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# NI 43-101 Compliant Technical Report Cap Oeste Project Santa Cruz Province, Argentina

Prepared for: Patagonia Gold Plc

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## **Section**

1.0	SUMN	MARY	1		
	1.1	Introduction and Terms of Reference	1		
	1.2	Property	1		
	1.3	Geology	1		
	1.4	Mineralization	2		
	1.5	Exploration and Drilling	3		
	1.6	Sampling	3		
	1.7	Assaving and OA/OC	3		
	1.8	Density Measurements	4		
	1.9	Data Verification	4		
	1.10	- Mineral Resources	5		
		1 10 1 Block Model	5		
		1.10.2 Variograms	6		
		1 10 3 Composites	6		
		1 10.4 Resource Estimation Results	6		
	1 1 1	Mineral Processing	7		
	1.11	Interpretations and Conclusions	8		
	1.12	Recommendations	8		
2.0			0		
2.0	21	Qualified Persons 1	0		
	2.1	Conventions 1	0		
	2.2	Units and Abbreviations	0		
3.0	DELI/	ANCE ON OTHER EXDERTS	3		
3.0 4.0	PROPERTY DESCRIPTION AND LOCATION 14				
4.0	1 KOI 4 1	Location 1	.+ ∕		
	4.1	Minoral Tanura and Titla	5		
	4.2	A 2.1 Can Oasta Project Datagonia Gold S A Evaluration Claims	5		
	13	4.2.1 Cap Ocster Hojeet-Franzonia Gold S.A Exploration Clamis 1 Surface Dights and Obligations	5		
	4.5	Minoral Property Engumbrances	Q		
	4.4	Environmental Liebilities	0		
	4.5	Environmental Liaonnues	.9		
50	4.0 CLIM		9		
J.U		ATE AND TOPOURAPHT, ACCESS AND INFRASTRUCTURE,	0		
EINV	IKONM 5 1	Climate Tensorenky and Vesetetian	20		
	5.1	A constant of the free transformed and the fre	20		
	5.2 5.2	Access and Infrastructure			
60	5.5 100TC	Environmental and Social Responsibility	1		
6.0	HISTO	DKY	:3		
	0.1	Early History	:3		
	6.2	Homestake-Barrick Exploration	:3		
7.0	6.3 CEOL	Patagonia Gold Program	:5		
/.0	GEOL	2 DUGICAL SETTING	10		
	/.1	Regional Setting	6		
	7.2	Property Geology	.8		
		7.2.1 Stratigraphy	8		
		7.2.2 Structure	:9		

## **Section**

8.0	DEPC	OSIT TYPES	31
9.0	MINE	ERALIZATION	34
	9.1	Regional mineralization	34
	9.2	Property Mineralization	35
		9.2.1 Description and Distribution	35
		9.2.3 Mineralogy and Paragenesis	38
		9.2.4 Controls on Mineralization	43
		9.2.5 Exploration Potential	43
10.0	PGSA	A EXPLORATION PROGRAM	45
	10.1	Gridding, Topography and Surveying	45
	10.2	Trenching	46
	10.3	Geophysics	48
		10.3.1 Pole-Dipole Induced Polarization	48
		10.3.2 Gradient Array Induced Polarization	49
		10.3.3 Ground Magnetic Surveying	51
	10.4	Petrography and Computed Axial Tomography	51
11.0	DRIL	LING	52
	11.1	Introduction	52
	11.2	Diamond Drilling Methods	56
	11.3	Drill Core Logging	57
	11.4	Reverse Circulation Drilling Methods	58
	11.5	Results of Drilling	58
12.0	SAMI	PLING METHODS AND APPROACH	62
	12.1	Trench Samples	62
	12.2	Reverse Circulation Sampling Methods	62
	12.3	Diamond Drilling Sampling Methods	63
	12.4	Drill Sample Recovery	63
		12.4.1 Diamond Core Recovery	63
		12.4.2 Reverse Circulation Sample Recovery	64
	12.5	True Width and Orientation of the Drill Target and Drill Intercepts	65
	12.6	Specific Gravity (Bulk Density) Determinations	66
		12.6.1 Specific Gravity Methodology	66
		12.6.2 Specific Gravity Results	66
		12.6.3 Discussion of Specific Gravity Results	68
	12.7	Summary of Sampling	68
13.0	SAM	PLE PREPARATION, ANALYSIS AND SECURITY	69
	13.1	General Description	69
	13.2	Trench Samples	69
	13.3	Reverse Circulation Drill Samples	69
	13.4	Diamond Drill Core Samples	70
	13.5	Storage and Transport	70
	13.6	Laboratories, Methods and Procedures	70
	13.7	Quality Control	71
		13.7.1 Geochemical Standards & Field Duplicates	71
	13.8	Check Assay Results	73
	13.9	Screen Fire Assays	73
		•	

## **Section**

	13.10	Adequacies of Sample Preparation, Security, and Analytical Procedures.	74
14.0	DATA	VERIFICATION	75
	14.1	Surface Topography	75
	14.2	Standard Checks	75
	14.3	Drillhole Database	78
15.0	ADJA	CENT PROPERTIES	79
16.0	MINE	RAL PROCESSING AND METALLURGICAL TESTING	80
17.0	MINE	RAL RESOURCE ESTIMATE	83
	17.1	Block Model	83
		17.1.1 Sections	83
	17.2	Assay Data Base Analyses	85
		17.2.1 Variograms	89
		17.2.2 Composite Exploratory Data Analysis	90
	17.3	Resource Calculation Results	93
	17.4	Resource Tabulation	94
	17.5	Recommendations for Resource Estimation	96
18.0	OTHE	R RELEVANT DATA OR INFORMATION	97
19.0	ADDI	TIONAL REQUIREMENTS FOR TECHNICAL REPORTS	
	ON DE	EVELOPMENT PROPERTIES AND PRODUCTION PROPERTIES	98
20.0	INTER	PRETATIONS AND CONCLUSIONS	99
21.0	RECO	MMENDATIONS	100
22.0	REFEF	RENCES	101
23.0	DATE	AND SIGNATURE	102
	23.1	Craig Bow	102
	23.2	Robert Sandefur	103

## **Tables**

1-1	Indicated Resources	7
1-2	Inferred Resources	7
1-3	Proposed Work Program	9
4-1	El Tranquilo Block of Exploration Properties	15
9-1	Selected Gold-Silver Deposits of the Deseado Massif. Data	
	from Company Annual Reports.	34
11-1	Drill collar information for the Cap Oeste Project Area- 2007-2008	54
11-2	Cap Oeste Project - Significant Drill Hole Intersections	59
12-1	Diamond Drill Recoveries	64
12-2	Reverse Circulation Drilling Recoveries throughout Various Geological Intervals	65
12-3	Summary of Specific Gravity Results	66
14-1	De-survey Differences of More than 2.5 metres	77
14-2	Drilling Statistics from Assay Database	78
16-1	Bottle Roll Results	81
17-1	Model Geometric Parameters	83
17-2	Indicated Resources	95
17-3	Inferred Resources	95
21-1	Proposed Work Program	100

# **Figures**

1-1	Project Location	2
4-1	Project Location	14
4-2	Location of the Cap Oeste Project Area	
	in relation to the El Tranquilo I MD Claim	16
4-3	Location of Cap Oeste Project area in relation to the fenced boundary	
	between the Estancia El Tranquilo and the Estancia La Bajada	18
6-1	Regional Zones of Hydrothermal Alteration and	
	Structural Trends El Tranquilo Property Block	25
7-1	Regional Geology of Deseado Massif Santa Cruz Province, Argentina	26
7-2	Cap Oeste Project Area (black rectangle) Geology and Structure	28
7-3	Geological Section 9950N	30
8-1	Geochemical zonation, quartz type and alteration patterns	
	of low sulphidation hydrothermal system (Hammond 2003)	32
9-1	Mineralized Section Schematic (after Sillitoe 2008)	36
9-2	Cap Oeste Project- Longitudinal Section	
	Contoured Au ppm x metre composites, red values highest	37
9-3	Cap Oeste Project- Longitudinal Section Ag ppm x metres	38
9-4	Cap Oeste Project- Longitudinal Section Au equivalent ppm x metres	38
9-5	CO_054-DR(132-133.1m; 7.86 ppm Au, 87.2 ppm Ag)	39
9-6	(CO-036-D; 56-57m)	40
9-7	Hole CO-054-DR: 133.1- 134.1m; 226 ppm Au, 4273 ppm Ag	42
10-1	Cap Oeste Trench Locations See Figure 7-2 for geological setting.	
	Red dots denote higher values (see text below).	46
10-2	Pole Dipole Chargeability - Survey Results along Section 9950N	48
10-3	Pole Dipole Resistivity Survey Results along Section 9950N	49
10-4	Gradient Array Chargeability Plan Map	50
10-5	Gradient Array Resistivity Plan Map	51
11-1	Cap Oeste Project Drill Hole Collars. See Figure 7-2 for geological setting.	
	Drillhole data are shown in Table 11-1.	53
11-2	Interpreted Geological Section 10000N	59
17-1	Assay Grades X Y Plot, view toward south	
	(Azm 130, Plunge 120, Rotated along Strike, Green>=1, Blue>=3, Red>=5)	85
17-2	Assay Grades Y Z Plot (Azm 130, Plunge 120, Rotated along Strike,	
	Green>=1, Blue>=3, Red>=5)	86
17-3	Mean Au (ppm) Plot (Azm 130, Plunge 120, Rotated along	
	Strike and Plane of Mineral across Structure)	87
17-4	Cumulative Frequency Plot Au (ppm) plus 0.01	88
17-5	Cumulative Frequency Plot Ag (ppm) plus 0.1	89
17-6	Downhole Variogram Au (ppm) >=0 plus 0.01	90
17-7	Box Plot of Au (ppm) versus oxidation	91
17-9	Box Plot of Au (ppm) versus mineralization type	93

## **Section**

#### 43-101F1 Table of Contents Reference Item

#### Reference in this Report

Item 1. Title Page	Title Page
Item 2. Table of Contents	Table of Contents
Item 3. Summary	Sec 1.0
Item 4. Introduction and Terms of Reference	Sec 2.0
Item 5. Reliance on Other Experts	Sec 3.0
Item 6. Property Description and Location	Sec 4.0
Item 7. Accessibility, Climate, Local Resources, Infrastructure and	
Physiography	Sec 5.0
Item 8. History	Sec 6.0
Item 9. Geological Setting	Sec 7.0
Item 10. Deposit Types	Sec 8.0
Item 11. Mineralization	Sec 9.0
Item 12. Exploration	Sec 10.0
Item 13. Drilling	Sec 11.0
Item 14. Sampling Method and Approach	Sec 12.0
Item 15. Sample Preparation, Analyses and Security	Sec 13.0
Item 16. Data Verification	Sec 14.0
Item 17. Adjacent Properties	Sec 15.0
Item 18. Mineral Processing and Metallurgical Testing	Sec 16.0
Item 19. Mineral Resource Estimate	Sec 17.0
Item 20. Other Data and Relevant Information	Sec 18.0
Item 25. Additional Requirements for Technical Reports on	
Development Properties and Production Properties	Sec 19.0
Item 21. Interpretation and Conclusions	Sec 20.0
Item 22. Recommendations	Sec 21.0
Item 23. References	Sec 22.0
Item 24. Date and Signature Page	Sec 23.0
Item 26. Illustrations	(See Figures)

#### 1.0 SUMMARY

#### 1.1 Introduction and Terms of Reference

This report was prepared by Chlumsky, Armbrust & Meyer, LLC (CAM) on behalf of Patagonia Gold S.A. (PGSA) which is a 100% owned subsidiary of Patagonia Gold Plc (PGD) to define and describe a National Instrument 43-101 (NI 43-101) compliant mineral Resource for the Cap Oeste Project (Cap Oeste or the Project), located within the El Tranquilo I MD claim in the province of Santa Cruz, Argentina.

Robert Sandefur and Craig Bow, Qualified Persons of Chlumsky, Armbrust & Meyer LLC visited the property from the 22-24th April, 2008.

## 1.2 Property

The Cap Oeste Project is situated in the central portion of the El Tranquilo I MD exploration claim which is held 100 percent by PGSA, the Argentine subsidiary of Patagonia Gold Plc. An agreement exists with the previous owners, Barrick Exploraciones S.A. and Minera Rodeo S.A., both subsidiaries of Barrick Gold, which have certain back-in rights, and PGSA has certain investment commitments to fulfill.

The El Tranquilo I MD exploration claim is one of several claims in PGSA's El Tranquilo project block. Another drilled prospect area called "Breccia Valentina," is located on the adjacent La Apaciguada MD exploration claim, centered approximately 5 kilometres to the southeast of the Cap Oeste Property.

#### 1.3 Geology

The Cap Oeste Property is located in the northwestern part of the Deseado Massif, in Patagonia, southern Argentina. This geological terrane is characterized by a sequence of Middle-to-Upper Jurassic volcanic rocks which are partially covered by Cretaceous volcaniclastic sediments, and by later Tertiary to Quaternary flood basalts and fluvial-glacial sedimentary cover. Widespread epithermal mineralization is hosted by the Jurassic rocks, specifically the Chon Aike and La Matilde Formation bimodal volcanic suites.



Figure 1-1 Project Location

## 1.4 Mineralization

Precious metals mineralization at Cap Oeste is spatially related to a curvilinear, west northwest trending structure, termed the Bonanza Fault. The fault dips moderately to steeply to the southwest and has been mapped over a strike length exceeding 1,500 metres. Mapping peripheral to the main zone of mineralization at Cap Oeste has defined a second, sub-parallel structure 220 metres to the southwest, referred to as the Esperanza Fault. Described as a steeply northeast-dipping zone of faulting and hydrothermal brecciation, the Esperanza Fault has been mapped over a strike distance of approximately 1,500 metres.

Gold mineralization at Cap Oeste is interpreted to be of the epithermal, low-sulphidation type. PGSA geologists interpret mineralization at Cap Oeste to occur as a fault-localized replacement body rather than as one or more quartz veins, a style more typical for such deposits elsewhere in the Deseado Massif.

#### **1.5 Exploration and Drilling**

Exploration at Cap Oeste has focused on establishing a core resource in the area of the strongest epithermal mineralization defined to date. Sawn channel samples from PGSA trenching adjacent to historic Barrick cuts confirmed the presence of an 8 to 25-metre wide zone of stockworked and crackle-brecciated vitric tuff in the hangingwall of the Bonanza Fault, reporting values of the order of 0.3 to 1.0 parts per million (ppm) Au. The fault zone contains limonite-hematite rich milled breccia with up to 11 ppm Au over widths up to 8 metres. Further trenches along strike defined a contiguous northwest trending, 900-metre-long by 5 to 15-metre-wide zone of stockwork veining, faulting, and brecciation with anomalous Au, Ag and trace element geochemistry (As, Sb, Hg). Subsequent geophysical, geochemical, and petrographic studies lend important support to these preliminary results, setting the stage for the follow-up drilling programs.

Work completed during 2007 and 2008 included completion of 24 reverse circulation (RC) drill holes (1,628 metres and 2,970 samples) and 71 diamond drill (DDR) holes (9,634.48 metres and 7,070 samples), including 30 RC pre-collars totaling altogether 1,620 metres of RC drilling.

