

U.S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Inversion results of time-domain electromagnetic soundings
near Medicine Lake, California (Part 2)

by

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This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards. Any use of trade names is for descriptive purposes only and does not imply endorsement by the U.S. Geological Survey.

Contents

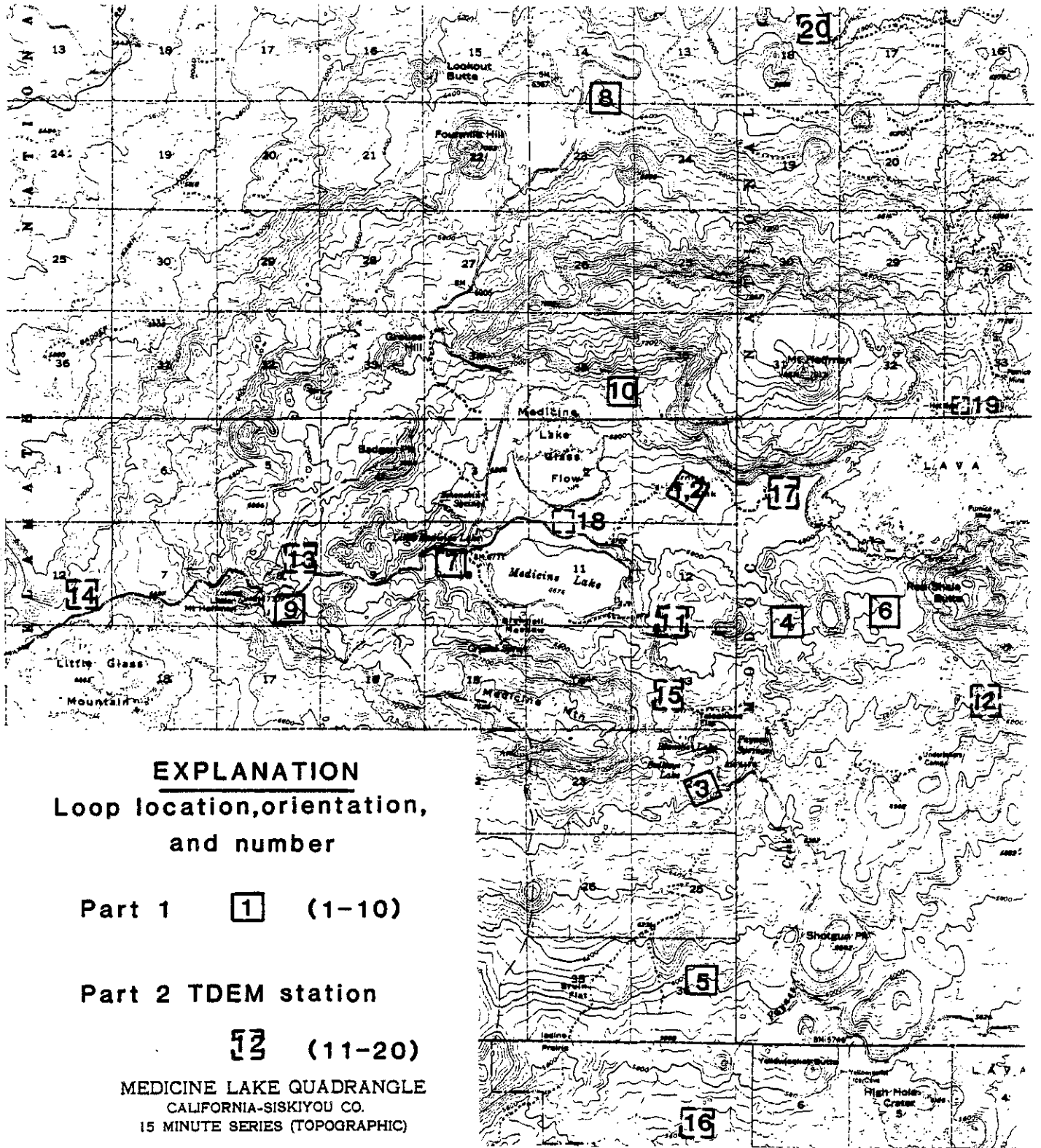
Introduction	3
Results	5
References	7
Appendix	8
Figure 1	4

Introduction

In July, 1983, several time-domain electromagnetic (TDEM) soundings were made in the vicinity of Medicine Lake, California, as part of the U.S. Geological Survey's geothermal research program. The objective was to supplement data acquired during a previous TDEM survey reported in Anderson and others (1983). The additional TDEM soundings were made at ten new sites (see Figure 1--stations denoted by dashed lines) using both single and central loop configurations (Spies, 1980). A large square loop having dimensions of 1500 ft. (457.2 m.) per side was used as a source, except at stations 18 and 19 where square loops with sides 1000 ft. (304.8 m.) and 750 ft. (228.6 m.) respectively were used. The receiver coil was positioned at the center of the transmitter loop (central-induction loop), and (or) the same transmitter loop was used as a receiver loop (coincident or single-loop). The new TDEM results and their computer inversions are being presented in this preliminary report with little discussion of their geologic significance or comparison with other geophysical results in Anderson and others (1983).

The TDEM equipment and field procedures used, data processing (Raab and Frischknecht, 1983), and computer inversion of TDEM soundings are identical to those described in Anderson and others (1983, p.3-7); therefore, these sections will not be repeated here.

Figure 1



EXPLANATION

Loop location, orientation,
 and number

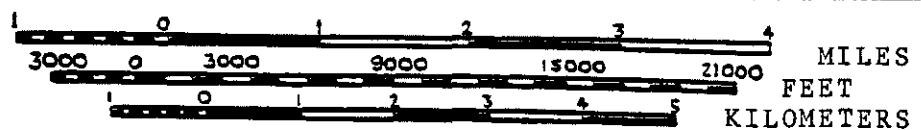
Part 1 1 (1-10)

Part 2 TDEM station
2 (11-20)

MEDICINE LAKE QUADRANGLE
 CALIFORNIA-SISKIYOU CO.
 15 MINUTE SERIES (TOPOGRAPHIC)



MAP LOCATION



Results

The results of computer inversion of this set (Part 2) of TDEM data are comparable with the earlier TDEM results (Anderson and others, 1983) denoted as "Part 1" in Figure 1. In general, the results agree with the inversion results of nearby Schlumberger soundings (Zohdy and Bisdorf, 1982). For the time range of the equipment and the size loop used, the response of high resistivity layers is small and hence the TDEM method was not as effective as the resistivity method in determining details of the near-surface resistivity section. However, the TDEM method is very effective in determining the parameters of conductive layers which occur at depth beneath all sites.

At several sites, such as STA.11, there appear to be detectable variations in the conductive layer. Of particular interest is the fact that several of the TDEM soundings indicate the presence of a high resistivity layer beneath the conductive layer. At STA.14, two conductive layers are seen, where the deeper conductor is found at a depth of about 845 meters and has a resistivity of about 13 ohm-meters. See the Appendix for further details on all the results.

The models presented in the Appendix represent the best fits that were obtained for the number of layers selected. However, it must be recognized that in some models, some of the parameters are not well resolved, and that there may exist other solutions which would fit the data equally well. For instance, the second and third layers in the model for STA. 16 could be combined, and a 2-layer model used. Fortunately, resolution is best for the

resistivity and depth of the most conductive layers. We used models with the smallest number of layers that best fit the data, and did not attempt to use 4-layer models for all stations as used in Anderson and others (1983, p.8.).

In some cases when the apparent resistivity curve flattens or starts to rise at late-time (e.g., see STA.11 and 19), it was necessary to fix the last layer conductivity to a reasonable constant value in order to obtain a positive-definite covariance matrix (i.e., so that the parameter standard errors or resolution statistics exists). Even when the last layer was not fixed, the conductivity is not well resolved if it is lower than the conductivity of the next layer. However, the existance of a resistive layer beneath the conductive layer is important information even when the resistivity is not well known.

References

- Anderson, W.L., Frischknecht, F.C., Raab, P.V., Bradley, J.A., Turnross, J., and Buckley, T.W., 1983, Inversion results of time-domain electromagnetic soundings near Medicine Lake, California, geothermal area: USGS Open-File Rept. 83-233, 31 p.
- Anderson, W.L., 1982a, Nonlinear least-squares inversion of transient soundings for a coincident loop system (Program NLSTCO): USGS Open-File Rept. 82-1064, 81 p.
- , 1982b, Nonlinear least-squares inversion of transient soundings for a central induction loop system (Program NLSTCI): USGS Open-File Rept. 82-1129, 85 p.
- Dennis, J.E., Gay, D.M., and Welsch R.E., 1979, An adaptive nonlinear least-squares algorithm: Univ. of Wisconsin MRC Tech. Sum. Rept. 2010 (also available as NTIS Rept. AD-A079-716), 40 p.
- Raab, P.V., and Frischknecht, F.C., 1983, Desktop computer processing of coincident and central loop TDEM data: USGS Open-File Rept. 83-240, 43 p.
- Spies, B.R., 1980, The application of the transient electromagnetic method in Australian conditions--Field examples and model studies: Ph.D. thesis, Macquarie Univ., N.S.W., Australia [unpublished]
- Zohdy, A.A.R., and Bisdorf, R.J., 1982, Schlumberger soundings in the Medicine Lake area, California: USGS Open-File Rept. 82-887, 162 p.

Appendix

The heading on each of the attached output sheets (and corresponding plots) identifies the station number, TDEM configuration as CI-LOOP (central-induction loop) or CO/SL-LOOP (coincident or single-loop), and the number of layers used in the model. The print-out sheet is a partial extract taken from the master print output file (FOR016.DAT) described in the program documentations for NLSTCO (Anderson, 1982a) and NLSTCI (Anderson, 1982b).

The rest of the print-out extract is arranged as follows: number of layers in the model (MM);, radius A (m.) of circle of area equal to the area of the square transmitter loop; PARAMETERS HELD FIXED (in all cases, the last parameter IB=2*MM is held fixed to 1.0, which is an apparent resistivity SHIFT or multiplier factor); type of nonlinear CONVERGENCE (see Dennis and others, 1979, p.11-14 for a discussion on convergence types); the observed transient apparent resistivity (OBS.Y(I)); the theoretical or calculated (CAL) transient; the residual (RES=Y(I)-CAL); percent residual error (%RES.ERR=100*RES/CAL); and the observed time (X(I,1)) given in seconds. The root-mean-square error (RMSERR) is given next, and is the standard error of the residual vector. The parameter CORRELATION MATRIX is printed in lower-diagonal matrix form, which is derived from the computed covariance matrix (see Dennis and others, 1979, p. 14, and p. 31). The measure of error of each determined layer nonlinear parameter (PARM.SOL.) is listed under STD.ERROR, and is a "linear statistic" based on the square-root of a scaled error

square-root of a scaled error variance times the diagonal of the covariance matrix. In addition, the STD.ERROR is also used to compute the relative error (REL.ERROR=STD.ERROR/PARM.SOL). The percent error (%ERROR) is simply 100 times the REL.ERROR. (If the covariance matrix is not positive-definite, then the message "INDEFINITE COVARIANCE MATRIX" is given, and the correlation matrix and standard errors are not given.)

The least-squares FINAL SOLUTION vector is listed next, giving each defined nonlinear parameter name, where SIGMA(I) is defined as the conductivity of layer I (in mhos/meter), RESISTIVITY is 1/SIGMA (in ohm-meters), THICK(I) is the thickness of layer I (in meters), and DEPTH(I) is the accumulated layer thicknesses to the bottom of layer I.

The summary plots show the observed Y(I) data denoted by a symbol "O", and a solid line representing a smooth curve drawn through the theoretical calculated (CAL) points at each observed time X(I,1). The final interpreted layered earth model solution is plotted in block form, and shows each layer solution resistivity and depth from the surface.

