

# THE HUAILAN PROPERTY



## GEOLOGICAL APPRAISAL

**Ullum Administrative District**  
San Juan Province  
Republic of Argentina

Lat: 30 degrees , 44' South - Long: 68 degrees , 57'30" West

***Written for:***

*La Mancha Resources Inc.*  
*311 West – 1<sup>st</sup> St.*  
*North Vancouver, B.C.*  
*Canada*  
*V7M – 1B5*

***By:***

***John Jenks – P.Geo. (BC)***  
*April 12, 2003*

## **EXECUTIVE SUMMARY:**

Jenks was retained by La Mancha Resources Inc. to examine the Hualilan property, to meet with key personnel of Compania Minera El Colorado (CMEC), review available property reports, data and documentation, ascertain the validity of past work programs and prepare a technical report describing the property's geology and potential.

Situated in the San Juan province of northwestern Argentina in the eastern foothills of the Andes the property is easily accessible by paved highway from the provincial capital of San Juan, population 650,000, 120 kilometers to the southeast. It lies within a dry, sparsely populated desert area at an elevation of 1,720 meters ASL and may be worked twelve months of the year.

CMEC has owned the property since 1993. It consists of a 600 hectares central core holding measuring 5 by 1.2 kilometers held under five different title categories including 14 'minas otorgadas'. A February 2003 purchase option agreement adds a number of adjoining claims to the parcel and includes exploration rights to an additional 10,000 hectares. La Mancha has entered into an agreement in principle whereby they may obtain full title to the property subject to fulfillment of a \$2.5 million US work commitment over four years and issuance of up to five million shares of common stock subject to performance and reserve milestones.

The property has had an extended somewhat sporadic history of exploration and production dating back to the pre-Spaniard era. Mining reached its zenith during the 1870's when a British company, employing a roaster to treat sulphide ore, produced at the rate of 80 tpd for several years. Since that time operations have tended to be opportunistic and short-lived with efforts directed primarily at tailings treatment and scalping of high-grade zones. Mining efforts have been directed primary towards oxidized, high-grade, easier to mill non-siliceous ore. Today some six kilometers of underground workings expose significant quantities of good grade mineralization. While comprehensive records are non existent it is estimated that total production would not have exceeded 150,000 tonnes with grades in the order of 16 to 25 grams per tonne.

The area has a 'basin and range' topography characterized by broad gravel-filled valleys and chains of northerly-trending hills and small mountains. It is made up of a series of narrow westerly dipping, northerly-trending fault slices and has undergone three major orogenies resulting in compressional and later tensional tectonics. The region is flanked to the north and to the west by a number of large-tonnage epithermal gold deposits including Barrick's Veladaro (7.6 million ounces) and adjacent Pascua Loma deposits. In a geological setting similar to Hualilan a March 25, 2003 press release by Viceroy Resources cited gold resources of 480,000 ounces indicated plus 894,270 ounces inferred within two deposits, the Quedabra del Diablo and Amelia Ines deposits in the Gulacamayo district. A couple of artisan operations are also reported in the Hualilan area.

Gold and polymetallic mineralization has been found at Hualilan in 19 different sites/11 designated showings over an area measuring 4 x 0.5 kilometers in two distinct zones named the Cerro Norte and Cerro Sur, separated by a major fault structure. Hualilan would be

classed as a distal zinc/lead skarn with associated mantos and veins. It was deposited in three separate mineralizing pulses: a prograde skarn phase, a retrograde skarn and a subsequent quartz-galena pulse. Gold occurs as native gold, electrum, as sub-microscopic inclusions in pyrite and chalcopyrite and in the telluride, hessite. Depositional temperatures ranged from 240 to 340 degrees C – in the transitional area between mesothermal and epithermal zones..

Principal host rock is the San Juan limestone of Ordovician age, which is overlain by conglomerates, lutites and sandstones of the Silurian Tucunoco Group. Both are intruded by dacite porphyries of mid-Miocene age which occur as small stocks, dykes and sills. While limestones are the principle host gold also occurs within the lutites, the dacite porphyries and in zones of silicification and brecciation. Contact and faulted areas are particularly promising.

The main gold-bearing structures are mantos, which are conformable to the host limestones trending northerly and dipping to the west between 40 and 70 degrees. Of equal importance as gold carriers are the east-west, near vertical, cross-cutting quartz veins. Thickness of both generally ranges from 1- 4 meters.

Structure plays a critical role on the property. North-south/ westerly-dipping reverse faults lie along either base of the Hualilan Hills , themselves a thrust slice. Thrusting has produced bedding plane faults in the upper chert-rich portion of the San Juan limestone, which created the permeability necessary for later manto development. Subsequent east-west normal faulting created the feeder channels for manto fluids as well as later gold-bearing quartz veins.

Skarns as well as veins tend to be gossanous masses of iron, manganese and probably silver oxides. The main sulphide minerals include pyrite, sphalerite, chalcopyrite and galena. The zone of oxidation relates to fault density and persists to some 25-50 meters below the valley floor.

The bulk of the resources are contained within four separate zones – the Magnata (vein and manta), Muchilera (manta) and the Sentazon (manta) of the Cerro Sur as well as the Main Zone (Manto Principal, Las Cuevas vein, Sanchez vein) of the Cerro Norte. Economic potential of all of these zones is enhanced by their proximity to underground workings from previous operations. Required underground development would be modest.

Resource calculations were heavily based upon work carried out by the Chilean consulting firm EPROM in 1996 and by more recent detailed in-house estimates by CMEC. Based upon these reports the property contains a measured and indicated resource of 444,579 tonnes averaging 14.59 g/t Au (209,187 ounces contained gold) plus an additional 976,539 tonnes of inferred at 13.37 g/t Au (438,633 ounces contained gold).

Preliminary metallurgical testing has indicated recoveries for differential flotation in conjunction with a Knelsen concentrator at 80% each for gold and silver and 50% for zinc irregardless of the type of material (sulphide or oxidized). In 2002 CMEC purchased the Mina Angela concentrator rated at 800 tpd and transported it to Hualilan from its site in southern Argentina. A Fluor South Africa examination in 1996 rated the plant as 60% new. It is currently in storage on site.

A net present value calculation was made based upon a preliminary feasibility/cash flow study by CMEC. Their figures were modified slightly to reflect current gold prices. A production scenario was based upon the following: 1 year construction, 3 years production at 400 tpd, 6 years at 800 tpd, a capital/development/exploration cost of \$8,000,000 US, 30% provision for income tax, a 2 ½% net profits royalty, no residual orebody value. Based upon the forgoing estimated accumulated earnings at the end of ten years would total \$84,126,897. Discounted over ten years at 10% the net present value is estimated at \$32,434,561 US.

Ongoing exploration would be required to ensure a reliable ongoing supply of mill feed. Initial onsite resource exploration would later accede to a wider ranging approach. Good mapping and prospecting would be the most effective tool supported by geophysics and rock sampling where applicable. Exploration flags would include cross-faults and similar structures, dacite porphyries, particularly where altered, juncture points of structure with other structures and/or lithology contacts.

A phase one budget to include data compilation, detailed mapping, CSAMT test geophysics and diamond drilling of CMEC selected targets is estimated at \$300,000 US. Obvious targets include faulted off portions of mantos along strike, extensions of veins, manto and vein probing at depth. The less obvious include silicification zones, fault and lithology junctures, breccia zones – particularly within the dacite porphyries. Probing in and around the Hualilan (east side of hill) thrust fault could eventually prove rewarding.

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## **1.0 INTRODUCTION AND TERMS OF REFERENCE**

### **1.1 TERMS OF REFERENCE**

Jenks was retained by Walter Berukoff, director of La Mancha Resources Inc., to travel to the Hualilan property site in Argentina, examine the geology and mineralization, study available documentation and reports on the property, meet with the management and personnel of la Compagnia Minera El Colorado (CMEC), current owners of the project, scrutinize the used concentrator acquired by CMEC and ascertain the validity of previous work carried out to date, particularly with respect to resource estimation.

To that end the results of the study were to be presented in a technical report written in compliance with the reporting requirements of National Instrument 43-101.

### **1.2 PURPOSE FOR WHICH THE TECHNICAL REPORT WAS PREPARED**

The report is to be utilized by La Mancha to evaluate the investment opportunity, justify further involvement in the Hualilan project of la CMEC and provide a source of information to potential co-partners, investors and brokerage houses.

#### **1.3.1 SOURCES OF INFORMATION AND FIELD INVOLVEMENT**

Thirteen days were spent by the author in Argentina from February 19 through March 3, 2003 including four days on the property examining surface and underground geology. In addition many reports were obtained and studied in detail. These are listed in the bibliography. In resource estimation particular reliance was placed upon detailed studies and estimates by EPROM Ltda. (EPROM) in 1996 and CMEC (1999, revised 2000) both of which were written to professional standards. Excellent geological reports by Watts, Griffis and McOuat (1995), Moxham (1994) and a PhD thesis by Vallone (1991) provided good insight into the property geology.

Considerable information was personally provided by Luis Vera, CMEC's mining engineer, Leopoldo Martinez and Niko Auriemma, geologists engaged in mapping and sampling the property, Dr. Ricardo Auriemma, CMEC's president and Eduardo Falloni, CMEC's geologist. The hospitality and amiability of each of these gentlemen (Photo G) is gratefully acknowledged. Jack Marr, La Mancha director, spent a day at the property and provided valuable geological input.

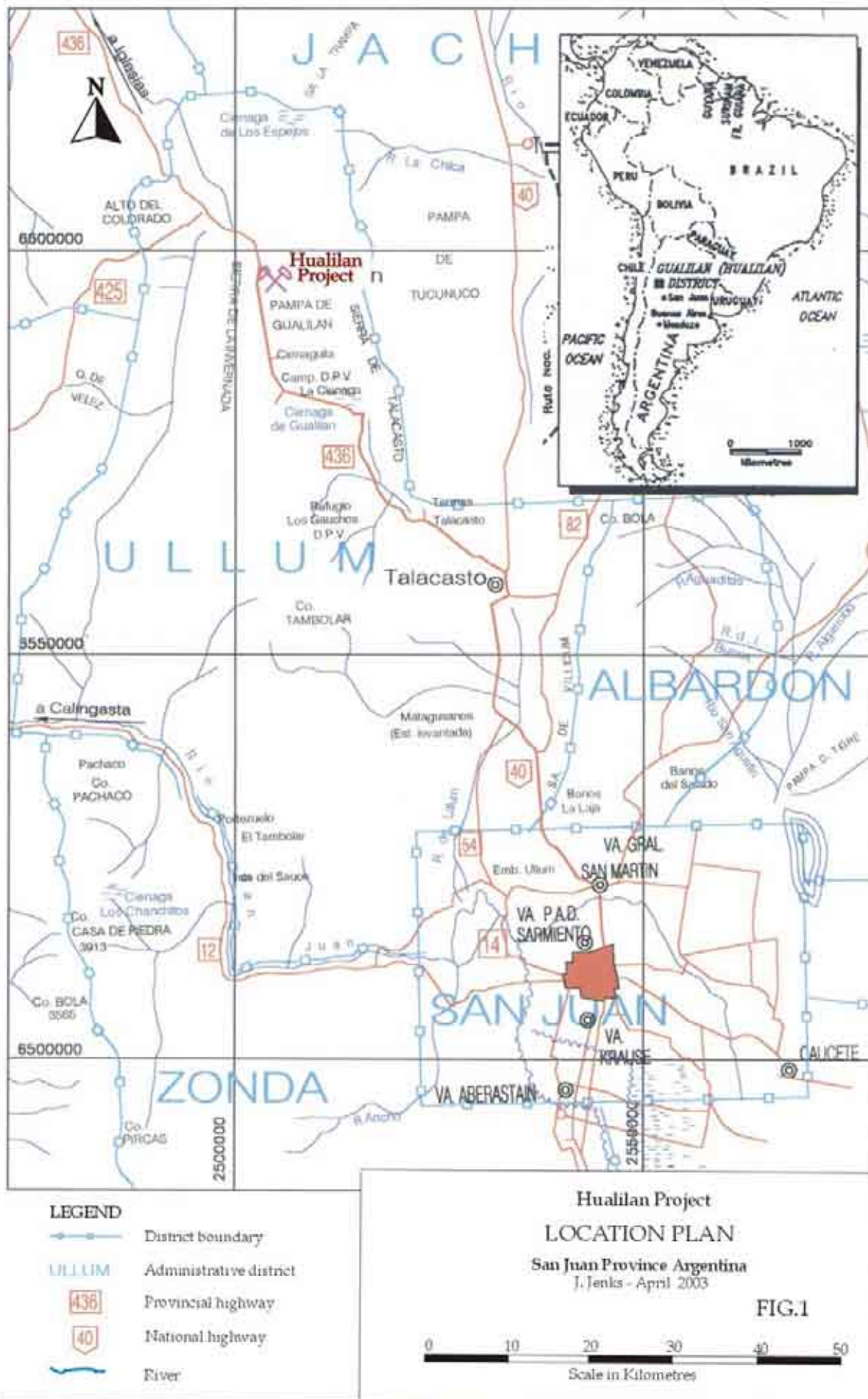
In view of the property's detailed history and extensive work programs carried out by various reputable entities and individuals it was felt pointless to attempt grade/tonnage verification via sampling in the limited time available. Accordingly, gold was conceded to be present on the property in the significant grades and tonnages indicated.



## **2.0 LOCATION & ACCESS, GEOGRAPHY AND PROPERTY DESCRIPTION**

### **2.1 LOCATION AND ACCESS (Figure 1)**

The Hualilan property is situated in northwestern Argentina, within the Ullum administrative district, province of San Juan. The provincial capital, San Juan - a city of 650,000, lies 120 kilometers south-southeast of the property. From San Juan the property may be accessed northerly via Talacasto on national route 40, a distance of 57 km., then northwesterly via provincial route 436 to the property, an additional 63 km. Both roads are paved. The highway passes within 500 meters of the property, which may be accessed internally by a network of dirt roads. Infrastructure within the property is limited to a few stone structures and foundations (Photo B) dating to the 1870's, a few of which could be resurrected.





**A - THE HUALILAN HILLS FROM THE SOUTHEAST**



**B - MINE BUILDINGS & FOUNDATIONS DATING BACK FROM THE 1870'S**

## 2.2.1 GEOGRAPHY AND CLIMATE

Lying within pre-Cordillerean foothills of the Andes the area exhibits a basin and range topography characterized by a series of steep northerly-trending hills and small mountains within extensive flat valley floors. Average elevation of the lower portions of the Hualilan property is approximately 1,720 meters ASL with relief in the order of 210 meters.

A range of steep northerly trending hills (Photo A) some 500 meters in width flanked by extensive plains or pampas makes up much of the property area. Outcroppings of positive relief diabase porphyries form small hills, which break up the monotony of the plains. East-west faulting across the trend of the hills forms a series of sharp, eroded gulches or quebradas marking the fault zones.

The area is classified as desert. It receives an average rainfall ranging between 100 and 200 millimeters falling in torrential fashion primarily during the months of December and January. Annual average temperatures range between 16 and 18 degrees C with minimums to -10 degrees C and maximums to 40 degrees C during December and January. Average humidity is 43.2%. The property may be worked year around. No permanent streams traverse the claim area, however, groundwater is apparently abundant while a series of springs eight kilometers to the south are a potential source for operational requirements.

Wind directions are from the north and the south. The wind from the north called the “Zonda” is hot, suffocating, debilitating and characterized by low pressures and large, dense dust clouds. Reaching its maximum intensity from September through December it remains benign the rest of the year. The southern wind, though cold, does not attain the violence of the “Zonda”. Confluence of the two wind types is said to produce particularly inclement weather conditions.

Soils are characterized as infertile, desiccated and generally alkaline. They support a sparse growth of grasses, cactus, thorn bush and other hardy species. Population is even more sparse with possibly one dozen people living along the entire 120 km. stretch of highway from San Juan to the property. The provincial capital, San Juan, population 650,000, lies 120 km. south while the town of Iglesias, population 1,500, the closest point to the electrical power grid, is situated 40 km. to the north.

## 2.2.2 PROPERTY DESCRIPTION AND CURRENT STATUS

At the author’s request a title opinion was obtained from Dr. Mario de Pablos, a lawyer specializing in the area of mineral titles in Argentina. While Dr. de Pablos also carries out work for la CMEC, the property owner, the author believes his title evaluation to be valid and reliable. His claims summary and opinion, submitted in the form of a letter to La Mancha director, Jack Marr, is included as Appendix I.

The Hualilan property, subject to a 2.5 % net profits royalty, is made up of the following land package held by CMEC (see Figure 2):

- **Minas Otorgadas** (Mining rights bestowed, title payments and exploration requirements fulfilled):

Divisadero #1, Andacollo, Flor de Gualilan, Pereyra Aciar, Bicolor, Sentazon, Muchilera, Magnata, Pizarro, La Toro, La Puntilla, Pique de Ortega, Descubridora, Pardo, Sanchez.

- each of the above pertenencias (claims) measures 300 x 200 meters or 6 hectares each which is also the standard size of most of the claims listed below.

