible Casing stick up: 0.45 m
Pump Setting: 103.50 m, Discharge (Q): 8.50 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
1-Jun-10	6:30		0	92.41	0			
			1	93.00	0.59			
			2	93.10	0.69			
			3	93.18	0.77			
			4	93.20	0.79			
			5	93.21	0.80			
			6	93.22	0.81			
			8	93.24	0.83			
			10	93.27	0.86			
			15	93.28	0.87			
			20	93.28	0.87	144.1	8.23	30.4
			25	93.29	0.88			
			30	93.28	0.87	145.2	8.25	30.1
			35	93.29	0.88			
			40	93.29	0.88			
			45	93.28	0.87			
			50	93.29	0.88			
			55	93.30	0.89			
	7:30	1	60	93.31	0.90	143.2	8.25	30.8
			70	93.31	0.90			
			80	93.30	0.89			
			90	93.32	0.91			
			100	93.31	0.90			
			110	93.31	0.90			
	8:30	2	120	93.31	0.90	144.8	8.28	30.3
			140	93.31	0.90			
			160	93.31	0.90			

Data 5.3 Pumping Test Data for Site No-2 (6/7)

CONTINUOUS PUMPING TEST DATA SHEET

Date: 1 June 2010

SHEET No. : 2/2

Location: Meki, West Shoa, Oromiya

Site No.: RVS BH No-2

GPS Reading: 486788 E,

907743 N

Well No.: No-2 Well Depth: 147.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 99 - 135 m

Static Groundwater Level (FToC* 92.20 m Screen Length: 30.00 m

Pump Type: Submersible Casing stick up: 0.45 m

Pump Setting: 103.50 m, Discharge (Q): 8.50 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
1-Jun-10	9:30	3	180	93.31	1.11	134.3	8.2	32
			210	93.30	1.10	134.4	8.16	32
		4	240	93.31	1.11	134.7	8.14	32.1
			270	93.31	1.11	134.6	8.13	32.3
		5	300	93.30	1.10	134.3	8.2	32.3
			330	93.31	1.11	134.2	8.19	32.1
		6	360	93.31	1.11	134.2	8.28	32.3
		7	420	93.32	1.12	134.2	8.1	32.1
		8	480	93.33	1.13	144.2	8.15	32.2
		9	540	93.34	1.14	144.8	8.14	32.4
		10	600	93.35	1.15	144.6	8.16	32.5
		11	660	93.35	1.15	143.5	8.13	32.4
	18:30	12	720	93.36	1.16	147.3	8.14	32.2
		13	780	93.37	1.17	143.5	8.19	32.3
		14	840	93.38	1.18	144.2	8.15	32
		15	900	93.38	1.18	144.6	8.16	31.8
		16	960	93.39	1.19	142.8	8.17	30.8
2-Jun-10	0:30	18	1080	93.40	1.20	144.6	8.14	30.5
		20	1200	93.40	1.20	144.7	8.16	29.6
		21	1260	93.41	1.21	147	8.15	28.7
		22	1320	93.42	1.22	147	8.16	30
	6:30	24	1440	93.43	1.23	146.8	8.24	31.6

Data 5.3 Pumping Test Data for Site No-2 (7/7)

RECOVERY TEST DATA SHEET

Date: 2 June 2010

SHEET No. : 1/1

Location: Meki, West Shoa, Oromiya Site No.: **RVS BH No-2**
 GPS Reading: 486788 E, 907743 N
 Well No.: No-2 Well Depth: 147.00 m, Well Diameter: ϕ 6.00 "
 Screen Depth(s): 99 - 135 m
 Static Groundwater Level (FToC 92.20 m Screen Length: 30.00 m
 Pump Type: Submersible Casing stick up: 0.45 m
 Pump Setting: 103.50 m, Discharge (Q): NA L/s

* FToC: From Top of Casing

Date	Time	Time since Pumping Stopped, [t']		Time since Pumping Started, [t] (min)	Time Ratio, [t/t']	Water Level (GL - m)	Residual Drawdown, [s'] (m)
		(hour)	(min)				
2-Jun-10	6:30		0	1440		93.43	1.23
			1	1441	1441	92.90	0.70
			2	1442	721	92.72	0.52
			4	1444	361	92.65	0.45
			6	1446	241	92.62	0.42
			8	1448	181	92.60	0.40
			10	1450	145	92.60	0.40
			12	1452	121	92.59	0.39
			14	1454	104	92.58	0.38
			16	1456	91	92.58	0.38
			18	1458	81	92.58	0.38
			20	1460	73	92.57	0.37
			25	1465	59	92.57	0.37
			30	1470	49	92.56	0.36
			35	1475	42	92.55	0.35
			40	1480	37	92.54	0.34
			45	1485	33	92.54	0.34
			50	1490	30	92.53	0.33
	7:30	1	60	1500	25	92.53	0.33
			70	1510	22	92.51	0.31
			80	1520	19	92.50	0.30
			90	1530	17	92.50	0.30
			100	1540	100	92.49	0.29
			110	1550	110	92.49	0.29
	8:30	2	120	1560	120	92.48	0.28
			150	1590	150	92.48	0.28
		3	180	1620	9	92.47	0.27
			210	1650	8	92.46	0.26
		4	240	1680	7	92.46	0.26
			270	1710	6	92.45	0.25
		5	300	1740	6	92.45	0.25
			330	1770	5	92.44	0.24
		6	360	1800	5	92.44	0.24
			390	1830	5	92.43	0.23
	13:30	7	420	1860	4	92.42	0.22

Data 5.3 Pumping Test Data for Site No-3 (1/8)

STEP-DRAWDOWN TEST DATA SHEET

Date: 31 July 2010

SHEET No. : 1/4

Location: Sheshemene, Oromiya Site No.: **RVS BH No-3**
 GPS Reading: 448141 E, 796423 N
 Well No.: No-3 Well Depth: 247.00 m, Well Diameter: ϕ 6.00 "
 Screen Depth(s): 99 - 135 m
 Static Groundwater Level (FToC) 172.00 m Screen Length: 36.00 m
 Pump Type: Submersible Casing stick up: 0.45 m
 Pump Setting: 187.00 m, Discharge (Q): 0.30 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
31-Jul-10	17:30	0	0	172.38	0.00			
			1	172.45	0.07			
			2	172.48	0.10			
			4	172.51	0.13			
			6	172.52	0.14			
			8	172.54	0.16			
			10	172.55	0.17			
			12	172.55	0.17			
			14	172.56	0.18			
			16	172.57	0.19			
			18	172.57	0.19			
			20	172.58	0.20			
			25	172.6	0.22			
			30	172.61	0.23			
			35	172.63	0.25			
			40	172.64	0.26			
			45	172.65	0.27			
			50	172.67	0.29			
			55	172.68	0.30			
	18:30	1	60	172.69	0.31			
			70	172.72	0.34			
			80	172.74	0.36			
			90	172.75	0.37			
			100	172.76	0.38			
			110	172.77	0.39			
	19:30	2	120	172.79	0.41			

Data 5.3 Pumping Test Data for Site No-3 (2/8)

STEP-DRAWDOWN TEST DATA SHEET

Date: 31 July 2010

SHEET No. : 2/5

Location: Sheshemene, Oromiya Site No.: **RVS BH No-3**
 GPS Reading: 448141 E, 796423 N
 Well No.: No-3 Well Depth: 247.00 m, Well Diameter: ϕ 6.00 "
 Screen Depth(s): 99 - 135 m
 Static Groundwater Level (FToC 172.00 m Screen Length: 36.00 m
 Pump Type: Submersible Casing stick up: 0.45 m
 Pump Setting: 187.00 m, Discharge (Q): 0.60 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
31-Jul-10	19:30	0	0	172.79	0.00			
			1	172.90	0.11			
			2	172.94	0.15			
			4	172.79	0.00			
			6	173.01	0.22			
			8	173.03	0.24			
			10	173.06	0.27			
			12	173.08	0.29			
			14	173.11	0.32			
			16	173.13	0.34			
			18	173.15	0.36			
			20	173.18	0.39			
			25	173.24	0.45			
			30	173.29	0.50			
			35	173.35	0.56			
			40	173.40	0.61			
			45	173.49	0.70			
			50	173.59	0.80			
			55	173.52	0.73			
	20:30	1	60	173.56	0.77			
			70	173.60	0.81			
			80	173.66	0.87			
			90	173.70	0.91			
			100	173.74	0.95			
			110	173.77	0.98			
	21:30	2	120	173.80	1.01			

Data 5.3 Pumping Test Data for Site No-3 (3/8)

STEP-DRAWDOWN TEST DATA SHEET

Date: 31 July 2010

SHEET No. : 3/5

Location: Sheshemene, Oromiya Site No.: **RVS BH No-3**
 GPS Reading: 448141 E, 796423 N
 Well No.: No-3 Well Depth: 247.00 m, Well Diameter: ϕ 6.00 "
 Screen Depth(s): 99 - 135 m
 Static Groundwater Level (FToC 172.00 m Screen Length: 36.00 m
 Pump Type: Submersible Casing stick up: 0.45 m
 Pump Setting: 187.00 m, Discharge (Q): 0.90 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
31-Jul-10	21:30	0	0	173.80	0.00			
			1	173.95	0.15			
			2	174.01	0.21			
			4	174.08	0.28			
			6	174.16	0.36			
			8	174.23	0.43			
			10	174.30	0.50			
			12	174.36	0.56			
			14	174.44	0.64			
			16	174.51	0.71			
			18	174.56	0.76			
			20	174.62	0.82			
			25	174.70	0.90			
			30	174.81	1.01			
			35	174.90	1.10			
			40	174.95	1.15			
			45	175.05	1.25			
			50	175.15	1.35			
			55	175.24	1.44			
	22:30	1	60	175.32	1.52			
			70	175.46	1.66			
			80	175.64	1.84			
			90	175.76	1.96			
			100	175.82	2.02			
			110	175.89	2.09			
	23:30	2	120	175.95	2.15			

Data 5.3 Pumping Test Data for Site No-3 (4/8)

STEP-DRAWDOWN TEST DATA SHEET

Date: 31 July 2010

SHEET No. : 4/5

Location: Sheshemene, Oromiya Site No.: **RVS BH No-3**
 GPS Reading: 448141 E, 796423 N
 Well No.: No-3 Well Depth: 247.00 m, Well Diameter: ϕ 6.00 "
 Screen Depth(s): 99 - 135 m
 Static Groundwater Level (FToC) 172.00 m Screen Length: 36.00 m
 Pump Type: Submersible Casing stick up: 0.45 m
 Pump Setting: 187.00 m, Discharge (Q): 1.20 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
31-Jul-10	23:30	0	0	175.95	0.00			
			1	176.15	0.20			
			2	176.32	0.37			
			4	176.57	0.62			
			6	176.92	0.97			
			8	176.75	0.80			
			10	177.06	1.11			
			12	177.20	1.25			
			14	177.35	1.40			
			16	177.49	1.54			
			18	177.62	1.67			
			20	177.76	1.81			
			25	178.00	2.05			
			30	178.22	2.27			
			35	178.43	2.48			
			40	178.60	2.65			
			45	178.78	2.83			
			50	178.90	2.95			
			55	179.00	3.05			
1-Jun-10	0:30	1	60	179.07	3.12			
			70	179.15	3.20			
			80	179.20	3.25			
			90	179.26	3.31			
			100	179.34	3.39			
			110	179.40	3.45			
	1:30	2	120	179.45	3.50			

Data 5.3 Pumping Test Data for Site No-3 (5/8)

STEP-DRAWDOWN TEST DATA SHEET

Date: 31 July 2010

SHEET No. : 5/5

Location: Sheshemene, Oromiya Site No.: **RVS BH No-3**
 GPS Reading: 448141 E, 796423 N
 Well No.: No-3 Well Depth: 247.00 m, Well Diameter: ϕ 6.00 "
 Screen Depth(s): 99 - 135 m
 Static Groundwater Level (FToC) 172.00 m Screen Length: 36.00 m
 Pump Type: Submersible Casing stick up: 0.45 m
 Pump Setting: 187.00 m, Discharge (Q): 1.50 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
31-Jul-10	23:30	0	0	179.45	0.00			
			1	179.85	0.40			
			2	180.14	0.69			
			4	180.64	1.19			
			6	180.94	1.49			
			8	181.14	1.69			
			10	181.33	1.88			
			12	181.51	2.06			
			14	181.69	2.24			
			16	181.84	2.39			
			18	181.99	2.54			
			20	182.11	2.66			
			25	182.30	2.85			
			30	182.51	3.06			
			35	182.74	3.29			
			40	182.89	3.44			
			45	183.00	3.55			
			50	183.10	3.65			
			55	183.19	3.74			
1-Jun-10	0:30	1	60	183.28	3.83			
			70	183.38	3.93			
			80		-179.45			
			90		-179.45			
			100		-179.45			
			110		-179.45			
	1:30	2	120		-179.45			

Data 5.3 Pumping Test Data for Site No-3 (6/8)

CONTINUOUS PUMPING TEST DATA SHEET

Date: 31 July 2010

SHEET No. : 1/2

Location: Sheshemene, Oromiya Site No.: **RVS BH No-3**
 GPS Reading: 448141 E, 796423 N
 Well No.: No-3 Well Depth: 247.00 m, Well Diameter: ϕ 6.00 "
 Screen Depth(s): 99 - 135 m
 Static Groundwater Level (FToC) 172.00 m Screen Length: 36.00 m
 Pump Type: Submersible Casing stick up: 0.45 m
 Pump Setting: 187.00 m, Discharge (Q): 8.50 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
31-Jul-10	6:30		0	172.40	0			
			1	173.01	0.61			
			2	173.30	0.90			
			3	173.56	1.16			
			4	173.83	1.43			
			5	173.99	1.59			
			6	174.13	1.73			
			8	174.34	1.94			
			10	174.52	2.12			
			15	174.84	2.44			
			20	175.09	2.69			
			25	175.35	2.95			
			30	175.57	3.17	47.4	7.09	30
			35	175.78	3.38			
			40	176.19	3.79			
			45	176.40	4.00			
			50	176.59	4.19			
			55	176.76	4.36			
	7:30	1	60	176.76	4.36	47.5	7.1	30
			70	177.00	4.60			
			80	177.22	4.82			
			90	177.41	5.01	47.4	7.08	30
			100	177.57	5.17			
			110	177.70	5.30			
	8:30	2	120	177.81	5.41	47.3	7.09	30.3
			140	177.92	5.52			
			160	178.01	5.61			

Data 5.3 Pumping Test Data for Site No-3 (7/8)

CONTINUOUS PUMPING TEST DATA SHEET

Date: 31 July 2010

SHEET No. : 2/2

Location: Sheshemene, Oromiya Site No.: RVS BH No-3
 GPS Reading: 448141 E, 796423 N
 Well No.: No-3 Well Depth: 247.00 m, Well Diameter: ϕ 6.00 "
 Screen Depth(s): 99 - 135 m
 Static Groundwater Level (FToC* 172.00 m Screen Length: 36.00 m
 Pump Type: Submersible Casing stick up: 0.45 m
 Pump Setting: 187.00 m, Discharge (Q): 8.50 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
8-Jan-10	18:30	3	180	178.12	6.12			
			210	178.26	6.26			
		4	240	178.39	6.39			
			270	178.52	6.52			
		5	300	178.64	6.64			
			330	178.90	6.90			
		6	360	179.06	7.06			
		7	420	179.12	7.12			
		8	480	179.18	7.18			
		9	540	179.25	7.25			
		10	600	179.31	7.31			
		11	660	179.35	7.35			
	1:30	12	720	179.38	7.38			
	1:30	13	780	179.42	7.42			
	2:30	14	840	179.45	7.45			
	3:30	15	900	179.46	7.46			
	4:30	16	960	179.52	7.52			
	6:30	18	1080	179.57	7.57			
	8:30	20	1200	179.61	7.61			
	9:30	21	1260	179.64	7.64			
	10:30	22	1320	179.68	7.68			
40217	12:30	24	1440	179.70	7.70			

Data 5.3 Pumping Test Data for Site No-3 (8/8)

RECOVERY TEST DATA SHEET

Date: 31 July 2010

SHEET No. : 1/1

Location: Sheshemene, Oromiya Site No.: **RVS BH No-3**
 GPS Reading: 448141 E, 796423 N
 Well No.: No-3 Well Depth: 247.00 m, Well Diameter: ϕ 6.00 "
 Screen Depth(s): 99 - 135 m
 Static Groundwater Level (FToC 172.00 m Screen Length: 36.00 m
 Pump Type: Submersible Casing stick up: 0.45 m
 Pump Setting: 187.00 m, Discharge (Q): NA L/s

* FToC: From Top of Casing

Date	Time	Time since Pumping Stopped, [t']		Time since Pumping Started, [t] (min)	Time Ratio, [t/t']	Water Level (GL - m)	Residual Drawdown, [s'] (m)
		(hour)	(min)				
31-Jul-10	6:30		0	1440		179.70	7.70
			1	1441	1441	178.50	6.50
			2	1442	721	177.00	5.00
			4	1444	361	177.55	5.55
			6	1446	241	176.00	4.00
			8	1448	181	176.45	4.45
			10	1450	145	175.00	3.00
			12	1452	121	175.50	3.50
			14	1454	104	175.10	3.10
			16	1456	91	174.85	2.85
			18	1458	81	174.60	2.60
			20	1460	73	174.41	2.41
			25	1465	59	174.23	2.23
			30	1470	49	174.08	2.08
			35	1475	42	173.93	1.93
			40	1480	37	173.83	1.83
			45	1485	33	173.70	1.70
			50	1490	30	173.65	1.65
	7:30	1	60	1500	25	173.40	1.40
			70	1510	22	173.54	1.54
			80	1520	19	173.50	1.50
			90	1530	17	175.47	3.47
			100	1540	100	173.45	1.45
			110	1550	110	173.41	1.41
	8:30	2	120	1560	120	173.36	1.36
			150	1590	150	173.25	1.25
		3	180	1620	9	173.20	1.20
			210	1650	8		
		4	240	1680	7		
			270	1710	6		
		5	300	1740	6		
			330	1770	5		
		6	360	1800	5		
			390	1830	5		
	13:30	7	420	1860	4		

Data 5.3 Pumping Test Data for Site No-4 (1/6)

STEP-DRAWDOWN TEST DATA SHEET

Date: 16 November 2011

SHEET No. : 1/5

Location: Yirga Alem Site No.: RVS BH-4

GPS Reading: 424918 E, 745467 N

Well No.: RVS-BH - 4 Well Depth: 247.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 82 - 106 and 124 - 154 m

Static Groundwater Level (FToC*): 7.70 m Screen Length: 54.00 m

Pump Type: Submersible Casing stick up: 0.70 m

Pump Setting: 82.00 m, Discharge (Q): 4.20 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
16-Nov-11	19:30	0	0	7.70	0.00			
			1	19.35	11.65			
			2	25.00	17.30			
			4	30.30	22.60			
			6	31.85	24.15			
			8	31.95	24.25			
			10	32.00	24.30			
			12	32.03	24.33			
			14	32.10	24.40			
			16	32.24	24.54			
			18	32.28	24.58			
			20	32.34	24.64			
			25	32.48	24.78			
			30	32.55	24.85			
			35	32.60	24.90			
			40	33.05	25.35			
			45	33.30	25.60			
			50	33.42	25.72			
			55	33.44	25.74			
	20:30	1	60	33.51	25.81	0.56	11.04	36.3
			70	33.63	25.93			
			80	33.68	25.98			
			90	33.72	26.02			
			100	33.77	26.07			
			110	33.79	26.09			
	21:30	2	120	33.80	26.10	0.5	11.5	36.6

Data 5.3 Pumping Test Data for Site No-4 (2/6)

STEP-DRAWDOWN TEST DATA SHEET

Date: 16 November 2011

SHEET No. : 2/5

Location: Yirga Alem Site No.: RVS BH-4

GPS Reading: 424918 E, 745467 N

Well No.: RVS-BH - 4 Well Depth: 247.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 82 - 106 and 124 - 154 m

Static Groundwater Level (FToC*): 7.70 m Screen Length: 54.00 m

Pump Type: Submersible Casing stick up: 0.70 m

Pump Setting: 82.00 m, Discharge (Q): 5.20 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
16-Nov-11	17:30	0	0	33.80	0.00			
			1	35.00	1.20			
			2	36.20	2.40			
			4	38.35	4.55			
			6	39.30	5.50			
			8	39.75	5.95			
			10	40.00	6.20			
			12	40.02	6.22			
			14	40.03	6.23			
			16	40.13	6.33			
			18	40.19	6.39			
			20	40.26	6.46			
			25	40.39	6.59			
			30	40.51	6.71			
			35	40.59	6.79			
			40	40.65	6.85			
			45	40.67	6.87			
			50	40.68	6.88			
			55	40.72	6.92			
	18:30	1	60	40.73	6.93	0.58	11.4	36.7
			70	40.78	6.98			
			80	40.84	7.04			
			90	40.97	7.17			
			100	41.04	7.24			
			110	41.09	7.29			
	19:30	2	120	41.09	7.29	0.62	11.32	36.7

Data 5.3 Pumping Test Data for Site No-4 (3/6)

STEP-DRAWDOWN TEST DATA SHEET

Date: 16 November 2011

SHEET No. : 3/5

Location: Yirga Alem Site No.: RVS BH-4

GPS Reading: 424918 E, 745467 N

Well No.: RVS-BH - 4 Well Depth: 247.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 82 - 106 and 124 - 154 m

Static Groundwater Level (FToC*): 7.70 m Screen Length: 54.00 m

Pump Type: Submersible Casing stick up: 0.70 m

Pump Setting: 82.00 m, Discharge (Q): 6.20 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
16-Nov-11	21:30	0	0	41.09	0.00			
			1	43.75	2.66			
			2	45.00	3.91			
			4	47.00	5.91			
			6	47.80	6.71			
			8	48.25	7.16			
			10	48.47	7.38			
			12	48.50	7.41			
			14	48.64	7.55			
			16	48.71	7.62			
			18	48.80	7.71			
			20	48.84	7.75			
			25	48.98	7.89			
			30	49.00	7.91			
			35	49.05	7.96			
			40	49.10	8.01			
			45	49.13	8.04			
			50	49.23	8.14			
			55	49.28	8.19			
	22:30	1	60	49.37	8.28	0.51	11.02	36.7
			70	49.38	8.29			
			80	49.40	8.31			
			90	49.42	8.33			
			100	49.50	8.41			
			110	49.53	8.44			
	23:30	2	120	49.55	8.46	0.57	11.04	36.7

Data 5.3 Pumping Test Data for Site No-4 (4/6)

CONTINUOUS PUMPING TEST DATA SHEET
SHEET No. : 1/2

Date: 16 November 2011

Location: Yirga Alem Site No.: RVS BH-4

GPS Reading: 424918 E, 745467 N

Well No.: RVS-BH - 4 Well Depth: 247.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 82 - 106 and 124 - 154 m

Static Groundwater Level (FToC*): 7.70 m Screen Length: 54.00 m

Pump Type: Submersible Casing stick up: 0.70 m

Pump Setting: 82.00 m, Discharge (Q): 6.00 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
16-Nov-11	6:30		0	7.70	0			
			1	19.10	11.40			
			2	25.67	17.97			
			3	31.00	23.30			
			4	32.07	24.37			
			5	33.70	26.00			
			6	34.95	27.25			
			8	36.38	28.68			
			10	37.15	29.45			
			15	38.08	30.38			
			20	38.53	30.83			
			25	38.80	31.10			
			30	38.97	31.27			
			35	39.10	31.40			
			40	39.19	31.49			
			45	39.33	31.63			
			50	39.36	31.66			
			55	39.41	31.71			
	7:30	1	60	39.46	31.76	0.63	11.42	36.5
			70	39.60	31.90			
			80	39.64	31.94			
			90	39.73	32.03			
			100	39.74	32.04			
			110	39.75	32.05			
	8:30	2	120	40.00	32.30	0.58	11.39	36.5
			140	40.83	33.13			
			160	41.17	33.47			

Data 5.3 Pumping Test Data for Site No-4 (5/6)

CONTINUOUS PUMPING TEST DATA SHEET
SHEET No. : 2/2

Date: 17 November 2011

Location: Yirga Alem Site No.: RVS BH-4

GPS Reading: 424918 E, 745467 N

Well No.: RVS-BH - 4 Well Depth: 247.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 82 - 106 and 124 - 154 m