<NLSTCI>: STA.11 CI-LOOP 4-LAYERS [M]
 MM= 4 A= 0.257950E+03
 PARAMETERS HELD FIXED: IB= 4 8

***** X-CONVERGENCE *****

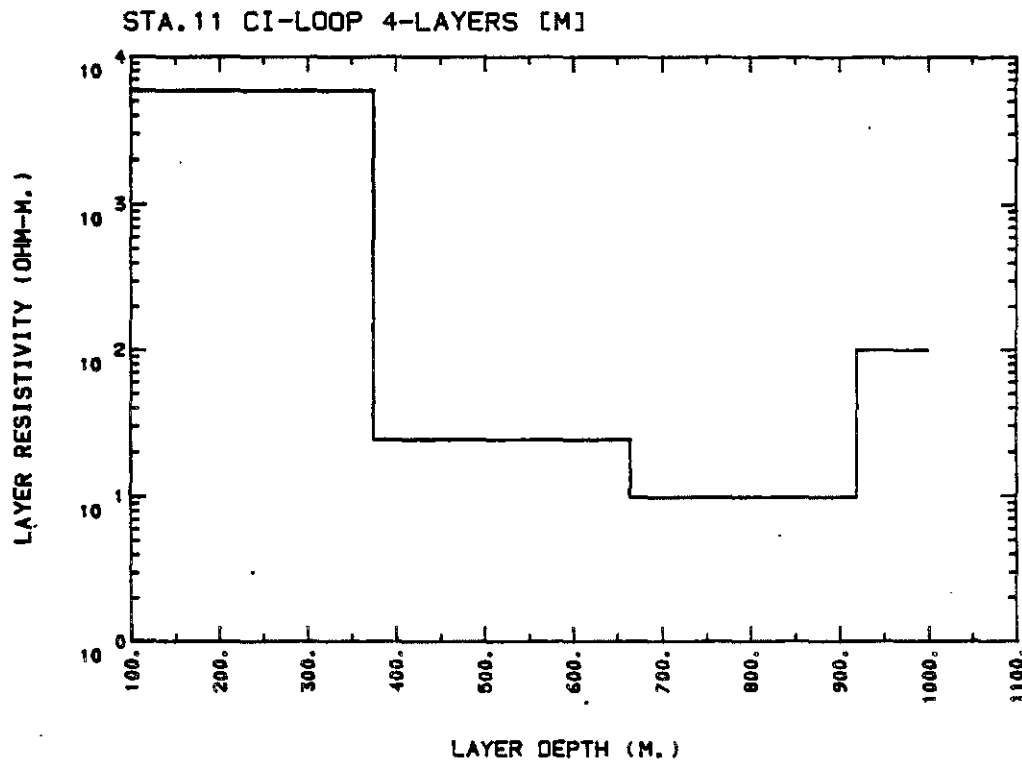
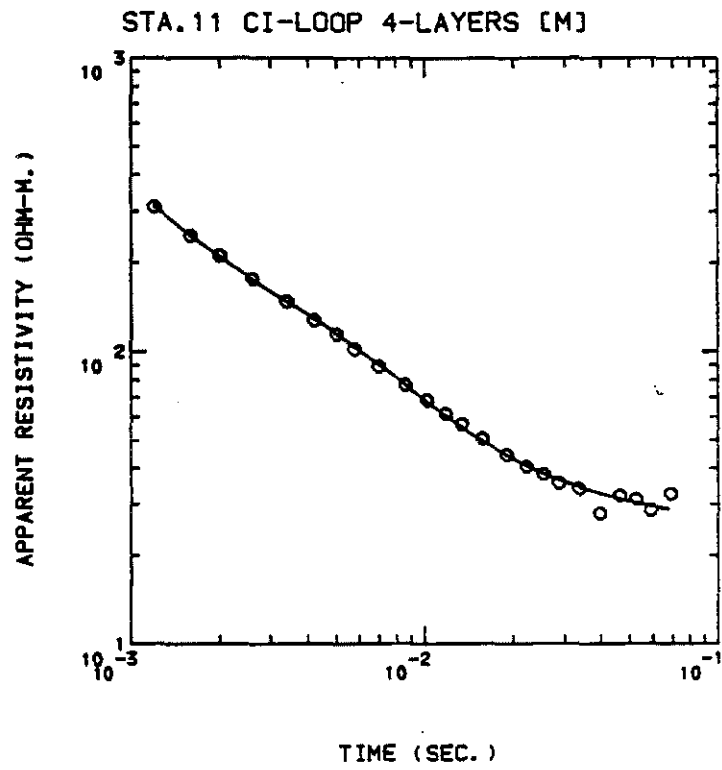
I	OBS.Y(I)	CAL	RES	ZRES.ERR	X(I,1)
1	0.310320E+03	0.312646E+03	-0.233E+01	-0.743862E+00	0.120000E-02
2	0.247260E+03	0.247134E+03	0.126E+00	0.508020E-01	0.160000E-02
3	0.211530E+03	0.209408E+03	0.212E+01	0.101352E+01	0.200000E-02
4	0.175680E+03	0.174687E+03	0.993E+00	0.568461E+00	0.260000E-02
5	0.147240E+03	0.146994E+03	0.246E+00	0.167449E+00	0.340000E-02
6	0.126940E+03	0.128331E+03	-0.139E+01	-0.108412E+01	0.420000E-02
7	0.114210E+03	0.114212E+03	-0.161E-02	-0.140949E-02	0.500000E-02
8	0.101620E+03	0.103028E+03	-0.141E+01	-0.136652E+01	0.580000E-02
9	0.889040E+02	0.899387E+02	-0.103E+01	-0.115042E+01	0.700000E-02
10	0.770110E+02	0.769751E+02	0.359E-01	0.466336E-01	0.860000E-02
11	0.683590E+02	0.674278E+02	0.931E+00	0.138103E+01	0.102000E-01
12	0.614850E+02	0.604237E+02	0.106E+01	0.175647E+01	0.118000E-01
13	0.566420E+02	0.552038E+02	0.144E+01	0.260527E+01	0.134000E-01
14	0.504950E+02	0.495205E+02	0.975E+00	0.196791E+01	0.158000E-01
15	0.444620E+02	0.443144E+02	0.148E+00	0.333148E+00	0.190000E-01
16	0.404780E+02	0.407194E+02	-0.241E+00	-0.592888E+00	0.222000E-01
17	0.381390E+02	0.381719E+02	-0.329E-01	-0.862636E-01	0.254000E-01
18	0.355440E+02	0.363164E+02	-0.772E+00	-0.212689E+01	0.286000E-01
19	0.339710E+02	0.343600E+02	-0.389E+00	-0.113199E+01	0.334000E-01
20	0.279290E+02	0.325830E+02	-0.465E+01	-0.142836E+02	0.398000E-01
21	0.321720E+02	0.312582E+02	0.914E+00	0.292333E+01	0.462000E-01
22	0.312760E+02	0.302639E+02	0.101E+01	0.334426E+01	0.526000E-01
23	0.286280E+02	0.295728E+02	-0.945E+00	-0.319494E+01	0.590000E-01
24	0.327270E+02	0.287835E+02	0.394E+01	0.137007E+02	0.686000E-01

** RMSERR= 0.18524703E+01

CORRELATION MATRIX

1	0.1000E+01				
2	-0.2973E+00	0.1000E+01			
3	-0.2760E+00	-0.4133E+00	0.1000E+01		
5	-0.3299E+00	0.8724E+00	-0.3426E+00	0.1000E+01	
6	-0.3365E+00	0.1442E+00	0.3030E+00	0.2296E+00	0.1000E+01
7	0.3106E+00	0.1129E+00	-0.8384E+00	0.2451E-01	-0.5576E+00 0.1000E+01
**PARM SOL. STD_ERROR REL_ERROR % ERROR **					
1	0.1710E-03	0.1151E-03	0.6731E+00	0.6731E+02	
2	0.4128E-01	0.1211E-02	0.2933E-01	0.2933E+01	
3	0.1018E+00	0.3641E-02	0.3576E-01	0.3576E+01	
5	0.3744E+03	0.1987E-02	0.5308E-05	0.5308E-03	
6	0.2899E+03	0.6855E-02	0.2364E-04	0.2364E-02	
7	0.2551E+03	0.1567E-01	0.6145E-04	0.6145E-02	

PARAMETER NAME	FINAL SOLUTION	RESISTIVITY	LAYER DEPTH
1 SIGMA(1) =	0.17101091E-03	1 0.58475801E+04	
2 SIGMA(2) =	0.41279886E-01	2 0.24224873E+02	
3 SIGMA(3) =	0.10181203E+00	3 0.98220224E+01	
4 SIGMA(4) =	0.99999998E-02	4 0.10000000E+03	
5 THICK(1) =	0.37437430E+03		1 0.37437430E+03
6 THICK(2) =	0.28992746E+03		2 0.66430176E+03
7 THICK(3) =	0.25510161E+03		3 0.91940338E+03
8 SHIFT =	0.10000000E+01		



<NLSTCI>: STA.12 CI-LOOP 3-LAYERS [N]
 MM= 3 A= 0.257950E+03
 PARAMETERS HELD FIXED: IB= 6

***** X-CONVERGENCE *****

I	OBS.Y(I)	CAL	RES	%RES.ERR	X(I,1)
1	0.452640E+03	0.463644E+03	-0.110E+02	-0.237333E+01	0.160000E-02
2	0.405940E+03	0.395330E+03	0.106E+02	0.268372E+01	0.200000E-02
3	0.332340E+03	0.331199E+03	0.114E+01	0.344623E+00	0.260000E-02
4	0.277920E+03	0.275249E+03	0.267E+01	0.970357E+00	0.340000E-02
5	0.236650E+03	0.236770E+03	-0.120E+00	-0.508539E-01	0.420000E-02
6	0.203950E+03	0.208159E+03	-0.421E+01	-0.202190E+01	0.500000E-02
7	0.185470E+03	0.185815E+03	-0.345E+00	-0.185874E+00	0.580000E-02
8	0.159340E+03	0.159863E+03	-0.523E+00	-0.327285E+00	0.700000E-02
9	0.137310E+03	0.135186E+03	0.212E+01	0.157145E+01	0.860000E-02
10	0.115660E+03	0.117593E+03	-0.193E+01	-0.164403E+01	0.102000E-01
11	0.107470E+03	0.104312E+03	0.316E+01	0.302767E+01	0.118000E-01
12	0.927050E+02	0.939118E+02	-0.121E+01	-0.128506E+01	0.134000E-01
13	0.803350E+02	0.819377E+02	-0.160E+01	-0.195597E+01	0.158000E-01
14	0.698840E+02	0.704902E+02	-0.606E+00	-0.860044E+00	0.190000E-01
15	0.632910E+02	0.620933E+02	0.120E+01	0.192889E+01	0.222000E-01
16	0.564930E+02	0.556328E+02	0.860E+00	0.154622E+01	0.254000E-01
17	0.501080E+02	0.505660E+02	-0.458E+00	-0.905755E+00	0.286000E-01
18	0.498990E+02	0.445438E+02	0.536E+01	0.120223E+02	0.334000E-01
19	0.390680E+02	0.386543E+02	0.414E+00	0.107026E+01	0.398000E-01
20	0.317900E+02	0.343498E+02	-0.256E+01	-0.745225E+01	0.462000E-01
21	0.306660E+02	0.309051E+02	-0.239E+00	-0.773688E+00	0.526000E-01

