#### **Artha Resources Corporation**

# 2015 TECHNICAL REPORT ON THE ORGANULLO PROJECT

Located in Salta Province, Argentina 24° 23' 42" South Latitude 66° 19' 16" West Longitude WGS 84, Zone 19J, 7299410N, 771690E

-prepared for-

ARTHA RESOURCES CORPORATION Suite 355 – 1350 Burrard Street Vancouver BC, Canada, V6Z 0C2

-prepared by-

J. Lehtinen, PGeo EQUITY EXPLORATION CONSULTANTS LTD Suite 200, 900 West Hastings Street Vancouver, British Columbia, Canada, V6C 1E5

Effective date: April 17, 2015



LC023679-2

TABLE OF CONTENTS	1
LIST OF APPENDICES	2
LIST OF TABLES	2
LIST OF FIGURES	2
1.0 SUMMARY	3
2.0 INTRODUCTION	
3.0 RELIANCE ON OTHER EXPERTS	
4.0 PROPERTY DESCRIPTION AND LOCATION	
5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE, PHYSIOGRAPHY	7
5.1 Accessibility	
5.2 Climate and Physiography	
5.3 Local Resources and Infrastructure	8
6.0 HISTORY	
7.0 GEOLOGICAL SETTING AND MINERALIZATION	10
7.1 Regional Geology	10
7.1.1 Lithostratigraphy	10
7.1.2 Tectonics	-
7.2 Property Geology	12
7.3 Mineralization	14
8.0 DEPOSIT TYPES	
9.0 EXPLORATION	
9.1 Mapping, ASTER Imaging and Geochemistry	
9.2 Geophysical Surveys	
10.0 DRILLING	
11.0 SAMPLE PREPARATION, ANALYSES AND SECURITY	
12.0 DATA VERIFICATION	
13.0 MINERAL PROCESSING AND METALLURGICAL TESTING	
14.0 MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES	
15.0 OTHER RELEVANT DATA AND INFORMATION	
16.0 INTERPRETATION AND CONCLUSIONS	
17.0 RECOMMENDATIONS	
17.1 Program	
17.2 Budget	28



1

## LIST OF APPENDICES

2

EQUITY

Appendix A: References Appendix B: Organullo Drill Holes Appendix C: Certificate of Qualified Person

# LIST OF TABLES

Table 1: Tenure data	7
Table 2: Summary of historic work done on the Organullo property, prior to work completed by Artha in 20	-
Table 3: Summary of reverse circulation (RC) and diamond (DD) drilling on the Organullo property	.18
Table 4: Significant historic (pre-2010) Organullo drill intersections	.19
Table 5: Significant 2010 Organullo drill intersections	22

## LIST OF FIGURES

Figure 1: Location map	5
Figure 2: Tenure map	6
Figure 3: Regional geology	11
Figure 4: Property geology	
Figure 5: Surface rock samples	17
Figure 6: Drill hole locations	21
Figure 7: Drill hole ORG10-05	24

#### 1.0 SUMMARY

The Organullo gold property is located in the Salta province of Argentina, approximately 20 kilometres ("km") due south of the village of San Antonio de Los Cobres and ~100 km WNW from the city of Salta. Access is easily attained by a network of roads that runs into the central part of the property. The Organullo property consists of eight contiguous "Mina" tenures covering 6,118 hectares (61 km<sup>2</sup>).

The property was initially explored and mined on a small scale as the Julio Verne mine in the 1930's. Regional work on the property was conducted in the 1960's and 70's. In 1994-5, Triton Mining Corporation conducted a mapping, sampling, rock geochemistry and reverse circulation (RC) drill program. Newmont Overseas Exploration Ltd performed a property evaluation in 1996. Northern Orion Explorations Ltd performed a core drilling program in 1997 followed by RC drilling in 1999.

In 2004, Cardero Argentina S.A. ("Cardero Argentina"), a wholly owned subsidiary of Cardero Resource Corporation ("Cardero") acquired the property by staking and in 2005 performed a digital data compilation of information on the property and surrounding area. In 2007 mapping and surface geochemical sampling was done, along with petrographic description of six samples. A compilation report was produced in 2008 that integrated digital data with previous work and advanced space-borne thermal emission and reflection radiometer (ASTER) imagery interpretation. In 2009, spectrometry-driven alteration mapping, geological mapping and rock geochemistry were done, along with a ground-based controlled source audio-frequency magnetotelluric (CSAMT) and magnetic geophysical survey. The CSAMT survey identified areas of high and low resistivity that could relate to silicification and clay alteration respectively. The survey also identified a major north-south trending structure aligned with the Organullo river valley that was interpreted to be a fault and possibly controlled mineralization at the Julio Verne mine. In 2010, reinterpretation of ASTER data was used to improve characterization of the alteration facies and eight core holes, for a total of 2,053.5 metres ("m"), were drilled in conjunction with a talus fines and chip sampling geochemical survey.

Artha Resources Corporation ("Artha") and Cardero have discussed terms, subject to approval of Artha shareholders and the TSX Venture Exchange, whereby Artha will acquire a 100% interest in the Organullo property pursuant to an acquisition by Artha of all of the issued and outstanding shares of Cardero Argentina pursuant to a purchase agreement dated March 23, 2014 between Artha and Cardero in consideration for the payment to Cardero by Artha of USD \$50,000 and the issuance by Artha of 21,953,781 common shares (subject to adjustment at closing) to Cardero in consideration for services provided by Cardero to Artha in connection with the purchase and sale transaction. This report has been prepared for Artha in connection with the proposed acquisition of the property.

The Organullo property is located in an anomalously light-coloured area related to a zone of argillic and sericitic alteration, which extends for ~6 km in a north-south direction along the Organullo river valley. In addition, strong oxidation of pyrite has produced orange-brown gossan over significant areas of the clay alteration. The style of alteration, lithologies, structural complexity, mineralization and geochemistry are all permissive of epithermal-style mineralization. Regionally, the property lies along the major northwest trending Calama-Olacapato-El Toro lineament, which is one of several NW-trending lineaments that host both volcanic centres and world-class mineral deposits in this part of South America.

Gold mineralization discovered to date on the Organullo property occurs at the Julio Verne mine site and on Organullo ridge. In both cases it is hosted in Palaeocene dacite to andesite volcanic and volcaniclastic rocks and their subvolcanic intrusive equivalents (granodiorite), as well as underlying Paleozoic metasedimentary rocks of the Puncoviscana Formation. The highest gold values are typically associated with quartz veins, stringer zones and silicified zones with disseminated pyrite and sulphosalt that occur in brecciated fault gouge zones proximal to granodiorite. Mineralization at the Julio Verne mine is reminiscent of high sulphidation epithermal-style mineralization, although elements of this classification are not entirely unequivocal. Mineralization on Organullo ridge is likewise equivocal but also tentatively classified as a high sulphidation epithermal system.

In 2010, a 2,053.5 m drill program on the Organullo ridge area and near the Julio Verne mine intersected silica- and clay–altered, faulted, Puncoviscana sedimentary rocks, Palaeocene volcanic and Palaeocene intrusive that returned assay composites ranging from 0.96 ppm Au over 16.0 m to 0.14 ppm Au

3



over 445.0 m. The drilling identified a system of (potentially high sulphidation) hydrothermal mineralization and alteration that has been structurally complicated by faulting.

In 2012, following completion of confirmatory sampling and desktop studies, Artha reported ranges of potential exploration targets. At a lower gold cut-off of 0.5 g/t the total target potential ranged from a lower 19.8 Mt at 0.94 g/t gold (600,000 ounces gold) to an upper 31.6 Mt at 0.92 g/t gold (940,000 ounces gold). *It should be noted that these potential exploration target quantities and grades are conceptual in nature, that insufficient exploration and geological modelling has been done to define a mineral resource, and that it is uncertain if further exploration will result in the delineation of a mineral resource.* 

A comprehensive two-phase exploration program, totalling approximately \$1,496,000, is recommended for the Organullo property. Phase I (\$342,000) is planned for 2015 to 2016 and comprises a review of data and prioritizing of targets, followed by a 1,200 m drill campaign split between exploration targets (~600 m) and infill drilling (~600 m) on known prospects. Phase II (\$1,154,000) is planned for 2016 to 2017 and will comprise a more intensive ~3,300 m drill program focussed predominantly on the best prospects on the property.

## 2.0 INTRODUCTION

Equity Exploration Consultants Ltd ("Equity") was contracted by Artha to update the 2011 National Instrument 43-101 ("NI 43-101") technical report. The last material exploration work done on the Organullo property dates from 2010 and was managed by Equity, then under contract to Cardero, with the author supervising exploration on the property from April 3 to April 9, April 25 to May 25 and from October 21 to 24 2010. The 2010 exploration program also involved LPF Consulting Ltd ("LPF") of Buenos Aires, Argentina, who were sub-contracted to provide skilled geological and technical support for the duration of the program. Artha has assured Equity that no material work has been done on the Organullo property since the 2010 program managed by Equity, so that the 2010 examinations by the author are considered current. Specifically, Artha's field work included confirmatory mapping and sampling. The 210 confirmatory rock samples collected and analysed were dominantly collected in areas that had previously been sampled by Cardero or historical operators. The literature used in compiling this technical report consists of current field data, historical reports and data supplied by Cardero, government maps and publicly available data.

## 3.0 RELIANCE ON OTHER EXPERTS

Information in Section 4.0 regarding property title, ownership, applicable mining laws, regulations and permitting have been provided by Cardero and have not been verified by the author. The author has relied on a title opinion dated January 15, 2013, prepared by Mario Luis Castelli, legal counsel to Cardero Argentina for the verification of title for all of the subject "Mina" tenures. Cardero has provided assurances to the author that the Organullo property as outlined in the title opinion remains in good standing, with the next property tax due for payment on June 30, 2015.