- **Demasias** (Claims situated between Minas Otorgadas that may be upgraded to that category):

Expedientes: 195.152-C-81; 545.207-B-94; 545.208-B-94

- **Ampliacion de Pertenencias** (Claims extending mineral rights; located contiguous and to the west of the Minas Otorgadas claims):

Expedientes: 545.210-B-94; 545.211-B-94; 545.212-B-94; 545.213-B-94; 545.214-B-94; 545.215-B-94; 545.216-B-94; 545.217-B-94; 545.218-B-94; 545.219-B-94; 545.220-B-94; 545.221-B-94

- **Multiplicacion de Pertencias** (Claims extending mineral rights; located contiguous and to the east of the Minas Otorgadas claims):

Muchilera (6 claims); Pizarro (6 claims); Descubridora (5 claims); Sanchez (3 claims); Puntilla (6 claims); Toro (6 claims)

- **Estaca Minas** (Claims covering possible extensions of mineralization, somewhat similar to the US ‘apex’ law, which may be upgraded to Minas Otorgadas):

Expedientes: 546.084-F-94; 546.085-F-94; 546.086-F-94; 546.087-F-94; 546.088-F-94; 545.829-P-94; 545.830-P-94; 545.831-P-94; 545.832-P-94; 545.833-P-94; 545.834-P-94; 545.835-P-94; 545.835-P-94; 545.837-P-94; 545.838-P-94; 545.839-P-94; 545.850-P-94; 545.851-P-94; 545.852-P-94; 545.853-P-94

- **Mineral Rights Subject to Contracts with Third Parties** (CMEC entered into a contractual agreement with Dr. Ricardo Romero for the following adjacent parcels. These are not shown on Figure 2):



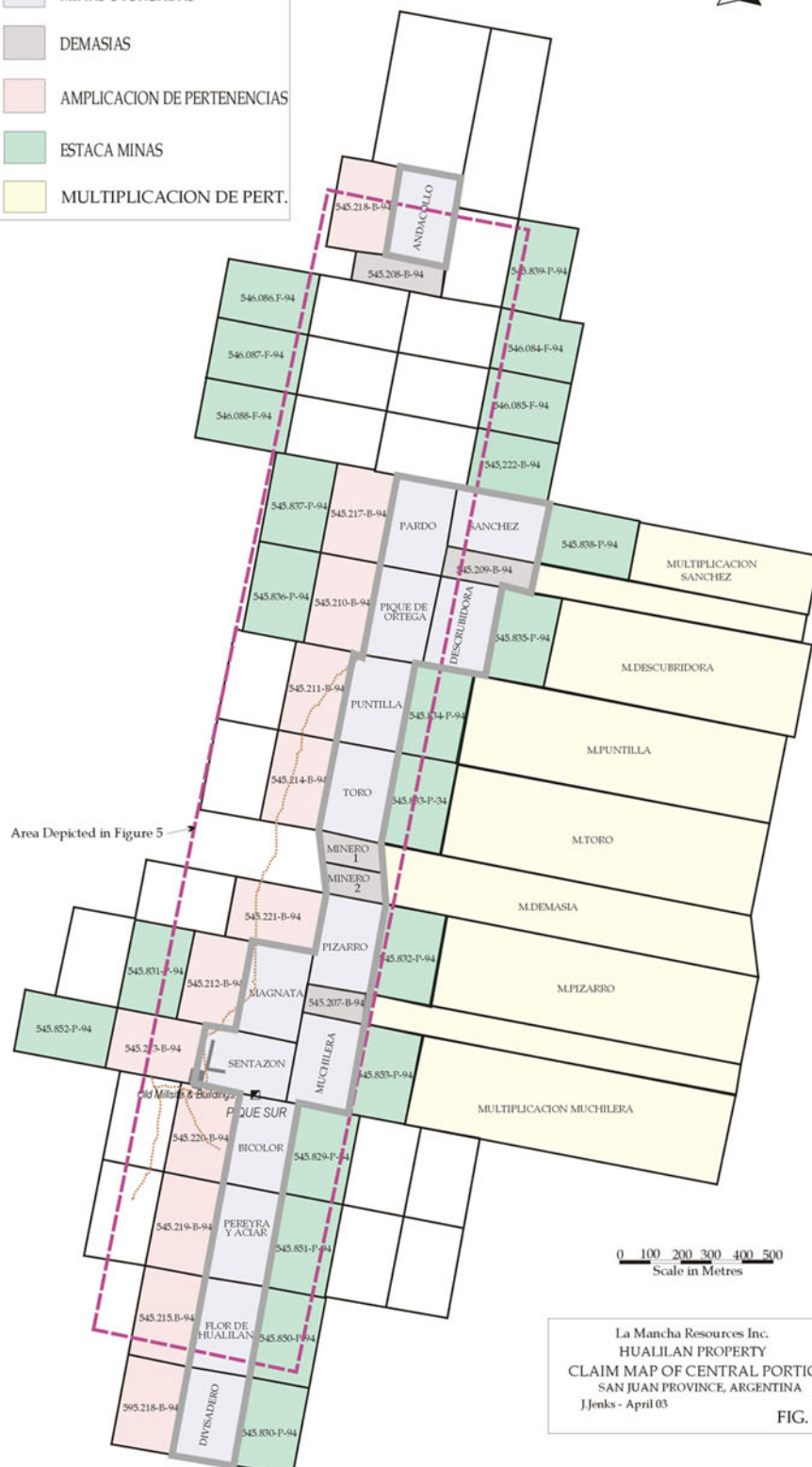
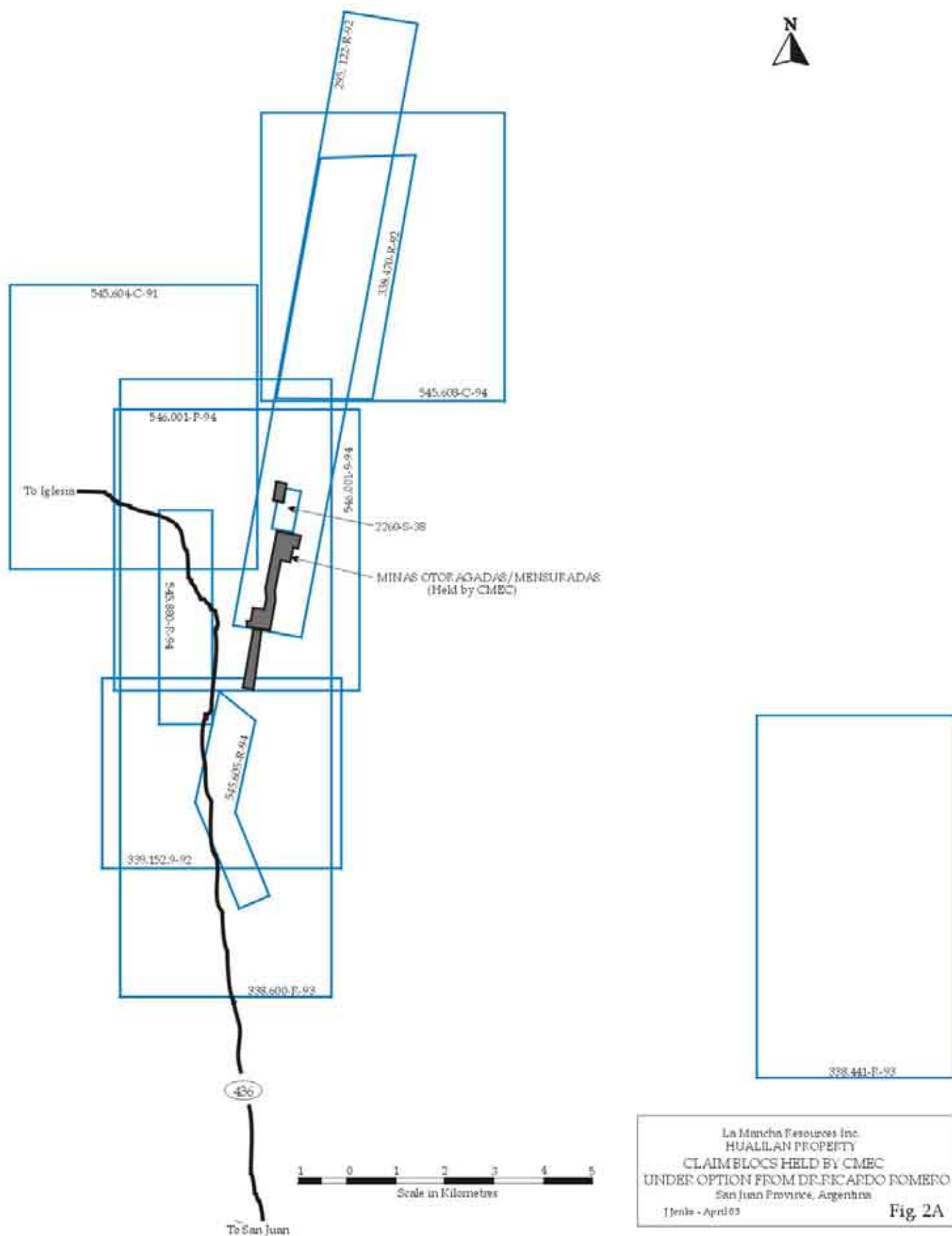


FIG. 2



Manifestaciones (Parcels claimed by two parties, in this case Dr. Romero and CMEC. Agreement implies relinquishment of title claim in favour of CMEC): Expedientes 545.606-C-94 Solitario 1-5; 545.605-C-94 Solitario 1-4; 545.606-C-94 Solitario 1-3; 545.608-C-94 Solitario 1-1; 546.513-C-94 Pardo D1; 546.515-C-94 Puntilla D1; 546.515-C-94 Ortega D1; 546.517-C-94 Pizarro D1; 546.516-C-94 Sentazon D1; 546.519-C-94 Flor de Hualilan D1; 546.521-C-94 Magnata D1; 546.522-C-94 Bicolor D1; 546.523-C-94 Toro D1

Cateos de Exploration (Exploration rights): Expedientes 295.122-R-89 (1,157 ha); 338.470-R-92 (1,000 ha); 339.152-R-92 (1,613 ha); 338.441-R-93 (2,800 ha); 338.600-H-93 (1,499 ha); 338.983-A-93 (325 ha); 545.880-O-94 (430 ha); 546.001-P-94 (1,285 ha)

An exploration/purchase agreement between Dr. Ricardo Romero and CMEC was signed the 28<sup>th</sup> of February 2003. Following a cash payment upon signature the contract provides for monthly payments commencing April 2003 and escalating each year. Payment number 113 would be the final and complete property ownership would then be vested in the hands of CMEC. Payments would have totaled \$680,000 US for the Romero land package.

The agreement in principle for La Mancha Resources Inc. (LMR) to acquire 100% of the Hualilan Gold Project involves assignment of a previous agreement between Red Lion Management Ltd. (RLM), a non-arms length party, and CMEC whereby RLM will receive 2,000,000 shares of LMR for agreement assignment and reimbursement of out of pocket costs. Following the assignment LMR may acquire the project by:

“issuing an aggregate of five million shares in stages upon completion of a feasibility study and by making an aggregate of US\$2.5 million of exploration and development expenditures over a four-year period. Issuance of all but 600,000 of the shares to CMEC will be subject to performance milestones, with issuance of the last two million shares being subject to establishment of proven reserves of not less than one million oz/Au. The acquisition is subject to completion of due diligence and definitive documentation as well as all necessary regulatory and shareholder approvals.” (La Mancha press release – February 2003)

The core CMEC Hualilan land package measures approximately five kilometers in the north-southerly direction by 1.2 kilometers, totaling six square kilometers or roughly 600 hectares. While the properties included in the Romero agreement are not shown in Figure 2 they do lie adjacent to the CMEC ground. Those claims holding exploration rights add an additional 10,109 hectares to the land inventory.



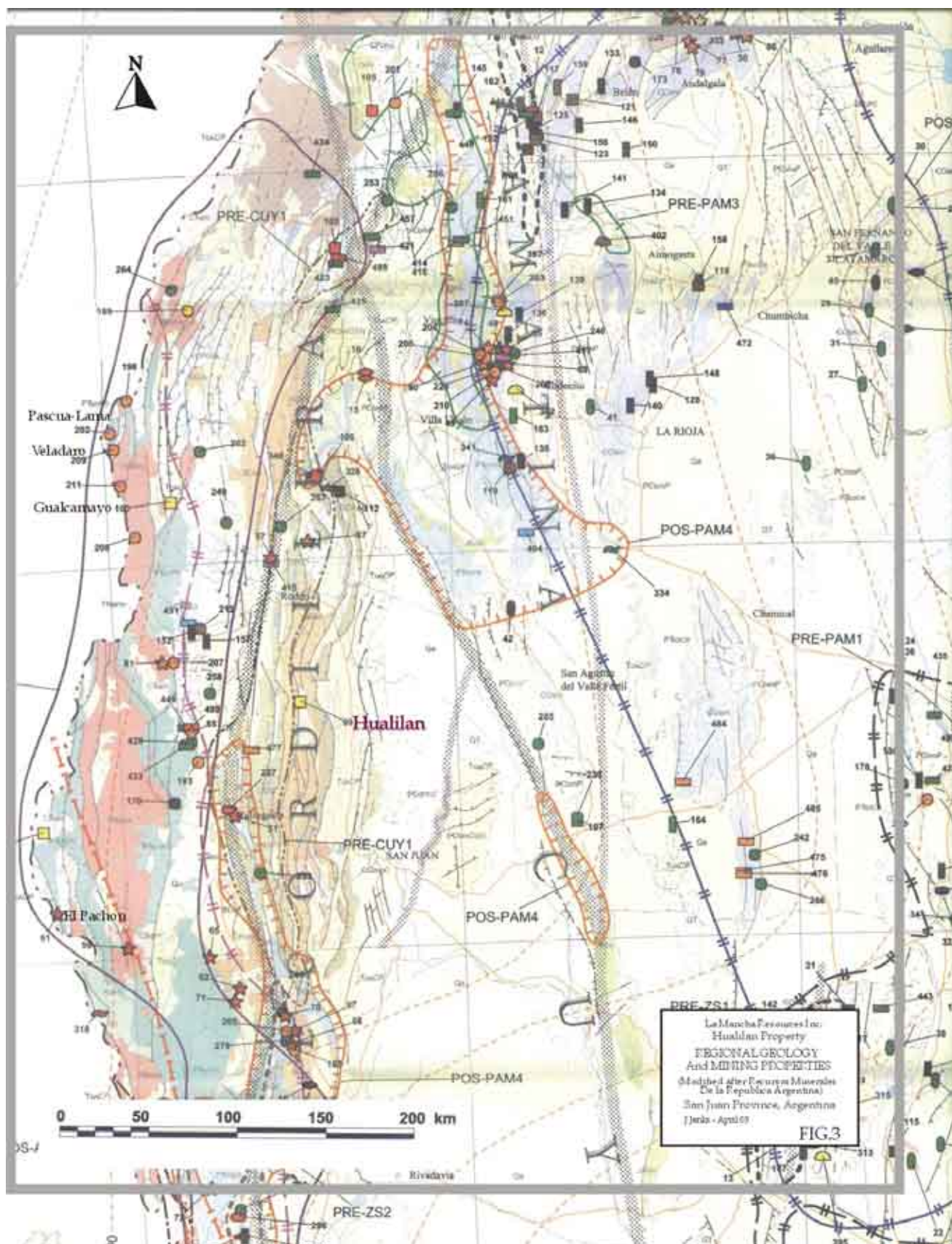
### 3.0 PREVIOUS WORK ON THE PROPERTY

Intermittent production and exploration dating from pre-Spaniard times has produced a wealth of information including exploration and sample data, geological maps, reports, trench and tunnel exposures, drill hole results, geophysical surveys, resource estimates plus property examinations and detailed studies by several geologists. In addition to the many trenches and test pits some six kilometers of underground tunnels has afforded excellent exposure to the deposit. While much information has ended up in the historical record a significant amount is unavailable or of limited use as exact surface reference points are frequently lacking. At some point the available data should be digitized and compiled in order to facilitate the exploration and development of this complex and economically promising deposit.





















In chronological order activities include:

- Pre-colonial exploitation followed by intermittent production under the Spaniards from the period 1561 until 1840, the start of the war of independence. Nineteen different excavations were worked on the property during this period.
- 1863: Attempted short-lived production by an English company.
- 1872: Installation of new equipment including an amalgamation circuit. Inability to treat sulphide 'ore' factored into the subsequent closure. Stockpiled material reportedly averaged 28 g/t.
- 1875: The English company "Argentina" re-opened the operation, installed additional equipment incorporating a two-furnace roaster circuit to treat the sulphide ore. The company processed a reported 80 TPD averaging 21 g/t employing some 160 men for several years. Most of the tunnels and underground workings as well as the stone buildings and foundations on site date to this period.
- 1914: Sr. Powell installed a cyanidation plant to treat tailings originating from the previous operations.
- 1936: Under the auspices of la Direccion de Minas y Geologia de la Nacion a reserve estimate and geological evaluation was carried out by Ing. Victor Angelilli.
- 1947: An engineer, Gabin Wilson, leased the property from la Sociedad Anonima Guanizuil Rural and Comercial owned by the Cantoni brothers and processed tailings by cyanidation.
- 1951: Another government-sponsored survey carried out by Juan C. Fernandez Lima and Jorge C. Olivieri of la Direccion Nacional de Geologia resulted in detailed plans of all the underground workings, a reserve estimation and an exploration proposal. The work also included topographic and geological mapping of all the workings plus analyses of 193 samples taken therein.
- 1955: Acquired by the company Los Marayes S.A. a cyanidation plant with a Merrill-Crowe circuit was installed on the property. The operation ran for three years treating between 6,000 to 7,000 tonnes of underground ore, 2,000 to 3,000 tonnes of stockpiled material and approximately 1,000 tonnes of tailings. In total some 10,000 tonnes averaging between 2 to 4 grams per ton gold were processed.
- 1959: Ownership of the property was taken over by Meteor S.A.I.C. who processed tailings. They subsequently selectively mined small high-grade sections and pillars from the upper levels. Later an undisclosed amount of material from the neighboring property, 'Marayes', was treated at the mill which was finally dismantled in 1959.