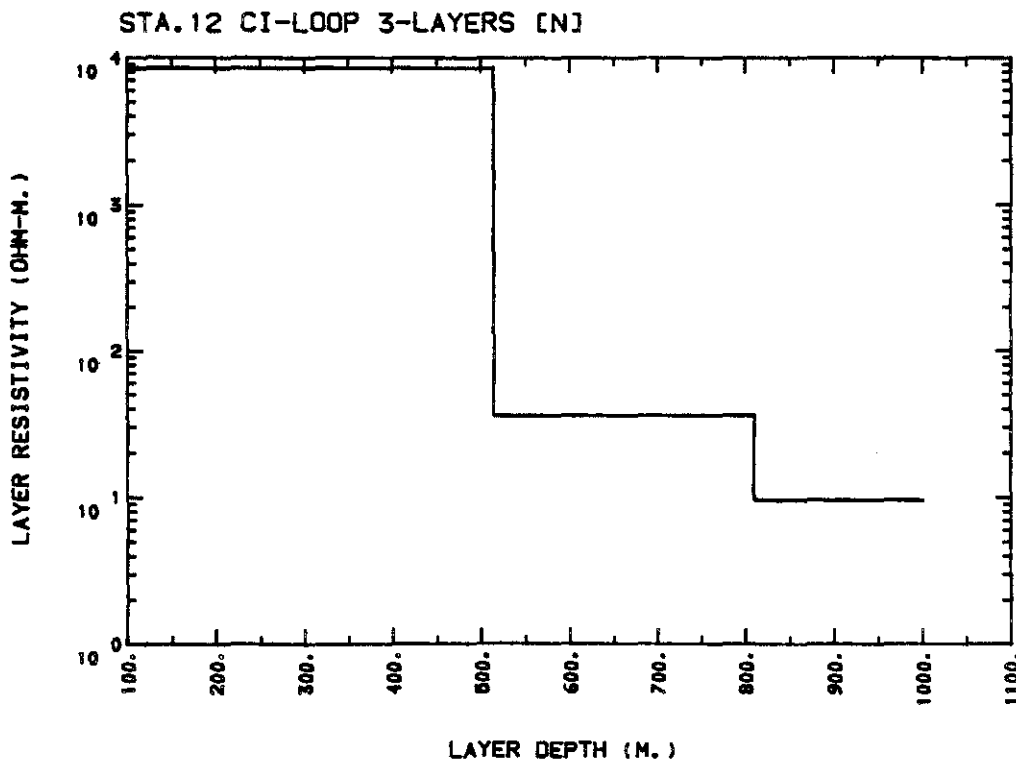
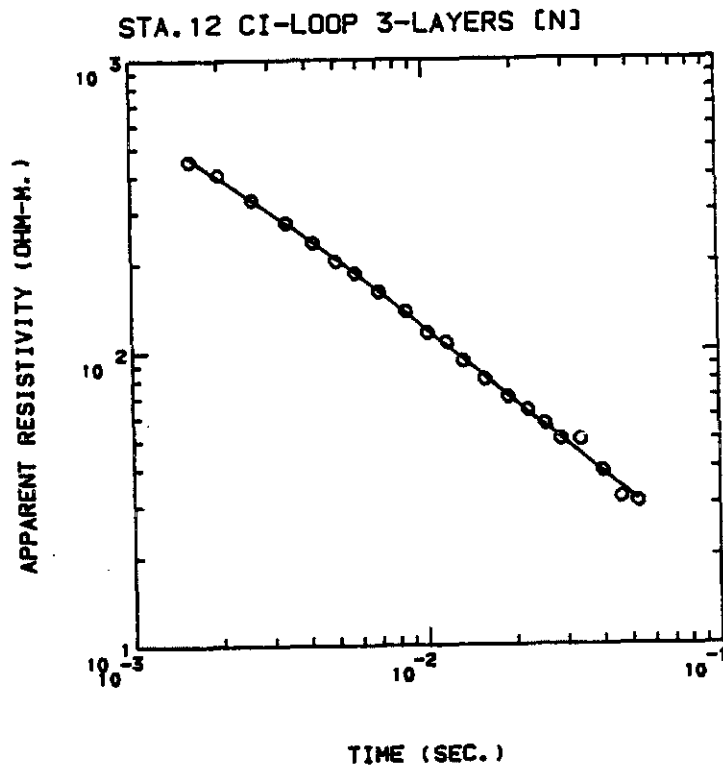
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CORRELATION MATRIX

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2	-0.6419E+00	0.1000E+01			
3	-0.3489E+00	0.2019E+00	0.1000E+01		
4	-0.4383E+00	0.8777E+00	-0.3742E-01	0.1000E+01	
5	-0.4799E+00	-0.4273E-01	-0.4838E-01	-0.1625E+00	0.1000E+01

**PARAM SOL.	STD_ERROR	REL_ERROR	%ERROR	**
1	0.1181E-03	0.8640E-04	0.7317E+00	0.7317E+02
2	0.2775E-01	0.1175E-02	0.4235E-01	0.4235E+01
3	0.1043E+00	0.1912E-02	0.1833E-01	0.1833E+01
4	0.5145E+03	0.2275E-02	0.4421E-05	0.4421E-03
5	0.2950E+03	0.3885E-02	0.1317E-04	0.1317E-02

PARAMETER NAME	FINAL SOLUTION	RESISTIVITY	LAYER DEPTH
1 SIGMA(1) =	0.11807559E-03	1 0.84691514E+04	
2 SIGMA(2) =	0.27748059E-01	2 0.36038555E+02	
3 SIGMA(3) =	0.10427359E+00	3 0.95901566E+01	
4 THICK(1) =	0.51448187E+03		1 0.51448187E+03
5 THICK(2) =	0.29500992E+03		2 0.80949182E+03
6 SHIFT =	0.10000000E+01		



<NLSTCI>: STA.13 CI-LOOP 4-LAYERS [0]
 MM= 4 A= 0.257950E+03
 PARAMETERS HELD FIXED: IB= 4 8

***** X-CONVERGENCE *****

I	OBS.Y(I)	CAL	RES	ZRES.ERR	X(I,1)
1	0.335310E+03	0.338784E+03	-0.347E+01	-0.102550E+01	0.120000E-02
2	0.274520E+03	0.271313E+03	0.321E+01	0.118185E+01	0.160000E-02
3	0.235000E+03	0.232390E+03	0.261E+01	0.112311E+01	0.200000E-02
4	0.199690E+03	0.196596E+03	0.309E+01	0.157404E+01	0.260000E-02
5	0.164080E+03	0.164349E+03	-0.269E+00	-0.163804E+00	0.340000E-02
6	0.137900E+03	0.139560E+03	-0.166E+01	-0.118974E+01	0.420000E-02
7	0.113850E+03	0.119823E+03	-0.597E+01	-0.498503E+01	0.500000E-02
8	0.101620E+03	0.103874E+03	-0.225E+01	-0.216998E+01	0.580000E-02
9	0.852150E+02	0.853771E+02	-0.162E+00	-0.189821E+00	0.700000E-02
10	0.690320E+02	0.682231E+02	0.809E+00	0.118566E+01	0.860000E-02
11	0.583940E+02	0.570171E+02	0.138E+01	0.241492E+01	0.102000E-01
12	0.511480E+02	0.493296E+02	0.182E+01	0.368620E+01	0.118000E-01
13	0.451440E+02	0.437444E+02	0.140E+01	0.319939E+01	0.134000E-01
14	0.394450E+02	0.377657E+02	0.168E+01	0.444674E+01	0.158000E-01
15	0.339770E+02	0.325022E+02	0.147E+01	0.453751E+01	0.190000E-01
16	0.299570E+02	0.290655E+02	0.892E+00	0.306733E+01	0.222000E-01
17	0.272190E+02	0.266794E+02	0.540E+00	0.202259E+01	0.254000E-01
18	0.249620E+02	0.249143E+02	0.477E-01	0.191406E+00	0.286000E-01
19	0.228220E+02	0.229500E+02	-0.128E+00	-0.557719E+00	0.334000E-01
20	0.207070E+02	0.211337E+02	-0.427E+00	-0.201911E+01	0.398000E-01
21	0.195120E+02	0.199920E+02	-0.480E+00	-0.240114E+01	0.462000E-01
22	0.188810E+02	0.191974E+02	-0.316E+00	-0.164798E+01	0.526000E-01
23	0.173670E+02	0.185453E+02	-0.118E+01	-0.635368E+01	0.590000E-01
24	0.174400E+02	0.179252E+02	-0.485E+00	-0.270684E+01	0.686000E-01
25	0.167580E+02	0.174176E+02	-0.660E+00	-0.378718E+01	0.814000E-01
26	0.171950E+02	0.172409E+02	-0.459E-01	-0.265943E+00	0.942000E-01
27	0.174290E+02	0.178419E+02	-0.413E+00	-0.231400E+01	0.107000E+00

** RMSERR= 0.21714096E+01

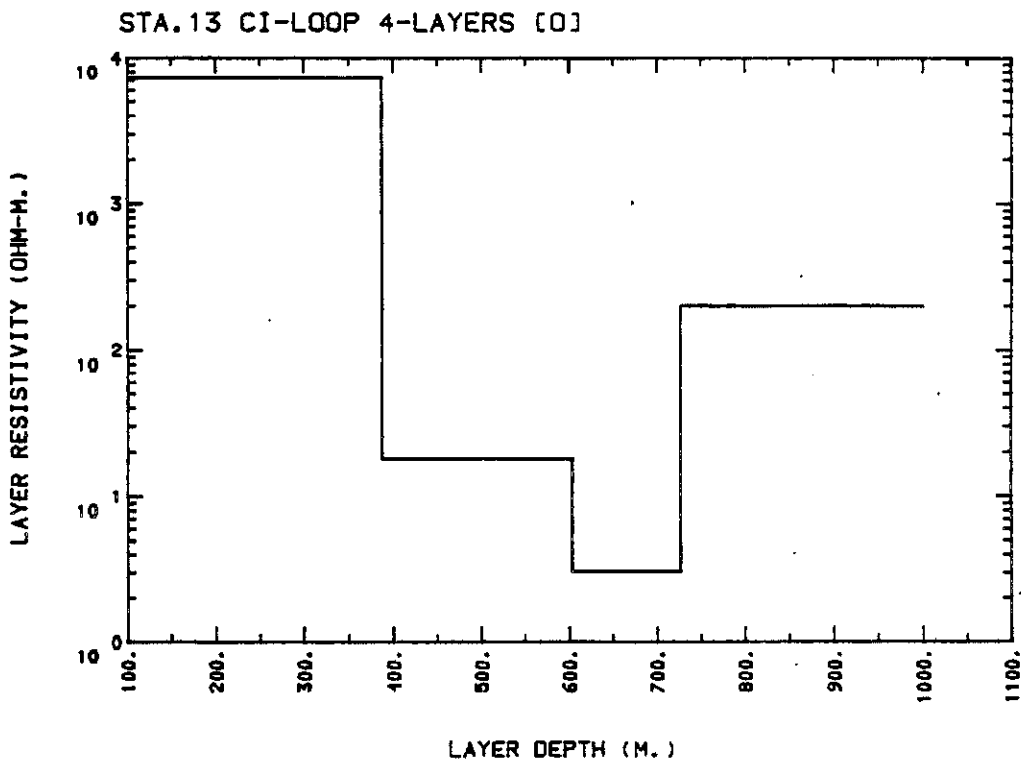
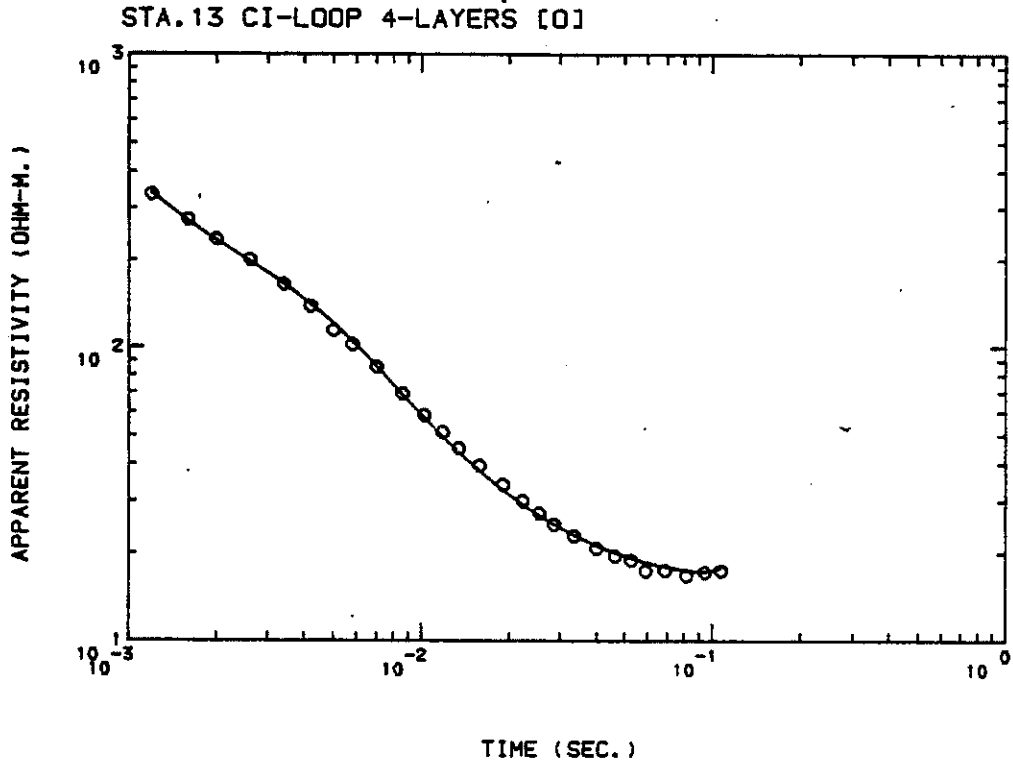
CORRELATION MATRIX

