A report prepared for Malbex Resources Inc.

# PRELIMINARY GEOLOGICAL MODEL OF THE ROJO GRANDE GOLD-SILVER PROSPECT, DEL CARMEN NORTE PROJECT, SAN JUAN PROVINCE, ARGENTINA

Richard H. Sillitoe

February 2011

## CONTENTS



**FIGURES**

## EXECUTIVE SUMMARY

- Reconnaissance core logging and corresponding section construction reveal that the Rojo Grande prospect, in the centre of the Del Norte project area, comprises a single siliceous ledge composed of vuggy quartz and associated silicification. The ledge is >220 m thick in the north, but is transitional to a thinner, subhorizontal body southwards and, possibly, also in the extreme north.

- The ledge is centred on the northernmost of two steeply cross-cutting bodies of dacite porphyry, which are interpreted as partially eroded volcanic domes. The northern dome and its andesitic volcanic wall rocks are transected by two steeply dipping bodies of hydrothermal breccia, which were generated during the alteration event.

- The Rojo Grande gold and silver mineralization was introduced relatively late and, as a consequence, is discontinuously present in the dacite porphyry and its wall rocks, in hydrothermally brecciated and non-brecciated rock volumes and in association with vuggy quartz, silicification and, locally, marginal zones of quartz-alunite alteration; however, the outermost quartz-kaolinite alteration zone is largely barren.

- The gold and silver distribution patterns are believed to be hypogene in origin rather than the product of localised supergene enrichment. Typically, the highest gold and silver values are found in limonite-rich zones, reflecting former elevated iron sulphide contents.

- The Rojo Grande ledge and its advanced argillic alteration halo are deeply oxidised, to a depth of >220 m, because of their intrinsic permeability. Consequently, any gold orebody that may be defined at Rojo Grande should be free milling, a prediction already preliminarily confirmed by metallurgical testing.

- Drilling south of Rojo Grande, in the Cerro Amarillo sector, encountered a poorly mineralized, polymict breccia, which is interpreted as part of a diatreme vent. The breccia is cut by essentially unaltered andesite porphyry, probably a late-stage volcanic plug or dome.

- Additional drilling at Rojo Grande needs to be focused on the thickest part of the siliceous ledge, which represents the feeder zone, with the aim of finding extensions to the recently drilled bonanza-grade intercept. Drilling to depths of >220 m is also required in order to test for any deeper precious-metal concentrations as well as delimit both the base of the ledge and the supergene oxidation.

- The Cerro Amarillo sector and its broadly coincident resistivity anomaly have been downgraded by the drilling to date, although the possibility of deep (>350 m), gold-bearing vuggy quartz development will hopefully be tested by the hole currently being drilled there.

- The deep porphyry gold ± copper potential of Del Carmen Norte, beneath the highest concentration of banded quartz veinlets, as well as the 500-m-wide, untested gap between Rojo Grande and Cerro Amarillo merit scout drilling.

## INTRODUCTION

At the request of Peter Stewart, the writer spent three days at the Del Carmen Norte gold-silver project in the Valle del Cura, western San Juan province, Argentina on behalf of Malbex Resources. The aim of the assignment was to model the geology of the Rojo Grande prospect, the principal focus of the 2010-2011 drilling campaign, as a guide to ongoing exploration.

The work, carried out at the Del Carmen Norte field camp, comprised reconnaissance logging of the core from 12 of the diamond drill holes completed at Rojo Grande and its possible southern extensions in the Cerro Amarillo sector during the 2010-2011 season. Based on the results and those for six holes logged previously (May 2010), the five geological and alteration cross sections and one longitudinal section shown on Figure 1 were constructed. The Cerro Amarillo section is located ~500 m south of the area shown in Figure 1.

This report presents a preliminary geological model for the Rojo Grande prospect, with particular emphasis on the location of the gold-silver mineralization encountered to date. The results are then used as a basis for prioritisation of areas for drilling. The drill-hole plan and sections are appended to the report as Figures 1-8.

Most of the core logging was carried out with Malbex geologists Guillermo Figueroa, Martín Flores, Fernando Murillo and Sergio Riveros who, along with Peter Stewart, are thanked for assistance, instruction and discussions. Martín Tortoza and Fernando Murillo kindly assisted with section preparation.

## GEOLOGICAL BACKGROUND

Del Carmen Norte is hosted by shallowly dipping volcanic strata that accumulated in a north-trending, Miocene magmatic arc constructed during eastward subduction. The volcanic sequence unconformably overlies the Permo-Triassic Choiyoi Group basement and occupies the north-trending Valle del Cura graben. The graben, bounded by high-angle reverse faults generated during late Miocene contractional tectonism, is flanked by horsts composed of Choiyoi Group rhyolitic volcanic and granitic intrusive rocks.

The extensively altered volcanic package at Del Carmen Norte appears to be dominated by andesitic volcanic breccias, tuffs and flows that seem likely to be part of the upper Escabroso member of the Doña Ana Group. The Escabroso Formation is isotopically dated as early Miocene in age. The andesitic strata are cut by bodies of dacite porphyry, defined during this study as probable volcanic domes.

The Doña Ana Group and nearby basement rocks host numerous, extensive zones of hydrothermal alteration and associated precious-metal mineralization, which together define the El Indio metallogenic belt. Most of the deposits and prospects, including Del Carmen Norte, are of high-sulphidation epithermal type, the best known being the high-grade El Indio vein system and low-grade, bulk-tonnage Pascua-Lama and Veladero deposits, all located north of Del Carmen Norte.

## ROJO GRANDE GEOLOGY

### Rock types

The Rojo Grande prospect is situated in the middle of the Del Carmen Norte project area and, at surface, appears to be dominated by a tabular, subhorizontal body of siliceous rock, which has been mapped along the outcrop for ~1,000 m. However, the 2010-2011 Malbex drilling results show that the siliceous ledge also has an important vertical component and remains open at depth (Figs. 3, 4 and 7). Rojo Grande is surrounded by several, apparently smaller siliceous ledges, which have steep, tabular geometries, as described previously (see May 2010 report).

The host rocks at Rojo Grande comprise andesitic volcanic flows and breccias, which are cut by steep bodies of biotite dacite porphyry and hydrothermal breccia, the latter only revealed by the 2010-2011 drilling. The breccias are inter-mineral in timing because they post-date early alteration (and possibly mineralization) as well as themselves being altered and mineralized. The hydrothermal breccias are distinguished from the andesitic volcanic breccia by either the presence of abundant clasts of silicified rock or the limonite-dominated cement.

The most clearly defined dacite porphyry body, centred on holes DDHC-11-040, 042 and 046 (Figs. 3 and 7), is >220 m thick and confined both to the northeast and southwest by andesitic volcanic rocks. A steep, funnel-shaped body, appropriate for a volcanic dome, seems to be its most likely form. A second, albeit less well-constrained dacite porphyry body is cut by holes DDHC-10-036 and 038 (Figs. 6 and 7); it is also depicted, although somewhat tentatively, as an upward-flared, funnel-like body, presumably a second volcanic dome. A clearly evident, chilled contact between the dacite porphyry and its andesitic wall rocks is observed in hole DDHC-11-047 (Fig. 3). Furthermore, flow banding – typical of volcanic domes – is observed locally.