#### 1.6 Sampling

Sampling methods employed in the Cap Oeste drilling and trenching work were carried out by PGSA personnel to acceptable NI 43-101 standards.

## 1.7 Assaying and QA/QC

Quality control measures implemented during the trenching and drilling programs included the submission of a series of certified standard and blanks, which were incorporated and dispatched with the drill samples, according to the following protocol:

- Diamond Drilling: alternate insertion of a laboratory-certified laboratory standard or blank for every 10th sample
- RC Drilling: For every alternate 10th sample, a duplicate sample of the preceding interval was taken as a field duplicate, or a certified laboratory check standard or blank sample was submitted respectively
- Trenching: For every alternate 10th sample, a duplicate sample of the preceding interval was taken as a field duplicate, or a certified laboratory check standard or blank sample was submitted respectively

Two labs were contracted for analysis of the samples: Alex Stewart and Acme Labs, both accredited laboratories compliant to ISO Certified - 9001:2000. Alex Stewart served as the principal lab, and Acme

as the check lab for Au fire assay and ICP. CAM believes that preparation and analysis of samples are acceptable and within NI 43-101 standards.

## **1.8 Density Measurements**

A total of 170 density measurements were available. The first step in reviewing density was to make sure that the calculations were properly performed by recalculating specific gravity by weight in water and weight in air. Results of these checks by CAM indicate that the original calculations were correctly performed.

The average of the 170 specific gravity measurements is 2.08. The difference in densities between the oxide (2.07) and the Non-Oxide (2.11) are not statistically significantly different (using the T-test), so the average density of 2.08 was used for the entire deposit. Additionally, it was not entirely clear if the difference in densities was a function of depth, or of oxidation class. There is a statistically significant correlation of density with the intensity of silicification, and also with depth from surface. Although specific gravity appears to correlate with a number of variables, further work will be required before these data can be reasonably integrated into the geological model.

CAM believes that further review is required before different densities are used for oxide and non-oxide, and that use of a single specific gravity is reasonable and appropriate for a project at this level of development.

Additional specific gravity measurements, using an aluminum cylinder as a density standard, are recommended as the Project proceeds. Oven-drying tests are also recommended, to ensure that air-drying does not leave significant free water in core samples.

# 1.9 Data Verification

A few anomalies were noted, and forwarded to PGSA, which were subsequently corrected. However, the number and type of anomalies were within industry norms for databases of this size, and even if the anomalies turn out to be errors, they would have no effect on the overall resource estimate. On the basis of these statistical checks, and the checks of data entry discussed previously, CAM believes that the exploration database has been prepared according to NI 43-101 norms and is suitable for the development of geological and grade models.

#### 1.10 Mineral Resources

The Cap Oeste resource estimate was based on data provided to CAM by PGSA. Data included the exploration database, surface topography and interpreted cross-sections. The mineral Resources and Reserves in this report were calculated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council on Dec 11, 2005.

#### 1.10.1 Block Model

The project is still in the exploration stage, and mining methods and bench heights have not been reviewed. It may be possible to extract the resource using conventional open pit mining operations. However, it seems that a portion of the deposit may be mined by selective underground techniques. CAM therefore selected a block size of 1 m x 1 m vertically and across strike and 5 m along strike. This block size needs to be revised as further work is done on the project. Because of the choice of this relatively small block size, CAM has elected to state the Resource in terms of a selective mining operation, both underground and open pit. CAM felt that cutoff grades of either 0.3 or 0.5 gpt Au are acceptable for Oxides, and 1.0 gpt for Non-Oxides.

A total of 30 sections separated by 25 to 75 metres looking toward the northwest were provided as MapInfo MID and MIF files. Review of sections suggested that almost all mineralization was controlled by a planar structure. A plan plot of assay grades rotated parallel to the strike shows that the mineralization in plan view appears to mostly occur in a band approximately 200 metres wide. A plot looking along the strike of the deposit shows that at least some of the 200 metres of strike width is due to the dip of the mineralization. To facilitate analysis of grade relative to the plane of the mineralization, the data was rotated to where the mineralization was mostly contained in the Z plane.

Although it is not possible to draw definitive views from a 2-D representation, it appears that the resource is not closed off by drilling.

A gold assay cumulative-frequency plot clearly shows a mixture of two (or depending on the additive constant, three) log normal distribution. The fact that the upper tail of the distribution is consistent with the lower portion means that there is not a compelling need to cap the distribution (i.e. cut grades). The same held true for silver.

#### 1.10.2 Variograms

CAM constructed a number of variograms and found that the most representative for gold was the downhole variogram. This is quite common in deposits where there are a relatively small number of individual holes separated by distances large compared to the downhole assay. The interpreted range is 35 metres. CAM normally defines material as Indicated if it is within 70.7 percent of the range of the variogram or in this case approximately 20 metres. However, because a significant portion of the ounces are contained in the high-grade tail of the distribution, CAM reduced the distance to 25 metres for this initial estimate. CAM believes it is likely that if additional close-spaced drilling is performed in the plane of the vein it may be possible to extend this range.

#### 1.10.3 Composites

One-metre length composites were selected for this Resource estimate because most of the assay intervals were 1.0 metre. The plan views of composite data, cumulative frequency plots and downhole variograms were visually very similar to assays. A box plot of Au (ppm) versus oxidation indicates that the mean grade of gold is higher in the sulphide than in the oxide. It also appears that the hydrothermal breccia has the highest grade mineralization, and that the most compelling control on mineralization appears to be distance relative to the plane of the mineralization.

To investigate the correlation between breccia lithology and distance from the plane of the mineralization CAM constructed a plot showing the number of breccia composites relative to distance to the plane of the mineralization. This showed a fairly good correlation with the number of breccia composites and distance from the plane of the mineralization; however, the mineralization appeared to be narrower than the width of a large number of breccia composites, so CAM elected not to use mineralization as a control on grade interpolation. However, CAM believes mineralogy and lithology will eventually play an important role in the system and it may be useful to add constraints based on these parameters in the future.

## 1.10.4 Resource Estimation Results

A relatively large number of resource estimation runs were made, at various cutoffs from 0 to 5.0 gpt Au. Resources are defined as Indicated if the nearest composite is within the 20 metres of the block, and as Inferred for blocks beyond 20 metres from the nearest composite. Oxide material is that above the defined oxide surface, while Non-Oxide material is below the oxide surface or outside the plan extent of the oxide surface.

The final resource corresponds to an open pit highly selective mining case with a search box with half dimensions of 50 by 50 by 2 metres search for the 6 nearest composites one composite minimum. Grade

estimation was done using inverse distance squared (ID2). A summary is shown in Table 1-1 and 1-2, with cutoffs of 0.3 and 0.5 grams per tonne Au for Oxide, and 1.0 for Non-Oxide. The appropriate cutoffs may be revised as the Cap Oeste Project progresses.

Table 1-1 Indicated Resources						
Oxide/Non-Oxide	Cutoff Au (gpt)	Tonnes	Au Grade (gpt)	Contained Au (ounces)	Ag Grade (gpt)	Contained Ag (ounces)
Ovida	0.30	1,911,998	1.27	78,028	30.74	1,889,762
Oxide	0.50	1,044,233	2.01	67,368	44.89	1,507,060
Non-Oxide	1.00	394,940	4.41	55,979	96.57	1,226,223
Total Indicated	0.30 Oxide +1.0 Non-Ox	2,306,938	1.81	134,007	42.01	3,115,985

Table 1-2 Inferred Resources						
Oxide/Non-Oxide	Cutoff Au (gpt)	Tonnes	Au Grade (gpt)	Contained Au (ounces)	Ag Grade (gpt)	Contained Ag (ounces)
Ovido	0.30	1,154,369	1.01	37,562	23.53	873,387
Oxide	0.50	603,533	1.59	30,872	35.55	689,765
Non-Oxide	1.00	664,924	4.19	89,484	76.22	1,629,341
Total Inferred	0.30 Oxide +1.0 Non-Ox	1,819,293	2.17	127,046	42.78	2,502,728

Mineral Resources which are not mineral Reserves do not have demonstrated economic viability. The estimate of mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.

The quantity and grade of reported Inferred resources in this estimation are conceptual in nature and it is uncertain if further exploration will result in conversion of an Inferred Resource to Indicated or Measured Resources on the property.

# 1.11 Mineral Processing

Bottle Roll and other tests are in progress on Cap Oeste composited samples. To date a total of 15 bottle roll tests for Au have been completed, composited from 97 individual, one-metre coarse reject samples selected from 10 RC and diamond holes. The majority of these samples were taken from the oxidized portions of fault-hydrothermal breccia hosted Au intercepts. Results from the bottle roll leach tests showed good average recoveries after 6, 12 and 24 hrs of 96.3 percent, 97 percent and 97.3 percent respectively. The three highest grade composite samples, between 17.5 and 26.75 ppm Au (average 22.67

ppm Au), returned an average recovery of 98.7 percent, 98.5 percent and 99 percent after 6, 12 and 24 hrs respectively.

While preliminary, these results indicate that oxidized mineralization is amenable to cyanide extraction of Au. CAM is aware that work to determine the Ag recovery is in progress for the same oxide composites, as well as lime and cyanide consumptions. Given that a significant proportion of the mineral resource at Cap Oeste is contained within primary sulphide mineralization, recoveries of both Au and Ag in partially oxidized and unoxidized material need also be evaluated on a priority basis.

## **1.12** Interpretations and Conclusions

- 1. Exploration has defined a zone of significant epithermal gold-silver mineralization at Cap Oeste, hosted within and adjacent to a moderate to high angle normal fault over widths of 5-40 metres and a minimum strike length of one kilometre.
- 2. Technical work has been conducted in a professional manner and carried out to NI 43-101 standards including the analysis, quality assurance and quality control protocols.
- 3. Drill intercepts identified as significant to delineation of a precious metals resource have been verified and substantiated sufficiently to pursue a Resource calculation.
- 4. Work on the property has been successful in identifying mineralization of potential economic interest, and further work is warranted.

# 1.13 Recommendations

Following are CAM recommendations with regard to the Cap Oeste project:

- 1. Additional step-out drilling is required to more adequately define the total Project Resource.
- 2. Additional sampling at approximate grade control separation to define the short range mineable continuity of the deposit. It is essential that these holes be gyroscopically downhole surveyed with the reproducibility of the downhole surveys verified by duplicates.
- 3. A high standard of consistency in data handling should be maintained, especially continued QA/QC work with particular attention to sampling and assaying of the high grades.
- 4. PGSA should carry out additional density measurements, using cores oven-dried at 105 degrees Celsius, and the cellophane-wrap immersion method.
- 5. Additional metallurgical testwork, currently in progress, should be completed on gold and silver recoveries on existing oxide composites, as well as consumption of lime and cyanide
- 6. Additional bottle-roll testing, currently in progress, should be completed out on primary sulphide mineralization.
- 7. Continued exploration is recommended for the Cap Oeste Project. The basic program outline is presented in Table 1-2, and is dominated by a large drilling component. CAM agrees that

significant additional in-fill and step-out drilling will be required to expand existing Resources and convert Resources to Reserves. Given the successful application of IP surveys in directly detecting mineralization and associated alteration, CAM also recommends further ground geophysical surveys as an aid to targeting, especially in covered areas.

Table 1-3 is the proposed work program for the Project

Table 1-3 Proposed Work Program					
Category	Amount	Basis	Cost US\$		
Drilling - HQ/RC and other exp.	190 holes @ 120 m	US\$155/m avg	3,534,000		
External Consultants, Mapping, Surveying, Images, Environmental & other studies, Meteorological Station, Compensations, Water monitoring, misc. equipment and others.			194,444		
Staff, labor, camp expense	10 months	US\$ 30,000/mo	300,000		
Assays and shipping, incl. QA/QC	7,000 samples	US\$ 70/sample	490,000		
Subtotal			4,518,444		
Contingency	(5%)		225,922		
Total			4,744,366		

#### 2.0 INTRODUCTION

This report was prepared by Chlumsky, Armbrust & Meyer LLC (CAM) for Patagonia Gold S.A. (PGSA), to define a gold and silver resource at the Cap Oeste Project, Santa Cruz province, Argentina, which complies with Canada National Instrument 43-101 (NI 43-101). PGSA is a 100% owned subsidiary of Patagonia Gold Plc which is listed on the London AIM stock exchange. Data contained in this report are drawn from original work by PGSA, unpublished data from former owners and explorers (Barrick and Homestake). The report includes data and analysis from contractors, consultants, certified laboratories, and CAM's Qualified Persons.

The authors' direct knowledge of the property is based on a site visit conducted April 22-24, 2008. During this time period, the undersigned examined outcrops and the locations of drill holes and surface samples, observed drilling and sampling of an RC pre-collar, observed logging and sampling procedures and reviewed the Project with PGSA staff.

Craig Bow of CAM is responsible for sections 1-13, 15, 16, and 18-22 of this report. Robert Sandefur of CAM is responsible for sections 14 and 17.

#### 2.1 Qualified Persons

Craig Bow, Ph.D. Geology, and Robert Sandefur, P.E., both Qualified Persons as defined by NI 43-101, prepared this report, with input by other individuals as listed in Section 3.0. Dr. Bow is responsible for Sections 1 to 13, 15, 16, and 18 to 24 of this report. Mr. Sandefur is responsible for Sections 14 and 17.

#### 2.2 Conventions

All references to dollars (\$) in this report are in US dollars unless otherwise noted. Distances, areas, volumes, and masses are expressed in the metric system unless indicated otherwise

#### 2.3 Units and Abbreviations

For the purpose of this report, all common measurements are given in metric units. All tonnages shown are in metric tonnes of 1,000 kilograms, and precious metal values are given in grams or grams per metric tonne.

To convert to English units, the following factors should be used:

1 short ton = 0.907 metric tonne (MT)

1 troy ounce = 31.103 grams (g)

1 troy ounce/short ton = 34.286 g/MT 1 foot = 30.48 centimetres = 0.3048 metres 1 mile = 1.61 kilometre 1 acre = 0.405 hectare

The following is a list of abbreviations used in this report:

Abbreviation	<u>Unit or Term</u>
AARL	Anglo American Research Laboratory
AA	atomic absorption
Ag	silver
ARD	acid rock drainage
AR\$	Argentinean peso
Au	gold
CAM	Chlumsky, Armbrust and Meyer, L.L.C.
CIC	carbon in column
C-I-L	carbon in leach
°C	degrees Celsius
Cu	copper
EIA	Environmental Impact Assessment
gm or g	gram
g/t or gpt	grams per tonne
g/cc	grams per cubic centimetre
GIS	geographic information system
GPS	global positioning system
ha	hectare
HCI	hydrochloric acid
IP	induced polarization (geophysical survey)
ICP-ES	Inductively Coupled Plasma-Atomic Emission Spectrometer
ISO	International Organization for Standardization
kg	kilogram
km	kilometre
kT	1,000 tonnes
lb	pound
m	metre
М	million
Ма	million years before present
NGO	Non-governmental Organization
NI 43-101 or 43-101	Canadian Securities Administrators' National Instrument 43-101
ounce or oz	troy ounce
PGD	Patagonia Gold Plc

PGSA	Patagonia Gold S.A.
ррb	parts per billion
ppm	parts per million
Project	Cap Oeste Project
QA	quality assurance
QC	quality control
RC	reverse circulation
RFP	Request for Proposal
RQD	rock quality designation
Std. Dev.	standard deviation
t or tonne	metric ton
TSF	tailings storage facility
UG	underground
US\$	United States dollars
y or yr	year
1	per

## 3.0 RELIANCE ON OTHER EXPERTS

Other persons beside the undersigned provided data for this report. These included Jorge Brito, BSc Geology, Exploration Manager of PGSA, and the Cap Oeste Project Geologist, Juan Di Caro, BSc Geology.