Static Groundwater Level (FToC*): 7.70 m Screen Length: 54.00 m

Pump Type: Submersible Casing stick up: 0.70 m

Pump Setting: 82.00 m, Discharge (Q): 6.00 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
17-Aug-11	18:30	3	180	41.25	33.55	0.77	11.36	36.7
			210	41.36	33.66			
		4	240	41.48	33.78	0.79	11.32	36.7
			270	41.60	33.90			
		5	300	41.71	34.01	0.79	11.4	36.7
			330	41.81	34.11			
		6	360	41.90	34.20	0.80	11.4	36.7
		7	420	42.20	34.50	0.80	11.4	36.7
		8	480	42.46	34.76	0.79	11.38	36.8
		9	540	42.68	34.98	0.78	11.36	36.8
		10	600	42.95	35.25	0.75	11.31	36.7
		11	660	43.30	35.60	0.70	11.35	36.7
	1:30	12	720	43.56	35.86	0.66	11.44	36.7
	1:30	13	780	43.74	36.04	0.56	11.43	36.8
	2:30	14	840	43.91	36.21	0.56	11.45	36.8
	3:30	15	900	44.05	36.35	0.51	11.45	36.9
	4:30	16	960	44.20	36.50	0.53	11.4	36.9
	6:30	18	1080	44.40	36.70	0.57	11.4	36.9
	8:30	20	1200	44.50	36.80	0.68	11.43	36.8
	9:30	21	1260	44.65	36.95	0.67	11.42	36.8
	10:30	22	1320	44.76	37.06	0.65	11.43	36.7
	12:30	24	1440	44.90	37.20	0.65	11.44	36.7

Data 5.3 Pumping Test Data for Site No-4 (6/6)

RECOVERY TEST DATA SHEET

Date: 17 November 2011

SHEET No. : 1/1

Location: Yirga Alem Site No.: **RVS BH-4**

GPS Reading: 424918 E, 745467 N

Well No.: RVS-BH - 4 Well Depth: 247.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 82 - 106 and 124 - 154 m

Static Groundwater Level (FToC*): 7.70 m Screen Length: 54.00 m

Pump Type: Submersible Casing stick up: 0.70 m

Pump Setting: _____ m, Discharge (Q): _____ L/s

* FToC: From Top of Casing

Date	Time	Time since Pumping Stopped, [t']		Time since Pumping Started, [t] (min)	Time Ratio, [t/t']	Water Level (GL - m)	Residual Drawdown, [s] (m)
		(hour)	(min)				
17-Nov-11	6:30		0	1440		44.90	37.20
			1	1441	1441	27.20	19.50
			2	1442	721	16.37	8.67
			4	1444	361	8.75	1.05
			6	1446	241	8.25	0.55
			8	1448	181	8.14	0.44
			10	1450	145	8.09	0.39
			12	1452	121	8.05	0.35
			14	1454	104	8.02	0.32
			16	1456	91	7.98	0.28

Data 5.3 Pumping Test Data for Site No-6 (1/6)

STEP-DRAWDOWN TEST DATA SHEET

Date: 29/10/2011

SHEET No. : 1/3

Location: Alaba Site No.: **RVS BH-6**

GPS Reading: 420139 E, 807171 N

Well No.: RVS-BH-6 Well Depth: 400.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 266-284, 296-320, & 326-350 m

Static Groundwater Level (FToC*): 247.60 m Screen Length: 66.00 m

Pump Type: Submersible Casing stick up: 0.50 m

Pump Setting: 286.00 m, Discharge (Q): 4.20 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
29/10/2011	19:30	0	0	247.60	0.00			
			1	250.60	3.00			
			2	250.90	3.30			
			4	251.00	3.40			
			6	251.20	3.60			
			8	251.22	3.62			
			10	251.28	3.68			
			12	251.31	3.71			
			14	251.60	4.00			
			16	251.70	4.10			
			18	251.78	4.18			
			20	251.80	4.20			
			25	251.84	4.24			
			30	251.96	4.36			
			35	252.01	4.41			
			40	252.10	4.50			
			45	252.15	4.55			
			50	252.20	4.60			
			55	252.21	4.61			
	20:30	1	60	252.23	4.63	0.94	8.7	40.6
			70	252.27	4.67			
			80	252.29	4.69			
			90	252.32	4.72			
			100	252.40	4.80			
			110	252.50	4.90			
	21:30	2	120	252.53	4.93	0.96	8.8	40.5

Data 5.3 Pumping Test Data for Site No-6 (2/6)

STEP-DRAWDOWN TEST DATA SHEET

Date: 29/10/2011

SHEET No. : 2/3

Location: Alaba Site No.: **RVS BH-6**

GPS Reading: 420139 E, 807171 N

Well No.: RVS-BH-6 Well Depth: 400.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 266-284, 296-320, & 326-350 m

Static Groundwater Level (FToC*): 247.60 m Screen Length: 66.00 m

Pump Type: Submersible Casing stick up: 0.50 m

Pump Setting: 286.00 m, Discharge (Q): 4.40 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
29/10/2011	17:30	0	0	252.53	0.00			
			1	252.56	0.03			
			2	252.57	0.04			
			4	252.58	0.05			
			6	252.59	0.06			
			8	252.59	0.06			
			10	252.60	0.07			
			12	252.60	0.07			
			14	252.60	0.07			
			16	252.60	0.07			
			18	252.60	0.07			
			20	252.60	0.07			
			25	252.60	0.07			
			30	252.60	0.07			
			35	252.61	0.08			
			40	252.62	0.09			
			45	252.63	0.10			
			50	252.64	0.11			
			55	252.65	0.12			
	18:30	1	60	252.66	0.13	0.93	8.9	40.8
			70	252.66	0.13			
			80	252.67	0.14			
			90	252.68	0.15			
			100	252.72	0.19			
			110	252.73	0.20			
	19:30	2	120	252.73	0.20	0.9	8.7	40.8

Data 5.3 Pumping Test Data for Site No-6 (3/6)

STEP-DRAWDOWN TEST DATA SHEET

Date: 29/10/2011

SHEET No. : 3/3

Location: Alaba Site No.: RVS BH-6

GPS Reading: 420139 E, 807171 N

Well No.: RVS-BH-6 Well Depth: 400.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 266-284, 296-320, & 326-350 m

Static Groundwater Level (FToC*): 247.60 m Screen Length: 66.00 m

Pump Type: Submersible Casing stick up: 0.50 m

Pump Setting: 286.00 m, Discharge (Q): 4.60 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
29/10/2011	21:30	0	0	252.73	0.00			
			1	252.74	0.01			
			2	252.76	0.03			
			4	252.78	0.05			
			6	252.79	0.06			
			8	252.80	0.07			
			10	252.80	0.07			
			12	252.82	0.09			
			14	252.92	0.19			
			16	253.00	0.27			
			18	253.04	0.31			
			20	253.06	0.33			
			25	253.08	0.35			
			30	253.12	0.39			
			35	253.15	0.42			
			40	253.20	0.47			
			45	253.24	0.51			
			50	253.30	0.57			
			55	253.34	0.61			
	22:30	1	60	253.37	0.64	0.89	8.6	40.8
			70	253.41	0.68			
			80	253.40	0.67			
			90	253.41	0.68			
			100	253.40	0.67			
			110	253.41	0.68			
	23:30	2	120	253.40	0.67	0.92	8.8	40.8

Data 5.3 Pumping Test Data for Site No-6 (4/6)

CONTINUOUS PUMPING TEST DATA SHEET

Date: 29/10/2011

SHEET No. : 1/2

Location: Alaba Site No.: **RVS BH-6**

GPS Reading: 420139 E, 807171 N

Well No.: RVS-BH-6 Well Depth: 400.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 266-284, 296-320, & 326-350 m

Static Groundwater Level (FToC*): 247.68 m Screen Length: 66.00 m

Pump Type: Submersible Casing stick up: 0.50 m

Pump Setting: 286.00 m, Discharge (Q): 4.60 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
29/10/2011	6:30		0	247.68	0			
			1	250.70	3.02			
			2	250.95	3.27			
			3	251.06	3.38			
			4	251.11	3.43			
			5	251.23	3.55			
			6	251.35	3.67			
			8	251.55	3.87			
			10	251.70	4.02			
			15	251.85	4.17			
			20	251.92	4.24			
			25	252.05	4.37			
			30	252.10	4.42			
			35	252.18	4.50			
			40	252.20	4.52			
			45	252.30	4.62			
			50	252.36	4.68			
			55	252.48	4.80			
	7:30	1	60	252.53	4.85	1.01	8.6	40.6
			70	252.55	4.87			
			80	252.65	4.97			
			90	252.72	5.04			
			100	252.74	5.06			
			110	252.76	5.08			
	8:30	2	120	252.84	5.16			
			140	252.86	5.18			
			160	252.88	5.20	1.01	8.7	40.6

Data 5.3 Pumping Test Data for Site No-6 (5/6)

CONTINUOUS PUMPING TEST DATA SHEET
SHEET No. : 2/2

Date: 30/10/2011

Location: Alaba Site No.: RVS BH-6
GPS Reading: 420139 E, 807171 N
Well No.: RVS-BH-6 Well Depth: 400.00 m, Well Diameter: ϕ 6.00 "
Screen Depth(s): 266-284, 296-320, & 326-350 m
Static Groundwater Level (FToC*): 247.68 m Screen Length: 66.00 m
Pump Type: Submersible Casing stick up: 0.50 m
Pump Setting: 286.00 m, Discharge (Q): 4.60 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
5-Mar-11	18:30	3	180	252.98	5.30	1.01	8.8	40.6
			210	252.98	5.30			
		4	240	252.98	5.30	1.02	8.8	40.5
			270	252.98	5.30			
		5	300	252.98	5.30	1.02	8.6	40.6
			330	253.00	5.32			
		6	360	253.03	5.35	1.08	8.9	40.6
		7	420	253.05	5.37	1.02	8.8	40.5
		8	480	253.06	5.38	1.05	8.8	40.5
		9	540	253.09	5.41	1.05	8.8	40.6
		10	600	253.10	5.42	1.05	8.9	40.5
		11	660	253.10	5.42	1.05	8.9	40.5
	0:30	12	720	253.11	5.43	1.05	8.8	40.6
	1:30	13	780	253.10	5.42	1.05	8.8	40.5
	2:30	14	840	253.12	5.44	1	8.8	40.5
	3:30	15	900	253.16	5.48	0.85	8.7	40.5
	4:30	16	960	253.18	5.50	0.86	8.7	40.5
	6:30	18	1080	253.19	5.51	0.87	8.6	40.5
	8:30	20	1200	253.20	5.52	0.87	8.8	40.5
	9:30	21	1260	253.20	5.52	0.87	8.8	40.5
	10:30	22	1320	253.21	5.53	0.87	8.9	40.5
	12:30	24	1440	253.20	5.52	0.87	8.8	40.5

Data 5.3 Pumping Test Data for Site No-6 (6/6)

RECOVERY TEST DATA SHEET
SHEET No. : 1/1

Date: 31/10/2011

Location: Alaba Site No.: **RVS BH-6**
GPS Reading: 420139 E, 807171 N
Well No.: RVS-BH-6 Well Depth: 400.00 m, Well Diameter: ϕ 6.00 "
Screen Depth(s): 266-284, 296-320, & 326-350 m
Static Groundwater Level (FToC*): 247.68 m Screen Length: 66.00 m
Pump Type: Submersible Casing stick up: 0.50 m
Pump Setting: 286.00 m, Discharge (Q): _____ L/s

* FToC: From Top of Casing

Date	Time	Time since Pumping Stopped, [t']		Time since Pumping Started, [t] (min)	Time Ratio, [t/t']	Water Level (GL - m)	Residual Drawdown, [s] (m)
		(hour)	(min)				
31/10/2011	6:30		0	1440		253.20	5.52
			1	1441	1441	250.03	2.35
			2	1442	721	249.50	1.82
			4	1444	361	248.00	0.32
			6	1446	241	248.98	1.30
			8	1448	181	248.68	1.00
			10	1450	145	248.30	0.62
			12	1452	121	248.28	0.60
			14	1454	104	248.26	0.58
			16	1456	91	248.24	0.56
			18	1458	81	248.20	0.52
			20	1460	73	248.18	0.50
			25	1465	59	248.14	0.46
			30	1470	49	248.11	0.43
			35	1475	42	248.09	0.41
			40	1480	37	248.00	0.32
			45	1485	33	247.98	0.30
			50	1490	30	247.97	0.29
	7:30	1	60	1500	25	247.96	0.28
			70	1510	22	247.94	0.26
			80	1520	19	247.93	0.25
			90	1530	17	247.92	0.24
			100	1540	100	247.90	0.22
			110	1550	110	247.88	0.20
	8:30	2	120	1560	120	247.86	0.18
			150	1590	150	247.83	0.15
		3	180	1620	9	247.80	0.12
			210	1650	8	247.79	0.11
		4	240	1680	7	247.79	0.11

Data 5.3 Pumping Test Data for Site No-7 (1/8)

STEP-DRAWDOWN TEST DATA SHEET

Date: 15 August 2011

SHEET No. : 1/5

Location: Arba Minch Site No.: **RVS BH-7**

GPS Reading: 341712 E, 670506 N

Well No.: RVS-BH 7 Well Depth: 200.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 86-146 m

Static Groundwater Level (FToC*): 4.89 m Screen Length: 60.00 m

Pump Type: Submersible Casing stick up: 0.77 m

Pump Setting: 75.00 m, Discharge (Q): 9.00 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
15-Aug-11	19:30	0	0	4.89	0.00			
			1	18.10	13.21			
			2	21.35	16.46			
			4	23.18	18.29			
			6	24.66	19.77			
			8	25.39	20.50			
			10	25.83	20.94			
			12	26.19	21.30			
			14	26.37	21.48			
			16	26.59	21.70			
			18	26.85	21.96			
			20	27.05	22.16			
			25	27.50	22.61			
			30	27.85	22.96			
			35	28.14	23.25			
			40	28.41	23.52			
			45	28.65	23.76			
			50	28.80	23.91			
			55	29.00	24.11			
	20:30	1	60	29.21	24.32	0.26	8.4	26.3
			70	29.49	24.60			
			80	30.19	25.30			
			90	31.02	26.13			
			100	31.16	26.27			
			110	31.40	26.51			
	21:30	2	120	31.65	26.76	0.26	8.4	26.3

Data 5.3 Pumping Test Data for Site No-7 (2/8)

STEP-DRAWDOWN TEST DATA SHEET

Date: 15 August 2011

SHEET No. : 2/5

Location: Arba Minch Site No.: **RVS BH-7**

GPS Reading: 341712 E, 670506 N

Well No.: RVS-BH 7 Well Depth: 200.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 86-146 m

Static Groundwater Level (FToC*): 4.89 m Screen Length: 60.00 m

Pump Type: Submersible Casing stick up: 0.77 m

Pump Setting: 75.00 m, Discharge (Q): 11.00 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
15-Aug-11	17:30	0	0	31.65	0.00			
			1	34.2	2.55			
			2	34.9	3.25			
			4	35.9	4.25			
			6	36.2	4.55			
			8	36.42	4.77			
			10	36.74	5.09			
			12	36.83	5.18			
			14	36.99	5.34			
			16	37.08	5.43			
			18	37.16	5.51			
			20	37.26	5.61			
			25	37.37	5.72			
			30	37.56	5.91			
			35	37.76	6.11			
			40	37.9	6.25			
			45	37.97	6.32			
			50	38.09	6.44			
			55	38.17	6.52			
	18:30	1	60	38.41	6.76	0.29	8.43	26.5
			70	39.5	7.85			
			80	39.65	8.00			
			90	39.8	8.15			
			100	40.16	8.51			
			110	40.26	8.61			
	19:30	2	120	40.36	8.71	0.26	8.47	26

Data 5.3 Pumping Test Data for Site No-7 (3/8)

STEP-DRAWDOWN TEST DATA SHEET

Date: 15 August 2011

SHEET No. : 3/5

Location: Arba Minch Site No.: **RVS BH-7**

GPS Reading: 341712 E, 670506 N

Well No.: RVS-BH 7 Well Depth: 200.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 86-146 m

Static Groundwater Level (FToC*): 4.89 m Screen Length: 60.00 m

Pump Type: Submersible Casing stick up: 0.77 m

Pump Setting: 75.00 m, Discharge (Q): 13.00 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
15-Aug-11	21:30	0	0	40.36	0.00			
			1	42.60	2.24			
			2	42.82	2.46			
			4	44.56	4.20			
			6	44.66	4.30			
			8	44.80	4.44			
			10	44.89	4.53			
			12	44.98	4.62			
			14	45.03	4.67			
			16	45.12	4.76			
			18	45.14	4.78			
			20	45.20	4.84			
			25	45.32	4.96			
			30	45.41	5.05			
			35	45.46	5.10			
			40	45.56	5.20			
			45	45.62	5.26			
			50	45.70	5.34			
			55	45.77	5.41			
	22:30	1	60	45.83	5.47	0.26	8.35	26.5
			70	46.11	5.75			
			80	46.24	5.88			
			90	46.45	6.09			
			100	46.56	6.20			
			110	46.63	6.27			
	23:30	2	120	46.70	6.34	0.26	8.44	26

Data 5.3 Pumping Test Data for Site No-7 (4/8)

STEP-DRAWDOWN TEST DATA SHEET

Date: 15 August 2011

SHEET No. : 4/5

Location: Arba Minch Site No.: **RVS BH-7**

GPS Reading: 341712 E, 670506 N

Well No.: RVS-BH 7 Well Depth: 200.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 86-146 m

Static Groundwater Level (FToC*): 4.89 m Screen Length: 60.00 m

Pump Type: Submersible Casing stick up: 0.77 m

Pump Setting: 75.00 m, Discharge (Q): 15.00 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
15-Aug-11	2:24	0	0	46.76	0.00			
			1	48.70	1.94			
			2	49.43	2.67			
			4	49.90	3.14			
			6	50.10	3.34			
			8	50.18	3.42			
			10	50.24	3.48			
			12	50.25	3.49			
			14	50.26	3.50			
			16	50.32	3.56			
			18	50.38	3.62			
			20	50.39	3.63			
			25	50.45	3.69			
			30	50.55	3.79			
			35	50.65	3.89			
			40	50.71	3.95			
			45	50.86	4.10			
			50	50.87	4.11			
			55	50.94	4.18			
15-Aug-11	3:24	1	60	51.87	5.11	0.3	8.43	26.4
			70	52.72	5.96			
			80	52.80	6.04			
			90	52.91	6.15			
			100	52.96	6.20			
			110	53.09	6.33			
	4:24	2	120	53.10	6.34	0.3	8.44	26.4

Data 5.3 Pumping Test Data for Site No-7 (5/8)

STEP-DRAWDOWN TEST DATA SHEET

Date: 15 August 2011

SHEET No. : 5/5

Location: Arba Minch Site No.: RVS BH-7

GPS Reading: 341712 E, 670506 N

Well No.: RVS-BH 7 Well Depth: 200.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 86-146 m

Static Groundwater Level (FToC*): 4.89 m Screen Length: 60.00 m

Pump Type: Submersible Casing stick up: 0.77 m

Pump Setting: 75.00 m, Discharge (Q): 17.00 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
15-Aug-11	23:30	0	0	53.10	0.00			
			1	54.45	1.35			
			2	54.70	1.60			
			4	55.05	1.95			
			6	55.70	2.60			
			8	56.26	3.16			
			10	56.37	3.27			
			12	56.40	3.30			
			14	56.46	3.36			
			16	56.51	3.41			
			18	56.56	3.46			
			20	56.60	3.50			
			25	56.64	3.54			
			30	56.66	3.56			
			35	56.67	3.57			
			40	56.68	3.58			
			45	56.70	3.60			
			50	56.72	3.62			
			55	56.74	3.64			
15-Aug-11	0:30	1	60	56.77	3.67	0.31	8.33	26.4
			70	56.80	3.70			
			80	56.85	3.75			
			90	56.89	3.79			
			100	56.91	3.81			
			110	56.92	3.82			
	1:30	2	120	57.23	4.13	0.33	8.3	26.3

Data 5.3 Pumping Test Data for Site No-7 (6/8)

CONTINUOUS PUMPING TEST DATA SHEET

Date: 16 August 2011

SHEET No. : 1/2

Location: Arba Minch Site No.: RVS BH-7
 GPS Reading: 341712 E, 670506 N
 Well No.: RVS-BH 7 Well Depth: 200.00 m, Well Diameter: ϕ 6.00 "
 Screen Depth(s): 86-146 m
 Static Groundwater Level (FToC*): 6.10 m Screen Length: 60.00 m
 Pump Type: Submersible Casing stick up: 0.77 m
 Pump Setting: 75.00 m, Discharge (Q): 16.00 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
16-Aug-11	6:30		0	6.10	0			
			1	32.33	26.23			
			2	36.95	30.85			
			3	38.63	32.53			
			4	39.02	32.92			
			5	39.05	32.95			
			6	39.36	33.26			
			8	39.70	33.60			
			10	40.00	33.90			
			15	41.27	35.17			
			20	42.00	35.90			
			25	42.32	36.22			
			30	42.73	36.63			
			35	43.20	37.10			
			40	43.40	37.30			
			45	43.68	37.58			
			50	43.97	37.87			
			55	44.23	38.13			
	7:30	1	60	44.83	38.73	0.29	8.43	26.3
			70	45.76	39.66			
			80	46.23	40.13			
			90	46.90	40.80			
			100	46.09	39.99			
			110	47.41	41.31			
	8:30	2	120	47.62	41.52	0.29	8.47	26.4
			140	48.21	42.11			
			160	48.40	42.30			

Data 5.3 Pumping Test Data for Site No-7 (7/8)

CONTINUOUS PUMPING TEST DATA SHEET
SHEET No. : 2/2

Date: 17 August 2011

Location: Arba Minch Site No.: RVS BH-7
GPS Reading: 341712 E, 670506 N
Well No.: RVS-BH 7 Well Depth: 200.00 m, Well Diameter: ϕ 6.00 "
Screen Depth(s): 86-146 m
Static Groundwater Level (FToC*): 6.10 m Screen Length: 60.00 m
Pump Type: Submersible Casing stick up: 0.77 m
Pump Setting: 75.00 m, Discharge (Q): 16.00 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
17-Aug-11	18:30	3	180	48.60	42.50	0.25	8.43	26.2
			210	48.70	42.60			
		4	240	49.00	42.90	0.26	8.44	26.5
			270	49.25	43.15			
		5	300	49.55	43.45	0.26	8.44	26.5
			330	49.85	43.75			
		6	360	50.00	43.90	0.26	8.35	26.5
		7	420	50.18	44.08	0.3	8.34	26.5
		8	480	50.45	44.35	0.3	8.44	26.4
		9	540	51.00	44.90	0.31	8.44	26.4
		10	600	51.60	45.50	0.31	8.38	26.3
		11	660	51.82	45.72	0.34	8.4	26.3
	1:30	12	720	51.95	45.85	0.34	8.41	26.4
	1:30	13	780	51.98	45.88	0.31	8.43	26.2
	2:30	14	840	52.38	46.28	0.32	8.44	26.4
	3:30	15	900	52.53	46.43	0.33	8.43	26.3
	4:30	16	960	52.65	46.55	0.32	8.44	26.3
	6:30	18	1080	52.90	46.80	0.32	8.43	26.4
	8:30	20	1200	53.32	47.22	0.33	8.44	26.4
	9:30	21	1260	53.44	47.34	0.3	8.44	26.4
	10:30	22	1320	53.76	47.66	0.35	8.45	26.4
	12:30	24	1440	53.80	47.70	0.34	8.44	26.4

Data 5.3 Pumping Test Data for Site No-7 (8/8)

RECOVERY TEST DATA SHEET
SHEET No. : 1/1

Date: 18 August 2011

Location: Arba Minch Site No.: **RVS BH-7**
GPS Reading: 341712 E, 670506 N
Well No.: RVS-BH 7 Well Depth: 200.00 m, Well Diameter: ϕ 6.00 "
Screen Depth(s): 86-146 m
Static Groundwater Level (FToC*): 6.10 m Screen Length: 60.00 m
Pump Type: Submersible Casing stick up: 0.77 m
Pump Setting: 75.00 m, Discharge (Q): L/s

