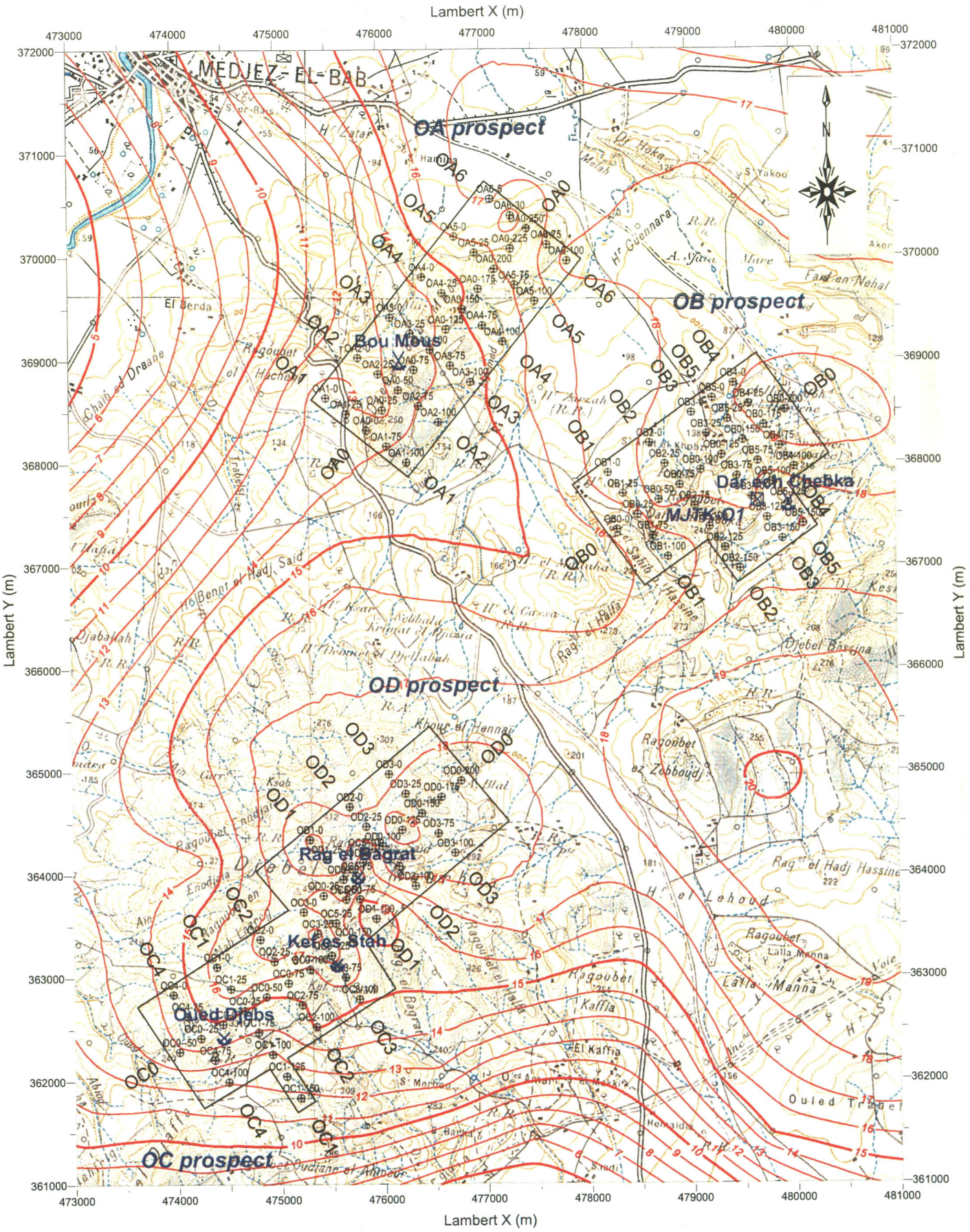


Legend

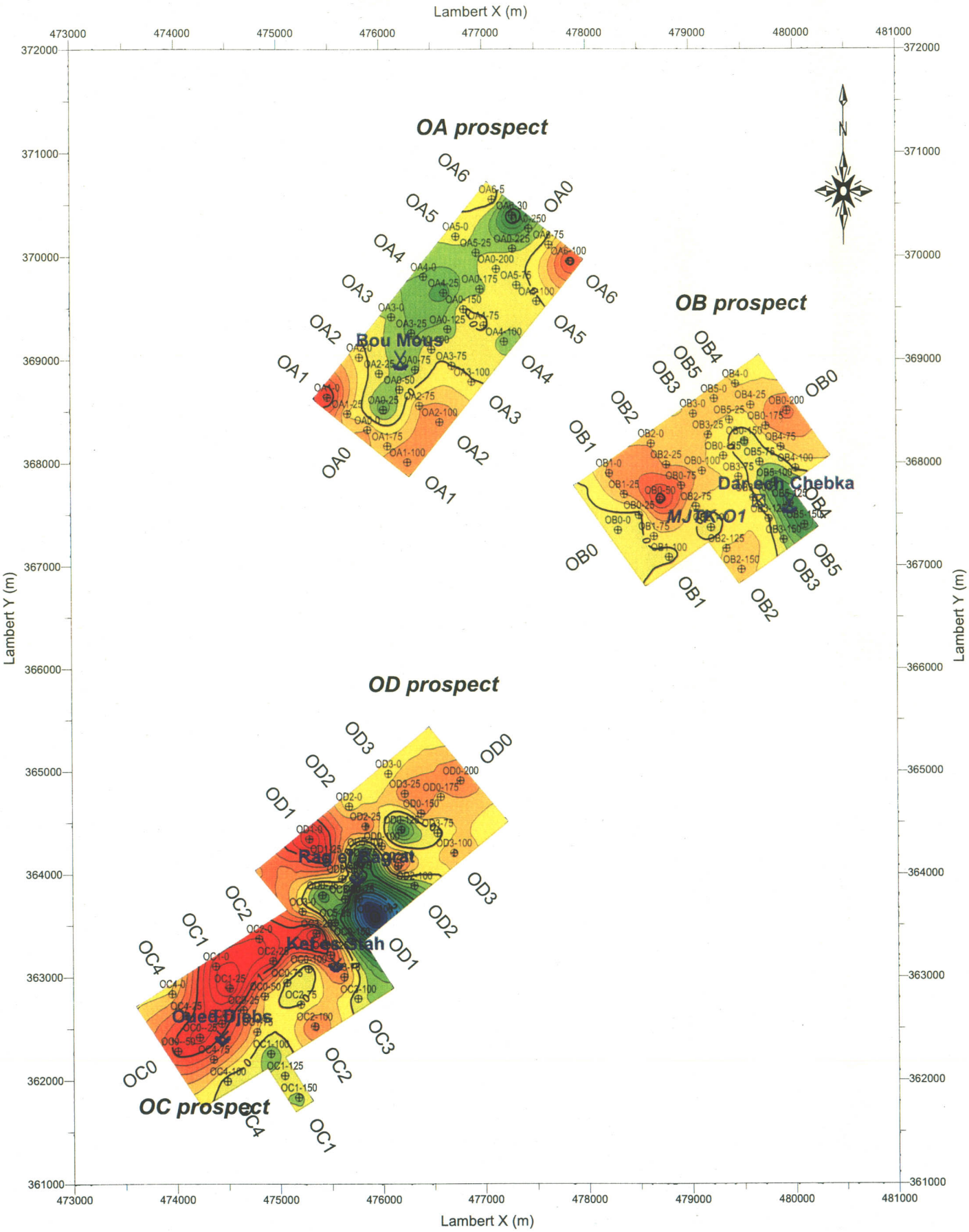
Survey Prospect

OB0-25 Gravity Station

Ancient Works

Diamond Drill-Hole

Figure 23 Bouguer anomaly map in Oued Jebs prospect (Density : 2.4g/cm³)



Legend

Survey Prospect

OB0-25 Gravity Station

Ancient Works

Diamond Drill-Hole

Residual Gravity (mgal)

-3.2 -2.8 -2.4 -2 -1.6 -1.2 -0.8 -0.4 0 0.4 0.8 1.2 1.6 2

Figure 24 Residual gravity map in Oued Jebs prospect

because of the location of the Triassic system in the northwestern end of the low anomaly and the presumption of the Triassic rising northwestwards from the geological structures.

The residual gravity distribution in the OC sub-prospect is characterized the high anomaly above 0.4 mgal extended in the northwestern side of the base line OC0. The fact that this high residual gravity anomaly corresponds to the Triassic systems suggests that this is related to Triassic dolomite estimated high-density in the laboratory test. The Oued Jebes old working in the southwest part of the sub-prospect and the Kef Lasfer old woking around the boundary with the OD sub-prospect are located in the south edge part of the high anomaly. The low residual gravity anomaly below 0 mgal stretches the northeastwards from the southwest end of the sub-prospect to the OC0-100 in the vicinity of the boundary with the OD sub-prospect. The low anomaly corresponds to the distribution of the tertiary systems, the Kef Lasfer old working is located in the northeastern end of it.

The residual gravity distribution in the OD sub-prospect is characterized the low anomaly below 0 mgal extended from the boundary with the OC sub-prospect to the southeast end of the survey line OC2 in the southwestern part of the sub-prospect. The low anomaly corresponds to the distribution of the cretaceous and tertiary systems, the Rag el Bagrat mineral indication is located within it. In both sides of this low residual gravity anomaly steep gravity gradients run in the NW-SE direction. It is supposed that the low residual gravity corresponds to the fall down part by faults. The high residual gravity anomaly exceeding 0.8 mgal related to the Triassic dolomite lies in the northwest side of the low anomaly such as the OC sub-prospect. It is inferred that the possible fault in the boundary with the OC sub-prospect thrust the high anomaly northwestwards.

④First Vertical Derivative Gravity (Figure 25)

In all sub-prospects anomalies of first vertical derivative gravity approximately correspond to those of residual gravity. The contours of 0 mgal/km indicating faults and boundaries of geological units are running inside the low residual gravity anomalies.

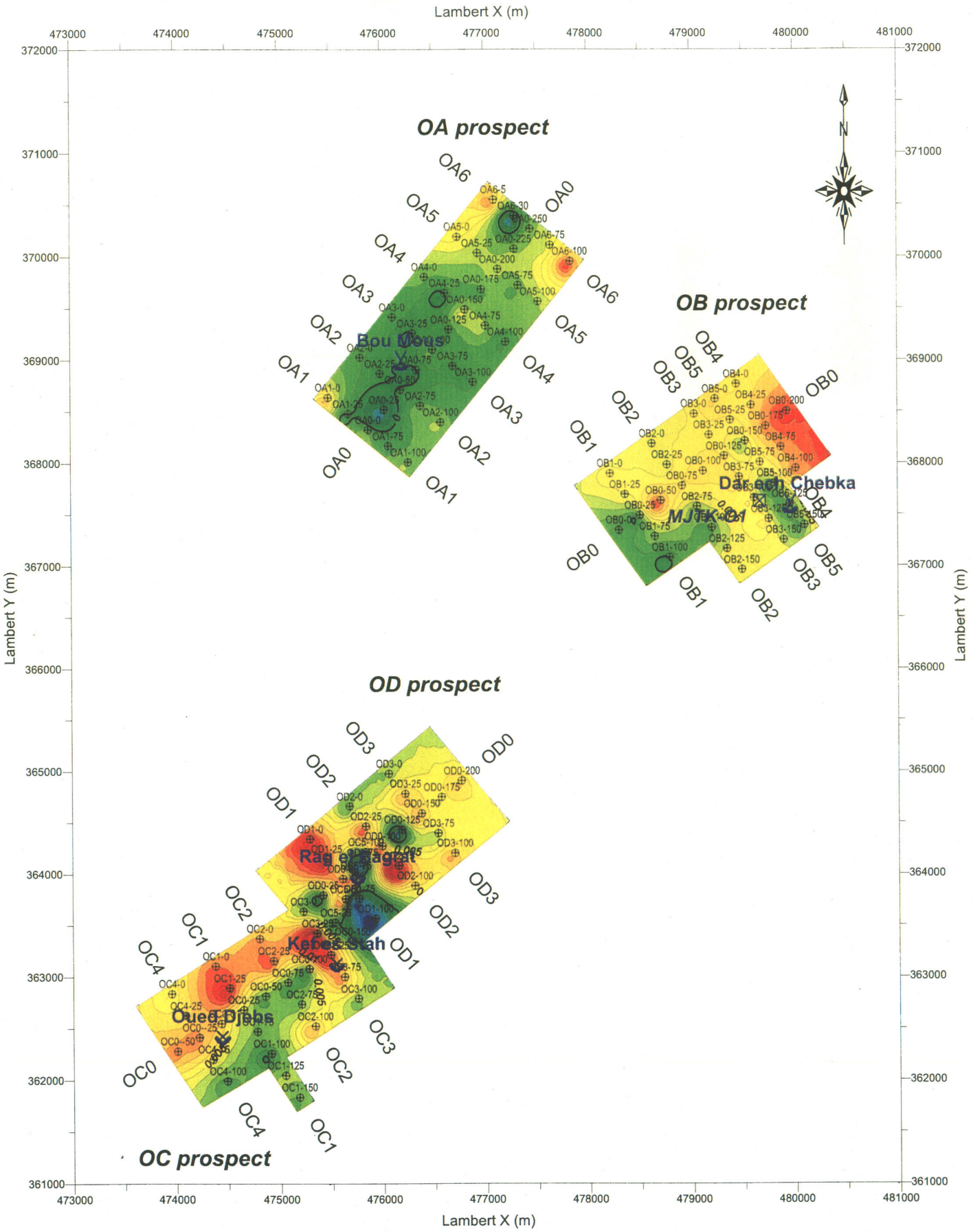
⑤Cross Section Analysis

In the cross section analysis of the Oued Jebes prospect, the tertiary system is suppose a gravity basement with density difference of 0.00 g/cm^3. It is assumed that the Cretaceous systems, the Tertiary systems and the Quaternary systems overly above the gravity basement and their density difference for the Triassic systems are decided.

The result of each profile is describes below.