1	0.1000E+01					
2	-0.8710E-01	0.1000E+01				
3	-0.6451E-01	-0.6513E+00	0.1000E+01			
5	-0.9617E-01	0.9272E+00	-0.6290E+00	0.1000E+01		
6	-0.2112E+00	-0.6700E+00	0.8382E+00	-0.5692E+00	0.1000E+01	
7	0.8272E-01	0.6828E+00	-0.9800E+00	0.6361E+00	-0.8589E+00	0.1000E+01

**PARAM SOL. STD ERROR REL ERROR % ERROR **

1	0.1371E-03	0.1177E-03	0.8590E+00	0.8590E+02
2	0.5553E-01	0.1783E-02	0.3211E-01	0.3211E+01
3	0.3284E+00	0.9868E-02	0.3004E-01	0.3004E+01
5	0.3873E+03	0.1836E-02	0.4740E-05	0.4740E-03
6	0.2157E+03	0.4278E-02	0.1983E-04	0.1983E-02
7	0.1238E+03	0.1294E-01	0.1045E-03	0.1045E-01

PARAMETER NAME	FINAL SOLUTION	RESISTIVITY	LAYER DEPTH
1 SIGMA(1) =	0.13707062E-03	1 0.72955098E+04	
2 SIGMA(2) =	0.55533759E-01	2 0.18007065E+02	
3 SIGMA(3) =	0.32843721E+00	3 0.30447221E+01	
4 SIGMA(4) =	0.49999999E-02	4 0.20000000E+03	
5 THICK(1) =	0.38725140E+03		1 0.38725140E+03
6 THICK(2) =	0.21574091E+03		2 0.60299231E+03
7 THICK(3) =	0.12377916E+03		3 0.72677148E+03
8 SHIFT =	0.10000000E+01		



<NLSTCI>: STA.14 CI-LOOP 4-LAYERS [P]
 MM= 4 A= 0.257950E+03
 PARAMETERS HELD FIXED: IB= 8

***** X-CONVERGENCE *****

I	OBS.Y(I)	CAL	RES	ZRES.ERR	X(I,1)
1	0.223000E+03	0.220487E+03	0.251E+01	0.113970E+01	0.800000E-03
2	0.166430E+03	0.166353E+03	0.768E-01	0.461745E-01	0.120000E-02
3	0.139170E+03	0.139562E+03	-0.392E+00	-0.280768E+00	0.160000E-02
4	0.122900E+03	0.124055E+03	-0.116E+01	-0.931294E+00	0.200000E-02
5	0.109720E+03	0.110810E+03	-0.109E+01	-0.983806E+00	0.260000E-02
6	0.101120E+03	0.101436E+03	-0.316E+00	-0.311971E+00	0.340000E-02
7	0.964250E+02	0.962432E+02	0.182E+00	0.188850E+00	0.420000E-02
8	0.932660E+02	0.931333E+02	0.133E+00	0.142474E+00	0.500000E-02
9	0.919840E+02	0.910027E+02	0.981E+00	0.107829E+01	0.580000E-02
10	0.884010E+02	0.883068E+02	0.942E-01	0.106726E+00	0.700000E-02
11	0.851950E+02	0.846778E+02	0.517E+00	0.610764E+00	0.860000E-02
12	0.812890E+02	0.815355E+02	-0.246E+00	-0.302301E+00	0.102000E-01
13	0.773450E+02	0.786518E+02	-0.131E+01	-0.166151E+01	0.118000E-01
14	0.747090E+02	0.754853E+02	-0.776E+00	-0.102841E+01	0.134000E-01
15	0.703780E+02	0.705682E+02	-0.190E+00	-0.269463E+00	0.158000E-01
16	0.649600E+02	0.652969E+02	-0.337E+00	-0.515961E+00	0.190000E-01
17	0.614990E+02	0.610585E+02	0.440E+00	0.721430E+00	0.222000E-01
18	0.586350E+02	0.573827E+02	0.125E+01	0.218239E+01	0.254000E-01
19	0.556030E+02	0.541717E+02	0.143E+01	0.264211E+01	0.286000E-01
20	0.506210E+02	0.502077E+02	0.413E+00	0.823088E+00	0.334000E-01
21	0.476680E+02	0.461189E+02	0.155E+01	0.335882E+01	0.398000E-01
22	0.452010E+02	0.431026E+02	0.210E+01	0.486830E+01	0.462000E-01
23	0.389720E+02	0.407007E+02	-0.173E+01	-0.424725E+01	0.526000E-01
24	0.374370E+02	0.386297E+02	-0.119E+01	-0.308759E+01	0.590000E-01

** RMSE= 0.12857440E+01

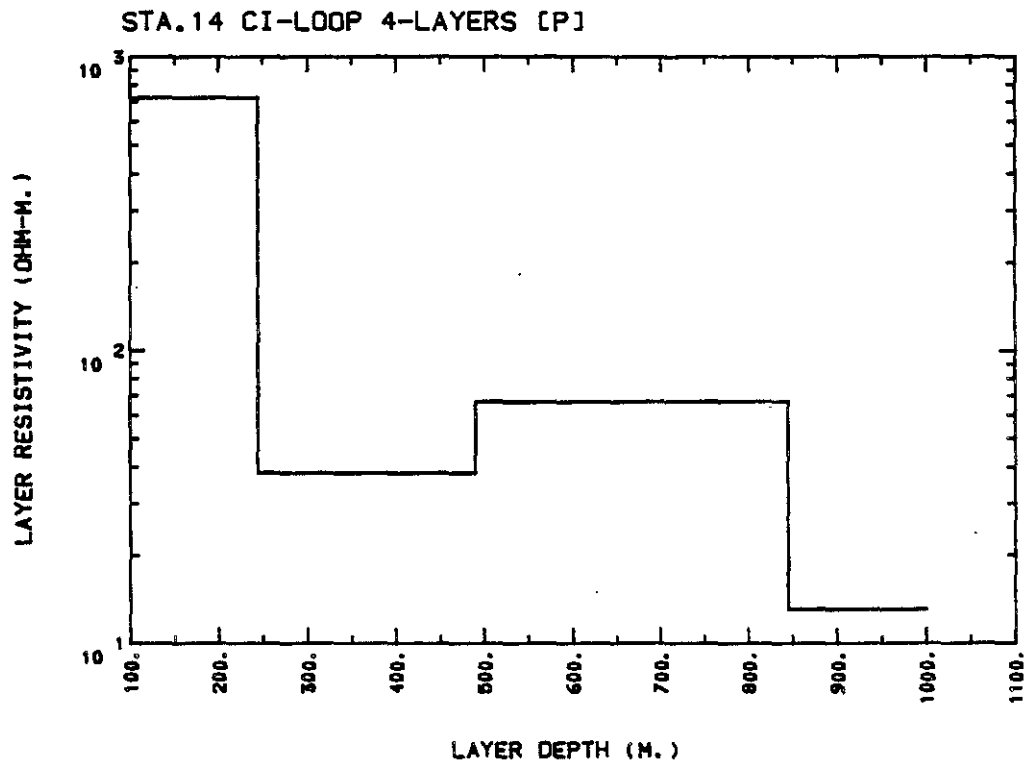
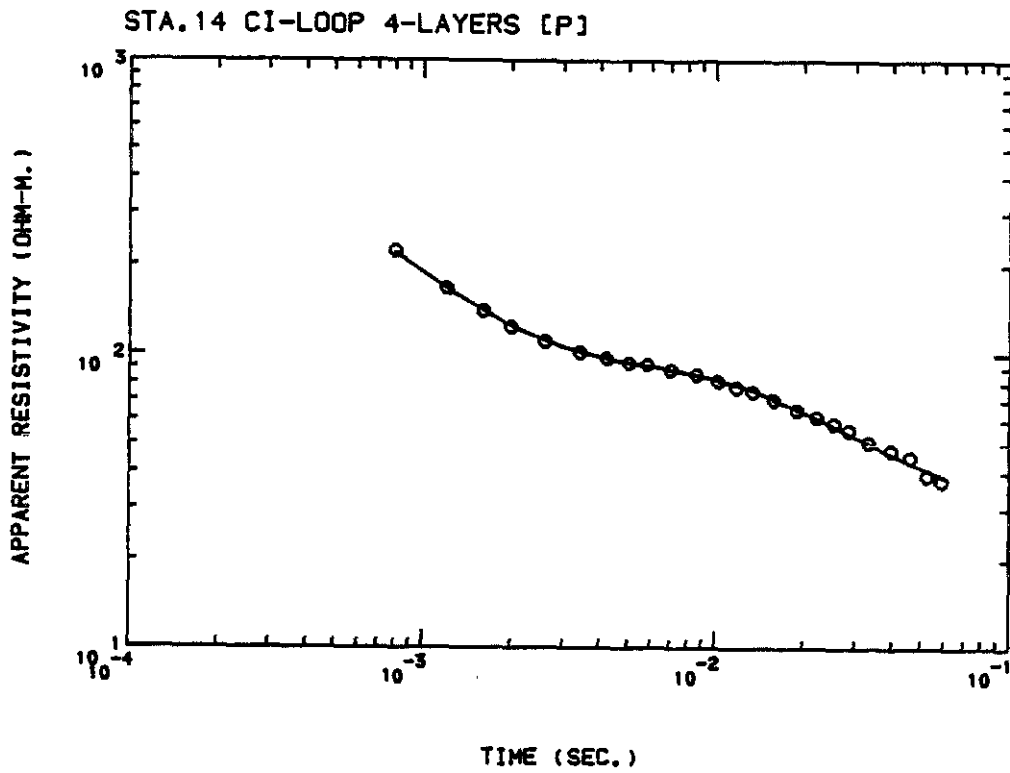
CORRELATION MATRIX

1	0.1000E+01							
2	-0.8405E+00	0.1000E+01						
3	-0.6011E-01	-0.4677E-01	0.1000E+01					
4	-0.8102E-01	0.1727E+00	-0.4865E+00	0.1000E+01				
5	-0.7237E+00	0.8685E+00	0.4018E-01	0.1575E+00	0.1000E+01			
6	0.7630E+00	-0.7440E+00	-0.3625E+00	0.2901E+00	-0.6243E+00	0.1000E+01		
7	-0.8218E+00	0.8005E+00	0.1123E+00	-0.5487E-01	0.6367E+00	-0.8325E+00	0.1000E+01	

**PARM SOL. STD ERROR REL ERROR % ERROR **

1	0.1387E-02	0.9611E-04	0.6930E-01	0.6930E+01
2	0.2622E-01	0.5611E-03	0.2140E-01	0.2140E+01
3	0.1500E-01	0.4886E-03	0.3258E-01	0.3258E+01
4	0.7655E-01	0.1489E-02	0.1946E-01	0.1946E+01
5	0.2450E+03	0.1395E-02	0.5693E-05	0.5693E-03
6	0.2448E+03	0.5662E-02	0.2313E-04	0.2313E-02
7	0.3553E+03	0.3188E-02	0.8973E-05	0.8973E-03

PARAMETER NAME	FINAL SOLUTION	RESISTIVITY	LAYER DEPTH
1 SIGMA(1) =	0.13868531E-02	1 0.72105695E+03	
2 SIGMA(2) =	0.26222950E-01	2 0.38134537E+02	
3 SIGMA(3) =	0.14995014E-01	3 0.66688835E+02	
4 SIGMA(4) =	0.76552927E-01	4 0.13062858E+02	
5 THICK(1) =	0.24498601E+03		1 0.24498601E+03
6 THICK(2) =	0.24478641E+03		2 0.48977243E+03
7 THICK(3) =	0.35530338E+03		3 0.84507581E+03
8 SHIFT =	0.10000000E+01		