* FToC: From Top of Casing

Date	Time	Time since Pumping Stopped, [t']		Time since Pumping Started, [t] (min)	Time Ratio, [t/t']	Water Level (GL - m)	Residual Drawdown, [s'] (m)
		(hour)	(min)				
18-Aug-11	6:30		0	1440		53.80	47.70
			1	1441	1441	31.50	25.40
			2	1442	721	28.20	22.10
			4	1444	361	25.17	19.07
			6	1446	241	23.72	17.62
			8	1448	181	22.80	16.70
			10	1450	145	22.01	15.91
			12	1452	121	21.46	15.36
			14	1454	104	21.02	14.92
			16	1456	91	20.41	14.31
			18	1458	81	20.12	14.02
			20	1460	73	19.85	13.75
			25	1465	59	19.15	13.05
			30	1470	49	18.76	12.66
			35	1475	42	18.21	12.11
			40	1480	37	17.98	11.88
			45	1485	33	17.48	11.38
			50	1490	30	17.19	11.09
	7:30	1	60	1500	25	17.50	11.40
			70	1510	22	15.95	9.85
			80	1520	19	15.79	9.69
			90	1530	17	15.65	9.55
			100	1540	100	14.77	8.67
			110	1550	110	14.63	8.53
	8:30	2	120	1560	120	14.10	8.00
			150	1590	150	14.00	7.90
		3	180	1620	9	13.25	7.15
			210	1650	8	12.00	5.90
		4	240	1680	7	11.40	5.30
			270	1710	6	11.00	4.90
		5	300	1740	6	10.85	4.75
			330	1770	5	10.70	4.60
		6	360	1800	5	10.44	4.34
			390	1830	5	10.00	3.90
	13:30	7	420	1860	4	9.80	3.70

Data 5.3 Pumping Test Data for Site No-8 (1/3)

CONTINUOUS PUMPING TEST DATA SHEET
SHEET No. : 1/2

Date: 28 August 2011

Location: Chamo South Site No.: RVS BH-8
GPS Reading: 327946 E, 630717 N
Well No.: RVS-BH 8 Well Depth: 152.00 m, Well Diameter: ϕ 6.00 "
Screen Depth(s): 50-74,86-122 m
Static Groundwater Level (FToC*): 15.40 m Screen Length: 60.00 m
Pump Type: Submersible Casing stick up: 0.72 m
Pump Setting: 45.00 m, Discharge (Q): 26.00 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
28-Aug-11	6:30		0	15.40	0			
			1	17.06	1.66			
			2	17.06	1.66			
			3	17.08	1.68			
			4	17.08	1.68			
			5	17.10	1.70			
			6	17.10	1.70			
			8	17.13	1.73			
			10	17.13	1.73			
			15	17.18	1.78			
			20	17.31	1.91			
			25	17.34	1.94			
			30	17.55	2.15			
			35	17.56	2.16			
			40	17.61	2.21			
			45	17.62	2.22			
			50	17.64	2.24			
			55	17.66	2.26			
	7:30	1	60	17.68	2.28			
			70	17.72	2.32			
			80	17.72	2.32			
			90	17.78	2.38			
			100	17.78	2.38			
			110	17.78	2.38			
	8:30	2	120	17.78	2.38			
			140	17.78	2.38			
			160	17.79	2.39			

Data 5.3 Pumping Test Data for Site No-8 (2/3)

CONTINUOUS PUMPING TEST DATA SHEET
SHEET No. : 2/2

Date: 28 August 2011

Location: Chamo South Site No.: RVS BH-8
 GPS Reading: 327946 E, 630717 N
 Well No.: RVS-BH 8 Well Depth: 152.00 m, Well Diameter: ϕ 6.00 "
 Screen Depth(s): 50-74 ,86-122 m
 Static Groundwater Level (FToC*): 15.40 m Screen Length: 60.00 m
 Pump Type: Submersible Casing stick up: 0.72 m
 Pump Setting: 45.00 m, Discharge (Q): 26.00 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
7-Jun-11	18:30	3	180	17.79	2.39			
			210	17.80	2.40			
		4	240	17.84	2.44			
			270	17.86	2.46			
		5	300	17.89	2.49			
			330	17.90	2.50			
		6	360	17.89	2.49			
		7	420	17.88	2.48			
		8	480	17.89	2.49			
		9	540	17.89	2.49			

Data 5.3 Pumping Test Data for Site No-8 (3/3)

RECOVERY TEST DATA SHEET
SHEET No. : 1/1

Date: 29 August 2011

Location: Chamo South Site No.: **RVS BH-8**
GPS Reading: 327946 E, 630717 N
Well No.: RVS-BH 8 Well Depth: 152.00 m, Well Diameter: ϕ 6.00 "
Screen Depth(s): 50-74 ,86-122 m
Static Groundwater Level (FToC*): 15.40 m Screen Length: 60.00 m
Pump Type: Submersible Casing stick up: 0.72 m
Pump Setting: 45.00 m, Discharge (Q): L/s

* FToC: From Top of Casing

Date	Time	Time since Pumping Stopped, [t']		Time since Pumping Started, [t] (min)	Time Ratio, [t/t']	Water Level (GL - m)	Residual Drawdown, [s] (m)
		(hour)	(min)				
29-Aug-11	6:30		0	1440		17.89	2.49
			1	1441	1441	16.70	1.30
			2	1442	721	16.40	1.00
			4	1444	361	16.36	0.96
			6	1446	241	16.34	0.94
			8	1448	181	16.30	0.90
			10	1450	145	16.28	0.88
			12	1452	121	16.21	0.81
			14	1454	104	16.20	0.80
			16	1456	91	16.20	0.80
			18	1458	81	16.10	0.70
			20	1460	73	16.10	0.70
			25	1465	59	16.05	0.65
			30	1470	49	16.03	0.63
			35	1475	42	15.95	0.55
			40	1480	37	15.93	0.53
			45	1485	33	15.90	0.50
			50	1490	30	15.88	0.48
	7:30	1	60	1500	25	15.80	0.40
			70	1510	22	15.72	0.32
			80	1520	19	15.72	0.32
			90	1530	17	15.70	0.30
			100	1540	100	15.69	0.29
			110	1550	110	15.67	0.27
	8:30	2	120	1560	120	15.65	0.25
			150	1590	150	15.63	0.23
		3	180	1620	9	15.62	0.22
			210	1650	8	15.60	0.20
		4	240	1680	7	15.57	0.17
			270	1710	6	15.54	0.14
		5	300	1740	6	15.52	0.12
			330	1770	5	15.48	0.08

Data 5.3 Pumping Test Data for Site No-9N (1/8)

STEP-DRAWDOWN TEST DATA SHEET

Date: 5 June 2011

SHEET No. : 1/5

Location: Langano SW Site No.: **RVS BH-9N**

GPS Reading: 464826 E, 829769 N

Well No.: RVS-BH 9N Well Depth: 201.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 87-105 m

Static Groundwater Level (FToC*): 43.41 m Screen Length: 18.00 m

Pump Type: Submersible Casing stick up: 0.51 m

Pump Setting: 80.00 m, Discharge (Q): 8.00 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (m FToC)	Drawdown, [s] (m)	EC (mS/cm)	pH	Temp. (°C)
		(hour)	(min)					
5-Jun-11	19:30	0	0	43.41	0.00			
			1	46.02	2.61			
			2	46.30	2.89			
			4	46.57	3.16			
			6	46.92	3.51			
			8	47.07	3.66			
			10	47.18	3.77			
			12	47.66	4.25			
			14	47.77	4.36			
			16	46.07	2.66			
			18	46.67	3.26			
			20	46.74	3.33			
			25	47.08	3.67			
			30	47.20	3.79			
			35	47.24	3.83			
			40	47.28	3.87			
			45	47.33	3.92			
			50	47.35	3.94			
			55	47.37	3.96			
	20:30	1	60	47.41	4.00			
			70	47.41	4.00			
			80	47.49	4.08			
			90	47.56	4.15			
			100	47.59	4.18			
			110	47.61	4.20			
	21:30	2	120	47.63	4.22			

Data 5.3 Pumping Test Data for Site No-9N (2/8)

STEP-DRAWDOWN TEST DATA SHEET

Date: 5 June 2011

SHEET No. : 2/5

Location: Langano SW Site No.: **RVS BH-9N**
 GPS Reading: 464826 E, 829769 N
 Well No.: RVS-BH 9N Well Depth: 201.00 m, Well Diameter: ϕ 6.00 "
 Screen Depth(s): 87-105 m
 Static Groundwater Level (FToC*): 43.41 m Screen Length: 18.00 m
 Pump Type: Submersible Casing stick up: 0.51 m
 Pump Setting: 80.00 m, Discharge (Q): 10.00 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (m FToC)	Drawdown, [s] (m)	EC (mS/cm)	pH	Temp. (°C)
		(hour)	(min)					
5-Jun-11	17:30	0	0	47.63	0.00			
			1	47.9	0.27			
			2	48.2	0.57			
			4	48.35	0.72			
			6	48.39	0.76			
			8	48.42	0.79			
			10	48.45	0.82			
			12	48.47	0.84			
			14	48.49	0.86			
			16	48.51	0.88			
			18	48.52	0.89			
			20	48.54	0.91			
			25	48.55	0.92			
			30	48.56	0.93			
			35	48.58	0.95			
			40	48.61	0.98			
			45	48.62	0.99			
			50	48.63	1.00			
			55	48.64	1.01			
	18:30	1	60	48.65	1.02			
			70	48.67	1.04			
			80	48.69	1.06			
			90	48.7	1.07			
			100	48.71	1.08			
			110	48.72	1.09			
	19:30	2	120	48.73	1.10	0.54	9.46	37.2

Data 5.3 Pumping Test Data for Site No-9N (3/8)

STEP-DRAWDOWN TEST DATA SHEET

Date: 5 June 2011

SHEET No. : 3/5

Location: Langano SW Site No.: **RVS BH-9N**

GPS Reading: 464826 E, 829769 N

Well No.: RVS-BH 9N Well Depth: 201.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 87-105 m

Static Groundwater Level (FToC*): 43.41 m Screen Length: 18.00 m

Pump Type: Submersible Casing stick up: 0.51 m

Pump Setting: 80.00 m, Discharge (Q): 12.00 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (m FToC)	Drawdown, [s] (m)	EC (mS/cm)	pH	Temp. (°C)
		(hour)	(min)					
5-Jun-11	21:30	0	0	48.73	0.00			
			1	49.46	0.73			
			2	49.55	0.82			
			4	49.56	0.83			
			6	49.63	0.90			
			8	49.66	0.93			
			10	49.68	0.95			
			12	49.70	0.97			
			14	49.71	0.98			
			16	49.73	1.00			
			18	49.74	1.01			
			20	49.75	1.02			
			25	49.78	1.05			
			30	49.80	1.07			
			35	49.81	1.08			
			40	49.83	1.10			
			45	49.84	1.11			
			50	49.85	1.12			
			55	49.86	1.13			
	22:30	1	60	49.87	1.14	0.54	9.43	37.3
			70	49.88	1.15			
			80	49.89	1.16			
			90	49.91	1.18			
			100	49.92	1.19			
			110	49.93	1.20			
	23:30	2	120	49.94	1.21			

Data 5.3 Pumping Test Data for Site No-9N (4/8)

STEP-DRAWDOWN TEST DATA SHEET

Date: 5 June 2011

SHEET No. : 4/5

Location: Langano SW Site No.: **RVS BH-9N**

GPS Reading: 464826 E, 829769 N

Well No.: RVS-BH 9N Well Depth: 201.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 87-105 m

Static Groundwater Level (FToC*): 43.41 m Screen Length: 18.00 m

Pump Type: Submersible Casing stick up: 0.51 m

Pump Setting: 80.00 m, Discharge (Q): 14.00 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (m FToC)	Drawdown, [s] (m)	EC (mS/cm)	pH	Temp. (°C)
		(hour)	(min)					
5-Jun-11	2:24	0	0	49.94	0.00			
			1	50.61	0.67			
			2	50.66	0.72			
			4	50.70	0.76			
			6	50.78	0.84			
			8	50.81	0.87			
			10	50.83	0.89			
			12	50.84	0.90			
			14	50.86	0.92			
			16	50.87	0.93			
			18	50.88	0.94			
			20	50.89	0.95			
			25	50.91	0.97			
			30	50.94	1.00			
			35	50.96	1.02			
			40	50.97	1.03			
			45	50.98	1.04			
			50	50.99	1.05			
			55	51.00	1.06			
4-Mar-11	3:24	1	60	51.01	1.07	0.5	9.31	37.3
			70	51.04	1.10			
			80	51.05	1.11			
			90	51.07	1.13			
			100	51.10	1.16			
			110	51.11	1.17			
	4:24	2	120	51.14	1.20			

Data 5.3 Pumping Test Data for Site No-9N (5/8)

STEP-DRAWDOWN TEST DATA SHEET

Date: 5 June 2011

SHEET No. : 5/5

Location: Langano SW Site No.: **RVS BH-9N**

GPS Reading: 464826 E, 829769 N

Well No.: RVS-BH 9N Well Depth: 201.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 87-105 m

Static Groundwater Level (FToC*): 43.41 m Screen Length: 18.00 m

Pump Type: Submersible Casing stick up: 0.51 m

Pump Setting: 80.00 m, Discharge (Q): 16.00 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (m FToC)	Drawdown, [s] (m)	EC (mS/cm)	pH	Temp. (°C)
		(hour)	(min)					
5-Jun-11	23:30	0	0	51.14	0.00			
			1	51.83	0.69			
			2	51.91	0.77			
			4	51.98	0.84			
			6	52.01	0.87			
			8	52.04	0.90			
			10	52.06	0.92			
			12	52.07	0.93			
			14	52.09	0.95			
			16	52.11	0.97			
			18	52.12	0.98			
			20	52.13	0.99			
			25	52.15	1.01			
			30	52.16	1.02			
			35	52.18	1.04			
			40	52.19	1.05			
			45	52.20	1.06			
			50	52.22	1.08			
			55	52.23	1.09			
5-Mar-11	0:30	1	60	52.23	1.09	0.52	9.44	37.4
			70	52.24	1.10			
			80	52.25	1.11			
			90	52.26	1.12			
			100	52.27	1.13			
			110	52.28	1.14			
	1:30	2	120	52.29	1.15			

Data 5.3 Pumping Test Data for Site No-9N (6/8)

CONTINUOUS PUMPING TEST DATA SHEET

Date: 6 June 2011

SHEET No. : 1/2

Location: Langano SW Site No.: **RVS BH-9N**

GPS Reading: 464826 E, 829769 N

Well No.: RVS-BH 9N Well Depth: 201.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 87-105 m

Static Groundwater Level (FToC*): 43.42 m Screen Length: 18.00 m

Pump Type: Submersible Casing stick up: 0.51 m

Pump Setting: 80.00 m, Discharge (Q): 16.00 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/cm)	pH	Temp. (°C)
		(hour)	(min)					
6-Jun-11	6:30		0	43.42	0			
			1	48.32	4.90			
			2	49.02	5.60			
			3	49.39	5.97			
			4	49.64	6.22			
			5	49.79	6.37			
			6	49.93	6.51			
			8	50.17	6.75			
			10	50.34	6.92			
			15	50.66	7.24			
			20	50.79	7.37			
			25	50.92	7.50			
			30	51.01	7.59			
			35	51.10	7.68			
			40	51.15	7.73			
			45	51.21	7.79			
			50	51.26	7.84			
			55	51.30	7.88			
	7:30	1	60	51.33	7.91	0.57	9.49	37.3
			70	51.41	7.99			
			80	51.47	8.05			
			90	51.52	8.10			
			100	51.56	8.14			
			110	51.59	8.17			
	8:30	2	120	51.62	8.20	0.55	9.5	37.2
			140	51.70	8.28			
			160	51.74	8.32			

Data 5.3 Pumping Test Data for Site No-9N (7/8)

CONTINUOUS PUMPING TEST DATA SHEET
SHEET No. : 2/2

Date: 7 June 2011

Location: Langano SW Site No.: RVS BH-9N

GPS Reading: 464826 E, 829769 N

Well No.: RVS-BH 9N Well Depth: 201.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 87-105 m

Static Groundwater Level (FToC*): 43.41 m Screen Length: 18.00 m

Pump Type: Submersible Casing stick up: 0.51 m

Pump Setting: 80.00 m, Discharge (Q): 16.00 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/cm)	pH	Temp. (°C)
		(hour)	(min)					
7-Jun-11	18:30	3	180	51.75	8.34	0.56	9.48	37.0
			210	51.80	8.39			
		4	240	51.84	8.43	0.55	9.50	37.3
			270	51.88	8.47			
		5	300	51.90	8.49	0.56	9.49	37.3
			330	51.96	8.55			
		6	360	51.99	8.58	0.56	9.49	37.0
		7	420	52.02	8.61	0.55	9.49	37.2
		8	480	52.05	8.64	0.56	9.49	37.2
		9	540	52.12	8.71	0.57	9.48	37.3
		10	600	52.16	8.75	0.57	9.49	37.2
		11	660	52.18	8.77	0.56	9.49	37.2
	1:30	12	720	52.22	8.81	0.55	9.49	37.2
	1:30	13	780	52.24	8.83	0.55	9.50	37.1
	2:30	14	840	52.26	8.85	0.56	9.50	37.0
	3:30	15	900	52.29	8.88	0.55	9.49	37.3
	4:30	16	960	52.30	8.89	0.55	9.49	37.3
	6:30	18	1080	52.31	8.90	0.64	9.49	37.2
	8:30	20	1200	52.38	8.97	0.65	9.50	37.0
	9:30	21	1260	52.40	8.99	0.65	9.48	37.0
	10:30	22	1320	52.42	9.01	0.64	9.47	37.3
	12:30	24	1440	52.37	8.96	0.58	9.37	37.3

Data 5.3 Pumping Test Data for Site No-9N (8/8)

RECOVERY TEST DATA SHEET
SHEET No. : 1/1

Date: 7 June 2011

Location: Langanu SW Site No.: **RVS BH-9N**
GPS Reading: 464826 E, 829769 N
Well No.: RVS-BH 9N Well Depth: 201.00 m, Well Diameter: ϕ 6.00 "
Screen Depth(s): 87-105 m
Static Groundwater Level (FToC*): 43.41 m Screen Length: 18.00 m
Pump Type: Submersible Casing stick up: 0.51 m
Pump Setting: 80.00 m, Discharge (Q): NA L/s

* FToC: From Top of Casing

Date	Time	Time since Pumping Stopped, [t']		Time since Pumping Started, [t] (min)	Time Ratio, [t/t']	Water Level (GL - m)	Residual Drawdown, [s] (m)
		(hour)	(min)				
7-Jun-11	6:30		0	1440		52.37	8.96
			1	1441	1441	46.65	3.24
			2	1442	721	46.23	2.82
			4	1444	361	45.82	2.41
			6	1446	241	45.65	2.24
			8	1448	181	45.35	1.94
			10	1450	145	45.22	1.81
			12	1452	121	45.08	1.67
			14	1454	104	45.00	1.59
			16	1456	91	44.91	1.50
			18	1458	81	44.88	1.47
			20	1460	73	44.80	1.39
			25	1465	59	44.61	1.20
			30	1470	49	44.58	1.17
			35	1475	42	44.50	1.09
			40	1480	37	44.43	1.02
			45	1485	33	44.35	0.94
			50	1490	30	44.31	0.90
	7:30	1	60	1500	25	44.26	0.85
			70	1510	22	44.18	0.77
			80	1520	19	44.11	0.70
			90	1530	17	44.07	0.66
			100	1540	100	44.02	0.61
			110	1550	110	44.00	0.59
	8:30	2	120	1560	120	43.92	0.51
			150	1590	150	43.86	0.45
		3	180	1620	9	43.81	0.40
			210	1650	8	43.76	0.35
		4	240	1680	7	43.73	0.32
			270	1710	6	43.70	0.29
		5	300	1740	6	43.67	0.26
			330	1770	5	43.64	0.23
		6	360	1800	5	43.62	0.21
			390	1830	5		
	13:30	7	420	1860	4		

Data 5.3 Pumping Test Data for Site No-10N (1/8)

STEP-DRAWDOWN TEST DATA SHEET

Date: 4 March 2011

SHEET No. : 1/5

Location: Ziway East Site No.: **RVS BH-10N**

GPS Reading: 500516 E, 889860 N

Well No.: RVS-BH 10N Well Depth: 202.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 64-118 and 130-142 m

Static Groundwater Level (FToC*): 25.36 m Screen Length: 66.00 m

Pump Type: Submersible Casing stick up: 0.50 m

Pump Setting: 44.00 m, Discharge (Q): 13.00 L/s

* FToC: From Top of Casing (stick up 0.5 m)

Date	Time	Elapsed Time, [t]		Water Level (FToC - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
4-Mar-11	15:00	0	0	25.36	0.00			
			1	29.30	3.94			
			2	29.48	4.12			
			4	29.60	4.24			
			6	29.55	4.19			
			8	29.56	4.20			
			10	29.66	4.30			
			12	29.65	4.29			
			14	29.80	4.44			
			16	29.80	4.44			
			18	29.81	4.45			
			20					
			25	29.84	4.48			
			30	29.85	4.49			
			35	29.86	4.50			
			40	29.88	4.52			
			45	29.90	4.54			
			50	29.90	4.54			
			55	29.91	4.55			
	16:00	1	60	30.16	4.80			
			70	30.20	4.84			
			80	30.20	4.84			
			90	30.21	4.85			
			100	30.21	4.85			
			110	30.23	4.87			
	17:00	2	120	30.24	4.88			

Data 5.3 Pumping Test Data for Site No-10N (2/8)

STEP-DRAWDOWN TEST DATA SHEET

Date: 4 March 2011

SHEET No. : 2/2

Location: Ziway East Site No.: **RVS BH-10N**

GPS Reading: 500516 E, 889860 N

Well No.: RVS-BH 10N Well Depth: 202.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 64-118 and 130-142 m

Static Groundwater Level (FToC*): 25.36 m Screen Length: 66.00 m

Pump Type: Submersible Casing stick up: 0.50 m

Pump Setting: 44.00 m, Discharge (Q): 14.50 L/s

* FToC: From Top of Casing (stick up 0.5 m)

Date	Time	Elapsed Time, [t]		Water Level (FToC - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
4-Mar-11	18:00	0	0	30.24	0.00			
			1	30.81	0.57			
			2	30.82	0.58			
			4	30.9	0.66			
			6	30.95	0.71			
			8	31.02	0.78			
			10	31.02	0.78			
			12	31.02	0.78			
			14	31.04	0.80			
			16	31.03	0.79			
			18	31.03	0.79			
			20	31.02	0.78			
			25	31.04	0.80			
			30	31.04	0.80			
			35	31.05	0.81			
			40	31.06	0.82			
			45	31.05	0.81			
			50	31.08	0.84			
			55	31.09	0.85			
	19:00	1	60	31.09	0.85			
			70	31.12	0.88			
			80	31.12	0.88			
			90	3.12	-27.12			
			100	31.13	0.89			
			110	31.16	0.92			
	20:00	2	120	31.21	0.97			

Data 5.3 Pumping Test Data for Site No-10N (3/8)

STEP-DRAWDOWN TEST DATA SHEET

Date: 4 March 2011

SHEET No. : 3/5

Location: Ziway East Site No.: **RVS BH-10N**

GPS Reading: 500516 E, 889860 N

Well No.: RVS-BH 10N Well Depth: 202.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 64 - 118 m and 130 - 142 m m

Static Groundwater Level (FToC*): 25.36 m Screen Length: 66.00 m

Pump Type: Submersible Casing stick up: 0.50 m

Pump Setting: 44.00 m, Discharge (Q): 16.00 L/s

* FToC: From Top of Casing (stick up 0.5 m)

Date	Time	Elapsed Time, [t]		Water Level (FToC - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
4-Mar-11	21:00	0	0	31.21	0.00			
			1	31.70	0.49			
			2	31.70	0.49			
			4	31.78	0.57			
			6	31.79	0.58			
			8	31.86	0.65			
			10	31.92	0.71			
			12	31.98	0.77			
			14	31.99	0.78			
			16	32.00	0.79			
			18	32.01	0.80			
			20	32.01	0.80			
			25	32.03	0.82			
			30	32.04	0.83			
			35	35.05	3.84			
			40	32.06	0.85			
			45	32.06	0.85			
			50	32.07	0.86			
			55	32.07	0.86			
	22:00	1	60	32.09	0.88			
			70	32.10	0.89			
			80	32.11	0.90			
			90	32.12	0.91			
			100	32.13	0.92			
			110	32.15	0.94			
	23:00	2	120	32.15	0.94			

Data 5.3 Pumping Test Data for Site No-10N (4/8)