- 1960's: The company Aluvion S.R.L. worked the third level of the Pique Sur workings with limited success.
- 1984: Compania Minera Aguilar S. A. carried out an exploration program concentrating on the Cerro Norte sector. Work included three drill holes and a geophysical study conducted along north-south and east-west lines.
- 1984-90: Lixivia S.A. established a permanent camp, treated tailings and mined ore from the easily accessible portions of the oxidized zone at Pique Pardo. The material was processed by a cyanidation and carbon-in-leach plant. Development for open pit mining was made in the Dona Justa area along with pitting and trenching of other zones.
- 1987: Srs. Cardo, R. and Rojo, A. of the Secretaria de Minería de la Nación completed an evaluation and reserve study of the Cerro Norte.
- 1990: Lixivia S.A. formed a new company, Alulix S.A. to bring the property into production. Work included topographic and geologic surface and underground mapping at 1:15,000 scales, channel sampling of mineralized zones (over 200 samples), geophysical studies and 2,040 meters (16 holes) of drilling. Most of the work was contracted to Compania Minera Aguilar S.A.
- 1993: Compania Mineral El Colorado S.A. (CMEC) entered into a purchase option agreement with Alulix.
- 1994: Plata Mining Ltd., an Alberta Stock Exchange listed company, optioned the property from CMEC. R.L. Moxham examined the property and produced a geological summary report.
- 1995: Under the technical supervision of Plata Mining Ltd. a work program by Watts, Griffis & McOuat was carried out on the Cerro Norte section which included the following – a) surface mapping, b) channel sampling of surface trenches and underground workings, c) 16 holes totaling 1,432 meters of reverse circulation drilling, d) gold assays of more than 1,500 samples, e) a geological report by Graham C. Wilson.
- 1995: Aerodat Inc. conducted an airborne geophysical survey for Monarch Resources Ltd. covering an area of 90 square kilometers including the Hualilan property. The survey included magnetics, resistivity, EM and radiometrics.
- 1998: The Chilean consulting firm, EPROM, conducted a detailed, thorough and highly professional survey of the property for La Plata– possibly the most factual and informative study to date. Work included a) surface mapping at 1:10,000 and 1:1,000 scales ; b) underground mapping at 1:500 and 1:800 scales; c) Systematic sampling every three meters of the Guia del Alto, Las Cuevas, Breccia Sanchez veins, the Dona Justa pit, the Main Manto (Manto Principal), newly discovered structures and adjacent zones as well as the tailings; c) in total 585 samples were taken plus seven bulk metallurgical samples. These were analyzed at the CIMM laboratories in La Serena, Chile; d) detailed reserve/resource calculations.
- 1998: A 320 meter long, 3 x 4 meter production decline was driven by la Plata beneath the Main Manto, through to the Las Cuevas vein and Dona Justa pit. Two short 15 and 25meter drifts were tunneled from the main decline.
- 1999: The company Minera El Colorado S.A.C.I. y M. assumed active management of the project. Their objective was to better define reserves and eventually bring the property into production. To that end an aggressive program of exploration was carried out which included a) geophysical test surveys (IP, ground magnetics, Slingram EM), b) a 1,700 meter reverse circulation drill program of plant site condemnation drilling (2 holes), geophysical anomaly



# LEGEND TO ACCOMPANY FIGURE 3

Deposit Type	Name of Deposit - Predominant elements		
PEGMATITES			
	Be +/- Li +/- Ta	41 - Cefereno, Be	
			
PORPHYRY DEPOSITS			
	Cu +/- Mo	57 - Carnizal, Cu 59 - Cerro Mercedario, Cu 61 - El Pachon, Cu 62 - Yalgvaraz, Cu, Mo, Zn, Au, W 65 - Leoncito, Cu, Mo 67 - Paramillos Norte, Cu, Mo 68 - Paramillos Sur, Cu 70 - San Benecio, Cu 71 - San Jorge, Cu 76 - Bajo de la Alumbra, Cu, Au	77 - Bajo de San Lucas, Cu, Au 79 - Bajo Las Junta, Cu, Au 81 - Vaca Viscana 85 - El Retamal, Cu, Au 86 - Filo Colorado, Cu, Au 87 - Guachi, Cu, Au 90 - San Pedro & others, Cu, Ag, Au
	Cu, Au		
	Au		
	Mo		
METASOMATIC DEPOSITS			
	Cu	99 - Cerro Norte & others, Au, Cu 100 - Gulacamayo, Au 105 - Los Aparejos, Cu 106 - Urcuschun, Cu, Mo, Au 112 - Gualcamayo, Fe	
	Au +/- Cu		
	Sn, W		
VEINS ASSOCIATED WITH GRANATOIDES			
	W	128 - Candombe & others, W 141 - Los Amigos & others, W 146 - San Antonio, W 148 - San Carlos & others, W 152 - San Rafael & others, W 155 - San Martin, W 157 - La Majadita, W 164 - Schlagintweit, U	
	Sn		
	U		
EPITHERMAL & TRANSITIONAL DEPOSITS			
	Au +/- Ag +/- Cu	189 - Macho Muerto, Au, Cu 193 - Andacollo & others, Au, Ag 195 - Boqui & others, Au, Ag, Cu 198 - El Soberado, Au 201 - Laguna Verde, Au 202 - Lama, Au 203 - Mogote Rio Blanco, Au, Cu 206 - Pocho, Au 207 - Poposa, Au 208 - Rio Frio, Au	209 - Veladero, Au 211 - Zancarron, Au 229 - Boni, Ag, Pb, Zn, Au 242 - Cuesta de la Florida, Au 246 - El Pararrayo,, La Cobnza & others, Cu, Au 249 - El Salado, Ag, Pb, Zn 258 - Krimer & others, Au, As 262 - La Lagunita & others, Pb, Zn, Ag 264 - La Negra & others, Pb, Ag, Zn 266 - La Pepita, Ag, Pb, Zn, As, Au 267 - La Punsma & others, Au
	Cu, Sn +/- Ag		
	Pb, Zn, Ag		
VEINS AND BRECCIAS (Diverse)			
	AU	318 - El Indio, Cu (in sediments) 326 - Cerro Aspero & others, U (in sediments) 340 - Urcal, U (in sediments)	
	Cu	415 - Carnizal, U 424 - Las Asperizas, Se, Cu, Hg 429 - Carmen, Cu, Pb, Zn, Ag 433 - Compania & others, Pb, Zn, Ag 449 - Maria Martha & 25 de Mayo, Ag, Pb 475 - Callana & others, Au 476 - El Chorrito, Au 477 - El Patacon, Au 484 - Sierra de Chepes-Sector Sur, Au 485 - Victor & others, Au 489 - San Francisco, Bi, Cu	
	Pb, Zn, Ag		
	Fl		
	Ni, Co, U, Cu		



- testing (6 holes) and aquifer testing (7 holes); c) metallurgical testing of material at Lakefield Labs (cyanidation) and CIMM Labs (flotation) in Chile; d) detailed reserve/resource estimations; e) a preliminary mining feasibility / scoping study of the property.
- 2002: The complete 800 tpd Minas Angela flotation plant was purchased, disassembled at its site in southern Argentina and transported to the Hualilan property where it currently awaits re-assembly.

## **4.0 GEOLOGICAL SETTING**

### **4.1 GENERAL**

Situated along the western dip-slope of the Hualilan hills immediately adjacent to the large 'Pampa de Hualilan' basin the Hualilan deposit lies within the Central Pre-Cordillera, an region of subdued basin and range topography with a distinct northerly structural grain lying east of the main Cordillera and the Andes mountains. Essentially the area is made up of a series of westerly-dipping thrust slices .

The predominant and host unit to the Hualilan mineralization is the Ordovician San Juan Limestone which is overlain by the Silurian Tucunuco Formation, a package of conglomerates, shales and lutites. Both formations strike northerly, dipping between 25 and 70 degrees to the west and are intruded by a series of small diorite stocks, sills and dykes of mid-Miocene age and calc-alkalic affinity.

The area as well as the property has undergone a series of orogenies over an extended period beginning with the Caledonian from Silurian to mid-Devonian, the Variscan from late Devonian through late Permian and the Neodican through the Tertiary. Blocks have been uplifted, thrust, folded and subjected to repeated oscillatory movements. Compressional as well as extensional regimes have prevailed. The net effect has been to provide heat sources, mineralizing fluids as well as networks of suitable structures for egress of solutions to eventual depositional sites. Fracturing, rock preparation and the process of mineralization has taken place over an extended time period in a repetitive, episodic fashion.

On a regional scale (100-200 km) the property is flanked to the north, west and south by a diversity of mineral deposits (Figure 3) from large tonnage copper and/or gold porphyries to metasomatic lodes to large epithermal/transitional golds as well as vein and breccia varieties. Deposits include the epithermal Veladero gold deposit (Barrick; 254 mT @ 1.14 gpt Au), the Pascua Loma gold deposit (Barrick), the El Pachon (Noranda; 880 million tonnes @ 0.60% Cu). In the Gualcamayo gold district, Viceroy Resources (press release dated March 25, 2003) announced 480,000 ounces of gold resources indicated/734,000 ounces inferred in the Quebrada del Diablo deposit plus 160,270 ounces inferred in the Amelia Ines deposit. Both bodies occur within skarnified San Juan limestone/dacite porphyry contacts in a geological setting similar to the Hualilan deposit.

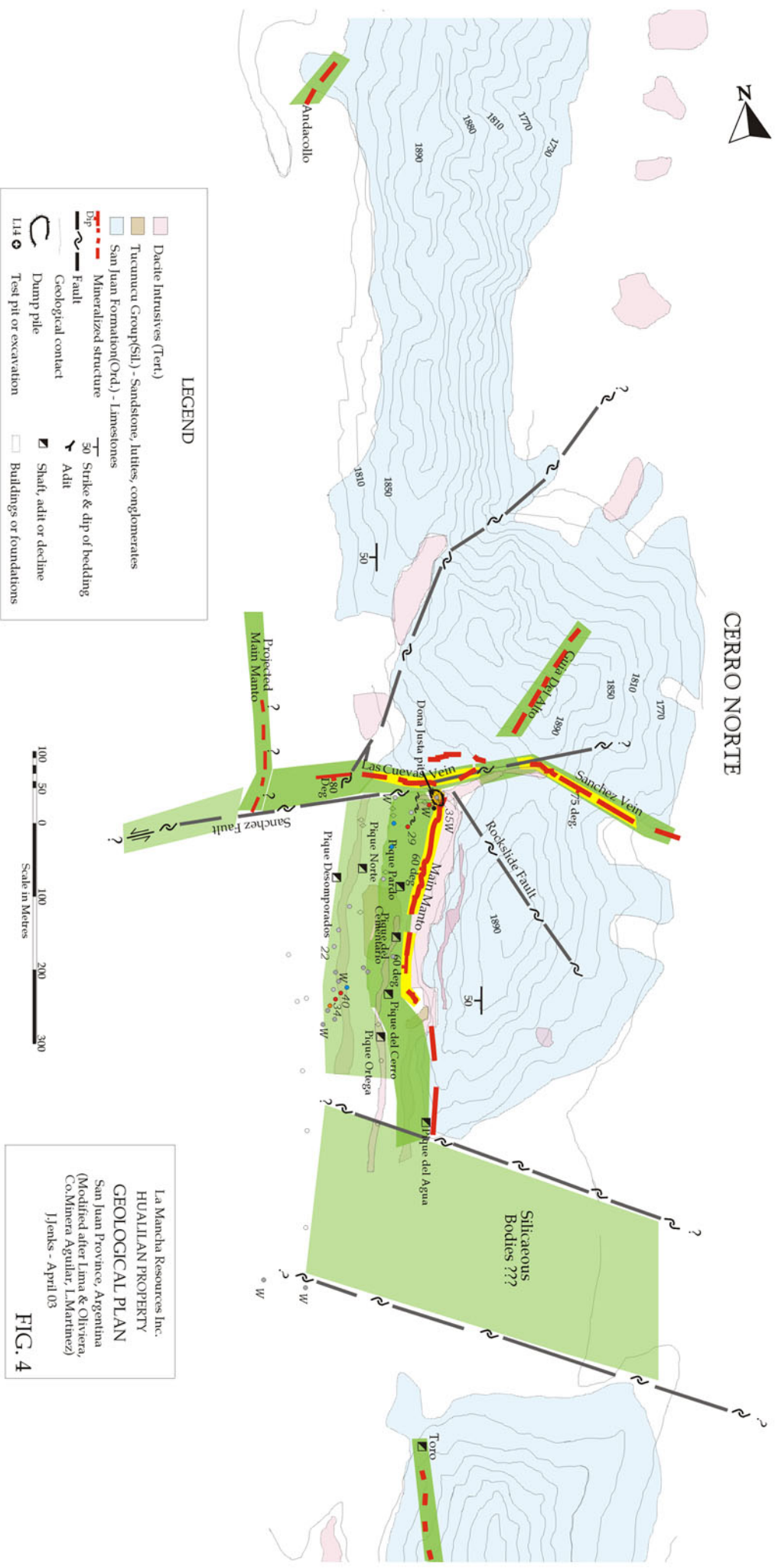
At least one artisanal gold operation is situated within a few kilometers of Hualilan. (Martinez-pers.com.). MIM Holdings reportedly carried out an airborne geophysical survey east of the property.

## 4.2 PROPERTY GEOLOGY AND MINERALIZATION

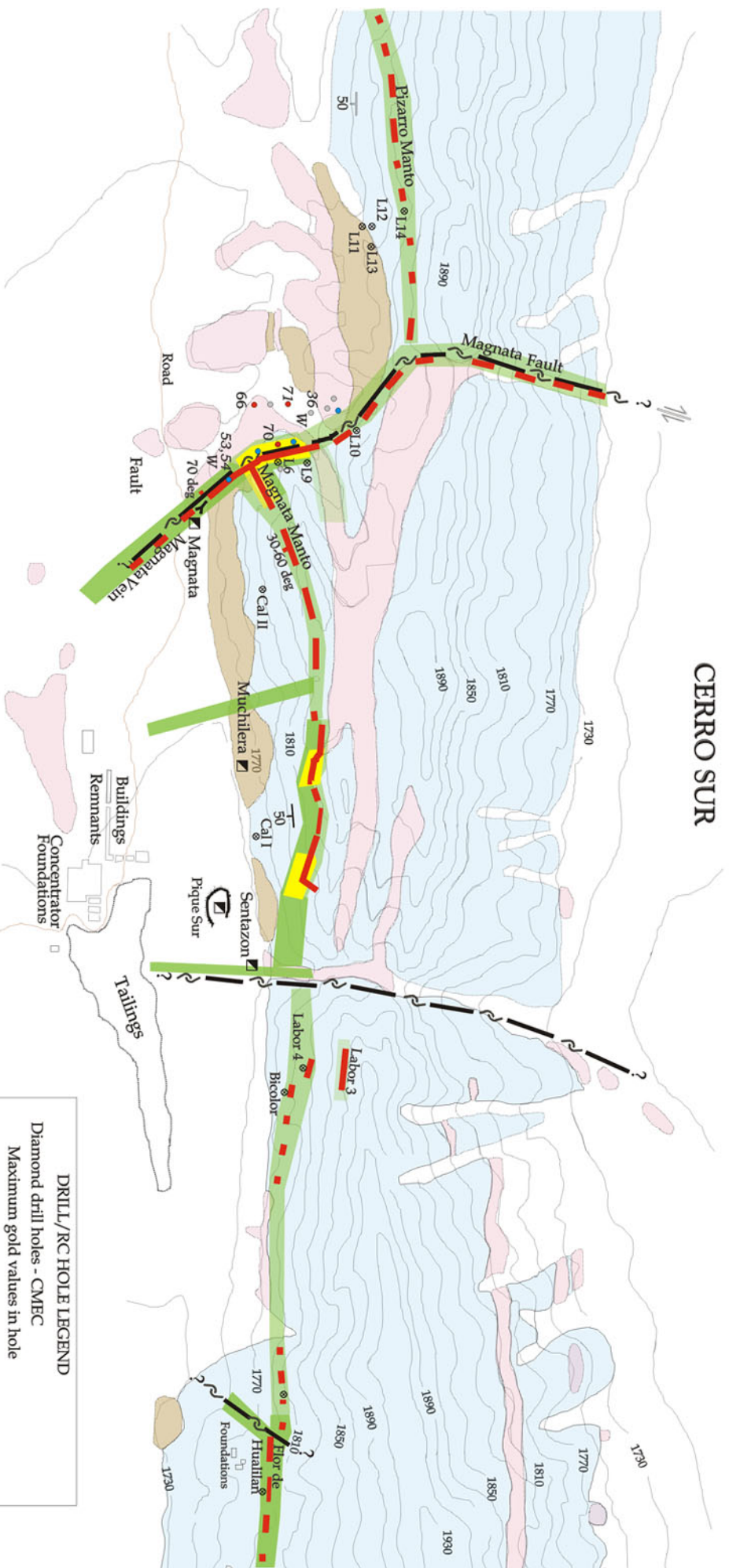
### 4.2.1 GENERAL (See Figure 4)

Gold/polymetallic, manto/vein/skarn style mineralization has been exposed in at least nineteen different sites/eleven different showings, trenches and workings over a four kilometer northerly trend/four hundred meter lateral interval at Hualilan. The property is arbitrarily divided into two areas designated the Cerra Norte and the Cerra Sur which are separated by an apparent east-northeasterly trending fault zone marked by a distinctive 400 meter wide flat interval.