CAM has reviewed documents that indicate that title of the mining concessions is in good standing and marketable from a legal viewpoint.

#### 4.0 PROPERTY DESCRIPTION AND LOCATION

#### 4.1 Location

The Cap Oeste Project area is located in the central portion of Santa Cruz province, in the Department of Rio Chico, southern Argentina (Figure 4-1). The core resource area is situated within the El Tranquilo I MD ("*Manifestación de Descubrimiento*"), within the El Tranquilo block of exploration properties approximately 65 kilometres southeast of the small township of Bajo Caracoles.

The closest cities to the Project site by road are Perito Moreno (208 kilometres northwest of the Project) and Gobernador Gregores (190 kilometres south of the Project).

The Project is accessed via the partially-sealed National Highway 40 heading south for approximately 166 kilometres from Perito Moreno, passing via the township of Bajo Caracoles to a junction titled "Cinco Buzones." A secondary improved gravel road is then followed east for approximately 42 kilometres to the Project site, approximately five kilometres to the northwest of the Estancia La Bajada.



Figure 4-1 Project Location

The Estancia La Bajada comprises a main farmhouse and several outbuildings which provide space for an exploration base camp, including logging, core cutting, sample preparation, and core storage facilities.

Infrastructure improvements to the property include a graded single track road and several secondary side access tracks to drilling platform areas. There are no mineral reserves, historic mine workings, tailings, tailings ponds, or waste deposits in the Project area.

#### 4.2 Mineral Tenure and Title

#### 4.2.1 Cap Oeste Project-Patagonia Gold S.A. - Exploration Claims

The Cap Oeste Project is located within the El Tranquilo I Manifestation of Discovery (MD) claim, which is one of fourteen contiguous exploration tenements comprising the El Tranquilo block of properties (45,400 hectares), controlled 100 percent by PGSA.

The El Tranquilo I MD claim was largely constituted from a pre-existing cateo claim block titled El Tranquilo (government file 404.195/MR/02), and a subsidiary portion originally covered by the La Apaciguada MD (government file 405.473/MR/05). The MD El Tranquilo (government file 403.094/PATAGONIA/07) was staked in September 2007 under the "Manifestation of Discovery" covering the last portion released of the original El Tranquilo Cateo.

In accordance with the Argentine mining code, all of the exploration properties are spatially registered in the Gauss Kruger Projection and Campo Inchauspe datum system in the corresponding longitudinal belt defined between 68°-70° West (Faja 2). The location of the Cap Oeste Project area with respect to the El Tranquilo MD claim is displayed in Figure 4-2. The details of each property are provided in Table 4-1.

Table 4-1       El Tranquilo Block of Exploration Properties						
Name	Property Type	Property File No.	Area (hectares)			
La Mansa	MD	413.543/MR/06	1,736.50			
El Tranquilo I	MD	403.094/PATAGONIA/07	3,736.20			
La Apaciguada	MD	405.473/MR705	3,472.50			
La Bajada	MD	404.562/PATAGONIA/05	5,000.00			
La Cañada	CATEO	412.791/Barrick/04	7,499.10			
La Cañada I	MD	403.985/PATAGONIA/07	2,794.50			
Cerro León	CATEO	406.025/MR/02	3,968.10			
La Marcelina	CATEO	412.792/Barrick/04	6,500.10			
Monte León	MD	415.664/MR/07	1,987.40			
Monte Puma	MD	406.881/MR/06	2,000.00			
Monte Tigre	MD	406.882/MR/06	2,000.00			

Table 4-1 El Tranquilo Block of Exploration Properties			
Name	Property Type	Property File No.	Area (hectares)
Marte	MD	409.148/MR/05	2,500.00
María	MD	412.520/MR/05	743.10
Enriqueta	MD	412.519/MR/05	1,500.00



Figure 4-2 Location of the Cap Oeste Project Area in relation to the El Tranquilo I MD Claim

The claim titles are current and renewed annually by fee. The renewal is contingent on continued exploration work on the claim within each year. All the MD's are within the legal period prior to which PGSA has to survey individual concessions (pertenencias) so as to eventually constitute a mining concession or 'Mina'.

#### 4.3 Surface Rights and Obligations

Surface rights in Argentina are not associated with title to either a mining lease or exploration claim and must be negotiated with the landowner. The Cap Oeste Project is transected by the boundary between contiguous farm properties, namely the Estancia El Tranquilo and the Estancia La Bajada (Figure 4-3).

The surface land titles for the respective estancias are currently held by Francisco Novoa (Estancia La Bajada) and Susana Martinic (Estancia El Tranquilo). The legal title for the Estancia El Tranquilo is currently under legal dispute between Susana Martinic and Mr. Fernando Amezcua, based on a payment default by Mr. Fernando Amezcua, who currently occupies the estancia, according to a legally binding purchase agreement signed between the two parties.

PGSA signed individual access agreements with Mr. Francisco Novoa and Ms. Susana Martinic on 19 April 2007 and 27 August 2007 respectively. These agreements permit surface land access, exploration and drilling for a two year period and detail the compensation for surface impacts based on the number of affected hectares. The agreements are renewable after the initial two year period.

The number of newly-affected hectares is calculated monthly by the summation of the disturbed areas to include:

- Constructed roads opened (approximately 3 metres wide x length)
- Platforms constructed (approximately 25 by 25 metres each)
- Recovered sumps used on diamond drilling (approximately 15 by 15 metres each)
- Trenches (approximately 2 metres wide x length)

The total new surface area affected per month is compensated by payment to the respective surface land owner at a rate of AR\$ 3,000 per hectare (approximately US\$1,000 per hectare).

Additionally, PGSA has signed a lease agreement with Francisco Novoa, the owner of the Estancia La Bajada, for the use of the farmhouse and farm warehouses as an exploration base camp. In accordance with the agreement, PGSA must abide by the regulations and commitments detailed in the Environmental Impact Assessment (EIA) for the Project.



Figure 4-3 Location of Cap Oeste Project area in relation to the fenced boundary between the Estancia El Tranquilo and the Estancia La Bajada

## 4.4 Mineral Property Encumbrances

The El Tranquilo property was acquired as part of a Purchase Agreement signed in February 2007 between PGSA and the Barrick Gold S.A. Argentinean exploration subsidiaries, namely Minera Rodeo S.A. and Barrick Exploraciones S.A.

Terms and conditions of this Purchase Agreement include:

- 1. A minimum US\$10,000,000 commitment of approved exploration expenditures within a period of five years, of which US\$1,500,000 must be invested during the first 18 months. PGSA has already sent the legal notification to Barrick's subsidiaries advising that the minimum investment commitment of US\$1,500,000 has been exceeded as of December 31, 2007.
- 2. PGSA is required to provide an annual year-end resource estimation statement completed by an independent qualified person and the provision of the data used for the generation of such statements.

3. Barrick Gold S.A. holds the right to 'back-in' up to 70 percent for any individual property group included in the Purchase Agreement upon written notice, within 90 days upon completion of a 43-101 compliant delineation of a two million ounce gold or gold equivalent Indicated Resource, within the respective property group. This is on a forward looking basis which does not include any resources or reserves produced or undergoing development. Upon exercise of the 'back-in' right PGSA must transfer the property group to a separate joint-venture corporation ("JV Company") which will be free from any and all encumbrances. The back-in right will survive any sale by PGSA of any portion of the property group.

As an integral part of both Barrick Gold's and PGSA's due diligence it was verified that there are no other mineral property encumbrances over the Project or block of properties.

#### 4.5 Environmental Liabilities

No previous mining or significant exploration activity has been conducted on the El Tranquilo block. To the best of CAM's knowledge, the property is not subject to any environmental liabilities related to exploration or mining activities.

#### 4.6 Permits

Work at the Cap Oeste Project was conducted in accordance with an approved Environmental Impact Assessment (EIA) for the El Tranquilo property block which was granted on 27 April 2007, and which has an effective duration of two years. PGSA retained Vector Argentina S.A. to complete an application for the renewal of this EIA which was submitted in June 2008, with approval anticipated by September 2008.

The company has been conducting quarterly baseline water sampling throughout the Project area since May 2007, and producing independent reports prepared by a private consultant (BEHA). Results of these studies were included in the newly-presented EIA for the Project and submitted to the pertinent authorities.

PGSA has obtained the relevant permits for the use of water during the drill campaigns, issued by the pertinent government water resources authority of the Santa Cruz Province. No other permits are required for the continuation of exploration and/or definition drilling within the property block.

#### 5.0 CLIMATE AND TOPOGRAPHY, ACCESS AND INFRASTRUCTURE, ENVIRONMENTAL AND SOCIAL ISSUES

#### 5.1 Climate, Topography, and Vegetation

The Patagonian region of southern South America is characterized by arid, windy and generally treeless expanses of rolling hills, interspersed with isolated plateaus which rise to elevations of 250 to 1,000 metres above sea level). Field work is generally feasible from September to June while mid-winter (June-August) is typically a recess period. In the absence of excessive snow and rain, exploration occasionally continues into this period due to frozen ground conditions which permit access over otherwise wet areas.

The closest meteorological information available is sourced from the cities of Perito Moreno and Gobernador Gregores, which are located at similar elevations to the Project area at straight line distances of 160 and 90 kilometres respectively. Given that there is no recorded climate data for the Project area, PGSA is planning to install a weather monitoring station in September 2008.

The average annual rainfall at the site is estimated to be 150 millimetres, the majority of which falls in the period June-September. Snow frequently accumulates on site between June and August, and infrequent snowfall events can deliver up to 100 mm, based on limited historic data. Annual potential evaporation is estimated at between 750 and 1,250 mm. Temperatures at the Project area are characteristic of the central plateau of Santa Cruz, with short warm summers, and winters with temperatures commonly below 0 degrees Celsius. Based on regional data, the annual average temperature is approximately 8.9 degrees Celsius. Average monthly temperatures above 10 degrees Celsius generally occur between November and March, whereas temperatures below 5 degrees Celsius generally occur from June through August. Strong winds (greater that 40 kilometres per hour) occur year round but typically are strongest during the spring and summer. The dry, windy climate accentuates the aridity of the region by generating an extremely high rate of evaporation and constitutes a strong natural erosive mechanism for the sparse vegetation cover.

The southeastern portion of the Cap Oeste Project area is characterized by a predominant northwestsoutheast aligned pattern of undulating hills between elevations of 350 and 500 metres above sea level. In the northwestern portion of the Project area, topography is generally low and flat. Vegetation constitutes approximately 50 percent of the ground cover and is characterized by grass and bushes; the former typically include the varieties Stipa sp, Poa sp and Festuca sp which are locally called "*coiron*." Subordinate plant species include *neneo* (Mulinum sp), *adesmia* (Adesmia sp), *calafate* (Berberis sp), *senecio* (Senecio sp), *zampa* (Atriplex sp), and *mata negra* (Verbena sp). Despite the general scarcity of surface water throughout the area, a significant fresh water spring (producing more than 4 liters per second) occurs within the northeastern portion of the prospect. Water supplies for drilling and exploration camp amenities are obtained from local springs and water courses with permission of the surface owners and respective provincial authorities.

## 5.2 Access and Infrastructure

The Project area is accessed from the capital city of Buenos Aires by commercial air service and a network of improved highways.

Within each individual regional population centre, including Perito Moreno and Bajo Caracoles, electrical power is supplied via local diesel generators. Within the Project area, electrical power is supplied through company owned or leased generators. The nearby towns generally source local groundwater supplies to meet their needs.

The closest fixed line telephone to the area is situated in Bajo Caracoles (65 kilometres from the Project) and since there is no mobile network coverage throughout the Project area, communication from the exploration camp at Estancia La Bajada is via satellite phones and satellite-based, broadband internet.

# 5.3 Environmental and Social Responsibility

As described in Section 4, exploration has been conducted in accordance with an approved Environmental Impact Assessment (EIA). The Santa Cruz Provincial Mining Directorate's agents together with representatives from the local communities have inspected PGSA's exploration activities, specifically during drilling, and have reportedly expressed satisfaction as to the manner in which the company has carried out operations.

Although once a large wool and mutton producing region, the area encompassing the Project is currently uninhabited, destocked, and unproductive as a result of overgrazing, gradual desertification, and severe loss of productivity following the eruption of the Hudson Volcano in Chile in 1991. To the extent practical, PGSA utilizes local communities to source food, accommodation, fuel, minor vehicle repairs and field labor. More specialized goods and services must be obtained in Caleta Olivia (Santa Cruz), Comodoro Rivadavia (Chubut) and Buenos Aires. The local workforce comprises mainly unskilled workers who receive safety, environmental and exploration methodology training. Senior project management and engineering positions are generally filled by professionals from outside the local communities.

Patagonia Gold S.A. has contracted Vector Argentina S.A. as consultant for community relations throughout the Santa Cruz Province. Under their auspices, public relation meetings have been conducted which involve open-forum discussions focused on industry best practice policies and social responsibility.

#### 6.0 HISTORY

#### 6.1 Early History

No historic mineral production is known to have occurred within or in close proximity to the Cap Oeste Project. The earliest modern exploration in the area was reportedly carried out during the mid 1990's by Western Mining Corporation and Homestake Mining, who initially targeted the area using Landsat imagery. Interpretation of the imagery highlighted the presence of regional-scale, northwest-trending lineaments and large zones of coincident clay alteration which served to focus the reconnaissance mapping and sampling. This work led to the staking of exploration claims by the Homestake Mining subsidiary Minera Patagonica S.A., which were held until July 2002. Subsequent to the merger between Barrick Gold and Homestake Mining, the ground was again staked as the El Tranquilo Project by Barrick Gold's subsidiary Minera Rodeo S.A.

#### 6.2 Homestake-Barrick Exploration

Exploration of the El Tranquilo Property Block by Barrick Gold spanned the period May 2002 to May 2006, at which time the decision was made to divest the project areas. The combined Homestake-Barrick exploration programs conducted throughout the El Tranquilo property block during this period included:

- Target generation incorporating information from the Homestake Mining geochemical database, supplemented by ASTER and Landsat Band Ratio image analysis
- Regional scale geological and structural mapping (1:25,000 to 1:100,000) and TM based alteration mapping at 1:50,000
- Geochemical sampling including 334 lag samples, 569 regional rock chip samples and 469 sawn channel samples taken from 11 trenches (1694 metres).
- Pole-Dipole Induced Polarization and resistivity surveying along 8 lines spaced 150 to 300 metres apart, totaling 27 line kilometres.
- Regional spaced ground magnetic surveying along 16 lines spaced 100 metres apart, totaling 35.2 line kilometres.
- Petrographic studies.