Otherwise, the author has not relied on a report, opinion or statement of an expert for information concerning legal, environmental, political or other issues. The preparation of this report has relied upon the authors' own field work and observations made at the Organullo property as well as field data collected by LPF. Other information is obtained from published material and is referenced in this report.

# 4.0 PROPERTY DESCRIPTION AND LOCATION

The Organullo property is located in Salta Province of northwestern Argentina, centred at 24° 23' 42" south latitude and 66° 19' 16" west longitude (Figure 1). The property is located approximately 20 km due south of the village of San Antonio de Los Cobres, on a high elevation plateau known as the altiplano. In 2004, Cardero Argentina, a wholly owned subsidiary of Cardero acquired the property by staking.

The Organullo property consists of eight contiguous "Mina" tenures covering 6,118 hectares (61 km<sup>2</sup>) as detailed in Table 1 and Figure 2. To the knowledge of the author, the "Mina" tenures comprising the LC023679-2

4







property are in good standing and are held 100% by Cardero Argentina, with no underlying royalty interests, back-in rights or encumbrances. Property taxes are next due for payment on June 30, 2015, at which time a payment of ARS\$111,000 (approximately CAD \$15,540) will be due. Cardero Argentina has not acquired any surface rights coincident with the extents of the Organullo property. Access to the Property is via secondary Provincial roads and does not require permission from any third party landowner. The "Mina" tenures comprising the property are of indefinite duration assuming active exploration, development or mining activities on the property and the payment of annual property payments. Annual payments of ARS \$0.8 (approximately CAD \$0.11 at current exchange rates) are required per hectare to maintain title.

Artha and Cardero have discussed terms, subject to the approval of Artha shareholders and the TSX Venture Exchange, where Artha will acquire a 100% interest in the Organullo property pursuant to an acquisition by Artha of all of the issued and outstanding shares of Cardero Argentina pursuant to a purchase agreement dated March 23, 2014 between Artha and Cardero in consideration for the payment to Cardero by Artha of USD \$50,000 and the issuance by Artha of 21,953,781 common shares (subject to adjustment at closing) to Cardero in consideration for services provided by Cardero to Artha in connection with the purchase and sale transaction. This report has been prepared for Artha in connection with the proposed acquisition of the property. In order to maintain the property in good standing, Artha will be required to make the payment of ARS \$111,000 on or before June 30, 2015. The transaction between Cardero and Artha will not result in the creation of any royalty agreement.

Legal boundaries of the Minas are defined by Gauss Krüger coordinates of their corner points, which have been surveyed. Altered and mineralized zones on the Organullo property are contained entirely within the property and located several hundred metres from the nearest property boundary.

Future programs will require permitting; a water licence will be needed if diamond drilling is to be undertaken. No major environmental liabilities or major surface disturbance were noted on the property.

Name	Code	Туре	Area (Hectares)
Norma	17768	Mina	2,000
Maria	14986	Mina	200
Alicia	14987	Mina	200
Mateo	17767	Mina	1,700
Andrea	14988	Mina	400
Julio Verne	190	Mina	18
Relampago 2	16254	Mina	600
Relampago	15421	Mina	1,000
Total			6,118

Table 1: Tenure data

# 5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE, PHYSIOGRAPHY

## 5.1 Accessibility

The Organullo property is approximately 20 km due south of the village of San Antonio de Los Cobres in Salta Province, northwestern Argentina. It is accessed via Ruta Nacional (highway) 51, west from San Antonio de Los Cobres and then by a series of gravel and dirt roads for a total of approximately 28 km. The city of Salta, approximately 100 km southeast of the property, is a 3-4 hour drive via Ruta Nacional 51 which roughly follows the route of the Tren de las Nubes (a rail line in Salta Province).

# 5.2 Climate and Physiography

The Organullo property lies on the altiplano, a high altitude plateau with topography ranging from hilly to mountainous and with flat basin valleys of detrital material and salt pans (salars). The elevation of the

LC023679-2



property ranges from 3,990 m in the north to 4,580 m in the south. The local terrain comprises a series of linear, north-south oriented hills with seasonal stream beds (arroyos) converging on the main Organullo River. Vegetation typical of the altiplano region includes hardy low-lying brush and grasses in valley bottoms, especially near streams or where groundwater comes close to the surface. Hilltops are generally barren due to extreme exposure from wind, dry air and sun. Average daily temperatures range from daily highs of 28-29 °C in the summer (October-January) to 21 °C in the winter (May-July). Precipitation peaks in the summer time (150-200 mm/month in October-January) and is lowest in the winter (<50 mm/month from June-September).

#### 5.3 Local Resources and Infrastructure

San Antonio de Los Cobres, with a population of approximately 5,500 inhabitants, is the closest community to the Organullo property and provides a suitable base of operations with access to food, fuel, accommodation and basic supplies. The provincial capital Salta (population 619,000) provides a source for personnel (technical, administrative and labour) and material goods for most exploration program needs, and has an airport with scheduled flights to Buenos Aires and other Argentine cities.

A major power line runs within approximately 15 km of the property and a rail link from Salta to San Antonio de Los Cobres was operating in 2010. Water from the Organullo River is sufficient for drilling, but it is premature to determine the sufficiency of water for processing or the availability of land for mining and processing operations.

## 6.0 HISTORY

A summary of the exploration work carried out on the Organullo property is presented in Table 2 below, with more details provided below.

The earliest recorded work in the area of the Organullo property was small-scale copper-bismuth-gold (Cu-Bi-Au) production from the Julio Verne mine during the 1930's. Mining activity centred on two high-grade sub-parallel veins with true widths of 20-80 cm and strike length of 160 m. There are reported to be over 450 m of workings in the mine on three levels, with some of the workings extending below the valley bottom and underneath the water table (Dawson, 1994). Few details of production are available, but concentrates were reported to average 12.5% Bi and 8.2% Cu with Au ranging between 10 and 20 g/t (Angelelli, 1984).

From 1962-1972, regional work was undertaken in the area by Fabricaciones Militares in partnership with the United Nations, including mapping as well as silt and talus fines sampling (Dawson, 1994). Based on preliminary results, the region around and including the Organullo property was declared a mineral reserve. More detailed mapping and silt sampling followed in 1973-74. Cities Service Corp subsequently optioned the property and completed surface geochemical work, an IP survey and a single drill hole to the north of the Julio Verne mine workings (Dawson, 1994; Foruria, 2008). Results from drilling indicated "abundant pyrite occurring principally in veinlets and additionally small quantities of finely disseminated dark minerals which were not identified" (Dawson, 1994).

Tenure holder	Year	Description	Reference
Unknown	1930's	Historic working of the Julio Verne mine	none
Fabricaciones Militares	1969-1974	Reconnaissance geology, geochemistry	none
<b>Cities Service Corporation</b>	1975	Surface geochemistry, IP, 1 drill hole	none
Triton Mining Corp & Northern Orion	1994	Surface sampling, mapping, grid chip sampling	Dawson, 1994
Explorations Ltd	1995	17 RC drill holes	Overbay and Jenkins, 1995

Table 2: Summary of historic work done on the Organullo property, prior to work completed by Artha in 2012.

# Table 2: Summary of historic work done on the Organullo property, prior to work completed by Artha in 2012(continued)

Tenure holder	Year	Description	Reference
Newmont Overseas Exploration Ltd (Chile)	1996	Property review	Hodgkin, 1996
Northern Orion	1997	6 diamond drill holes	Echevarría, 1997
Explorations Ltd	1999	12 RC holes	Unknown, 1999
	2004	Staking	n/a
	2005	Digital compilation	Cardero, 2005
	2007	Mapping, surface geochemistry	Enns, 2007
		Petrography	Thompson, 2007
		Property review, surface geochemistry	Fouria, 2008
		Compilation	Stewart, 2008
Cardero Argentina S.A.		PIMA analyses	Fonseca, 2009
		Mapping	Klipfel, 2009
	2009	Rock, chip and soil sampling	Internal company database
		CSAMT and magnetic surveys	Langer et al., 2010
		Re-interpretation of ASTER data	Fitzpatrick, 2010
	2010	Geochemical sampling, 8 diamond drill holes	Harris and Lehtinen, 2011

In 1994-95, Triton Mining Corp and Northern Orion Explorations Ltd jointly conducted a project-level exploratory campaign, with field work sub-contracted to Ingeoma SA and including:

- Collection of >200 reconnaissance rock chip samples;
- Surface mapping of lithologies, structures and alteration at 1:6,000 and 1:2,000;
- Collection of >600 rock chip samples from a 1900 m x 600 m grid over the central area of alteration;
- A 17 hole, 3295 m RC drill program

Newmont Chile reviewed the project for possible acquisition in early 1996. Senior Geologist Andrew Hodgkin performed the property-wide evaluation (Hodgkin, 1996) and consultant John Chulick evaluated the central project area (Chulick, 1996a, b). In 1997, Northern Orion Explorations Ltd carried out a six hole diamond drill program totaling 1,014 m over the central project target area (Echevarría, 1997). Diamond drill hole DDH 18 twinned the 1995 RC hole O-5 to confirm intercepted grades. Core recoveries improved relative to RC drilling but still ranged between 73-92% per hole. An additional 12 RC holes were drilled in 1999, possibly by Northern Orion, but currently only scanned copies of drill logs are available (Unknown, 1999).

In 2002-2003 Cardero acquired the property through staking and conducted several compilation and exploration programs on and around the property, starting in 2005 (Cardero, 2005). This was followed by brief reconnaissance mapping and collection of 112 samples in April 2007 (Enns, 2007) and petrographic studies on specimens from the Julio Verne mine area (Thompson, 2007). In 2008, Cardero was approached by Newmont for a second review of the property that culminated in a site evaluation based on 10.5 days of fieldwork and collection of 61 samples (Foruria, 2008).