<NLSTCI>: STA.15 CI-LOOP 3-LAYERS [Q]
 MM= 3 A= 0.257950E+03
 PARAMETERS HELD FIXED: IB= 6

***** X-CONVERGENCE *****

I	OBS.Y(I)	CAL	RES	ZRES.ERR	X(I,1)
1	0.209000E+03	0.208030E+03	0.970E+00	0.466420E+00	0.800000E-03
2	0.162770E+03	0.166746E+03	-0.398E+01	-0.238444E+01	0.120000E-02
3	0.133820E+03	0.134049E+03	-0.229E+00	-0.170563E+00	0.160000E-02
4	0.114250E+03	0.112871E+03	0.138E+01	0.122208E+01	0.200000E-02
5	0.929530E+02	0.912371E+02	0.172E+01	0.188075E+01	0.260000E-02
6	0.751230E+02	0.740117E+02	0.111E+01	0.150156E+01	0.340000E-02
7	0.640430E+02	0.633876E+02	0.655E+00	0.103399E+01	0.420000E-02
8	0.564140E+02	0.557624E+02	0.652E+00	0.116849E+01	0.500000E-02
9	0.501730E+02	0.502667E+02	-0.937E-01	-0.186391E+00	0.580000E-02
10	0.437510E+02	0.442947E+02	-0.544E+00	-0.122749E+01	0.700000E-02
11	0.378630E+02	0.385268E+02	-0.664E+00	-0.172292E+01	0.860000E-02
12	0.337160E+02	0.344198E+02	-0.704E+00	-0.204475E+01	0.102000E-01
13	0.308180E+02	0.313634E+02	-0.545E+00	-0.173898E+01	0.118000E-01
14	0.285590E+02	0.290093E+02	-0.450E+00	-0.155240E+01	0.134000E-01
15	0.260300E+02	0.263505E+02	-0.321E+00	-0.121647E+01	0.158000E-01
16	0.238000E+02	0.238663E+02	-0.663E-01	-0.277931E+00	0.190000E-01
17	0.222200E+02	0.221471E+02	0.729E-01	0.329088E+00	0.222000E-01
18	0.211870E+02	0.209438E+02	0.243E+00	0.116143E+01	0.254000E-01
19	0.205100E+02	0.200842E+02	0.426E+00	0.211987E+01	0.286000E-01
20	0.196650E+02	0.192158E+02	0.449E+00	0.233785E+01	0.334000E-01
21	0.187810E+02	0.185349E+02	0.246E+00	0.132752E+01	0.398000E-01
22	0.184380E+02	0.181643E+02	0.274E+00	0.150699E+01	0.462000E-01
23	0.179430E+02	0.179752E+02	-0.322E-01	-0.179103E+00	0.526000E-01
24	0.188390E+02	0.179148E+02	0.924E+00	0.515862E+01	0.590000E-01
25	0.179380E+02	0.180429E+02	-0.105E+00	-0.581657E+00	0.686000E-01
26	0.182390E+02	0.184641E+02	-0.225E+00	-0.121893E+01	0.814000E-01
27	0.176290E+02	0.189816E+02	-0.135E+01	-0.712606E+01	0.942000E-01

** RMSERR= 0.11464461E+01

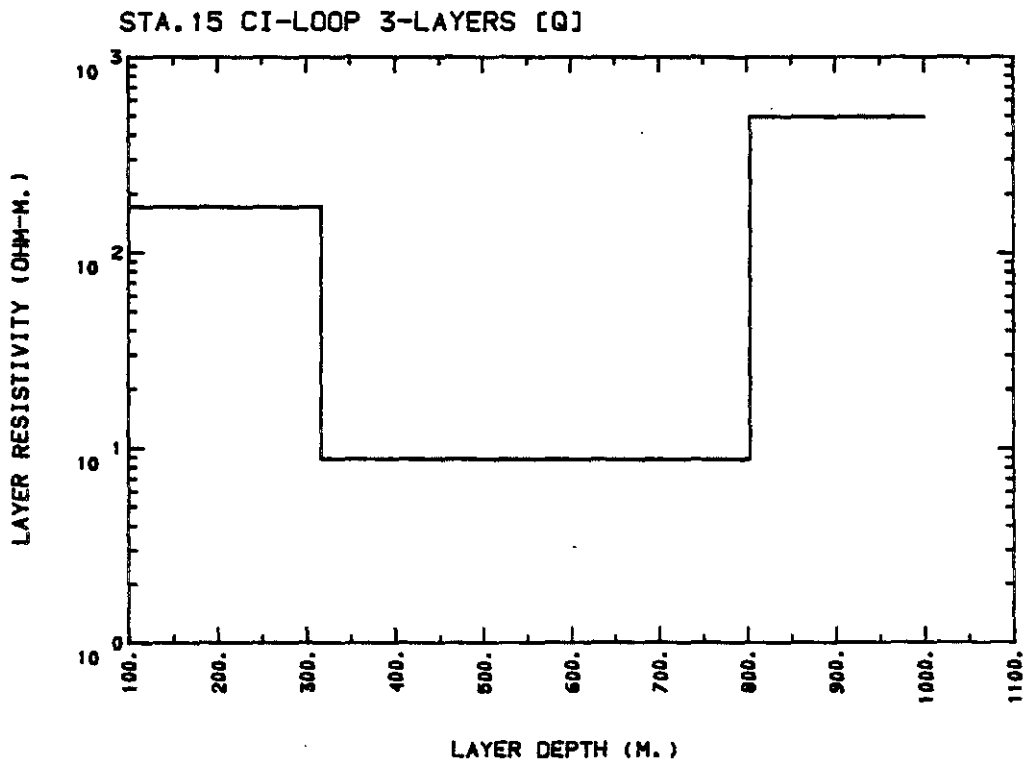
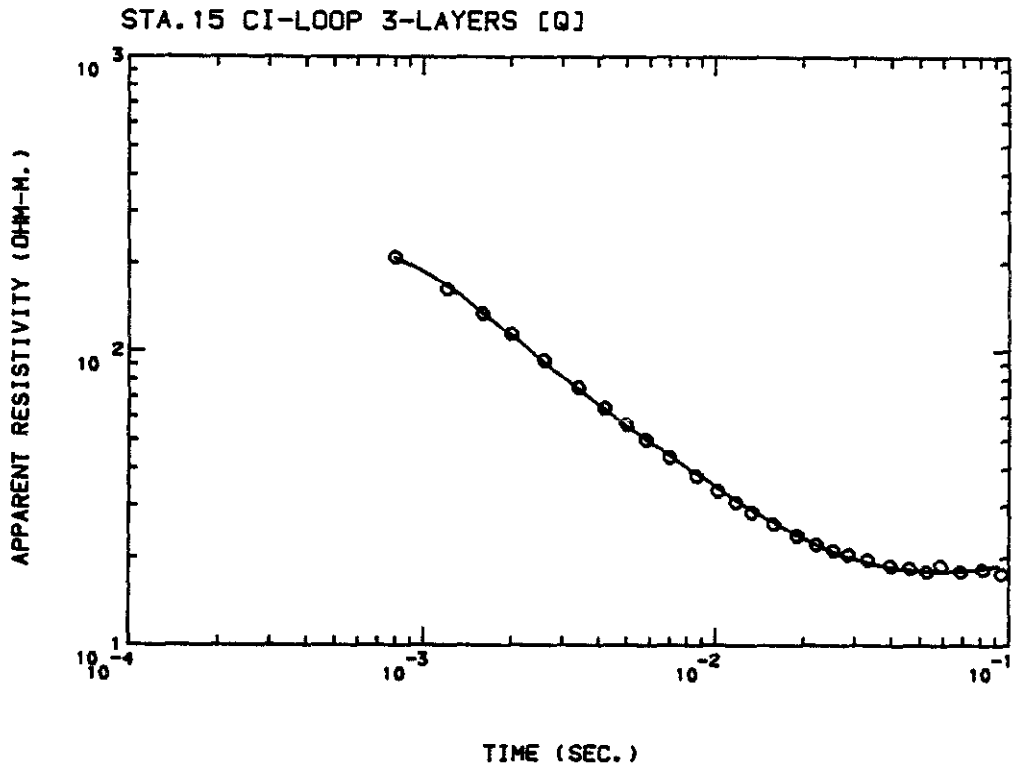
CORRELATION MATRIX

1	0.1000E+01				
2	0.1718E+00	0.1000E+01			
3	-0.1344E+00	0.3209E+00	0.1000E+01		
4	0.5836E+00	0.3224E+00	-0.5045E-01	0.1000E+01	
5	-0.3950E-01	-0.5679E+00	-0.3768E+00	-0.1310E+00	0.1000E+01

**PARAM SOL. STD ERROR REL ERROR % ERROR **

1	0.5841E-02	0.1410E-03	0.2413E-01	0.2413E+01
2	0.1131E+00	0.6765E-03	0.5980E-02	0.5980E+00
3	0.2028E-02	0.3500E-03	0.1726E+00	0.1726E+02
4	0.3167E+03	0.7325E-03	0.2313E-05	0.2313E-03
5	0.4867E+03	0.5153E-02	0.1059E-04	0.1059E-02

PARAMETER NAME	FINAL SOLUTION	RESISTIVITY	LAYER DEPTH
1 SIGMA(1) =	0.58406172E-02	1 0.17121478E+03	
2 SIGMA(2) =	0.11312653E+00	2 0.88396597E+01	
3 SIGMA(3) =	0.20281947E-02	3 0.49304932E+03	
4 THICK(1) =	0.31672543E+03		1 0.31672543E+03
5 THICK(2) =	0.48672043E+03		2 0.80344586E+03
6 SHIFT =	0.10000000E+01		



<NLSTCI>: STA.16 CI-LOOP 3-LAYERS [R]

MM= 3 A= 0.257950E+03

PARAMETERS HELD FIXED: IB= 6

***** X-CONVERGENCE *****

I	OBS.Y(I)	CAL	RES	%RES.ERR	X(I,1)
1	0.860000E+03	0.823274E+03	0.367E+02	0.446096E+01	0.800000E-03
2	0.650000E+03	0.675577E+03	-0.256E+02	-0.378597E+01	0.120000E-02
3	0.532810E+03	0.554936E+03	-0.221E+02	-0.398713E+01	0.160000E-02
4	0.465370E+03	0.465213E+03	0.157E+00	0.338229E-01	0.200000E-02
5	0.383860E+03	0.378837E+03	0.502E+01	0.132594E+01	0.260000E-02
6	0.326710E+03	0.310495E+03	0.162E+02	0.522240E+01	0.340000E-02
7	0.273050E+03	0.264937E+03	0.811E+01	0.306206E+01	0.420000E-02
8	0.234310E+03	0.234920E+03	-0.610E+00	-0.259683E+00	0.500000E-02
9	0.216450E+03	0.212787E+03	0.366E+01	0.172163E+01	0.580000E-02
10	0.186250E+03	0.187671E+03	-0.142E+01	-0.756945E+00	0.700000E-02
11	0.161770E+03	0.164919E+03	-0.315E+01	-0.190954E+01	0.860000E-02
12	0.148030E+03	0.148854E+03	-0.824E+00	-0.553270E+00	0.102000E-01
13	0.133880E+03	0.136711E+03	-0.283E+01	-0.207101E+01	0.118000E-01
14	0.125850E+03	0.127213E+03	-0.136E+01	-0.107150E+01	0.134000E-01
15	0.114590E+03	0.116211E+03	-0.162E+01	-0.139460E+01	0.158000E-01
16	0.106160E+03	0.105431E+03	0.729E+00	0.691269E+00	0.190000E-01
17	0.952300E+02	0.974417E+02	-0.221E+01	-0.226974E+01	0.222000E-01
18	0.948140E+02	0.911965E+02	0.362E+01	0.396669E+01	0.254000E-01
19	0.879320E+02	0.861493E+02	0.178E+01	0.206931E+01	0.286000E-01
20	0.816140E+02	0.802243E+02	0.139E+01	0.173223E+01	0.334000E-01
21	0.808710E+02	0.743662E+02	0.650E+01	0.874701E+01	0.398000E-01