Most of the resources are contained within four zones – the Magnata, Muchilera and Sentazon zones within the Cerro Sur and the Manto Principal within the Cerro Norte. The latter zone may itself be sub-divided into the Sanchez, Las Cuevas, Dona Justa and Main Manto bodies.



# CERRO SUR



- Lower potential resource
- Potential resource
- Resource Zone

DRILL/RC HOLE LEGEND	
Diamond drill holes - CMEC	
Maximum gold values in hole	
•	<0.1 g/t
•	0.1 - 4.9 g/t
•	5.0 - 14.9 g/t
•	15.0 - 29.9 g/t
•	>30.0 g/t
29	Hole number
Signifies significant width of intercept	
○	Diamond drill hole - Compagnia Minera Aguilar
◇	RC hole - Watts, Griffiths, McQuat



#### 4.2.2 LITHOLOGY

The primary host rock is the Ordovician **San Juan Formation**, a massive gray limestone, well bedded with bedding thickness ranging from 10-50 centimeters. Striking northerly with 30 degrees variations this unit dips to the west at between 25 to 70 degrees forming a series of distinct hills trending in the same northerly direction. A northerly-striking/westerly-dipping overthrust fault on the east side of the hills truncates the section of San Juan Formation juxtaposing it over younger Tertiary sediments to the east. Accordingly, the full thickness of the formation is not known, however, the upper 240 meters of section is exposed at the property. The top of the exposed section (20-40 meters ?) is unique in that it contains significant quantities of black chert in nodules, discontinuous layers, lenses and, occasionally, as replacements of stromatolites. The significance of elevated chert may relate to increased brittleness of the top section and greater susceptibility to fracturing and bedding plane faulting.

Conformably overlying the San Juan limestones the Silurian **Tucunoco Group** is comprised of a thin conglomerate at the base followed upward by thin-bedded gray-brown lutites and greenish-yellow sandstones. The group has a similar strike and dip to the San Juan and occurs as erosional remnants flanking the western side of the hills.

Mid-Miocene high level intrusives of the second eruptive period of the Andino orogen occur as small stocks in the valley areas west and east of the Hualilan hills and as sills and dykes within the San Juan limestones. Ranging in composition from granodiorite to the more common dacite porphyry they are greenish-grey in colour with light-coloured feldspar phenocrysts within a matrix of plagioclase, quartz, hornblende, biotite. A greater proportion of dacite porphyry occurs in the Cerro Sur section as sills and in association with breccia zones. Less prevalent within the Cerro Norte zone dacite porphyry appears associated with zones of brecciation and the Main Manto. In places the porphyries may be highly altered with gradations ranging from prophyllitic to argillic to sericitic ranging from the border to the center of a dyke or small faulted igneous body (Vallone 1991).

The youngest units within the property are Tertiary sandstones and Quaternary alluvial and colluvial deposits which appear to play no role in the mineralization. Gravel thickness within the valleys are felt to be significant.

#### 4.2.3 STRUCTURE

Northerly-trending, westerly-dipping low-angle thrust faults are situated along both the eastern and western margins of the Hualilan hills parallel to the regional grain and similar in orientation to the bedding. Propagated by compressive forces from the west these thrusts were probably accompanied by bedding plane faulting on a minor scale which may have provided crucial channel ways for subsequent introduction of dacite porphyry dykes and gold-rich mantos.

A later set of faults trends approximately east-west to east-northeasterly across the regional grain. These are recognized as high-angle normal faults with normal displacements in the order of ten or twenty meters. Significant post-mineral transverse movement has also occurred along these structures as indicated by the lateral displacement of mantos in the order of 250-300 meters. While initially formed prior to emplacement of porphyries, veins and mantos these transverse structures have had an extensive history of activation and re-activation extending beyond the mineralizing phases.

A set of hot springs marks the location of the Hualilan thrust fault ten kilometers south of the property.

#### 4.2.4 MINERALIZATION

Hualilan mineralization occurs in various forms and styles. It is well-described by Moxham (1994) and summarized in order of economic significance by the CMEC staff (1999) as follows:

- Siliceous veins oriented generally east-west, dipping near-vertically (Magneta, Las Cuevas, Sanchez).
- Conformable calcareous mantiform bodies striking north-south dipping between 30 and 70 degrees west (Main Manto, Magneta, Sentazon, Muchilera).
- Siliceous vein structures in the contact between dacite porphyries and limestones trending north-south.
- Northeasterly-trending siliceous tension veins (Guia del Alto).
- North-south, westerly-dipping siliceous manta bodies in the contact between limestone and lutites.

A series of rock samples taken by Moxham (1994) provides strong evidence for the presence and potential of gold in virtually all of the rock types present on the property (see Appendix II) – a potential that extends to low-grade, large tonnage opportunities.

Vallone (1991) has noted the presence of the following minerals:

**Hypogene:** hedenbergite, andradite, epidote, illvite, magnetite, specularite, pyrrhotite, pyrite, chalcopyrite, mackinoite (FeS), galena, argentite, hessite, electrum, quartz, aragonite and rhodochrosite.

**Supergene:** goetite, covellite, calcocite, digenite, malachite, azurite, cerussite, goslarite, hemimorphite, pyrolusite, psilomelane, hematite, limonite, gypsum, smithsonite and chrysocolla.

Gold occurs as free gold, in electrum, in submicroscopic inclusions within pyrite and chalcopyrite and in the telluride hessite

While gold is the principal commodity silver, zinc, lead and copper total approximately 22% of the gross recoverable metal value.

Deposits occur in two different sections of the property, Cerro Sur and Cerro Norte, each with a slightly different style of mineralization.

#### Cerro Sur:

The Cerro Sur sector consists essentially of three en-echelon manto zones, lensoid in shape, trending northerly, dipping 40 to 70 degrees west over a strike interval of 330 meters. From north to south they are the Magnata, Muclilera and Sentazon zones. Of the three only the Magnata has an east-west siliceous feeder vein of economic significance averaging 4.4 meters in thickness.

All mantos are open to depth with thickness of 1 to 4 meters ranging to 8 meters. Maximum vertical exposure of 125 meters is seen at the Muchilera zone. Manto as well as vein material in each of the zones is oxidized to depths extending to some 25-50 meters beneath the valley floor. Degree of fracturing and faulting strongly influences the extent and depth of the oxidation zone.

The manto bodies tend to be earthy gossanous masses rich in oxides of iron (limonite, goetite), manganese, copper and possibly silver. They contain skarn minerals including hedenbergite or actinolite in radial fibrous masses, epidote, chlorite, minor garnet, recrystallized calcite and quartz, kaolin, hematite and pyrolusite. Sulphide and 'ore' minerals, in order of prominence, include pyrite, sphalerite (iron-rich), chalcopyrite, galena, smithsonite, malachite and free gold. Manto/wall contacts may be planar or highly irregular

The Magnata east-west feeder vein has a rusty weathering appearance somewhat similar to the mantos but with a higher percentage of quartz and pyrite, comparable iron and manganese oxides, and a simpler mineralogy.

Zones of quartz stockworking and brecciation within masses of dacite porphyry contain low-grade gold values and are possible large-tonnage targets.

A number of smaller deposits are exposed to the south in a series of trenches, pits and adits. These include the various Labors, Bicolor, Cal I & II and the Flor de Hualilan. They include east-west vein swarms, siliceous zones and mantos. While seen as future exploration targets none of these are placed into a resource category.

### Cerro Norte:

Primary exploitation has come from the Main Manto, a manto body extending for 300 meters along a 20 degree strike, dipping 30-60 degrees westerly and situated partially in the hanging wall of a large sill-like mass of dacite porphyry. The manto terminates to the north in the Dona Justa pit area, a complex zone located at the junction of three different fault structures. This intercept area is highlighted by a large gold-bearing zone featuring tectonic and hydrothermal breccias, red iron staining and jasperoid replacing carbonates in an epithermal style of deposition. The apparent fault zone separating Cerro Norte from Cerro Sur terminates the Main Manto to the south.

The Sanchez fault, which has broken up the northern continuation of the Main Manto may have relocated it some 300 meters to the west (see Fig.5).

An east-westerly steeply dipping feeder vein is fault-interrupted in the Dona Justa pit area, the western portion called the Las Cuevas vein, the eastern portion, the Sanchez vein. The veins are rusty weathering composed primarily of quartz, iron and manganiferous oxides with subordinate calcite and pyrite. Zones of silicification commonly run parallel to them.

Three northwesterly-trending, steeply dipping, narrow gold rich structures called 'canos', while limited in dimension, add significant sweeteners to average gold grades.

A series of dacite porphyry sills of the same orientation as the Main Manto contain gold mineralization at their contacts.

Additional smaller bodies in the Cerro Norte sector include the Guia del Alto and the Andacollo, northeasterly-trending tension vein type of deposits, both containing significant gold values. Skarn mineralization is less prevalent in the Cerro Norte sector.



## 5.0 CLASSIFICATION AND OROGENESIS

The Hualilan deposit would be categorized as a skarn/vein/manto. More specifically the skarn component lies within the calcic zinc-lead skarn classification of Einaudi et al (1981):

“... Calcic Zn-Pb skarn deposits form in the middle to late orogenic stages of continental margin belts and are associated with granodioritic to granitic magmatism. The skarns are characterized by their occurrence along structural or lithologic contacts at some distance from plutonic contacts, high pyroxene to garnet ratios, distinctive Mn and Fe-rich minerals, and the association of significant amounts of sulfides (e.g., sphalerite, galena, pyrite, pyrrhotite) with pyroxene rather than with garnet or other silicate minerals. Variations within this class may be related to distance from causative plutons; proximal Zn-Pb skarns are less Mn-rich, contain more sulfides in skarn than in limestone replacement ore, and display higher garnet to pyroxene ratios and lower Pb to Cu ratios than do distal skarns. Distal Pb-Zn deposits commonly contain the bulk of ore in carbonate gangue beyond the skarn zone and may be linked with certain manto and vein deposits of Pb-Zn-Ag. An important factor in the formation of Zn-Pb skarns is the travel distance of hydrothermal fluids between source and reactive limestone, which results in depletion of fluids in Mg, Al, and Cu and relative enrichment in Mn, Fe, Zn, and Pb.”

The Hualilan skarns fall neatly into the category of distal Zn-Pb skarn with their preponderance of pyroxene over garnet, ‘ore’ beyond the skarn zone, enrichment of Mn, Fe, Zn and Pb and the link to manto and vein deposits. While dacite intrusives are abundant on the property, their relationship to mineralization is unclear though a common link to a distant source cannot be discounted. Clearly the intrusives are ‘pre-ore’ since they are cross cut by gold-bearing veins and stringers in various places. Their low but ubiquitous gold content, however, places them high on the list of potential low-grade, large-tonnage resources.

In order for mantos to develop conformably along certain limestone horizons they require a ‘feeder’ which, at Hualilan, are the quartz-filled, east-westerly trending, steeply-dipping normal faults. In several instances the feeders (Magnata, Las Cuevas, Sanchez) are viable high-grade deposits in their own right. Primarily quartz with subordinate sulphides the feeders appear upper mesothermal in character as they seem to generally lack the colliform, cockscomb textures and open cavity structures of epithermal veins. As mesothermal veins their depth potential could be in the order of a few thousand meters rather than a few hundred, however, they lie roughly within the 300 degree C. transitional zone between meso and epithermal. In the case of certain mantos (Muchilera, Sentazon) east-west structural features are proximal yet there seems to be no quartz/sulphide feeder vein present. Whether absent, faulted off or, as yet undiscovered, this question awaits further exploration for clarification.

The massive character of the host limestones, their lack of permeability/porosity, suggests that a second feature is required for manto development – namely the presence of a bedding plane fault. These were likely developed within chert-rich horizons during compressive regimes along with regional thrust faulting. Manto development along bedding plane faulting is well illustrated in the Magnata lower tunnel.

Inference has been made by several geologists that mineralization at the Cerro Sur, with its greater proportion of intrusive rock has a higher temperature of deposition than the Cerro Norte zone. The presence of jasper in the Cerro Norte's Dona Justa open pit infers a lower formational temperature than the feeder veins and possible epithermal style of mineralization. It may also bear evidence to a more extensive temperature range of deposition at Hualilan and the variation of depositional parameters provided by several orogenic pulses.

Vallone (1991) proposes three stages of mineralization at Hualilan: **Stage 1** 320 to 283 degrees C; 9.2 to 6.5% NaCl eq. Prograde skarn formation of both fine and coarse-grained varieties. Deposition of pyroxene (hedenbergite, diopside, johannsenite), magnetite, calcite and pyrrhotite, chalcopryrite and pyrite in the later stages. **Stage 2:** 294-240 degrees C; 5.0-0.4 % NaCl eq. Structurally controlled. Retrograde deposition of ilvaite, epidote, chlorite, nontronite, smectite, calcite & quartz plus the sulphides pyrite & sphalerite and subordinate pyrrhotite, chalcopryrite and galena. **Stage 3:** 340-245 degrees C; 4-0.4% NaCl eq. Characterized by veins rich in galena that fill post stage 1 & 2 faults and partially replace carbonates. Also includes minor pyrite, pyrite, sphalerite, argentite, hessite and electrum in a calcite/quartz gangue.

Vallone also indicates a progressive change in skarn fluids from high magnesium initially to elevated iron in the mid-stage to enriched manganese in the final stages.

At least one geologist has compared the Hualilan setting to the Carlin trend, a prolific gold province in Nevada. Similarities include association with regional structures, the relation of faults and favoured lithologies to gold deposition, the presence of jasperoids and a spacial association with Miocene intrusives. Carlin appears to have lower temperatures of deposition, relatively high arsenic, antimony and mercury contents, meteoric hydrothermal solution sources and a lithology favouring impure limestones and limey argillites in contrast to Hualilan. However many of the exploration parameters employed on the Carlin belt appear valid at Hualilan.

In summary Hualilan is a distal zinc-lead skarn with associated mantos and veins. At least three pulses of mineralization occurred which accessed the present depositional sites from distal sources vertically up the east-west normal faults initially forming sub-vertical veins and occupying the bedding plane faults within the limestones to form mantos. Later pulses utilized the same plumbing system adding complexity to the veins and expanding the depositional zones to include the breccias and lithology/structure interfaces in possibly lower temperature modes of deposition.

## 6.0 PROPERTY RESOURCES

### 6.1 GENERAL

Evaluation of property resources relies heavily upon detailed resource calculations from three main sources: a) An estimate by Ingeoma S.A. based upon work by Aguilar, data from Alulix and studies by Fernandez and Lima in 1951; b) An extensive study and thorough resource calculation by the Chilean consulting firm EPROM carried out during 1996; c) Subsequent in-depth/ in-house reserve estimates directed by CMEC's professional mining engineer Luis Vera. The CMEC reserve estimate was accompanied by a preliminary feasibility/scoping study of the property's mining economics and has the benefit of drilling programs carried out in the late 1990's, which increase resources, particularly in the Magnata vein.

CMEC followed standard sampling procedures in their evaluations. Underground and surface channel samples were taken with a battery-powered rock chipper over widths of 12 to 15 centimeters to depths of 2.5 centimeters. Drill cores were split with half retained for reference, the other half submitted to the assay lab. In both cases the primary laboratory used was ALS Geolab, currently owned by Chemex. Samples were prepped at their Mendoza prep lab and sent to Santiago, Chile for fire assay and AA analysis with check assays performed on approximately 10%. Correlations were seen to be acceptable. Samples were under the care and vigilance of the camp watchman while at Hualilan and taken to Mendoza by either the geologist in charge of the program or a reliable employee. In the author's opinion sampling by CMEC was carried out to a high professional standard, assays were performed by a reputable laboratory and adequate security precautions were maintained. Results should accurately reflect tenors of the areas sampled.

Personal exposure to the property together with study of these detailed reports indicates that the resource figures given are realistic. EPROM takes dilution and percentage recovery into consideration. CMEC's calculation include an arbitrary correction factor ranging from 0.4 to 0.8 to account for possible waste blocs within mineralized zones. Both the EPROM and the CMEC calculations take into consideration the different specific gravities according to the type of material. Taken in conjunction with the estimated revenues and mining costs provided by CMEC's preliminary feasibility study a basis is provided upon which to formulate a reasonable estimate of the property's worth and net present value. The reality of such an estimate is further enhanced by the company's acquisition of a complete 800 tonne per day flotation plant, currently stored at the property, awaiting assembly.

In arriving at a measured and indicated resource figure none of the property's significant other resource potential was added. This includes, a) the low-grade resources in and around the junctures of rock contacts and fault zones, siliceous zones, particularly those bordering and within the dacite porphyry, b) high-grade though volumetrically minor "canos", c) the possible northern extensions of the Main Manto (Manto Principal) or, d) the Magneta Manto, e) possible extensions of the east-westerly vein structures, f) none of the mantos south of the "Pique Sur" and g) nothing to the north of the Las Cuevas zone.

Approximately six kilometers of underground workings excavated over the years afford excellent exposure to much of the deposit. Previous production preferentially favored the extraction of oxidized over sulphide ore, softer material over the hard-milling vein quartz and high-grade





**E - DONA JUSTA OPEN PIT WHERE THREE FAULTS COINCIDE**



**F - LIMESTONE/PORPHYRY BRECCIA NEAR MAGNATA ZONE**

ore (averaging an estimated 24 g/t gold) over what was considered low-grade. Accordingly, substantial quantities of good-grade manto and vein material remain exposed and unmined in various stopes and tunnels.