Also in 2008, Cardero contracted Stewart Geological Consulting to produce a compilation report on the Organullo property (Stewart, 2008). This was followed, in 2009, by a mapping and sampling program completed with the aid of a portable infrared mineral analyzer (PIMA) to characterize alteration in the central portion of the Organullo property (Fonseca, 2009). A subsequent re-interpretation of the advanced space-borne thermal emission and reflection radiometer (ASTER) data was completed with corrected georeferencing (Fitzpatrick, 2010), as an earlier ASTER interpretation was found to be incorrectly georeferenced. The property was further mapped in 2009-2010 (Klipfel, 2009) and also sampled by LPF



Consulting Ltd, who collected 630 rock and talus fine samples, 13 soil samples and 418 RC chip samples from historic drilling. A controlled source audio-frequency magnetotelluric (CSAMT) and ground magnetic survey was also completed in 2009 (Langer et al., 2010). Lastly, diamond drilling of eight holes, for a total of 2,053.5 m, was completed in 2010 near the Julio Verne mine and immediately east on Organullo ridge (Harris and Lehtinen, 2011).

# 7.0 GEOLOGICAL SETTING AND MINERALIZATION

The following discussion of the regional geology and Figure 3 are excerpted from Stewart (2008).

## 7.1 Regional Geology

## 7.1.1 Lithostratigraphy

The oldest rocks in the region comprise turbiditic sedimentary rocks of the Neoproterozoic to early Cambrian (i.e. >540 Ma) Puncoviscana Formation, which also comprises much of the basement for the altiplano. These basement rocks were intruded by small granitoids stocks of broadly similar age (i.e. Neoproterozoic to early Cambrian) and are unconformably overlain by continental and marine sedimentary rocks ranging from the Lower Paleozoic to Cretaceous (i.e. ~66-540 Ma). Some of these units are also cut by a large Silurian (419-443 Ma) granodiorite batholith that Stewart (2008) links to the "Oire Suite". Isolated occurrences of Cretaceous (66-145 Ma) calcareous arenite with interlayered stromatolite occur along fold axes and as structural outliers next to faults, and locally grade into Paleocene (<66 Ma) fluvial sandstones and mudstones of the Santa Barbara Subgroup (Zappettini and Blasco, 1996). All of these pre-Cenozoic units appear to have been affected by no greater than greenschist facies metamorphism, aside from local hornfels development around intrusive bodies.

Miocene and post-Miocene (0-23 Ma) volcanic rocks cover a significant area, extending along much of the length of the Andean range as flows and volcanic complexes. These rocks are hosts to, and possibly the source of, several world-class precious (Au-Ag) and base metal deposits, as well as the mineralization on Organullo property.

Quaternary cover is limited at higher elevations, with local fluvial sedimentation in valley bottoms and accumulations of colluvium ranging from valley bottoms to the steeper slopes.

# 7.1.2 Tectonics

Sedimentary rocks of the Puncoviscana Formation were strongly folded and deformed during the upper Ordovician (443-456 Ma) Oclóyica tectonic event, with fold axes trending north-south (Triton, 1997). The regional stretching related to this tectonic event ranged northward from the Catamarca province in Argentina through Chile, Bolivia and into southern Peru. Much of this region was then uplifted during Miocene-Pliocene (3-23 Ma) shortening of the Andean orogeny, forming the altiplano ("high plan"). This great plateau dominates the physiography of central South America, lying at an average elevation of 3,700 m above sea level (asl) over its 500,000 km<sup>2</sup> extent and affecting the hydrology, climate and geography of an even greater area. A series of conjugate north-south oriented thrust faults accommodated this regional shortening in the upper crust, forming a series of north-south elongate uplifted structural blocks. Many of the north-south to northeast oriented structures have been reactivated since the Miocene as strike-slip faults with minor displacement.

Chernicoff et al (2002) also recognized an additional series of northwest-oriented lineaments within the central Andes, including the Culampajá, Archibarca and Calama-Olacapato-El Toro lineaments. While these features are not recognizable at surface by regionally continuous fault structures, they are represented by small scale fracture zones and faults. Integration with geophysical data suggests that they are deep-seated zones of crustal weakness. There is a striking correlation between the location of these lineaments and the presence of several world-class porphyry Cu deposits and centers of volcanic activity. The intersection of the Culampajá lineament and the Tucuman transfer zone, for example, hosts the Bajo de la Alumbrera copper-gold mine (695 Mt @ 0.51% Cu, 0.66 g/t Au). The Archibarca lineament hosts the world's largest copper resource at La Escondida (2,620 Mt @1.15% Cu) in addition to the Cerro Galán caldera and LC023679-2





the Llullaillaco stratovolcano (6,739 m asl) on the Argentina-Chile border. The third of these NW-trending lineaments, Calama-Olacapato-El Toro, hosts the Chiquicamata mine (6,450 Mt @ 0.55% Cu) and the Láscar stratovolcano (5,592 m asl). Interestingly, the Organullo property lies on an intersection between the Calama-Olacapato-El Toro lineament and a northeast-oriented lineament that appears to cross the Llullaillaco volcano ~550 km to the southwest.

#### 7.2 Property Geology

The oldest rocks on the property comprise thinly bedded and strongly folded quartzite, phyllite, slate and wacke of the Puncoviscana Formation, with minor quartz- and feldspar-phyric dacite. These Neoproterozoic to early Cambrian rocks underlie much of the property (Figure 4). Metamorphism of the Puncoviscana rocks is generally of greenschist grade with areas of hornfels next to intrusive bodies.

Younger volcanic rocks on the property are likely of Miocene to post-Miocene age and comprise a lower sequence of andesite volcaniclastic rocks that are overlain by dacite flows and tuffs. These volcanic and volcaniclastic rocks are assigned to the Agua Caliente Formation and are intruded by co-magmatic sub-volcanic intrusive. These granodiorite intrusions are exposed at several locations on the property. Some of these intrusions appear dome-like and may have been the source of the heat and fluids driving alteration and mineralization on the property.

The main alteration zone on the property is markedly visible and has been characterized through mapping, petrography (Thompson, 2007), core logging (Harris and Lehtinen, 2011), TerraSpec® analysis (Foruria, 2008; Harris and Lehtinen, 2011) and PIMA analysis (Fonseca, 2009; Harris and Lehtinen, 2011). These programs were used to define a ~6 x 1 km NNE-trending system of argillic to sericitic alteration, with argillic alteration in the northern ~2-3 km of this trend and sericitic alteration to the outside of this and predominant within the southern-most ~3-4 km. Argillic alteration is variably advanced, consisting of sericite, quartz, clay minerals (illite, smectite, kaolinite, other minor phases), pyrophyllite and/or alunite. Limonite, jarosite and hematite occur in argillic rocks that are also mineralized, especially in the area of the Julio Verne mine (Stewart, 2008). Advanced argillic assemblages (e.g. pyrophyllite + andalusite + quartz  $\pm$  alunite  $\pm$  tourmaline  $\pm$  enargite, no kaolinite, dickite), however, are relatively scarce. Argillic to variably developed advanced argillic alteration surrounds the Julio Verne mine and extends east to Organullo ridge, then northerly in a narrow zone approximately 200 m in width over 2,000 m in length. Sericitic alteration is defined by the predominance of sericite, illite and muscovite.

Two generations of silica alteration and veining are superimposed on argillic and sericitic alteration assemblages, and also occurs along faults and as fine stockworks and the matrix-fill of crackle breccias. These silicified and veined zones may include minor development of vuggy silica and drusy quartz, although both of these textural varieties are generally scarce on the property. Pyrite may be associated with some phases of quartz but is generally oxidized at and near the surface. Northern portions of the property display red hematitic staining. The general lack of vuggy silica, along with limited development of advanced argillic assemblages and kaolinite outboard of the advanced argillic assemblages (Fonseca, 2009) contrasts with the alteration and veining systematic of typical high sulphidation epithermal systems.

The ASTER imagery processing and interpretation completed in 2010 (Fitzpatrick, 2010) confirmed the results of field mapping and PIMA analyses. It shows a large area of sericite alteration on both sides of the Organullo valley that appears to be locally truncated by, perhaps, faults and Palaeocene cover rocks. Areas of advanced argillic alteration are defined by the presence of dickite + pyrophyllite + kaolinite + alunite, and show some correlation to the mineralized zones. Abrupt changes in the intensity of the alteration observed along the N-NE strike of the alteration zone is likely related to faulting, which juxtaposed blocks of differing alteration and lithology (or both).

Numerous structural elements have been recorded on the Organullo property, suggesting a complex history of deformation. Faults are typically exposed as broad zones of faulting, fracturing and shearing, as opposed to single planes, and in places may also host pervasive crackle brecciation (e.g. east of Julio Verne). Most of the strongly fractured zones are also strongly altered. The predominant fault orientation appears to be north-south striking (355°-012°) and steeply west dipping (78-85°), parallel to the most prominent valleys and ridges on the property and a series of ASTER-defined lineaments that appear to cut

LC023679-2





and terminate the NNE-trending alteration to the north. The sub-vertical vein set mined at Julio Verne strikes slightly oblique to these faults, at 323°-340°, and runs parallel to a set of silicified faults and fractures as well as lineaments (320°-325°) disrupting the alteration trend on the south end of Organullo ridge. Other structures possibly significant structural trends include; (1) sub-vertical quartz veins with silicified wall rocks striking NE-SW to ENE-WSW (045°-058°) and occurring within the Organullo ridge alteration zone, (2) ENE-trending (~070°) fractures and faults aligning quartz veins, silicification, and alteration, and (3) unmineralized faults and sulphide-bearing quartz veins striking 298°-315° and dipping steeply SW (Stewart, 2008). Some of these structures, especially those trending ~330 ° and ~070 °, appear to be inherited from the underlying Puncoviscana Formation. Dacite dikes locally appear to intrude along 070° structures. Volcanic rocks also show arrays of localized, discontinuous, fractures sets that most likely form during cooling (Klipfel, 2009).