Two principal bodies of hydrothermal breccia appear to be present at Rojo Grande. The northernmost one is confined to the better-defined dacite porphyry dome, where it appears to terminate downwards, presumably because it continues off section (Figs. 3 and 7). This breccia contains appreciable, non-brecciated intervals, which are interpreted as large clasts, and is largely monomict in nature. Essentially all the clasts are composed of silicified dacite porphyry or dacite porphyry transformed to vuggy quartz, which are cemented mainly by limonite after iron sulphides. The second breccia body is located in the southern part of the Rojo Grande prospect, where it cuts andesitic volcanic rocks, as observed in the core from holes DDHC-10-017, 018, 032 and 033 (Figs. 5 and 7). This southern breccia is more obviously polymict, contains much smaller, centimetre-sized clasts of variably altered, commonly silicified rock and is cemented by fine-grained, limonite-impregnated quartz.

A series of post-mineral faults of generally steep, albeit commonly uncertain attitude cut the altered and mineralized rocks but do not appear to juxtapose different geological units (e.g. Figs. 3, 4, 5 and 6); hence, they are assumed to have undergone only relatively minor displacement. In some cases, the faults appear to have been localised simply by differential motion caused by the rheological contrast between silicified and argillized rocks (e.g. Fig. 4), a common feature of siliceous ledges in high-sulphidation deposits. In view of their uncertain attitudes, the faults were omitted from the preliminary longitudinal section (Fig. 7).

**Alteration features**

The andesitic volcanic strata and cross-cutting dacite porphyry domes at Rojo Grande host a large siliceous ledge, measuring at least 550 m in a northeast-southwest direction and with widths attaining 200 m. In the northern part of the prospect area, the ledge is a steep, transgressive body at least 220 m in thickness (Figs. 3, 4 and 7), whereas southwards it is transitional to a subhorizontal body with well-defined upper and lower contacts (Figs. 5, 6 and 7). A similar, although less extensive subhorizontal geometry may also characterise the northern extremity of the ledge.

The core of the ledge is composed of vuggy residual quartz and associated silicification and, as noted above, is in part hydrothermally re-brecciated. The siliceous ledge grades peripherally to a zone of quartz-alunite alteration, which is particularly well developed in the southern part of the prospect area (Fig. 7). Most of the quartz-alunite alteration is massive and characterised by alunite replacement of feldspar phenocrysts. However, in places, particularly in a shallowly inclined horizon within the thickest part of the siliceous ledge (Figs. 3 and 7), alunite-rich alteration is powdery in character and largely disaggregated in the core boxes. This material is reminiscent of alunite developed in steam-heated horizons above paleo-water tables, although it is difficult to see how the required processes could have operated within the ledge unless the paleo-water table descended appreciably during the late stages of the mineralization event. If this were the case, then the kaolinite-bearing alteration elsewhere at Rojo Grande should also have been transformed to a similar steam-heated assemblage. The peripheral alteration on all the sections is dominated by a quartz-kaolinite assemblage, in which the plagioclase phenocrysts are replaced by kaolinite.

The siliceous ledge, probably including its quartz-alunite halo, coincide well with the CSAMT resistivity anomaly at Rojo Grande, which tends to diminish in intensity at a depth of ~200 m. This effect may signal an approach to the base of the ledge or, alternatively, reflect the depth penetration of the method.

**Supergene effects**

Almost the entire Rojo Grande ledge and its advanced argillic (quartz-alunite and quartz-kaolinite) alteration haloes, as defined to date by drilling, are completely oxidised, implying that sulphide destruction extends to depths of at least 220 m. Pyrite and marcasite are transformed to hematite, goethite and jarosite, and any associated copper (as enargite) has been completely leached. Within this oxidised zone, the only observed pyrite is confined to uncommon, isolated patches <2 cm in size. However, on the southwestern periphery of the ledge, partially oxidised quartz-kaolinite alteration is encountered at a depth of 140 m (Figs. 6 and 7).

The Rojo Grande ledge is mirrored by a low induced-polarisation chargeability response, as it should be in view of the deep supergene oxidation of all its contained sulphide minerals to a depth of at least 220 m.

**Precious-metal localisation**

Inspection of the geological sections, particularly the longitudinal (Fig. 7), reveals a complex distribution of gold and silver values. Precious-metal concentrations are hosted by both the dacite porphyry bodies and wall-rock andesitic volcanic rocks and, in both rock types, may be contained either within or beyond the hydrothermal breccias. Nevertheless, the highest gold values reported to date, 29 m at 9.61 g/t Au (including 5 m at 48.34 g/t Au), occur in hydrothermally brecciated dacite porphyry (DDHC-11-042; Figs. 3 and 7).

The gold and silver are mainly present in vuggy quartz and associated silicification, although in places they are hosted by the quartz-alunite zone, albeit generally only where it suffered re-brecciation (DDHC-10-32; Fig. 7). The powdery quartz-alunite alteration contains only low-order silver values (DDHC-11-040; Fig. 3) and the quartz-kaolinite zone is generally barren (Fig. 7). Nevertheless, in hole DDHC-10-35, an 8-m intercept averaging 7.08 g/t Au, is centred on a narrow, probably steep breccia dyke within the quartz-kaolinite zone, albeit with nearby development of quartz-alunite alteration veinlets.

Based on the above observations, the precise localisation of gold and silver values is difficult to ascertain. However, as generalisations, it may be stated that the hydrothermally brecciated and marginal parts of the northern dacite porphyry body are particularly favourable, as is the southern, polymict hydrothermal breccia body. Nevertheless, most of the elevated gold and silver intervals coincide with increased limonite abundance, implying an original association of the highest precious-metal values with elevated iron sulphide contents. Parenthetically, it should be noted that there is no evidence for any supergene gold or silver enrichment consequent upon the sulphide oxidation. The highest gold tenors everywhere coincide with increased silver contents, although in places elevated silver values lack appreciable accompanying gold (e.g. DDHC-10-020; Figs. 4 and 7).

**Cerro Amarillo sector**

Holes DDHC-11-041 and 045 (Fig. 8) were drilled ~500 m south of Rojo Grande in search of possible extensions to the gold- and silver-bearing ledge beneath the remanent steam-heated horizon that is preserved at the highest elevations (see May 2010 report). Both holes encountered very different geology to that described above for Rojo Grande. The holes drilled a polymict, matrix-supported hydrothermal breccia similar to that mapped by Guillermo Figueroa and co-workers to the east of Rojo Grande. The widespread extent, overall homogeneity and general character of the breccia suggest that it fills a phreatomagmatic diatreme vent. The breccia is relatively late in timing because it contains numerous altered and veined clasts besides isolated clasts of earlier-formed breccia, indicative of multi-phase brecciation. The breccia is cut by wide intervals of essentially unaltered biotite andesite porphyry. Since the porphyry does not crop out, its geometry is poorly constrained, although it is probably a late-mineral plug or dome and associated dykes, as interpreted in Figure 8.