Essentially four different zones exposed through underground workings may be readily accessed and exploited with minimal underground development. In the Cerro Norte sector these would collectively include the Manto Principal, Las Cuevas and Sanchez veins as well as the zones in and around the Dona Justa pit. A 320 meters long production decline driven during 1996 extending beneath these zones provides a possible collection level for drawdown and removal of material.

Within the Cerro Sur sector the Magnata, Sentazon and Muchilera zones all provide a resource of exploitable material requiring minimal underground development. Together with the Cerro Norte zones they comprise the bulk of the measured and indicated resources.

## 6.2 SUMMARY OF ZONES

The following is a summary of the individual zones (after EPROM 1996, CMEC 2002, *CMA 1990*, Martinez 2003 and others), their salient features and prospects. CMA utilized only an inferred resource classification. Original Argentinian resource categories have been modified slightly to conform with NI 43-101 usage:

CERRO NORTE (See Fig.5 & Photo E):

- Sanchez Vein/Breccia: Strikes east-west, dipping 68 degrees south. Strike length of 150 meters with an average width of 1.08 meters. Grades average 17.10 g/t Au, 24.13 g/t Ag, 0.12% Cu, 0.68% Zn, 0.55% Pb. Appears open to the east and to depth. Terminated to the west by Las Cuevas fault (and/or Rockslide fault) and, after a short displacement, probably continues to the west as the Las Cuevas vein.

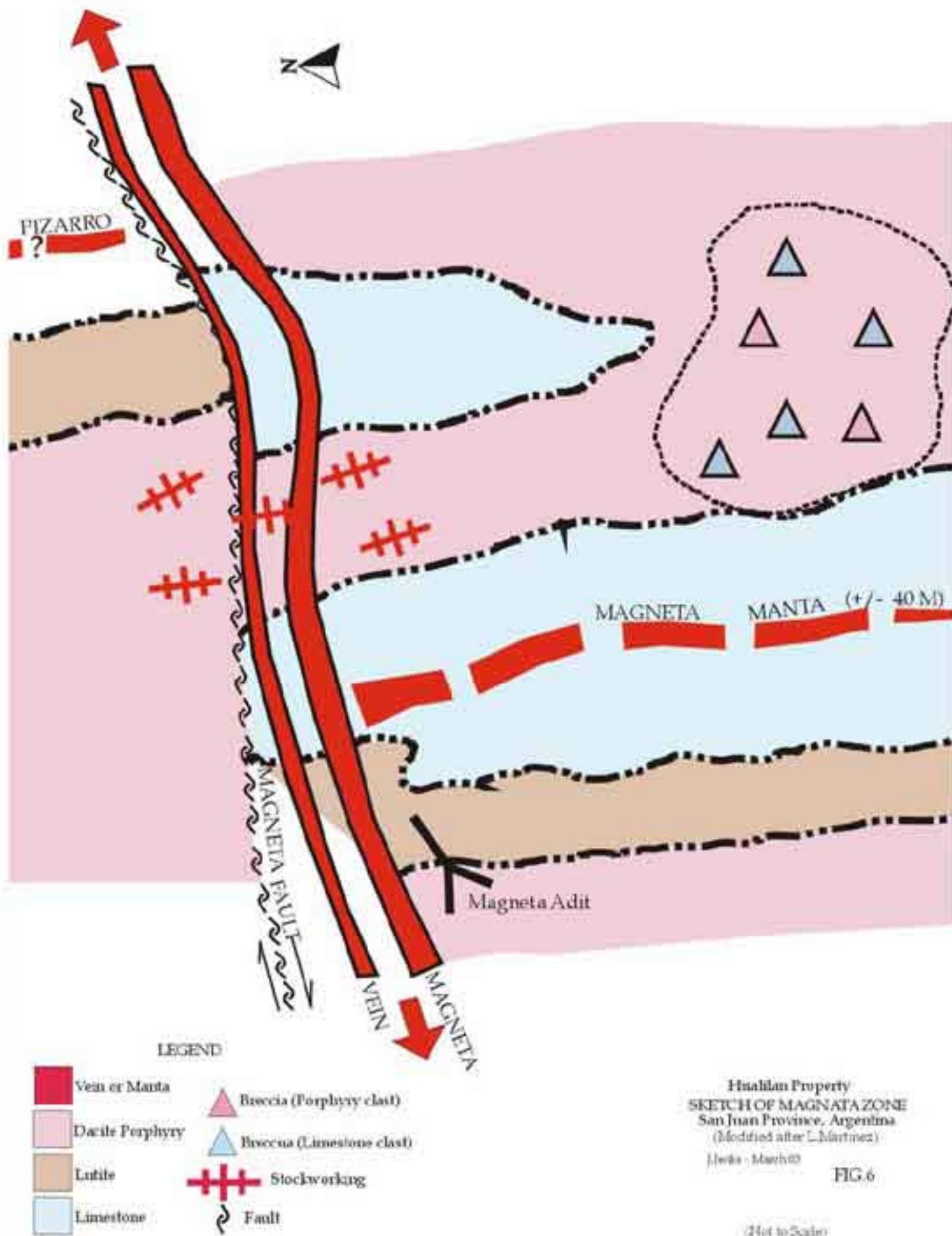
EPROM assigns an in-situ measured and indicated resource within 5 blocs of 33,924 tonnes @ 17.10 g/t Au, 24.13 g/t Ag, 3.38% Zn ).

CMEC measured and indicated resource estimate is 18,781 tonnes @ 10.27 g/t Au, 21.02 g/t Ag, 1.58% Zn from two blocs after applying a conservative correction factor of 0.76. The material is listed as oxidized.

- Las Cuevas Vein: Strikes east-west, dipping 60 degrees south. Strike length of 230 meters, average thickness 0.75 meters over a vertical depth of 60 meters. Grades average 18.21 g/t Au, 30.14 g/t Ag, 0.14% Cu, 1.75% Zn, 0.85% Pb. Open along strike to the west and to depth. (Deepest point sampled: 8.4 g/t Au & 19.3 g/t Ag over 2.1 meters).

EPROM's net in-situ measured and indicated resource is taken at 17,700 tonnes @ 18.21 g/t Au, 12.75 g/t Ag, 30.14, 1.751% Zn.

CMEC's measured and indicated resource is 16,134 tonnes @ 10.46 g/t Au, 17.63 g/t Ag, 2.13 % Zn from two blocs applying a correction factor of 0.76. The material is oxidized.







**C - MAGNATA ZONE FROM THE NORTH SHOWING DIP SLOPE OF LIMESTONES TO THE RIGHT (WEST) AND LIGHT-COLOURED DACITE PORPHYRY DYKES**



**D - MAGNATA FAULT**

- Manto Principal (Main Manto): Strikes 340 degrees, dips between 40 and 70 degrees to the southwest. Strike interval is 600 meters with an average thickness of 1.34 meters. Grades average 14.97 g/t Au, 62.41 g/t Ag, 0.26% Cu, 2.71% Zn, 0.89% Pb. Continues southerly to the apparent fault zone and eroded flat area separating the Cerro Norte from the Cerro Sur zone. The Main Manto is terminated to the north by the Sanchez/Las Cuevas fault zone. The likelihood of a 300meter displacement of the Main Manto along the fault zone towards the west (L. Martinez 2003) is a postulation to be tested by a combination of geophysics and diamond drilling.

EPROM's in situ M & I resource is 83,838 tonnes @ 14.97 g/t Au, 29.26 g/t Ag, 2.7% Zn from 11 blocs to a total depth of 120 meters.

CMEC cites a measured and indicated resource of 35,635 tonnes @ 14.67 g/t Au, 42.59 g/t Ag, 4.27% Zn using a correction factor of 0.87. The material is oxidized.

The above zones collectively are referred to as the Labor Principal which, in the Ingeoma/Minera Aguilar CMA) study, are listed as inferred mineral resources totaling 97,684 tonnes @ 10.18 g/t Au and 33.0 g/t Ag of oxidized material.

CERRO SUR (See Photo H):

- Magnata: (See Fig.6, Photo F) A complex zone consisting of two sub-parallel feeder veins trending east-westerly, dipping steeply to the south. These structures, which coalesce at the 80meter depth, provide a feed structure for the conformable Magneta manto trending 340 degrees dipping 40 to 70 degrees to the west. The manto extends along strike to the south for 40 meters where it lenses out into a bedding plane fault. Speculation holds that the manto has been faulted off to the north by the east-west Magnata vein/fault structure (Photo D) and displaced some 250 meters to the east. From here it supposedly continues its northerly trend as the Pizarro manto.

The Magnata vein appears open to the east, the west and to depth. Several sub-parallel zones of silicification marked at the surface by black manganiferous stains warrant sampling and further investigation. A northerly-trending valley situated 100 meters east of the Magnata workings is an apparent fault structure coinciding with a zone of brecciation and stockworking containing gold in anomalous (to 6.35 g/t) and possibly economic quantities – an obvious exploration target. A series of post-EPROM diamond *NQ* drill holes situated between the main Magnata adit and the valley to the east have provided ten regularly-spaced pierce points on the vein 30-50 meters apart which added significantly to the measured mineral resource. The drill-defined bloc measures approximately 125 x 125 meters with an average true vein thickness of 4.4 meters (see Figure 6a).

MAGNATA VEIN - Longitudinal Section Looking North

The map displays the geological features of the Magnata Adit area. The Mantla mine is shown as a red-shaded area with a dashed outline, labeled "Projection of Mantla". The Magnata Adit is indicated by a dashed line. Drill holes (DDH-65 to DDH-74) are marked with black dots and labeled with their coordinates and depths. The map includes a scale bar from 1,650M asl to 1,800 M asl and a north arrow.

Drill Hole	Coordinates (Easting, Northing)	Depth (m)
DDH-65	11 0', 61.0'	5m
DDH-66	22 0', 43.0'	5.7m
DDH-67	0 15', 2 04'	0.13 / 7.0m
DDH-68	0 13', 3 1', 0 19'	5m
DDH-69	0 24', 23 24'	2.2 / 5.0m
DDH-70	22 25', 55 05'	1.89 / 1.5m
DDH-71	47 42', 174 85'	9.42 / 7m
DDH-72	1 32', 38 35', 0 03'	5m
DDH-73	0 45', 12 2', 0 87'	2m
DDH-74	7 27', 27 98', 3 2'	0.5m

**MEASURED RESOURCE**  
 Tonnage: 216,054 tonnes  
 Average Gold grade (g/t): 13.05  
 Average Silver grade (g/t): 51.91  
 Average Zinc grade (%): 2.57

**LEGEND**

■ Geological contact

● DDH-71 Diamond drill hole

47.42 ; 174.85 ; 9.42 / 7.0m  
Gold in g/t Silver in g/t Zinc in % / True thickness in metres

Dactyl porphyry (Ter.)  
Lautis (Stl.)  
Limestone (Ord.)

MEASURED RESOURCE	
Tonnage	216,054 tonnes
Average Gold grade (g/t)	1.3 05
Average Silver grade (g/t)	51.91
Average Zinc grade (%)	2.57
INDICATED RESOURCE	
Tonnage	53,400 tonnes
Average Gold grade (g/t)	12.00
Average Silver grade (g/t)	21.00
Average Zinc grade (%)	not considered

La Mancha Resources Inc.  
HUALLAN PROPERTY  
MAGNATA VEIN  
- Longitudinal Projection  
Bloc 1 - Measured Resource  
(After CMEQ)

CMEC's calculations which benefit from information derived from the above-mentioned drilling program total measured and indicated resources as follows:

Magnata manto: 15,053 tonnes @ 10.02 g/t Au, 48.87 g/t Ag, 3.42% Zn from 6 blocs (primarily oxidized, some mixed material with sulphides)

Magnata vein: 226,243 tonnes @ 12.8 o/p Au, 44.61 g/t Ag, 2.41% Zn from 2 blocs (primarily oxidized, some mixed material with sulphides)

CMA assigns the following inferred mineral resources (pre-drilling) to the Magneta zone:

Sulphide: 10,500 tonnes @ 9.5 g/t Au, 32 g/t Ag

Oxidized: 27,688 tonnes @ 10.87 g/t Au, 94.74 g/t Ag

Muchilera: The central of the three Cerra Sur resource zones Muchilera is a manto striking northerly, dipping 55 degrees west and raking sub-vertically to steeply south. Probably the highest grade of all the zones, it is somewhat unique in that a siliceous east-west feeder zone is not evident. The manto's abutment against the east-west Muchilera fault may be a factor influencing this apparent absence. The slight rake of the zone to the south together with the Sentazon's rake to the north suggests that these two zones may possibly coalesce somewhere in the 200-250 meter depth range.

CMEC's measured and indicated resource of oxidized manta material is as follows:  
12,286 tonnes @ 25.71 g/t Au, 131.44 g/t Ag, 5.11% Zb from 7 blocs.

CMA assigns an inferred resource tonnage to the Muchillera zone of :  
21,396 tonnes @ 16.50 g/t Au, 112.52 g/t Ag (oxidized)

(It should be noted that CMA's assessment was carried twelve years prior to CMEC's and is inferred rather than measured and indicated)

While the zone begs for a drill program its location beneath a very steep hillside makes drill placement very difficult. Either very costly road building or helicopter assistance would be required. Alternatively the zone could be drilled from underground as development progresses from one of the adjacent zones. Though conceptual in nature, taken in conjunction with the Sentazon zone, manta tonnage potential of the Muchilera/Sentazon segment measuring 120 meters along strike, 240 meters downdip, 8 meters thick is estimated to be in the order of 750,000 tonnes. Feeder vein possibilities in this same sector with strike dimensions of 100 meters, 240 meters depth and 3 meters thickness total some 430,000 tonnes.

Sentazon: Originally exploited through the 100 meter deep Pique Sur vertical shaft the Sentazon manto zone has been exposed over a 125 meter vertical distance. Similar in strike and dip to the adjoining Muchilera manto the zone reaches a maximum thickness of 6.5 meters at its southern extremity.





**G - DR. RICARDO AURIEMMA (CMEC PRESIDENT), JACK MARR (LA MANCHA DIR.) LUIS VERA (MINING ENGINEER), NIKO AURIEMMA (GEOLOGIST), LEOPOLDO MARTINEZ (CONSULTING GEOLOGIST) IN FRONT OF CONCENTRATOR COMPONENTS**



**H - JACK MARR PHOTOGRAPHING FOLDED/FAULTED CERRO SUR SHOWING LIMESTONE DIP SLOPES TO THE LEFT (WEST)**



adjoining Muchilera manto the zone reaches a maximum thickness of 6.5 meters at its southern extremity.

CMEC's measured and indicated resource calculation is estimated at:

28,702 tonnes @ 6.44 g/t Au, 33.77 g/t Ag, 1.66% Zn of mixed oxidized and sulphide material from 8 blocs.

CMA places an inferred resource for Sentazon at:

22,511 tonnes @ 9.08 g/t Au, 81.98 g/t Ag (oxidized)

65,000 tonnes @ 3.7 g/t Au, 14 g/t Ag (sulphide)

EPROM lumps the entire Cerro Sur (Magneta, Muchilera, Sentazon) in-situ measured and indicated resource together totaling 57,633 tons @ 15.26 g/t Au, 83.31 g/t Ag, 2.84% Zn from 11 different blocs.

### 6.3 RECONCILIATION OF RESOURCE ESTIMATES

For comparative purposes the resource estimates CMEC, EPROM and CMA are modified slightly and shown in abbreviated form in Tables 1 through 4. For purposes of the present study and as these elements do not figure prominently in the overall economics Cu, Zn and Pb are not shown. At current gold (\$325/oz) and silver (\$4.34/oz) prices the gold equivalency of silver is 0.013 times the silver value. For simplicity silver is converted to a gold equivalent and added to the gold value.

- The resource estimates of CMEC and EPROM are realistic and conservative. Little supporting data is available to elucidate the CMA estimates, however, they are felt to be reasonable and are included for comparative purposes. Both CMEC and EPROM utilized longitudinal section polygonal methods for estimating resources, with individual blocs representing weighted averages of sampled underground or surface exposures and/or areas of diamond drill pierce points with zones of influence halfway to adjacent holes. CMEC applied a correction factor ranging from 0.4 to 0.8 to account for barren or low-grade blocs within mineralized zones.
- Some artistic license is taken in correlating Spanish reserve/resource terms with those currently favored by Canada's National Policy Instrument 43-101. Both CMEC and EPROM employ essentially the same terms which are taken to mean the following:

Reservas Probadas: Proven reserves taken to correlate with the term "Measured Resource". In practical usage both companies employed an arbitrary maximum distance of 25 meters from sampled faces or drill intersections within which mineralization was placed into the "measured" category.