As a result of this program of work, several significant Au-Ag targets were defined along a series of subparallel, northwest trending structural lineaments which proved to contain the Cap Oeste (originally referred to by Barrick as the Zona Central), Breccia Valentina, and Vetas Norte prospects. With the assistance of external consultants, conceptual genetic models were developed for the various styles of low sulphidation precious metal mineralization identified in order to help guide subsequent exploration. As follow-up at Cap Oeste, Barrick took a total of 144 lag samples covering a 600 metre long, northwest trending zone of poorly exposed hydrothermal breccia, silica/hematite flooding, and sheeted, limonitic quartz veining. This sampling returned weakly anomalous Au, As and Hg values over an approximate 300-metre wide by 800-metre long area. Barrick tested this anomaly with three trenches (TR 4 -TR 6) totaling 420 metres, which were excavated perpendicular to the exposed mineralization over a strike length of 270 metres. Significant values were returned from two of these trenches, approximately 145 metres apart:

• Trench TR-4

38 m @ 1.0 ppm Au (using 0.25 ppm Au cutoff) including 7.5 m @ 1.88 ppm Au, and 33 ppm Ag (using 1.5 ppm Au cutoff)

Trench TR-5
14.8m @ 0.55 ppm Au (using 0.25 ppm Au cutoff)
including 2 m @ 1.05 ppm Au (using 1.0 ppm Au cutoff)

Mineralization was spatially coincident with a prominent chargeability and resistivity anomaly highlighted by the one Pole-Dipole Induced polarization (IP) and resistivity survey line that transected the zone.

In summary, the Homestake- Barrick exploration program defined a 10km wide x 25km long northwest trending structural corridor hosting extensive zones of precious and trace element anomalism, hydrothermal alteration, and coincident chargeability/resistivity targets, as shown in Figure 6.1.



Figure 6-1 Regional Zones of Hydrothermal Alteration and Structural Trends El Tranquilo Property Block

#### 6.3 Patagonia Gold Program

PGSA visited the project and began negotiations for the purchase of the properties in September 2006. Subsequent to the Purchase Agreement reached on February 5, 2007, exploration activities commenced including gridding, surveying, trenching, and drilling programs which are detailed further in Sections 10 through 12 of this Technical Report.

#### 7.0 GEOLOGICAL SETTING

#### 7.1 Regional Setting

The Cap Oeste Project is contained within the Deseado Massif geological province, which occupies a 70,000 square kilometres area in the northern third of Santa Cruz Province. The geology of Santa Cruz has been mapped and compiled at 1:750,000 scale, and published by SEGEMAR in 2003 (Figure 7-1).

Both the Deseado Massif and a second uplifted block, the Somuncura Massif (exposed in Chubut and Rio Negro Provinces to the north), are interpreted to have developed during large-scale continental volcanism accompanying extensional rifting of the Gondwanaland supercontinent and the opening of the Atlantic Ocean (Feraud, et.al, 1999). Bedrock comprises a bimodal suite of andesitic to rhyolitic ignimbrites and tuffs, with lesser flows and intrusions, which was erupted over a 50 million year interval in the middle to late Jurassic (125 to 175 Ma). Its aerial extent places this geological province amongst the most extensive rhyolite platforms worldwide. The Deseado Massif is bordered by two Cretaceous petroliferous basins, the San Jorge Basin to the north, which separates it from the Somuncura Massif, and the Austral-Magallanes Basin to the south. These basins contain thick sequences of non-marine sedimentary rocks which host Argentina's largest producing oil and gas fields.



Figure 7-1 Regional Geology of Deseado Massif Santa Cruz Province, Argentina

Within the project area, the Jurassic volcanic suite is comprised dominantly of rocks assigned to the Bahia Laura Group. The volcanic stratigraphy of the Bahia Laura Group is the best exposed rock sequence in the Deseado Massif, covering more than half of its area, and comprises three formational members:

*Bajo Pobre Formation (175-166 Ma)*: and esitic to basaltic flows, agglomerates, and minor hypabyssal porphyry intrusives which intercalate upwards with mafic tuffs, conglomerates and sediments. Olivine basalts common in the lower part of the formation are thought to be products of fissure eruptions from rifts related to early stages of the Gondwana breakup and continental separation.

*Chon Aike Formation (166 – 150 Ma:):* high-Si, high-K rhyolitic to rhyodacitic ignimbrites, tuffs and lesser volcanic breccias, flows and domes which attain a cumulative thickness up to 1,200m (Sanders, 2000). Volcanic rocks assigned to the Chon Aike Formation are coincident in space and time with the most significant precious metal deposits in the province.

La Matilde Formation (upper age of approximately 142 Ma): fine grained fossiliferous lacustrine sediments, volcano-sedimentary rocks and airborne tuffs.

The Bahia Laura Formation is underlain by an extensive sequence of basement rocks ranging in age from Precambrian to early Jurassic. Younger cover sequences include small windows (less than 300 metres in diametre) of flat-lying Tertiary marine sediments (which have filled structural controlled and/or erosional basins) and alkalic basalts, which form extensive plateaus throughout the region. Finally, unconsolidated Quaternary glacial - fluvial sediments form characteristic elevated gravel terraces throughout the province.

In a regional structural sense, northwest-southeast extensional faults active during the period of Jurassic volcanism formed grabens, half-grabens and horst blocks with pervasive eastern dips. Since the Jurassic, rocks have been cut by normal faults that probably represent reactivated basement fracture zones. The Jurassic rocks have undergone only minor subsequent deformation and remain relatively flat to gently dipping, except on a local scale proximal to faults and subvolcanic intrusions.

Fault kinematics throughout both the Cap Oeste Project and the surrounding region are consistent with regional east-west to northeast-southwest extension as has been documented for many low sulphidation, epithermal precious metal deposits throughout the province.

#### 7.2 Property Geology

#### 7.2.1 Stratigraphy

Bedrock in the Cap Oeste Project comprises a thick (greater than 200 metres) sequence of rhyolitic ignimbrite and tuff units of the Chon Aike Formation, overlain by a thin veneer of Oligocene to Miocene shallow marine calcarenite sediments and unconsolidated Quaternary fluvio-glacial gravels. The surface and subsurface distribution of these units defined by mapping and drilling, excluding outcrop of the Quaternary gravel cover, is shown in Figure 7-2.



Figure 7-2 Cap Oeste Project Area (black rectangle) Geology and Structure

The stratigraphy of the Chon Aike Formation has been further divided by PGSA geologists into seven sub-units whose mapped distribution appears to be controlled by displacement along a northwest trending fault, as shown in Figure 7-2 and described more fully below.

#### 7.2.2 Structure

Low sulphidation Au-Ag mineralization at Cap Oeste is spatially related to the curvilinear, west/northwest trending Bonanza Fault. The fault dips moderately to steeply to the southwest and has been mapped over a strike extent exceeding 1,500 metres. Mapping peripheral to the main zone of mineralization at Cap Oeste has defined a second, sub-parallel structure 220 metres to the southwest, referred to as the Esperanza Fault. Described as a steeply northeast dipping zone of faulting and hydrothermal brecciation, the Esperanza Fault has been mapped over a strike distance of approximately 1,500 metres.

Geological mapping and drill section interpretation of stratigraphic relationships across the Bonanza Fault suggest normal displacement with the southwestern (hanging wall) block downthrown at least 180 metres, as shown in Figure 7-3. No movement vector indicators (e.g. slickensides) have been observed to indicate oblique or strike slip movement along the fault, although observations on a more regional scale suggest a component of oblique movement is possible.

The inclination of the Esperanza fault with respect to that of the Bonanza Fault and the repetition of the stratigraphy in the foot wall and hanging wall blocks respectively, suggests that this structural pair bound a northwest trending graben or half graben, approximately 220 metres wide at surface (Figure 7-3). PGSA geologists consider the graben model more probable, given that significant stratigraphic tilting is not observed within the intervening rock section. Extrapolation of the respective fault planes from the Bonanza and Esperanza Faults below the level for which drill information exists, suggests the graben floor or fault intersection should occur approximately 280 metres below surface (200 metres RL).

CAM believes the structural interpretation outlined above is reasonable and consistent with observed features of the geology and associated mineralization. Exploration is at a relatively early stage, however, and additional data – particularly deeper drilling – may require revision of this model.

Figure 7-3 depicts Geological Section 9950N, which shows the respective northeast and southwest dipping faults and the displacement of volcanic stratigraphy.



Figure 7-3 Geological Section 9950N
#### 8.0 DEPOSIT TYPES

Exploration by PGSA at Cap Oeste is focused principally on discovery and delineation of low sulphidation, Au-Ag epithermal mineralization of the type well documented throughout the Deseado Massif [e.g. White and Hedenquist (1990 &1994), Corbett, G.J. (2001) and Sillitoe, R.H. (1993)]. Mineralization typically comprises banded fissure veins and local vein/breccias characterized by high Au and Ag contents and ratios of Au to Ag generally greater than 1 to 10. Mineralized veins and breccias consist of quartz (colloform, banded, and chalcedonic morphologies), adularia, bladed carbonate (often replaced by quartz), and dark sulphidic material termed *ginguro* (fine grained electrum or Ag sulphosalts banded with quartz). Discrete vein deposits develop where mineralizing hydrothermal fluids are focused into dilatant structures, producing ore shoots which host the highest precious metal grades. Low sulphidation style mineralization can also develop where mineralizing fluids flood permeable lithologies to generate large tonnage, low grade disseminated deposits (e.g. Round Mountain, Nevada; McDonald Meadows, Montana)

Studies of alteration patterns and fluid inclusion data show that precious metal precipitation generally occurs between 180 to 240 degrees Celsius, corresponding to depths 150 to 450 metres below the paleosurface (Figure 8-1). Deposits often exhibit a top to bottom vertical zonation:

- Precious metals poor, paleosurface, sinter (Hg-As-Sb).
- Au-Ag-rich, base metal poor "bonanza zone" (Au-Ag-As-Sb-Hg).
- Ag-rich, base metal zone (Ag-Pb-Zn-Cu).
- Barren pyritic root.

Alteration accompanying low sulphidation epithermal mineralization is controlled by the temperature and pH of the circulating hydrothermal fluids and its distribution therefore can also be spatially zoned. Alteration minerals that occur proximal to mineralization include illite, sericite, calcite and adularia whereas smectite and chlorite typically occur in a more distal setting. Additional variants include pervasive silicification of wall rock as envelopes to quartz veins and breccias, and advanced argillic alteration (alunite, jarosite, kaolinite, vuggy silica) in steam heated horizons at higher structural levels (Figure 8-1).



Figure 8-1 Geochemical zonation, quartz type and alteration patterns of low sulphidation hydrothermal system (Hammond 2003)

Based on observations by R. Sillitoe (2008), mineralization at Cap Oeste is assigned to a shallow epithermal, low sulphidation type of mineralization, specifically:

"The presence of fine-grained replacement quartz, widespread illite alteration, abundant marcasite, silver-bearing sulphosalts and late-stage realgar and orpiment combine to confirm that Cap Oeste formed in the epithermal environment, potentially in relative proximity to the paleosurface. The abundance of arsenopyrite, a sulphide that precipitates under reduced conditions, suggests that the prospect is assignable to the low-sulphidation epithermal category."

PGSA staff believes mineralization occurs as a fault-localized replacement body rather than as one or more discrete quartz veins, the typical style for similar deposits elsewhere in the Deseado Massif. As described previously, replacement style, low-sulphidation deposits do occur elsewhere and include the disseminated orebodies in non-welded ignimbrite at Round Mountain, Nevada, the lithic tuff hosted deposit of McDonald Meadows, Montana, and the breccia-hosted orebodies at Ladolam in Lihir Island, Papua New Guinea (Sillitoe, 2008). In contrast to low-sulphidation systems, high-sulphidation epithermal deposits are normally replacement bodies, commonly localized along faults. A high-sulphidation assignation for the Cap Oeste Project has been ruled out by the neutral-pH illite alteration and the complete absence of vuggy quartz and associated advanced argillic alteration assemblages.

### 9.0 MINERALIZATION

#### 9.1 Regional mineralization

Table 9-1   Selected Gold-Silver Deposits of the Deseado Massif.   Data from Company Annual Reports.								
Deposit Inventory Inventory Type Operator Status								
Cerro Vanguardia	3.7 M oz Au 67.2 M oz Ag	2006 Resources (also past prod'n of + 1 M oz Au)	AngloGold –Ashanti	producing				
Martha Mine	2.0 M oz Au 50.0 M oz Ag	2006 Resources (also past prod'n)	Coeur d'Alene Mines	producing				
Manantial Espejo	38.5 M oz Ag	2006 Reserves	Pan American Silver	construction				
Cerro Negro Project	0.8 M oz Au	2006 Resource	Andean Resources	advanced exploration				
San Jose	0.17 M oz Au 15.8 M oz Ag	2007 Resource	Minera Andes	producing				

The Deseado Massif volcanic province hosts several producing and advanced stage projects (Table 9-1).

Throughout the northern portion of the El Tranquilo Block exploration claims, PGSA has defined several areas hosting Au-Ag mineralization and pathfinder geochemical anomalism (e.g. As, Sb, Hg). These areas are spatially related to three, northwest trending regional structural corridors within an approximate 8-kilometre wide by 10-kilometre long window of variably clay-silica-Fe oxide altered Chon Aike volcanic rocks. This permissive sequence is surrounded by post Jurassic cover rocks as described in Section 7.

The most advanced project area near Cap Oeste is the Breccia Valentina prospect, which is situated approximately six kilometres to the southeast. This prospect occurs at the southeastern limit of the Valentino Trend, another of the northwest trending corridors previously described.

Precious metal mineralization at the Breccia Valentina prospect is best developed within a 150 by 300metre area. Bedrock comprises altered ash and lapilli tuff, which are interpreted to enclose a brecciated subvolcanic rhyolite dome. Alteration is accompanied by extensive silicification and disseminated marcasite and arsenopyrite. The most significant Au and Ag values to date report to a series of steep east/northeast dipping, 5 to 40-metre wide zones hosting hydrothermal breccia, sheeted to irregular crystalline / comb quartz / chalcedony veinlets and milled matrix breccia. Proustite (ruby silver) occurs as disseminations in the tuff matrix, in breccia matrix, in drusy veins, and rarely with kaolinite in vein selvages. Trace realgar and orpiment have also been observed. These mineralogical features at Breccia Valentina resemble those at Cap Oeste and are taken as indicative of a similar origin of the mineralization (R. Sillitoe, 2008).

### 9.2 Property Mineralization

## 9.2.1 Description and Distribution

As described in Section 7, Au-Ag mineralization at Cap Oeste is predominantly hosted by the northwesttrending Bonanza Fault, which dips 40 to 80 degrees to the southwest. Drilling has therefore been orientated towards the northeast (050 degrees true north) along grid lines orthogonal to a baseline trending 140 degrees. The fault juxtaposes crystal-poor ignimbrite to the west with dominantly crystalrich ignimbrite to the east, reflecting "west side down" normal displacement, and is interpreted to be one of the bounding structures to a Late Jurassic graben or half-graben, as previously discussed.

Transecting the mineralized zone in section, from the hangingwall to the footwall, four successive types of mineralization have been identified (Figure 9-1).