Most of the breccia body displays quartz-kaolinite alteration, although at depth there is an abrupt transition to quartz-alunite alteration (Fig. 8). However, although there is a very minor increase in precious-metal values in the quartz-alunite zone (DDHC-11-041; Fig. 8), the breccia, as well as the late-mineral porphyry, appears to be essentially barren although the assays for hole DDHC-11-045 are still pending.

Much of the breccia and late-mineral andesite porphyry (which contains trace disseminated pyrite) is sulphide bearing beneath a shallow (<25 m) oxidised zone. At a depth of 220 m, however, a second, deep oxidised zone is present, much of it confined to the quartz-alunite alteration noted above (Fig. 8).

## GEOLOGICAL MODEL

The andesitic volcanic host rocks to the Del Carmen Norte system are consistent with accumulation in a stratovolcano setting. The dacite porphyry bodies, interpreted as the subsurface parts of volcanic domes, seem likely to have been emplaced in the same setting, where they may denote proximity to a volcanic centre. The dacite porphyry described previously (May 2010) from the Quebrada Pedregosa sector, now seems likely to be part of another dome rather than a flow. The hydrothermal brecciation, apparently giving rise to upward-flared, pipe-like bodies, appears to have accompanied, but immediately followed dacite porphyry emplacement. Dome emplacement was also closely followed by the formation of the large polymict breccia body drilled in the Cerro Amarillo sector, which is preliminarily assigned a phreatomagmatic diatreme origin by both Guillermo Figueroa and the writer.

The Rojo Grande ledge appears to be roughly centred on the two dacite porphyry bodies and associated hydrothermal breccias although the latter, in common with the inferred diatreme, are inter-mineral in timing, implying that they were generated during the alteration process. Hydrothermal upflow appears to have been focused by the northern dacite porphyry body, as reflected by the >220-m thickness of vuggy quartz and associated silicification within and surrounding it (Figs. 3 and 7). The subhorizontal ledge geometry to the south and, possibly, also north implies outward and predominantly lateral fluid flow in these parts of the system, presumably controlled by the shallowly dipping volcanic stratigraphy. Progressive neutralisation and cooling of the highly acidic fluids responsible for ledge formation gave rise to the quartz-alunite and quartz-kaolinite alteration haloes. The curious outward concave form of these haloes in Figures 2 and 3 is ascribed to the relative impermeability of the non-brecciated dacite porphyry. These advanced argillic haloes are followed outwards by illite- and smectite-bearing intermediate argillic assemblages, although none of this distal alteration was intersected by the holes used to construct the attached sections. The hydrothermal event concluded with emplacement of the late-mineral andesite porphyry plug or dome at Cerro Amarillo (Fig. 8).

The precious metals were introduced relatively late in the development of the Rojo Grande ledge, as confirmed by their occurrence in vuggy quartz, silicification and, locally, quartz-alunite alteration as well as partly within the inter-mineral hydrothermal breccias. It is this late introduction that accounts for the disparate lithological and alteration controls on precious-metal distribution, although permeability seems likely to have been the ultimate localiser. This same permeability – a product of vuggy quartz and hydrothermal breccia formation – along with the prominent topographic position of Rojo Grande also controlled the extremely deep supergene oxidation. As noted previously, this deep oxidation is an extremely important factor because it implies that any high-sulphidation gold ore defined at Rojo Grande should be readily amenable to cyanidation: a prediction supported by the preliminary metallurgical test results.

The banded quartz veinlets recognised previously in the Quebrada Pedregosa sector and several translucent veinlets observed at Rojo Grande confirm that porphyry gold ± copper mineralization is present in the central parts of the Del Carmen Norte project area (see May 2010 report). The absence of a recognisable porphyry intrusion and the sparse, commonly sheeted distribution of the veinlets suggest that only the uppermost parts of the porphyry centre are exposed. Hence, it is impossible to determine the potential importance of the porphyry gold mineralization at depth without drill testing.

## EXPLORATION RECOMMENDATIONS

The ongoing exploration at Rojo Grande should aim to test for extensions to the high-grade intercept recently returned by hole DDHC-11-042, a task which would probably be best achieved by drilling vertical step-out holes within the thickest part of the vuggy quartz and silicified zone. A site midway between the DDHC-10-019 and 11-042 platforms would be an obvious location for the first hole. Deeper (>220 m) drilling within the centre of the ledge is also recommended in order to test for any deeper high-sulphidation precious-metal concentrations as well as to close off the ledge downwards and define the base of supergene oxidation.

The presence of the diatreme and late-mineral andesite porphyry body in the Cerro Amarillo sector, south of Rojo Grande, downgrades the potential of this area, including the zone beneath the steam-heated horizon. Nevertheless, the downward change from quartz-kaolinite to quartz-alunite (Fig. 8) could presage the presence of potentially auriferous vuggy quartz and silicification at still greater depths (>350 m): an outside possibility that will hopefully be successfully tested by one of the current drill holes (DDHC-11-048). The prominent CSAMT resistor targeted by holes DDHC-11-041 and 045 seems to be plausibly explained by the siliceous nature of the quartz-kaolinite-altered breccia and/or unaltered andesite porphyry, although any deeper source should be effectively tested by hole DDHC-11-048.

As an addition to the scout drilling planned to the east and south of Rojo Grande, two untested targets might also be considered: the undrilled, 500-m-wide gap between Rojo Grande and holes DDHC-11-041 and 045 at Cerro Amarillo, and the deep porphyry gold ± copper potential. The latter would require at least two deep (say, 600 m), steeply inclined holes in the centre of the zone of most intense banded quartz veinlet development, probably in the Quebrada Pedregosa sector.