・Cross Section OA0 (Figure 26)

This is a longitudinal section crosscutting the OA sub-prospect along the base line from the southwest to the northeast. The high-density layer with density difference of



Legend

Survey Prospect

Gravity Station

Ancient Works

Diamond Drill-Hole

Vertical First Derivative Gravity (mgal/km)

-0.015 -0.01 -0.005 0 0.005 0.01 0.015

Figure 25 Vertical first derivative gravity map in Oued Jebs prospect

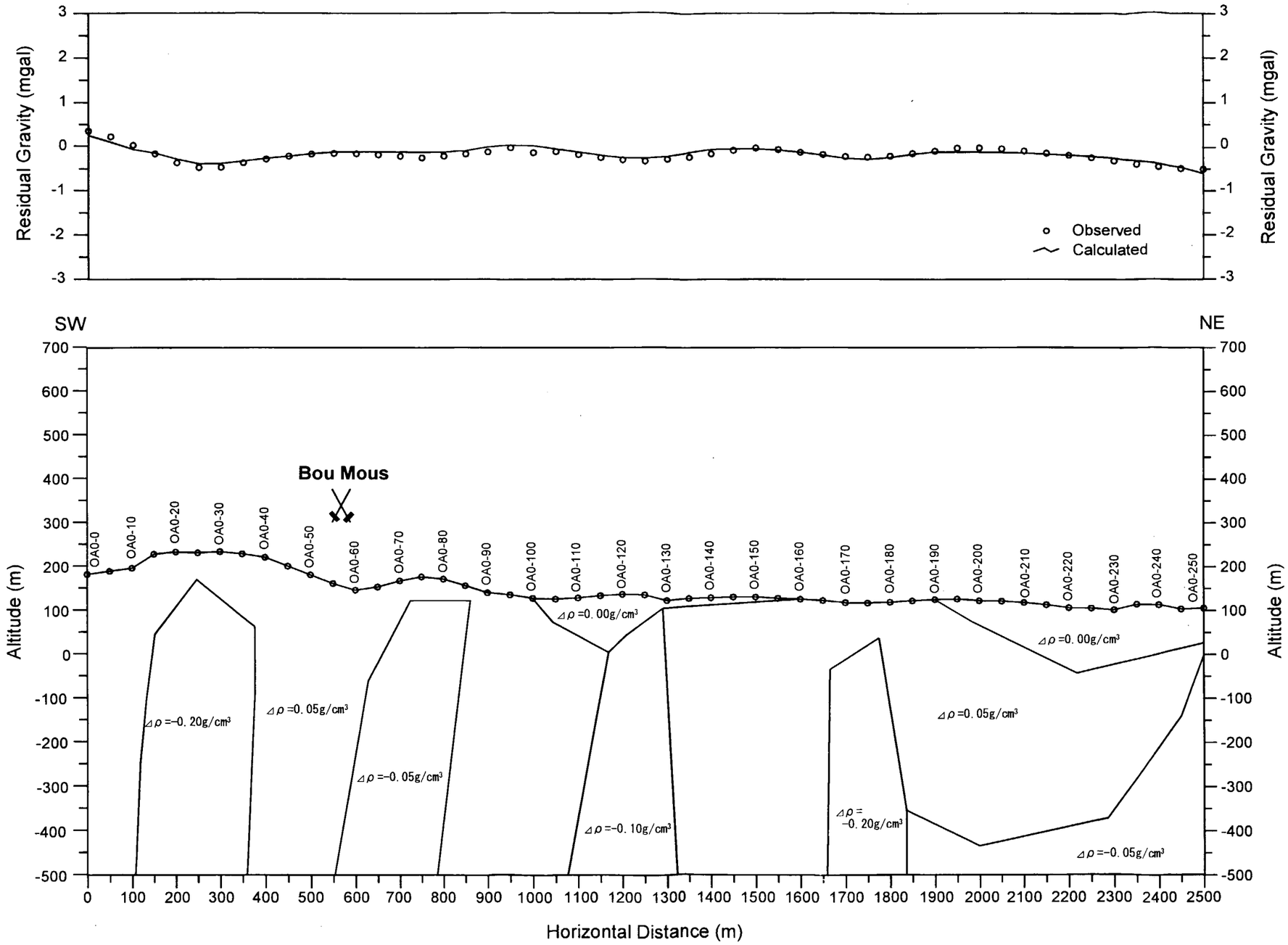


Figure 26
Result of 2-D Gravimetric analysis (Line OA0)
Scale : 10,000
February, 2002

0.05 g/cm^3, which may reflect Cretaceous systems extends almost all the section. Within this high-density layer four low-density layers rise from the deep to the shallow part such as veins around the stations OA0-30, OA-70, OA0-120 and OA0-180. Their outlines suggest that these low-density layers may reflect fractured zones intersecting the base line. The Bou Mouss old working lies between two low-density layers around the station OA0-60. The density differences of two surface layers from OA0-100 through OA0-160 and between OA0-190 and OA0-250 are 0.00 g/cm^3. The former may reflect the Tertiary system, and the latter may be the Triassic systems.

・Cross Section OA2 (Figure 27)

This is the southwestern cross section, traversing from the northwest to the southeast in the southwest part of the Bou Mouss hills. Such as the section OA0 the high-density layer with density difference of 0.05 g/cm^3, which may reflect Cretaceous systems extends almost all the section. The gravity basement with density difference of 0.00 g/cm^3, which may reflect the Triassic system, lies in the northwest end of the section.

・Cross Section OA3 (Figure 28)

This section runs from the northwest to the southeast in the central part of the Bou Mouss hills. The gravity basement with the density difference of 0.00 g/cm^3, which may reflect the Triassic systems, extends in the deep part of the section. Such as the cross section OA2 the low-density surface layer from the station OA3-10 through 30 is corresponded the Triassic systems. From the station OA3-40 to the southeast end of the section the high-density layer corresponded the Cretaceous systems is covered with low-density layer. The fact that the tertiary system is outcropped at the southeast end of the section leads possibly the supposition that the low-density layer is corresponded to the tertiary systems.

・Cross Section OA4 (Figure 29)

This section runs in the northeast of 500m apart from the section OA3 parallel. The low-density layers with density difference below 0.0 g/cm^3 that is corresponded the Triassic systems are distributed in the northwest side of the vicinity of the station OA4-40 near the axis of the Bou Mouss hills, the high-density layer with density difference of 0.05 g/cm^3 that may reflect the Cretaceous systems extends in the opposite side. In the southeast side of the station OA0-150 the high-density layer corresponded to the Cretaceous systems is covered with the density difference of -0.05 g/cm^3 that may reflect the Tertiary systems.

・Cross Section OB0 (Figure 30)

This is a longitudinal section crosscutting the OB sub-prospect along the base line from the southwest to the northeast in the foothill between Dar ech Chebka and Bou Rahal. This section is divided four parts. In the southwestern side of the station OB0-40 the gravity basement corresponded to the Triassic systems is covered with the

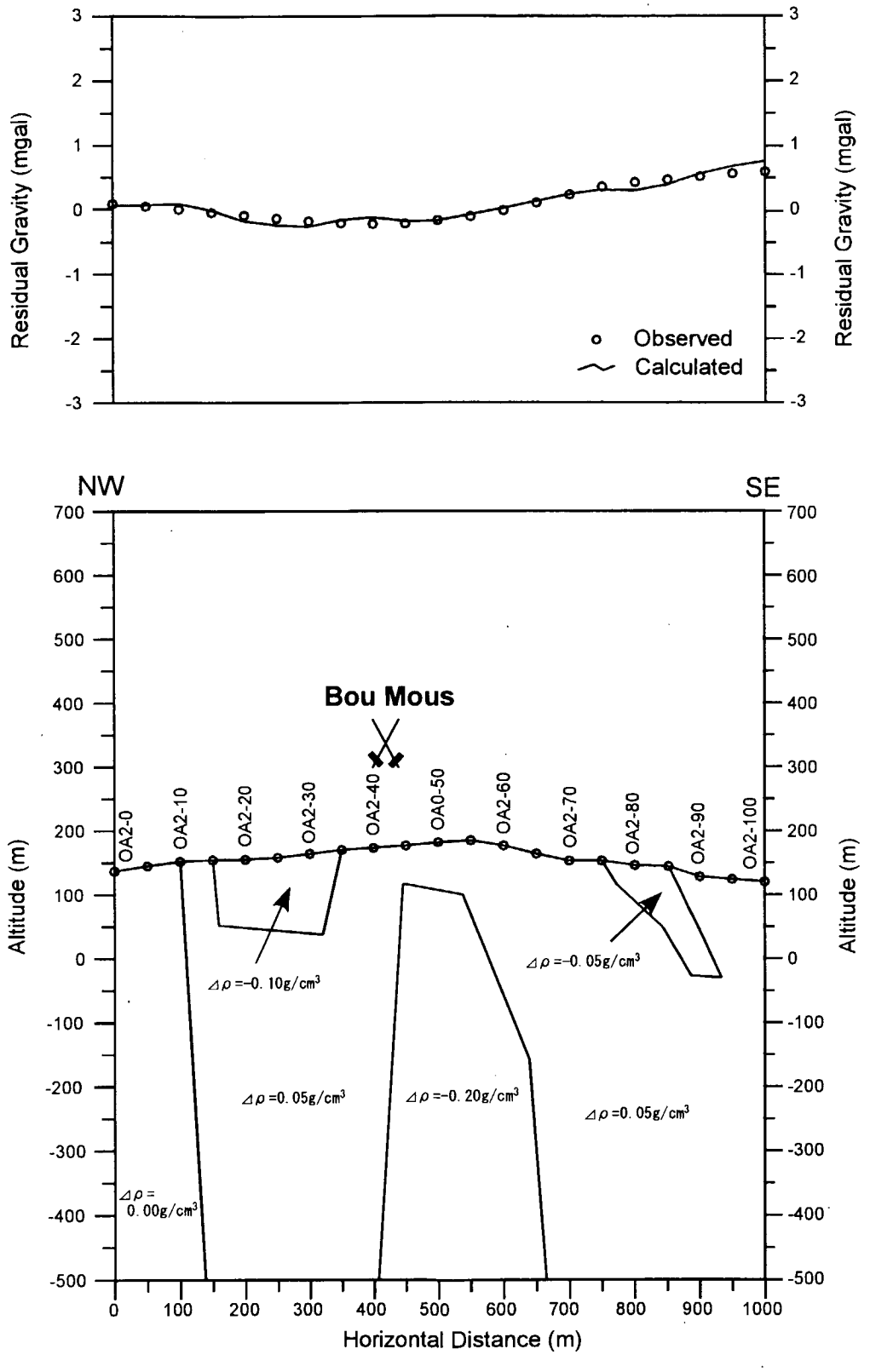


Figure 27
Result of 2-D Gravimetric analysis (Line OA2)
Scale : 10,000
February, 2002

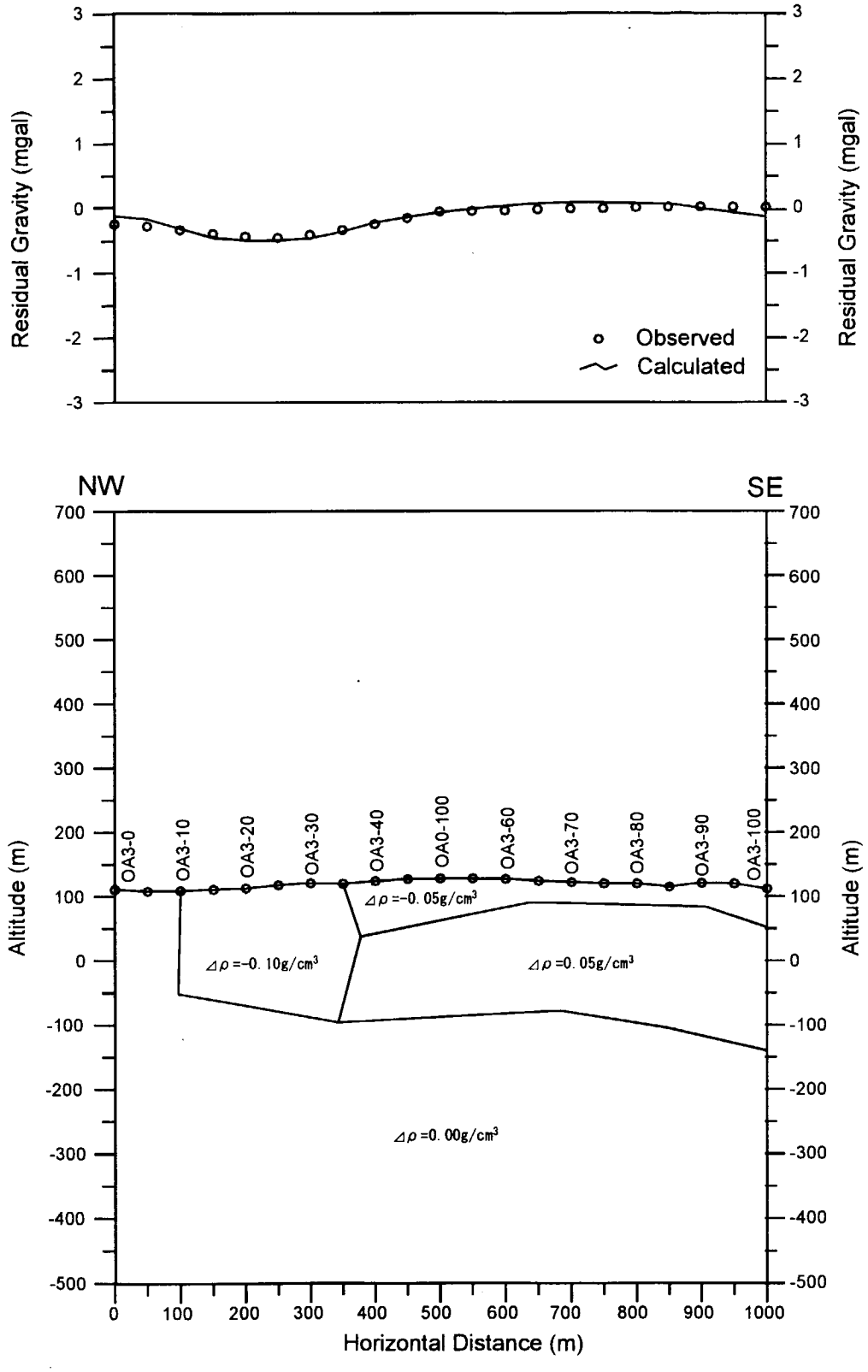


Figure 28
Result of 2-D Gravimetric analysis (Line OA3)
Scale : 10,000
February, 2002