### Zone 1 (Hangingwall crackle breccia)

Irregular, multi-directional, chalcedonic stockwork quartz veinlets and matrix-supported breccia occur with associated pyrite, goethite, and hematite. This zone is developed over 10-40m true width, preferentially within hangingwall vitric tuff. It tends to narrow and become less well developed with depth, possibly as a result of increasing lithostatic pressure and its effects on ascending hydrothermal fluids. Zone 1 is characterized by persistently anomalous precious metals... Where unoxidized, this zone contains generally low concentrations of disseminated sulphides (< 1.0% ) and low-order precious-metal values.

### Zone 2a (Fault Zone silicified breccia)

Relict hydrothermal breccia textures are preserved within the Bonanza Fault and generally extend 1-5 metres into the footwall crystal tuff. Zone 2a breccias are commonly overprinted by pervasive chalcedony + hematite (where oxidized) and disseminated marcasite-pyrite (where unoxidized), thought to be introduced during cyclic re-brecciation and healing.

## Zone 2b (Fault Zone sulphide stringer / sulphide matrix breccia)

Distinctive breccias consisting of silicified clasts cemented by a marcasite-pyrite-illite-chalcedonic silica rich matrix, are interpreted to have been converted by post-mineral faulting to fine-grained gouge containing illitised and silicified clasts. This gouge is commonly black in color due to the presence of crushed sulphide minerals. This zone varies in width between 5 and 15 metres, and occurs most commonly along the contact between contrasting lithologies juxtaposed across the Bonanza Fault; it has

also been identified along sub-parallel fault splays which locally cut the hangingwall stratigraphy and within underlying footwall rocks (Figure 9-1).

# Zone 3 (Footwall stringer/disseminated zone)

Sheeted to stockwork, marcasite-pyrite veinlets and disseminations containing up to 5 percent fine sulphide occur peripheral and sub-parallel to Zones 2a and 2b, across a true thickness of 10 to 40 metres. Precious metal values diminish progressively into the footwall together with an increase in the smectite: illite clay alteration ratio and a decrease in abundance of arsenopyrite needles. Zone 3 lacks hydrothermal quartz and occasionally hosts rare calcite stringers.



Figure 9-1 Mineralized Section Schematic (after Sillitoe 2008)

Drilling completed to date has shown that gold-silver mineralization extends for at least 1,200 metres, broadly coincident with and peripheral to the Bonanza Fault, but is most strongly developed over a strike length of approximately 1,025 metres between Sections 9775N and 10800N.

It has been proposed that ore shoot localization is favored by strike changes along the fault, particularly where the fault trace becomes more northerly. The principal high grade mineralized interval has been

denominated the 'Main Shoot', and is clearly distinguished on longitudinal sections contouring gold grade x metres (Figure 9-2). This section was generated from the mineralized intersections tabulated in Section 11 (refer to Table 11-2), and utilizes minimum cutoff grades of 0.5 ppm Au or 35 ppm Ag, and internal dilution of less than 5 metres.

The 'Main Shoot' is principally defined by a Au grade-times-thickness composite value of greater than 20 gram-metres, which is interpreted to extend at surface for approximately 450 metres between sections 9825N and 10275N. At depth the Main Shoot exhibits a moderate to steep plunge (35 to 65 degrees) with the strongest mineralization extending between sections 9850N and 10350N. The strongest Au mineralization within this shoot (up to 408 ppm x metre), between 9925N and 10050N, appears to define a second order shoot which plunges more steeply. With the current level of drill information (see Section 11), the 'Main Shoot' is essentially open down plunge and down dip along the Bonanza Fault between sections 9850N and 10350N.

A second 'northwest Shoot" of somewhat lower grade mineralization is centred approximately 600m to the northwest of the central outcropping portion of the 'Main Shoot', between Sections 10550N and 10775N (Figure 9-2). This shoot appears to define an overall sub-horizontal geometry (defined by the greater than 10 gram x metre contour) within which a higher grade (20 to 30 gram x metre) core approximately 50 metres wide by 120 metres long plunges steeply northwest.



Figure 9-2 Cap Oeste Project- Longitudinal Section Contoured Au ppm x metre composites, red values highest.

The longitudinal section for Ag, as shown in Figure 9-3, displays a semi-contiguous high grade zone (defined by Ag grade x thickness greater than 350 gram x metre). With local exceptions, Ag values appear to be relatively depleted within 50 to 75 metres of the surface, possibly a result of supergene

oxidation of hypogene Ag sulphide species. Locally discrepancies between respective high Au and high Ag zones are considered to be due to differing mineral assemblages.



Figure 9-3 Cap Oeste Project- Longitudinal Section Ag ppm x metres

As shown in Figure 9-4, the longitudinal section for Au equivalent gram x metre displays the combined, broadly enhanced continuity of the individual shoot geometry.



Figure 9-4 Cap Oeste Project- Longitudinal Section Au equivalent ppm x metres

# 9.2.3 Mineralogy and Paragenesis

Based on observations from core in hand specimen, thin and polished section petrographic samples (total of 14 samples) and studies by computed axial tomography (CAT scan; 2 samples), the respective mineralogical characteristics of oxide and sulphide assemblages have been determined and are discussed below.

#### Oxide Mineralogy

Partial to complete supergene oxidation of high-grade Au-Ag mineralization (Zones 2a & 2b) has occurred to an average depth interval of 70 to 120 metres, with the consequent destruction of all sulphide minerals and the development of abundant hematite, jarosite, limonite, and kaolinite. The oxide/sulphide boundary is transitional, and generally mirrors the southwest dipping trace of the fault, with oxidation consistently deeper on the hangingwall side (Figure 7-2). This has been interpreted as due to the lower rock permeability caused by the preferential development of illite and smectite clay in footwall rocks (Sillitoe, 2008).

Within the zone of oxidation, gold occurs in the native state; discrete grains of gold (up to approximately 30 microns across) were observed and interpreted to be of both relict hypogene and supergene occurrence (Figure 9-5). Gold fineness may have been increased due to preferential silver removal during oxidation of hypogene electrum. Native silver has also been defined by both petrology and CAT scan, some of it potentially inherited from hypogene assemblages.



Figure 9-5. CO\_054-DR (132-133.1m; 7.86 ppm Au, 87.2 ppm Ag). Composite aggregate of gold-electrum with argentite-acanthite (pale grey) enclosed in quartz and illite-sericite (dark grey), with slight development of supergene Fe oxides (red-brown hue). Plane polarized reflected light, field of view 0.2 mm across (after Ashley 2008).

Similarly, in the oxidized sample examined by CAT, gold and silver were observed to occur in the native state and also as electrum, as shown in Figure 9-6.





Figure 9-6. (CO-036-D; 56-57m) – Computed axial tomography (CAT) scan image LHS image represents a rendered 2D image of the distribution of native Au/Ag at the flat surface face of the core sample, the RHS image represents the 'see through' 3D projection showing the pattern produced by the Au/Ag distributed throughout the whole volume of the sample

Apart from minor amounts of scorodite, the iron arsenate, no other supergene minerals have been identified to date and it is assumed that strongly anomalous values of Au, Ag, As and Sb may also be hosted in supergene Fe oxides. In addition, Ag is suspected to be present as one or more halides (chlorargyrite, embolite, bromargyrite and iodargyrite) given the semi-arid climatic conditions and consequent elevated chloride, bromide and iodide contents of local ground water (Sillitoe, 2008).

### Sulphide Mineralogy

Based on hand lens observations, the main sulphide minerals in the Cap Oeste Project zone are pyrite and marcasite; pyrite typically occurs as small (less than 0.5 millimetres) isolated crystals and marcasite as fine (less than 0.2 millimetres) disseminations. Sulphides occur in different sites including altered phenocrysts (e.g. former ferromagnesian and feldspar pseudomorphs), altered groundmass of volcanic fragments, in strongly silicified fragments in breccias, as components of hydrothermal breccia matrices and veins, and within fault gouge. In the Non-Oxide zone, total sulphide content is generally in the 1-5% range, with rare intervals up to 30% in core.

In hand specimen the pyrite appears to be early in the paragenesis of precious metal mineralization and typically occurs as sub-radiating and bladed aggregates, whereas the marcasite appears to be more closely related to the gold and silver mineralization. Arsenopyrite is widespread as an accessory to the iron sulphides particularly in the footwall stringer Zone 3 where it is paragenetically later than pyrite-marcasite.

Precious metals within hypogene mineralization occur dominantly in finely disseminated proustite, argentite/acanthite, sternbergite, lautite, and gold/electrum, either singly or in aggregates. Gold values in excess of 10 grams per tonne occur with concentrations of acicular arsenopyrite without appreciable Ag and Sb, most commonly on the immediate footwall side of the high-grade zone. In several of the petrology samples hosting high grade hypogene mineralization no discrete Au-bearing phases were recognised, suggesting that a proportion of the gold might be held in arsenopyrite  $\pm$  pyrite.

From the CAT study of hypogene samples, Au and Ag were found to occur both in the native state and as electrum - both of which show a strong association with freibergite (Ag, Cu, Fe)<sub>12</sub>(Sb, As)<sub>4</sub>S<sub>13</sub>, argentiferous tetrahedrite (AgCu<sub>12</sub>As<sub>4</sub>S<sub>13</sub> and possibly pyrostilpnite Ag<sub>3</sub>SbS<sub>3</sub>, as shown in Figure 9-7).

Hand specimen observations suggest that tennantite-tetrahedrite mineralization identified on the basis of its characteristic chestnut-colored streak is broadly confined to Zone 2b, and gives rise to close correlations between gold, silver, copper, antimony, arsenic and mercury values. There are also minor occurrences of high-grade silver-gold mineralization that lack any correlation with elevated copper, arsenic and antimony values, perhaps due to the presence of acanthite, electrum and/or native silver, all of which have been identified locally in drill core.





Figure 9-7. Hole CO-054-DR: 133.1- 134.1m; 226 ppm Au, 4273 ppm Ag Computed axial tomography CAT scan image – showing Au associated with Freibergite and Ag tetrahedrite and possibly pyrostilpnite. LHS image represents a rendered 2D image of the distribution of native Au/Ag at the flat surface face of the core sample, the RHS image represents the 'see through' 3D projection showing the pattern produced by the Au/Ag distributed throughout the whole volume of the sample.

In Zone 2b, one or more ruby silver minerals, probably proustite and/or pyrargyrite, occur as monominerallic veinlets or, where gouge development has taken place, as clastic grains. There is a strong suggestion that these silver sulphosalts were deposited late with respect to the rest of the gold-silver mineralization at the Cap Oeste Project which were in turn followed by deposition of trace amounts of realgar and orpiment. The geochemical association of silver with other metals as described suggests that supergene silver enrichment is not an important contributor to bonanza-grade values, and that appreciable silver introduction as supergene acanthite is unlikely (Sillitoe, 2008). Particle size for individual Ag-rich minerals ranges up to 0.5 to 1.0 millimetres, with local aggregates up to a few millimetres.

# 9.2.4 Controls on Mineralization

The ore fluid responsible for mineralization at Cap Oeste is postulated to have been focused within dilatant sites along the Bonanza Fault, with its expulsion potentially linked directly to fault-displacement events. The source of the fluid may have been felsic magma similar to that which formed rhyolitic domes a few kilometres distant at Breccia Valentina (Sillitoe, 2008).

Although high-grade mineralization is relatively quartz-poor, adjacent, intensely silicified rocks of Zone 1 are considered as integral parts of the mineralizing event. Sillitoe (2008) has postulated that silicification and associated stockwork development may have occurred early on, with the stockworks being the product of fluid overpressuring and release into the overlying hanging wall of the Bonanza Fault. The decrease in stockwork development with depth would then presumably reflect increasing lithostatic pressure. Quartz precipitation implies declining fluid temperatures, which would be anticipated at progressively shallower levels within and immediately above the fault zone. However, fluid that accessed the immediate foot wall of the fault does not appear to have undergone the same degree of cooling; hence, the complete absence of both silicification and quartz veining. A lack of open space during the faulting is considered the most likely explanation for the absence of the banded quartz typical of low-sulphidation deposits.

Deposition of high-grade mineralization is considered to have overlapped with or immediately followed the main silicification event, potentially in multiple, discrete stages. The ore-bearing fluids were focused along the footwall side of the silicified zone, resulting in intense illite-sericite alteration. Gold deposition is considered more likely to have resulted from admixture of ascending fluid with meteoric water than by boiling, given the absence of boiling indicators such as adularia and carbonate-replacement textures. Deposition of ruby silver(s), realgar and orpiment concluded the paragenetic sequence.

Following alteration and mineralization, fault displacement may have continued and been localized by the rheologically weakest part of the fault zone: the intense illite-sericite alteration along the immediate footwall of the massive silicification. Since this zone was also the site of high-grade mineralization, much of the potential ore occurs in fault gouge. In the case of low-sulphidation veins, post-mineral faulting tends to be focused along the immediate contacts of the ore-bearing quartz and, hence, does not normally disturb the high-grade mineralization.

# 9.2.5 Exploration Potential

Exploration potential within the immediate project area is considered to be good, based on the following analysis:

- The "Main Shoot" and "Northwest Shoot" remain open for expansion.
- The area drilled to date is limited with respect to the full strike extent of the Cap Oeste structural corridor (+ 6km). Prospects for additional high grade shoots along the extension of this structure are noted, particularly in those portions of the fault with marked variations in strike.
- Geologic arguments place the relative topographic level of the high grade Au-Ag mineralization within the upper portions of a well preserved paleo-hydrothermal system.
- The strong correlation between high grade Au-Ag mineralization and fault-hosted zones of illiterich alteration suggests targets will weather recessively and hence be poorly exposed at surface.

Additional conceptual structural and stratigraphic targets remain to be tested throughout the Cap Oeste Project area including:

- Structural intersections of half graben or graben bounding faults (i.e. southwest dipping Bonanza Fault with the northeast dipping Esperanza Fault) at depth which might have created a dilatant setting for the deposition of mineralized hydrothermal fluids. The fault geometry suggests that the intersection of these faults may be sub-horizontal or shallowly plunging (and hence non outcropping), at interpolated depths of the order of 250 to 300 metres below surface.
- Permeable lithologies are potentially favorable sites for disseminated Au-Ag mineralization emanating from the main structurally controlled feeder conduit.

## 10.0 PGSA EXPLORATION PROGRAM

Upon signing the purchase agreement with Barrick (February 5, 2007) PGSA began exploration activities throughout the El Tranquilo claim block. The initial emphasis was to validate Barrick data for the Breccia Valentina and Cap Oeste prospect areas, in preparation for the first stage of drill testing in September 2007. Work completed to date includes:

- Establishment of local grid baseline points at origin- 5000E, 10000N- to allow projection of trench and drill section data on sections perpendicular to the northwest strike of mineralization.
- Geologic mapping at 1:1,000 scale.
- Excavation and sampling of five trenches, (224 metres and 82 channel samples).
- Completion of 24 RC drill holes (1,628 metres and 2,970 samples) and 71 diamond drill holes (9,634.48 metres and 7,070 samples), including 30 RC pre-collars for 1,620 metres of RC drilling. Three of the diamond holes are twin holes of earlier RC holes: CO-001-R & CO-036-D, CO-009-R & CO-034-D, CO-010-R, and CO-035-D.
- Petrographic study of 14 samples in thin and polished sections.
- Consultations by internationally-recognized geological consultants Greg Corbett (2007) and Richard Sillitoe (2008).
- Survey topography with a differential GPS and develop a contour map.
- Survey of all drill hole and trench locations in x, y, and z dimensions with a differential GPS
- IP/resistivity surveys (7 lines totaling 6.3 line kilometre gradient array; 1 line totaling 1.6 kilometres pole-dipole) Ground magnetic survey (10 lines totaling 13 line kilometres at Cap Oeste, of a total 90line kilometre survey).