#### 7.3 Mineralization

Mineralization on the Organullo property occurs in the Julio Verne mine area and on Organullo ridge to the east of this mine. At the Julio Verne Mine, copper-bismuth-gold (Cu-Bi-Au) mineralization is hosted in structurally-controlled, sub-vertical quartz veins striking 323°-340°. Ore minerals include enargite, pyrite, covellite, chalcopyrite, bornite, bismuthinite and sulphosalts, with a noteworthy lack of truly fine-grained enargite and pyrite (Thompson, 2007). Mining activity centred on two high-grade sub-parallel veins 20-80 cm wide and 160 m in strike length. There are reported to be over 450 m of workings in the mine on 3 levels, with some of the workings extending below the valley bottom and likely below the water table (Dawson, 1994). Few details of production are available, but concentrates were reported to average 12.5% Bi and 8.2% Cu with Au ranging between 10-20 g/t (Angelelli, 1984).

The enargite + pyrite + covellite ± bismuthinite ± alunite mineral assemblage at the Julio Verne mine is typical of high sulphidation systems, although the lack of "truly fine-grained" pyrite and enargite is not (Thompson, 2007). Other indicators of a high sulphidation system include the presence of alunite in the mine dump material, which indicates low pH conditions (Fonseca, 2009). Thompson (2007), however, suggested that the mineralization appears to be formed at somewhat deeper levels than typical high sulphidation systems, which is consistent with the scarcity and sporadic development of vuggy silica and advanced argillic alteration assemblages.

Mineralization on Organullo ridge is associated with an area of quartz veining, silicified rock and fine quartz stringers across several different rock types, including basement, overlying volcanic rock and subvolcanic intrusions. Variably developed advanced argillic alteration assemblages are defined by the presence of alunite + dickite + pyrophyllite, all of which are typical of high sulphidation environments. Mineralization identified from surface work and drilling is usually associated with faulting and veining, and is generally proximal to granodiorite intrusions. Northwest, northeast, and north-south trending subvertical fracture sets form the principal control to mineralization on surface and host most of the veins. These veins are sporadically exposed along the west-central portion of Organullo ridge, east of the Julio Verne workings. Foruria (2008) reports that some of these quartz veins are massive, unoxidized and occasionally sulphiderich, with an average width of ~30 cm and range of ~5-150 cm. Veins are spaced metres to tens of metres apart and typically follow structures trending 070° and 330° (Klipfel, 2009).

## 8.0 DEPOSIT TYPES

The Organullo property was historically explored as a high sulphidation epithermal lode gold deposit. Epithermal gold deposits are shallow deposits that form from surface to up to two kilometres depth, at temperatures from <150°C to 300°C. Some epithermal deposits from a continuum with porphyry Cu  $\pm$  Mo  $\pm$  Au deposits. Epithermal deposits may occur within both island and continental volcano-plutonic arcs, typically on the back-arc side of a convergent plate setting and within ~100 km of the active volcanic front. Host rocks for these deposits typically comprise contemporaneous volcanic and volcanogenic sedimentary units, as well as basement rocks.

Epithermal deposits may be formed by high or low sulphidation hydrothermal fluids that are characterized by specific alteration and mineralization assemblages. High sulphidation systems develop from oxidized, acidic fluids and produce alteration minerals stable in low pH environments. They are generally LC023679-2

located proximal to associated Cu  $\pm$  Mo  $\pm$  Au porphyry systems. Low sulphidation systems develop further away from contemporaneous porphyry deposits and from fluids that have been buffered by interaction with meteoric water, resulting in reduced, near-neutral pH fluids that, sometimes, discharge at hot springs. The recognition of the style of mineralizing system is important in interpreting alteration and vectoring to mineralization.

High sulphidation systems are defined by sulphur-bearing minerals of high sulphidation state, most characteristic of which are enargite (Cu<sub>3</sub>AsS<sub>4</sub>), pyrite (FeS<sub>2</sub>), luzonite (Cu<sub>3</sub>AsS<sub>4</sub>), famatinite (Cu<sub>3</sub>SbS<sub>4</sub>), covellite (CuS), alunite (KAl<sub>3</sub>(SO<sub>4</sub>)<sub>2</sub>(OH)<sub>6</sub>) and barite (BaSO<sub>4</sub>). Sillitoe (1999) differentiated shallow, intermediate and deep high-sulphidation systems, with stratigraphic control dominant in the shallower systems and structural control dominant in the deeper ones. High-sulphidation systems are commonly located above a genetically related Cu  $\pm$  Mo  $\pm$  Au porphyry system, and may either be superimposed on the porphyry environment (through telescoping) or located up to several hundred vertical metres above it. In intermediate-depth high sulphidation systems, precious metal mineralization is hosted by moderately to steeply-dipping, tabular bodies of vuggy silica and/or by semi-massive to massive pyritic sulphides which commonly form fault- or fracture-controlled veins. At shallow levels, lithologic permeability and hydrothermal brecciation are important mineralization controls so that deposits are typically hosted by permeable units (e.g. poorly welded ash-flow tuff) modified to complex mixtures of vuggy quartz, massive silicification and quartz-cemented breccia. Typical of high sulphidation epithermal deposits is distinct suite of minerals formed in low pH conditions (e.g. quartz + alunite + pyrophyllite + kaolinite/dickite).

In addition to high sulphidation veining like the Julio Verne mine, the Organullo property is also prospective for bulk-mineable high and low sulphidation epithermal style gold mineralization and possibly porphyry style mineralization.

#### 9.0 EXPLORATION

Early exploration on the Organullo property is described in section 6.0 of this report. The following sections describe work, including drilling, carried out by or on behalf of Cardero, as well as confirmatory fieldwork and desktop studies undertaken by Artha. No material exploration work has been conducted by, or on behalf of, Artha on the Organullo property.

Together, exploration completed by Cardero and Artha on the Organullo property totals 630 rock samples, 471 talus fines samples, 45 BLEG samples, and 2,707 samples for PIMA analysis. This sampled area totals 6,114 hectares, of which approximately 513 hectares have been sampled in detail, with the remainder of the sampling being regional in nature. Sampling, together with mapping, geophysics and remote sensing, helped define priority areas for the various drill programs described in Section 10.0 below.

#### 9.1 Mapping, ASTER Imaging and Geochemistry

In 2007 Cardero contracted Steve Enns to conduct a property examination with geological mapping and sampling which was completed over a four-day period (Enns, 2007). Samples were assayed and PIMA analysis was completed on a limited number of samples. In addition, six polished samples from the Enns (2007) work were submitted to PetraScience Consultants Inc with the aim of characterizing the alteration and mineralization (Thompson, 2007). PetraScience concluded that the samples indicate that the nature of the mineralization, alteration and host lithologies are consistent with an intrusion-related system and the presence of sulphosalts was indicative of a high-sulphidation system (Thompson, 2007).

ASTER imagery interpretation was completed in 2007 by Telluris Consulting Ltd and served as a preliminary interpretation. However, this work appears to have been incorrectly georeferenced. The ASTER data was re-processed in 2010 and used to identify kaolinite, dickite, pyrophyllite, alunite and illite occurrences on the property (Fitzpatrick, 2010).

A program of alteration mapping and spectrographic analysis was contracted to Anna Fonseca in 2009. This work involved collection and PIMA II analysis of 228 samples, and helped characterize the alteration system as variably developed advanced argillic enveloped by sericitic (Fonseca, 2009). Results were interpreted as indicating a deep to intermediate high sulphidation system.



In 2009, Mineral Resource Services Inc was contracted to map and sample the Organullo alteration zone (Klipfel, 2009). This program involved mapping of lithologies, structure and visual alteration, as well as lithogeochemical sampling. The program was conducted in conjunction with the Fonseca (2009) alteration mapping and PIMA survey, as well as a rock sampling program contracted to LPF Consulting Ltd. Klipfel (2009) concluded that the Organullo alteration zone could be a high sulphidation system or a hybrid system resulting from the mixing of meteoric waters with upwelling high sulphidation fluids. LPF collected 331 rock and 13 soil samples. The 2010 geochemical surface sampling program done by LPF produced 299 rock/detrital samples and 418 check samples of RC drill cuttings from the older drill holes. Surface sampling outlined anomalous areas which are commonly coincident with argillic alteration outlined by the earlier PIMA survey.

This surface program included collection of talus fines near the base of the cliff faces, primarily from the main Organullo river valley, though some samples were collected along secondary and tertiary valleys elsewhere on the property. Samples were collected at approximately 50 m intervals along lines roughly paralleling the outcrop-talus contact near the cliff base. These sample sites were selected to allow for effective collection of talus fines with excessive amounts of coarse talus (as would be found further downslope). Sampling procedures adhered to industry-standard practices, with several hundred grams of sample placed in a paper Kraft bag to be sent for geochemical analysis.

In 2012, Cardero optioned the Organullo property to Artha. Artha completed field work including lithological mapping, alteration mapping, mapping of structures and veins, and rock sampling. This field work was mostly confirmatory in nature. Figure 5 shows sample locations and results of Artha's surface rock sampling program (n = 210), as well as historical rock sampling. In total, the Artha rock sampling covers an area of approximately 106 hectares. The sampling was largely completed in areas that had already been sampled by Cardero or historical explorers and provided independent confirmation for Artha that the anomalies were reliable. Approximately 5 to 10% of the surface rock samples collected by Artha were in new areas and helped define some extensions to mineralized structures.

Desktop work by Artha included a structural analysis report on the Organullo project (Garcia and Mejia, 2012). The report describes the regional setting based on the measurement of kinematic indicators in the field, and describes the deposit-scale structure in detail. In summary, the Organullo deposit is defined by two main faults, striking approximately north-south, which bound a zone of shearing, alteration and mineralization.