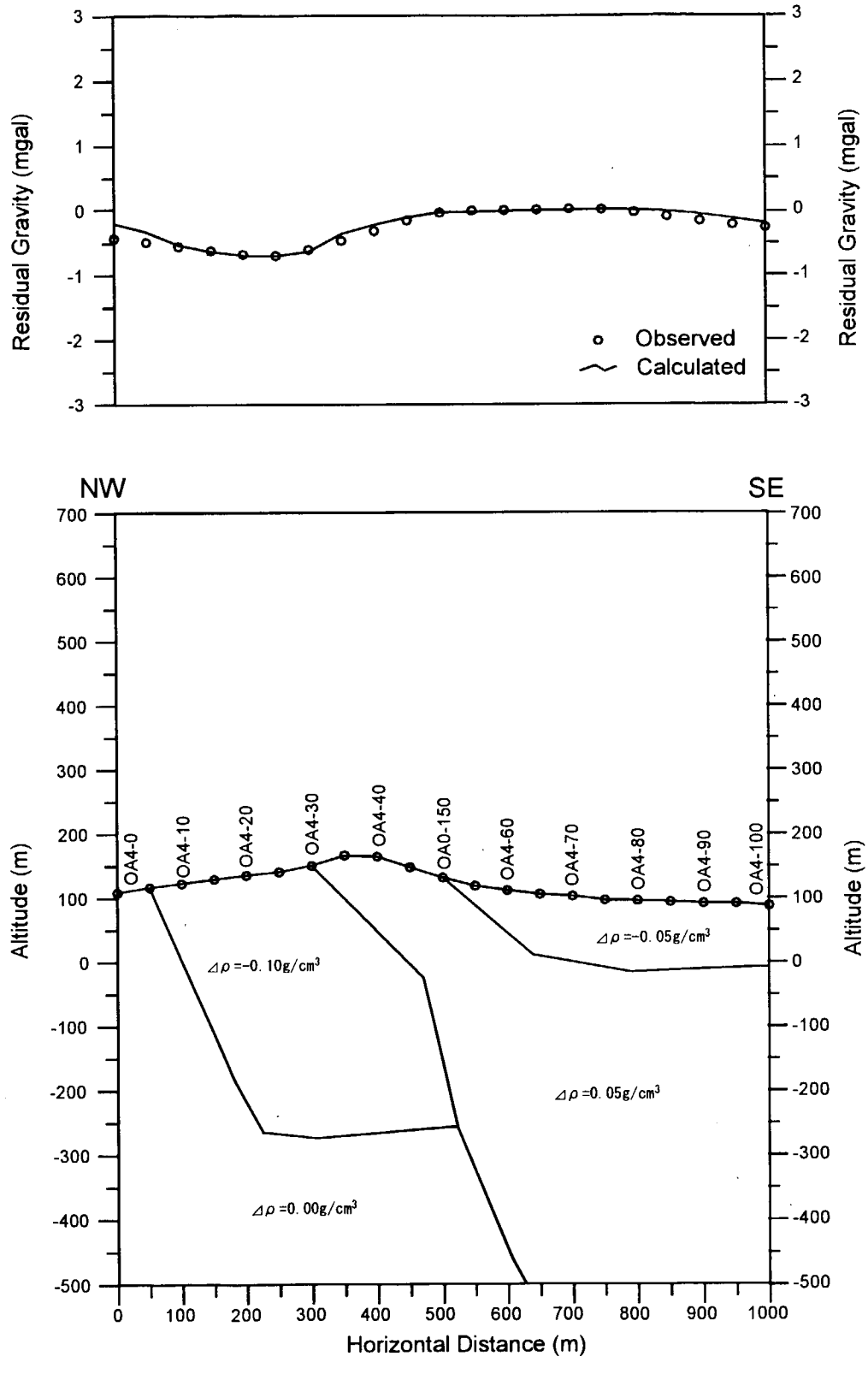


Figure 29
Result of 2-D Gravimetric analysis (Line OA4)
Scale : 10,000
February, 2002

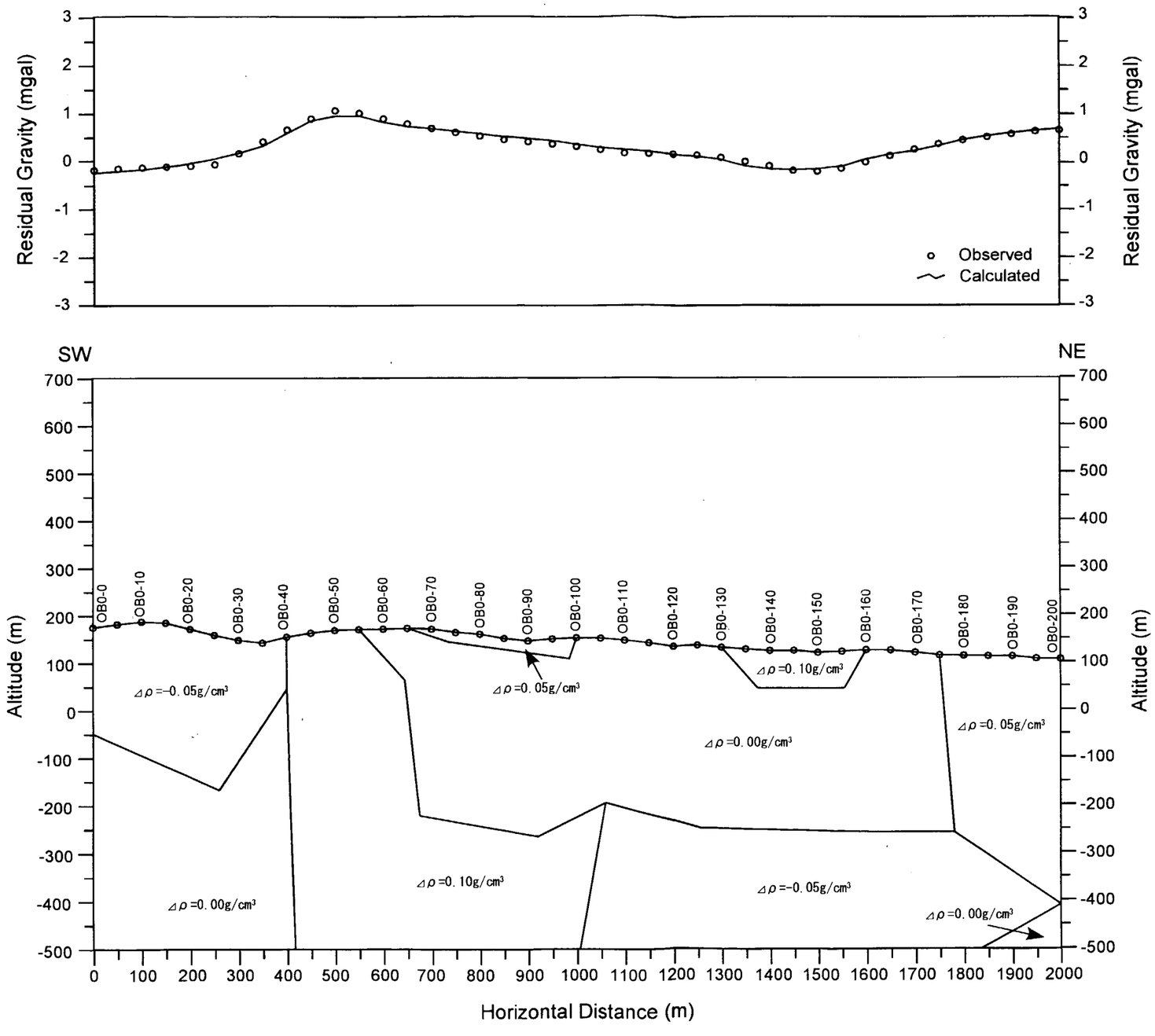


Figure 30
Result of 2-D Gravimetric analysis (Line OB0)
Scale : 10,000
February, 2002

low-density layer of density difference of -0.05 g/cm^3 that may reflect the Tertiary systems. The layer with density difference of 0.00 g/cm^3, which is corresponded to the Triassic systems, extends in the shallow part between the station OB0-60 and 170 in the central part of the section. The high-density layer with density difference of 0.10 g/cm^3 underlying the layer corresponded to the Triassic systems between the station OB0-60 and 100 rises up to the ground surface around the station OB0-50. The low-density layer with density difference of -0.05 g/cm^3 is underlying the layer corresponded to the Triassic systems between the station OB0-100 and 170. The high-density layer with density difference of 0.05 g/cm^3 that may reflect the Cretaceous systems is distributed from the station OB0-180 through the northeastern ends of the section.

・Cross Section OB2 (Figure 31)

This section crosscuts in the southwestern part of the OB sub-prospect from the northwest to the southeast. The gravity basement extends in the deep part of the section and goes up to the ground surface in the southeast side of the station OB2-130. It seems that the low-density layer with density difference ranging between -0.20 and -0.10 g/cm^3 thick extending from the station OB2-60 through 120 in the central part of the section is corresponded to the Tertiary systems. The surface layer in the northwest side of the station OB2-60 is the high-density layer with density difference of 0.05 g/cm^3 that is corresponded to the Cretaceous systems. Underlying gravity basement rise up to the elevation around 100 m in the vicinity of the station OB2-30.

・Cross Section OB3 (Figure 32)

This section crosscuts in the center of the OB sub-prospect parallel to the section OB2. The gravity basement occupies many parts of the section. The high-density layer extending in the shallow part of the northwestern side of the station OB3-30 is corresponded to the Cretaceous systems. The high-density surface layer in the central part of the section is corresponded to the Triassic systems. The low-density layer lying in the southeastern side of the high-density surface layer is corresponded to the Tertiary systems. The densities of these layers are not so much different from one of the gravity basement.

・Cross Section OB5 (Figure 33)

This section crosscuts the northeastern part of the OB sub-prospect from the northwest to the southeast through the Dar ech Chebka old small working. The high-density overburden with density difference of 0.05 g/cm^3 in the northwest side of the station OB5-40 reflects the Cretaceous systems. This overburden overlies the low-density layer with density difference of -0.05 g/cm^3. The gravity basement is distributed in the deep part of the southeastern side of the station OB5-60. It is guessed that the high-density overburden with density difference of 0.04 g/cm^3 lying between the station OB5-60 and 80 may be corresponded to the Triassic dolomites or the

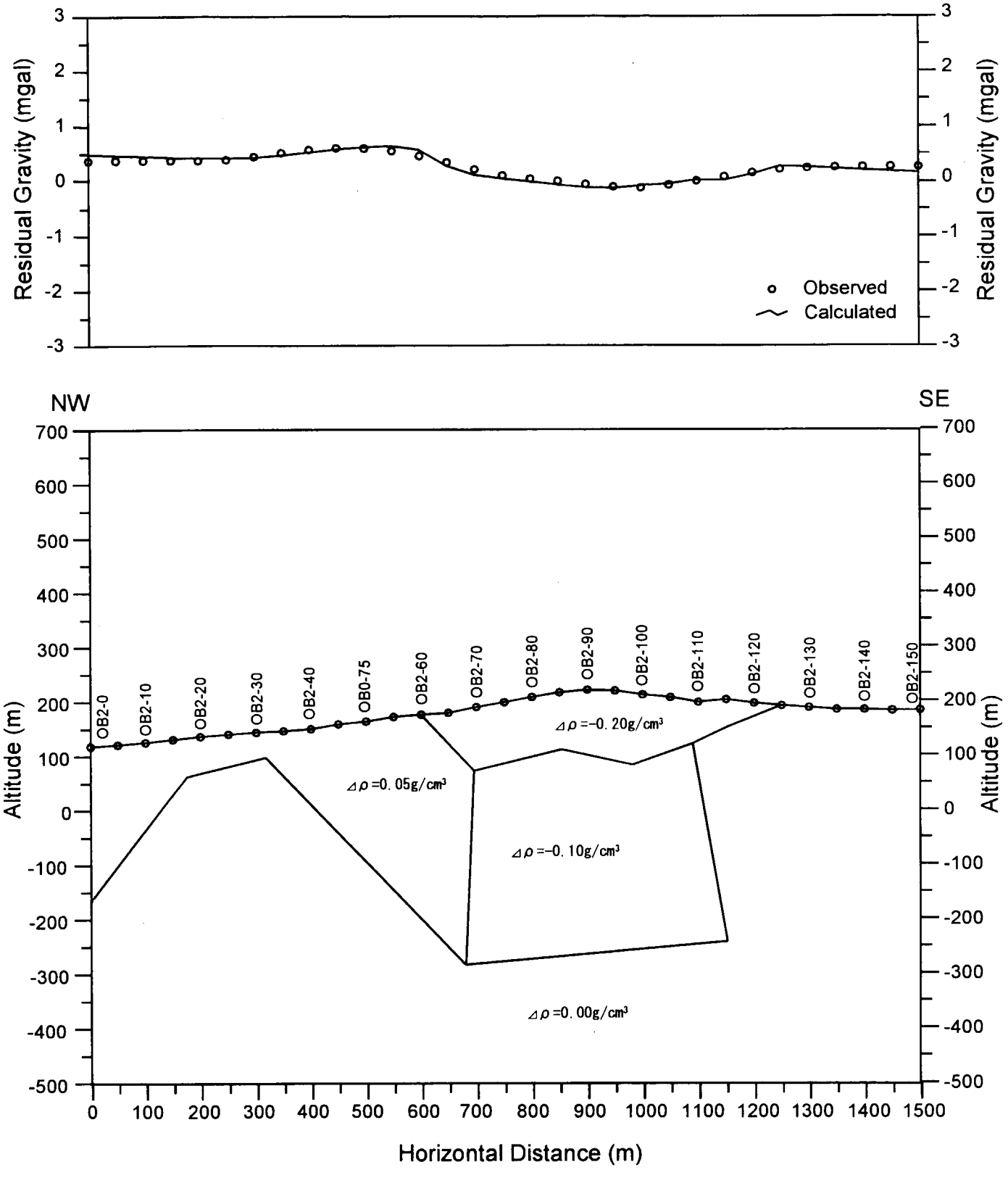


Figure 31
Result of 2-D Gravimetric analysis (Line OB2)
Scale : 10,000
February, 2002