San Juan
25th February 2011

Richard H. Sillitoe

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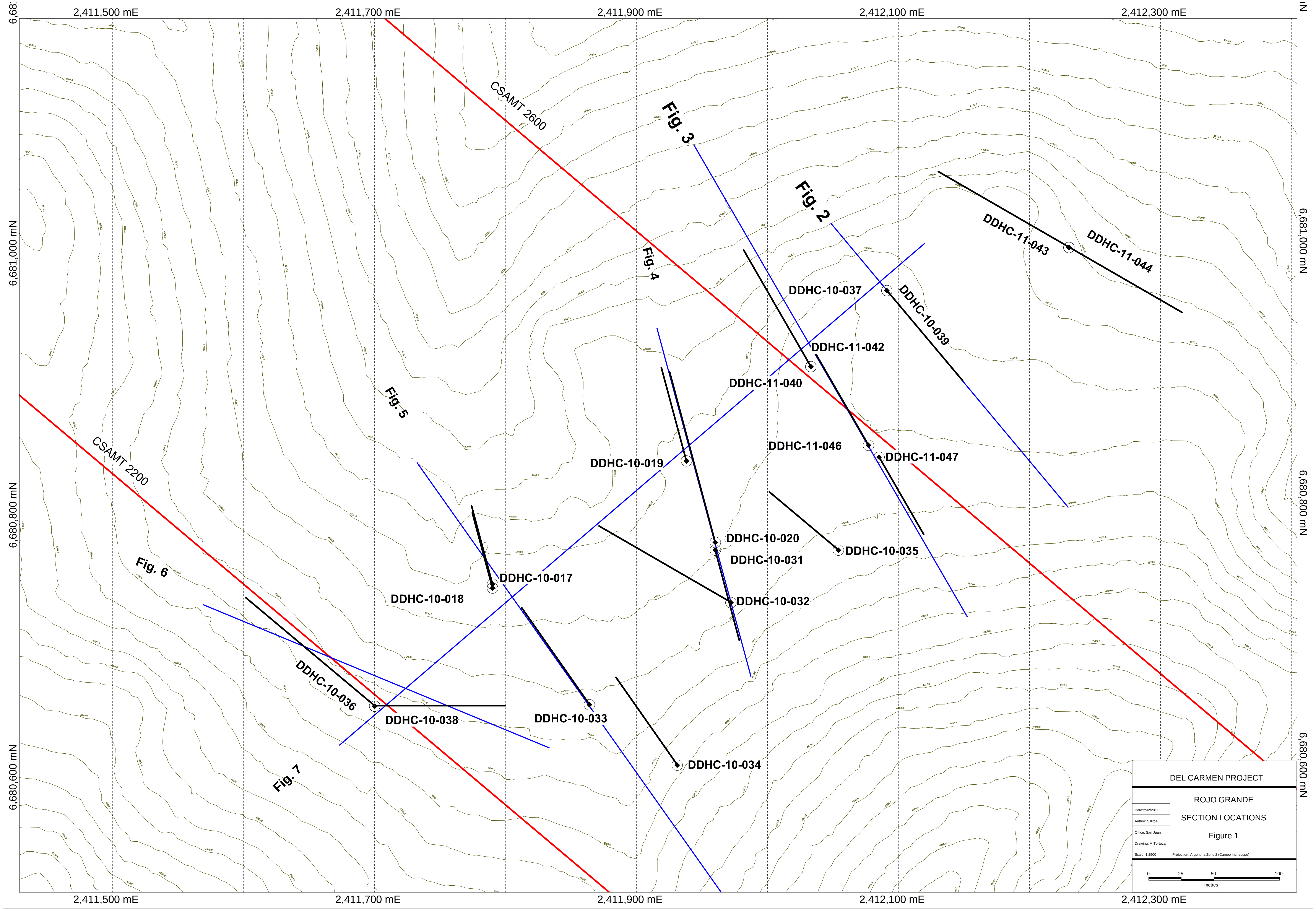