A second report, "Organullo Exploration targets & Pit Optimization", dated June 6, 2012, is authored by Robin Rankin of GeoRes. The work resulted in (i) potential exploration target tonnages and (ii) potential exploration target grades of gold at the Organullo property, which were reported at lower and upper ranges in southern and northern areas of the property and in total. GeoRes determined two common strike and dip directions, each characteristic of a specific exploration target area. Block models were built for the two target areas (north area and south area (Figure 5). Block sizes were defined to emphasise the narrow vein orientation and were consequently much narrower in the X (east-west) directions than in the Y (north-south) and Z (vertical) directions. Gold grades were estimated into each model's blocks using parameters adapted to the common vein direction in each area. Raw drillhole data was composited to 2.0 meters downhole. No limits were applied to either input data or output estimates and the estimation was unconstrained by geology. Block estimation was done using an inverse distance squared algorithm. Grade estimation scan distances of up to 100 meters in the plane of the veins adequately filled the blocks between drill holes and extended beyond them. Following this evidence, increasing the scan distances by simple multiples produced reasonable figures for ranges of exploration targets.

In 2012, field work, together with desktop studies, helped to delineate two priority areas for Artha's planned drill program. Targets were reported for a variety of gold grade lower cut-off values. Tonnages assumed a constant density of 2.6 t/m<sup>3</sup>. At a lower gold cut-off of 0.5 g/t the total exploration targets ranged from a lower 19.8 Mt at 0.94 g/t gold (600,000 ounces gold) to an upper 31.6 Mt at 0.92 g/t gold (940,000 ounces gold). It should be noted that these potential exploration target quantities and grades are conceptual





in nature, that insufficient exploration and geological modelling has been done to define a mineral resource, and that it is uncertain if further exploration will result in the delineation of a mineral resource.

However, Artha was unable to raise the necessary finance to complete drill testing of the targets and having failed to meet minimum expenditure commitments, Cardero terminated the option agreement.

## 9.2 Geophysical Surveys

In 2009, Cardero contracted Quantec Geoscience Argentina to complete a controlled source audiofrequency magnetotelluric (CSAMT) survey over eight lines (totalling 18 line-km) and a magnetic survey over 200 lines (totalling 110 line-km), thereby covering a significant portion of the claim block. The CSAMT survey was employed to detect and delineate bodies and zones of resistive silicification and/or conductive hydrothermal alteration, and was successful in identifying several significant resistive (potentially silicified) zones as well as strongly conductive zones (Langer et al., 2010). Results of the survey were used to locate subsequent drill holes.

The magnetic survey was employed to detect and delineate areas of magnetite depletion related to hydrothermal alteration, structural controls of the epithermal gold mineralization and the possibility of a deeper porphyry system. Modeled resistivity, subsequently drill-tested by drill hole ORG10\_5, is included on Figure 7. A large magnetic feature was identified in the southeast of the survey area (Langer et al., 2010), whose source has not yet been identified.

#### **10.0 DRILLING**

A total of 44 holes have been drilled on the Organullo property since 1975 (Table 3), with the location, azimuth and dip of these holes listed in Appendix B. The earliest recorded drill hole was a single core hole near the Julio Verne mine, but no data is available for this hole (Dawson, 1994). Varying amounts of relevant information for 35 historic drill holes from 1995 to 2009 are available, whereas drilling of the eight holes in 2010 was partially managed by the author and data is complete.

Company	Year	RC holes (No)	RC metreage (m)	DD holes (No)	DD metreage (m)
Cities Services Inc	1975	-	-	1	unknown
Triton Mining Corp	1995	17	3,095	-	-
Triton Mining Corp & Orion Explorations Ltd	1997	-	-	6	1,013.75
Orion Explorations Ltd?	1999	12	2,012	-	-
Cardero Argentina S.A.	2010	-	-	8	2,053.5
TOTAL		29	5,107	15	>3,067.25

Table 3: Summary of reverse circulation (RC) and diamond (DD) drilling on the Organullo property

In 1995, Triton Mining Corp completed 17 reverse circulation (RC) holes (O-1 to -17) on the property, with 15 of these holes placed on Organullo ridge and another two near the Julio Verne mine (Overbay and Jenkins, 1995). This program was followed by a six hole diamond drilling program (DDH 18 to 23) ran by Triton Mining Corp and Orion Explorations Ltd in 1997 (Echavarría, 1997), which also focused predominantly on Organullo ridge. This program was followed by twelve RC holes (AR 24 to 35) drilled by Orion Explorations Ltd in 1999 across various locations on the property (Unknown, 1999). In 2010, Cardero completed eight diamond drill holes (ORG10-01 to -08) near the Julio Verne mine and on Organullo ridge (Harris and Lehtinen, 2011).

Significant drill intersections from historic drilling (pre-2010 and by operators other than Cardero or Artha) are listed in Table 4. Most of these holes were drilled in either a westerly or easterly direction in order to intersect perpendicular to the strike of the known mineralization. This would indeed be the case for those veins recorded by Jenkins (1994), who measured veins trending ~015°-345°, but not necessarily the ~295° 10023679-2



trending veins described by Dawson (1994). Regardless of orientation, intersection widths recorded in most holes are likely longer than the true widths of the mineralization, as most drill holes would have intersected the mineralization at an acute angle. There is insufficient structural data to calculate the true widths of the zones intersected.

Hole ID	Туре	From (m)	To (m)	Interval (m)	Au (g/t)	Ag (g/t)	Au (g/t∙m)	Ag (g∕t·m)	Reference
0-1	RC	90	112	22	1.00	2.56	22	56	
	RC	167	174	7	0.53	2.21	4	15	]
0-2	RC	No significant intercepts							
0-3		0	61	61	0.70	1.50	43	92	
including		0	9	9	1.80	1.53	16	14	]
and	RC	46	48	2	5.50	1.75	11	4	
and		158	164	6	0.60	1.38	4	8	
including		162	163	1	2.80	2.30	3	2	
0-4		0	200	200	0.47	1.13	94	226	
including		21	34	13	1.00	0.75	13	10	
and	DC	43	49	6	1.41	1.33	8	8	
and	RC	65	70	5	1.70	1.76	9	9	
and		103	110	7	1.21	1.43	8	10	
and		193	200	7	1.57	0.27	11	2	
0-5		0	189	189	0.66	2.00	125	378	
including	RC	17	30	13	0.96	2.33	12	30	1
and		86	88	2	20.90	5.85	42	12	
and		122	127	5	2.30	2.82	12	14	Overbay
O-6		40	43	3	1.25	4.47	4	13	and Jenkins 1995
and	RC	174	176	2	1.20	4.00	2	8	1993
0-7		17	106	89	0.56	2.30	50	205	
including	RC	70	75	5	4.13	3.94	21	20	1
and		163	165	2	2.90	2.80	6	6	
0-8		18	20	2	0.50	0.60	1	1	
and	RC	179	186	7	0.51	3.43	4	24	1
0-9		115	131	16	0.73	6.80	12	109	1
including	RC	116	122	6	1.27	11.67	8	70	1
0-10	RC			Nos	significant ir				
0-11	RC			Nos	significant ir	itercepts			1
0-12		63	76	13	0.56	2.81	7	37	1
and	RC	81	95	14	0.52	3.26	7	46	1
0-13	RC	No significant intercepts							1
0-14		33	38	5	0.57	1.34	3	7	1
and	RC	93	96	3	0.50	2.57	2	8	1
0-15		72	89	17	0.59	1.19	10	20	1
including	RC	72	73	1	3.59	1.30	4	1	1

Table 4: Significant historic (pre-2010) Organullo drill intersections

LC023679-2



	Table 4: Significant historic (pre-2010) Organullo drill intersections (continued)									
Hole ID	Туре	From (m)	To (m)	Interval (m)	Au (g/t)	Ag (g/t)	Au (g/t∙m)	Ag (g∕t·m)	Reference	
0-16	RC	65	69	4	0.59	4.73	2	19	Overbay	
0-17	RC	0	4	4	0.60	4.73	2	19	and Jenkins,	
and	κc	13	15	2	0.65	3.20	1	6	1995	
DDH 18		0.0	4.5	4.5	0.58	1.84	2.6	8.3		
and	DD	12.2	16.4	4.2	1.41	0.28	5.9	1.2		
and	00	69.7	71.6	1.9	1.44	1.52	2.7	2.9		
and		216.7	219.8	3.1	6.03	1.40	18.4	4.3		
DDH 19	חח	19.0	110.7	91.7	0.66	1.06	60.5	97.1		
including	DD	38.5	48.2	9.8	2.90	1.34	28.3	13.1		
DDH 20		20.8	22.0	1.3	2.13	4.40	2.7	5.5		
and	DD	50.5	58.3	7.8	0.87	1.50	6.8	11.7	Echevarría, 1997	
and		169.0	175.0	6.0	0.75	3.53	4.5	21.2	1997	
DDH 21	DD	25.5	31.6	6.1	5.97	15.19	36.4	92.7	]	
including		25.5	27.5	2.0	16.72	43.50	33.4	87.0	]	
and		100.0	101.0	1.0	1.28	3.80	1.3	3.8	]	
DDH 22		89.3	91.2	2.0	1.01	2.70	2.0	5.3	1	
DDH 23	2.2	48.0	78.7	30.7	0.48	1.82	14.7	55.8	1	
including	DD	72.0	74.0	2.0	2.39	10.60	4.8	21.2	]	
AR 24	RC			No s	significant ir	ntercepts				
AR 25	RC	48	50	2	1.00	0.60	2	1	]	
AR 26	RC		No sig	gnificant int	ercepts				1	
AR 27	RC		No sig	gnificant into	ercepts				1	
AR 28	RC	180	182	2	9.83	22.90	20	46	]	
AR 29	RC			Nos	significant ir	ntercepts			1	
AR 30	RC			Nos	significant ir	ntercepts			1	
AR 31	RC	194	196	2	0.63	21.00	1	42	1	
AR 32		0	186	186	0.50	2.30	93	428	Unknown, 1999	
including	50	14	24	10	1.06	1.22	11	12	1999	
and	RC	40	82	42	0.70	2.63	29	110		
and		94	96	2	1.78	1.40	4	3		
AR 33	50	102	106	4	1.44	1.70	6	7		
and	RC	130	134	4	0.66	1.80	3	7		
AR 34	RC			No s	significant ir	ntercepts				
AR 35		38	62	24	0.50	4.79	12	115		
including	RC	38	42	4	1.17	11.10	5	44	1	