STEP-DRAWDOWN TEST DATA SHEET

Date: 5 March 2011

SHEET No. : 4/5

Location: Ziway East Site No.: **RVS BH-10N**

GPS Reading: 500516 E, 889860 N

Well No.: RVS-BH 10N Well Depth: 202.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 64 - 118 m and 130 - 142 m m

Static Groundwater Level (FToC*): 25.36 m Screen Length: 66.00 m

Pump Type: Submersible Casing stick up: 0.50 m

Pump Setting: 44.00 m, Discharge (Q): 17.50 L/s

* FToC: From Top of Casing (stick up 0.5 m)

Date	Time	Elapsed Time, [t]		Water Level (FToC - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
5-Mar-11	0:00	0	0	32.15	0.00			
			1	32.47	0.32			
			2	32.50	0.35			
			4	32.53	0.38			
			6	32.53	0.38			
			8	32.54	0.39			
			10	32.56	0.41			
			12	32.55	0.40			
			14	32.56	0.41			
			16	32.57	0.42			
			18	32.57	0.42			
			20	32.59	0.44			
			25	32.60	0.45			
			30	32.61	0.46			
			35	32.62	0.47			
			40	32.63	0.48			
			45	32.63	0.48			
			50	32.62	0.47			
			55	32.64	0.49			
	1:00	1	60	32.64	0.49	0.28	8.48	24
			70	32.66	0.51			
			80	32.65	0.50			
			90	32.65	0.50			
			100	32.67	0.52			
			110	32.67	0.52			
	2:00	2	120	32.69	0.54	0.29	8.33	23.9

Data 5.3 Pumping Test Data for Site No-10N (5/8)

STEP-DRAWDOWN TEST DATA SHEET

Date: 5 March 2011

SHEET No. : 5/5

Location: Ziway East Site No.: **RVS BH-10N**

GPS Reading: 500516 E, 889860 N

Well No.: RVS-BH 10N Well Depth: 202.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 64 - 118 m and 130 - 142 m m

Static Groundwater Level (FToC*): 25.36 m Screen Length: 66.00 m

Pump Type: Submersible Casing stick up: 0.50 m

Pump Setting: 44.00 m, Discharge (Q): 19.00 L/s

* FToC: From Top of Casing (stick up 0.5 m)

Date	Time	Elapsed Time, [t]		Water Level (FToC - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
5-Mar-11	1:00	0	0	32.69	0.00			
			1	33.45	0.76			
			2	33.52	0.83			
			4	33.60	0.91			
			6	33.64	0.95			
			8	33.64	0.95			
			10	33.64	0.95			
			12	33.64	0.95			
			14	33.65	0.96			
			16	33.65	0.96			
			18	33.66	0.97			
			20	33.66	0.97			
			25	33.67	0.98			
			30	33.69	1.00			
			35	33.69	1.00			
			40	33.71	1.02			
			45	33.73	1.04			
			50	33.73	1.04			
			55	33.74	1.05			
	2:00	1	60	33.75	1.06	0.29	8	23.9
			70	33.75	1.06			
			80	33.76	1.07			
			90	33.77	1.08			
			100	33.78	1.09			
			110	33.78	1.09			
	3:00	2	120	33.79	1.10			

Data 5.3 Pumping Test Data for Site No-10N (6/8)

CONTINUOUS PUMPING TEST DATA SHEET

Date: 5 March 2011

SHEET No. : 1/2

Location: Ziway East Site No.: RVS BH-10N

GPS Reading: 500516 E, 889860 N

Well No.: RVS BH-10N Well Depth: 202.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 64 - 118 m and 130 - 142 m m

Static Groundwater Level (FToC*): 25.32 m Screen Length: 66.00 m

Pump Type: Submersible Casing stick up: 0.50 m

Pump Setting: 44.00 m, Discharge (Q): 18.50 L/s

* FToC: From Top of Casing (stick up 0.5 m)

Date	Time	Elapsed Time, [t]		Water Level (FToC - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
5-Mar-11	12:00		0	25.32	0			
			1	32.00	6.68			
			2	32.32	7.00			
			3	32.45	7.13			
			4	32.60	7.28			
			5	32.73	7.41			
			6	32.73	7.41			
			8	32.84	7.52			
			10	32.94	7.62			
			15	33.02	7.70			
			20	33.06	7.74			
			25	33.08	7.76			
			30	33.10	7.78	0.21	8.3	24.6
			35	33.12	7.80			
			40	33.14	7.82			
			45	33.16	7.84			
			50	33.18	7.86			
			55	33.20	7.88			
	13:00	1	60	33.22	7.90	0.24	8.26	24.6
			70	33.24	7.92			
			80	33.25	7.93			
			90	33.27	7.95			
			100	33.28	7.96			
			110	33.30	7.98			
	14:00	2	120	33.31	7.99	0.23	8.38	24.5
			140	33.36	8.04			
			160	33.40	8.08			

Data 5.3 Pumping Test Data for Site No-10N (7/8)

CONTINUOUS PUMPING TEST DATA SHEET
SHEET No. : 2/2

Date: 5 March 2011

Location: Ziway East Site No.: RVS BH-10N

GPS Reading: 500516 E, 889860 N

Well No.: RVS BH-10N Well Depth: 202.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 64 - 118 m and 130 - 142 m m

Static Groundwater Level (FToC*): 25.32 m Screen Length: 66.00 m

Pump Type: Submersible Casing stick up: 0.50 m

Pump Setting: 44.00 m, Discharge (Q): 18.50 L/s

* FToC: From Top of Casing (stick up 0.5 m)

Date	Time	Elapsed Time, [t]		Water Level (FToC - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (°C)
		(hour)	(min)					
5-Mar-11	15:00	3	180	33.41	8.09	0.23	8.4	24.2
			210	33.42	8.10			
	16:00	4	240	33.47	8.15	0.22	8.23	24.1
			270	33.50	8.18			
	17:00	5	300	33.53	8.21	0.23	8.2	24.1
			330	33.55	8.23			
	18:00	6	360	33.57	8.25	0.25	8.2	24.1
	19:00	7	420	33.64	8.32	0.25	8.29	24.1
	20:00	8	480	33.68	8.36	0.27	8.23	24.1
	21:00	9	540	33.73	8.41	0.28	8.24	24.3
	22:00	10	600	33.77	8.45	0.28	8.22	24.2
	23:00	11	660	33.82	8.50	0.27	8.24	24.2
6-Mar-11	0:00	12	720	33.84	8.52	0.27	8.23	24.1
	1:00	13	780	33.88	8.56	0.27	8.24	24.1
	2:00	14	840	33.90	8.58	0.27	8.24	24.1
	3:00	15	900	33.93	8.61	0.27	8.29	24.1
	4:00	16	960	33.99	8.67	0.27	8.29	24.1
	6:00	18	1080	34.00	8.68	0.28	8.3	24.1
	8:00	20	1200	34.02	8.70	0.28	8.24	24.1
	9:00	21	1260	34.04	8.72	0.22	8.36	24.1
	10:00	22	1320	34.04	8.72	0.21	8.32	24.1
	12:00	24	1440	34.05	8.73	0.24	8.34	24.2

Data 5.3 Pumping Test Data for Site No-10N (8/8)

RECOVERY TEST DATA SHEET
SHEET No. : 1/1

Date: 6 March 2011

Location: Ziway East Site No.: **RVS BH-10N**

GPS Reading: 500516 E, 889860 N

Well No.: RVS BH-10N Well Depth: 202.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 64 - 118 m and 130 - 142 m m

Static Groundwater Level (FToC*): 25.32 m Screen Length: 66.00 m

Pump Type: Submersible Casing stick up: 0.50 m

Pump Setting: 44.00 m, Discharge (Q): NA L/s

* FToC: From Top of Casing (stick up 0.5 m)

Date	Time	Time since Pumping Stopped, [t']		Water Level (FToC - m)	Time Ratio, [t/t']	Water Level (GL - m)	Residual Drawdown, [s'] (m)
		(hour)	(min)				
6-Mar-11	12:00		0	1440		34.05	8.73
			1	1441	1441	26.66	1.34
			2	1442	721	26.40	1.08
			4	1444	361	26.26	0.94
			6	1446	241	26.19	0.87
			8	1448	181	26.16	0.84
			10	1450	145	26.13	0.81
			12	1452	121	26.08	0.76
			14	1454	104	26.08	0.76
			16	1456	91	26.08	0.76
			18	1458	81	26.08	0.76
			20	1460	73	26.06	0.74
			25	1465	59	26.04	0.72
			30	1470	49	26.02	0.70
			35	1475	42	26.01	0.69
			40	1480	37	26.00	0.68
			45	1485	33	25.98	0.66
			50	1490	30	25.97	0.65
	13:00	1	60	1500	25	25.96	0.64
			70	1510	22	25.94	0.62
			80	1520	19	25.92	0.60
			90	1530	17	25.90	0.58
			100	1540	100	25.88	0.56
			110	1550	110	25.87	0.55
	14:00	2	120	1560	120	25.86	0.54
			150	1590	150	25.82	0.50
		3	180	1620	9	25.78	0.46
			210	1650	8	25.75	0.43
		4	240	1680	7	25.72	0.40
			270	1710	6	25.69	0.37
		5	300	1740	6	25.65	0.33
			330	1770	5	25.64	0.32
		6	360	1800	5	25.62	0.30
			390	1830	5	25.61	0.29
	19:00	7	420	1860	4	25.58	0.26

Data 5.4 Water Quality Indication with Depth during Drilling

Sample ID.No.	RVBH-4		RVBH-4		RVBH-4		RVBH-4		RVBH-5		WHO maximum allowable Concentration
	well	depth	well	depth	well	depth	well	depth	well	depth	
Source of sample	well		well		well		well		well		
depth	42-47m		82-87m		97-102m		197-217m		29-34m		
Date received (year/m/d)	2011/11/10		2011/11/10		2011/11/10		2011/11/10		2011/11/10		
Lab ID No.	696/04		694/04		697/04		695/04		699		698/04
Electrical Conductivity (µS/cm)	530		469		332		1767		871		792
Fluoride(F)mg/l)	1.22		0.58		1.34		0.78		2.42		5.00

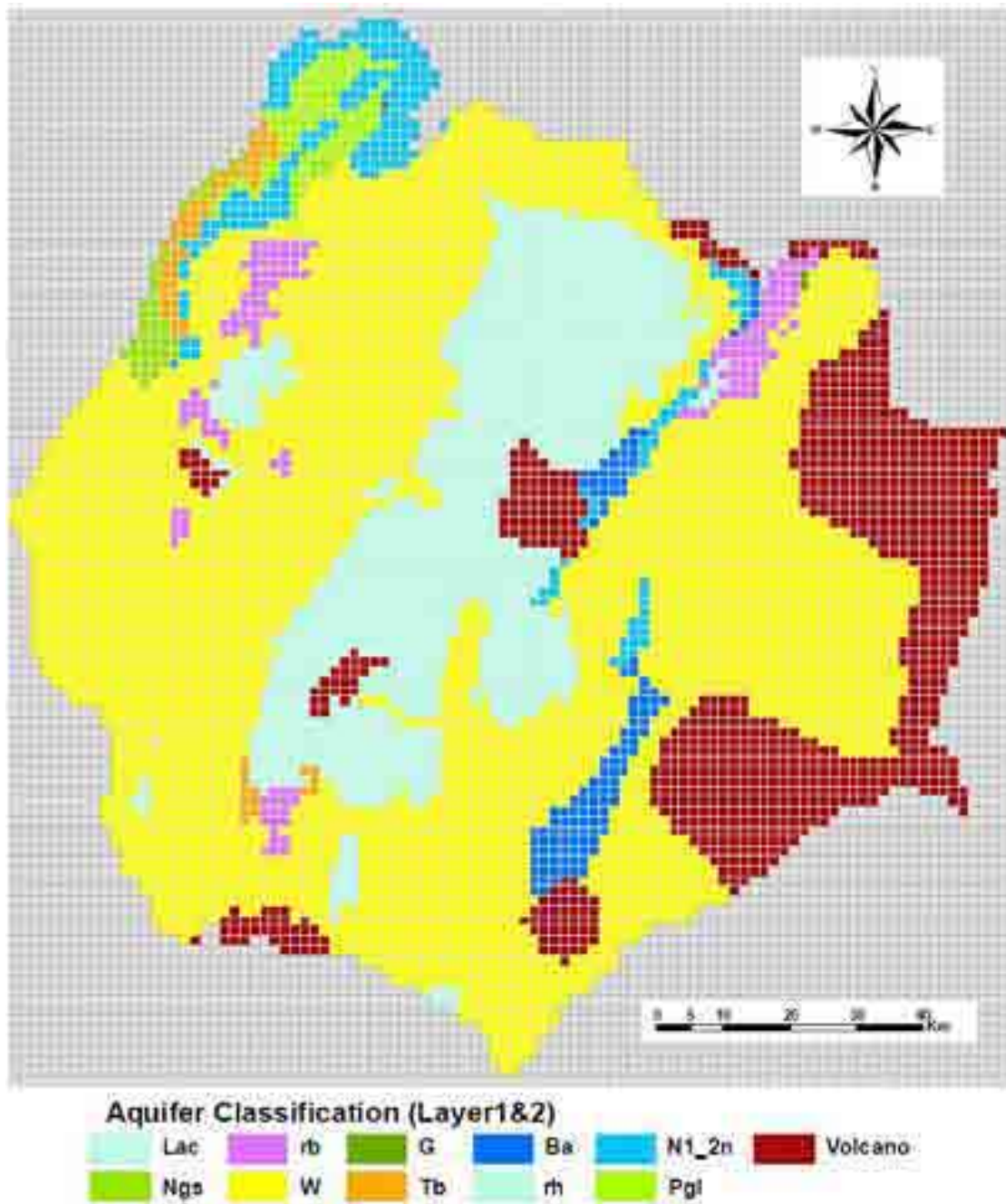
Sample ID.No.	RVBH-6		RVBH-6		RVBH-6		RVBH-6		RVBH-8		WHO maximum allowable Concentration
	well	depth	well	depth	well	depth	well	depth	well	depth	
Source of sample	well		well		well		well		well		
depth	274-284m		314-324m		354-364m		384-394m		0-20m		120-140m
Date received (year/m/d)	2011/11/10		2011/11/10		2011/11/10		2011/11/10		2011/11/10		2011/11/11
Lab ID No.	702		701		700		703/04		705/04		704/04
Electrical Conductivity (µS/cm)	750		747		698		728		656		528
Fluoride(F)mg/l)	0.68		1.22		1.06		0.84		0.74		0.58

6. *Groundwater Modelling*

Data 6.1 Geological Layers in the Model (1/7)

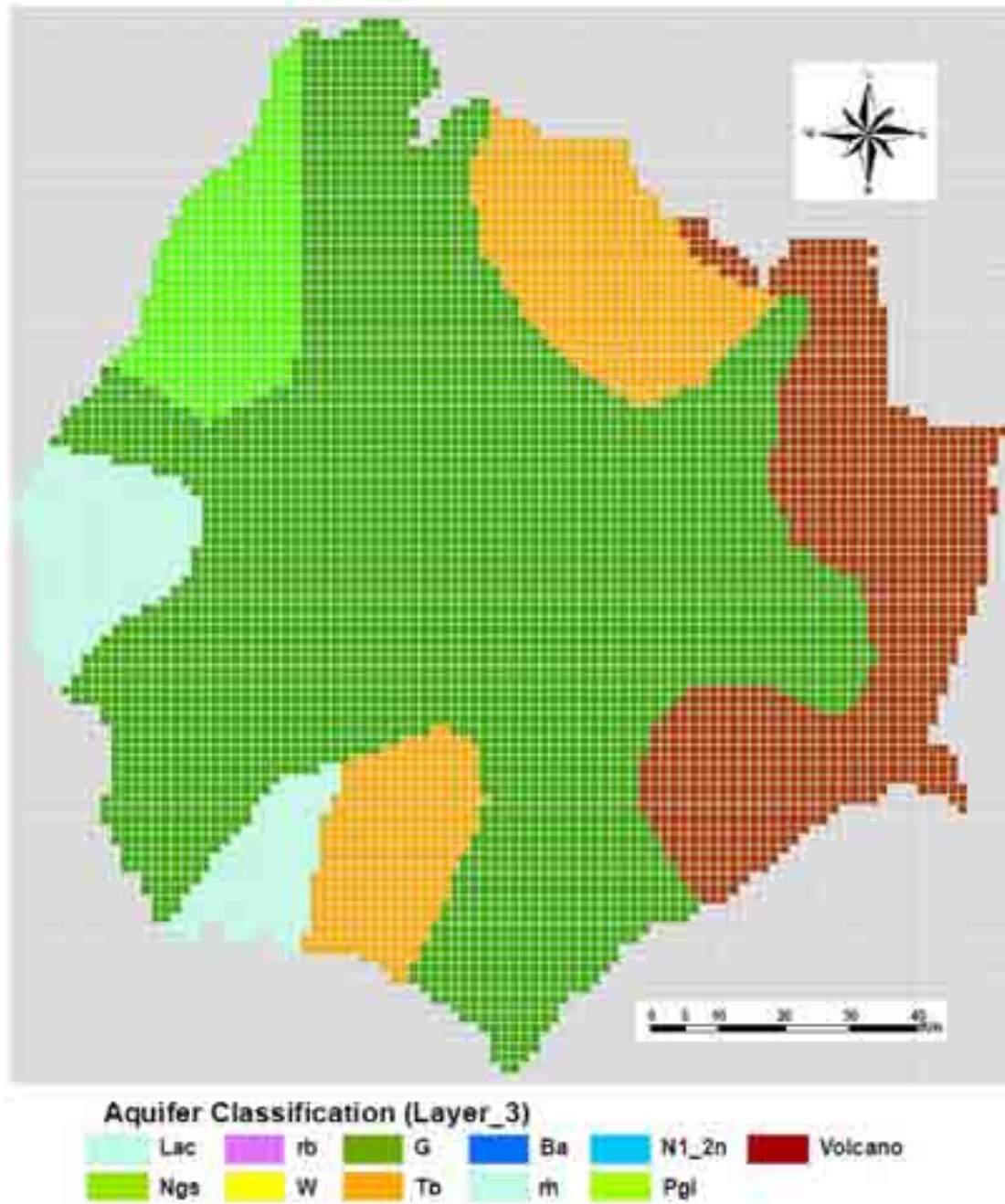
Ziway Model Aquifer Classification in Each Layer

Layer_1&2



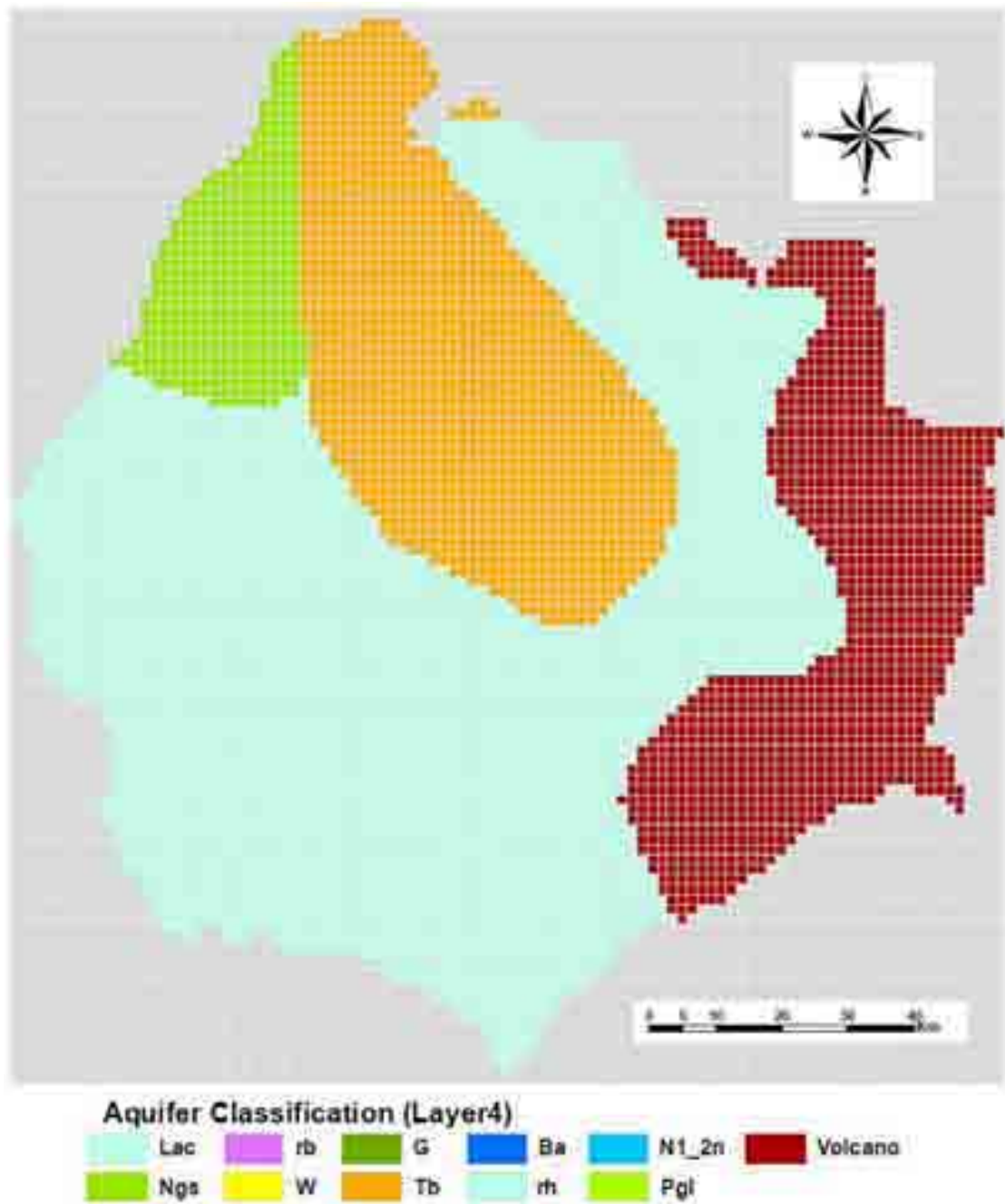
Data 6.1 Geological Layers in the Model (2/7)

Layer_3



Data 6.1 Geological Layers in the Model (3/7)

Layer_4



Data 6.1 Geological Layers in the Model (4/7)