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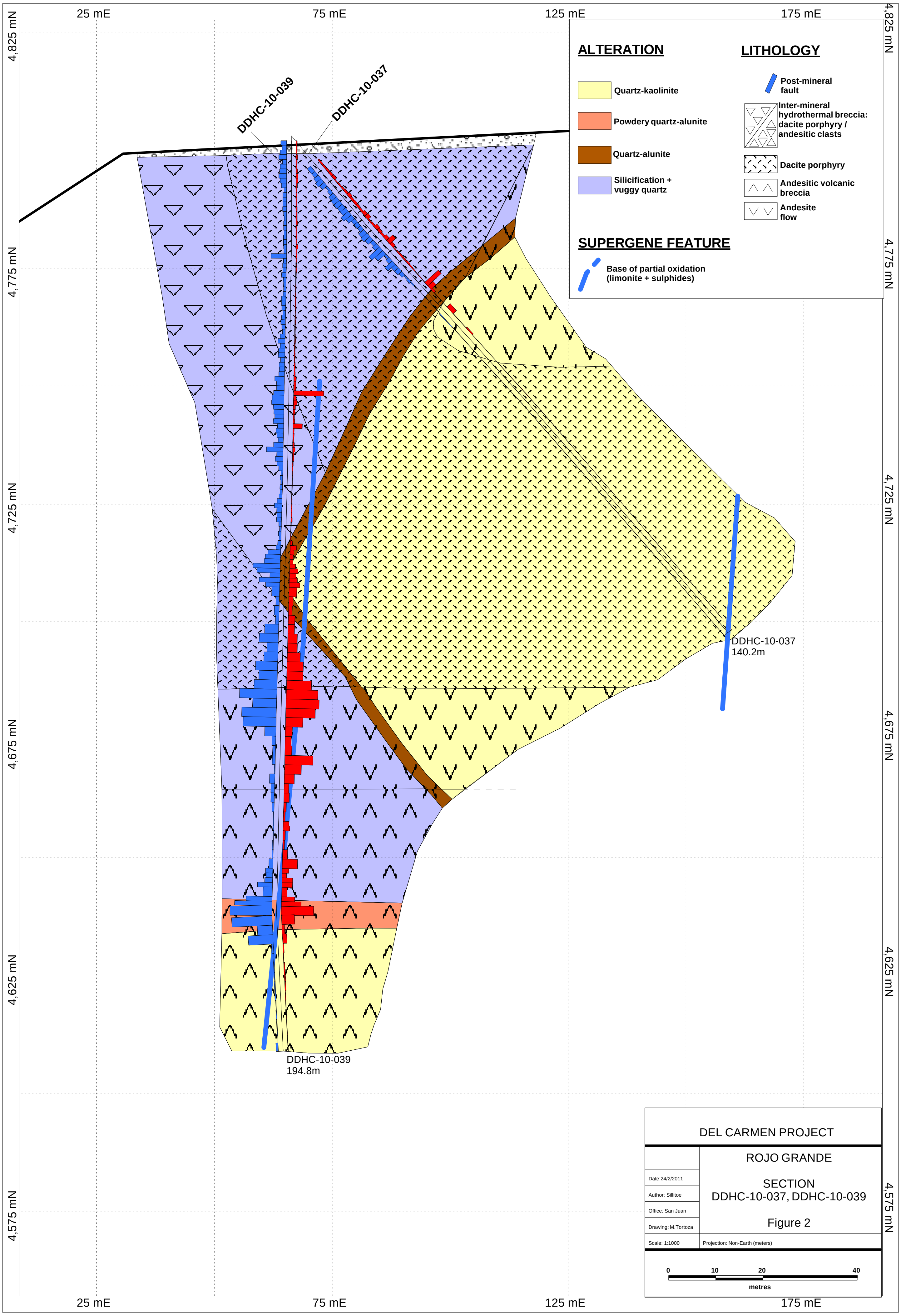
2,411,900 mE
2,412,100 mE
2,412,300 mE
6,681,000 mN
6,680,800 mN
6,680,600 mN
CSAMT 2600
CSAMT 2200
Fig. 2
Fig. 3
Fig. 4
Fig. 5
Fig. 6
Fig. 7
DDHC-11-043
DDHC-11-044
DDHC-10-037
DDHC-10-039
DDHC-11-042
DDHC-11-040
DDHC-11-046
DDHC-11-047
DDHC-10-019
DDHC-10-020
DDHC-10-031
DDHC-10-035
DDHC-10-017
DDHC-10-018
DDHC-10-032
DDHC-10-036
DDHC-10-038
DDHC-10-033
DDHC-10-034
DEL CARMEN PROJECT
ROJO GRANDE
SECTION LOCATIONS
Figure 1
Date:25/2/2011
Author: Sillitoe
Office: San Juan
Drawing: M.Tortoza
Scale: 1:2500
Projection: Argentina Zone 2 (Campo Inchauspe)
0
25
50
100
metres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75 mE
125 mE
175 mE