Exploration activities, including trenching, sampling, and logging were carried out by PGSA personnel under the supervision of a qualified project geologist. The petrographic analysis was undertaken by Dr. Paul Ashley of Australia, an experienced petrographer.

# 10.1 Gridding, Topography and Surveying

Local baseline grid points were surveyed with the origin defined at 5000E, 10000N. This grid is tied into the Gauss Kruger Projection and Campo Inchauspe Faja 2 datum coordinate system with surveying using a double frequency (L1 and L2), TOPCON Model GB-1000 differential GPS which generally gives precision of X=1 centimetre, y=1 centimetre and Z (altitude) =1.5 centimetre.

The same equipment was employed to survey trench and drill hole collar locations in addition to providing both topographic control and contours. Topographic control was facilitated with the collection

of coordinate and altitude data on a 5 by 5 metre grid spacing over a 450-hectare area from which the data points were subsequently contoured using triangulation parametres.

### 10.2 Trenching

By May 2007, five trenches totaling 224 metres were mechanically excavated (PGTR\_12 to PGTR\_16; Figure 10-1). Trenches PGTR\_12 to PGTR\_14 were excavated adjacent to Barrick's original trench TR-4 along 50-metre spaced lines and PGTR\_15-16, were excavated 550 metres and 750 metres respectively to the northwest.



Figure 10-1 Cap Oeste Trench Locations See Figure 7-2 for geological setting. Red dots denote higher values (see text below).

The most significant precious metals values reported from trench PGTR\_14, which returned 37 metres @ 0.52 ppm Au (0.2 ppm Au cutoff), including 8 metres @ 5.77 ppm Au and 17.3 ppm Ag (2.5 ppm Au cutoff).

Sawn channel samples from PGSA trenching adjacent to historic Barrick cuts confirmed the presence of an 8-25m wide zone of stockwork veined and crackle brecciated vitric tuff in the hangingwall to the Bonanza Fault, reporting values of the order of 0.3 to 1.0 ppm Au. The fault zone proper contained limonite-hematite rich milled breccia with up to 11 ppm Au over widths up to 8 metres. Further trenches along strike defined a contiguous northwest trending, 900-metre long by 5 to 15-metre wide zone of stockwork veining, faulting, and brecciation with anomalous Au, Ag and trace element geochemistry (As, Sb, Hg). Subsequent geophysical, geochemical, and petrographic studies lent important support to these preliminary results, setting the stage of the follow-up drilling programs described below.

#### 10.3 Geophysics

Based on the observed correlation of Au-Ag mineralization with disseminated sulphides and varying degrees of silicification, and the effective application of regionally spaced, pole-dipole IP surveying by Barrick Gold, both pole-dipole array and gradient array geophysical surveys were trialed as potential tools for the detection of additional concealed mineralization. Baseline ground magnetic data were also collected in a hope of mapping fault-related displacements within the volcanic stratigraphy.

## 10.3.1 Pole-Dipole Induced Polarization

Pole-dipole IP surveys were completed along a 1,600m portion of local grid section 9950N between 4100 E and 5700E, across a well defined, mineralized section. The survey was performed with dipole spacing of 50 metres expanded through 6 separations (n=1 to 6). The chargeability anomaly which occurs broadly in the centre of the test survey line correlates with the occurrence of up to 10 percent sulphide below the level of oxidation, within the Bonanza Fault and its immediate footwall rocks.

Figure 10-2 depicts pole-dipole chargeability survey results along Section 9950N. The inverted section (lower) shows the survey results with geological and drillhole information overlaid. Note apparent correlation of the principal zone of chargeability (magenta-red) with the footwall to the Bonanza Fault structure.



Figure 10-2 Pole Dipole Chargeability - Survey Results along Section 9950N

A zone of high apparent resistivity is offset slightly to the west of the conductivity anomaly (Figure 10-3); this is interpreted as due to the presence of silicified breccias within the mineralized envelop, augmented by greater degrees of silicification within the vitric tuff unit.



Figure 10-3 Pole Dipole Resistivity Survey Results along Section 9950N

## 10.3.2 Gradient Array Induced Polarization

A baseline gradient array IP survey was conducted along 100-metre spaced lines to provide approximately 80 percent coverage of the project area. The gradient array data is presented as plan maps of total chargeability and apparent resistivity (Figures 10-4 and 10-5); both are draped with surface geological data and drillhole locations.

Coincident, northwest trending chargeability and resistivity anomalies are evident in these plots which mirror the strongest mineralized zone between Sections 9800N and 10350N. Peak chargeability is broadly coincident with the southwest dipping Bonanza Fault. Towards the northwest the anomaly resolves into sub-parallel anomalies which are coincident with the mapped traces of the Bonanza and Esperanza Faults.



Figure 10-4 Gradient Array Chargeability Plan Map

Peak resistivities are interpreted to reflect the combined effects of silicification along the bounding faults augmented by relatively higher resistivities within the vitric tuff unit mapped within the northwest trending graben. As is the case for conductivities, resistivity anomalies resolve into discrete, linear zones to the northwest of the strongest mineralization, presumably reflecting silicification along the main graben-bounding faults.



Figure 10-5 Gradient Array Resistivity Plan Map

# 10.3.3 Ground Magnetic Surveying

Baseline ground magnetic surveying was carried out, utilizing 10-metre spaced sample intervals along 100-metre spaced, 1-kilometre long lines throughout the southeastern portion of the project area. Based on results from this orientation study, CAM agrees with PGSA suggestions that ground magnetics does not appear to be an effective tool for mapping rock type or structure within the project area.

# 10.4 Petrography and Computed Axial Tomography

A suite of 14 samples were selected from HQ drill core and shipped to a petrology consultant in Australia for preparation and petrographic analysis. A summary of sample descriptions and interpretations from this study are discussed above in Section 9.3.

In addition, two core samples, comprising respectively oxidized and un-oxidized samples, were studied using computed axial tomography (CAT scan) at the Department of Mineralogy of the Natural History Museum, London, UK. A summary of sample descriptions and interpretations from this study were discussed previously in Section 9.

### 11.0 DRILLING

### 11.1 Introduction

Drilling of reverse circulation (RC) and diamond holes (DDH) at Cap Oeste was carried out in two separate campaigns under contract by Patagonia Drill S.A (October through December 2007) and Major Drilling S.A. (January through June 2008), utilizing truck and track mounted Universal UDR 650 rigs respectively. Rotary pre-collar drilling by Major Drilling S.A. was witnessed by Robert Sandefur and Craig Bow representing Chlumsky, Armbrust & Meyer, LLC in April 2008.

A first tranche of RC drilling, designed to test the strongest zones of mineralization as defined by trenching, commenced in October 2007 along 50-metre spaced centers (CO-001-R toCO-010-R). Encouraging results led to the continuation and expansion of the program, specifically:

- The use of diamond drilling in preference to RC drilling through the deeper (greater than 40 metres down dip) projected zones of mineralization. This was based on the relatively high water table, the silica-poor, clay-sulphide-rich character of mineralization, and resulting concerns over RC recoveries and ability to obtain representative samples.
- Twinning of first stage RC holes with DDH to check influences of wet sample intervals and low recoveries on grade bias.
- Drill testing along the entirety of the strike length of the breccia/fault zone identified by trenching and zones extrapolated under areas of post mineral cover between previous drill sections.

Drillhole naming adopted the following nomenclature:

- *Project* prefix CO (Cap Oeste)
- *Hole Number* -(3-digit number)
- *Hole Type* suffixes of R (RC) or D (DDH) where a DDH hole was pre-collared by RC the hole suffix is DR

For example: CO-016-DR is Cap Oeste diamond drillhole #16 with RC pre-collar

Most drill holes were collared on 50-metre spaced sections with 050 degree azimuths and with inclinations between -50 and -70 degrees (Figure 11-1). This configuration was designed to intersect the southwest dipping mineralized zone as perpendicularly as possible with increasing depth. One hole CO-079-D was drilled towards 230 degrees GK grid (i.e. Local Grid west), in order to intersect the Esperanza Fault.



Figure 11-1 Cap Oeste Project Drill Hole Collars. See Figure 7-2 for geological setting. Drillhole data are shown in Table 11-1.

Holes drilled on the step-back lines were generally drilled with RC pre-collars to the approximate depth of the water table or before the interpolated depth of possible mineralization, after which the universal drill rig was converted to allow subsequent diamond drilling. The drill collar information for the Cap Oeste Project area is tabulated in Table 11-1.

Table 11-1 Drill collar information for the Cap Oeste Project Area- 2007-2008								
Hole	East GKf2	North GKf2	Alt_mts	Azimuth	Dip	Depth	Local Grid Section	
CO-001-R	2390625.233	4688009.881	438.991	50	-55	80	10100	
CO-002-R	2390666.64	4687979.726	442.647	50	-55	74	10050	
CO-003-R	2390688.013	4687931.672	448.808	50	-55	80	10000	
CO-004-R	2390597.301	4688050.945	431.906	50	-55	56	10150	
CO-005-R	2390555.037	4688081.794	428.46	50	-55	55	10200	
CO-006-R	2390518.347	4688116.533	427.089	50	-55	60	10250	
CO-007-R	2390732.705	4687907.527	454.948	50	-55	70	9950	
CO-008-R	2390763.668	4687867.93	457.886	50	-55	70	9900	
CO-009-R	2390601.032	4687986.313	442.684	50	-55	120	10100	
CO-010-R	2390634.45	4687951.681	447.469	50	-55	111	10050	
CO-011-DR	2390654.787	4687901.798	454.455	50	-55	123.25	10000	
CO-012-DR	2390562.143	4688020.512	437.325	50	-55	114	10150	
CO-013-D	2390523.652	4688054.963	434.728	50	-55	123	10200	
CO-014-D	2390482.658	4688085.936	432.051	50	-55	111.25	10250	
CO-015-D	2390733.062	4687843.452	460.058	50	-55	117	9900	
CO-016-D	2390696.436	4687877.245	458.795	50	-55	111.1	9950	
CO-017-R	2390848.358	4688005.695	426.223	50	-50	44	9950	
CO-018-R	2390935.107	4687952.939	427.274	50	-55	40	9850	
CO-019-R	2390786.535	4687953.741	436.889	50	-50	80	9950	
CO-020-R	2390823.026	4687985.167	429.371	50	-50	50	9950	
CO-021-D	2390429.681	4688235.421	417.666	50	-50	46.2	10400	
CO-022-D	2390461.523	4688177.17	421.738	50	-50	62.95	10325	
CO-023-D	2390348.371	4688328.475	415.211	50	-50	68.85	10500	
CO-024-D	2390286.869	4688401.052	414.814	50	-55	78.05	10600	
CO-025-D	2390246.358	4688445.645	413.946	50	-55	87	10675	
CO-026-D	2390199.341	4688512.725	414.063	50	-55	69.25	10750	
CO-027-D	2390153.288	4688562.732	416.311	50	-55	78.05	10825	
CO-028-R	2390791.405	4687889.834	449.893	50	-55	56	9900	
CO-029-R	2390719.048	4687956.396	443.636	50	-55	56	10000	
CO-030-R	2390755.536	4687928.156	447.67	50	-55	60	9950	
CO-031-R	2390800.126	4687832.857	455.891	50	-55	68	9850	
CO-032-R	2390831.156	4687796.211	458.427	50	-55	62	9800	
CO-033-R	2390862.791	4687757.415	460.88	50	-55	62	9750	
CO-034-D	2390602.49	4687985.657	442.623	50	-55	150.95	10100	
CO-035-D	2390636.219	4687950.587	447.536	50	-55	146.9	10050	

Table 11-1     Drill collar information for the Cap Oeste Project Area- 2007-2008								
Hole	East GKf2	North GKf2	Alt_mts	Azimuth	Dip	Depth	Local Grid Section	
CO-036-D	2390624.808	4688008.584	438.987	50	-55	108.1	10100	
CO-037-D	2390489.881	4688146.917	424.476	50	-55	126.15	10275	
CO-038-DR	2390386.057	4688196.77	422.01	50	-55	118.6	10400	
CO-039-DR	2390420.241	4688140.471	425.939	50	-55	151	10325	
CO-040-DR	2390454.188	4688112.409	429.336	50	-55	116	10275	
CO-041-R	2390893.308	4687717.665	460.797	50	-55	56	9700	
CO-042-R	2390927.794	4687681.251	459.358	50	-55	54	9650	
CO-043-DR	2390757.167	4687799.317	466.88	50	-55	110	9850	
CO-044-DR	2390813.399	4687763.299	469.44	50	-55	89	9800	
CO-045-D	2390315.944	4688363.958	414.56	50	-55	74	10550	
CO-046-D	2390382.317	4688268.298	417.728	50	-55	65	10450	
CO-047-D	2390221.594	4688476.42	413.393	50	-55	80	10700	
CO-048-D	2390117.241	4688599.031	417.678	50	-55	81	10875	
CO-049-D	2390087.003	4688640.332	418.299	50	-55	72	10925	
CO-050-D	2390318.715	4688301.266	416.747	50	-55	111	10500	
CO-051-D	2390256.083	4688373.689	414.512	50	-55	111	10600	
CO-052-D	2390217.124	4688419.797	413.305	50	-55	111	10675	
CO-053-DR	2390701.033	4687815.41	468.083	50	-55	164	9900	
CO-054-DR	2390666.58	4687851.606	463.991	50	-55	172	9950	
CO-055-DR	2390621.334	4687873.84	462.288	50	-60	186	10000	
CO-056-DR	2390610.913	4687928.118	450.886	50	-55	180	10050	
CO-057-DR	2390573.331	4687962.462	446.708	50	-55	170	10100	
CO-058-D	2390639.496	4687987.221	442.874	50	-55	105	10075	
CO-059-D	2390660.338	4687939.41	448.614	50	-55	119	10025	
CO-060-D	2390685.54	4687901.781	454.951	50	-55	141	9975	
CO-061-DR	2390838.197	4687734.769	471.477	50	-55	82	9750	
CO-062-DR	2390723.536	4687773.462	475.801	50	-55	153	9850	
CO-063-DR	2390782.642	4687736.194	480.154	50	-55	120	9800	
CO-064-DR	2390530.09	4687993.465	446.439	50	-60	161	10150	
CO-065-DR	2390484.155	4688018.336	446.321	50	-55	186	10200	
CO-066-DR	2390452.475	4688054.191	439.77	50	-55	150	10250	
CO-067-D	2390645.133	4688029.598	434.279	50	-55	60	10100	
CO-068-D	2390610.936	4688030.719	435.029	50	-55	66	10125	
CO-069-D	2390286.315	4688333.383	415.465	50	-55	102	10550	
CO-070-D	2390224.583	4688344.155	414.791	50	-55	156	10600	
CO-071-D	2390255.861	4688305.1	416.501	50	-55	150	10550	
CO-072-D	2390288.155	4688273.229	418.193	50	-55	144	10500	
CO-073-D	2390351.36	4688240.635	419.843	50	-55	123	10450	
CO-074-D	2390189.65	4688447.629	413.003	50	-55	117	10700	
CO-075-D	2390175.315	4688491.951	412.684	50	-60	108	10750	
CO-076-D	2390121.597	4688534.542	415.46	50	-55	123	10825	
CO-077-D	2390684.407	4687995.671	437.344	50	-55	51	10050	
CO-078-DR	2390628.252	4687817.419	475.834	50	-55	232	9950	