Reservas Probables: Probable reserves taken to correlate with the term "Indicated Resource". Given a favorable geological condition the interval beyond the "Measured Resource" some 25 to

**Table 1: CIA.Minera El Colorado**  
*Resource Estimate - 2002*

<b>Zone</b>	<b>Measured Tonnes</b>	<b>Indicated Tonnes</b>	<b>Total Tonnes M &amp; I</b>	<b>Au g/t</b>	<b>Ag g/t</b>	<b>Au g/t Equiv.</b>	<b>Au oz Total</b>	<b>Inferred Tonnes</b>	<b>Au oz Inferred</b>
<b><i>Cerro Norte</i></b>									
Sanchez vein/breccia	7,757	11,024	18,781	10.27	21.02	10.54	6,385	97,279	33,075
Las Cuevas vein	8,771	7,363	16,134	10.46	17.63	10.69	5,563	77,176	26,613
Dona Justa	2,773	1,912	4,685	8.42	25.71	8.77	1,325		
Main manto	12,100	23,535	35,635	14.67	42.59	15.22	17,495	220,145	108,084
<b><i>Cerro Sur</i></b>									
Sentazon manto	10,846	17,855	28,701	6.44	33.77	6.88	6,389		
Sent/Much combined								293,964	162,581
Muchilera manto	7,648	4,637	12,285	25.71	131.44	27.41	10,863		
Magneta manto	6,372	8,680	15,052	10.02	48.87	10.66	5,176	183,398	63,065
Magneta vein	172,843	53,400	226,243	12.80	44.61	13.40	101,055	104,577	45,204
<b>Totals</b>	<b>229,110</b>	<b>128,406</b>	<b>357,516</b>			<b>13.37</b>	<b>154,251</b>	<b>976,539</b>	<b>438,622</b>

**Table 2: Resource Estimate - EPROM**  
*August 1996*

<b>Zone</b>	<b>Measured Tonnes</b>	<b>Indicated Tonnes</b>	<b>Total Tonnes M &amp; I</b>	<b>Au g/t</b>	<b>Ag g/t</b>	<b>Au g/t Equiv.</b>	<b>Au oz Total</b>	<b>Inferred Tonnes</b>	<b>Au oz Inferred</b>
<i><b>Cerro Norte</b></i>									
Guia del Alto I	402	265	667	9.47	9.08	9.59	206	5,000	1,546
Guia del Alto II	325	166	491	17.00	11.88	17.15	271	8,000	4,426
Sanchez vein/breccia	16,717	17,297	34,014	17.10	24.13	17.41	19,102	150,000	84,242
Las Cuevas vein	8,456	9,244	17,700	18.21	30.14	18.60	10,278	80,950	48,570
Dona Justa	12,575	12,575	25,150	3.98	14.21	4.16	3,375	150,000	20,129
Main manto	45,432	38,406	83,838	14.97	62.41	15.78	42,676	100,000	108,084
<i><b>Cerro Sur</b></i>									
South zone manto	43,555	14,079	57,634	15.26	83.31	16.34	30,379	200,000	105,419
Other									
Tailings	19,726		19,726	2.60	23.18	2.90	1,845		
<b>Totals</b>	<b>126,735</b>	<b>91,601</b>	<b>218,336</b>			<b>15.35</b>	<b>108,132</b>	<b>693,950</b>	<b>372,416</b>

**Table 3: Estimate of Potential Resources - EPROM***August 1996*

<b>Zone</b>	<b>Potencial Resources Tonnes</b>	<b>Au g/t</b>	<b>Ag g/t</b>	<b>Au g/t Equiv.</b>	<b>Potential Au oz Total</b>
<b><i>Cerro Norte</i></b>					
Guia del Alto I	10,000	12.74	10.83	12.88	4,155
Guia del Alto II	10,000	20.24	13.99	20.42	6,587
Sanchez vein/breccia	200,000	17.32	34.10	18.34	118,322
Las Cuevas vein	100,000	17.36	27.91	17.72	57,161
Dona Justa	200,000	3.93	20.82	21.09	136,064
Main manto	150,000	14.84	62.04	14.92	72,194
<b><i>Cerro Sur</i></b>					
South zone manto	350,000	17.63	85.91	18.90	213,387
<b><i>Other</i></b>					
Far south zones	250,000	2.60	57.90	3.35	27,016
Porphyries, other mantos & sills	7,300,000	0.96	8.66	1.07	251,967
East-west structures	375,000	11.25	14.71	11.44	138,387
Andacollo prospect	450,000	1.51	26.43	1.85	26,855
<b>Totals</b>	<b>9,395,000</b>			<b>3.47</b>	<b>1,052,095</b>

**Table 4: Resource Estimate - Co. Minera Aguilar S.A.**  
1990

<b>Zone</b>	<b>Type</b>	<b>Inferred Tonnes</b>	<b>Au g/t</b>	<b>Ag g/t</b>	<b>Au g/t Equiv.</b>	<b>Au oz Total</b>
<b><i>Cerro Norte</i></b>	Oxidized					
<i>Main manto</i>		97,684	10.18	33.0		
<b><i>Cerro Sur</i></b>	Oxidized					
<i>Sentazon</i>		22,511	9.08	81.98		
<i>Mucilera</i>		21,396	16.50	112.53		
<i>Magnata</i>		27,688	10.87	94.74		
<b><i>Cerro Sur</i></b>	Sulphide					
<i>Sentazon</i>		65,000	3.7	14.00		
<i>Magnata</i>		10,500	9.5	32.00		
<b>SUMMARY</b>						
<b><i>Cerro Norte</i></b>	Oxidized	97,684	10.18	33.0		
<b><i>Cerro Sur</i></b>	Oxidized	71,595	11.98	96.04		
<b><i>Cerro Sur</i></b>	Sulphide	75,500	4.5	16.3		
<b>Totals</b>		<b>244,779</b>	<b>8.95</b>	<b>46.28</b>	<b>9.55</b>	<b>75,408</b>

**Table 5: Hualilan Resource Summary**  
*March 2003*

Resource Category	CMEC			EPRM			CMA		
	<i>Tonnes</i>	<i>Au g/t Equiv.</i>	<i>Au oz Total</i>	<i>Tonnes</i>	<i>Au g/t Equiv.</i>	<i>Au oz Total</i>	<i>Tonnes</i>	<i>Au g/t Equiv.</i>	<i>Au oz Total</i>
<i>Measured &amp; indicated</i>	357,516	13.37	154,251	218,336	15.35	108,132	226,243	13.40	101,055
<i>Magneta vein - M &amp; I</i>				226,243	13.40	101,055			
<i>Total M &amp; I</i>	357,516	13.37	154,251	444,579	14.59	209,187			
<i>Inferred</i>	976,539	13.37	438,622	693,950	15.35	372,416	244,779	9.55	75,408
<i>Potential resources</i>				9,395,000	3.47	1,052,095			

75 meters from the sampled face or diamond drill hole falls into the “Indicated” category.

Reservas Prospectivas: Prospective reserves taken to correlate with “Inferred Mineral Resources”. A favorable geological condition beyond 75 meters from sample points places a resource into this category.

Reservas Potencial: A potential resource based upon viable geological theory and/or positive sample or drill results, which require additional work to upgrade to a higher category.

- Neither the EPROM resource calculation nor that of CMA included the drill-measured Magneta vein resource, which was drilled and defined subsequent to their estimates. CMEC, on the other hand, did not include small resources such as the Guia Alta I and II, the Andacollo, the tailings, nor did it include any potential low-grade resources such as the Dona Justa or the dacite porphyries.
- EPROM and CMA both appeared to focus their activities more on the Cerro Norte resulting in greater emphasis upon that particular zone over the Cerro Sur, which is covered in greater detail by the CMEC estimate.

Notes to Table 3: Estimate of Potential Resources: While outside a resource definition category as defined by NI 43-101 the table is included as a matter of historical record. Prepared by EPROM in 1996 for Plata Mining Ltd. the study reflects the opinion of a third party on the exploration potential of various zones. Estimated grades and quantities are conceptual in nature. There has been insufficient exploration to support these numbers and there is no assurance that further exploration will result in discoveries in any of the zones.

## 6.4 ESTIMATED RESOURCES

Table 5 provides a summary of the Hualilan resources as calculated by three different companies, CMEC, EPROM and CMA. CMEC’s calculations were carried out by its in-house engineer Luis Vera, a professional engineer with a M.S. (Mining Engineering), University of Pennsylvania. EPROM’s resource calculations were conducted by Carlos Theune, a consulting geologist holding a M.Sc. degree from the Technische Universitat Carolo Wilhelmina zu Braunschweig, Germany. Details as to the author of the CMA calculations are currently unavailable.

The measured and indicated resources of EPROM and CMA do not have the benefit of drilling information obtained during the late 1990’s therefore the resource figure for the Magnata vein is added onto both estimates to bring them into line with CMEC’s.

EPROM’s measured and indicated total is the highest of the three reflecting the greater attention to the Cerro Norte sector.

Maximization of ounces would entail utilizing the EPROM measured and indicated resource, inclusion of the Magnata vein measured and indicated, inclusion of CMEC’s inferred resource.



A reasonable estimate of the Hualilan resources would therefore read as follows:

**Measured and Indicated Resources (EPROM): 444,579 tonnes @ 14.59 g/t Au  
209,187 oz Au**

(Includes 172,813 tonnes of Magnata Vein added @ 13.37 g/t Au eq. – 101,055 oz contained Au)

**Inferred Resources (CMEC): 976,539 tonnes @ 13.37 g/t Au  
438,622 oz Au**

Longitudinal polygonal sections were used for estimating grades and tonnages. Individual resource blocs represented weighted averages of sampled underground or surface exposures and/or diamond drill pierce points with zones of influence halfway to adjacent holes. Material within 25 meters of a sampled face with a suitable grade was placed into a “measured” resource category while that in the 25-75 meter range was included in an “indicated” resource category.

To allow for barren or low-grade blocs within mineralized zones CMEC applied a correction factor ranging from 0.4 to 0.8.

In certain instances EPROM measured and indicated resource estimates were utilized rather than the more current CMEC estimates for two reasons. Firstly, the EPROM estimates are particularly valued because of the independent, arms-length nature of their association with the property unlike CMEC who are de-facto owners. Secondly, their greater focus on the Cerro Norte provides a more meaningful resource calculation within this particular sector.

At the present time there are no foreseeable factors relating to the environment, permitting, political stability, socio-economics, which could adversely affect the project.

## **7.0 METALLURGICAL TESTING AND CONCENTRATOR ACQUISITION**

Preliminary metallurgical testing has been carried out on Hualilan material. Bottle roll and column cyanidation tests by Lakefield Research in 1999 indicated poor recoveries and high cyanide consumption. Gold recoveries were 40% for gold, 31% for silver. Ventures over the previous century involving cyanide processing all proved unsuccessful and short-lived, confirming the inefficiencies of this method.

Four bulk samples were submitted by la CMEC in 2000 to the CIMM T & SSA. laboratories in Santiago, Chile for testing. These consisted of oxidized sulphide as well as mixed material. Results indicated that flotation used in conjunction with a Knelsen concentrator provided 80% recoveries for gold and silver and 50% for zinc regardless of sample type.

In their preliminary feasibility study CMEC employed recovery figures of 82% for gold, 73% for silver and 68% for zinc, reasonable numbers considering that recovery rates generally increase as

experience is gained in the plant operation.

In 2002 CMEC purchased a complete 800 tpd concentrator, had it disassembled and moved from the Mina Angela site in Chabut province to Hualilan, a distance of 1,500 kilometers. The mine had ceased operation in 1992. A due diligence report of the plant carried out on site for Lohnro by Flour South Africa in 1996 provided a detailed inventory of the plant and ancillary equipment and rated it at 60% new in terms of wear and tear. The plant consists of a crushing, milling and flotation circuit producing a global lead (containing Pb, Au, Ag & Cu) and a zinc concentrate by differential flotation. Free gold and electrum concentrates were recovered on corduroy cloth lining the mill discharge chute and treated in an amalgam mill ultimately producing sponge gold. At Hualilan incorporation of a Knelsen concentrator would likely optimize recovery of free and electrum gold.

At its current storage location on the Hualilan site between the Cerro Norte and Cerro Sur sectors dry desert conditions should retard any significant rusting of components. Subject to engineering design, foundation construction, assembly and normal start-up glitches the on-site concentrator should provide a relatively low-cost entry into a production phase.

## **8.0 GEOPHYSICS**

Hualilan mineralization does not appear to constitute a good direct geophysical target. Low sulphide content, a relatively deep oxidized zone, deep overburden within the valleys and narrow deposit types mitigate against its successful deployment. Nevertheless a number of ground surveys of various types have been carried out. At the present time the absence of ground control points limits the value of previous surveys as their exact locations cannot be determined with precision.

Spatial association of mineralized zones with fault junctures, fault/lithology change confluences, breccia zones etc. means that any geophysical system capable of delineating structure and/or lithology changes may be as useful as an exploration tool in conjunction with good geological mapping.

Aerodat Inc. carried out a 90 square kilometre airborne survey for Monarch Resources Ltd. in 1995, which covered the Hualilan property. The survey included magnetics, electromagnetics, resistivity and radiometrics. While the exact location of the property cannot be pinpointed within the survey bloc both the magnetic and the resistivity maps indicate a number of very intriguing structural patterns, fault junctures and features (See Appendix IV) that should be overlain onto the geology and investigated. Acquisition of all the airborne data including the air photographic base maps should be a high priority.

**Table 6 Huailian Project**  
*Operating Cash Flow - March 2003*  
 Based Upon CMEC Projections, \$325/oz Au, 2.5% NP Royalty  
 (US Dollars)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total
<i>Tonnes/day</i>		400 tpd	400 tpd	400 tpd	800 tpd	800 tpd	800 tpd	800 tpd	800 tpd	800 tpd	
<i>Tonnes/year</i>		144,000	144,000	144,000	288,000	288,000	288,000	288,000	288,000	288,000	2,160,000 tonnes
<i>Au oz produced</i>	0	44,195.50	44,195.50	44,195.50	88,391	88,391	88,391	88,391	88,391	88,391	662,932.5 ounces
<i>Au production value</i>	0	\$14,363,538	14,363,538	14,363,538	28,727,075	28,727,075	28,727,075	28,727,075	28,727,075	28,727,075	\$215,453,064
<i>Total production value</i>	0	\$17,822,175	17,822,175	17,822,175	35,644,350	35,644,350	35,644,350	35,644,350	35,644,350	35,644,350	\$267,332,625
<i>Total operating costs</i>	0	\$ 7,157,892	7,157,892	7,157,892	18,234,880	18,234,880	18,234,880	18,234,880	18,234,880	18,234,880	\$130,882,956
<i>Operating profit</i>	0	\$10,664,283	10,664,283	10,664,283	17,409,470	17,409,470	17,409,470	17,409,470	17,409,470	17,409,470	\$136,449,669
<i>Profits royalty - 2.5%</i>		\$ 266,607	266,607	266,607	435,237	435,237	435,237	435,237	435,237	435,237	\$3,411,243
<i>Op.profit less royalty</i>		\$10,397,676	10,397,676	10,397,676	16,974,233	16,974,233	16,974,233	16,974,233	16,974,233	16,974,233	\$133,038,426
<i>30% Income tax</i>	0	\$ 3,119,303	3,119,303	3,119,303	5,092,270	5,092,270	5,092,270	5,092,270	5,092,270	5,092,270	\$39,911,529
<i>After-tax profit</i>	0	\$ 7,278,373	7,278,373	7,278,373	11,881,963	11,881,963	11,881,963	11,881,963	11,881,963	11,881,963	\$93,126,897
<i>Exploration costs</i>	\$350,000	\$ 650,000									\$1,000,000
<i>Capital costs</i>	\$4,000,000										\$4,000,000
<i>Development costs</i>	\$500,000	\$ 500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000		\$4,000,000
<i>Accumulated profit</i>	(\$4,850,000)	\$ 1,278,373	8,056,746	14,835,119	26,217,082	37,599,045	48,981,008	60,362,971	72,244,934	84,126,897	<b>\$84,126,897</b>

**Hualilan Project**  
*Net Present Value Estimate*  
*March 2003*

Basis:

- Revision of Minera El Colorado 2000 cash flow estimates
- Revised using a \$325 US/oz gold price
- Construction only in year one
- Initial production at 400 tpd for three years upgrading to 800 tpd for the remaining six years
- A ten-year discount period
- \$1,000,000 expended upon exploration the first two years
- A \$4,000,000 capital cost
- Ongoing development/exploration costs of \$4,000,000 over eight years
- Provision for corporate income tax of 30% of operating profit
- A 2 ½% royalty on net profits
- Accumulated net after-tax profit of \$84,126,897
- All figures in US dollars

Table 7 - \$84,126,897 US discounted over 10 years

Discount Rate	NPV
8%	\$38,967,031
10%	32,434,561
12%	27,086,609
14%	22,692,710

## 9.0 ESTIMATED PROPERTY VALUE

Various valuation methods may be used in assigning value; among them

- a) Acquisition costs
- b) Historical expenditures on the property
- c) Value per tonne of 'ore' in the ground
- d) Value of comparable properties
- d) Discounted cash flow
- e) Net present value
- f) Price/earnings multiples

While the Hualilan property is advanced in terms of property history, exposure to the deposit and exploration, it has no recorded earnings history. A January 2000 preliminary feasibility carried out by CMEC provides a basis upon which to establish a net present value based upon projected cash flow over a ten year period commencing from the date of construction. A copy of CMEC's case 2 scenario is presented in Appendix III.

For purposes of net present value calculation CMEC revenues and costs are utilized except that gold revenues are recalculated at \$325/oz Au rather than the \$290/oz Au employed in 2000. The following metal prices and rates of recovery are used: Au \$325/oz – 83%; Ag \$5.00/oz – 73%; Pb \$0.25/lb – 80%; Cu \$0.90 – 84%; Zn \$0.50 – 68%. A ten year discount period is utilized with construction in the first year followed by three years of production at 400 tpd and six years at 800 tpd. Allowances are made for \$9,000,000 US capital, exploration and development costs. A 30% income tax provision is made on operating profits from which a 2 ½% net profits royalty is deducted. The resulting accumulated profit as shown in Table 6 over ten years totals \$84,126,897 US.

Table 7 provides an illustration of net present value (NPV) based upon accumulated net profit for the proposed ten-year mining scenario. Four different discount rates are employed. In the above scenario total throughput of material could be less than the total resource, however, no allowance is made in the NPV calculation for the value of any deposit residual.