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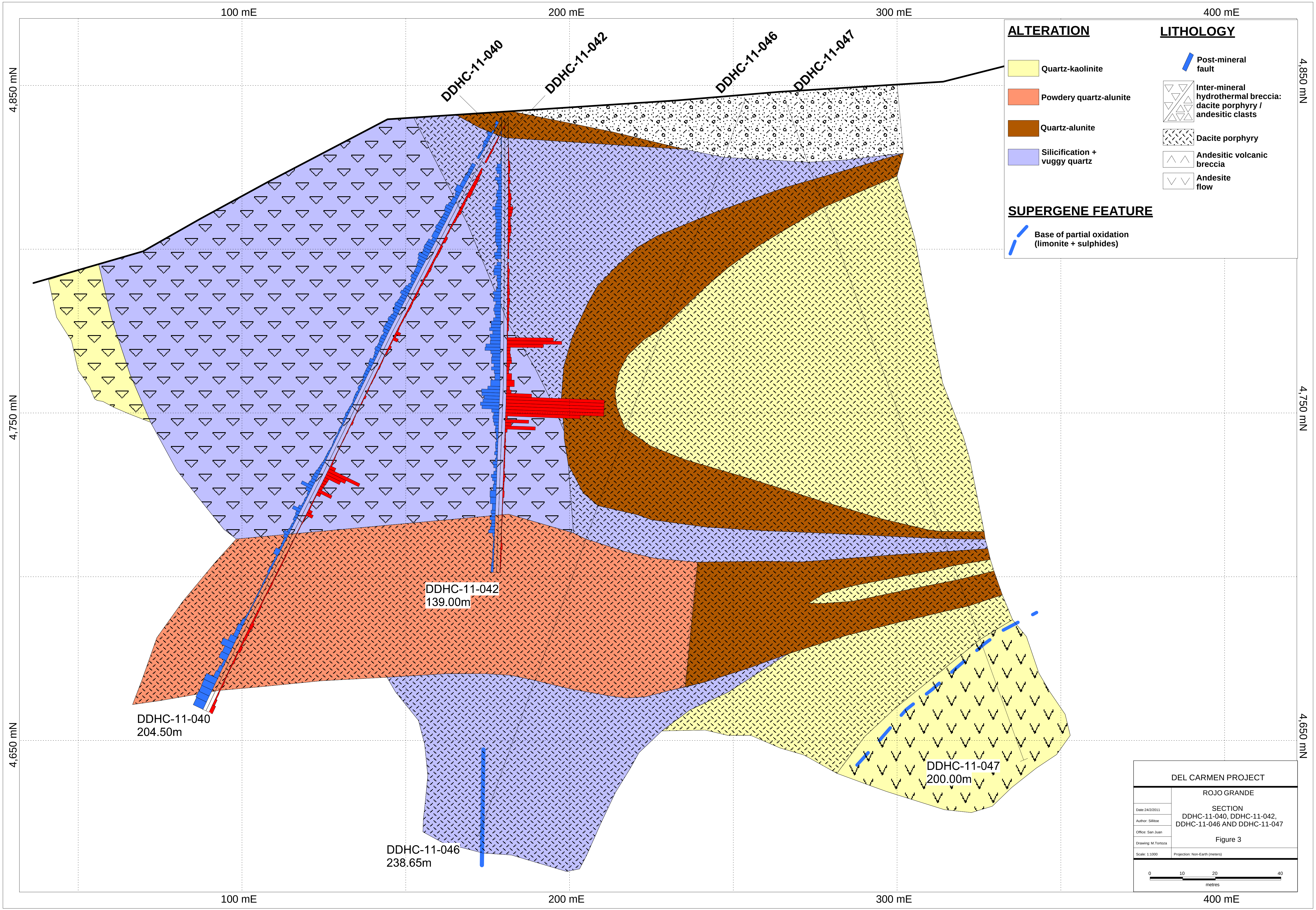
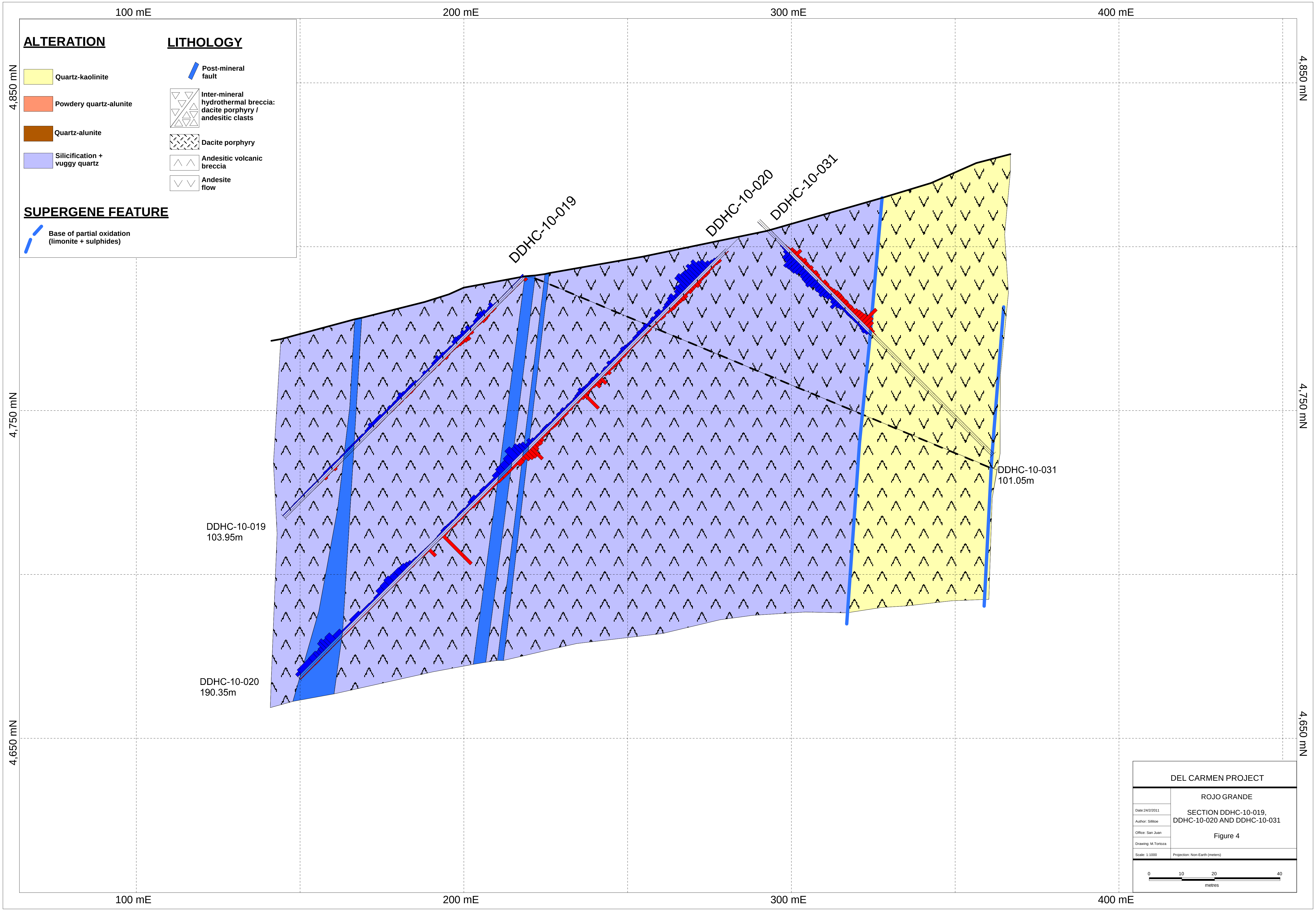
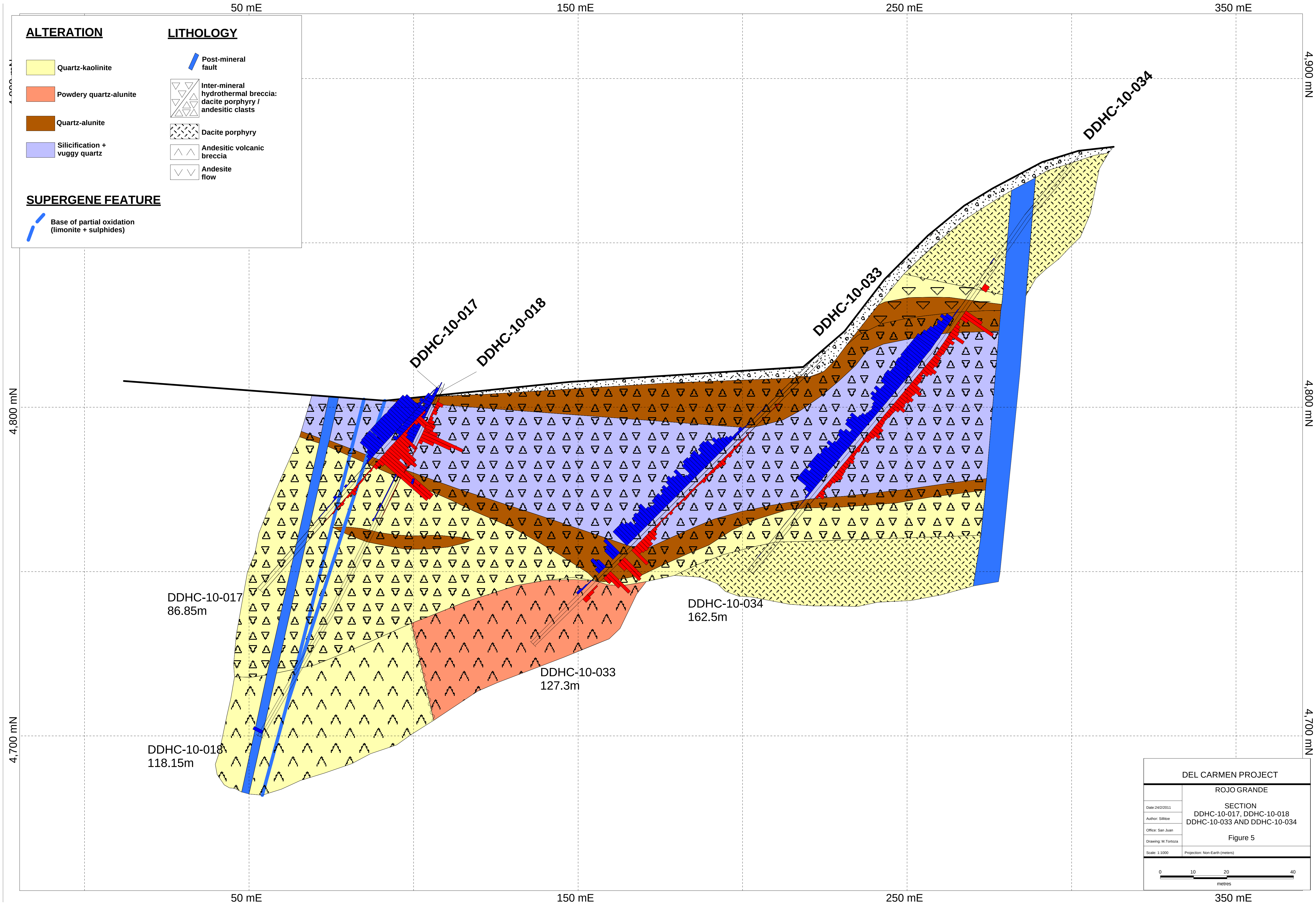
4,775 mN
4,725 mN
4,675 mN
4,625 mN
4,575 mN
ALTERATION
Quartz-kaolinite
Powdery quartz-alunite
Quartz-alunite
Silicification + vuggy quartz
LITHOLOGY
Post-mineral fault
Inter-mineral hydrothermal breccia: dacite porphyry / andesitic clasts
Dacite porphyry
Andesitic volcanic breccia
Andesite flow
SUPERGENE FEATURE
Base of partial oxidation (limonite + sulphides)
DDHC-10-039
DDHC-10-037
DDHC-10-037 140.2m
DDHC-10-039 194.8m
DEL CARMEN PROJECT
ROJO GRANDE
SECTION
DDHC-10-037, DDHC-10-039
Figure 2
Date:24/2/2011
Author: Sillitoe
Office: San Juan
Drawing: M.Tortoza
Scale: 1:1000
Projection: Non-Earth (meters)
0
10
20
40
metres