Billate Model Aquifer Classification in Each Layer

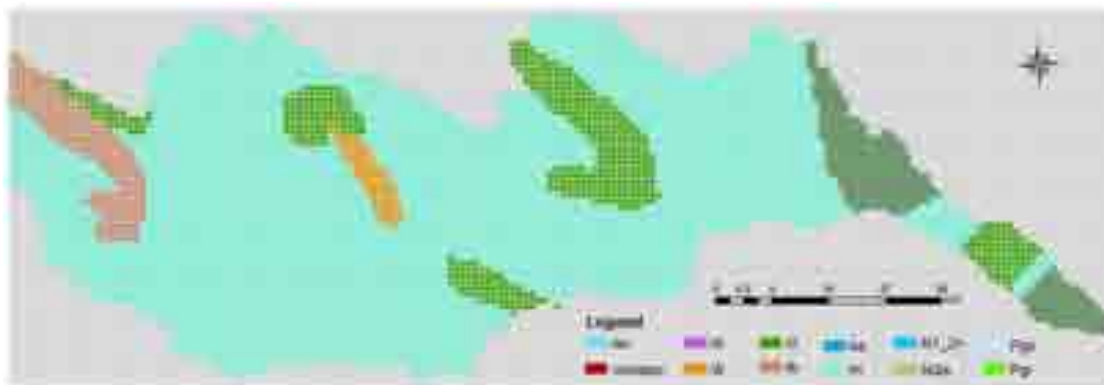
Layer_1&2



Layer_3

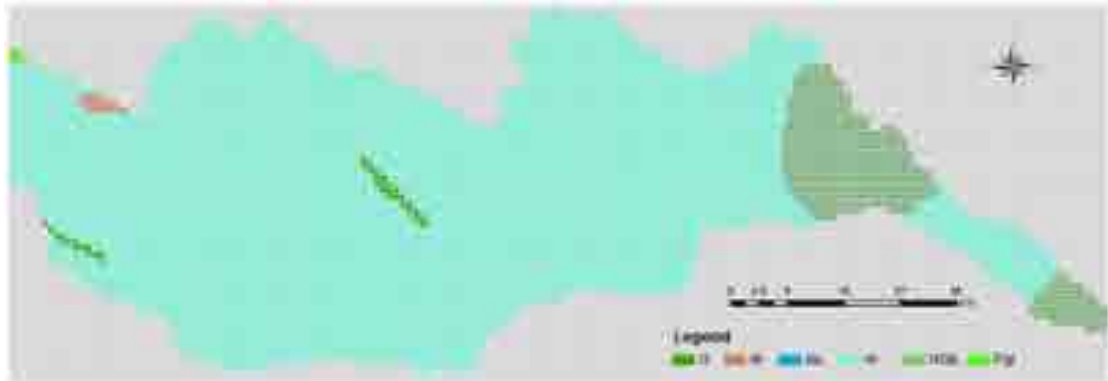


Layer_4



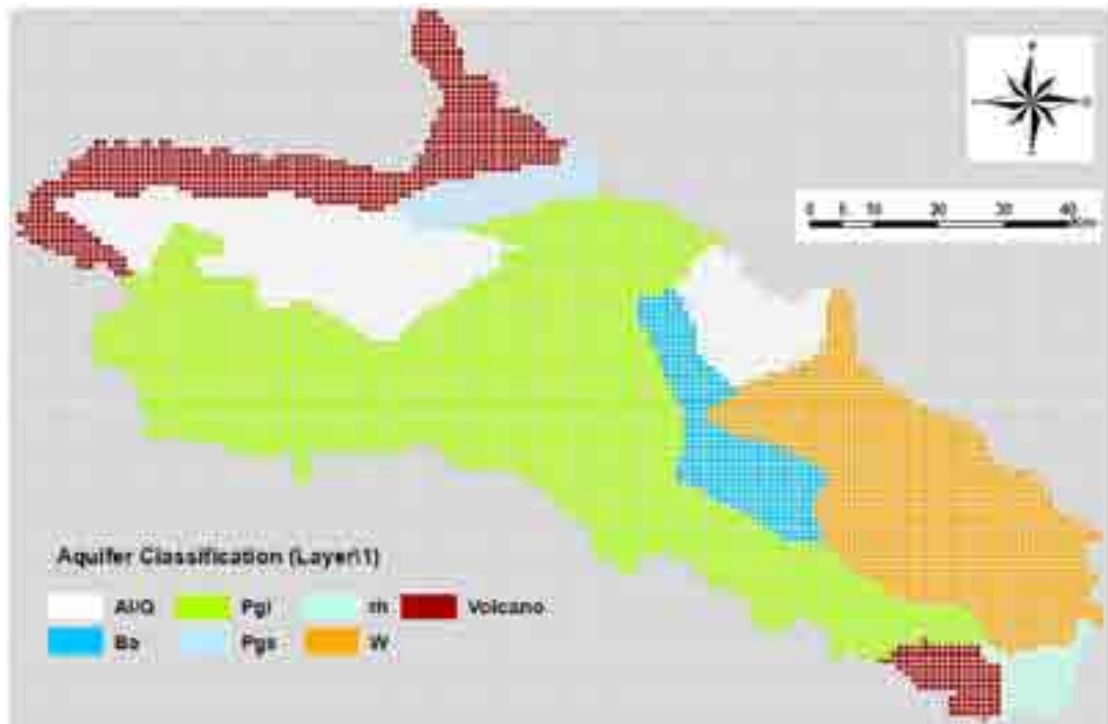
Data 6.1 Geological Layers in the Model (5/7)

Layer_5



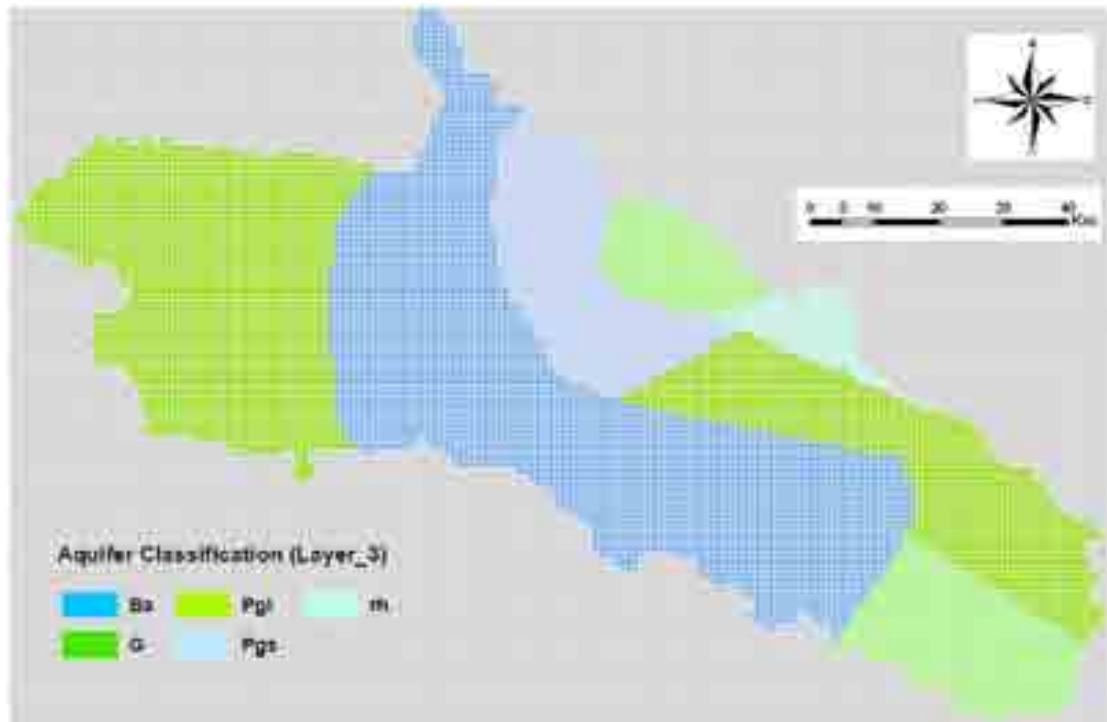
Eastern Abaya Model Aquifer Classification in Each Layer

Layer_1&2

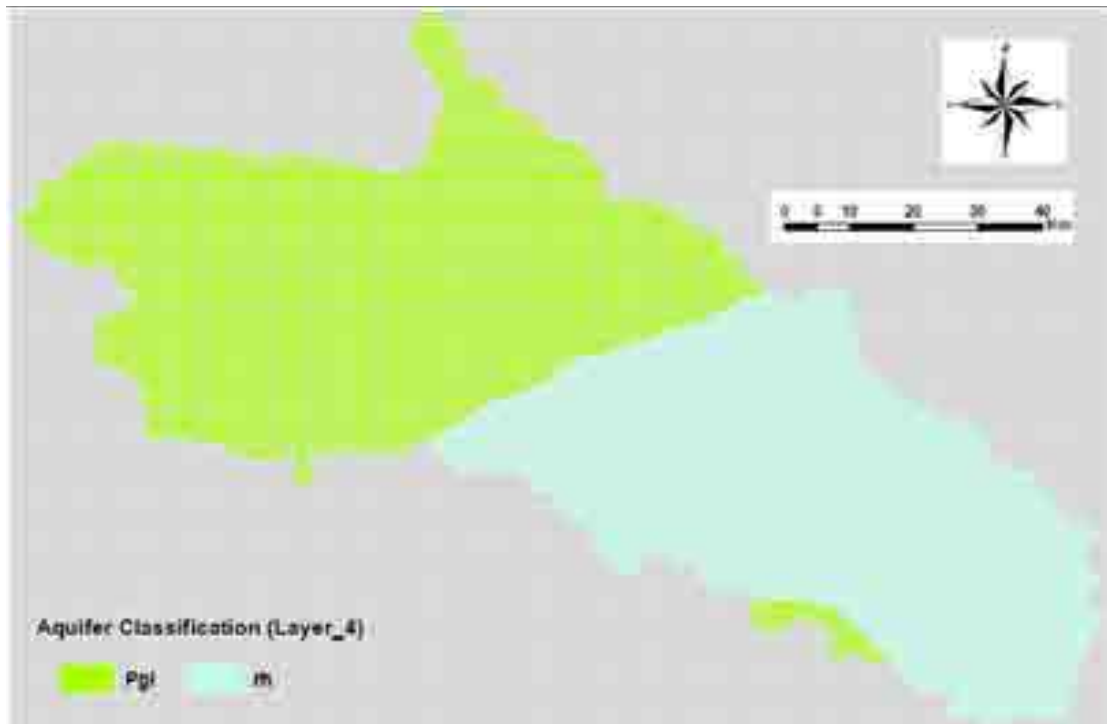


Data 6.1 Geological Layers in the Model (6/7)

Layer_3



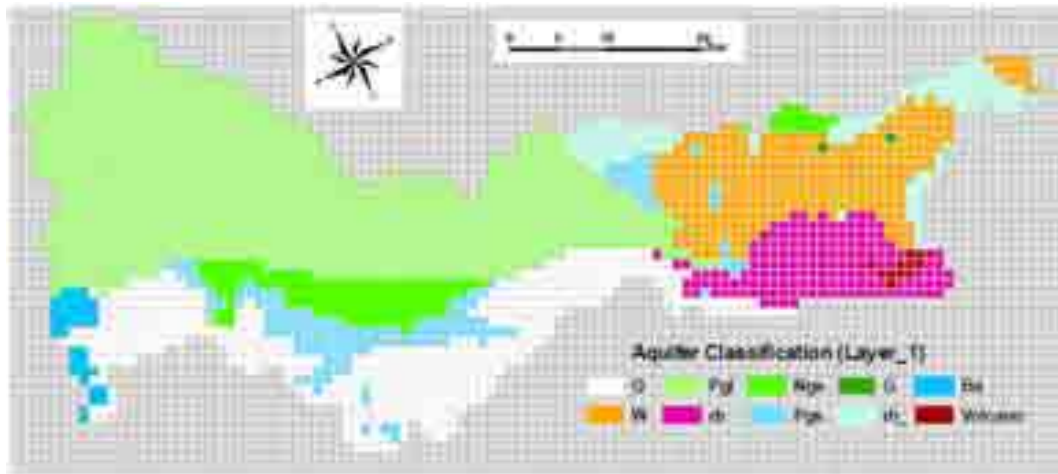
Layer_4



Data 6.1 Geological Layers in the Model (7/7)

Western Abaya Model Aquifer Classification in Each Layer

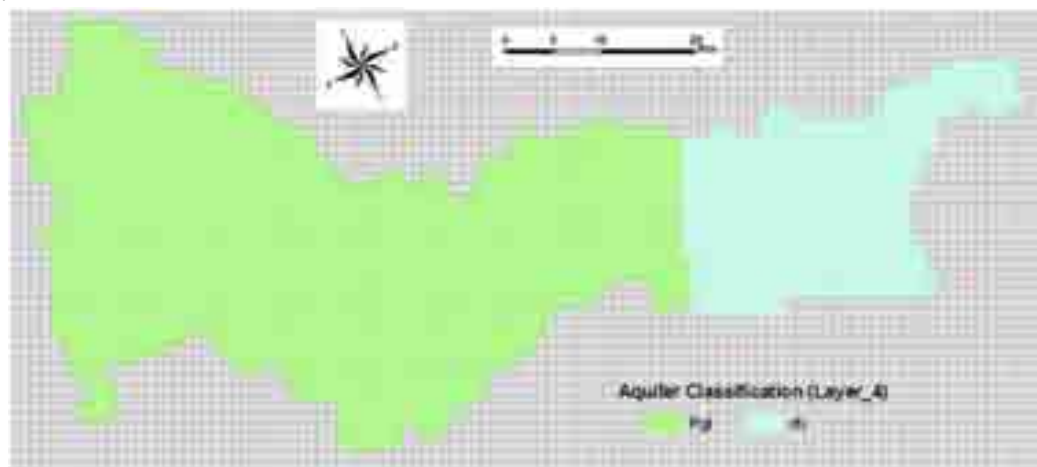
Layer1&2



Layer_3



Layer_4



Data 6.2 Results of Model Calibration (1/3)

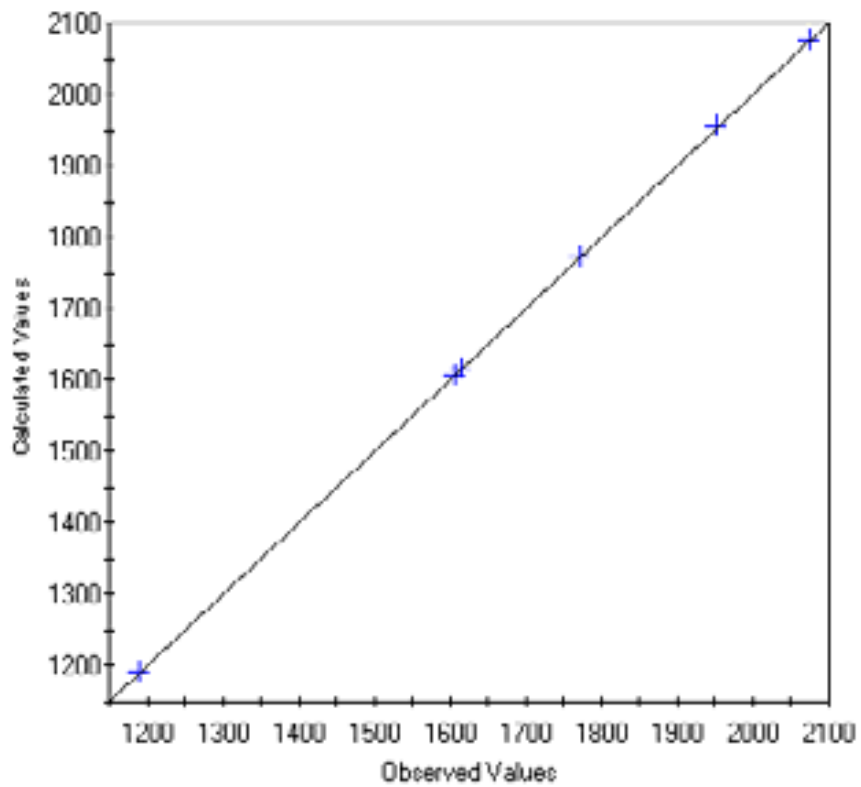
Billate Model

Location of observation wells



Result of Model calibration

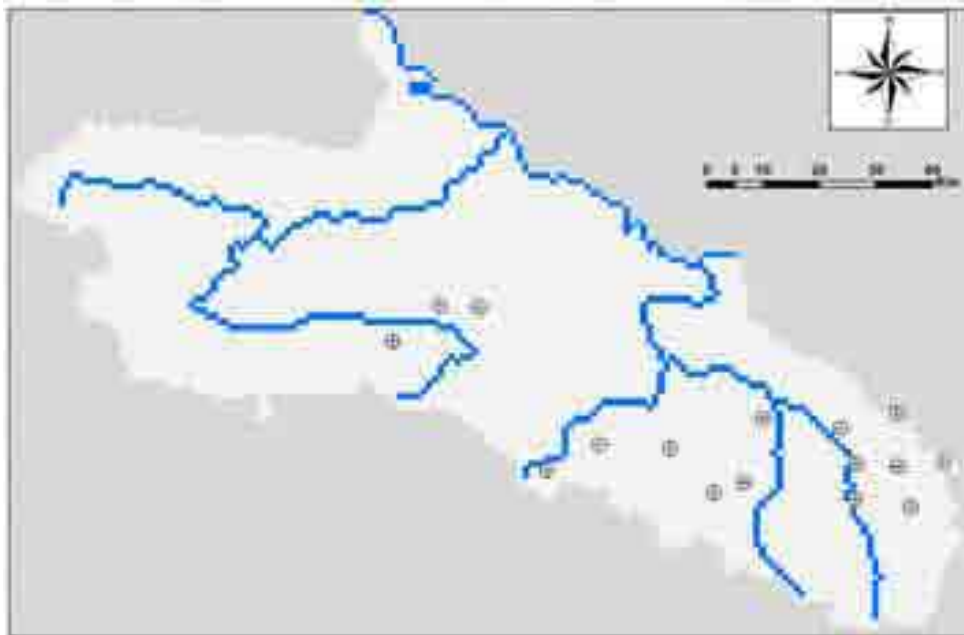
Comparison of Calculated and Observed Heads



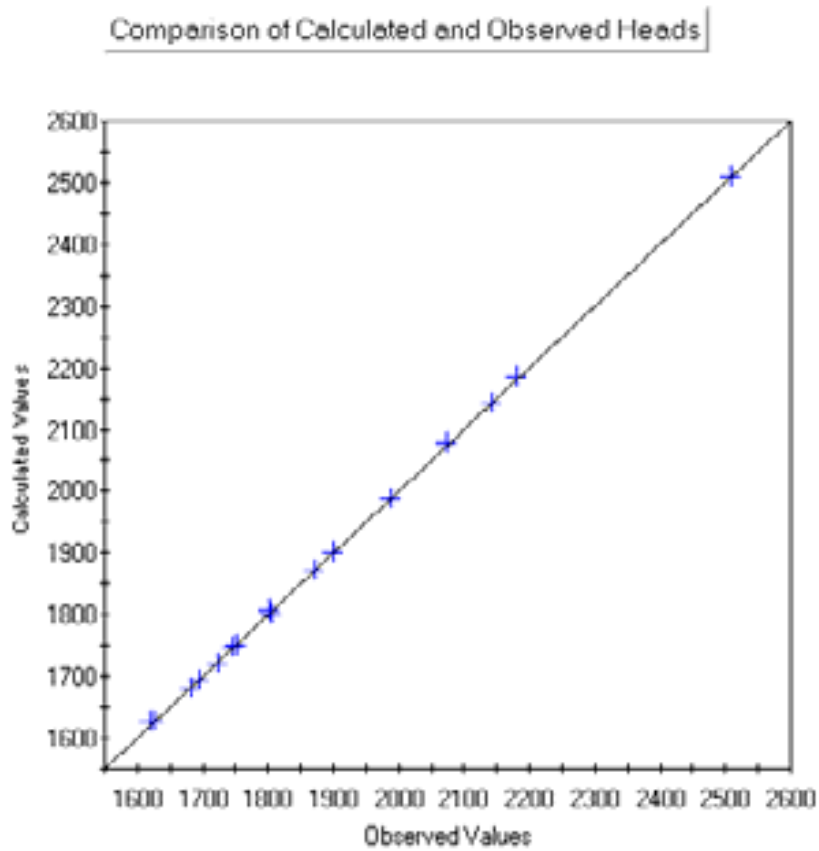
Data 6.2 Results of Model Calibration (2/3)

Eastern Abaya Model

Location of observation wells



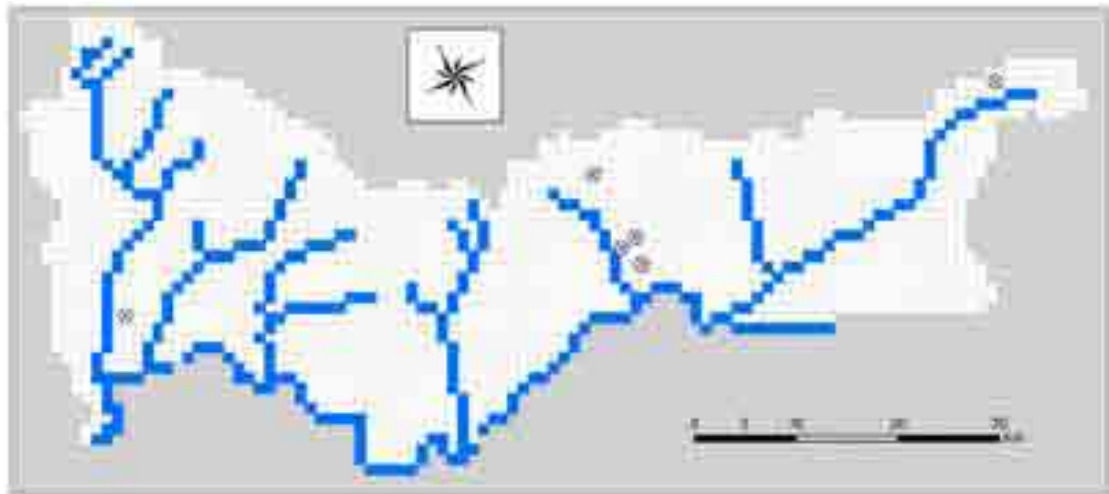
Result of Model calibration



Data 6.2 Results of Model Calibration (3/3)

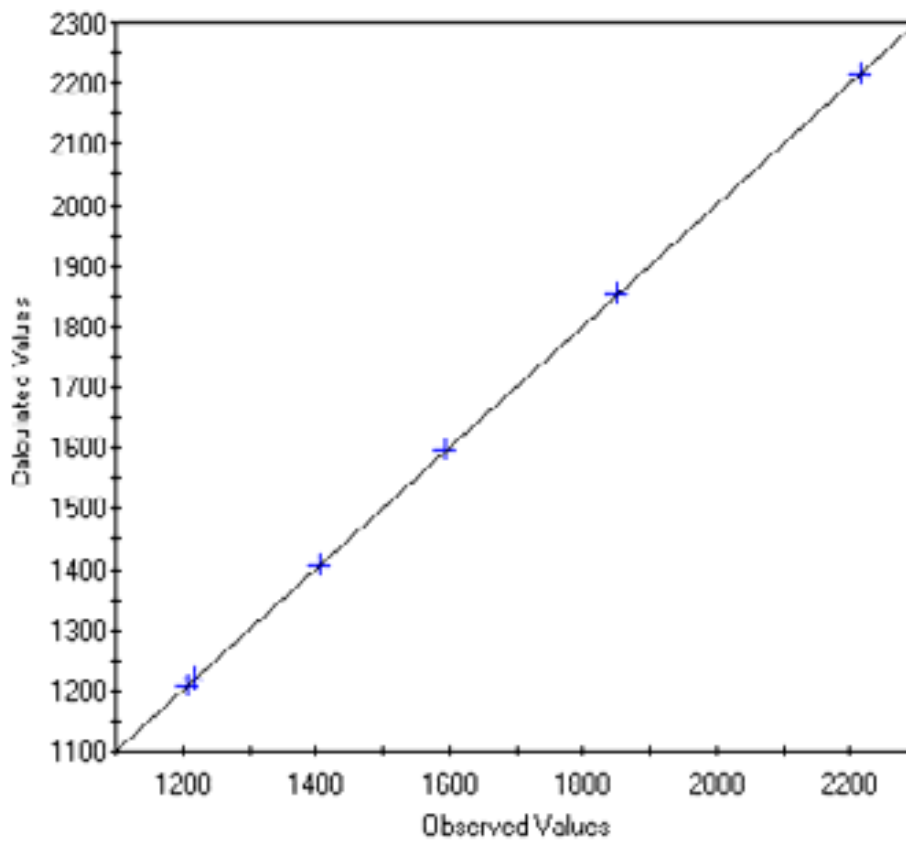
Western Abaya Model

Location of observation wells



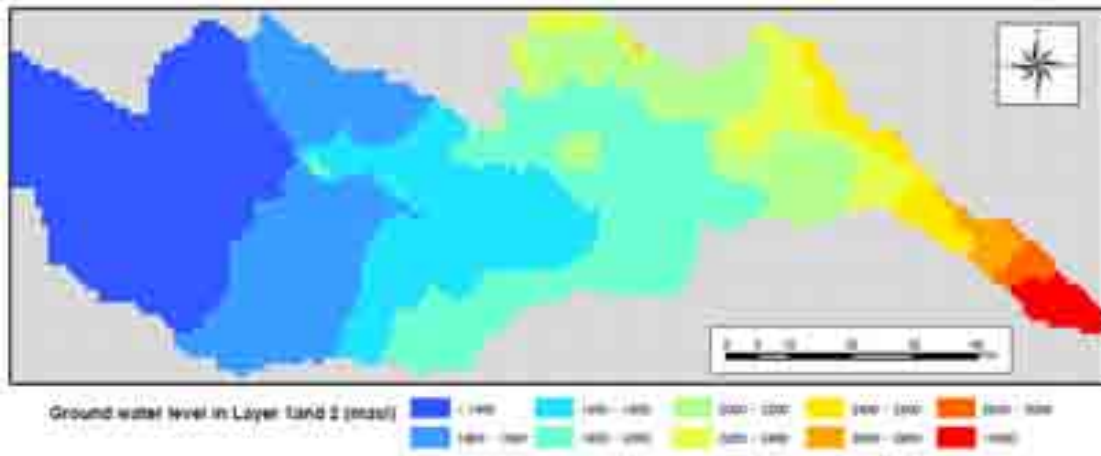
Result of Model calibration

Comparison of Calculated and Observed Heads



Data 6.3 Modeling Results (1/4)