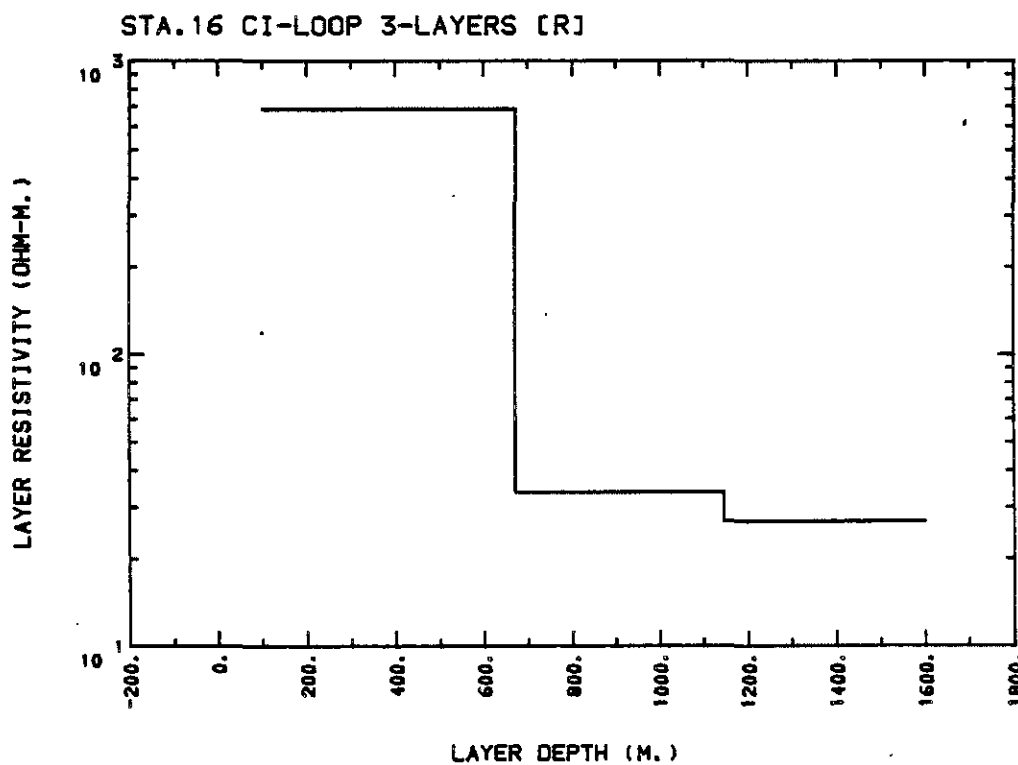
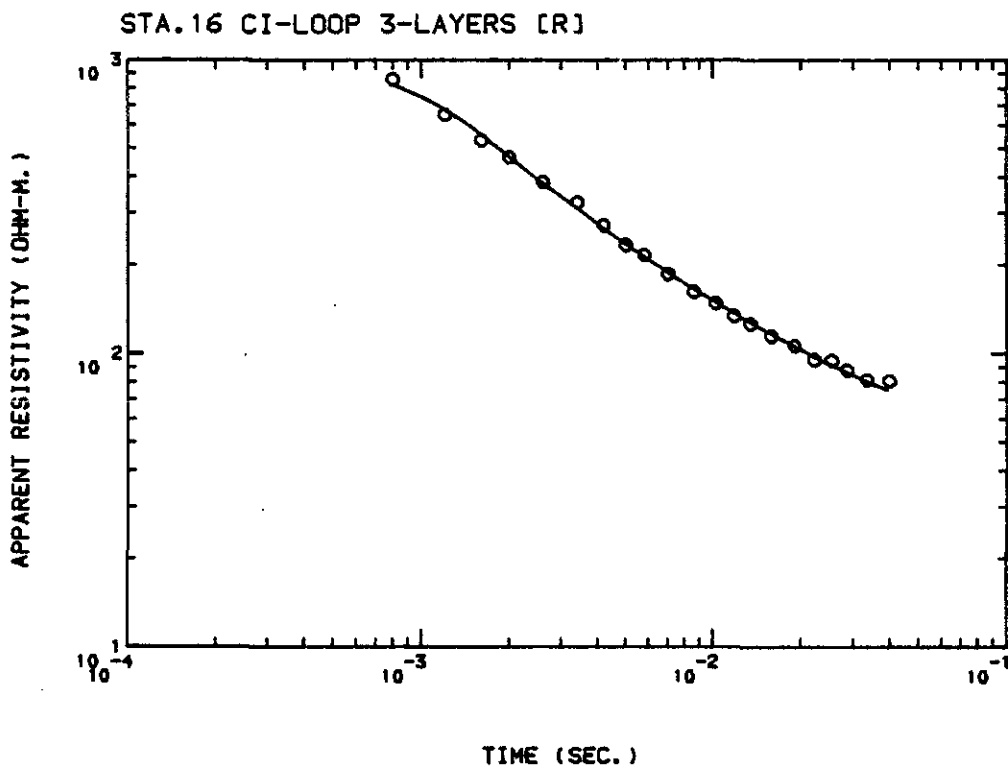
** RMSERR= 0.13581666E+02

CORRELATION MATRIX

1	0.1000E+01				
2	-0.1491E+00	0.1000E+01			
3	0.4920E+00	-0.4839E+00	0.1000E+01		
4	-0.4194E+00	0.4695E+00	-0.5914E+00	0.1000E+01	
5	-0.9845E-01	-0.3540E+00	0.3004E+00	-0.3777E+00	0.1000E+01

**P	PARAM SOL.	STD ERROR	REL ERROR	% ERROR	**
1	0.1458E-02	0.6281E-04	0.4308E-01	0.4308E+01	
2	0.2966E-01	0.6720E-03	0.2265E-01	0.2265E+01	
3	0.3725E-01	0.2276E-02	0.6110E-01	0.6110E+01	
4	0.6723E+03	0.2173E-02	0.3232E-05	0.3232E-03	
5	0.4730E+03	0.1735E-01	0.3668E-04	0.3668E-02	

PARAMETER NAME	FINAL SOLUTION	RESISTIVITY	LAYER DEPTH
1 SIGMA(1) =	0.14579695E-02	1 0.68588538E+03	
2 SIGMA(2) =	0.29664695E-01	2 0.33710106E+02	
3 SIGMA(3) =	0.37248880E-01	3 0.26846445E+02	
4 THICK(1) =	0.67233002E+03		1 0.67233002E+03
5 THICK(2) =	0.47295020E+03		2 0.11452803E+04
6 SHIFT =	0.10000000E+01		



<NLSTCI>: STA.17 CI-LOOP 4-LAYERS [S]
 MM= 4 A= 0.257950E+03
 PARAMETERS HELD FIXED: IB= 8
 ***** X-CONVERGENCE *****

I	OBS.Y(I)	CAL	RES	ZRES.ERR	X(I,1)
1	0.441000E+03	0.443622E+03	-0.262E+01	-0.591094E+00	0.800000E-03
2	0.357040E+03	0.354288E+03	0.275E+01	0.776660E+00	0.120000E-02
3	0.300510E+03	0.298268E+03	0.224E+01	0.751798E+00	0.160000E-02
4	0.254520E+03	0.258397E+03	-0.388E+01	-0.150035E+01	0.200000E-02
5	0.216780E+03	0.217363E+03	-0.583E+00	-0.268324E+00	0.260000E-02
6	0.181140E+03	0.182309E+03	-0.117E+01	-0.641181E+00	0.340000E-02
7	0.154880E+03	0.154002E+03	0.878E+00	0.570116E+00	0.420000E-02
8	0.132600E+03	0.133022E+03	-0.422E+00	-0.317044E+00	0.500000E-02
9	0.118650E+03	0.116917E+03	0.173E+01	0.148257E+01	0.580000E-02
10	0.985500E+02	0.985764E+02	-0.264E-01	-0.268176E-01	0.700000E-02
11	0.821510E+02	0.816644E+02	0.487E+00	0.595866E+00	0.860000E-02
12	0.704310E+02	0.699792E+02	0.452E+00	0.645595E+00	0.102000E-01
13	0.621010E+02	0.616727E+02	0.428E+00	0.694452E+00	0.118000E-01
14	0.557140E+02	0.555041E+02	0.210E+00	0.378087E+00	0.134000E-01
15	0.485070E+02	0.487248E+02	-0.218E+00	-0.447071E+00	0.158000E-01
16	0.422380E+02	0.424471E+02	-0.209E+00	-0.492601E+00	0.190000E-01
17	0.379190E+02	0.380485E+02	-0.130E+00	-0.340488E+00	0.222000E-01
18	0.347970E+02	0.348558E+02	-0.588E-01	-0.168716E+00	0.254000E-01
19	0.318030E+02	0.324302E+02	-0.627E+00	-0.193399E+01	0.286000E-01
20	0.287140E+02	0.296821E+02	-0.968E+00	-0.326152E+01	0.334000E-01
21	0.271760E+02	0.270373E+02	0.139E+00	0.513174E+00	0.398000E-01
22	0.246620E+02	0.251503E+02	-0.488E+00	-0.194166E+01	0.462000E-01
23	0.231770E+02	0.237434E+02	-0.566E+00	-0.238548E+01	0.526000E-01
24	0.230020E+02	0.226432E+02	0.359E+00	0.158455E+01	0.590000E-01
25	0.209100E+02	0.213727E+02	-0.463E+00	-0.216488E+01	0.686000E-01
26	0.201550E+02	0.201121E+02	0.429E-01	0.213191E+00	0.814000E-01
27	0.194320E+02	0.191754E+02	0.257E+00	0.133795E+01	0.942000E-01

** RMSERR= 0.14708079E+01

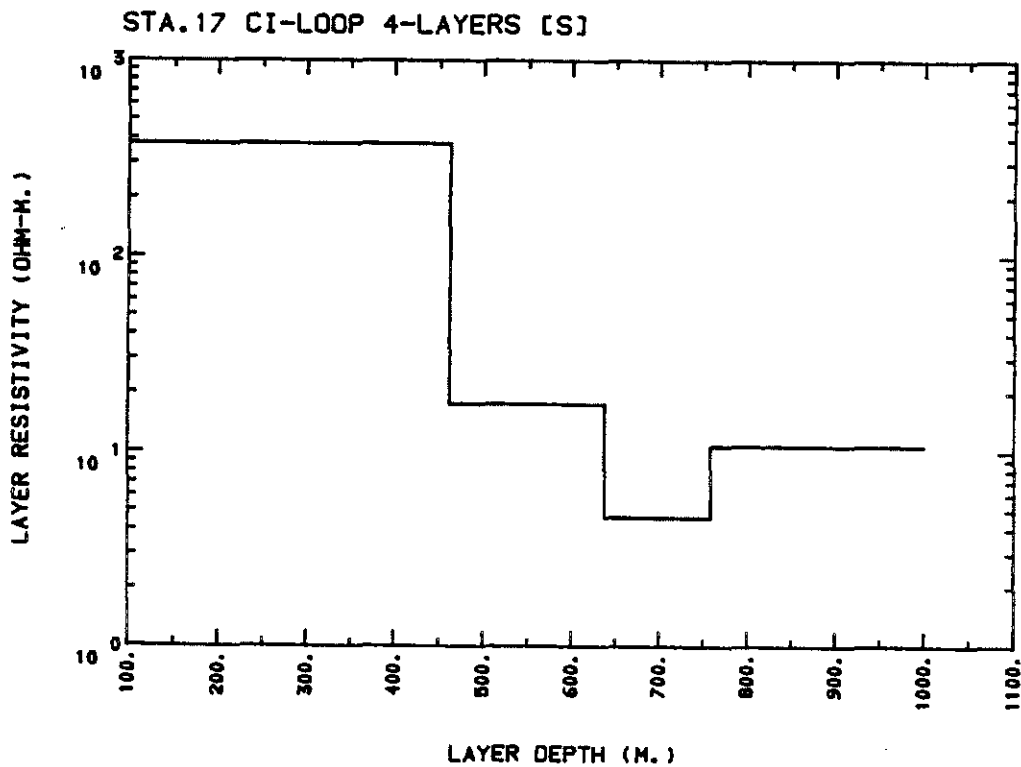
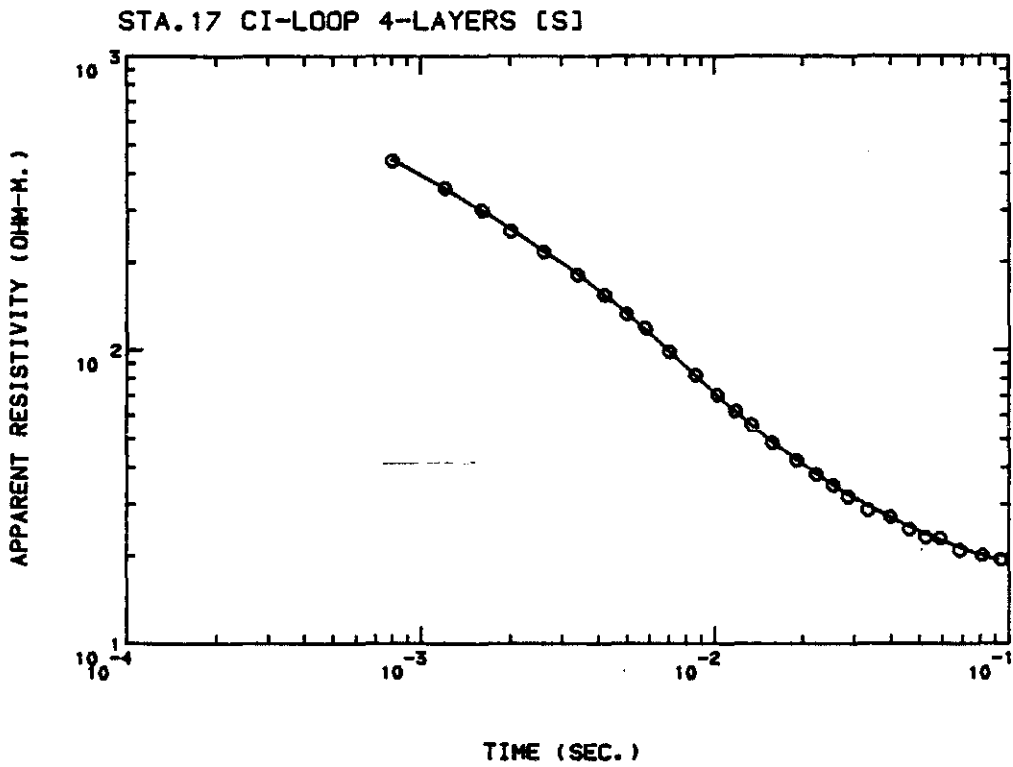
CORRELATION MATRIX