100 mE
200 mE
300 mE
400 mE
4,850 mN
4,750 mN
4,650 mN
DDHC-11-040
DDHC-11-042
DDHC-11-046
DDHC-11-047
ALTERATION
Quartz-kaolinite
Powdery quartz-alunite
Quartz-alunite
Silicification + vuggy quartz
LITHOLOGY
Post-mineral fault
Inter-mineral hydrothermal breccia: dacite porphyry / andesitic clasts
Dacite porphyry
Andesitic volcanic breccia
Andesite flow
SUPERGENE FEATURE
Base of partial oxidation (limonite + sulphides)
DDHC-11-042 139.00m
DDHC-11-040 204.50m
DDHC-11-047 200.00m
DDHC-11-046 238.65m
DEL CARMEN PROJECT
ROJO GRANDE
SECTION DDHC-11-040, DDHC-11-042, DDHC-11-046 AND DDHC-11-047
Figure 3
Scale: 1:1000
0 10 20 40
metres


100 mE
200 mE
300 mE
400 mE
4,850 mN
4,750 mN
4,650 mN
ALTERATION
Quartz-kaolinite
Powdery quartz-alunite
Quartz-alunite
Silicification + vuggy quartz
LITHOLOGY
Post-mineral fault
Inter-mineral hydrothermal breccia: dacite porphyry / andesitic clasts
Dacite porphyry
Andesitic volcanic breccia
Andesite flow
SUPERGENE FEATURE
Base of partial oxidation (limonite + sulphides)
DDHC-10-019
DDHC-10-020
DDHC-10-031
DDHC-10-031 101.05m
DDHC-10-019 103.95m
DDHC-10-020 190.35m
DEL CARMEN PROJECT
ROJO GRANDE
SECTION DDHC-10-019, DDHC-10-020 AND DDHC-10-031
Figure 4
Date:24/2/2011
Author: Sillitoe
Office: San Juan
Drawing: M.Tortoza
Scale: 1:1000
Projection: Non-Earth (meters)
0
10
20
40
metres



50 mE
150 mE
250 mE
350 mE
4,900 mN
4,800 mN
4,700 mN
ALTERATION
Quartz-kaolinite
Powdery quartz-alunite
Quartz-alunite
Silicification + vuggy quartz
LITHOLOGY
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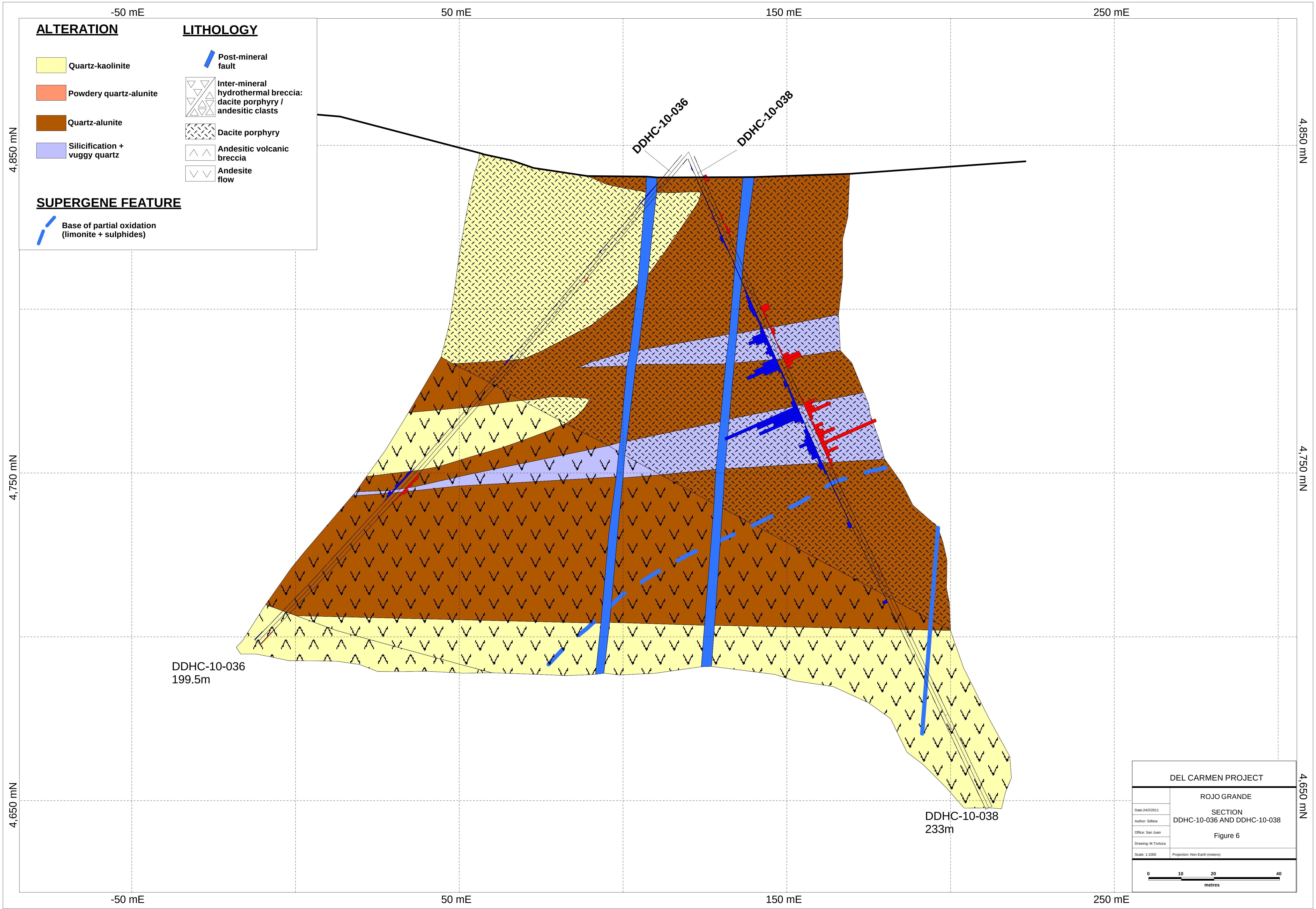
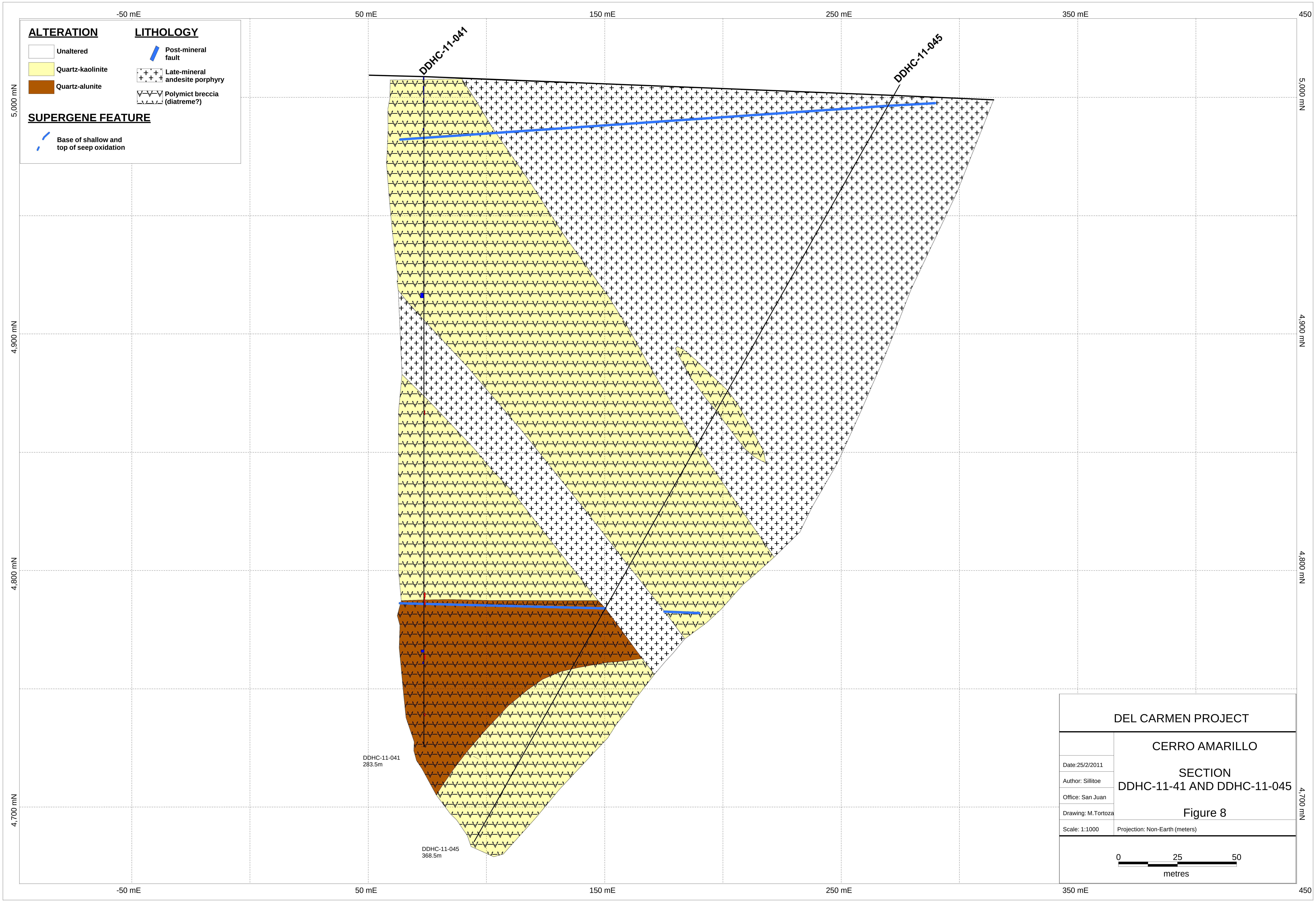
Inter-mineral hydrothermal breccia: dacite porphyry / andesitic clasts
Dacite porphyry
Andesitic volcanic breccia
Andesite flow
SUPERGENE FEATURE
Base of partial oxidation (limonite + sulphides)
DDHC-10-017
DDHC-10-018
DDHC-10-033
DDHC-10-034
DDHC-10-017 86.85m
DDHC-10-018 118.15m
DDHC-10-033 127.3m
DDHC-10-034 162.5m
DEL CARMEN PROJECT
ROJO GRANDE
SECTION
DDHC-10-017, DDHC-10-018
DDHC-10-033 AND DDHC-10-034
Figure 5
Date:24/2/2011
Author: Sillitoe
Office: San Juan
Drawing: M.Tortoza
Scale: 1:1000
Projection: Non-Earth (meters)
0 10 20 40
metres