Table 11-1     Drill collar information for the Cap Oeste Project Area- 2007-2008									
Hole	East GKf2	North GKf2	Alt_mts	Azimuth	Dip	Depth	Local Grid Section		
CO-079-D	2390622.765	4687812.742	476.441	230	-50	120	9950		
CO-080-DR	2390621.077	4687872.164	462.905	50	-68	231	10000		
CO-081-DR	2390585.753	4687906.267	457.081	50	-60	205	10050		
CO-082-DR	2390547.706	4687939.453	451.616	50	-60	232	10100		
CO-083-DR	2390695.51	4687812.111	468.689	50	-70	192	9900		
CO-084-DR	2390685.782	4687741.76	486.901	50	-55	214	9850		
CO-085-DR	2390448.014	4687987.091	447.273	50	-55	227	10200		
CO-086-DR	2390490.018	4687957.845	454.312	50	-55	226	10150		
CO-087-DR	2390415.697	4688023.919	443.639	50	-60	261.83	10250		
CO-088-DR	2390420.934	4688083.838	433.405	50	-58	170	10275		
CO-089-DR	2390384.485	4688051.335	437.172	50	-55	211	10275		
CO-090-DR	2390351.295	4688079.998	432.222	50	-55	221	10325		
CO-091-D	2390188.632	4688311.263	415.404	50	-55	210	10600		
CO-092-D	2390179.93	4688386.7	413.445	50	-55	168	10675		
CO-093-D	2390144.495	4688355.348	412.953	50	-55	213	10675		
CO-094-R	2390867.714	4687694.118	472.437	50	-60	84	9700		
CO-095-R	2390897.672	4687655.855	468.152	50	-60	80	9650		

#### 11.2 Diamond Drilling Methods

Drillhole collars were sited by hand-held GPS, in addition to triangulation from adjacent previously drilled and surveyed collars. For each drill hole, the orientation of the drill rig (azimuth and inclination) was defined by PGSA geologists using a Brunton compass.

Diamond drilling was carried out under daily individual, 12-hour night and day shifts during which PGSA trained technicians were on site at all times in order to record drilling activities in a Drill Log sheet (e.g. drilling, reaming time, additives, core recovery, down hole survey information) and supervise the extraction of the core from the diamond core barrel and placement into the core cradle. Permanent radio contact was maintained between the PGSA technician at the drill site and the PGSA geologists at base camp. All diamond drilling was of HQ diametre and utilized a 3-metre core barrel where ground conditions permitted. Fresh drilling water was sourced from a series of spring-fed pits excavated in the northeastern portion of the project area. No orientated core surveys were carried out during diamond drilling due to the generally fractured state of the rock.

Daily site visits, which collectively comprised several hours onsite time, were made by the PGSA geologist / project geologist for review of drilling progress, drill planning and quality control.

Upon termination of each drill hole, down hole surveys were generally taken by the drill contractor every 50 metres utilizing either a Eastman single-shot camera (Patagonia Drill) or a digital, multishot, reflex down hole survey tool (Major Drilling). Depending on the presence and depth of casing in each hole, collar survey photos were generally taken to within 5 to 10 metres of the collar. Each photo or series of drill hole orientation surveys were reviewed by both the drill contractor and the PGSA field technician on site, and subsequently recorded in both the drill contractors log and the respective section on the PGSA Drill Log sheet by the PGSA field technician.

Following termination of each hole, the collars were marked clearly and permanently with capped PVC tubing cemented in a square concrete base. Following the completion of drilling, the collars were surveyed by a qualified surveyor utilizing a differential GPS.

CAM believes the drilling was executed to industry standards in a safe, secure, and environmentally responsible manner in which all drilling water used and or generated during drilling was contained in sumps excavated peripheral to the drill site; PGSA staff report all the drill sites were cleaned and reclaimed subsequent to termination of each hole.

# **11.3 Drill Core Logging**

Core logging was carried out at Estancia La Bajada, which is situated approximately 5 kilometres from the Cap Oeste Project area. Based on detailed geological mapping completed prior to the drill campaigns, a set of lithology, alteration, and mineralization codes were established and the logging methodology defined in order to standardize nomenclature amongst the geologists involved in the project. Geological information recorded during logging included:

- Lithology- rock type, grain size and composition;
- Alteration- mineral identification, especially type and intensity of clay and silicification;
- Structure measurement of structural elements relative to the core axis;
- Mineralization type- breccia types, vein composition and widths, sulphide species and concentrations; and
- Oxidation-degree of oxidation of rock by weathering including oxidized/partially oxidized and unoxidized.

High resolution digital photographs of each core box were taken by PGSA technicians and are stored as a virtual core library in the PGSA drilling database. The logging process as conducted by the geologist involved the definition, marking and numbering of sample intervals on the core and core boxes; sample intervals were based on the above geological criteria in preference to metre by metre sampling. As a broad guide, minimum and maximum sample intervals of 0.5 and 1.5 metres were utilized. Exceptions to

this rule were applied in zones of very low recovery where in rare cases several consecutive down hole metre intervals were composited in order to provide a critical mass of core material for analysis.

All the graphical and coded logs were recorded on paper log sheets at a scale between 1:100 and 1:200, depending upon the intervals of interest, in addition to the sample intervals and sample numbers defined by the PGSA geologist. This information was subsequently entered digitally by PGSA technicians into a database and validated by both the PGSA technician and the geologist. All geological logging information was recorded on sectional plans on a continual basis in order to allow ongoing interpretation of the lithology and mineralization and compilation of a daily summary for PGSA management.

# **11.4 Reverse Circulation Drilling Methods**

Reverse circulation (RC) drilling was conducted on a 12 hour per day basis during which the entire drilling and sampling process was supervised by a PGSA geologist on site. As stated previously, due to generally high water table levels and emphasis on achieving good sample quality all RC drilling subsequent to hole CO-010-DR was limited to the top of the water table, and thereafter diamond drilling was used.

During RC drilling, a 5 1/4-inch face return hammer was utilized and a PVC tube and sealed dust T box was installed at the collar with which to channel dust away from the drill area and prevent caving around the mouth of the hole. Individual one metre intervals were clearly marked on the drill mast which acted as a guide for the drilling contractors in sample collection. Subsequent to each six metre rod change, the hole was routinely conditioned and cleaned prior to the placement of the bulk sample bag beneath the cyclone for the sampling of the subsequent drill interval.

RC logging of sieved washed drill chips from each interval was accomplished on-site and contemporaneous with the drilling of each hole. Representative drill chips from individual on metre samples were saved in the respective marked chip trays.

# 11.5 Results of Drilling

A total of 30 geological sections were generated by PGSA geologists using Mapinfo/Discover GIS software from which interpreted lithologic boundaries and mineral zones were defined. Figure 11-2 is an interpreted Geological Section 10000N showing typical boundaries for lithology, styles of mineralization and oxidation.



Figure 11-2 Interpreted Geological Section 10000N

Table 11-2 is a summary of PGSA drill intersections based on minimum cutoff of 0.5 ppm Au or 35 ppm Ag and internal dilution of less than 5 metres.

Table 11-2 Cap Oeste Project - Significant Drill Hole Intersections								
Drill Hole No.	From (m)	Interval (m)	Au g/t	Ag g/t				
CO-001-R	44.00	13.00	11.55	47.49				
including	50.00	5.00	28.70	84.90				
and	65.00	5.00	1.40	28.20				
CO-002-R	48.00	6.00	2.36	68.20				
CO-007-R	49.00	5.00	5.80	68.40				
CO-008-R	40.00	10.00	3.61	32.70				
CO-011-DR	103.00	9.50	2.92	65.42				
including	106.95	4.70	5.23	132.94				
CO-015-D	75.85	14.35	2.38	18.71				
including	75.85	5.25	5.55	28.63				
CO-016-D	91.95	13.45	11.93	388.76				

Table 11-2     Cap Oeste Project - Significant Drill Hole Intersections								
Drill Hole No.	From (m)	Interval (m)	Au g/t	Ag g/t				
including	91.95	5.05	30.47	1,011.56				
including	93.15	1.20	94.28	3,410.00				
CO-028-R	11.00	20.00	1.40	18.46				
including	24.00	6.00	3.29	16.41				
CO-031-R	11.00	11.00	2.30	2.23				
including	17.00	5.00	4.54	1.66				
CO-034-D	87.00	5.00	3.28	172.38				
CO-036-D	47.10	12.30	14.03	55.91				
including	52.60	5.30	31.05	100.35				
CO-044-DR	55.00	5.00	5.44	33.49				
including	56.00	3.00	7.71	11.91				
CO-045-D	35.00	11.40	2.27	2.00				
CO-051-D	79.00	12.00	3.20	26.57				
including	81.00	5.10	4.79	23.99				
CO-054-DR	132.00	7.00	47.16	769.35				
including	133.10	2.80	115.94	1,874.93				
CO-055-DR	160.00	11.80	2.79	144.20				
including	168.30	2.70	9.28	453.27				
CO-058-D	57.42	7.28	2.21	326.00				
including	59.03	0.97	6.13	1,968.00				
CO-060-D	88.00	7.00	3.78	51.00				
CO-065-DR	140.90	30.10	1.59	18.00				
CO-067-DR	3.00	24.00	1.85	76.00				
including	23.00	3.00	5.89	401.00				
CO-078-D	181.65	37.35	1.04	11.00				
CO-080-DR	161.00	27.00	7.88	122.00				
including	170.00	15.20	12.94	189.00				
including	175.90	2.10	33.71	71.00				
including	181.80	0.90	10.69	1,717.00				
CO-081-DR	156.60	17.00	2.24	127.00				
including	168.20	5.40	5.42	238.00				
CO-082-DR	172.00	6.00	0.91	31.86				
CO-083-DR	145.50	5.40	1.39	23.03				
CO-084-DR	175.00	31.10	1.24	24.48				
including	178.70	2.75	4.14	99.55				
CO-085-DR	187.00	6.00	1.16	68.38				
CO-086-DR	193.90	7.10	4.89	208.00				
including	196.10	4.90	6.21	250.00				
CO-087-DR	196.15	9.85	0.87	9.09				
CO-089-DR	182.35	21.65	1.24	17.36				



Table 11-2     Cap Oeste Project - Significant Drill Hole Intersections							
Drill Hole No.	From (m)	Interval (m)	Au g/t	Ag g/t			
CO-090-DR	192.20	15.30	3.35	19.53			
including	197.00	5.00	8.14	17.20			

As described previously, drill intersections are interpreted to define two higher grade shoots which plunge variably towards the northwest. The limits of oxidation are highly variable whereby the base is broadly coincident with Zone 1 crackle breccia hosted within the hanging wall vitric tuff units and the Bonanza Fault down to vertical depths of between 70 and 120 metres. The depth of oxidation within footwall crystal tuff is generally shallower, of the order of 10-25 metres.

### 12.0 SAMPLING METHODS AND APPROACH

### 12.1 Trench Samples

Trenches were laid out with Brunton compass and hand-held GPS. Topsoil removed by the backhoe excavator was stockpiled separately for later backfilling, and trenches were subsequently excavated down to bedrock to a maximum depth of three metres. The trenches were then cleaned and two parallel, five-centimetre by five-centimetre slots were mechanically dry sawn, cleaned, and sampled. Trench sampling and logging were carried out under the supervision of PGSA geologists; sample intervals were generally marked using a measuring tape following geological criteria (e.g. zones of similar mineralogical/geological features). Sampling of the trenches comprised chipping between the two sawn slots with hammer and chisel to the limits of marked sample intervals and placing the broken material in plastic sample bags. Each sample bag is tagged and staple sealed and subsequently transported back to the base camp where each sample weighed and recorded for final laboratory dispatch. Final surveying of the trenches position was completed by a qualified surveyor using a differential GPS.

#### 12.2 Reverse Circulation Sampling Methods

PGSA field technicians processed each one metre sample as follows:

- Weighing on-site of the sample and recording sample weight and type (e.g. dry, moist, wet).
- Riffle splitting to achieve a representative 4 kilogram sub sample which was bagged immediately in a plastic polyurethane bag (dry samples), or in polypropylene cloth bags (wet samples). Samples were weighed at various times during drilling for quality control.
- The rifle splitter was cleaned between each sample interval with compressed air sourced from the drilling rig. The cyclone was thoroughly cleaned between drill holes and every effort made to ensure quality control on-site.

In the case of wet RC drilling conditions, a rotary splitter was utilized in lieu of the conventional cyclone which allowed for a 1/8 and 7/8 split of the bulk one metre interval. Individual interval samples were taken from the 1/8 split portion of the splitter, placed in consecutively numbered lines peripheral to the drill platform and subsequently weighed when the excess water had drained through the pores of the polypropylene cloth bags. The wet splitter was thoroughly cleaned between each hole to minimize contamination.

CAM agrees with the abandonment of wet RC drilling for the second campaign, in favor of more-reliable diamond core drilling.

## 12.3 Diamond Drilling Sampling Methods

During drilling, the diamond core samples were managed according to the following protocol:

- The core barrel was retrieved following each 'run' via wire line, after which the diamond core was immediately placed in a core cradle. During this process care was taken by the contractor and PGSA field technician to ensure that core was maintained intact and in the correct order within the cradle.
- Core was washed and subsequently orientated in order to reconstruct the core in its predrilled in situ position as much as possible. The vertices of any mineralized structures were preferentially aligned with the upper axis of the core
- In combination with the drilling meterage blocks, as defined and provided by the driller, the PGSA technician calculated and marked the individual metre limits on the core
- Recovery length and percentage of both the total drilled interval and each complete unit depth metre interval was calculated and recorded on the Drill Log sheet
- Rock quality designation (RQD) for each core run was measured by the PGSA field technician on the sum total interval of individual core pieces that measure over 10cm in the core run
- Core was carefully placed into the numbered wooden core boxes in which metre intervals were marked on core, and core boxes, with wooden meterage blocks inserted in the corresponding position.

# 12.4 Drill Sample Recovery

### 12.4.1 Diamond Core Recovery

Based on results from the 2662 diamond core intervals drilled throughout the program, overall diamond core recoveries averaged 96 percent. Analysis of the recoveries achieved in the different geological zones, as tabulated in Table 12-1, is based on the average core recovery per geological interval. From this analysis it is apparent that good recovery was achieved throughout Zone 1 and Zone 3 with average recoveries of 97 and 98 percent respectively. Slight loss of core (average recovery of 92 percent) occurred throughout Zones 2a and 2b, which is likely a consequence of clay rich fault gouge and fractured rock.