 Table 4: Significant historic (pre-2010) Organullo drill intersections (continued)

In 2010, eight core holes (Appendix B) were drilled on the Organullo property for a total of 2,053.5 m (Harris and Lehtinen, 2011). Holes ORG10-01 to ORG10-04 and ORG10-07 were drilled in the vicinity of the Julio Verne mine (Figure 6) to test the Organullo valley lineament and parallel features that were suspected of representing a long-lived structure which may have been a conduit for hydrothermal fluids. A conductive body on the east side of the Organullo river valley identified with the CSAMT survey (Langer et al., 2010) was hypothesized to be the primary fault structure controlling the Organullo valley lineament. The holes were also LC023679-2





designed to test mineralization near the Julio Verne and vein structures below the old workings, which were interpreted to comprise a strongly resistive unit on the west side of the inferred fault. Holes were drilled at an azimuth of 110° with dips ranging from -45° to -50° (Appendix B).

Sampling during the 2010 diamond drill program was carried out by Equity and LPF, using industry standard practices and procedures. Drill core was cut along the longitudinal axis with a diamond saw, with one half of the sample submitted for geochemical analysis while the other half was retained for a geological record. Sample lengths were dictated, when apparent, by changes in lithology, alteration, mineralization and structure. Otherwise, the sampling was commonly done in 3 m intervals to correspond to the 3 m-sized blocks that would be used in a resource estimate. Overall core recovery was ~75% owing to strong clay alteration, numerous faulted zones and broken ground with attendant clay gouge and breccia. These zones tended to wash away much of the clay-sized material and may well have reduced the grade of the mineralized zones, since gold shows a positive correlation with these strongly broken and altered intervals. Table 5 summarizes data for significant mineralization in the 2010 drilling.

	From		Interval			Au	Ag	
Hole ID	(m)	To (m)	(m)	Au (g/t)	Ag (g/t)	(g∕t·m)	<b>(g/t·</b> m)	Reference
ORG10-01								
ORG10-02	3.8	37.2	33.4	0.17	4.20	5.5	140.1	
ORG10-03	6.1	12.8	6.7	0.21	3.78	1.4	25.4	
ORG10-04	7.8	91.3	83.5	0.11	1.42	9.1	118.9	
ORG10-05	16.4	139.2	122.8	0.22	1.04	27.1	127.5	
including	52.6	68.6	16.0	0.96	0.87	15.3	13.9	
and	190.9	256.0	65.1	0.43	2.11	27.9	137.6	
including	208.8	226.1	17.4	0.83	2.60	14.5	45.1	Harris and Lehtinen, 2011
ORG10-06	47.5	63.3	15.8	0.26	0.98	4.1	15.5	
and	78.3	193.9	115.6	0.20	1.55	23.1	179.1	
including	78.3	101.9	23.6	0.59	1.48	13.8	34.9	
ORG10-07	4.5	71.5	67.0	0.30	0.30	20.2	20.2	
including	5.9	54.8	48.9	0.35	3.48	16.9	169.9	
ORG10-08	0.0	445.0	445.0	0.14	1.92	63.2	852.2	
including	47.1	353.6	306.5	0.17	1.98	51.5	607.8	
with	116.4	175.2	58.8	0.29	3.14	17.3	184.4	

#### Table 5: Significant 2010 Organullo drill intersections

The first four holes of this program (ORG10-01 to -04) encountered extremely challenging drilling conditions through fault zones with intense fault gouge and breccia, which resulted in abandonment of the first three holes within 40 m of the surface. Hole ORG10-04 achieved the greatest depth (~192 m) and intersected altered and strongly faulted Puncoviscana sedimentary rocks throughout the drill hole, before it was abandoned short of its target depth. Sedimentary rocks were found to show abundant illite + sericite alteration along with significant disseminated, fracture-controlled and vein-hosted pyrite mineralization that is coincident with a conductive zone identified in the CSAMT survey (Langer et al., 2010).

Hole ORG10-07 was collared immediately south of the Julio Verne mine and was drilled at azimuth 080° and dip of -60° to test a structure and conductor defined by the CSAMT survey, in addition to testing the mine structures. This hole drilled through altered sedimentary rocks and intersected a fault zone from 182.6-217.7 m, which was followed by another 8.4 m of altered sedimentary rocks to a contact with dacite at 226.1 m. The location of this fault within the drill core is more-or-less consistent with the estimated depth of a fault inferred from the CSAMT survey. The strongest gold mineralization occurs in sedimentary rocks stretching from surface to 71.5 m depth (Table 5), in association with strong silicification, clay alteration and numerous

LC023679-2



silica- and clay-bearing veinlets that also contain pyrite, sulphosalts, covellite and/or bornite. This mineralization is similar to that observed within the Julio Verne mine. The three remaining drill holes from the 2010 program (ORG10-05, -06, -08) were located on Organullo ridge, in the same general area as the historic drilling that returned gold intersections over substantial widths. Hole ORG10-05 (Figure 7) was drilled at an azimuth of 110° and inclined at -55° to test a CSAMT resistivity low and to follow up results of historic holes DDH 19-21. The 2010 drill hole was designed to intersect a presumed westerly dipping structure at a more favourable angle than earlier drilling, although the rough topography prevented collaring in the most ideal spot. Assays returned anomalous gold from most of this drill hole, comprising two long intervals in excess of 0.20 g/t Au (Table 5). The higher-grade parts were returned from intervals with brecciated guartz vein or chalcedonic material. The upper interval, from 16.4 m to 139.2 m, is primarily hosted in strongly faulted and brecciated sedimentary rocks. The highest-grade part of this interval, which returned 0.96 g/t Au over 16.0 m from 52.6-68.6 m (Table 5), occurs in highly fractured, altered and silicified sedimentary rock with guartz and chalcedonic vein material. Alteration minerals in this 16.0 m interval include mostly sericite, dickite and illite, as well as jarosite, hematite and goethite. The higher grade interval in the lower section, which grades 0.83 g/t Au over 17.4 m from 208.75-226.10 m, is associated with strongly fractured, pyrite + sulphosalt-bearing, quartz and chalcedonic veins in strongly fractured and dickite + smectite + illite-altered dacite. The mineralization intersected in historic holes DDH 19-21 is also associated with silicified rocks, and presumably drilled straight down this west-dipping structure.

ORG10-06 was drilled from the same location as ORG10-05 but at an azimuth 185° and dip of -50°. This hole was also designed to follow up on the mineralization encountered in drill holes DDH19-21 and test the resistivity low identified by the CSAMT survey. Assays indicate that the best gold values occur in the dacite immediately beneath a fault contact with the overlying sedimentary rocks, occurring within strongly fractured zones with hematite, jarosite, goethite and manganese oxide. Moderately strong silica + dickite + illite alteration occurs in the underlying dacite. Like hole -05, the steep topography of this area required that ORG10-06 was collared too far to the east to fully test the west-dipping structure and resistivity high intersected in holes DDH19-21.

Hole ORG10-08 was located several hundred metres south of the other 2010 holes, oriented at azimuth 240° and inclined at -60° to test an outcrop of dacite with alunite veining and a northwest-trending structure. The drill hole intersected granodiorite (logged as "intrusive dacite") over its entire length and was mineralized from approximately 47.0 m to the end of the drill hole at 445.0 m depth. The interval from surface to approximately 47 m was sparsely mineralized and represents the north side of a northwest trending fault. This granodiorite may represent a sub-volcanic intrusive of the dacite flows and tuffs. Alteration over the entire hole is illite-dominant with secondary montmorillonite and halloysite. Silica alteration is commonly moderate with quartz stringers and veinlets hosting minor pyrite and trace sulphosalts.

Results of the 2010 drilling indicate that low-grade gold mineralization is present over a broad range of depths within sedimentary, volcanic and intrusive rocks. All of the drill holes that extended to target depth encountered anomalous gold throughout their length, and even three of the four that didn't reach their intended depth did so as well. Higher grades typically occurred within strongly faulted ground with remnant quartz veining, chalcedonic quartz and silicification. Good examples of this were seen in holes ORG10-05, -06 and, to a lesser extent, ORG10-07. The location of veined and silicified rocks was found to be coincident with an abrupt change in resistivity observed in the CSAMT data (Langer et al., 2010) and is interpreted as a major fault. This fault appears to place blocks of distinctly differing resistivity adjacent to each other and, as suggested by Langer et al (2010), may represent different levels of a mineralizing system.

## **11.0 SAMPLE PREPARATION, ANALYSES AND SECURITY**

Industry standard quality assurance and quality control (QA/QC) protocols were used during the 2010 program but, unfortunately, little information is available regarding procedures for earlier programs. For the 2010 program, drill core was sawn on site with a diamond saw, one-half stored on site for reference and one-half collected in a plastic bag as an analytical sample. The samples were placed in rice bags that were sealed with tamper-proof and uniquely numbered security seals, then shipped by commercial truck to the ALS Chemex lab in Mendoza, Argentina, an ISO 9001:2000 certified lab. Artha and Cardero have no relationship

LC023679-2





with ALS Chemex, except in ALS Chemex's commercial provision of arms-length analytical services. There was no evidence for any tampering of samples between the core processing facility and the laboratory. No employees, directors or officials of Artha Resources Corporation were involved in any aspect of sample collection and preparation.