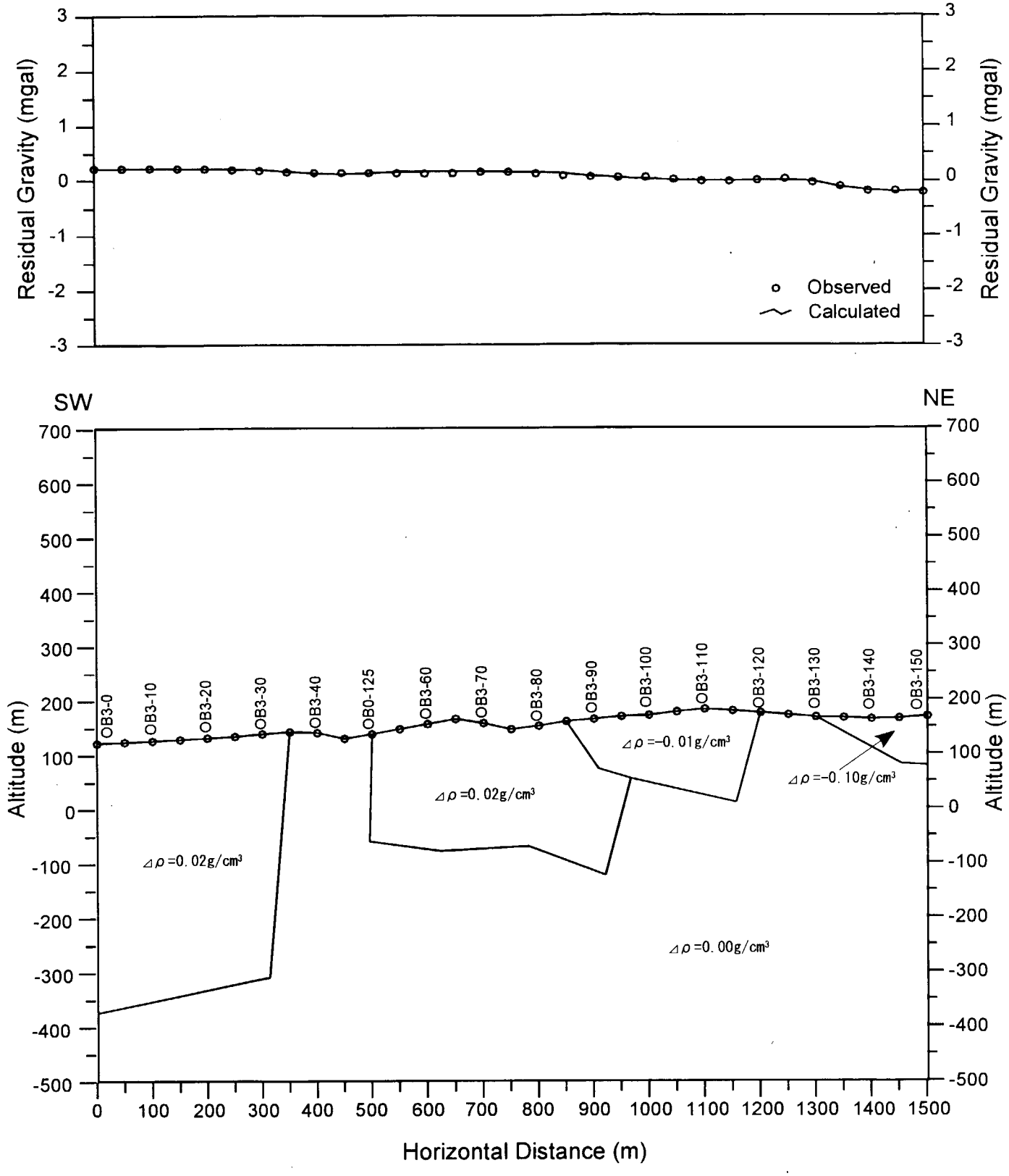


Figure 32
Result of 2-D Gravimetric analysis (Line OB3)
Scale : 10,000
February, 2002

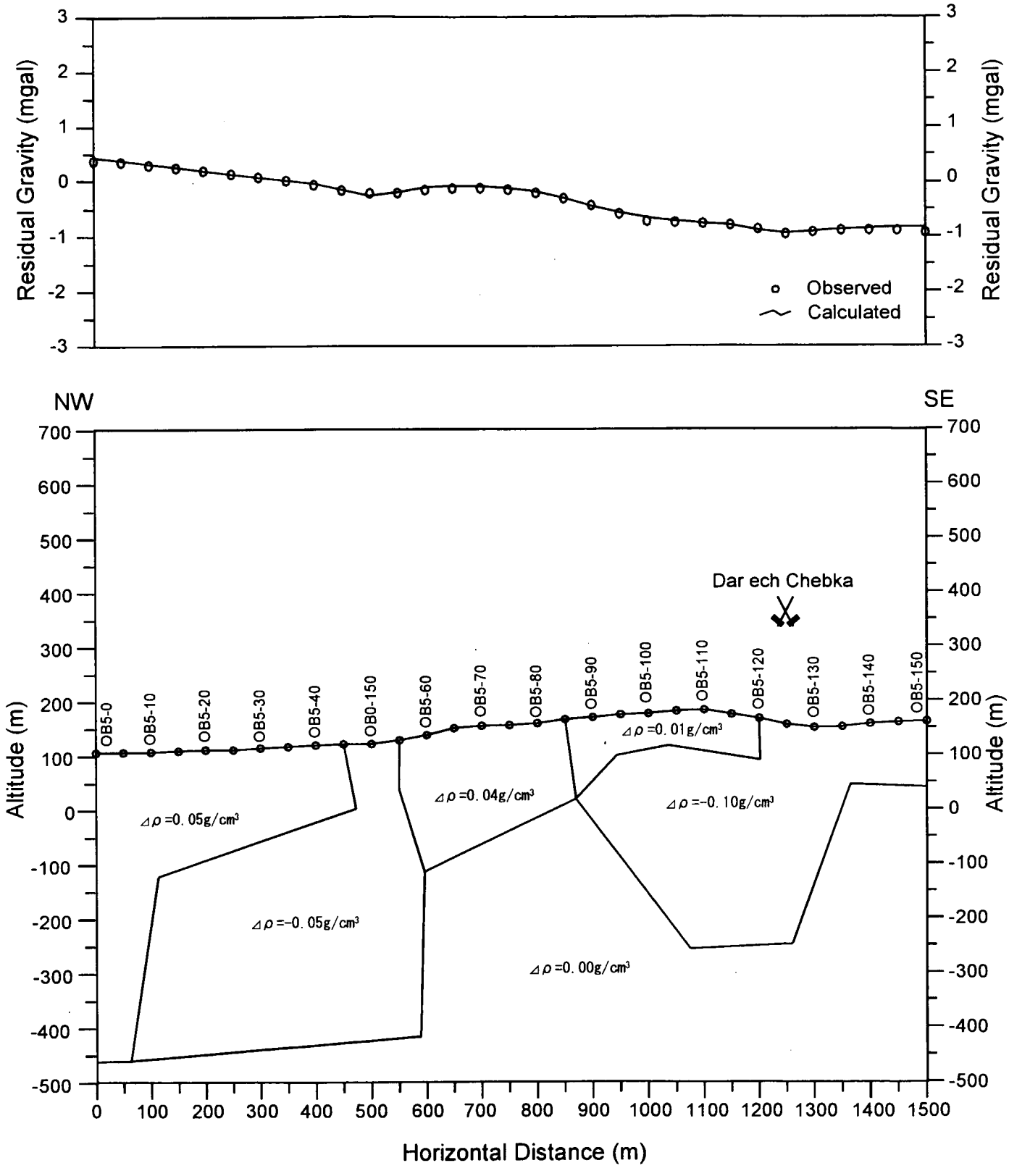


Figure 33
Result of 2-D Gravimetric analysis (Line OB5)
Scale : 10,000
February, 2002

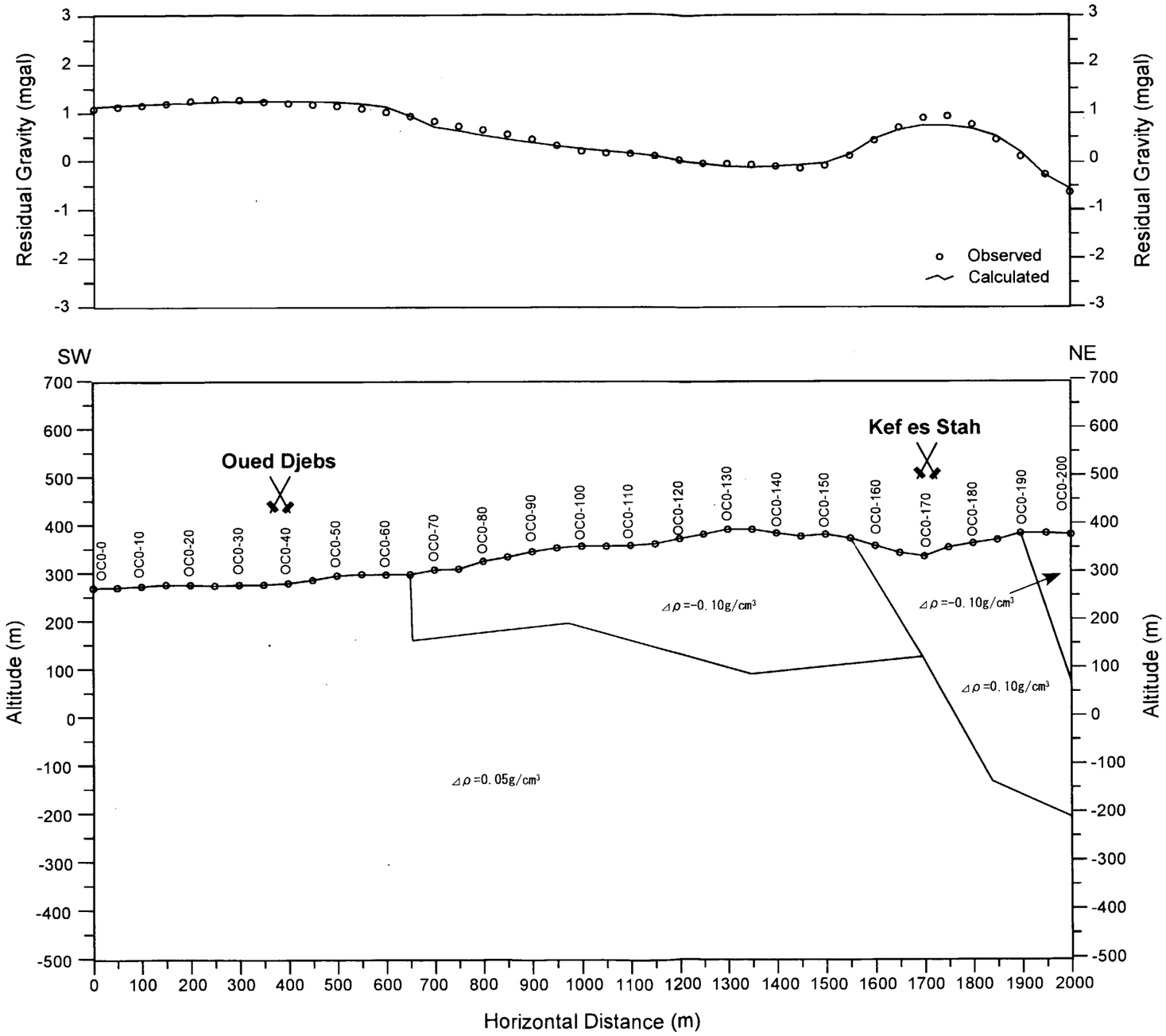


Figure 34
Result of 2-D Gravimetric analysis (Line OC0)
Scale : 10,000
February, 2002

celestites of the transition zones. The low-density layer with density difference of -0.10 g/cm^3, which is corresponded to the Tertiary systems, is distributed thick. The gravity basement underlying this low-density layer is rising up in the vicinity of the Dar ech Chebka small old working.

・Cross Section OC0 (Figure 34)

This section runs longitudinally from the southwest to the northeast in the OC sub-prospect through the Oued Jebes and the Kef Lasfer old workings. The gravity basement corresponded to the Triassic system rises to the shallow part almost section except for the overburden in the central part through the northeast part. It is outcropped in the southeastern side of the station OC0-60 including the Oued Jebes old working. It is supposed that the low-density layers with density difference of -0.05 g/cm^3 distributed in the shallowness between the station OC0-70 and 160 in the central part of the section and around the station OC0-200 in the vicinity of the northeast end are corresponded to the Tertiary systems. The high-density layer with density difference of 0.10 g/cm^3 lying from the station OC0-160 to 190 may reflect the Cretaceous systems. The Kef Lasfer old working is located within this high-density layer.

・Cross Section OC1 (Figure 35)

This section runs from the northwest to the southeast in the west part of the Djebel el Mauhra hills. The gravity basement rises up to the ground surface in the area between the station OC1-40 and 90 in the central part and from the station OC1-100 to 140 in the southeastern part of the section. The high-density layer with density difference of 0.15 g/cm^3 is distributed in the northwest side of the station OC1-140. This high-density layer may reflect the Triassic dolomite. The low-density layer with density difference of -0.07 g/cm^3 stretches from the shallow to the deep part in the area between the station OC1-90 and 110. This low-density layer may reflect a fractured zone of a fault intersecting the section. The low-density layer with density difference of -0.07 g/cm^3 is distributed in the southeast end of the section, too.

・Cross Section OC2 (Figure 36)

This section runs in the central part of the OC sub-prospect. The gravity basement underlies deeply in the section, it rise up to the shallow part around the station in the northwestern part of the section. The high-density layer with density difference of 0.10 g/cm^3 is overlying the gravity basement, it is exposed on the ground surface in the northwestern side of the station OC2-30. In this exposed part the high-density layer may reflect the Triassic dolomite. The low-density overburden with density difference of -0.15 g/cm^3 in the southeastern side of the station OC2-40 is corresponded to the Tertiary systems.