1	0.1000E+01								
2	-0.9786E-01	0.1000E+01							
3	-0.3491E+00	0.4395E+00	0.1000E+01						
4	-0.9962E-01	0.2783E+00	0.2877E+00	0.1000E+01					
5	0.2788E+00	0.6198E+00	0.7574E-01	-0.4534E-01	0.1000E+01				
6	-0.2478E+00	0.2958E+00	0.5256E+00	-0.8029E-01	0.2160E+00	0.1000E+01			
7	0.1621E+00	-0.5153E+00	-0.7274E+00	-0.5165E+00	-0.3174E+00	-0.3873E+00	0.1000E+01		

**PARAM SOL. STD ERROR REL ERROR % ERROR **

1	0.2666E-02	0.4866E-04	0.1825E-01	0.1825E+01
2	0.5743E-01	0.5854E-03	0.1019E-01	0.1019E+01
3	0.2178E+00	0.1920E-02	0.8818E-02	0.8818E+00
4	0.9336E-01	0.2316E-02	0.2481E-01	0.2481E+01
5	0.4615E+03	0.5475E-03	0.1186E-05	0.1186E-03
6	0.1762E+03	0.1747E-02	0.9914E-05	0.9914E-03
7	0.1204E+03	0.4063E-02	0.3375E-04	0.3375E-02

PARAMETER NAME	FINAL SOLUTION	RESISTIVITY	LAYER DEPTH
1 SIGMA(1) =	0.26660818E-02	1 0.37508228E+03	
2 SIGMA(2) =	0.57427209E-01	2 0.17413349E+02	
3 SIGMA(3) =	0.21778585E+00	3 0.45916667E+01	
4 SIGMA(4) =	0.93361445E-01	4 0.10711060E+02	
5 THICK(1) =	0.46151416E+03		1 0.46151416E+03
6 THICK(2) =	0.17619257E+03		2 0.63770673E+03
7 THICK(3) =	0.12037613E+03		3 0.75808289E+03
8 SHIFT =	0.10000000E+01		



<NLSTCI>: STA.18 CI-LOOP 4-LAYERS [T]

MM= 4 A= 0.171970E+03

PARAMETERS HELD FIXED: IB= 4 8

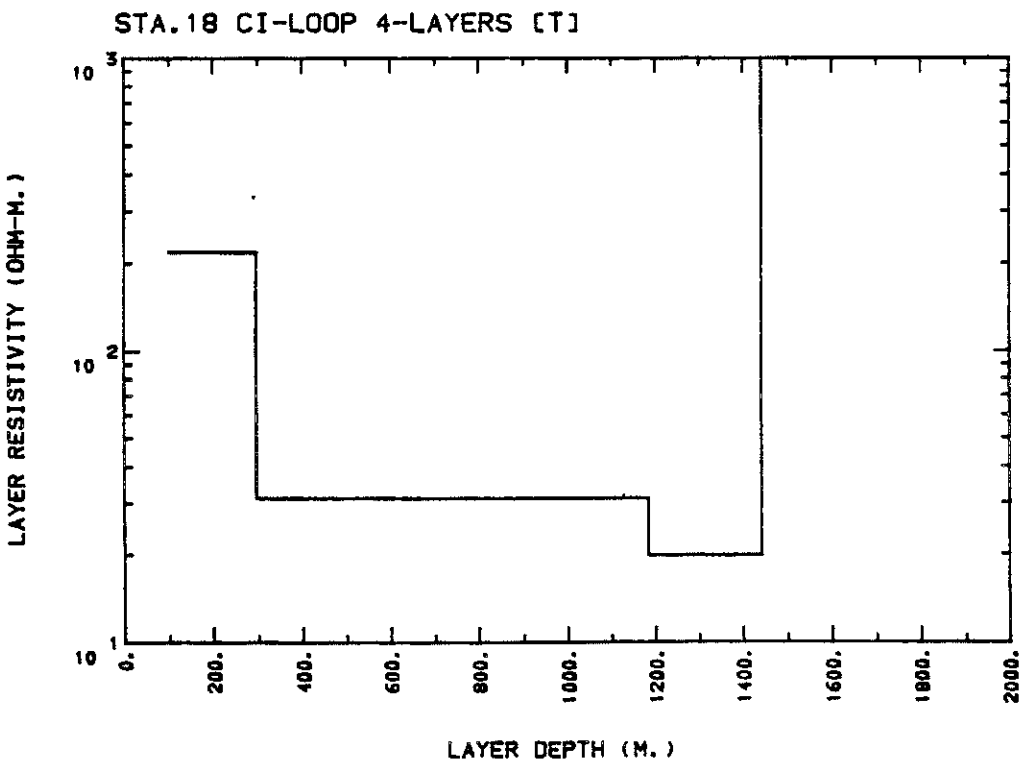
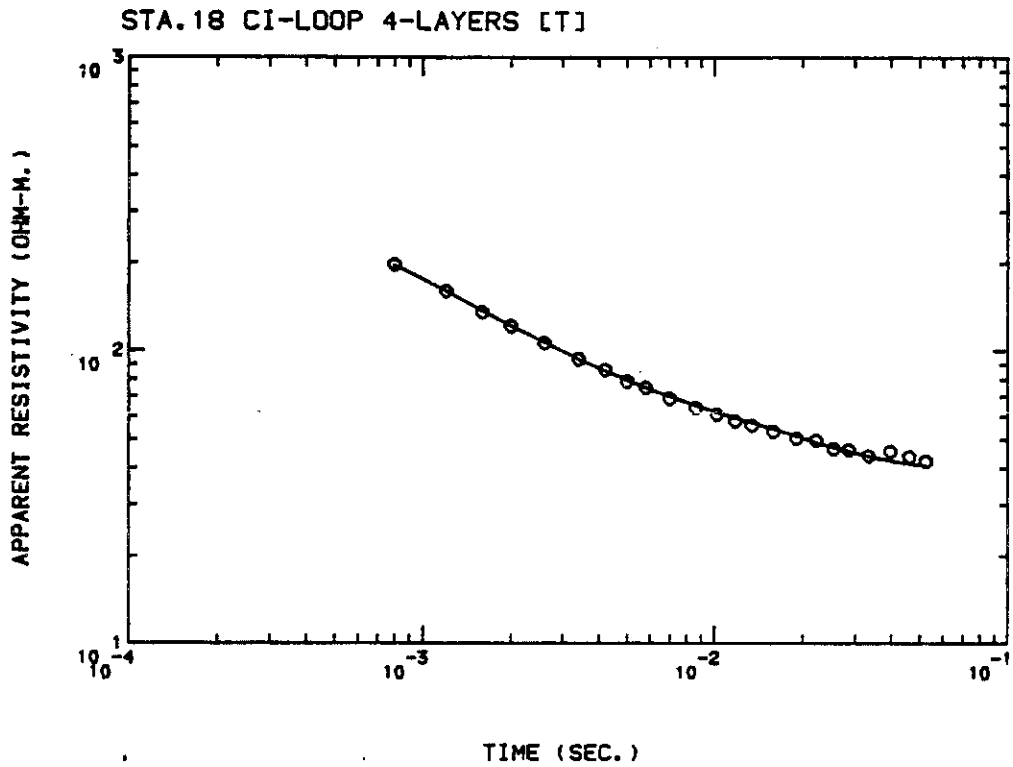
***** X-CONVERGENCE *****

++++++ INDEFINITE COVARIANCE MATRIX ++++++

I	OBS.Y(I)	CAL	RES	%RES.ERR	X(I,1)
1	0.197000E+03	0.196035E+03	0.965E+00	0.492171E+00	0.800000E-03
2	0.159490E+03	0.159044E+03	0.446E+00	0.280512E+00	0.120000E-02
3	0.134710E+03	0.135901E+03	-0.119E+01	-0.876725E+00	0.160000E-02
4	0.120620E+03	0.120575E+03	0.450E-01	0.373576E-01	0.200000E-02
5	0.105700E+03	0.106244E+03	-0.544E+00	-0.511999E+00	0.260000E-02
6	0.934430E+02	0.931765E+02	0.266E+00	0.285978E+00	0.340000E-02
7	0.859640E+02	0.850908E+02	0.873E+00	0.102616E+01	0.420000E-02
8	0.785960E+02	0.792281E+02	-0.632E+00	-0.797798E+00	0.500000E-02
9	0.748180E+02	0.747332E+02	0.848E-01	0.113410E+00	0.580000E-02
10	0.688840E+02	0.697916E+02	-0.908E+00	-0.130049E+01	0.700000E-02
11	0.639770E+02	0.651602E+02	-0.118E+01	-0.181578E+01	0.860000E-02
12	0.607840E+02	0.617745E+02	-0.990E+00	-0.160338E+01	0.102000E-01
13	0.575830E+02	0.590689E+02	-0.149E+01	-0.251552E+01	0.118000E-01
14	0.557690E+02	0.568569E+02	-0.109E+01	-0.191334E+01	0.134000E-01
15	0.531700E+02	0.541548E+02	-0.985E+00	-0.181844E+01	0.158000E-01
16	0.504450E+02	0.512505E+02	-0.806E+00	-0.157171E+01	0.190000E-01
17	0.496340E+02	0.487953E+02	0.839E+00	0.171882E+01	0.222000E-01
18	0.464850E+02	0.469110E+02	-0.426E+00	-0.908051E+00	0.254000E-01
19	0.460500E+02	0.454678E+02	0.582E+00	0.128051E+01	0.286000E-01
20	0.439840E+02	0.438460E+02	0.138E+00	0.314835E+00	0.334000E-01
21	0.456490E+02	0.422782E+02	0.337E+01	0.797279E+01	0.398000E-01
22	0.436540E+02	0.412724E+02	0.238E+01	0.577036E+01	0.462000E-01
23	0.421640E+02	0.406761E+02	0.149E+01	0.365784E+01	0.526000E-01

** RMSERR= 0.1388804E+01

PARAMETER NAME	FINAL SOLUTION	RESISTIVITY	LAYER DEPTH
1 SIGMA(1) =	0.45856675E-02	1 0.21807076E+03	
2 SIGMA(2) =	0.32152846E-01	2 0.31101446E+02	
3 SIGMA(3) =	0.50475188E-01	3 0.19811714E+02	
4 SIGMA(4) =	0.10000000E-02	4 0.99999994E+03	
5 THICK(1) =	0.29599426E+03		1 0.29599426E+03
6 THICK(2) =	0.88764911E+03		2 0.11836434E+04
7 THICK(3) =	0.25706021E+03		3 0.14407036E+04
8 SHIFT =	0.10000000E+01		