QA/QC procedures used during the 2010 program included the insertion of blanks, certified reference materials (or "standards"), field duplicates (quarter core) and preparation or lab duplicates (Harris and Lehtinen, 2011). The blank samples did not indicate any evidence of contamination. Analysis of standards indicated several "failures" where the assay result was more than three standard deviations from the mean, although all of these were within mostly weak to poorly mineralized intervals or abandoned holes that were re-drilled. For these reasons, re-analysis of these standards was not required as doing so would not materially upgrade or downgrade the respective intervals. Review of quarter-core field duplicates and preparation duplicates indicated acceptable levels of precision. In general then, results from the 2010 QA/QC program did not indicate any problems.

All samples were analysed for gold by fire assay with an atomic absorption (AA) finish, and for 33 other elements by four acid digestion and inductively coupled plasma atomic absorption spectrometry (ICP-AES). Initial analyses exceeding 1 ppm Au were re-analysed by gravimetric fire assay. Over-limit ICP results (>100 ppm Ag, >10,000 ppm Co, Cu, Mo, Ni, Pb, Zn) were re-analysed with an ICP-AES or ICP atomic absorption spectrometry (-AAS) finish. The author believes that sample preparation, security and analytical procedures were adequate for the 2010 drill program.

QA/QC procedures and results from all of the historical work done on the Organullo property, prior to Cardero's acquisition, are either missing or incomplete, so that it is not possible to verify this data. Drill logs from these programs are likewise incomplete and also cannot be verified.

## **12.0 DATA VERIFICATION**

The author was on site for much of the 2010 drilling program on the Organullo project and took abundant opportunity to examine surface exposures and drill core, scrutinize drill logs and examine anomalous analytical results in drill core. Preparation and verification of the drill database was, in part, done by the author. The QA/QC program described in Section 12.0 was, in part, carried out under the authors' supervision and was interpreted by Stewart Harris, co-author of the 2011 technical report (Harris and Lehtinen, 2011).

As noted in Section 12.0, several aspects of the historical data cannot be verified. However, given the relatively early stage of exploration on the Organullo property, the author believes the data as a whole is adequate for the purposes of this report.

## **13.0 MINERAL PROCESSING AND METALLURGICAL TESTING**

No mineral processing or metallurgical testing analyses have been reported on the Organullo property.

## 14.0 MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES

No mineral resources or mineral reserve estimates have been calculated for the Organullo property.

#### **15.0 OTHER RELEVANT DATA AND INFORMATION**

No other information or explanation is necessary to make the technical report understandable and not misleading.



LC023679-2

#### **16.0 INTERPRETATION AND CONCLUSIONS**

The Organullo property is underlain by the Neoproterozoic to early Cambrian sedimentary rocks (Puncoviscana Formation) as well as Palaeocene volcanic, volcaniclastic and intrusive rocks (Pucará and Agua Caliente formations). The Puncoviscana Formation forms the basement and consists of siliciclastic and wacke-dominant sedimentary rocks with lesser abundance of felsic volcanic. These basement rocks are overlain and cut by andesitic volcaniclastic, dacite flows and tuffs, as well as co-genetic granodiorite intrusions of the Pucará and Agua Caliente formations. These Palaeocene volcanic-intrusive complexes are important drivers of magmatic hydrothermal Cu-Au-Ag mineralization throughout the western margin of South America. Since most of the mineralization at Organullo is hosted in the basement rocks, mineralization may correspond to Sillitoe's (1999) deep to intermediate level high sulphidation systems. The higher levels of the volcanic complex, which would have hosted the near-surface part of the high sulphidation system, appear to have been eroded at Organullo. Alternatively, Klipfel (2009) suggested that the alteration and mineralization observed at Organullo may be part of a hydrothermal outflow system with low and high sulphidation characteristics.

Mineralization in the past-producing Julio Verne Cu-Bi-Au mine, which lies at a relatively low elevation on the property, contains economic abundances of Cu-Bi sulphides that are also consistent with interpretation as a high sulphidation system at depth. Mineralization on the topographically higher Organullo ridge, which lies ~200-300 m above the Julio Verne mine, is also mostly structurally- rather than lithologically-controlled, consistent with a deep- to intermediate level epithermal systems rather than shallow. It is possible that a transect from Organullo ridge to the Julio Verne mine could represent a transect from intermediate to deep levels in an epithermal system, although significant faulting in the area could complicate this simple scenario by juxtaposing blocks derived from different depths.

A total of 44 holes (29 RC, 15 diamond) and 8,174 m of drilling (5,107 m RC, 3,067 m diamond) have been completed on the Organullo property, so that exploration is still at a relatively early stage. These programs have identified broad low-grade gold intersections (e.g. 0.14 g/t Au over 445 m in ORG10-08), suggesting some potential for large-tonnage, low-grade gold mineralization. However, high-grade gold  $\pm$  Cu  $\pm$  Bi mineralization over narrow widths has also been reported from historical drilling and small-scale mining, suggesting potential for high-grade deposits as well. Gold is typically associated with quartz veins, silicified zones, fault zones and argillic alteration, occurring over a sizable area, significant depth and within a variety of lithologies. Structural complexities and features both enhance and detract from some mineralized intersections as it appears that the structures controlled veining but the mineralized veins have also been brecciated along the same structures. The mineralization style is believed to be high sulphidation but this has not been unequivocally established. The ambiguity is possibly the result of juxtaposition of large faulted blocks of contrasting mineralization and alteration from different levels in a high sulphidation system, resulting in complications to the geological interpretation.

The Organullo system remains open at depth, to the north, to the south and, to a lesser degree, to the east and west as well. The north and south strike extensions display strong, visually obvious, alteration. Several exploration techniques have proved useful for finding mineralized rocks, including CSAMT for the discovery of resistive zones and structural features as well as PIMA analysis to help characterize the alteration. Both techniques should be used in exploring the open trends of the system.

Historical work also identified gold mineralization at Alto Panizo ridge, on the west side of the Organullo river valley, with subsequent mapping identifying several dacite units, PIMA analysis indicating the presence of a kaolinite zone and the CSAMT survey used to define a less resistive body at shallow depth (potentially altered dacite). To the east of Organullo ridge, the CSAMT survey identified a zone of higher resistivity trending north-south and dipping west, parallel to mineralization at Organullo ridge, possibly representing an as-of-yet unexplored silicified zone that is associated with faulting and masked by Palaeocene cover rocks.

There are no significant risks or uncertainties that could affect the reliability or confidence in the exploration information. As noted above, QA/QC procedures and results from all of the historical work done on the Organullo property, prior to its acquisition by Cardero Argentina, are either missing or incomplete, so that it is not possible to verify this data. Drill logs from these programs are likewise incomplete and also LC023679-2



cannot be verified. However, the results of more recent drilling completed by Cardero support the reported results of historical work.

The highly altered, veined and fractured rock within the known mineralized area has resulted in historically difficult drilling and poor recoveries in drill holes, which could be considered a risk and uncertainty affecting the reliability or confidence in the exploration information in this report. However, the impact of poor recovery in these types of gold systems is generally believed to be the loss of fine material, which in some cases can lead to loss of fine gold and under-reporting of gold grade; the poor recovery is not considered as posing a significant risk or uncertainty at Organullo.

The mineralization of the Organullo epithermal system is not fully understood or explored and therefore warrants further work, in the author's opinion.

#### **17.0 RECOMMENDATIONS**

#### 17.1 Program

A two-phase, C\$1.496 M, exploration program is recommended, focusing on the Organullo ridge area and the west side of Organullo river valley. Phase I of this program (C\$0.342M) will be completed in 2015 to 2016 and comprise a review of data and prioritizing of targets, followed by a 1,200 m drill campaign that is split between exploration targets (~600 m) and infill drilling (~600 m) on known prospects. Exploration targets could include some of the strong lineaments identified through the ASTER re-interpretation (Fitzpatrick, 2010) and contact zones between granodiorite and host rocks.

Phase II of the program (C\$1.154M), if warranted by favourable results from the Phase I program, will be completed from 2016 to 2017 and comprise a more intensive ~3,300 m drill program focussed predominantly on the best prospects on the property, which are currently located within the ground between Organullo ridge and Julio Verne mine. This program would also follow up on any positive results from the Phase I exploration target drilling. Phase II would be contingent on positive results from Phase I.

# 17.2 Budget

Phases I and II (All figures are in Canadian dollars):

	Phase	I (2015-2016)	Phase	II (2016-2017)
Review & targeting	\$	25,000	\$	-
Field Personnel	\$	60,000	\$	310,000
Camp and Support	\$	34,500	\$	165,000
Drilling	\$	120,000	\$	385,000
Analyses	\$	18,000	\$	65,000
Report	\$	10,000	\$	25,000
Travel & Expenses	\$	22.500		
Property Payments	\$	11,391		
SUBTOTAL	\$	410,000	\$	950,000
Contingency	\$	22,500	\$	95,000
Project Supervision	\$	20,000	\$	109,500
SUBTOTAL FOR EACH PHASE	\$	341,891	\$	1,154,500
TOTAL FOR PHASE I + PHASE II			\$	1,496,391

The recommended Phase I program will cost approximately CDN\$342,000 to implement. If advancement to the second phase is warranted by favourable results from Phase I, the Phase II program will cost approximately an additional CDN\$1,154,000 to implement and both phases will cost approximately CDN \$1,496,000 in total.

Respectfully submitted,

"signed and sealed"

Jim Lehtinen, PGeo EQUITY EXPLORATION CONSULTANTS LTD Vancouver, British Columbia Effective date: April 17, 2015



28

Appendix A: References



## REFERENCES

Angelelli, V., 1984, Yacimientos Metalíferos de la República Argentina, Comisión de Investigaciones Científicas de la Provincia de Buenos Aires, I y II, p. 704.