As shown in Table 7 the lowest NPV utilizing a 14% discount rate over ten years is taken at **\$22,692,710 US**. Using a lower 8% discount rate an NPV of **\$38,967,031 US** is indicated at the higher end of the spectrum. Depending upon the operation's ultimate circumstances the actual NPV will likely lie somewhere between these two extremes. A 10% discount rate would result in a **\$32,434,561 US** NPV, perhaps the most realistic estimate.

**While a ten-year mining scenario is presented above it should be emphasized that current measured and indicated resources on the property would support only a two and a half year mine life.**

## 10.0 CONCLUSIONS AND RECOMMENDATIONS

### 10.1 CONCLUSIONS

- The Hualilan property is situated within a prospective gold area that has undergone relatively limited exploration by modern methods. It has excellent access, is a 1.5 hours drive from a major population center, yet the sparse population of the area and nature of the terrain suggests that few problems of an environmental nature would arise from a mining operation.
- Though the property has undergone exploration and production over an extended period it has been intermittent, sporadic and generally not very methodical. It has generated a wealth of data which should be compiled and placed upon a suitable base.
- The polymetallic Hualilan deposits fall into the **distal zinc-lead skarn** category with skarn, manto and vein varieties equally prevalent. Mineralization was emplaced in three pulses – an initial prograde skarn, a later, lower-temperature retrograde skarn and finally, deposition of veins and more distal epithermal bodies. Deposition occurred in and around the 300 degree C temperature range, within the transitional area between epithermal and mesothermal zones.
- temperature range, within the transitional area between epithermal and mesothermal zones.
- While the primary host is the Ordovician San Juan limestone gold-bearing mineralization also occurs within overlaying Silurian lutites of the Tucunucu Formation, particularly in contact areas, and within the Tertiary dacite porphyries.
- **Fault structures are critical to mineral deposition.** Early stage thrusting produced bedding plane faults within the upper chert-rich horizons of the San Juan limestones, which provided permeability for eventual manto emplacement. Later east-west normal fault structures were the channels through which solutions traveled to form mantos, skarns and veins – usually within the faults themselves. From an exploration viewpoint any east-west structure must be viewed as prospective, particularly in the juncture area with other structures, dacite porphyrys, rock contacts and the upper section of the San Juan limestones.
- **Four deposits are imminently mineable** and are partially developed at present. These include the Labor Principal (Main Manto, Las Cuevas vein, Sanchez vein) in the Cerro Norte sector and the Magnata vein and manto, Mucillera manto and Sentazon manto in the Cerro Sur sector. Acquisition of an 800 tpd crushing, milling, flotation circuit, currently stored on site, provides a potential fast track entry to production.
- Detailed resource calculations made by three different groups are seen to be realistic. Utilizing a combination of resources estimated from the EPROM 1996 study and the CMEC 2000 report the following resource figure is arrived at:

<b>Measured and Indicated:</b>	<b>444,580 tonnes @ 14.59 g/t Au</b>	<b>209,187 oz Au contained</b>
<b>Inferred:</b>	<b>976,539 tonnes @ 13.37 g/t Au</b>	<b>438,622 oz Au contained</b>

**EPROM's arms-length/third-party relationship to the property provides an extra measure of value to their resource calculations in addition to their focus on the Cerro Norte which makes their estimates more meaningful in this sector. On the other hand CMEC's more recent exploration activity and greater attention in the Cerro Sur are seen to produce more meaningful estimates within this particular section of the property.**

- Applying current gold prices to a 2000 CMEC preliminary feasibility study/cash flow analysis and assuming the following scenario: a ten year discount period, \$9,000,000 US capital, development and exploration costs, 3 years of 400 tpd followed by 6 years of 800 tpd production, 30% income tax, a 2.5 % net profits royalty, a 10% discount rate. Based upon the forgoing a **net present value of \$32,434,561 US** is indicated for the property.
- Ongoing exploration and development over the life of the mine would be required to provide mill feed on a consistent and continual basis.
- There remains considerable exploration potential within the property boundaries as well as along strike of the San Juan limestones for dozens of kilometers both north and south. Exploration 'flags' would include the presence of **east-west transverse structures** and **dacite porphyries**. Alteration and breccia zones within the dacites are particularly prospective. Good detailed mapping, rock sampling and prospecting are seen as the most reliable exploration tools.
- Geophysics has limited application as a direct exploration tool. Its main use would be to define structures and lithology differences. Soil geochemistry is equally difficult to apply because of deep overburden in valleys and lack of soil development along steep slopes.

## 10.2 RECOMMENDATIONS

- Production of a suitable topographic (orthophoto?) base map with surveyed control points for use as a base for mapping and mining.
- Compilation and digitization of available data onto the above base via an appropriate software programme such as GEMCON.
- Obtain all the Monarch/Aerodat airborne geophysical data. Overlay it over the known geology and select areas for follow-up.
- Surface map in detail a 4 sq. km. bloc including the main deposits and surrounding areas. Features to include lithology, structure, alteration, mantos, veins, veinlets, vein swarms, silicified zones and gossans. Fluid inclusion study could provide a temperature vector, which could prove useful. Tie all the surface geology to underground geology, diamond drill and grade information via GEMCOM software.
- Examine the lower section of the San Juan limestone stratigraphy wherever it may be



exposed. The object would be to determine the presence and position of any layer capable of hosting gold deposits such as permeable horizons or those with elevated organic contents. Such information could then be applied to drill target depths in the gravel-covered flats to the west.

- Experimental ground geophysics (CSAMT) to detect westerly extensions of mineralized veins and northerly extensions of faulted off mantos.
- Diamond drilling of targets currently selected by the CMEC staff:
  - Magnata vein extension to the west preceded by geophysics (4 x 150m holes; 2 x 200m holes)
  - Sentazon feeder vein and manto preceded by geophysics (2 x 100m holes; 2 x 150m holes; 1 x 250 m hole)
  - Western extension of Las Cuevas vein preceded by geophysics (1 x 100m hole; 1x 150m hole)
  - Displacement of Main Manto north of Sanchez fault preceded by geophysics (4 x 150m holes)
  - Muchilera has a very high priority but may not be drillable from surface

Total drill metrage proposed is 2,600 metres plus an optional 900 meters. Because of the fractured nature of the veins and mantos and since much of the mineralization is fault-associated it is recommended that the larger diameter HQ drill size be utilized to optimize core recoveries.

- In the event of production exploration will be ongoing and focussed initially upon the immediate property in order to provide mill feed. Obvious target areas will include fault junctures, fault/lithology contact intercepts, fault/dacite porphyry intercepts, breccia zones and strike extensions of known veins and mantos. Exploration in and around the Hualilan thrust fault on the east side of the hills could prove fruitful. Specific target areas will materialize from the detailed mapping programme recommended above.
- As exploration evolves to a more regional basis it will involve examination of the many kilometers of San Juan limestone to the north and south along strike. Transverse east-west faulting will warrant attention as will the presence of dacite porphyry bodies. Panning of drainage material from east-west fault draws is recommended as an exploration tool. Investigation into the viability of biogeochemistry could be worthwhile as the persistent presence of hardy bushes with deep root systems could offer a medium through which gold or indicator elements are absorbed in anomalous quantities in proximity to buried deposits. Possible application of the MMI technique (mobile metal ion), which has enjoyed some success with deep deposits in Chilean desert conditions, should be investigated as well.

## 11.0 - PROPOSED BUDGET:

### Phase 1 Hualilan 2003 Budget

#### SURVEY

Monarch Airborne, processing and plots	5,000	
Orthophoto/Survey	<u>12,000</u>	\$17,000

#### GEOLOGY

Structural mapper & support	5,000	
Drill geologist & helper	6,000	
Project Manager	10,000	
Vancouver consultants and tech visits	10,000	
Gemcom operator and support	<u>7,000</u>	\$38,000

#### GEOPHYSICS CSAMT

test, minor GC	10,000	
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#### SUPPORT

Vehicles/Accommodation/Misc.	10,000	
Radio, computer, communications	10,000	

#### DRILLING

Direct costs 2000 m @ \$ 75/m	150,000	
Dozer, water truck etc	<u>15,000</u>	\$165,000

#### VANCOUVER

Accounting, admin.	10,000	
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#### ARGENTINA

Admin, Overhead	20,000	
Land, Legal, Misc.	<u>20,000</u>	\$40,000

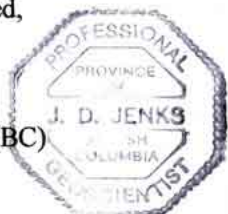
#### TOTAL

**\$300,000 US**

Respectfully submitted,



John Jenks – P.Geo. (BC)  
April 12, 2003



## 12.0- REFERENCES:

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## **CERTIFICATE OF AUTHOR**

I, John Jenks, do hereby certify that:

1. I am an independent geological consultant resident at the above address.
2. I graduated with a B.Sc. (Geology Major) degree from McGill University - Montreal, Canada in 1968.
3. I am a Registered Professional Geoscientist (#21123) with the Association of Professional Engineers and Geoscientists of British Columbia as well as a Life Member of the Association of Professional Engineers, Geologists and Geophysicists of Alberta.
4. I have worked as a geologist for a total of thirty-five years since my graduation from university.
5. I have read the definition of “qualified person” set out in National Instrument 43-101 (“NI 43-101”) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a “qualified person” for the purposes of NI 43-101.
6. I am responsible for the preparation of the technical report entitled “The Hualilan Property – Geological Appraisal” and dated April 12, 2003 relating to the Hualilan Property, Ullum Administrative District, San Juan Province, Republic of Argentina. I spent four days on the property between March 22 and March 28, 2003 examining showings, geology and the underground workings. I reviewed available maps, reports and documentation relating to the property.
7. I have had no prior involvement with the property that is the subject of the Technical Report.
8. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes The Technical Report misleading.
9. I am independent of the issuer applying all of the tests in section 1.5 of National Instrument 43-101.
10. I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.
10. I consent to the filing of the Technical Report with any stock exchange and other regulatory Authority and any publication by them, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Dated this 12<sup>th</sup> Day of April, 2003

  
\_\_\_\_\_  
Signature of Qualified Person

JOHN JENKS  
\_\_\_\_\_  
Print Name of Qualified Person



Appendix I:

TITLE OPINION AND PROPERTY SUMMARY

DR. MARIO DE PABLOS



## CONSULTORIA MINERA Dr. TOMÁS DE PABLOS

Bolivar 187 5° "B" Buenos Aires, República Argentina

Tel/Fax: (\*\*54-11) 4343-6138/4343-6422

E-mail: [gytarg@satlink.com](mailto:gytarg@satlink.com)

Buenos Aires, 3 de marzo de 2003.-

Dr. John M. Marr

Director

La Mancha Resources, Inc.

El propósito del presente es presentar un informe acerca de la situación legal de la empresa denominada Compañía Minera El Colorado SACI y M y de la titularidad de los derechos mineros del proyecto de referencia, ubicado en la provincia de San Juan, que se emite a continuación:

1) Cía. Minera El Colorado SACI y M se encuentra legalmente inscripta y vigente a la fecha de este estudio.

A tal efecto se deja constancia que la compañía se encuentra inscripta en el Registro Público de comercio de la provincia de San Juan, bajo el N° 13, Folio 45 del 24/03/1972 del libro de Sociedades Anónimas, con domicilio legal en la Avda. del Libertador 828 piso 1°, ofic. "A", de la Ciudad Autónoma de Buenos Aires.

Así mismo se encuentra registrada como empresa beneficiaria de la Ley de inversiones 24. 196, bajo el número 383.

2) Cía. Minera El Colorado SACI y M, es propietaria de todos los derechos mineros correspondientes al proyecto de referencia, siendo la autoridad de aplicación en todo lo concerniente con las propiedades mineras la Dirección de Minería de la Provincia de San Juan.

## CONSULTORIA MINERA Dr. TOMÁS DE PABLOS

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Tel/Fax: (\*\*54-11) 4343-6138/4343-6422

E-mail: [gytarg@satlink.com](mailto:gytarg@satlink.com)

3) La Cía. Minera El Colorado SACI y M, celebró un contrato el 28/02/2003 con el Dr. Ricardo Romero, a partir de este acuerdo la compañía formaliza el total control sobre las zonas adyacentes a la mina.

El proyecto está compuesto por propiedades mineras que cubren toda la mineralización conocida y derechos de explotación, considerando que los minerales protegidos por los mismos son según el código de Minería de la Nación de primera categoría.

Las propiedades mineras están constituidas por derechos con la siguiente denominación, descriptos a continuación:

- 1) Minas otorgadas
- 2) Demasías (superficie entre dos minas)
- 3) Ampliación de pertenencias de minas otorgadas
- 4) Multiplicación de pertenencias
- 5) Estaca Minas
- 6) Derechos mineros controlados con contratos con terceros

A: Minas

B: Cateos de exploración

## DESCRIPCIÓN DE LAS PROPIEDADES

### 1) MINAS OTORGADAS

Este grupo está constituido por minas con mensura aprobada, canon minero pagado e inversiones mineras realizadas cumpliendo con las normas legales vigentes.

## CONSULTORIA MINERA Dr. TOMÁS DE PABLOS

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Tel/Fax: (\*\*54-11) 4343-6138/4343-6422

E-mail: [gytarg@satlink.com](mailto:gytarg@satlink.com)

- Expediente 5448-M-60, incluyendo las minas:

Divisadero N° 1 (1 pertenencia)\*

Andacollo (1 pertenencia)

Flor de Gualilán (1 pertenencia)\*

Pereyra Aciar (1 pertenencia)\*

Bicolor (1 pertenencia)\*

Sentazón (1 pertenencia)\*

Muchilera (1 pertenencia)\*

Magnata (1 pertenencia)\*

Pizarro (1 pertenencia)\*

La Toro (1 pertenencia)\*\*

La Puntilla (1 pertenencia)\*\*

Pique de Ortega (1 pertenencia)\*\*

Descubridora (1 pertenencia)\*\*

Pardo (1 pertenencia)\*\*

Sánchez (1 pertenencia)\*\*

Los derechos enumerados se encuentran a su vez identificados en dos expedientes denominados Grupo Minero por nuestra legislación y que tiene el sentido de simplificar los trámites, de acuerdo al siguiente detalle:

\* Constituyen el Grupo Minero Hualilán N° 1 (Expediente 156.932-C-73)

\*\* Constituyen el Grupo Minero Hualilán N°2 (Expediente 156.931-C-73)

## 2) DEMASÍAS

Las Demasías corresponden a superficies libres entre minas y adquieren categoría de mina.

- Expediente 195.152-C-81

- Expediente 545.207-B-94

- Expediente 545.208-B-94

- Expediente 545.209-B-94

## CONSULTORIA MINERA Dr. TOMÁS DE PABLOS

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E-mail: [gytarg@satlink.com](mailto:gytarg@satlink.com)

### 3) AMPLIACIÓN DE PERTENENCIAS

Se denominan Ampliaciones a los derechos mineros ubicados a continuación de las minas otorgadas y ubicados al Oeste de las mismas.

- Expediente 545.210-B-94
- Expediente 545.211-B-94
- Expediente 545.212-B-94
- Expediente 545.213-B-94
- Expediente 545.214-B-94
- Expediente 545.215-B-94
- Expediente 545.216-B-94
- Expediente 545.217-B-94
- Expediente 545.218-B-94
- Expediente 545.219-B-94
- Expediente 545.220-B-94
- Expediente 545.221-B-94

### 4) MULTIPLICACIÓN DE PERTENENCIAS

Se denominan así a expedients (en trámite) que se ubican a continuación de las minas otorgadas y ubicados al Este de las mismas.

Muchilera (6 pertenencias)

Pizarro (6 pertenencias)

Descubridora (5 pertenencias)

Sánchez (3 pertenencias)

Puntilla (6 pertenencias)

Toro (6 pertenencias)

### 5) ESTACA MINAS

Estos derechos (en trámite) cubren posibles extensiones de la mineralización, adquiriendo categoría de mina.

## CONSULTORIA MINERA Dr. TOMÁS DE PABLOS

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- Expediente 546.084-F-94
- Expediente 546.085-F-94
- Expediente 546.086-F-94
- Expediente 546.087-F-94
- Expediente 546.088-F-94
- Expediente 546.829-P-94
- Expediente 546.830-P-94
- Expediente 546.831-P-94
- Expediente 546.832-P-94
- Expediente 546.833-P-94
- Expediente 546.834-P-94
- Expediente 546.835-P-94
- Expediente 546.836-P-94
- Expediente 546.837-P-94
- Expediente 546.838-P-94
- Expediente 546.839-P-94
- Expediente 546.850-P-94
- Expediente 546.851-P-94
- Expediente 546.852-P-94
- Expediente 546.853-P-94

### 6) DERECHOS MINEROS CONTROLADOS CON CONTRATOS CON TERCEROS

#### 6.a: Minas

- Expediente 2260-S-58 (Mina Marta Alicia, mensurada)
- Expediente 339.376-R-93 (Mina Ana)
- Expedients 339.153-R-92 (Mina Marta I)

#### 6.b: Cateos de exploración

- Expediente 295.122-R-89
- Expediente 338.470-R-92
- Expediente 339.152-R-92
- Expediente 338.441-R-93
- Expediente 338.600-H-93
- Expediente 338.983-A-93
- Expediente 545.880-O-94
- Expediente 546.001-P-94

## CONSULTORIA MINERA Dr. TOMÁS DE PABLOS

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Es importante destacar que dentro de las propiedades mineras mencionadas se encuentran las edificaciones correspondientes al campamento y red de caminos de comunicación interna.