ALTERATION
Quartz-kaolinite
Powdery quartz-alunite
Quartz-alunite
Silicification + vuggy quartz
LITHOLOGY
Post-mineral fault
Inter-mineral hydrothermal breccia: dacite porphyry / andesitic clasts
Dacite porphyry
Andesitic volcanic breccia
Andesite flow
SUPERGENE FEATURE
Base of partial oxidation (limonite + sulphides)
-50 mE
50 mE
150 mE
250 mE
4,850 mN
4,750 mN
4,650 mN
DDHC-10-036
DDHC-10-038
DDHC-10-036
199.5m
DDHC-10-038
233m
DEL CARMEN PROJECT
ROJO GRANDE
SECTION
DDHC-10-036 AND DDHC-10-038
Figure 6
Date:24/2/2011
Author: Sillitoe
Office: San Juan
Drawing: M.Tortoza
Scale: 1:1000
Projection: Non-Earth (meters)
0
10
20
40
metres

ALTERATION
Quartz-kaolinite
Powdery quartz-alunite
Quartz-alunite
Silicification + vuggy quartz
LITHOLOGY
Post-mineral fault
Inter-mineral hydrothermal breccia: dacite porphyry / andesitic clasts
Dacite porphyry
Andesitic volcanic breccia
Andesite flow
SUPERGENE FEATURE
Base of partial oxidation (limonite + sulphides)
0 mE
150 mE
300 mE
450 mE
600 mE
4,875 mN
4,725 mN
4,575 mN
DDHC-10-036
DDHC-10-038
DDHC-10-018
DDHC-10-017
DDHC-10-032
DDHC-10-020
DDHC-10-019
DDHC-11-042
DDHC-11-040
DDHC-10-039
DDHC-10-036 199.5m
DDHC-10-038 233m
DDHC-10-017 86.85m
DDHC-10-018 118.15m
DDHC-10-032 164.15m
DDHC-10-019 103.95m
DDHC-10-020 190.35m
DDHC-11-042 139m
DDHC-11-040 204.5m
DDHC-10-039 194.8m
DEL CARMEN PROJECT
ROJO GRANDE
LONGITUDINAL SECTION
Figure 7
Date:25/2/2011
Author: Sillitoe
Office: San Juan
Drawing: Tortoza
Scale: 1:1000
Projection: Non-Earth (meters)
0 25 50
metres


ALTERATION
Unaltered
Quartz-kaolinite
Quartz-alunite
LITHOLOGY
Post-mineral fault
Late-mineral andesite porphyry
Polymict breccia (diatreme?)
SUPERGENE FEATURE
Base of shallow and top of seep oxidation
-50 mE
50 mE
150 mE
250 mE
350 mE
450
5,000 mN
4,900 mN
4,800 mN
4,700 mN
DDHC-11-041
DDHC-11-045
DDHC-11-041 283.5m
DDHC-11-045 368.5m
DEL CARMEN PROJECT
CERRO AMARILLO
SECTION DDHC-11-41 AND DDHC-11-045
Figure 8
Date:25/2/2011
Author: Sillitoe
Office: San Juan
Drawing: M.Tortoza
Scale: 1:1000
Projection: Non-Earth (meters)
0
25
50
metres