{NLSTCO}: STA.19 CO/SL-LOOP 3-LAYERS [V]
 MM= 3 A= 0.128970E+03
 PARAMETERS HELD FIXED: IB= 3 6

***** X-CONVERGENCE *****

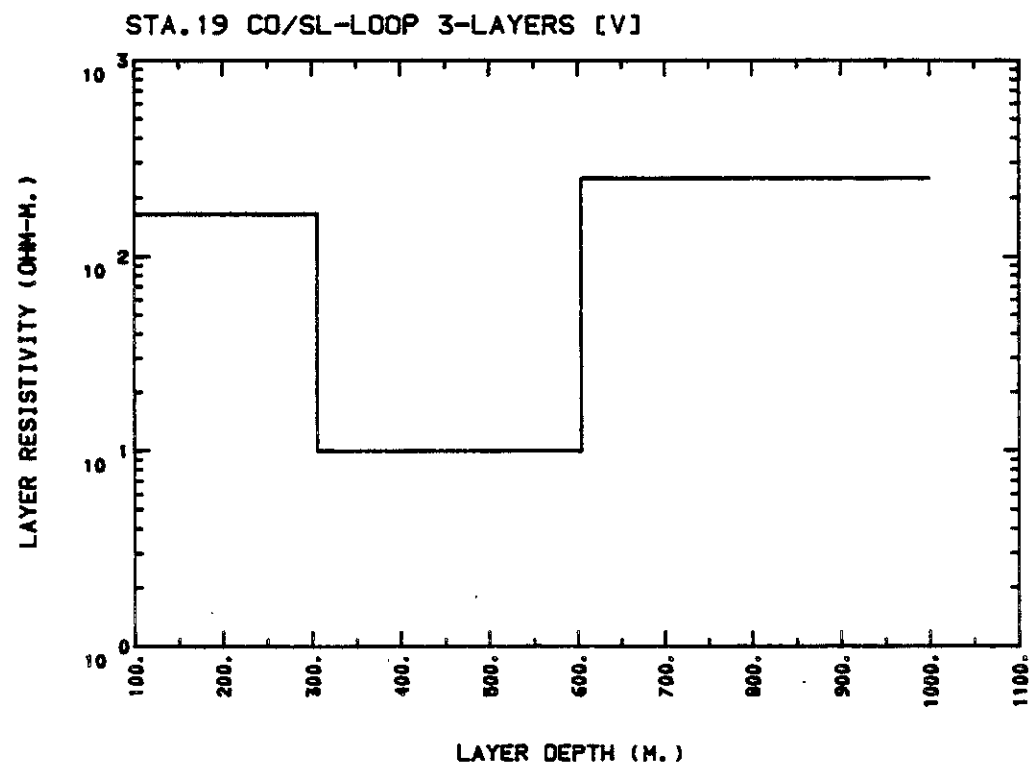
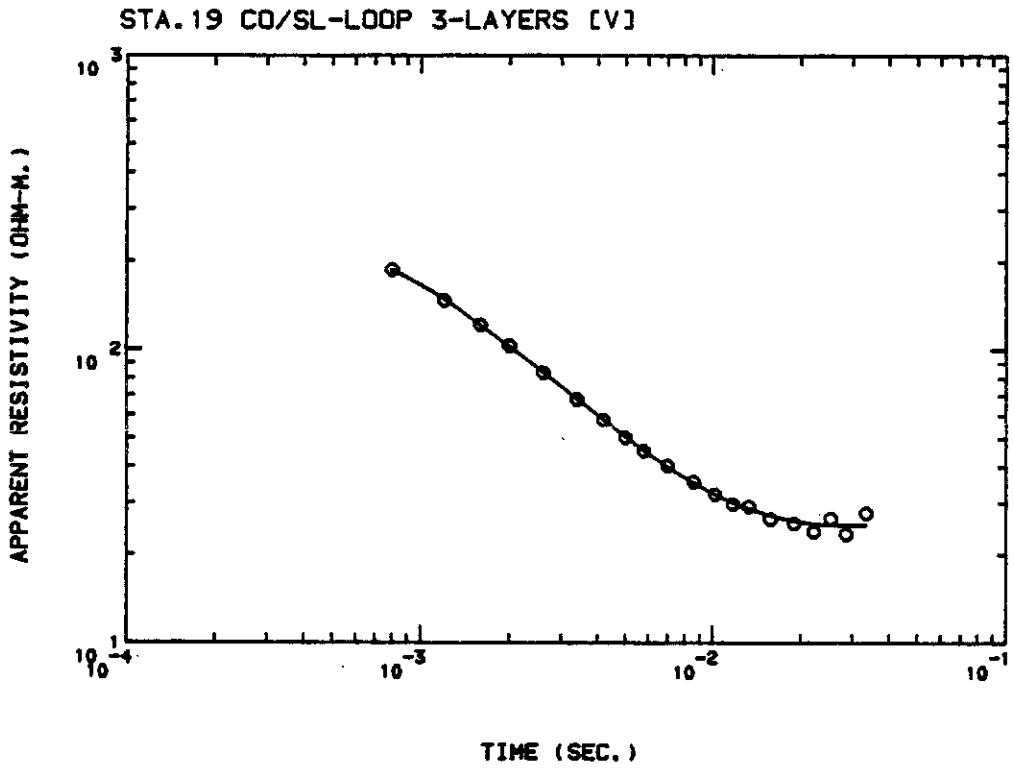
I	OBS.Y(I)	CAL	RES	%RES.ERR	X(I,1)
1	0.186870E+03	0.186530E+03	0.340E+00	0.182217E+00	0.800000E-03
2	0.147320E+03	0.148361E+03	-0.104E+01	-0.701442E+00	0.120000E-02
3	0.121330E+03	0.120681E+03	0.649E+00	0.537898E+00	0.160000E-02
4	0.102880E+03	0.102020E+03	0.860E+00	0.843410E+00	0.200000E-02
5	0.833940E+02	0.836142E+02	-0.220E+00	-0.263397E+00	0.260000E-02
6	0.677990E+02	0.679158E+02	-0.117E+00	-0.171908E+00	0.340000E-02
7	0.577470E+02	0.577447E+02	0.231E-02	0.399672E-02	0.420000E-02
8	0.502800E+02	0.505068E+02	-0.227E+00	-0.449144E+00	0.500000E-02
9	0.452050E+02	0.452944E+02	-0.894E-01	-0.197277E+00	0.580000E-02
10	0.402400E+02	0.398637E+02	0.376E+00	0.943969E+00	0.700000E-02
11	0.354520E+02	0.350959E+02	0.356E+00	0.101465E+01	0.860000E-02
12	0.320950E+02	0.320569E+02	0.381E-01	0.118914E+00	0.102000E-01
13	0.296750E+02	0.299940E+02	-0.319E+00	-0.106347E+01	0.118000E-01
14	0.291940E+02	0.285675E+02	0.626E+00	0.219304E+01	0.134000E-01
15	0.264140E+02	0.271372E+02	-0.723E+00	-0.266508E+01	0.158000E-01
16	0.255470E+02	0.259771E+02	-0.430E+00	-0.165563E+01	0.190000E-01
17	0.238960E+02	0.254124E+02	-0.152E+01	-0.596727E+01	0.222000E-01
18	0.265270E+02	0.251902E+02	0.134E+01	0.530693E+01	0.254000E-01
19	0.234610E+02	0.251362E+02	-0.168E+01	-0.666432E+01	0.286000E-01
20	0.276970E+02	0.252463E+02	0.245E+01	0.970721E+01	0.334000E-01

** RMSERR= 0.10263026E+01

CORRELATION MATRIX

1	0.1000E+01			
2	0.2533E-01	0.1000E+01		
4	0.1029E+00	0.3098E-01	0.1000E+01	
5	-0.6772E-01	-0.6223E+00	-0.4690E-01	0.1000E+01
**PARAM SOL. STD ERROR REL ERROR % ERROR **				
1	0.6104E-02	0.6214E-04	0.1018E-01	0.1018E+01
2	0.1008E+00	0.3433E-03	0.3408E-02	0.3408E+00
4	0.3062E+03	0.7580E-03	0.2475E-05	0.2475E-03
5	0.2977E+03	0.1527E-02	0.5131E-05	0.5131E-03

PARAMETER NAME	FINAL SOLUTION	RESISTIVITY	LAYER DEPTH
1 SIGMA(1) =	0.61035547E-02	1 0.16383894E+03	
2 SIGMA(2) =	0.10075790E+00	2 0.99247808E+01	
3 SIGMA(3) =	0.40039034E-02	3 0.24975627E+03	
4 THICK(1) =	0.30619376E+03		1 0.30619376E+03
5 THICK(2) =	0.29772055E+03		2 0.60391431E+03
6 SHIFT =	0.10000000E+01		



<NLSTCI>: STA.20 CI-LOOP 3-LAYERS [U]
 MM= 3 A= 0.257950E+03

PARAMETERS HELD FIXED: IB= 6

***** X-CONVERGENCE *****

I	OBS.Y(I)	CAL	RES	%RES.ERR	X(I,1)
1	0.137000E+04	0.131639E+04	0.536E+02	0.407271E+01	0.800000E-03
2	0.109840E+04	0.110825E+04	-0.985E+01	-0.889125E+00	0.120000E-02
3	0.890720E+03	0.900316E+03	-0.960E+01	-0.106586E+01	0.160000E-02
4	0.719380E+03	0.759062E+03	-0.397E+02	-0.522778E+01	0.200000E-02
5	0.637810E+03	0.610690E+03	0.271E+02	0.444081E+01	0.260000E-02
6	0.525650E+03	0.498124E+03	0.275E+02	0.552596E+01	0.340000E-02
7	0.426750E+03	0.424241E+03	0.251E+01	0.591417E+00	0.420000E-02
8	0.392980E+03	0.370929E+03	0.221E+02	0.594467E+01	0.500000E-02
9	0.342510E+03	0.332652E+03	0.986E+01	0.296354E+01	0.580000E-02
10	0.287000E+03	0.289811E+03	-0.281E+01	-0.969902E+00	0.700000E-02
11	0.249820E+03	0.248403E+03	0.142E+01	0.570595E+00	0.860000E-02
12	0.217380E+03	0.218886E+03	-0.151E+01	-0.687938E+00	0.102000E-01
13	0.192710E+03	0.196588E+03	-0.388E+01	-0.197272E+01	0.118000E-01
14	0.181990E+03	0.179152E+03	0.284E+01	0.158415E+01	0.134000E-01
15	0.159840E+03	0.159001E+03	0.839E+00	0.527595E+00	0.158000E-01
16	0.138180E+03	0.139346E+03	-0.117E+01	-0.836593E+00	0.190000E-01
17	0.122050E+03	0.124992E+03	-0.294E+01	-0.235354E+01	0.222000E-01
18	0.108530E+03	0.114038E+03	-0.551E+01	-0.483023E+01	0.254000E-01
19	0.107480E+03	0.105358E+03	0.212E+01	0.201432E+01	0.286000E-01
20	0.911760E+02	0.952573E+02	-0.408E+01	-0.428451E+01	0.334000E-01
21	0.882700E+02	0.854255E+02	0.284E+01	0.332980E+01	0.398000E-01

** RMSERR= 0.20655838E+02

CORRELATION MATRIX

1	0.1000E+01				
2	0.1133E+00	0.1000E+01			
3	0.1924E+00	-0.3652E+00	0.1000E+01		
4	0.3396E+00	0.2408E+00	-0.1160E+00	0.1000E+01	
5	-0.2212E-01	-0.6311E-01	-0.6540E-01	0.2493E+00	0.1000E+01

**PARAM SOL. STD ERROR REL ERROR % ERROR **

1	0.9697E-03	0.8434E-04	0.8697E-01	0.8697E+01
2	0.2906E-01	0.1141E-02	0.3928E-01	0.3928E+01
3	0.5684E-01	0.1311E-02	0.2306E-01	0.2306E+01
4	0.8526E+03	0.1802E-02	0.2113E-05	0.2113E-03
5	0.3567E+03	0.8052E-02	0.2257E-04	0.2257E-02

PARAMETER NAME	FINAL SOLUTION	RESISTIVITY	LAYER DEPTH
1 SIGMA(1) =	0.96972688E-03	1 0.10312181E+04	
2 SIGMA(2) =	0.29058617E-01	2 0.34413200E+02	
3 SIGMA(3) =	0.56836247E-01	3 0.17594406E+02	
4 THICK(1) =	0.85258997E+03		1 0.85258997E+03
5 THICK(2) =	0.35670697E+03		2 0.12092970E+04
6 SHIFT =	0.10000000E+01		