・Cross Section OC3 (Figure 37)

This section crosscuts the OC sub-prospect from the northwest to the southeast

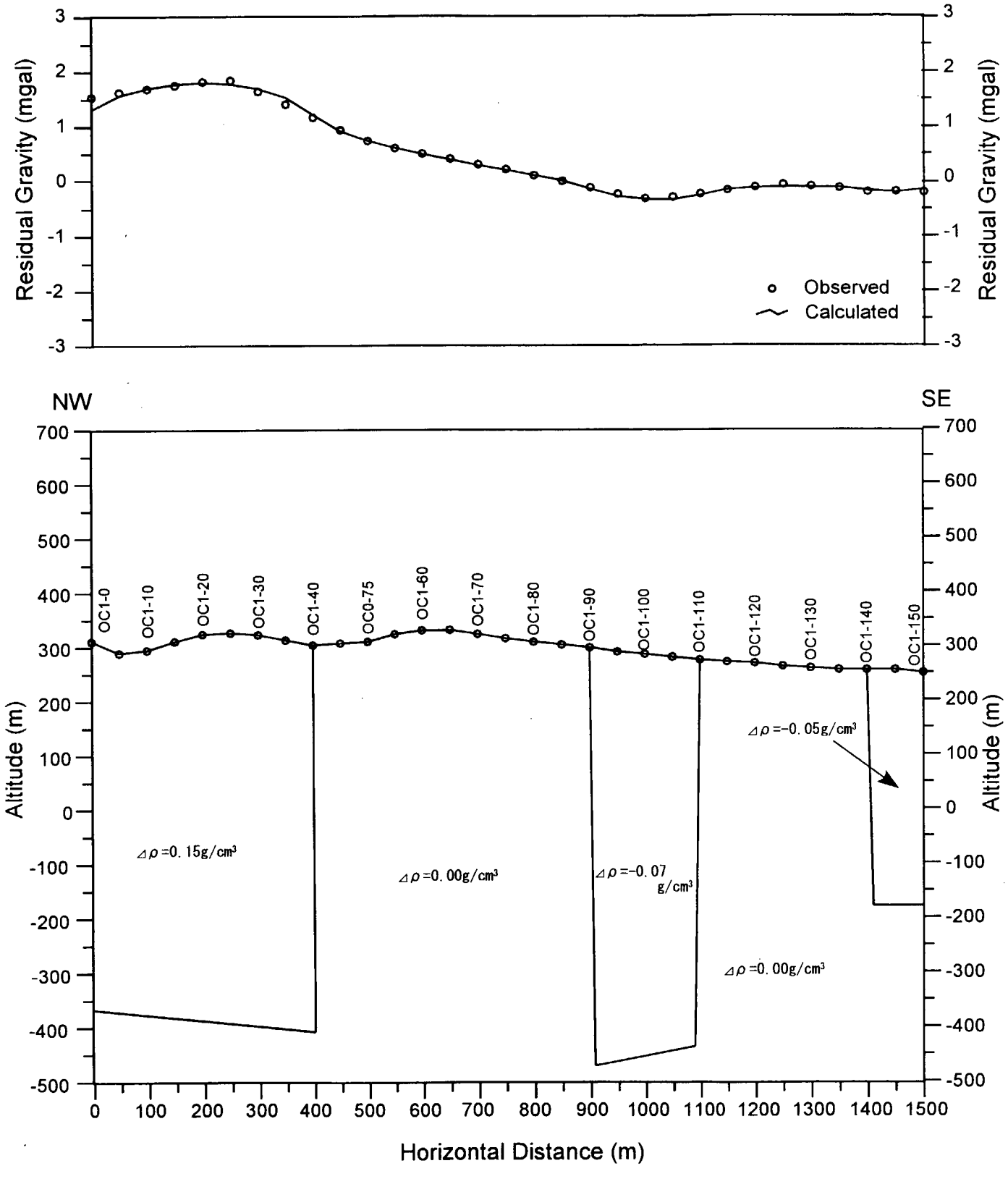


Figure 35
Result of 2-D Gravimetric analysis (Line OC1)
Scale : 10,000
February, 2002

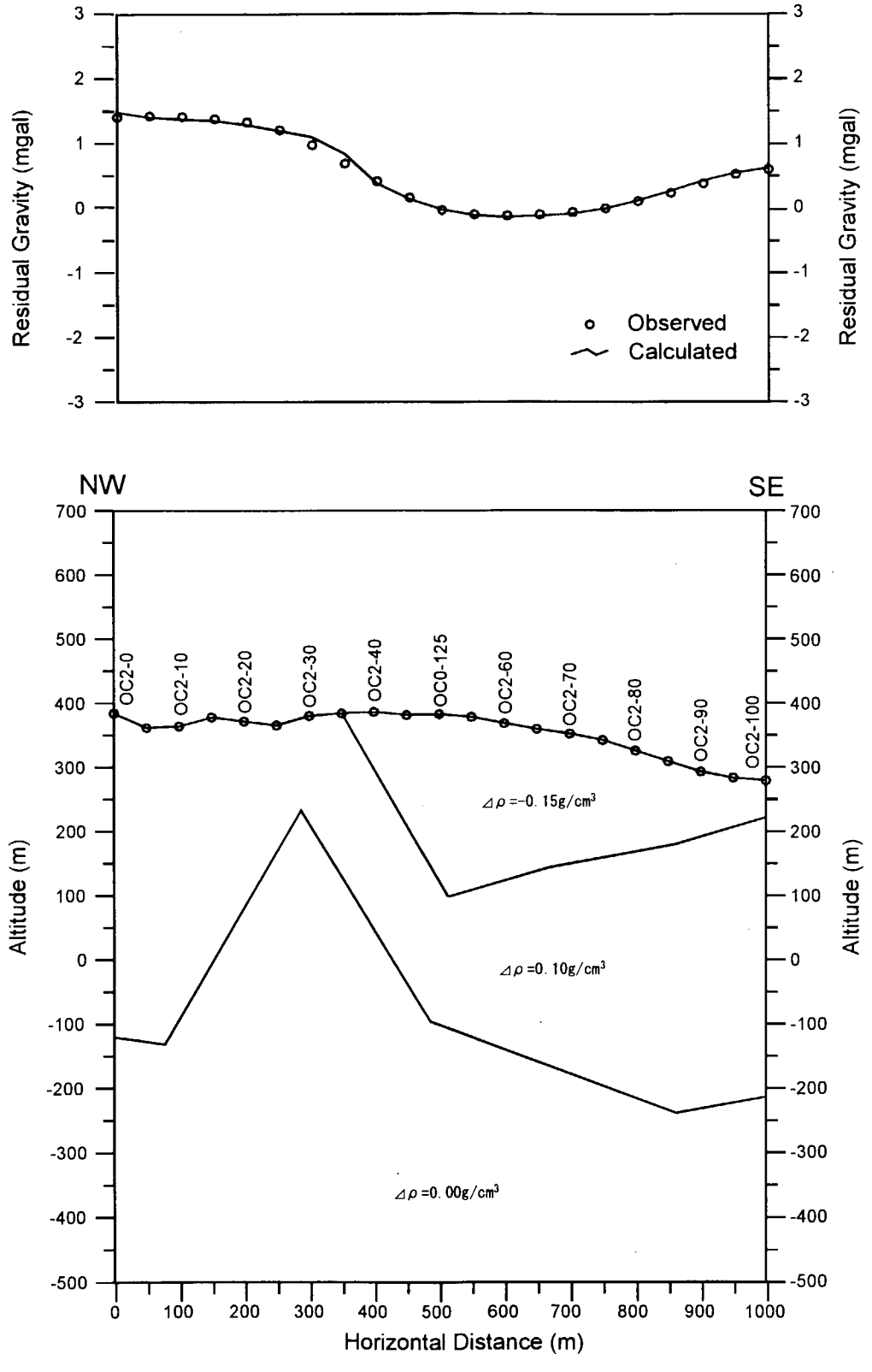


Figure 36
Result of 2-D Gravimetric analysis (Line OC2)
Scale : 10,000
February, 2002

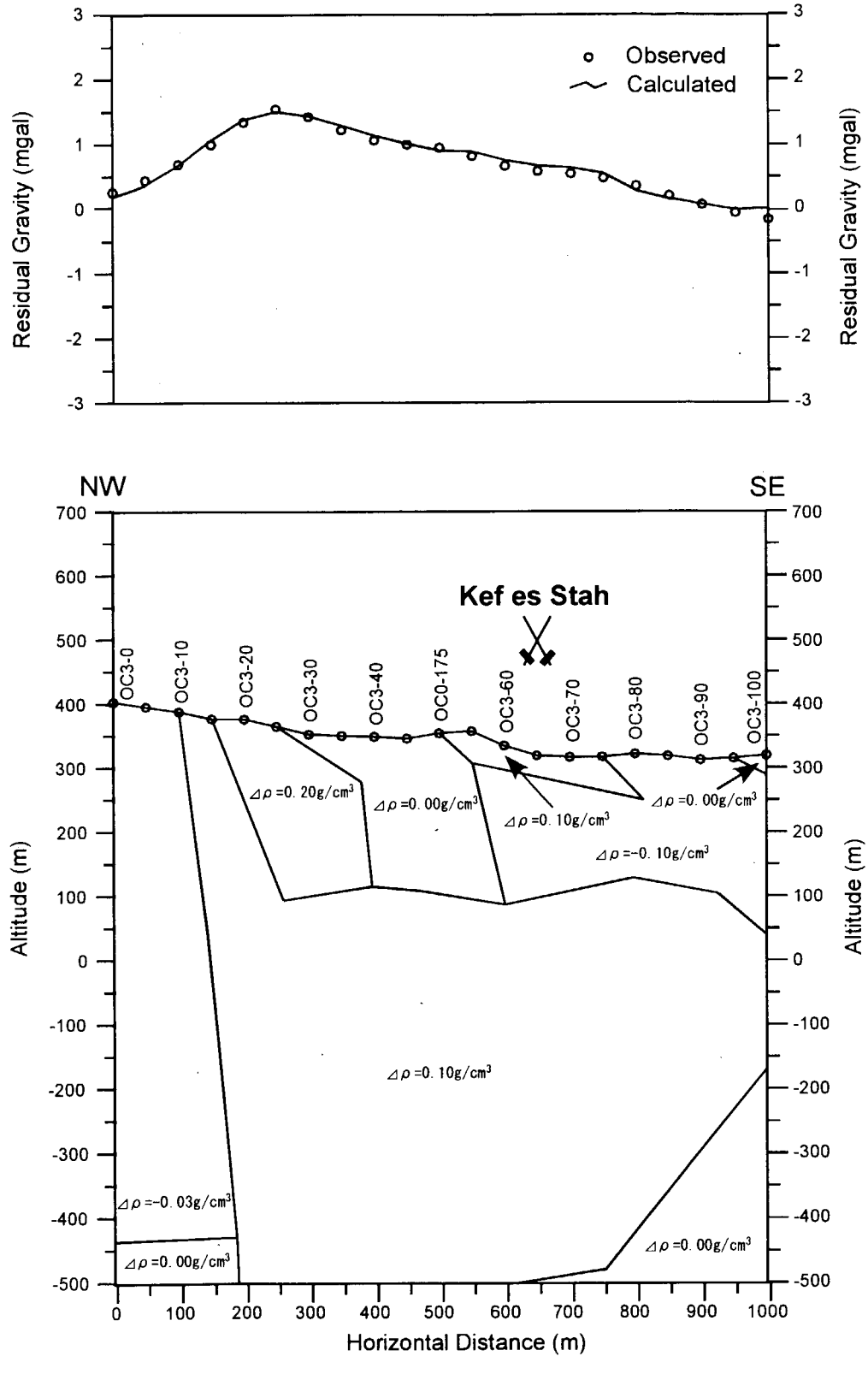


Figure 37
Result of 2-D Gravimetric analysis (Line OC3)
Scale : 10,000
February, 2002

through the Kef Lasfer old working in the central part of the Djebe el Maurhra hills. The high-density layer with density difference of 0.10 g/cm^3 extends deeply in the central part, it is exposed on the ground surface between the station OC3-10 and 30. The low-density layers below 0.00 g/cm^3 are overlying the high-density layer. The high-density overburden with density difference of 0.10 g/cm^3 near the Kef Lasfer old working is corresponded to the Cretaceous systems.

・Cross Section OD0 (Figure 38)

This section crosscuts longitudinally the OD sub-prospect from the southwest to the northeast through the Rag el Bagrat mineral indication in the northeastern part of the Djebel el Maurha hills. The high-density layer with density difference of 0.10 g/cm^3 that is corresponded the Cretaceous systems covers almost section. The low-density layers with density difference ranging between -0.25 and -0.10 g/cm^3 overlie this high density between the station OD0-10 and 40, the station OD0-65 and 90, the station OD0-110 and 140, and in the northeastern side of the station OD0-160. The low-density layer stretching deeply in the vicinity of the the Rag el Bagrat mineral indication may reflect a fractured zone.

・Cross Section OD1 (Figure 39)

This section traverses the OD sub-prospect from the northwest to the southeast through the Rag el Bagrat mineral indication in the northeastern part of the Djebel el Maurha hills. The high-density layer with density difference of 0.10 g/cm^3 lies in the northwest side of the station OD1-30, the low-density layer ranging from -0.25 to -0.10 g/cm^3 is distributed in the opposite side. It is supposed that the high-density layer comprises the Triassic dolomite distributed in the northwestern part of the section and the Cretaceous systems in the central part. Their boundary position supposed around the station OD1-30 is not recognized so much clearly. The low-density is corresponded to the Tertiary systems. The low-density layers between the station OD1-70 and 90 going down deeply such as a vein may reflect a fractured zone.

・Cross Section OD2 (Figure 40)

This section runs from the northwest to the southeast in the central part of the OD sub-prospect. The gravity basement that is corresponded to the Triassic systems extends in the northwestern side of the station OD2-40, the high-density layer 0.10 g/cm^3 lies inside the basement. The high-density layer with density difference of 0.10 g/cm^3, which is corresponded to the Cretaceous systems, is distributed deeply between the station OD2-40 and 90 in the central part of the section, and it is overlaid with the low-density layer of 0.10 g/cm^3 density difference in the surface part from the station OD2-35 to 65. The low-density overburden with density difference of -0.10 g/cm^3, which is corresponded to the Tertiary systems, lies in the southeast end of the section.