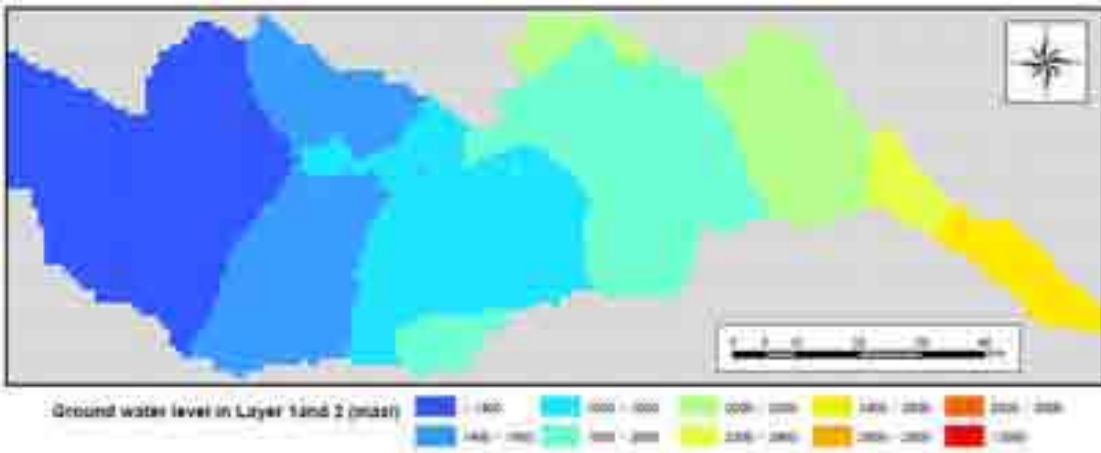
Groundwater Head Distribution in Layer_1, Billate Model



Groundwater Head Distribution in Layer_3, Billate Model

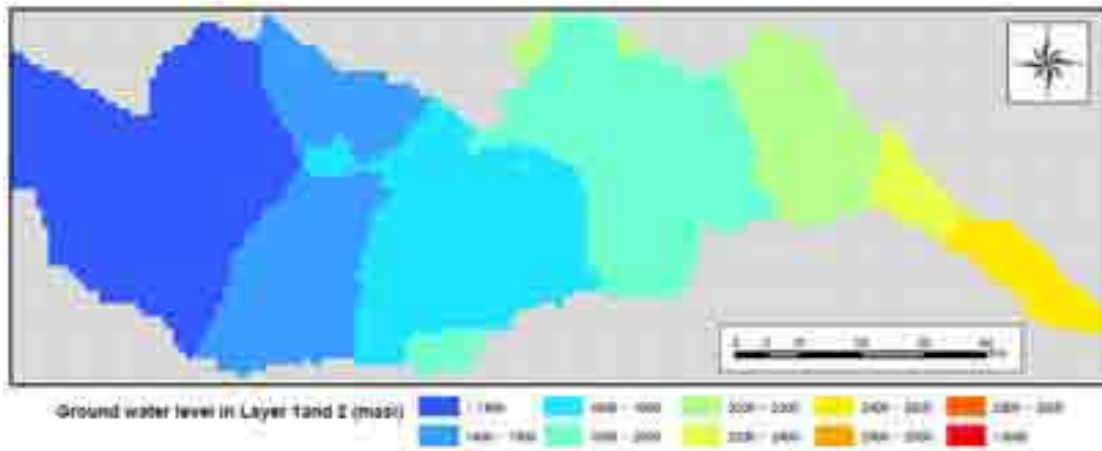


Groundwater Head Distribution in Layer_4, Billate Model

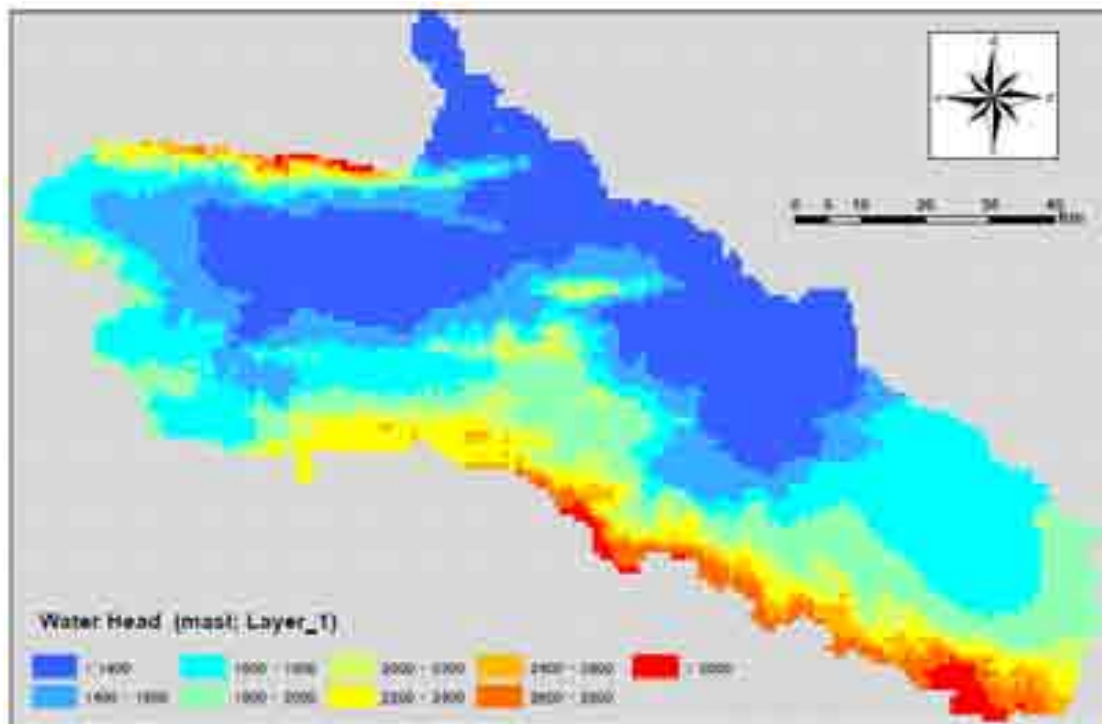


Data 6.3 Modeling Results (2/4)

Groundwater Head Distribution in Layer_5, Billate Model

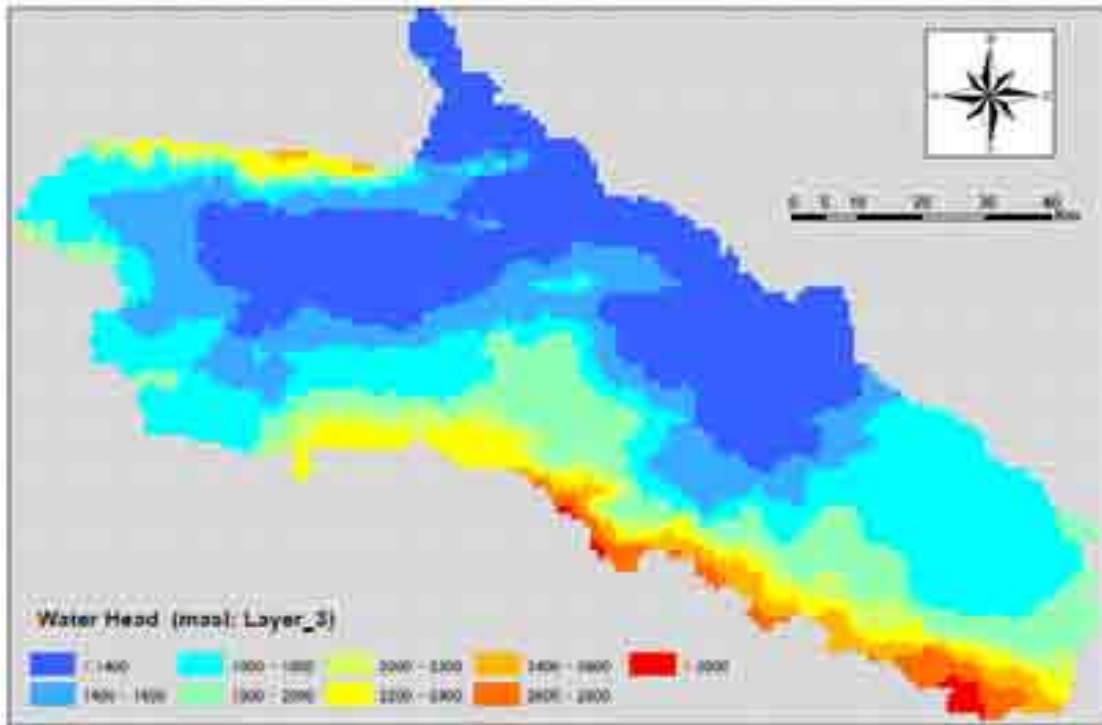


Groundwater Head Distribution in Layer_1, Eastern Abaya Model

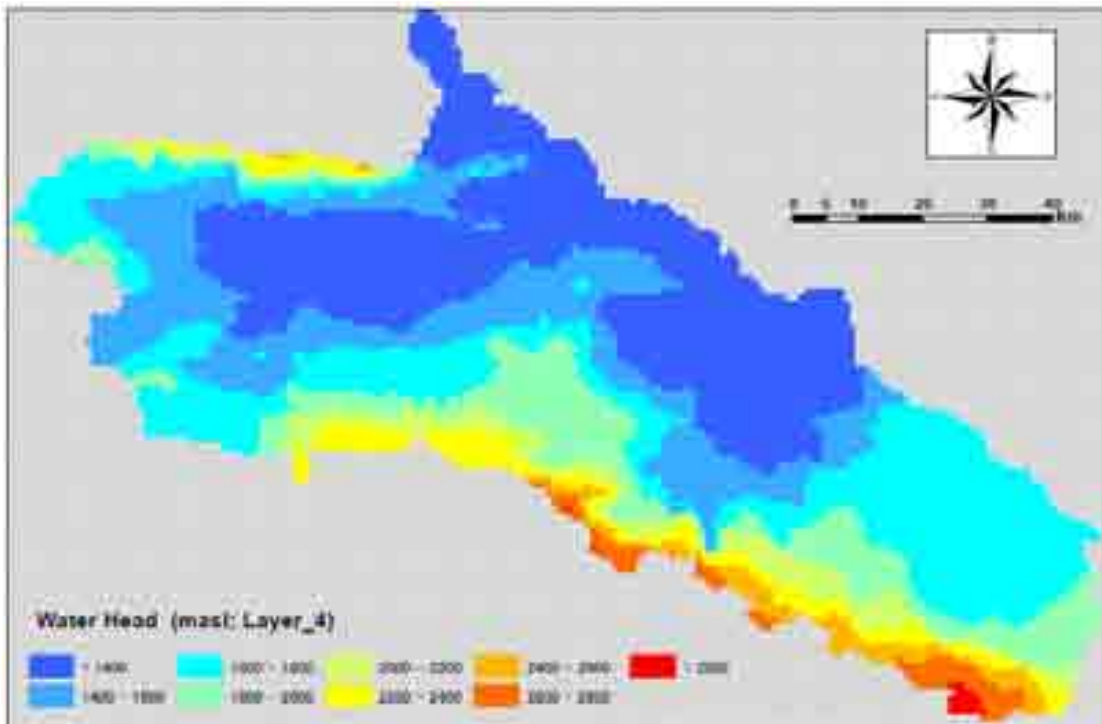


Data 6.3 Modeling Results (3/4)

Groundwater Head Distribution in Layer_3, Eastern Abaya Model

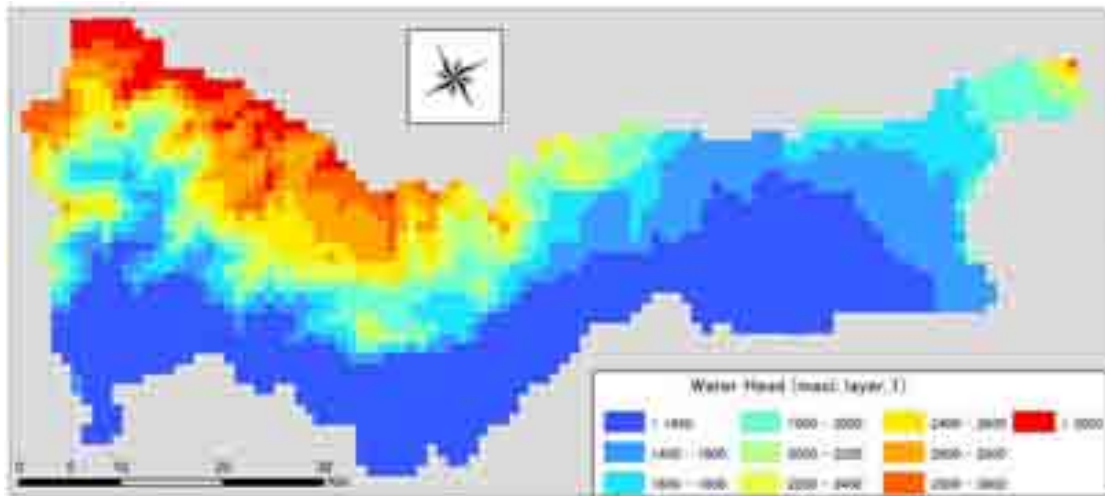


Groundwater Head Distribution in Layer_4, Eastern Abaya Model

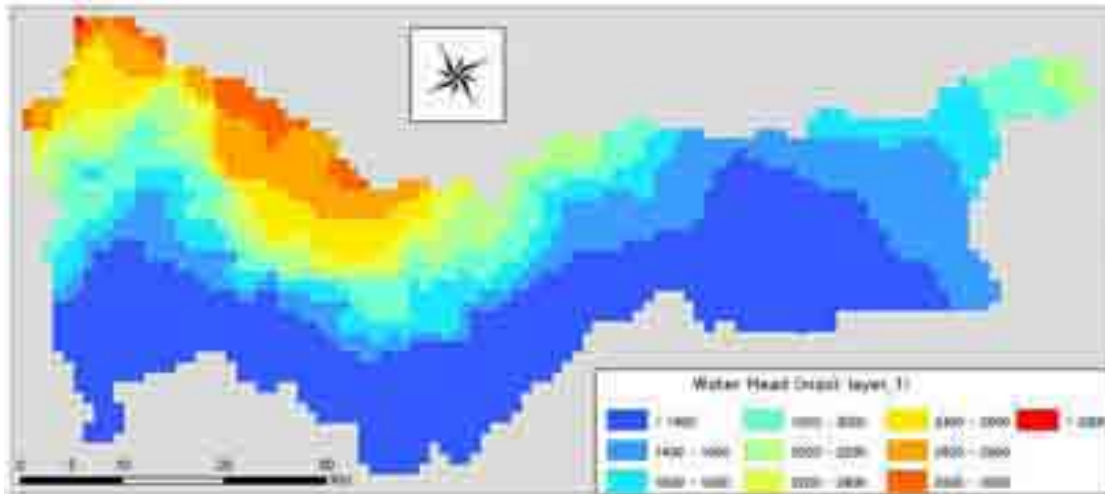


Data 6.3 Modeling Results (4/4)

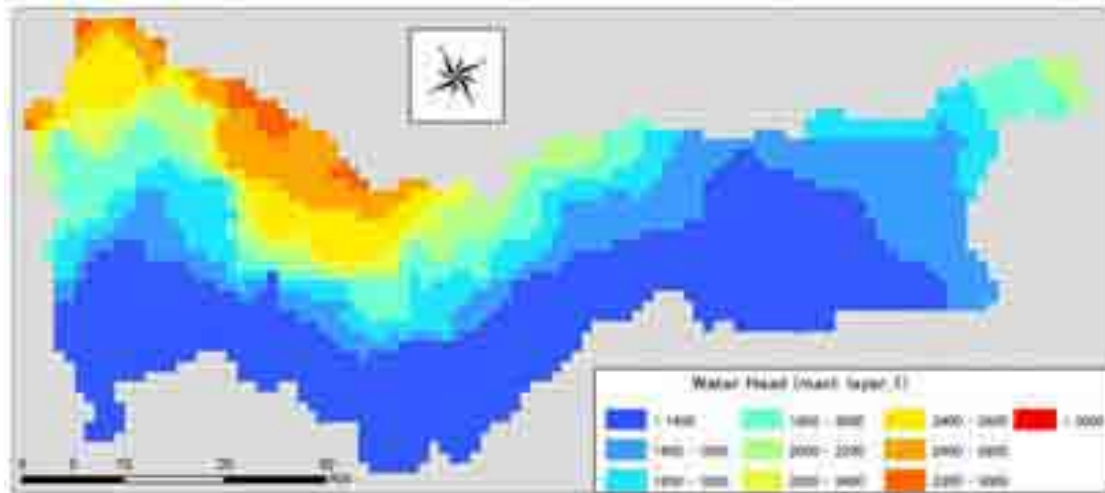
Groundwater Head Distribution in Layer_1, Western Abaya Model



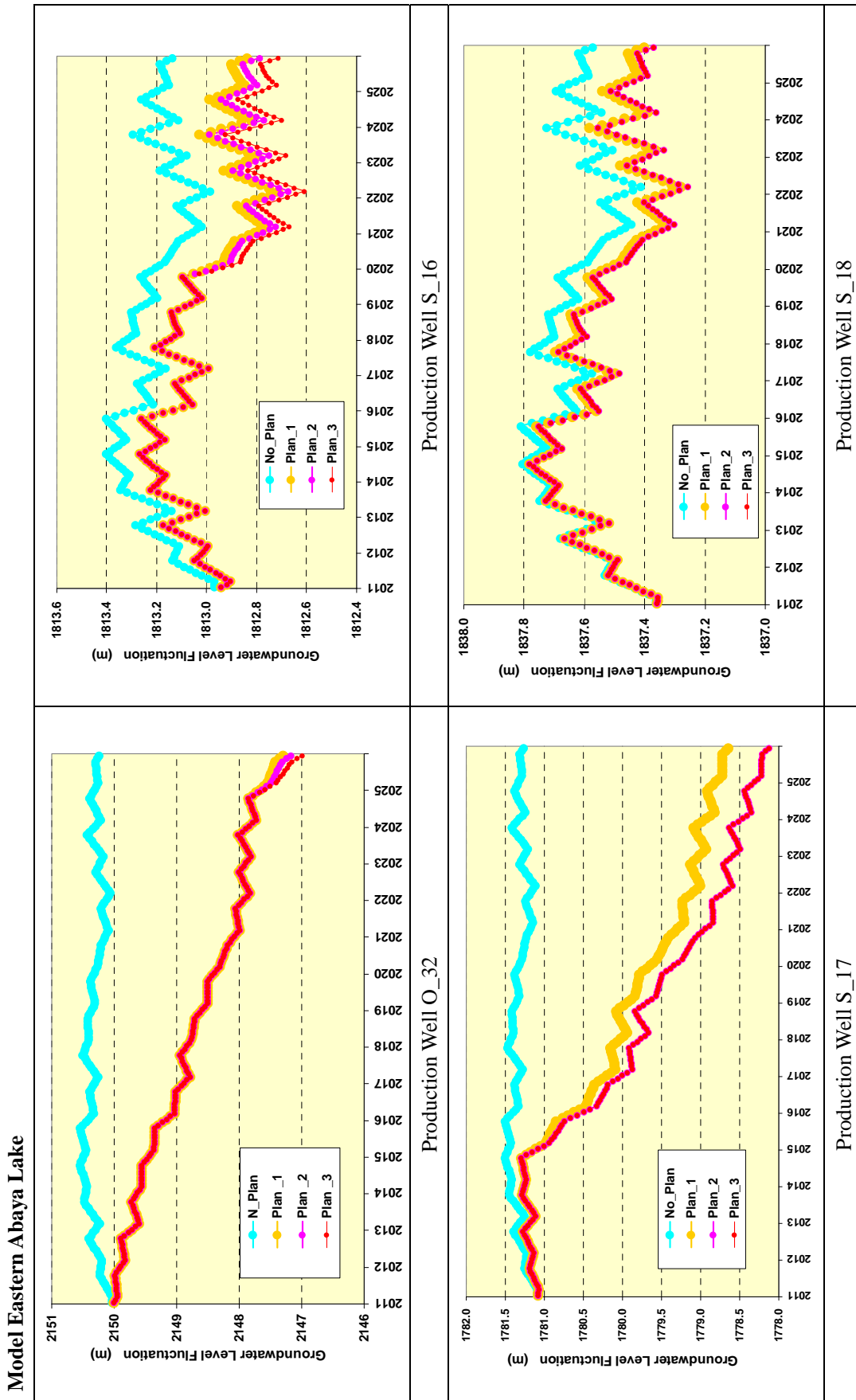
Groundwater Head Distribution in Layer_3, Western Abaya Model



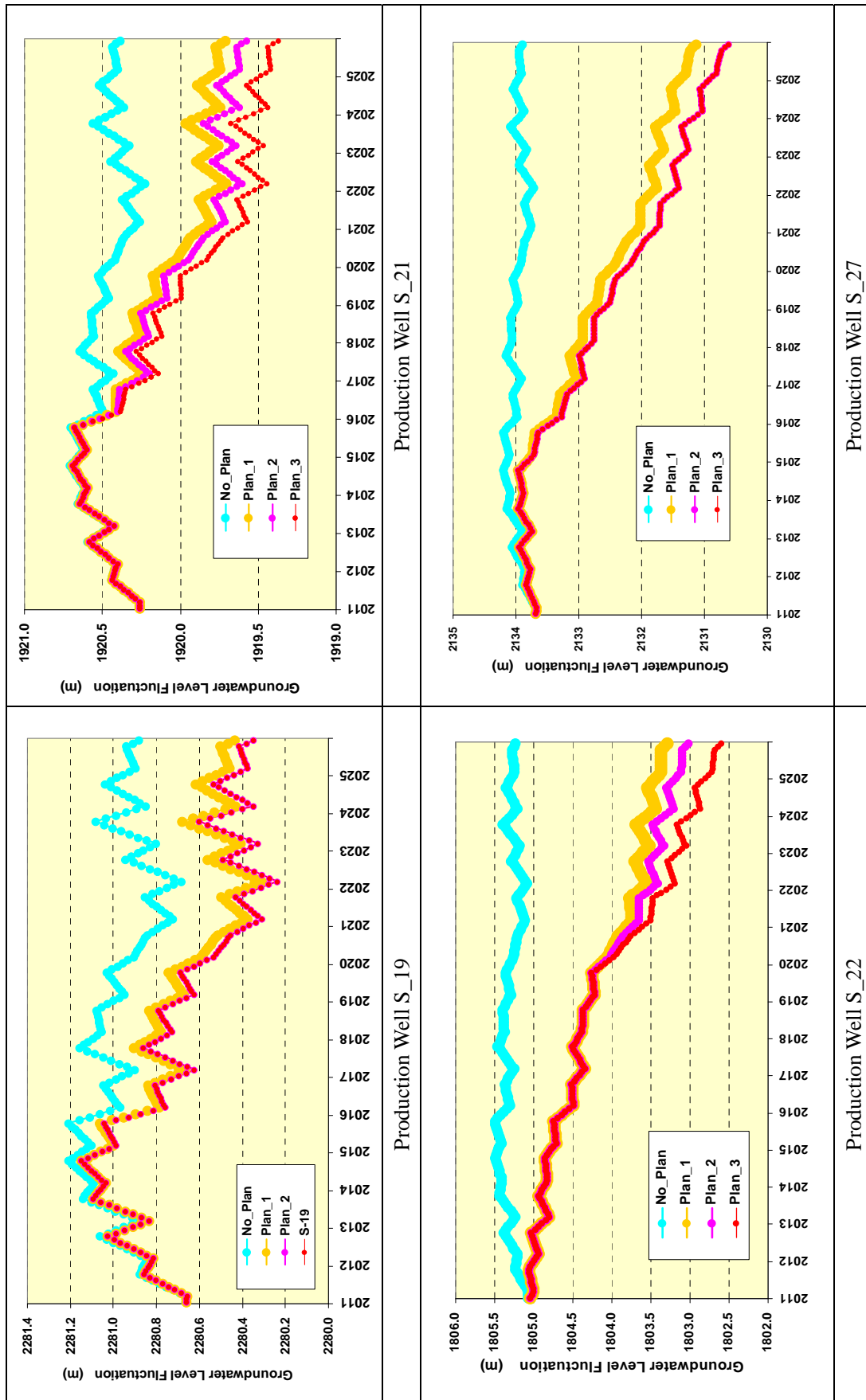
Groundwater Head Distribution in Layer_4, Western Abaya Model