Cardero, 2005, Sistemización, digitalización, y georeferanciación para la elaboración de Cartografia Temática, Proyecto Organullo, Departamento de los Andes, Provincia de Salta, Internal report for Cardero Argentina SA, p. 17.

Cardero, 2011, Cardero options Organullo gold project, northwest Argentina, to Artha Resources Corporation, Cardero September 12, 2011 news release.

Chernicoff, C. J., Richards, J. P., and Zappettini, E. O., 2002, Crustal lineament control on magmatism and mineralization in northwestern Argentina: geological, geophysical and remote sensing evidence: Ore Geology Reviews, v. 21, p. 127-155.

Chulick, J. J., 1996a, Organullo follow-up, Internal correspondence for Newmont Overseas Exploration Ltd dated 22 May, 1996, p. 2.

Chulick, J. J., 1996b, Organullo gold property, Julio Verne mine, Salta Province, Argentina, Internal report prepared for CIA Minera Newmont Chile, p. 30.

Dawson, J. M., 1994, Report on the Argentinean properties of Triton Mining Corporation, Internal report prepared for Triton Minerals Corp, p. 86.

Echavarría, D., 1997, Proyecto Organullo, Provincia de Salta, Argentina: Programa de perforaciones a diamantina, Internal report for Grupo Minero Aconcagua SA, p. 76.

- Echevarría, D., 1997, Proyecto Organullo, Provincia de Salta, Argentina: Programa de perforaciones a diamantina, Internal report for Grupo Minero Aconcagua SA, p. 76.
- Enns, S., 2007, Recommendations for the Organullo epithermal prospect, Salta Province, Argentina, Internal report for Cardero Resources Corp, p. 11.

Fitzpatrick, M. J., 2010, ASTER image processing and products, Internal report for Cardero Resources Corp, p. 16.

Fonseca, A., 2009, Organullo project: Alteration mapping and infrared spectroscopy survey, Internal report for Cardero Resources Corp, p. 14.

Foruria, J., 2008, Site evaluation of the Organullo prospect, Provincia de Salta, Argentina, Internal report for Newmont Perú SRL, p. 6.

Garcia, M., and Mejia, R., 2012, Structural Analysis of the Organullo Project, Internal report for Artha Resources Corp.

Harris, S., and Lehtinen, J., 2011, 2011 technical report on the Organullo project, NI 43-101 report for Artha Resources Corp dated November 21, 2011, p. 36.

Hodgkin, A., 1996, Organullo report appendix: Results of sampling areas outside the Organullo alteration zone, Internal report for Newmont Overseas Exploration Ltd, p. 15.

Jenkins, D. M., 1994, Report of examination of Minerales Patagonicos SA exploration projects in Argentina including recommendations for work programs, Internal report for Triton Mining Corporation, p. 52.

Klipfel, P., 2009, Organullo geological report, Internal report for Cardero Resources Corp, p. 38.

Langer, K., Unger, N., and Rideout, M., 2010, Geophysical report on controlled source audio-frequency magnetotelluric and ground magnetic surveys at the Organullo project, Salta, Argentina, Internal report for Cardero Resources Corp, p. 25.

Overbay, B., and Jenkins, D. M., 1995, Organullo drilling report, Internal report for Triton Minerals Corp, p. 116.

Rankin, R., 2012, Organullo Exploration Targets & Pit Optimization; Internal report for Artha Resources Corp.

Sillitoe, R. H., 1999, Styles of high-sulphidation gold, silver and copper mineralisation in porphyry and epithermal environments: PACRIM '99 congress, Bali, Indonesia, 1999, p. 29-44.

Stewart, M. L., 2008, Organullo compilation, Internal report for Cardero Resources Corp, p. 30.

Thompson, A. J. B., 2007, Petrographic description of 6 samples, Organullo project, Argentina, Internal report for Cardero Resources Corp, p. 14.

Triton, 1997, Organullo project: Informe preliminar, Internal report for Triton Mining Corporation, p. 120.

Unknown, 1999, RC logging forms (rock type & alteration), RC drill logs for Northern Orion Explorations Ltd, p. 91.

Zappettini, E. O., and Blasco, G., 1996, Descripción geológica de la hoja 2566-I San Antonio de los Cobres, Programa Nacional de Cartas Geológicas 1:250,000. Servicio Geológico Minero Argentino, p. 126.

Appendix B: Organullo Drill Holes



HOLE_ID	ΤΥΡΕ	DATE	E_WGS84	N_WGS84	EL_m	AZIMUTH	DIP	LENGTH_m
	RC	1995			4265	258	-60	200.00
AR02	RC	1995	772108	7299417	4261	266	-60	196.00
AR03	RC	1995	771996	7299342	4262	283	-60	200.00
AR04	RC	1995	772016	7299437	4265	261	-60	200.00
AR05	RC	1995	771959	7299257	4272	263	-60	189.00
AR06	RC	1995	772003	7299128	4290	267	-60	200.00
AR07	RC	1995	771944	7299148	4303	286	-60	200.00
AR08	RC	1995	771822	7298870	4310	282	-60	200.00
AR09	RC	1995	771582	7297914	4383	275	-60	200.00
AR10	RC	1995	772242	7299479	4219	283	-60	165.00
AR11	RC	1995	772219	7299387	4221	284	-60	184.00
AR12	RC	1995	772154	7299089	4219	270	-60	200.00
AR13	RC	1995	772197	7299089	4219	283	-60	200.00
AR14	RC	1995	772101	7298737	4234	273	-60	120.00
AR15	RC	1995	772074	7299542	4265	0	-90	140.00
AR16	RC	1995	771586	7299208	3772	125	-60	148.00
AR17	RC	1995	771703	7299442	4030	98	-60	153.00
DD18	DDH	1997	771959	7299257	4272	265	-60	303.30
DD19	DDH	1997	771947	7299438	4246	273	-50	144.80
DD20	DDH	1997	771947	7299438	4246	273	-65	220.25
DD21	DDH	1997	771947	7299438	4246	318	-60	118.05
DD22	DDH	1997	771873	7299208	4273	273	-45	110.45
DD23	DDH	1997	771874	7299207	4274	273	-60	116.90
AR24	RC	1999	771702	7299312	4045	265	-60	198.00
AR25	RC	1999	772026	7300565	4046	330	-60	106.00
AR26	RC	1999	771941	7300363	4048	85	-60	42.00
AR27	RC	1999	771717	7300680	4100	166	-60	204.00
AR28	RC	1999	771881	7300672	4091	206	-60	200.00
AR29	RC	1999	772060	7300784	4075	117	-60	200.00
AR30	RC	1999	772654	7300726	4086	110	-60	110.00
AR31	RC	1999	772119	7299688	4286	70	-60	210.00
AR32	RC	1999	771957	7299253	4272	265	-80	186.00
AR33	RC	1999	771953	7299249	4272	265	-45	200.00
AR34	RC	1999	772406	7302171	4028	270	-55	156.00
AR35	RC	1999	771699	7299310	4089	65	-55	200.00
ORG10-01	DDH	2010	771639	7299426	4058	107	-45	38.50
ORG10-02	DDH	2010	771693	7299408	4063	110	-50	37.20
ORG10-03	DDH	2010	771689	7299393	4057	116	-50	12.80
ORG10-04	DDH	2010	771689	7299394	4070	110	-50	192.20
ORG10-05	DDH	2010	771951	7299443	4239	107	-58	496.50
ORG10-06	DDH	2010	771955	7299430	4239	185	-50	500.30
ORG10-07	DDH	2010	771701	7299321	4073	80	-60	331.00
ORG10-08	DDH	2010	771874	7298622	4304	240	-60	445.00

Appendix C: Certificate of Qualified Person



# **CERTIFICATE OF QUALIFIED PERSON**

I, JIM LEHTINEN, B.Sc., PGeo, do hereby certify that:

- 1. I am a Consulting Geologist, residing at 4317 Briardale Road, Courtenay, British Columbia, Canada.
- 2. I graduated from the University of British Columbia with a Bachelor of Science degree in geology in 1984, and I have practiced my profession continuously since 1984.
- 3. I am a member in good standing (#19,778) of the Association of Professional Engineers and Geoscientists of British Columbia.
- 4. Since 1984 I have been involved in mineral exploration for gold, silver, copper, lead, zinc, cobalt, nickel, uranium and coal in Canada, U.S.A, Jamaica, Panama and Argentina.
- 5. As a result of my experience and qualification I am a Qualified Person as defined in National Instrument 43-101.
- 6. I am responsible for the preparation of all sections of the technical report entitled "2015 Technical Report on the Organullo Property" with effective date of April 17, 2015 (the "Technical Report").
- 7. I was personally present at the Organullo property from April 3-9, April 25 to May 25, and October 21-24, 2010, in connection with the supervision and implementation of the 2010 exploration program managed by Equity Exploration Consultants Ltd ("Equity") under contract from Cardero Resource Corp. Equity was retained by Artha in November, 2014 to update the 2011 technical report on the Organullo property prepared for Artha Resources Corporation dated November 21, 2011 by Stewart Harris and Jim Lehtinen.
- 8. With the exception of my involvement with the 2010 exploration program and the preparation of certain sections of the 2011 technical report on the Organullo property, I have not had prior involvement with the property that is the subject of the Technical Report.
- 9. I am independent of Artha Resources Corporation and Cardero Resource Corp. within the meaning of Section 1.5 of National Instrument 43-101.
- 10. I have read National Instrument 43-101 and Form 43-101Fl, and the Technical Report has been prepared in compliance with the foregoing Instrument and Form.
- 11. As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading..

Dated at Vancouver, British Columbia, this <u>17th</u> day of April, 2015.

"signed and sealed"

Jim Lehtinen, PGeo