・Cross Section OD3 (Figure 41)

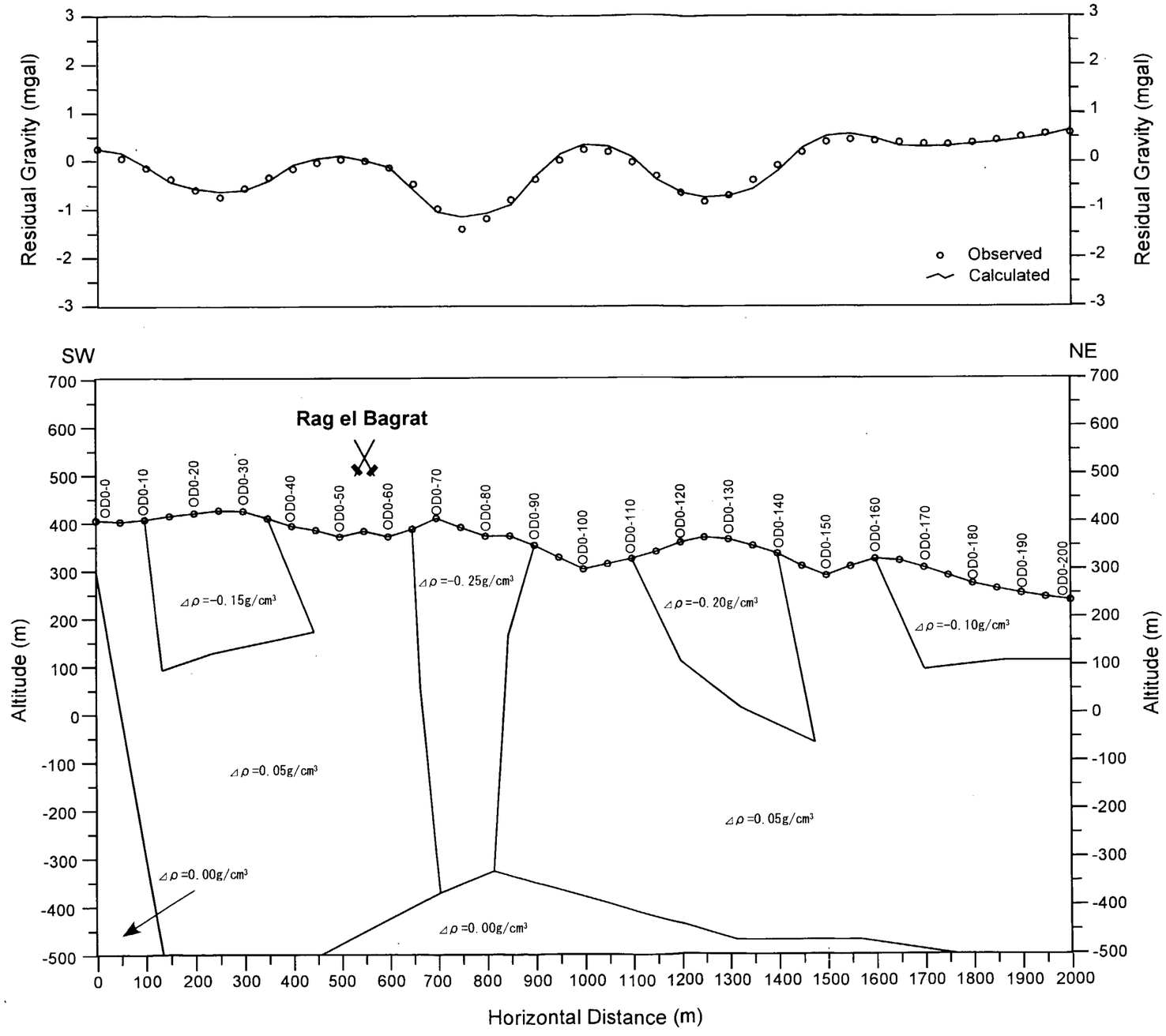


Figure 38
Result of 2-D Gravimetric analysis (Line OD0)
Scale : 10,000
February, 2002

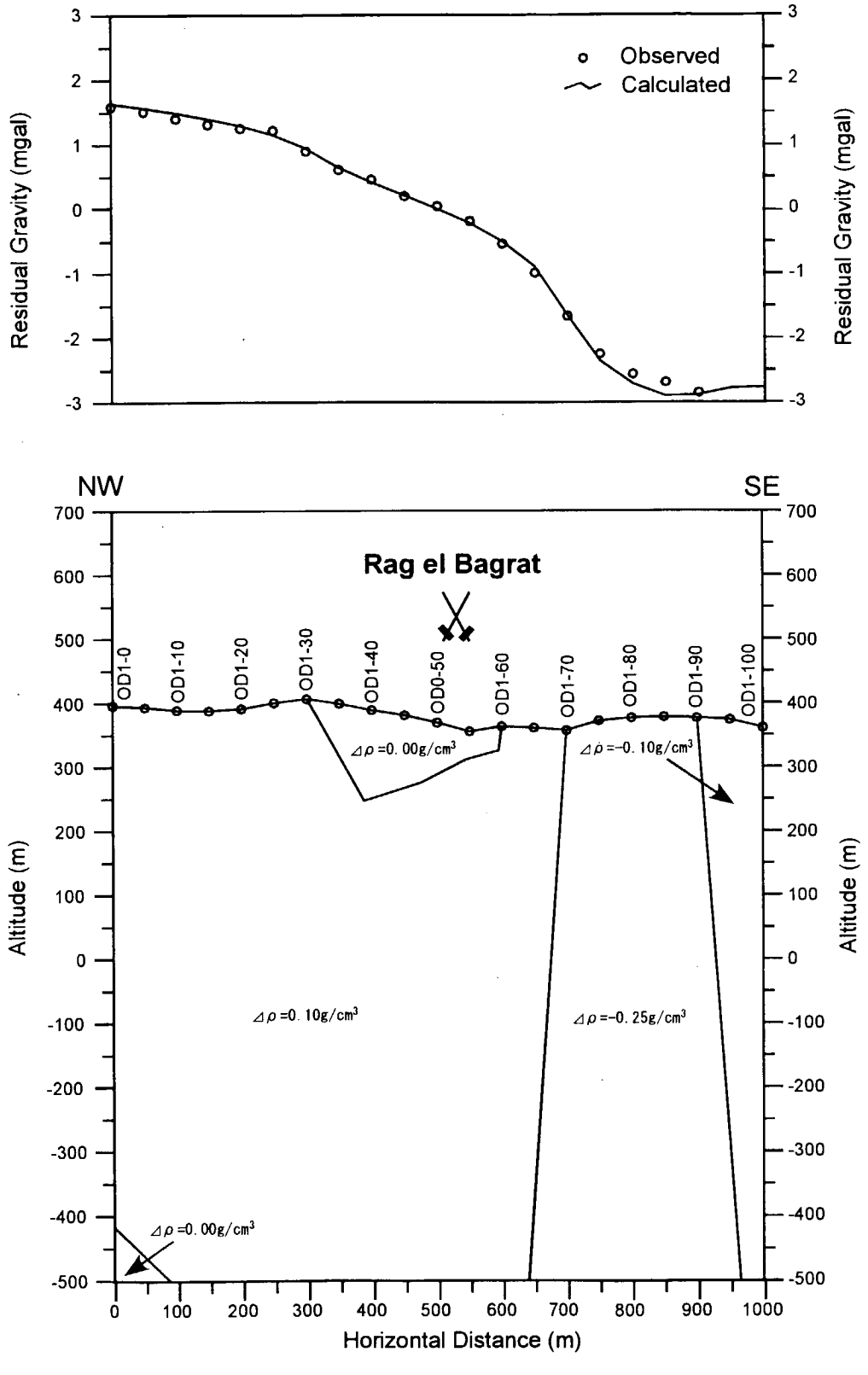


Figure 39
Result of 2-D Gravimetric analysis (Line OD1)
Scale : 10,000
February, 2002

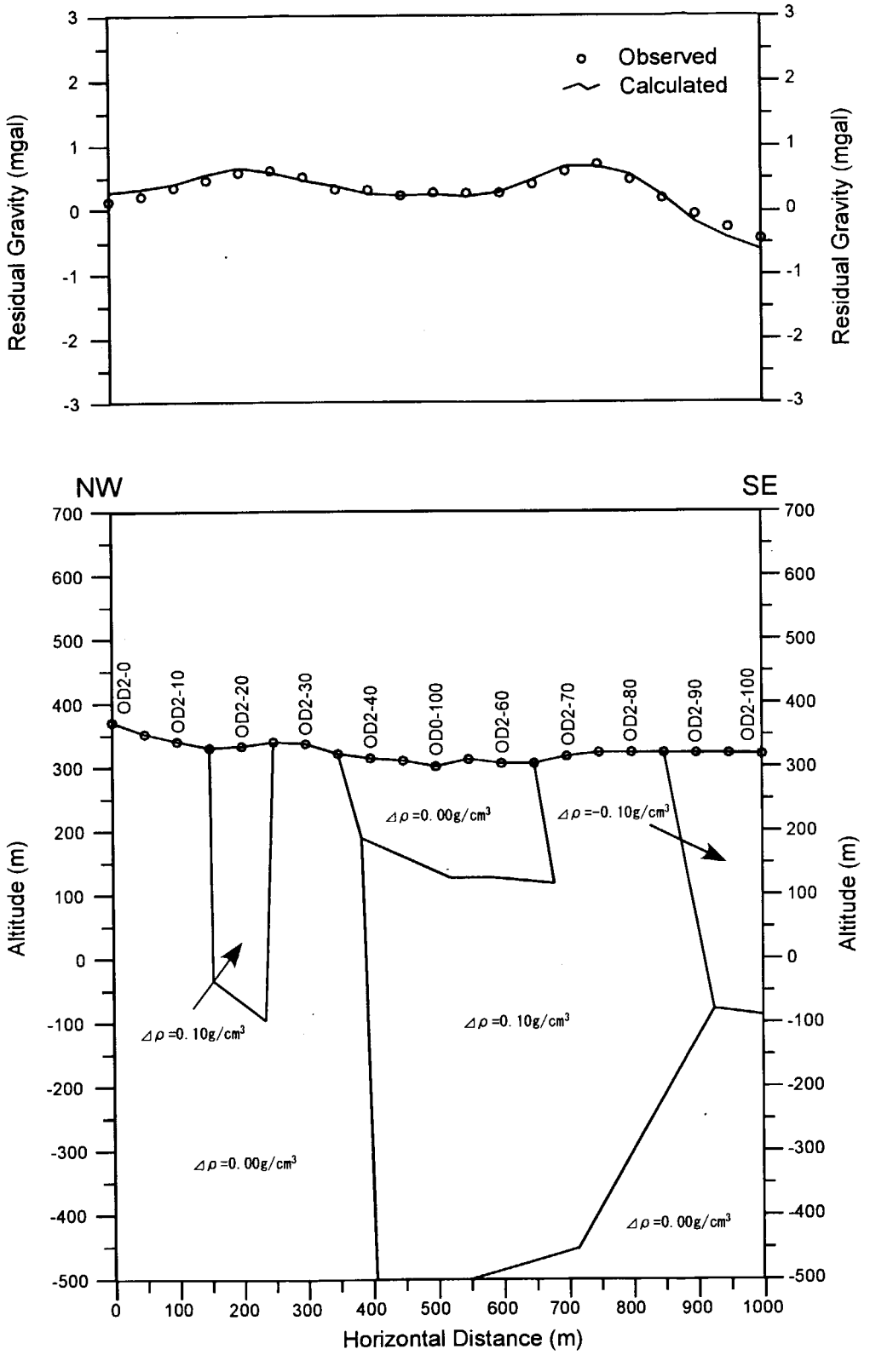


Figure 40
Result of 2-D Gravimetric analysis (Line OD2)
Scale : 10,000
February, 2002

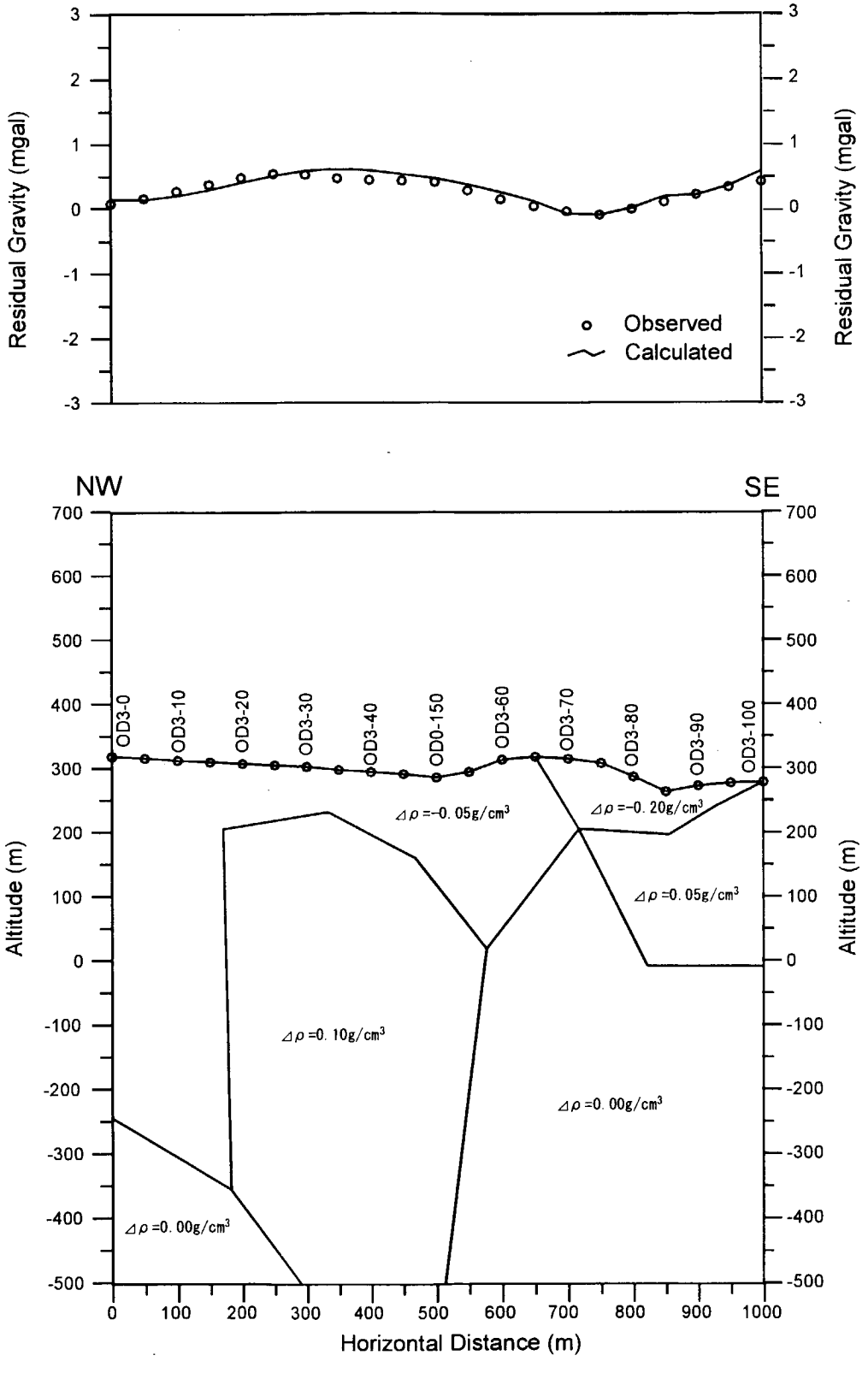


Figure 41
Result of 2-D Gravimetric analysis (Line OD3)
Scale : 10,000
February, 2002

This section runs from the northwest to the southeast in the northeast edge of the Djebel el Maurhra hills. The low-density overburden with density difference of -0.05 g/cm^3 overlies the high-density overburden with density difference of -0.10 g/cm^3, which may reflect the Cretaceous systems. The deep gravity basement rises up to the shallow in the southeast part of the section, and it is overlaid with the low-density overburden with density difference of -0.20 g/cm^3. The high-density layer with density difference of 0.05 g/cm^3 lies between the gravity basement and the low-density overburden, it goes up to the surface in the southeastern end of the section.