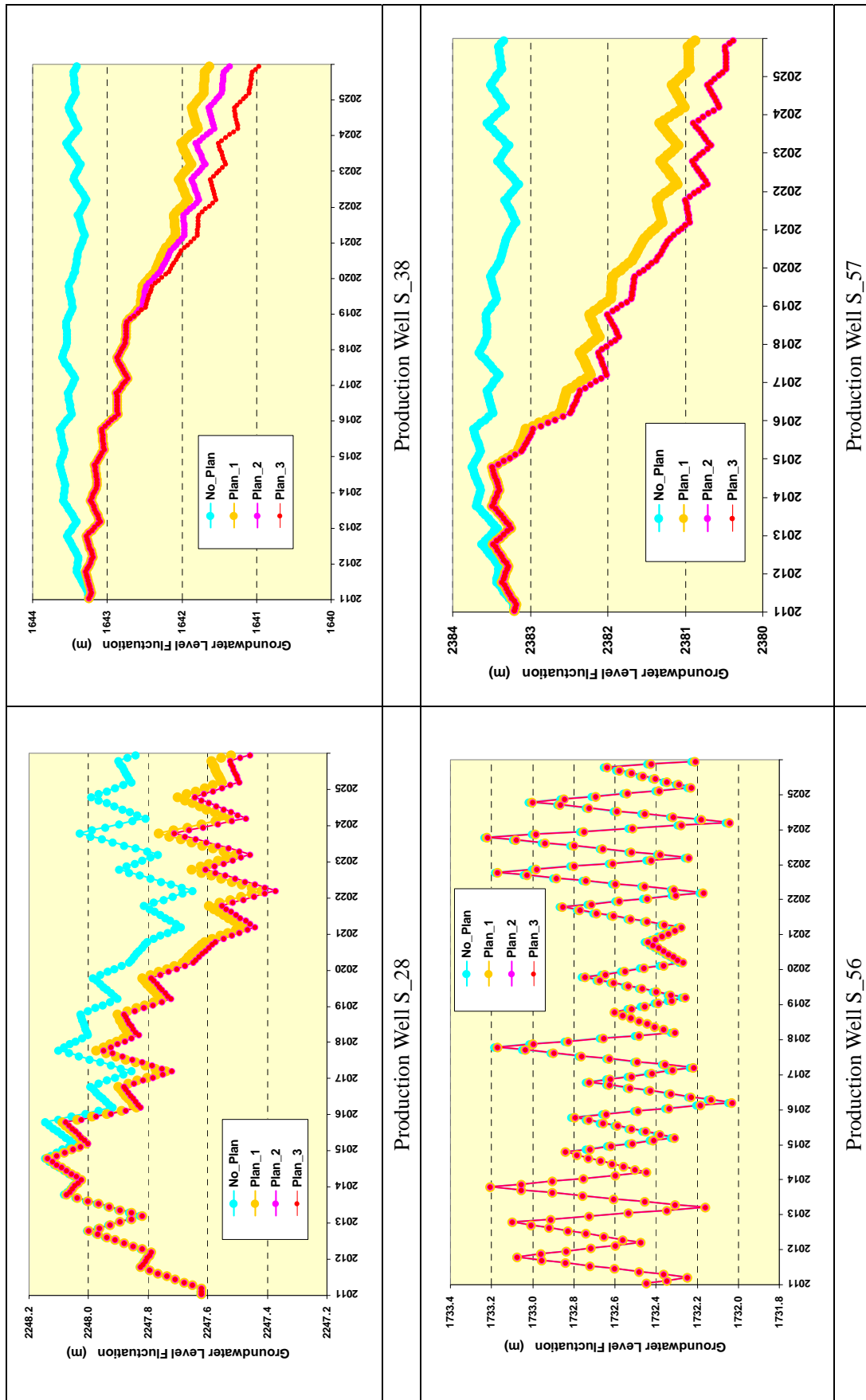
Data 6.4 Water Level Fluctuation Forecast (1/16)



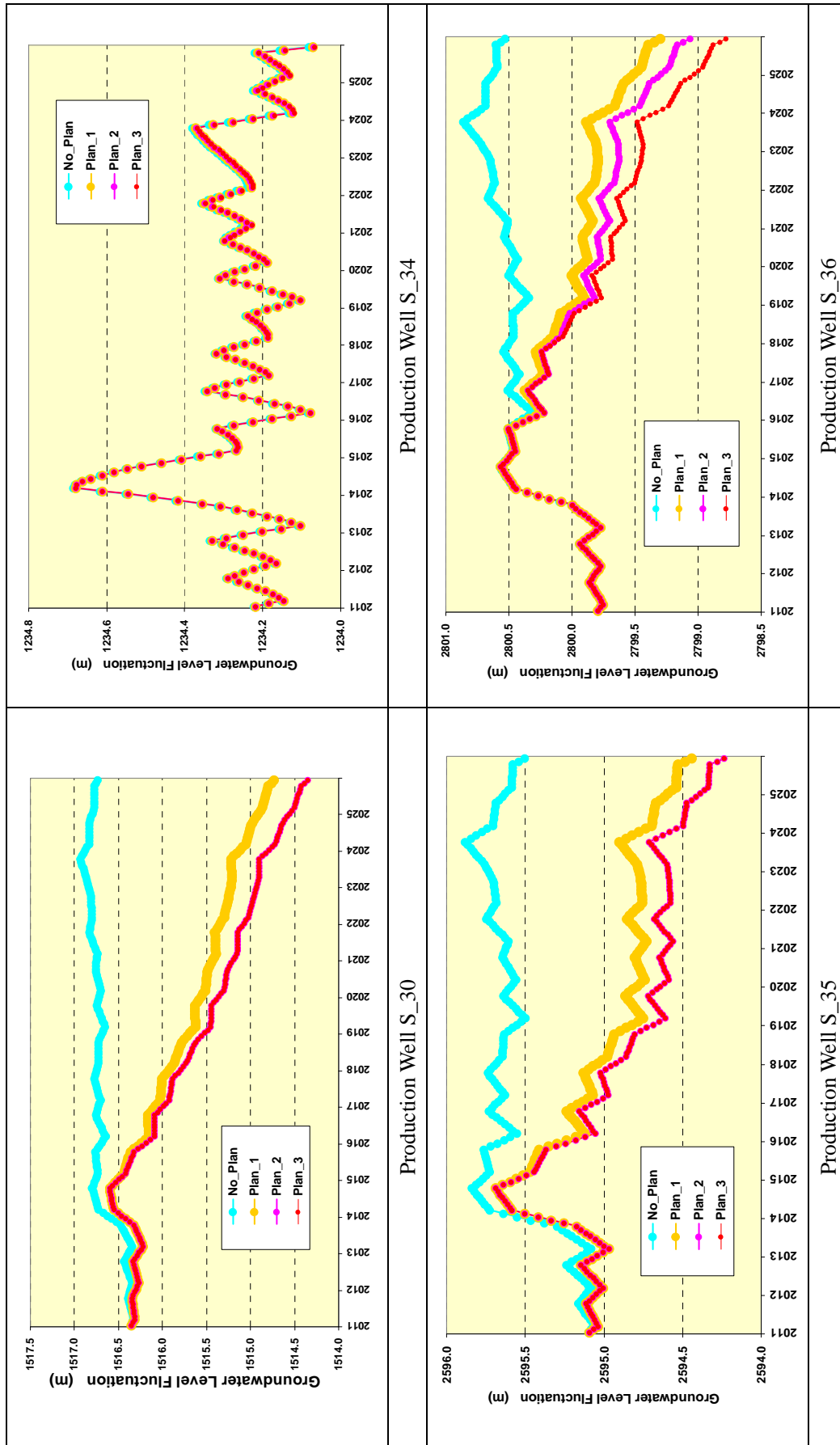
Data 6.4 Water Level Fluctuation Forecast (2/16)



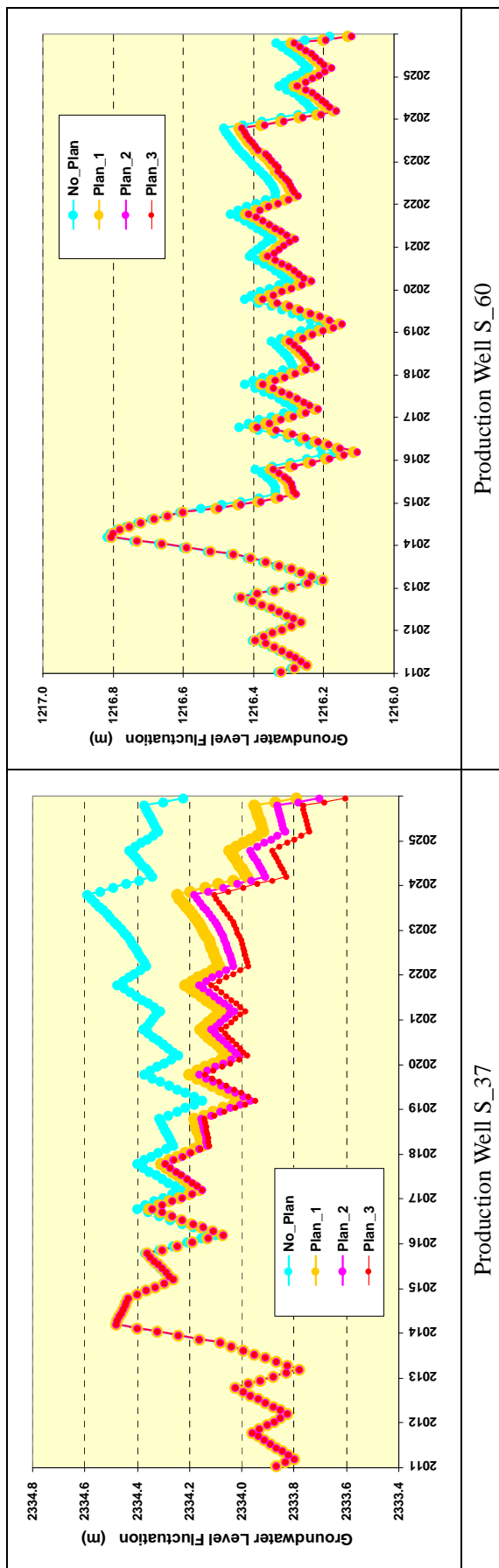
Data 6.4 Water Level Fluctuation Forecast (3/16)



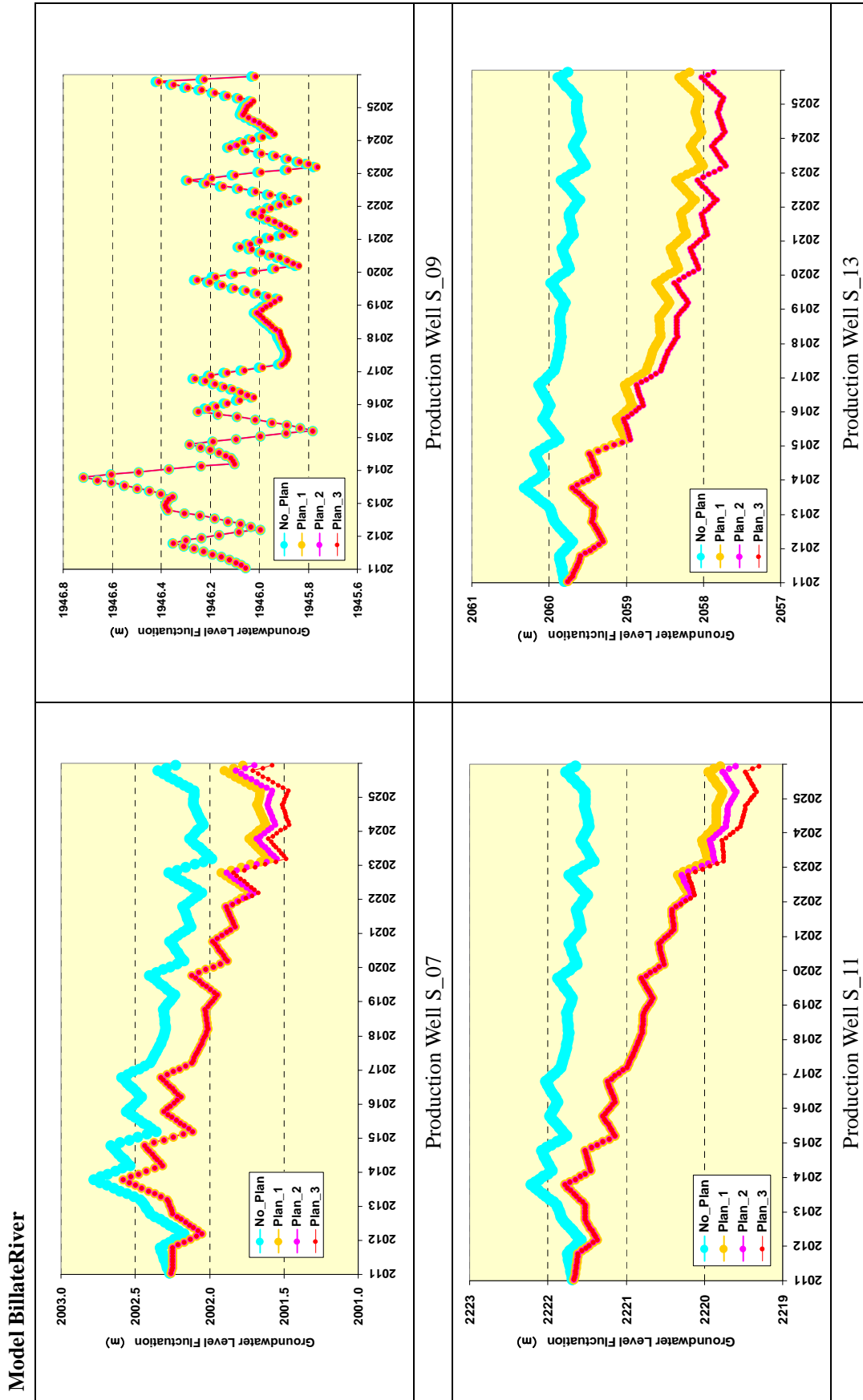
Data 6.4 Water Level Fluctuation Forecast (4/16)



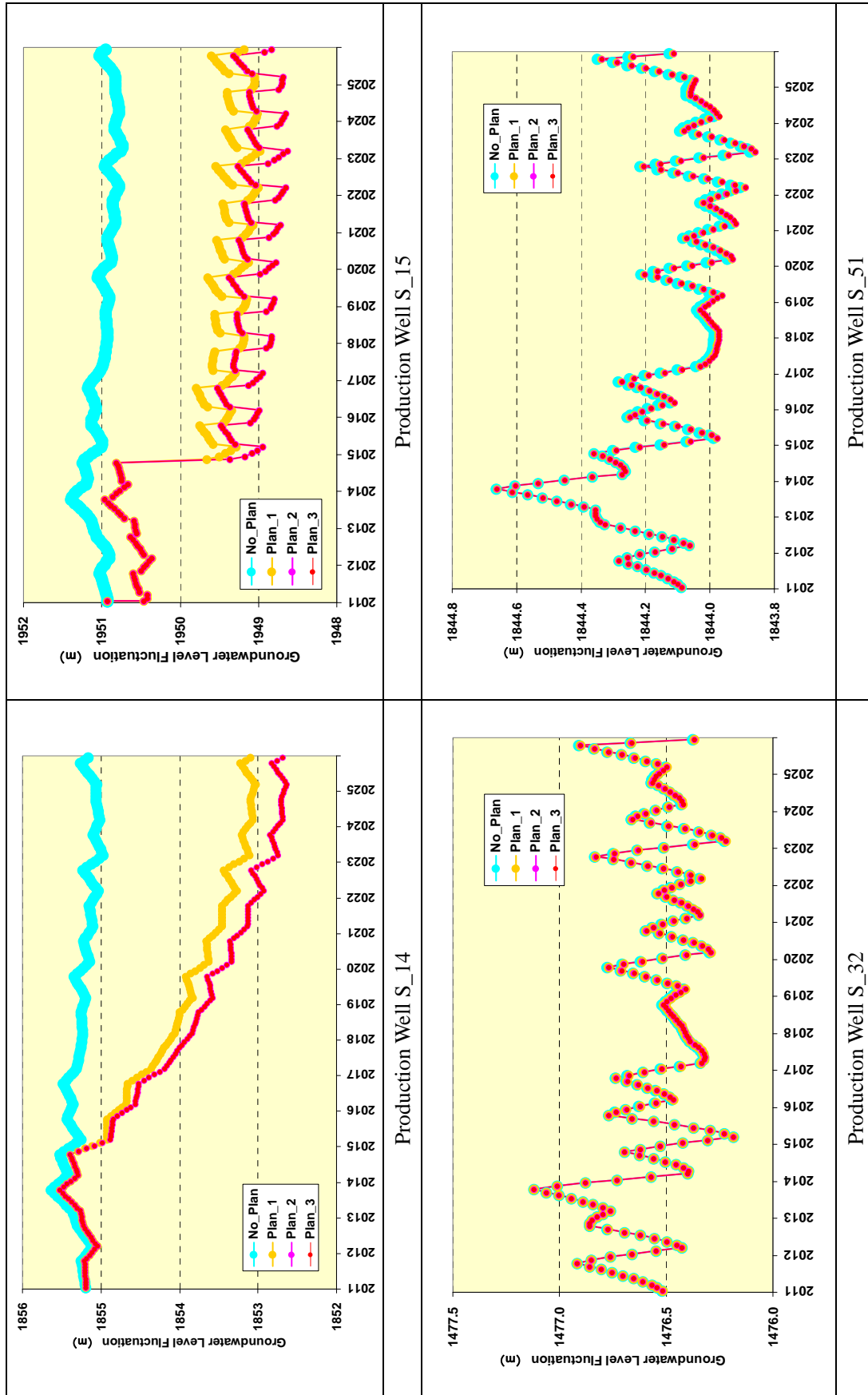
Data 6.4 Water Level Fluctuation Forecast (5/16)



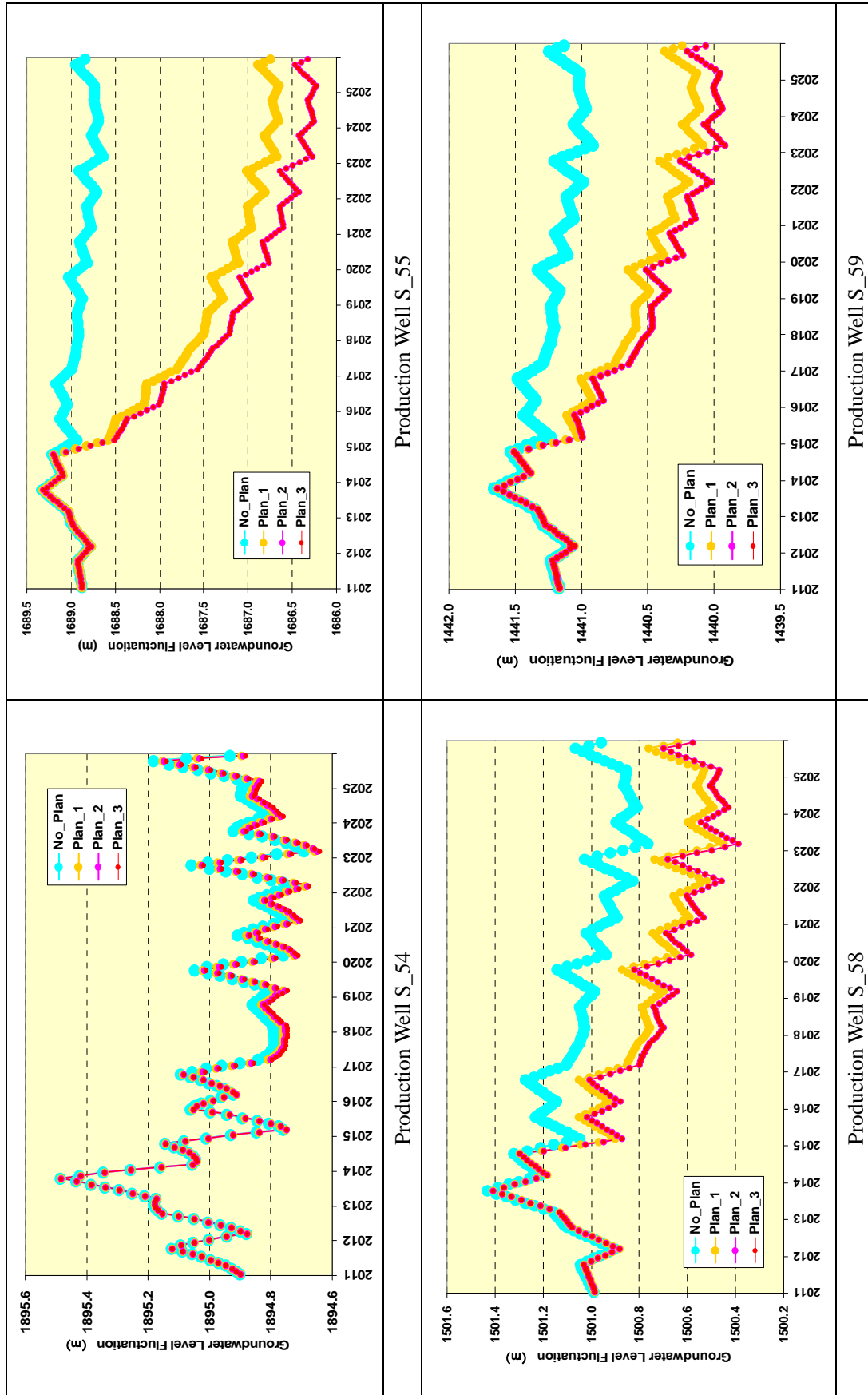
Data 6.4 Water Level Fluctuation Forecast (6/16)



Data 6.4 Water Level Fluctuation Forecast (7/16)

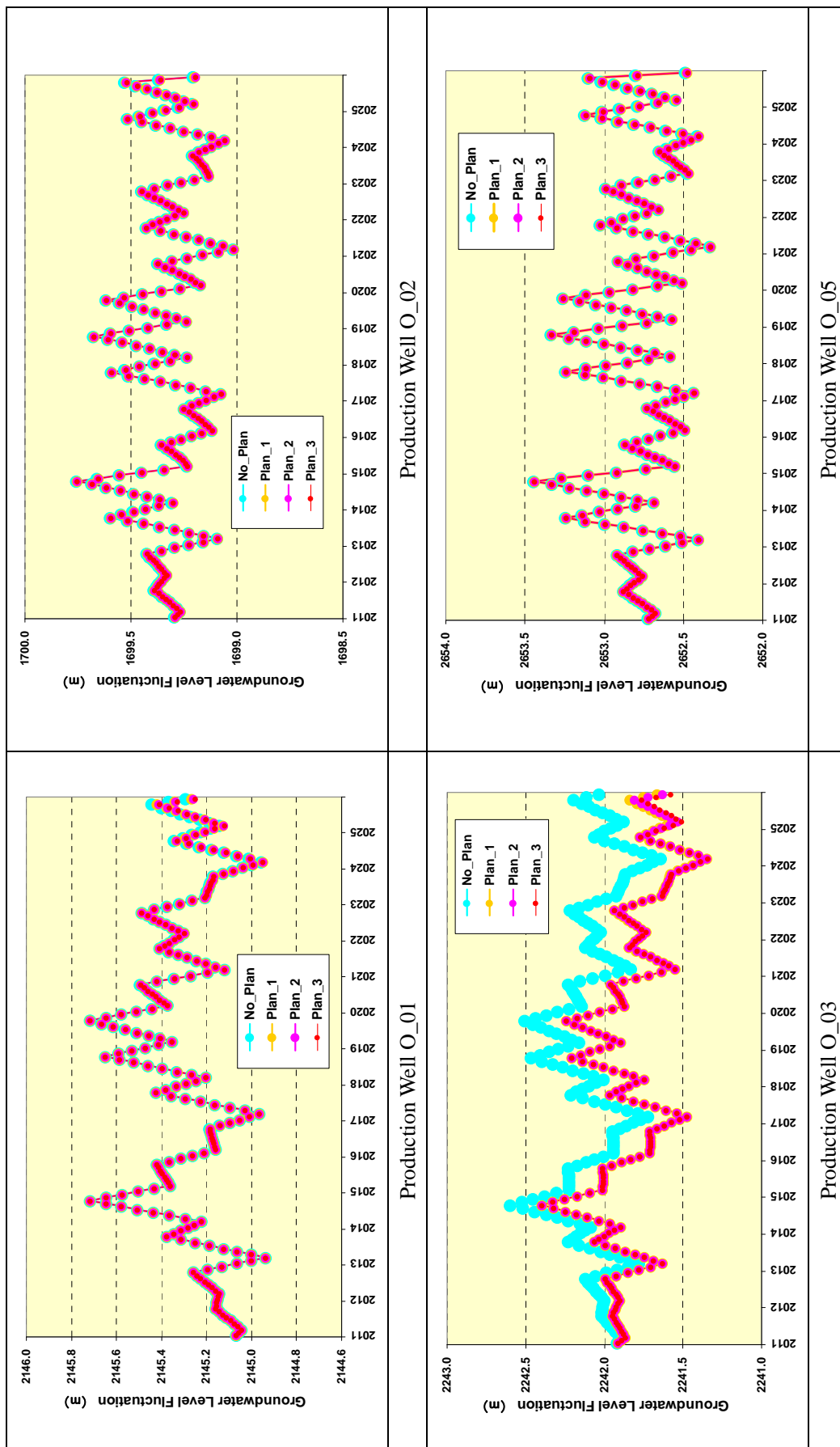


Data 6.4 Water Level Fluctuation Forecast (8/16)