Ha sido presentado el informe de impacto ambiental correspondiente a las tareas de exploración programadas y de la explotación propuesta.

Atentamente.

Dr. Mario de Pablos

## Appendix II

### ANALYTICAL RESULTS OF GRAB SAMPLES TAKEN BY DR. R.L. MOXHAM – 1994



**ANALYTICAL RESULTS – KEY ELEMENTS**  
(AFTER MOXHAM 1994)

Sample No.	Description	Au g/t (ppb)	Ag (g/t ppm)	Cu ppm	Pb ppm	Zn ppm
HUA – 1	Hydrothermal (?) breccia with dacite porphyry fragments	9.94	44.23	67.7	1,100	162
HUA – 2	Hydrothermal quartz breccia with silicified limestone fragments	17.7	8.57	87.3	738	7,060
HUA – 3	Altered dacite porphyry	5.21	3.77	6.6	1,450	508
HUA – 4	Hydrothermal (?) breccia with dacite porphyry fragments	3.98	17.49	65.4	287	234
HUA – 5	Bleached dacite porphyry	(256)	(3.0)	21.1	258	154
HUA – 6	Hydrothermal (?) breccia with dacite porphyry fragments	9.91	85.03	113	2,550	182
HUA – 7	Silicified limestone breccia	1.54	(2.0)	20.7	323	338
HUA – 8	Altered sandstone	2.47	27.77	104	1,230	607
HUA – 9	Silicified limestone breccia	(138)	(1.8)	25.9	214	159
HUA – 10	Primary sulphide mineralization dominantly qtz/py	6.31	9.60	288	4,020	1,160
HUA – 11	Limestone breccia	1.51	9.26	41.6	504	61.3
HUA – 12	Dacite porphyry breccia	(324)	7.20	103	337	143
HUA – 13	Primary sulphide mineralization dominantly py, sph minor cp	241	104.92	2,220	386	113,000
HUA – 14	Hematitic limestone breccia	(888)	7.54	426	3,590	68,900
HUA – 15	Limestone breccia	3.63	18.17	49.4	1,170	246
HUA – 16	Hydrothermal (?) breccia with dacite porphyry fragments	2.82	25.71	90.5	880	107
HUA – 17	Silicified limestone breccia	70	(0.2)	7.6	95	305

Appendix III:

COMPANIA MINERIA EL COLORADO S.A.  
OPERATING CASH FLOW – CASE 2 SCENARIO

HUALILAN PROJECT		170	300	450	600	800	
OPERATING CASH FLOW		TOTAL YEAR 1	TOTAL YEAR 2	TOTAL YEAR 3	TOTAL YEAR 4	TOTAL YEAR 5	
1	Tons ore/ year	YEAR 2000 61,790.00	YEAR 2001 107,000.00	YEAR 2002 162,000.00	YEAR 2003 216,000.00	YEAR 2004 288,000.00	TOTAL 834,790.00
<b>GOLD</b>							
2	Grade Au g/tm	11.13	11.29	11.28	11.50	11.50	11.40
3	Conc. ratio	15.00	15.00	15.00	15.00	15.00	15.00
4	Recovery %	83.00	83.00	83.00	83.00	83.00	83.00
5	Au concent Grade g/tm	99.60	99.60	99.60	99.60	99.60	99.60
6	Tons conc. Produced	4,119.33	7,133.33	10,800.00	14,400.00	19,200.00	55,652.66
7	Ounces Au produced	18,432.52	32,246.59	48,765.17	66,293.25	88,391.00	254,128.53
8	Au price US\$ / Oz	290.00	290.00	290.00	290.00	290.00	290.00
9	Au produc. Value US\$	5,345,431.55	9,351,510.39	14,141,898.95	19,225,041.80	25,633,389.07	73,697,271.76
<b>SILVER</b>							
10	Grade Ag g/tm	32.18	30.17	29.73	25.26	25.26	27.27
11	Conc. ratio	15.00	15.00	15.00	15.00	15.00	15.00
12	Recovery %	73.00	73.00	73.00	73.00	73.00	73.00
13	Ag conc. Grade g/tm	657.00	657.00	657.00	657.00	657.00	657.00
14	Tons conc. Produced	4,119.33	7,133.33	10,800.00	14,400.00	19,200.00	55,652.66
15	Ounces Ag produced	46,006.65	75,778.93	113,012.45	128,070.64	170,760.85	533,629.34
16	Ag price US\$ / Oz	5.00	5.00	5.00	5.00	5.00	5.00
17	Ag produc. Value US\$	230,033.23	378,894.76	565,062.25	640,353.18	853,804.24	2,668,147.66
<b>LEAD</b>							
18	Grade %	1.00	1.00	1.00	1.00	1.00	1.00
19	Conc. ratio	15.00	15.00	15.00	15.00	15.00	15.00
20	Recovery %	80.00	80.00	80.00	80.00	80.00	80.00
21	Pb conc. Grade %	12.00	12.00	12.00	12.00	12.00	12.00
22	Tons conc. Produced	4,119.33	7,133.33	10,800.00	14,400.00	19,200.00	55,652.66
23	Pounds Pb produced	1,097,390.40	1,900,320.00	2,877,120.00	3,836,160.00	5,114,880.00	14,825,870.40
24	Pb price US\$ / lb	0.25	0.25	0.25	0.25	0.25	0.25
25	Pb produc. Value US\$	274,347.60	475,080.00	719,280.00	959,040.00	1,278,720.00	3,706,467.60
<b>COPPER</b>							
26	Copper grade %	0.22	0.22	0.22	0.22	0.22	0.22
27	Conc. ratio	15.00	15.00	15.00	15.00	15.00	15.00



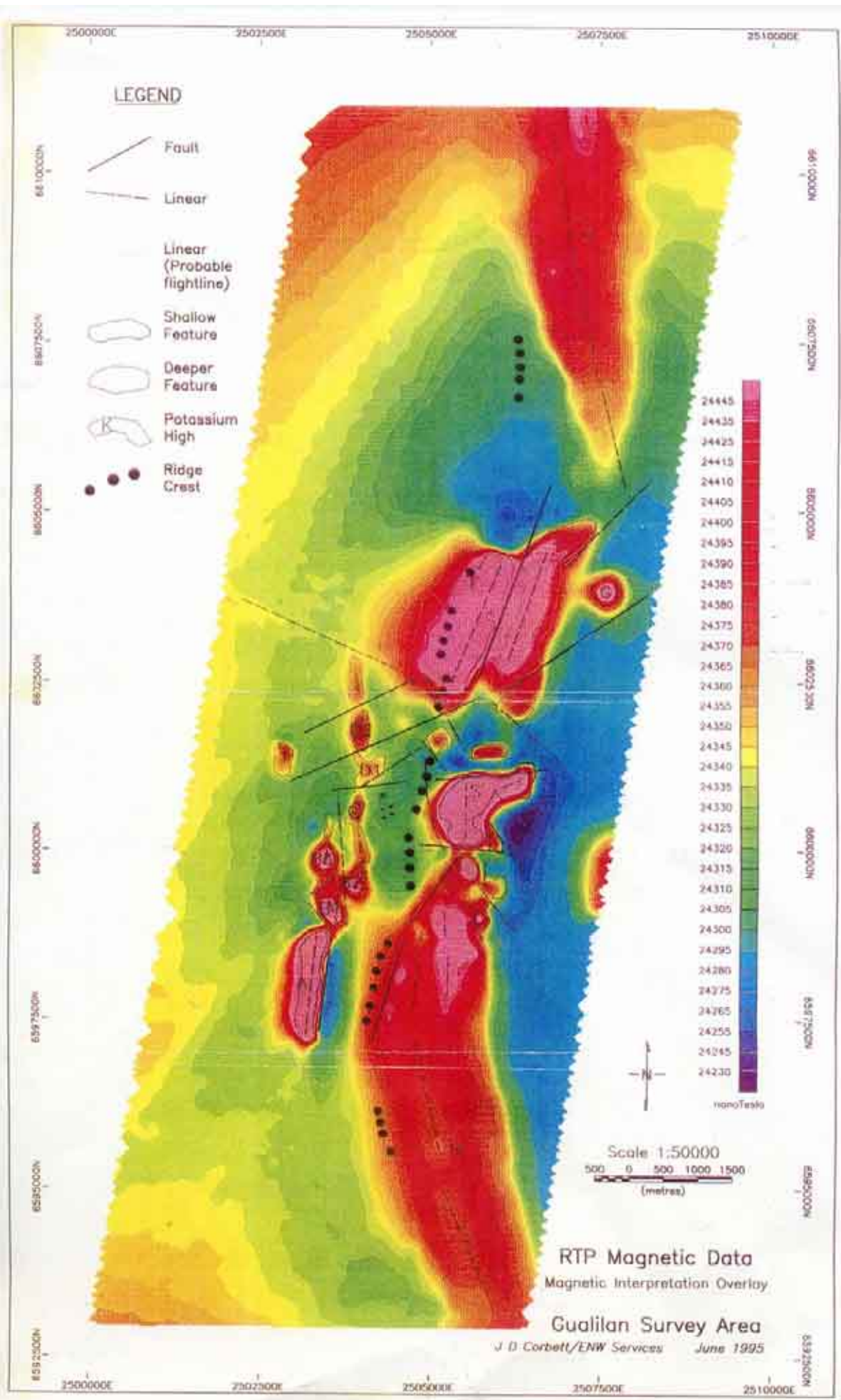
**HUALILAN PROJECT**

OPERATING CASH FLOW	TOTAL YEAR					TOTAL
	YEAR 2000	YEAR 2001	YEAR 2002	YEAR 2003	YEAR 2004	
55 Cost / year US\$	857,645.20	1,485,160.00	2,248,560.00	2,998,080.00	3,997,440.00	11,586,885.20
56 Mine administ. US\$ / tn	7.05	7.05	7.05	7.05	7.05	5.885,269.50
57 Cost / year US\$	435,619.50	754,350.00	1,142,100.00	1,522,800.00	2,030,400.00	5,885,269.50
58 Overhead US\$ / tn	6.67	6.67	5.56	5.56	5.56	4,736,409.55
59 Cost / year US\$	412,139.30	621,310.25	900,720.00	1,200,960.00	1,601,280.00	35,790,597.35
60 Op. Costs / year US\$	2,710,727.30	4,601,710.25	6,927,120.00	9,236,160.00	12,314,880.00	
Concentrate transp. + treatment						
Au / Ag conc.						
61 Transport Conc. Au, AG / ton conc. US\$	35.00	35.00	35.00	35.00	35.00	35.00
62 Cost / year US\$	144,176.67	249,666.67	378,000.00	504,000.00	672,000.00	1,947,843.34
63 Smelting + Refining US\$ / ton conc.	115.00	115.00	115.00	115.00	115.00	6,400,056.66
64 Cost / year US\$	473,723.33	820,333.33	1,242,000.00	1,656,000.00	2,208,000.00	8,347,900.00
65 Transp. + treatment conc. Au / Ag Zn concentrate	617,900.00	1,070,000.00	1,620,000.00	2,160,000.00	2,880,000.00	
66 Transp. Conc. Zn US\$ / ton conc.	35.00	35.00	35.00	35.00	35.00	35.00
67 Cost / year US\$	120,147.22	208,035.56	315,000.00	420,000.00	560,000.00	1,623,202.78
68 Smelting + Refining US\$ / ton conc.	155.00	155.00	155.00	155.00	155.00	7,188,469.45
69 Cost / year US\$	532,080.56	921,388.89	1,395,000.00	1,860,000.00	2,480,000.00	8,817,672.22
70 Transp. + treatment conc. Zn US\$	652,227.78	1,129,444.44	1,710,000.00	2,280,000.00	3,040,000.00	
71 Total Oper. Costs	3,980,855.08	6,801,154.69	10,257,120.00	13,676,160.00	18,234,880.00	52,950,169.77
72 OPERATIONAL PROFIT US\$	2,900,885.21	5,187,514.40	7,870,147.73	10,736,838.02	14,315,784.02	41,011,169.38
OPERATIONS RESULT						
47 VALUE MINE PRODUCT. US\$	6,881,740.29	11,988,669.09	18,127,267.73	24,412,998.02	32,550,664.02	93,961,339.15
71 Total Oper. Costs	3,980,855.08	6,801,154.69	10,257,120.00	13,676,160.00	18,234,880.00	52,950,169.77
72 OPERATIONAL PROFIT US\$	2,900,885.21	5,187,514.40	7,870,147.73	10,736,838.02	14,315,784.02	41,011,169.38
CUMULATIVE US\$						
	2,900,885.21	8,088,399.61	15,958,547.34	26,695,385.36	41,011,169.38	

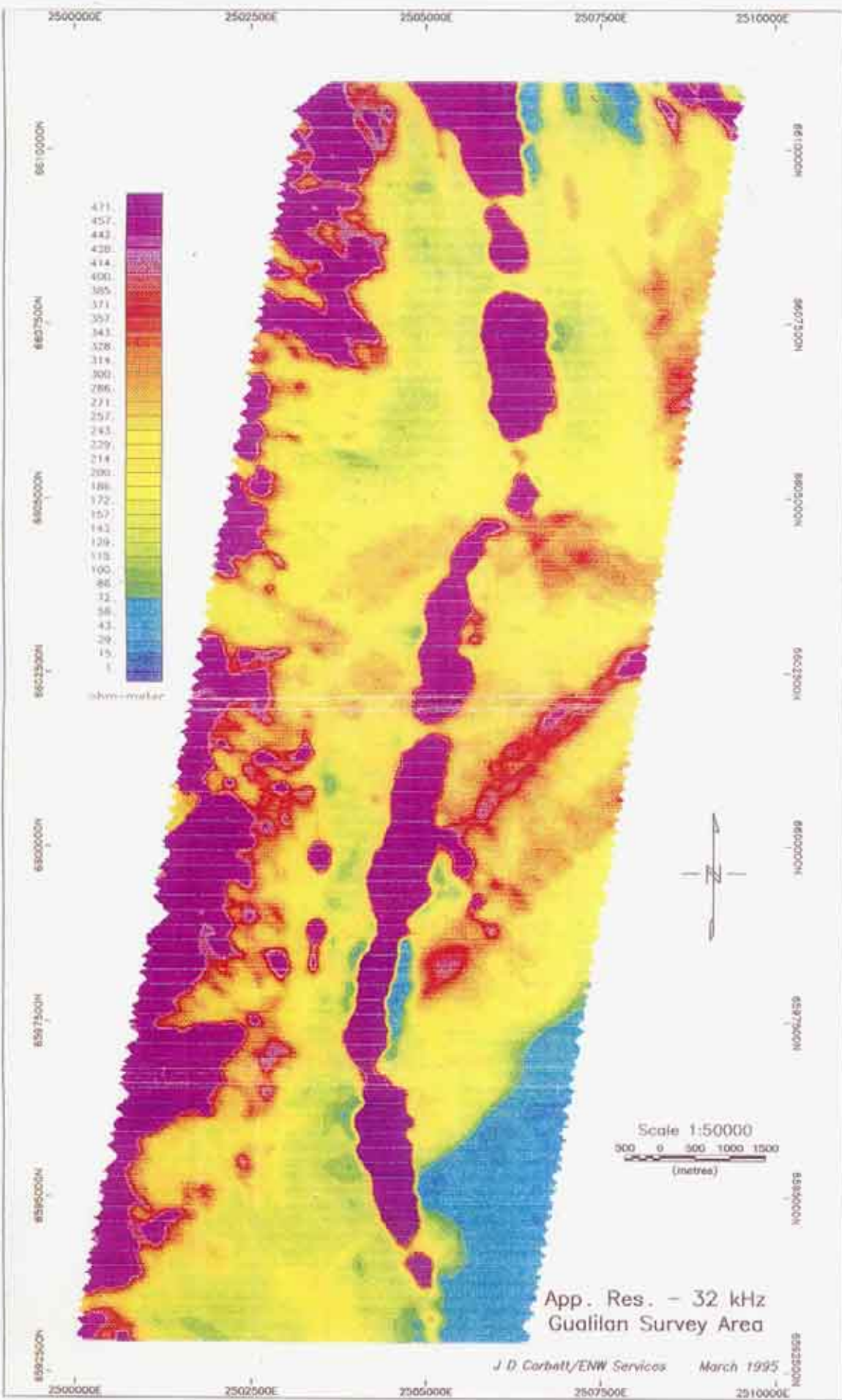
Appendix IV:

MONARCH RESOURCES/AERODAT  
AIRBOURNE GEOPHYSICS FLOWN 1994

- MAGNETICS AND RESISTIVITY







Appendix V:  
ADDITIONAL PHOTOGRAPHS



**I - VIEW OF CAMP LOOKING NORTH SHOWING REWORKED TAILINGS**



**J - LEOPOLDO MARTINEZ AND LUIS VERA AT HEADFRAME OF PIQUE SUR SHAFT**





**K - CAMP VIEW FROM THE SOUTH SHOWING DACITE PORPHYRY RIDGES IN  
BACKGROUND**



**L - FINAL RESTING PLACE HUALILAN MINERS CIRCA 1870'S**





**M - REPLACEMENT OF  
STROMATOPERIDS BY  
CHERT IN UPPER SAN  
JUAN LIMESTONE**



**N - HIGH GRADE 'CANO' SANTA BARBARA**





**A - THE HUALILAN HILLS FROM THE SOUTHEAST**



**P - SERIES OF DUMPS  
MARKING POSITION  
OF SANCHEZ VEIN**