⑥Interpreted gravity map

The interpreted gravity map composed of the valid anomalies of residual gravity, the 0 mgal/km contour of first vertical differential gravity and the contours of Bouguer anomaly overlaid geological maps shown in Figure 42.

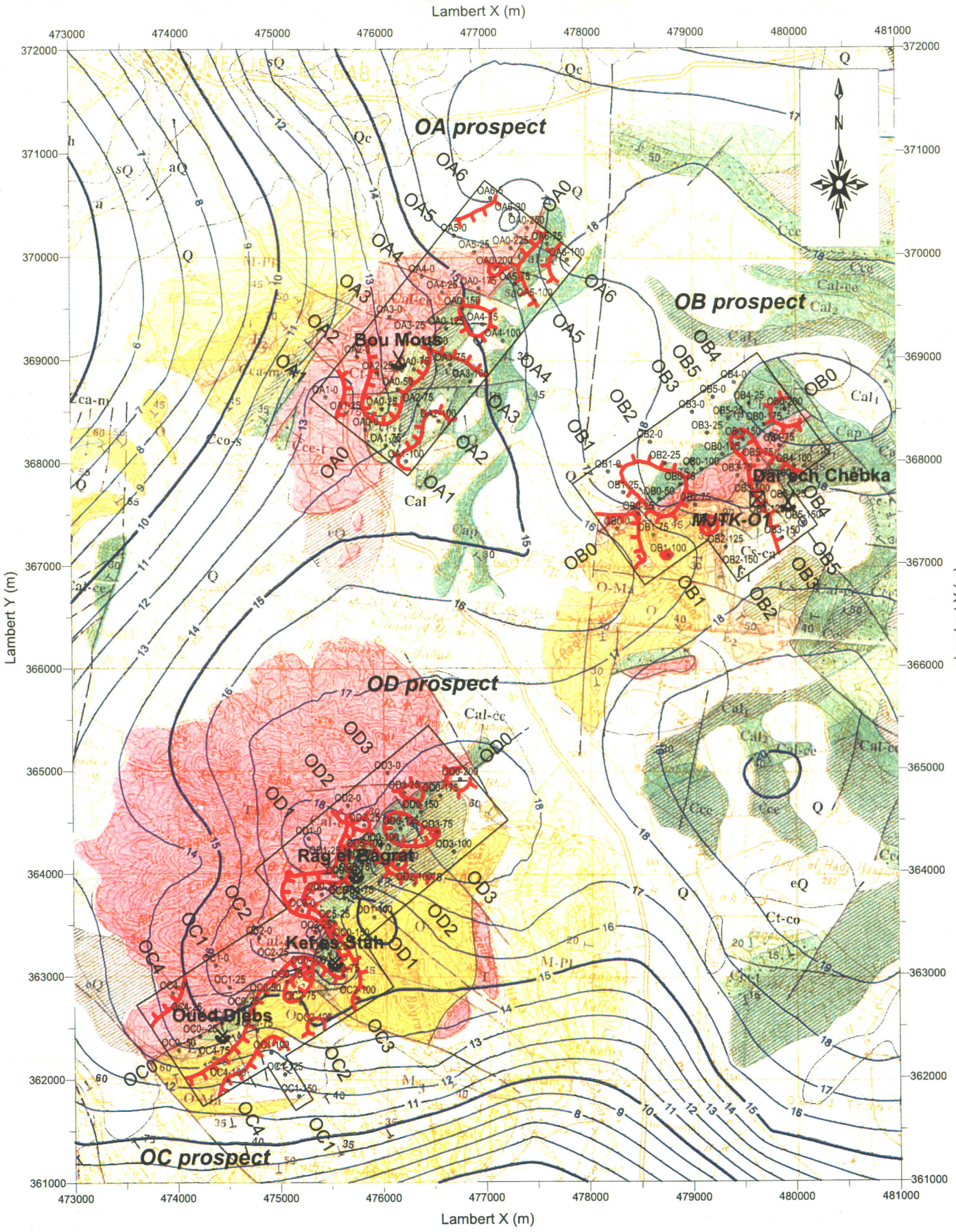
The residual gravity anomalies are well correspondent to the distribution of the Triassic systems in the OA, OC and OD sub-prospects. In the OA sub-prospect, the Triassic systems are corresponded to the low residual gravity anomalies with density difference below 0.00 mgal. On the contrary, they are corresponded to the high residual gravity anomalies with density difference above 1 mgal in the OC and OD sub-prospects. The facts suggest that the Triassic systems in the OA sub-prospect are mainly consist of mud with low density and they in the OC and OD sub-prospects include a lot of dolomite with high density. In the OB sub-prospect the valid correspondence between the Triassic systems the residual gravity anomalies is not recognized.

The both boundaries of the low residual gravity anomaly below 0 mgal extending from the southeast to the northwest in the eastern part of the OB sub-prospect are coincided with two faults running in the NW-SE direction. The low residual gravity anomaly below 0 mgal in the boundary part between the OC and OD sub-prospects are also corresponded to two faults running in the NW-SE direction. The shift northwestwards of the southeast edge of the high residual gravity, which may be reflected the Triassic systems, in the vicinity of the Kef Lasfer old working suggest a fault. At the many areas in the Oued Jebes prospect faults could be traced using the contour lines on the residual gravity map.

The Bou Mouss old working in the OA sub-prospect, the Dar ech Chebka small old working in the OB sub-prospect and the Rag el Bagrat mineral indication in the OD sub-prospect lie inside low residual gravity anomalies below 0 mgal. The Oued Jebes and the Kef Lasfer old workings in the OC sub-prospect are located in the boundary of residual gravity.

(3) IP survey

The results of the IP survey carried out in the Oued Jebes prospect are described



Legend

Survey Prospect

Gravity Station

Ancient Works

Diamond Drill-Hole

Residual Gravity > 0.5mgal

Residual Gravity < -0.05 mgal

Figure 42 Gravity interpretation map in Oued Jebs prospect

below.

① Pseudo-section of Apparent Resistivity and Observed Chargeability

・OA0 Cross Section (Figure 43)

This is a longitudinal section crosscutting the OA sub-prospect along the axis of the Bou Mouss hills from the southwest to the northeast. High apparent resistivity area above 100Ωm extends. High apparent resistivity anomalies exceeding 300Ωm lie in the shallow from the station OA0-0 to 50 in the southwest part of the section and in the deep between the station OA0-200 and 220 in the northeastern part. The low apparent resistivity anomalies below 50Ωm is located around the station OA0-50 in the vicinity of the Bou Mouss old working and between the OA0-150 and 180 in the central part of the section.

The highest observed chargeability anomaly exceeding 10 mV/V of the Oued Jebes prospect lies between the station OA0-40 and 50 in the vicinity of the Bou Mouss old working. Low observed chargeability covers the other area.

・OA2 Cross Section (Figure 44)

This is the southwestern cross section, traversing from the northwest to the southeast in the southwest part of the Bou Mouss hills. High apparent resistivity exceeding 100 Ωm is distributed at the shallow in the central part and at the deep in the northwestern part of the section. Low apparent resistivity below 50 Ωm lies in the southeastern side of the station OA2-70.

The weak observed chargeability above 5mV/V is located in the station OA2-35 in the vicinity of the Bou Mouss old working.

・OA3 Cross Section (Figure 45)

This section runs from the northwest to the southeast in the central part of the Bou Mouss hills. High apparent resistivity exceeding 100Ωm is distributed deeply in the northwestern part of the section. low apparent resistivity anomaly lies in the southeastern end of the section.

The valid anomaly of observed is not recognized in this section.

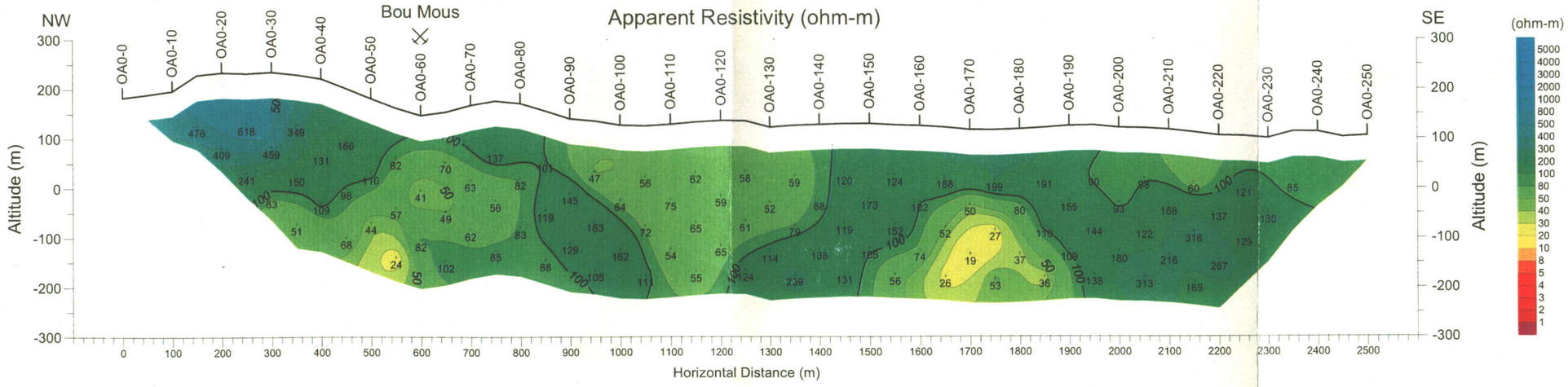
・OA4 Cross Section (Figure 46)

This section runs in the northeast of 500 m apart from the section OA3 parallel. Apparent resistivity in the northwestern side of the station OA0-150 intersecting the base line indicates high exceeding exceeding 100 Ω, low apparent resistivity less than 20 Ωm is distributed from the southeastern part.

There is no valid anomaly of observed chargeability in this section.

・OB0 Cross Section (Figure 47)

This is a longitudinal section crosscutting the OB sub-prospect along the base line from the southwest to the northeast in the foothill between Dar ech Chebka and Bou Rahal. Low apparent resistivity below 50 Ωm covers almost the section except for high



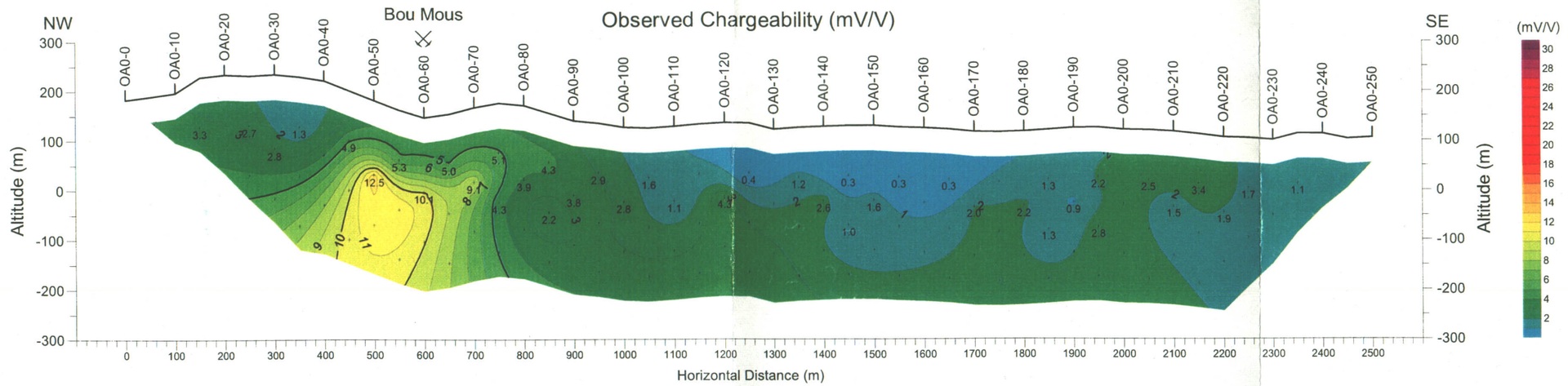


Figure 43 Observed IP pseudo-section (Line OA0)