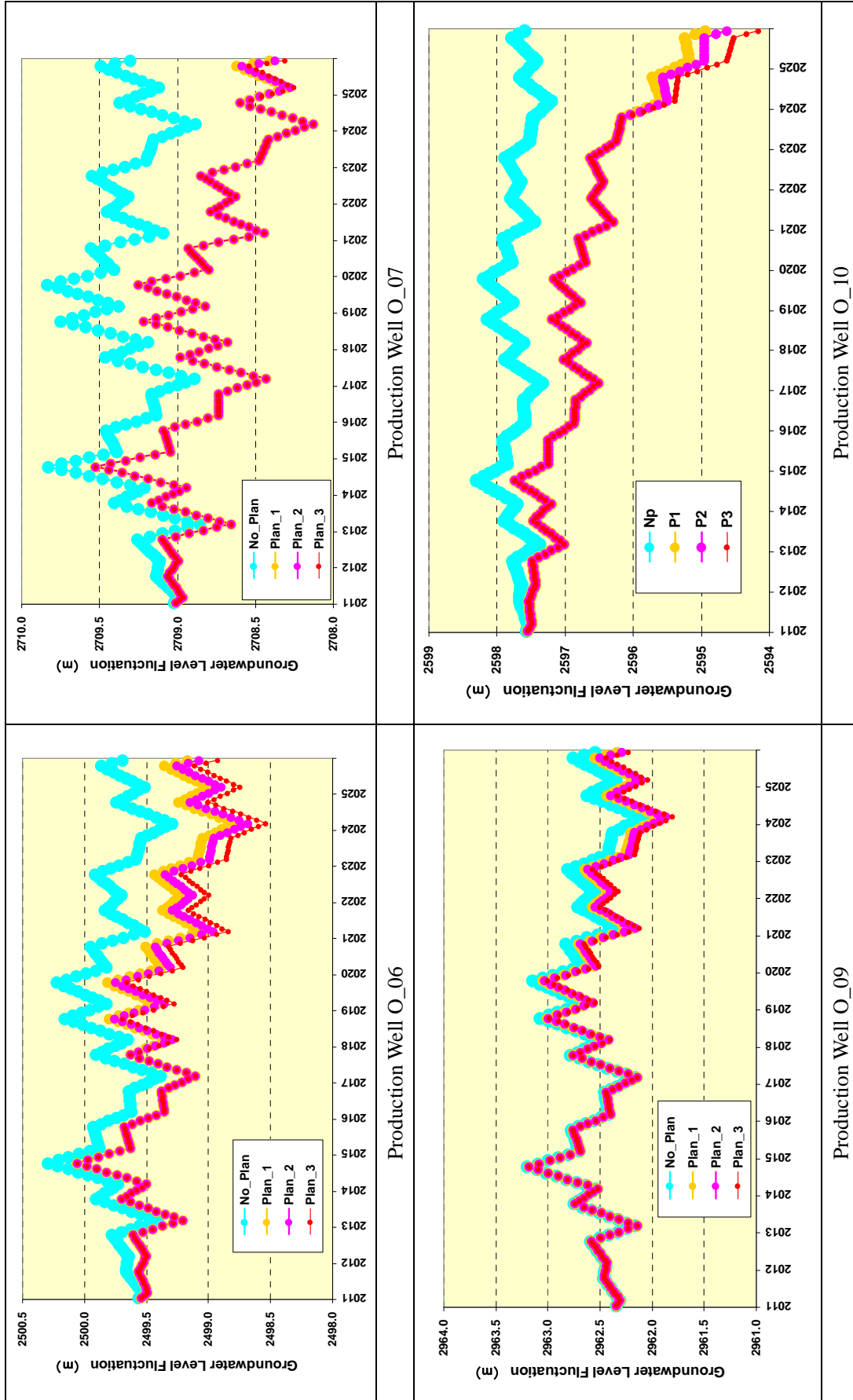


Model Ziway Basin

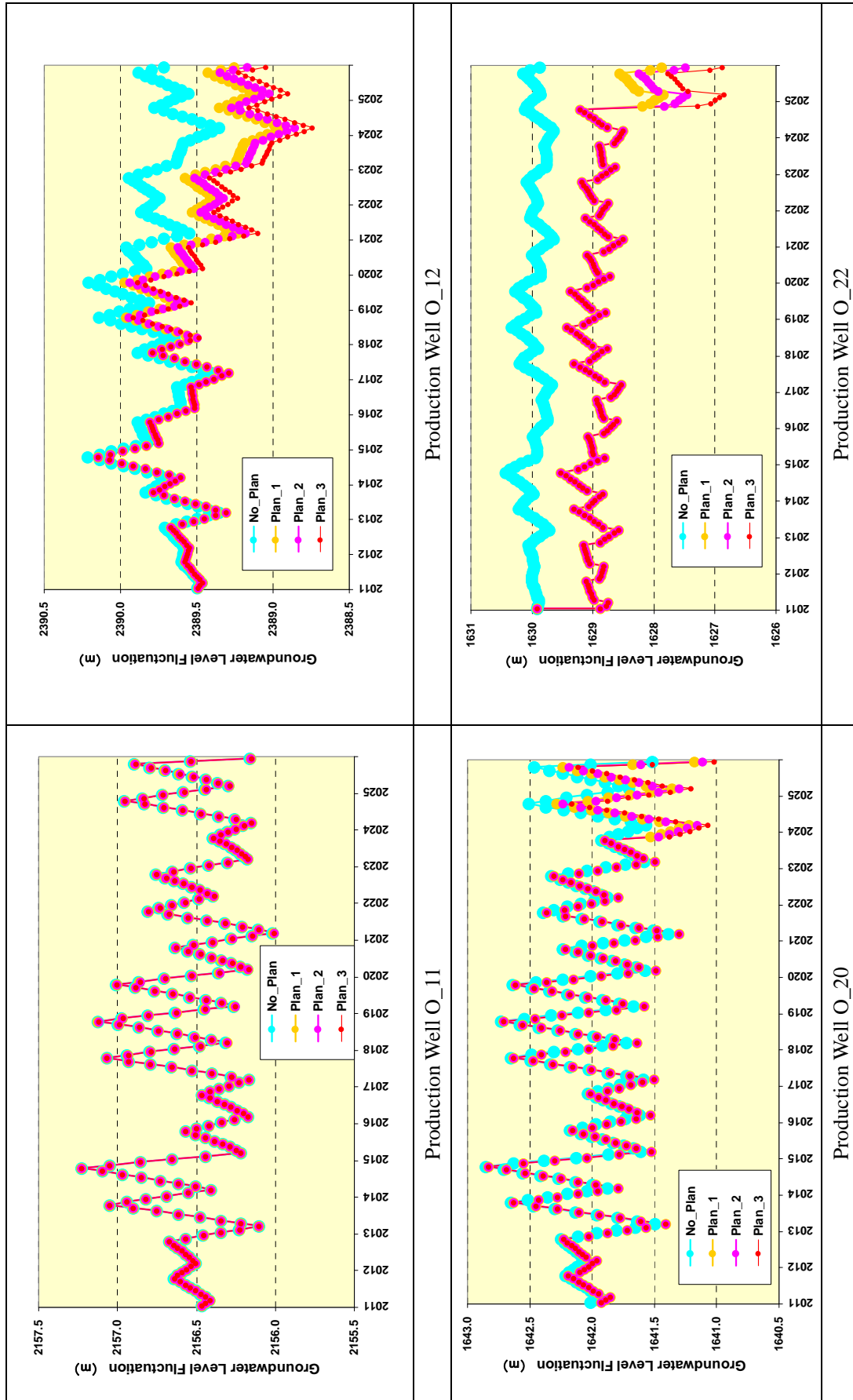
Data 6.4 Water Level Fluctuation Forecast (9/16)



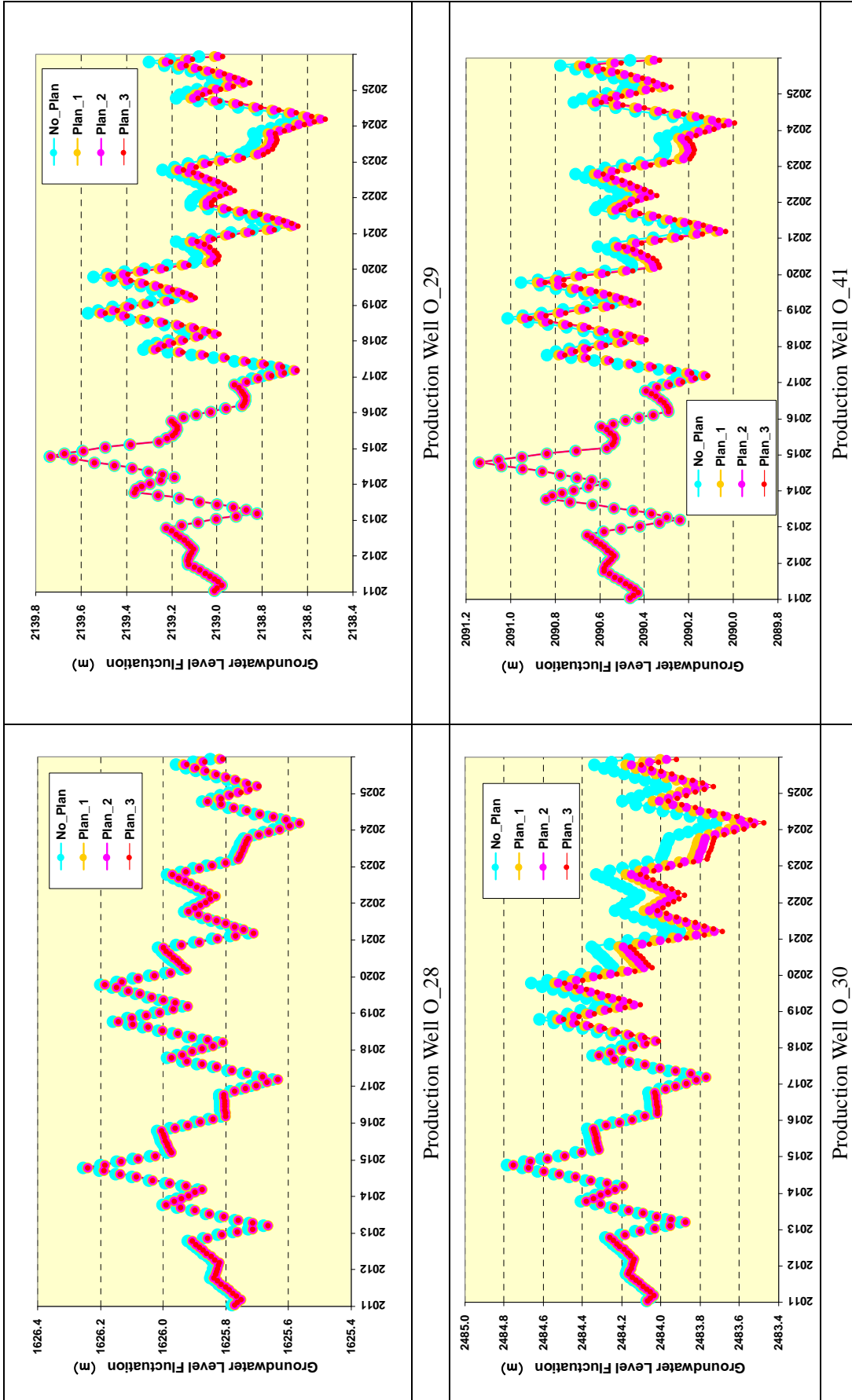
Data 6.4 Water Level Fluctuation Forecast (10/16)



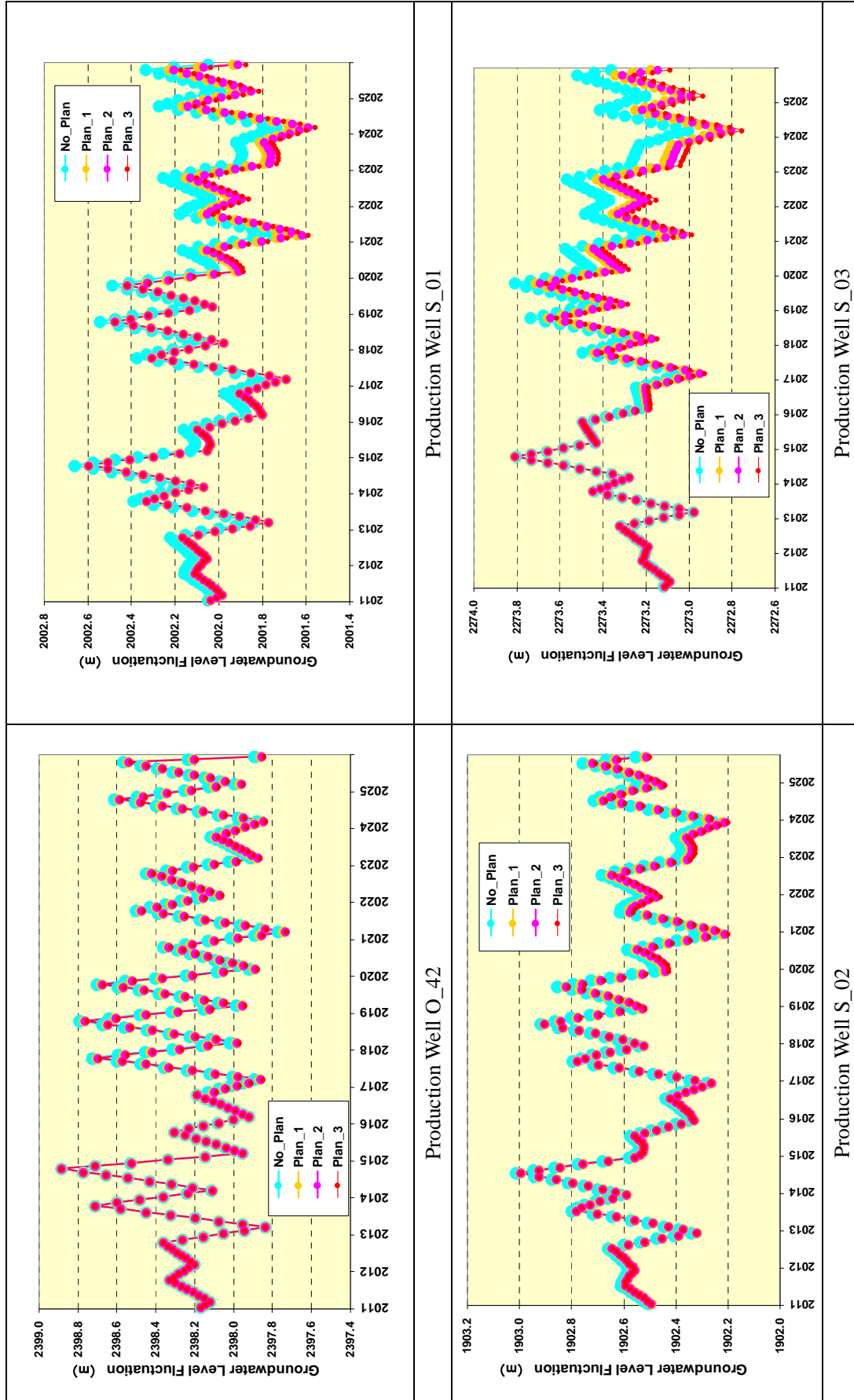
Data 6.4 Water Level Fluctuation Forecast (11/16)



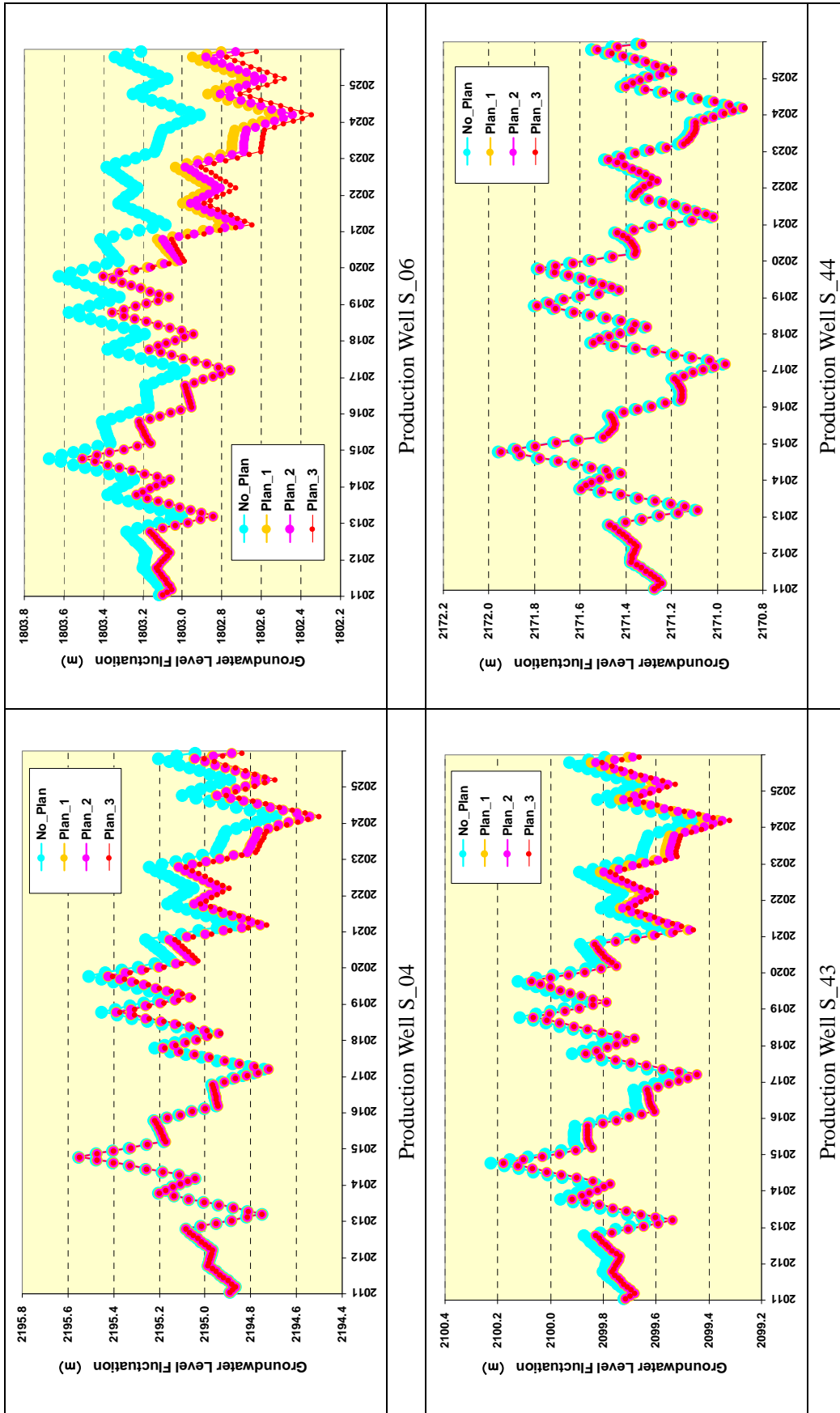
Data 6.4 Water Level Fluctuation Forecast (12/16)



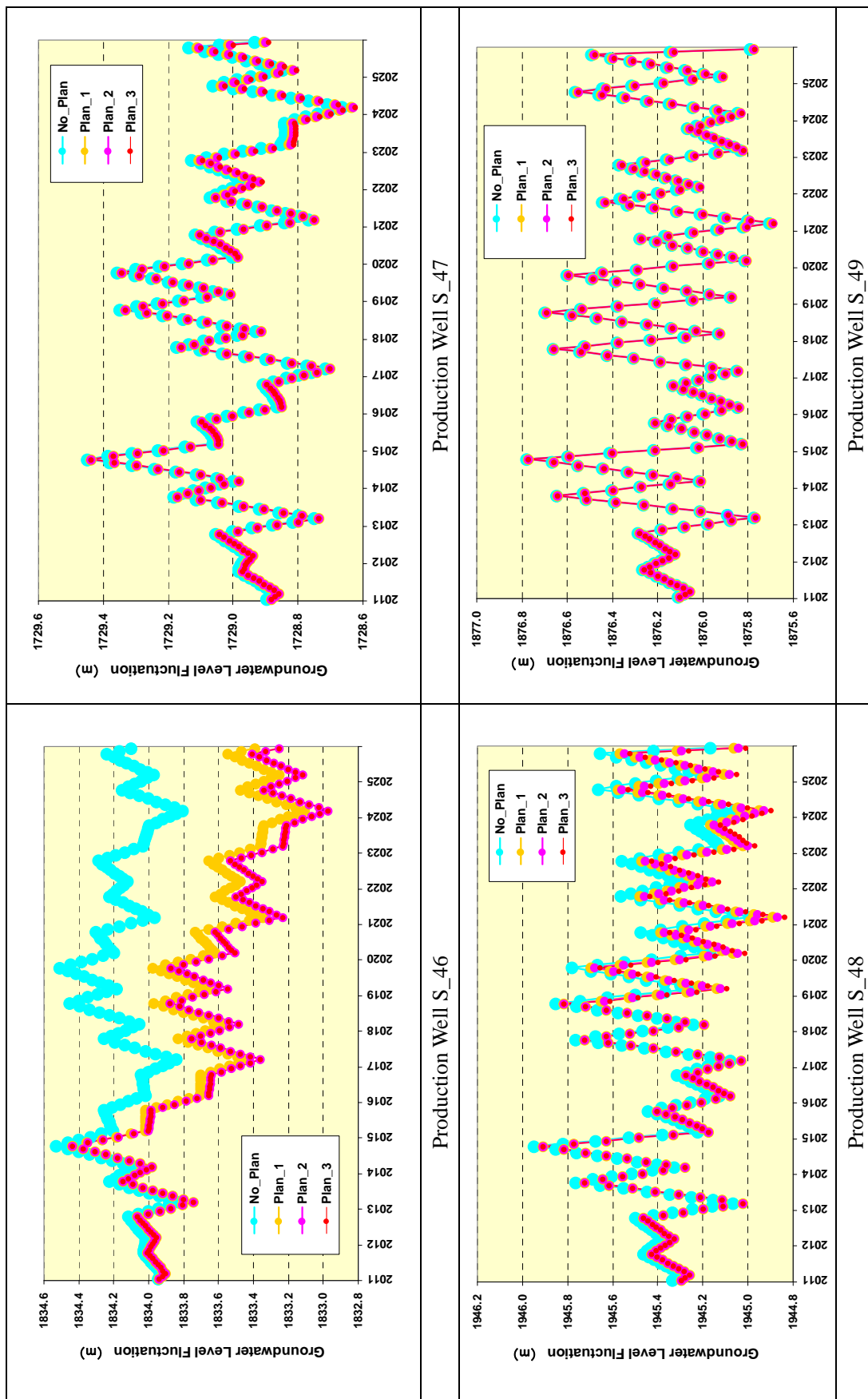
Data 6.4 Water Level Fluctuation Forecast (13/16)



Data 6.4 Water Level Fluctuation Forecast (14/16)



Data 6.4 Water Level Fluctuation Forecast (15/16)



Data 6.4 Water Level Fluctuation Forecast (16/16)