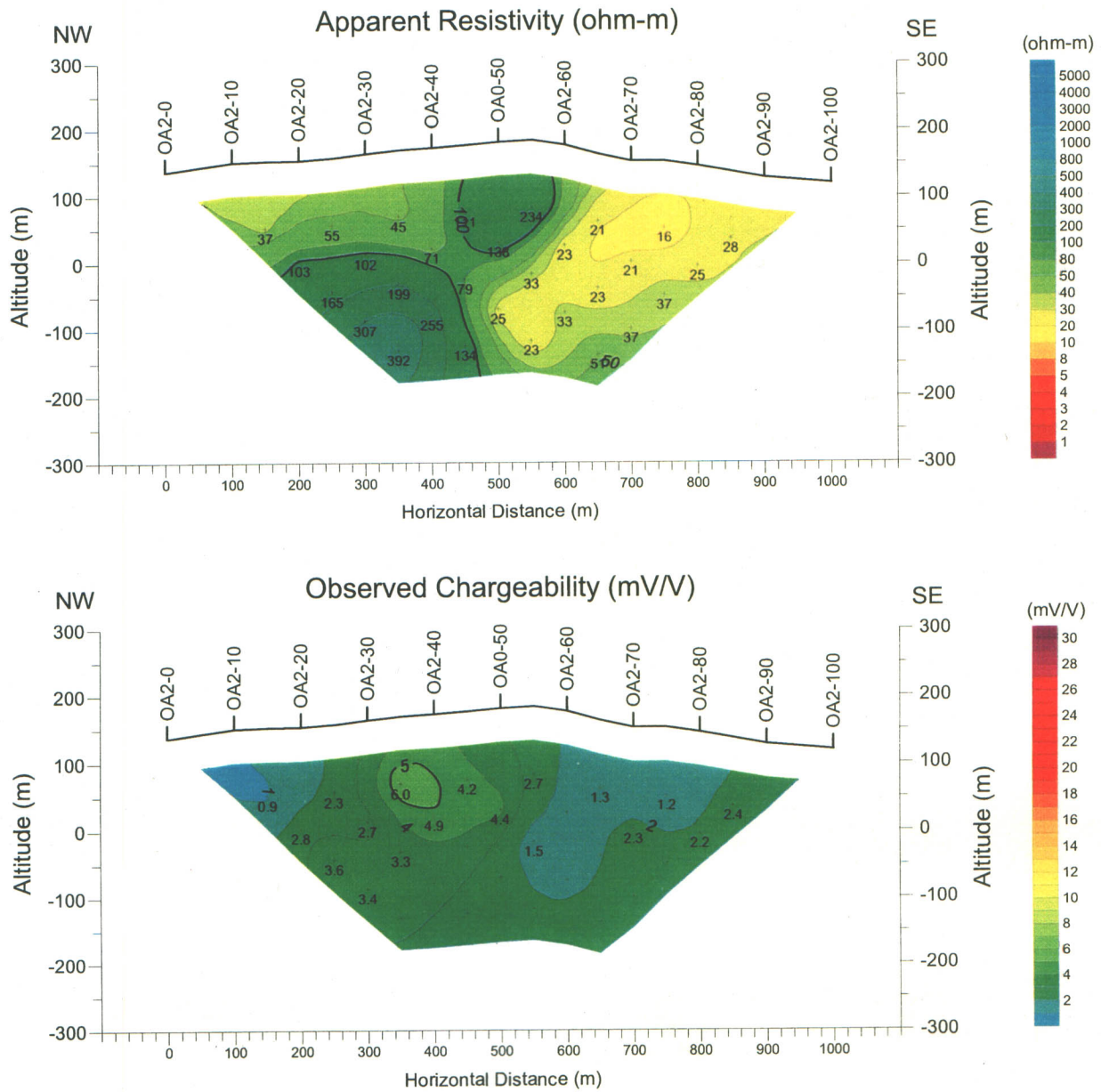


Figure 44 Observed IP pseudo-section (Line OA2)

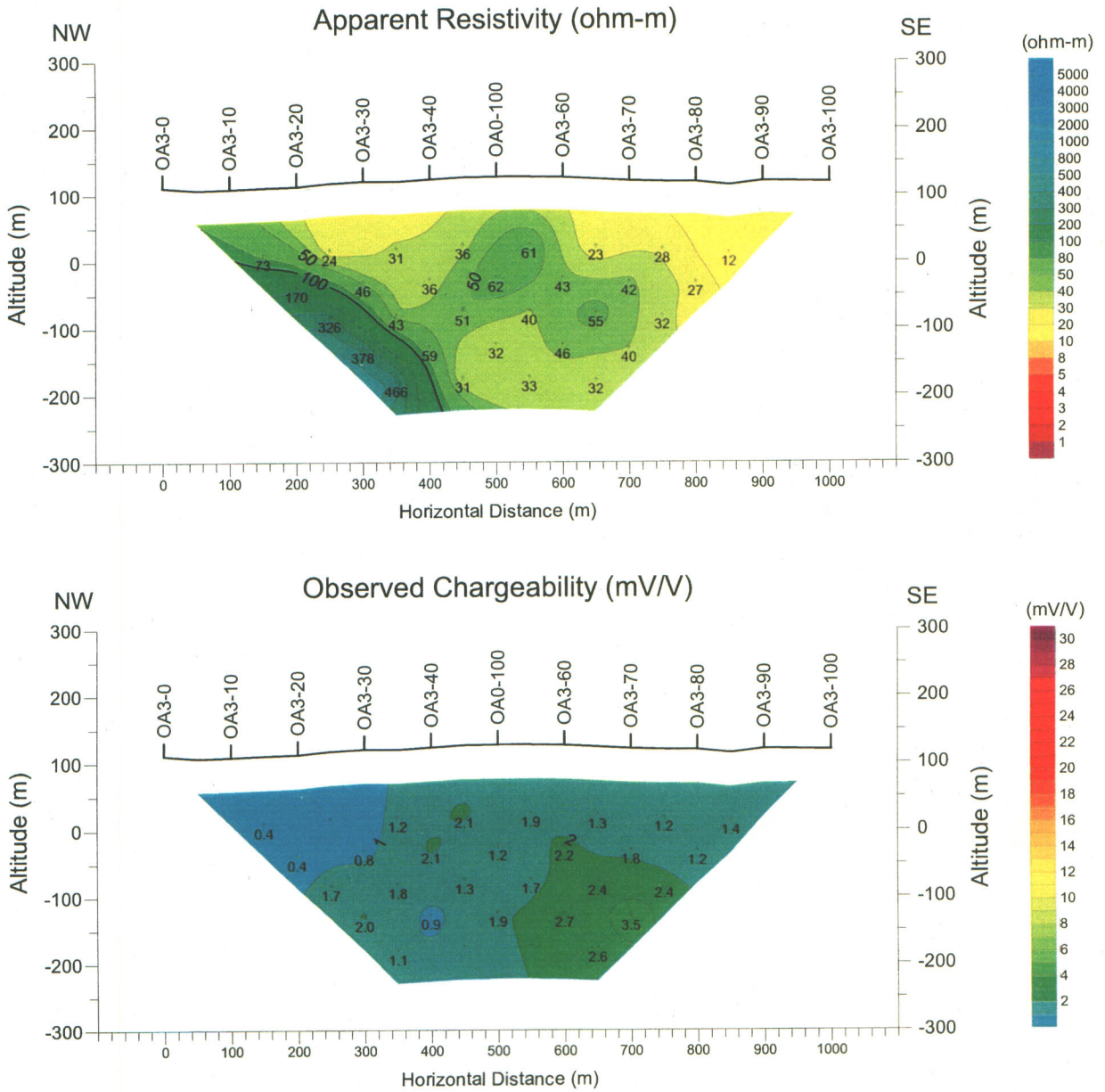


Figure 45 Observed IP pseudo-section (Line OA3)

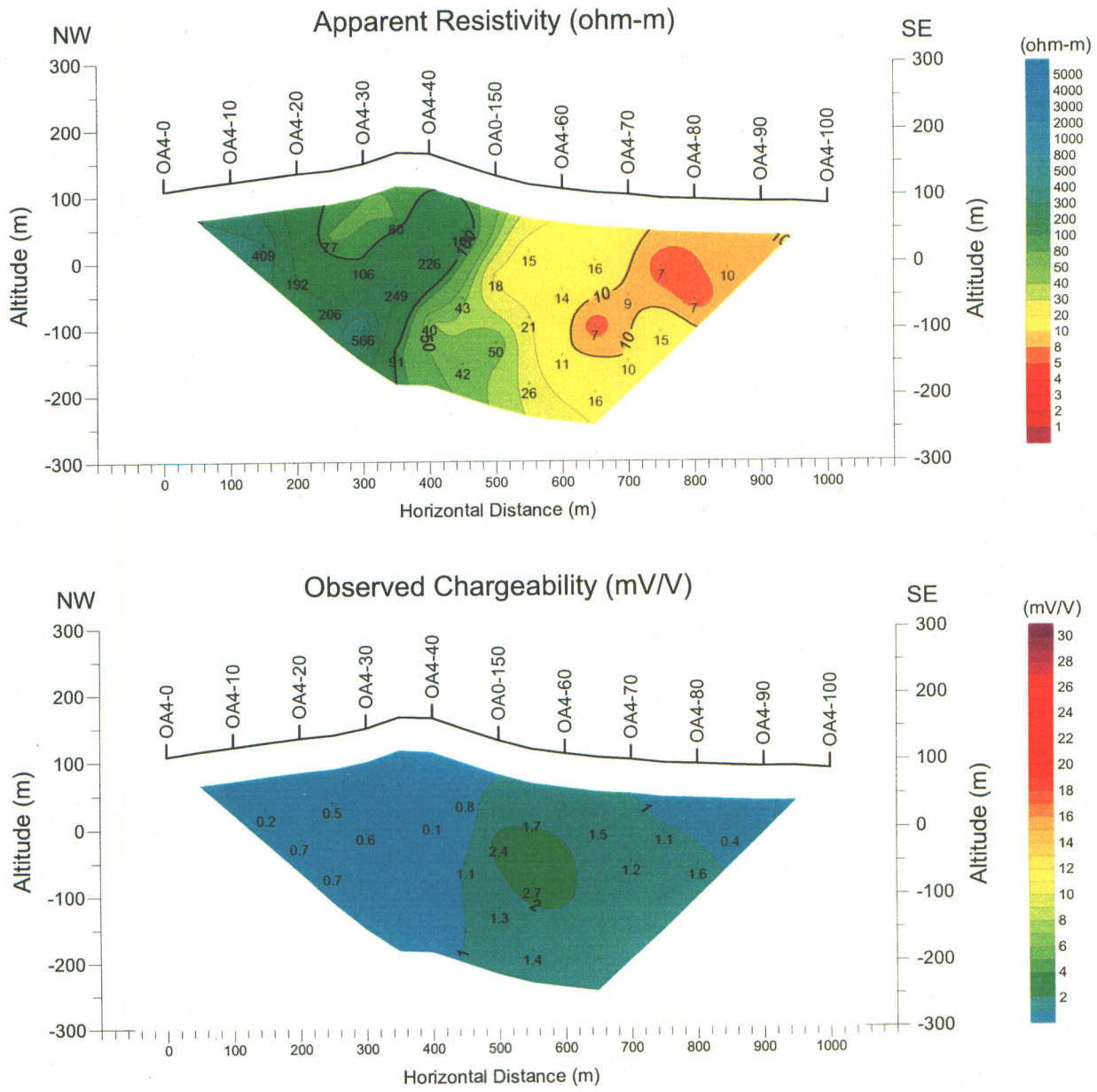


Figure 46 Observed IP pseudo-section (Line OA4)

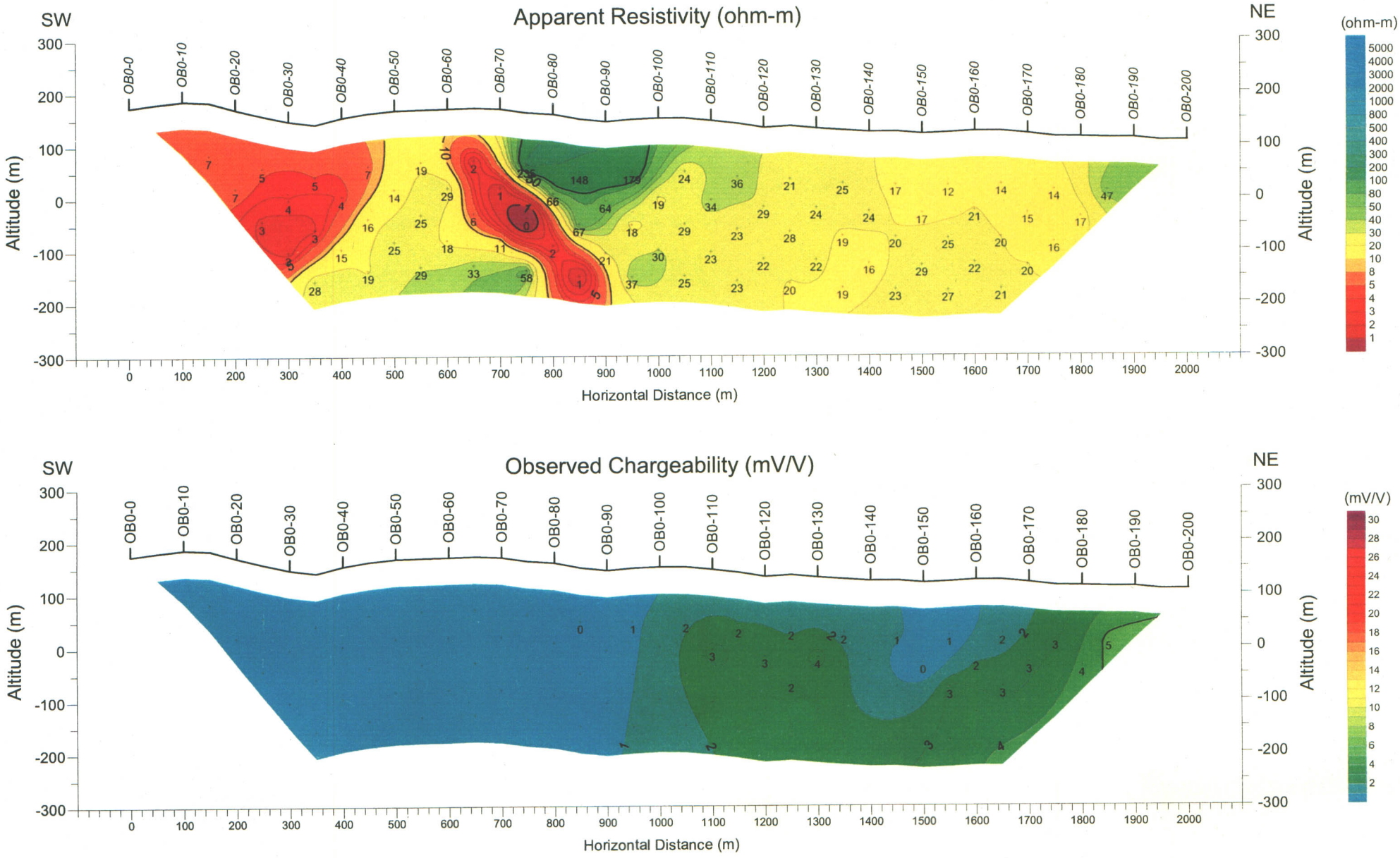


Figure 47 Observed IP pseudo-section (Line OB0)