Generally good recoveries were achieved for hypogene sulphide and transitional zones, averaging 99 and 98 percent respectively. Greater core loss (average recovery 94 percent) occurred throughout the oxide zone, likely a product of the friable and clay-rich nature of mineralization. Pervasive argillic alteration, particularly well developed in the crystal tuff in the oxidized zone, occasionally led to poor recoveries which were typically exacerbated in the first 10 metres of the hole. Diamond drill recoveries are listed in Table 12-1.

Table 12-1   Diamond Drill Recoveries							
Geological Zone	No. Intervals	Rec DDH (%)					
Crackle Bx (Zone 1)	48	97%					
Hydrothermal Bx (Zone 2)	61	92%					
Disseminated (Zone 3)	71	98%					
Ox	69	94%					
Trans	16	99%					
Hypogene	67	98%					

## 12.4.2 Reverse Circulation Sample Recovery

Average recoveries for the RC drilling sample intervals were calculated for differing drilling conditions (wet/dry) and geological parameters including degree of oxidation and mineralized zones, as shown in Table 12-2. Recovery was calculated by dividing the dry weight per metre by the theoretical weight of the volume of rock per metre in which rock densities used were derived from the respective rock specific gravity values defined below in Section 12.7. In the case of wet RC samples, the wet bulk sample residues (i.e. after splitting) were left to dry prior to weighing to which the recorded weight of the split laboratory sample was subsequently added to calculate recoveries.

Theoretical sample weight/metre values utilized in recovery calculations for hypogene and oxide zones were calculated as follows:

- Oxide: 3.1417 (pi) x 0.066 sq (radius metres squared) x 2.07 (density) = 28.3 kg
- Sulphide: 3.1417 (pi) x 0.066 sq (radius metres squared) x 2.11 (density) = 28.9 kg

Dry RC samples, largely limited to the oxide zone, yielded excellent average recoveries ranging from 98 to 100 percent. Relatively small losses typically occurred preferentially throughout the first 15 to 20 metres where supergene clay alteration is strongest and the presence of open space fractures is greatest. Wet RC drill samples, which were limited to the deeper holes from the initial campaign (CO-001-R to CO-010-R), generally reported poor recoveries, averaging 49 percent. These results led directly to the policy of limiting future RC drilling to the interval above the water table; in addition, the diamond twins were completed adjacent to the initial RC holes where mineralization was intersected below the water table.

With respect to the sample return as a function of mineralization types, overall good recovery was achieved within Zone 1, most likely as a result of the rocks generally competent nature and the fact that it was primarily tested in the oxide zone above the water table.

Recoveries throughout Zones 2 and 3 were generally lower at 91 and 88 percent respectively, which is likely due to clay rich fault gouge and fractured rock conditions which obtain within both oxidized and un-oxidized variants.

Table 12-2     Reverse Circulation Drilling Recoveries throughout Various Geological Intervals								
Geological Interval	Mean S.G.	No. of Intervals	Rec RC (%)	Std Dev %				
Dry drilling	2.07	707	96% ??	17%				
Wet drilling (largely replaced by core)	2.10	131	49%	67%				
Zone 1 Crackle Bx	2.11	16	100%	16%				
Zone 2 Hydrothermal Bx	2.17	20	91%	28%				
Zone 3 Disseminated	2.09	15	88%	33%				
Oxide	2.07	52	99%	13%				
Sulphide	2.11	22	95%	29%				

The reverse-circulation drilling recoveries calculated for various geological intervals are shown in Table 12-2.

## **12.5** True Width and Orientation of the Drill Target and Drill Intercepts

The overall form of the mineralized envelope at Cap Oeste in section is planar and broadly sigmoidal with an average dip of 55° southwest, with local variations between 40 and 80 degrees. The holes drilled to test the zone (drilled 50 to 70 degrees towards the northeast), generally intersected mineralization at relatively high acute angles of 60 to 85 degrees with respect to the core axis. Although no orientated core was obtained, these overall angles correlate with those recorded in the structural logging including fault planes, hydrothermal breccia fabrics and sheeted veinlets, relative to the core axis.

Given the consistent orientation of drill holes, the true widths of the intersected mineralization generally equate to approximately 80 to 95 percent of intersected widths. In a rare number of circumstances mineralization was intersected at a lower acute angle of 55 degrees which equates to approximately 80 to 95 percent of the intersected widths.

#### 12.6 Specific Gravity (Bulk Density) Determinations

Measurements of bulk density or specific gravity (SG) were performed on site by PGSA on 170 individual, 1/2 HQ core pieces from individual one metre drill core intervals, for which the average dry sample weight was 0.66 kilograms. Based on the 9,634 metres of available core this sample set thus represents approximately 1.8 percent of the total sample population. The samples were systematically selected to represent all major lithological, alteration, and mineralization types, as well as differing degrees of oxidization and silicification.

### 12.6.1 Specific Gravity Methodology

Intervals for specific gravity determinations were selected by the project geologist and the process was subsequently carried out by PGSA field technicians under the geologists' supervision. Samples were chosen from 1/2 HQ core samples measuring at least 20 cm long which were sufficiently robust so as not to break up or crumble during the measurement process, and could be wrapped with plastic film without creating excessive air filled cavities. For each selected core piece, the dry weight was measured and subsequently the core was securely wrapped in plastic cellophane-wrap and its weight when fully submerged in clean fresh water was recorded. The geologist also recorded the relevant lithology, mineralization type and oxidized state information for each core piece. The specific gravity of each core sample was defined using the following equation:

SG = weight dry / (weight dry – weight submerged)

CAM reviewed the density database to ensure that the calculations were properly performed by recalculating specific gravity by weight in water and weight in air. Results of these checks by CAM indicate that the original calculations were correctly performed.

### 12.6.2 Specific Gravity Results

The range of SG values calculated from samples representing the spectrum of lithologies, mineralization types and oxidization states are shown in Table 12-3.

Table 12-3 Summary of Specific Gravity Results							
Global Summary Oxide State Lithology S.G. S.G S.G S.G Std No. Samples							No. Samples
All samples	NA	NA	2.08	2.51	1.67	0.16	170
Oxide	Oxide	NA	2.07	2.51	1.67	0.18	104
Sulphide	Sulphide	NA	2.11	2.45	1.82	0.13	66


Table 12-3 Summary of Specific Gravity Results									
Global Summary	Oxide State	Lithology	S.G. Mean	S.G Maximum	S.G Minimum	Std Dev.	No. Samples		
Mineralization Type									
Hanging wall, Unmineralized	Oxide	Vitric & Crystal	1.93	1.93	1.93	NA	1		
Stockwork-Crackle Breccia (Zone 1)	Oxide	Vitric	1.98	2.32	1.71	0.17	43		
	Sulphide	NA	NA	NA	NA	NA	NA		
Strongly Silicified	Oxide	Vitric	2.16	2.32	1.98	0.11	10		
Moderately Silicified	Oxide	Vitric	1.99	2.18	1.72	0.12	16		
Weakly Silicified	Oxide	Vitric	1.86	2.15	1.71	0.12	17		
Fault-Hydrothermal Breccia (Zones 2a, 2b)		Crystal /Vitric	2.17	2.51	1.87	0.12	57		
	Oxide	Crystal	2.18	2.51	1.99	0.11	37		
	Sulphide	Crystal	2.15	2.45	1.87	0.12	20		
Footwall stringer (Zone 3)		Crystal & Lapilli	2.09	2.33	1.67	0.13	49		
	Oxide	Crystal	2.02	2.33	1.67	0.18	15		
	Unoxidized	Crystal	2.11	2.33	1.86	0.11	34		
Footwall unmineralized	Unoxidized	Crystal & Lapilli	2.02	2.39	1.82	0.16	11		

Specific gravities for the Project can be summarized as follows:

- The global average of all the SG values based on all rock, oxidation and mineralization types for the 170 samples is 2.08.
- There is only a small difference (less than 2.5 percent) between the S.G for the oxide (average 2.07) versus Non-Oxide (2.11). Application of the T-test shows that this difference is not statistically significant.

With respect to the zones of mineralization, the highest average S.G values relate to hydrothermal breccia (Zone 2) mineralization, with an overall average of 2.17. This is interpreted as due to the enhanced levels (5 to 10 percent) of pyrite (in the sulphide zone) and secondary iron oxides (in the oxidized zone). The peak SG value (2.51) relates to strongly silicified and hematite-limonite rich breccia. The oxidized portion of Zone 2 mineralization yields slightly higher S.G. values (2.18) than the sulphide material (2.15).

The average of the 170 specific gravity measurements is 2.08. Since the difference in densities between the Oxide and Non-Oxide is not statistically significant, the average density of 2.08 was used for the entire deposit. Additionally, it was not entirely clear if the difference in densities was a function of depth, or of oxidation class. There is a statistically significant correlation of density with the intensity of silicification, and also with depth from surface. Although specific gravity appears to correlate with a

number of variables, further work will be required before these data can be reasonably integrated into the geological model.

Zone 1 (crackle breccia-stockwork mineralization) has only been intersected within oxide for which an average S.G. of 1.98 is calculated. Data indicates higher S.G. values in zones of stronger silicification (2.16) versus that in moderate silicification (1.99) and weak silicification (1.86)

Zone 3 (sulphide stringer/disseminated mineralization) averages an S.G of 2.09 throughout and is weakly enhanced (+5%) in the sulphide zone (2.11) as compared to the oxide zone (2.02), probably as a result of the oxidation and removal of sulphides from the oxide zone.

## 12.6.3 Discussion of Specific Gravity Results

In CAM's experience, the reported specific gravity (bulk-density) values are lower than expected, with very little difference between Oxide and Non-oxide mineralization. CAM notes that there is a depth effect, with higher average densities at depth than near surface, as well as a correlation with the degree of silicification.

CAM believes that further review is required before different densities are used for Oxide and Non-Oxide, and that use of a single specific gravity is reasonable and appropriate for a project at this level of development.

Use of the current summary densities likely introduces a small conservative factor into the Resource estimates, which CAM believes does not have a material effect on the overall Resource estimation. However, refinement of the bulk-density measurements is expected as the project evolves, including the use of an aluminum cylinder as a density standard to ensure that scales are well-calibrated.

## 12.7 Summary of Sampling

CAM are of the opinion that PGSA's drilling and sampling approach and procedures yielded samples of sufficient reliability to be appropriate for use in Resource estimation.

Additional specific gravity measurements, using an aluminum cylinder as a density standard, are recommended as the Project proceeds. Oven-drying tests are also recommended, to ensure that air-drying does not leave significant free water in core samples.

## 13.0 SAMPLE PREPARATION, ANALYSIS AND SECURITY

#### **13.1** General Description

Sampling was performed on site, in the case of trenching and RC drilling, and at the Estancia La Bajada base camp, in the case of diamond core. Field technicians were given appropriate training and were supervised by a PGSA geologist. Care was exercised to eliminate sources of potential contamination:

- Wearing of jewelry was prohibited;
- Sample bags and core boxes were closed immediately upon the insertion/placement of the respective sample and kept above the ground surface on pallets;
- Care was taken during the transporting and processing of core samples, and the subsequent storing of samples and core boxes;
- Sample bags were kept in a dust-free environment and individual sample bags were stapled closed and maintained in burlap bags subsequent to sampling, which were immediately zip tied closed; and
- No sample reduction of any of type was conducted at the base camp other than the ½ splitting of the diamond core. The only sample reduction that took place in the field was the splitting of the RC samples (as described previously in Section 12).

CAM concludes the sampling methods employed in Cap Oeste drilling and trenching were carried out by PGSA to acceptable industry and NI 43-101 standards.

#### **13.2** Trench Samples

As previously described in Section 10, trench samples were prepared and bagged in the field at the Cap Oeste Project area. Upon arrival at the base camp they were collectively bagged in burlap bags and subsequently labeled, zip-tied, weighed and recorded in the sample dispatch log, and stored ready for shipment.

#### **13.3** Reverse Circulation Drill Samples

As previously described in section 10.2 and 12.2, the RC drill samples were collected and prepared at the drilling site. Other than packaging in sealed burlap bags, labeling, documenting and weighing prior to shipment, no other preparation was performed on the samples.

## 13.4 Diamond Drill Core Samples

As described in Section 12.3 and Section 12.4, drill core was placed in the core cradle and subsequently washed, orientated, marked and the recovery and RQD were measured and recorded.

In order to standardize sampling methodology and allow for reconstruction of the drillhole in 1/2 core, the convention of utilizing the left hand side of each cut core portion for subsequent geochemical analysis and the right hand piece to be retained as the reference core was applied. At the end of each sample interval, a perpendicular saw cut was made to clearly mark the end and beginning of the consecutive sample. During the cutting, the core sample intervals and corresponding numbers were repeatedly crosschecked.

Half core samples for individual intervals were placed in clean, tagged plastic sample bags which were immediately closed after sampling, and the corresponding interval in the core was marked with a stapled aluminum tag. After the individual samples were bagged they were placed in numbered burlap bags and subsequently weighed and recorded ready for transport. The marking, sampling, and bagging process was conducted by the PGSA field technicians under supervision of the Project geologist.

## 13.5 Storage and Transport

Samples pending shipment were stored onsite at Estancia La Bajada in a secure storage area and shipped weekly via a contracted private courier in a closed and locked truck compartment. The samples were transported directly to the designated laboratory in Mendoza, Argentina and were always accompanied by a required provincial transport permit in addition to a shipping dispatch and a letter addressing the particular analyses required, sample numbers, quantity and weights for the laboratory. The PGSA data manager was notified immediately upon reception of the samples in the laboratory by the laboratory staff.

#### 13.6 Laboratories, Methods and Procedures

Alex Stewart Assayers Argentina S.A., which is an international recognized and accredited laboratory compliant to ISO Certified - 9001:2000 standards, was contracted for the geochemical analysis of the samples generated during the two drilling campaigns at Cap Oeste, and for exploration holes drilled outside the Cap Oeste Project area. ACME Labs of Vancouver BC Canada performed check assays on selected samples.

## 13.7 Quality Control

Quality control procedures conducted include the routine incorporation of certified geochemical standards, blanks and sample duplicates (RC percussion) which are submitted with geochemical samples to the laboratories and check assaying.

## 13.7.1 Geochemical Standards & Field Duplicates

Quality control measures implemented during the trenching and drilling programs included the submission of a series of certified standard and blanks, which were incorporated and dispatched with the drill samples, according to the following protocol:

- **Diamond Drilling:** alternate insertion of a laboratory certified laboratory standard or blank for every 10th sample.
- **RC Drilling:** For every 10<sup>th</sup> sample, a duplicate sample of the preceding interval was taken as a field duplicate, or a certified laboratory check standard or blank sample was submitted respectively.
- **Trenching:** For every 10<sup>th</sup> sample, a duplicate sample of the preceding interval was taken as a field duplicate, or a certified laboratory check standard or blank sample was submitted respectively.

A total of 633 individual standards, with a range of certified Au grades of up to 47.24 ppm Au, and 152 blanks were submitted.

The analytical results for each individual standard were plotted against three upper and lower limits defined by plus or minus 2 and plus or minus 3 standard deviations from the respective certified value, in addition to the plus or minus 10 percent relative variance from the value.

A total of 8 standards with a certified grade of 1419.6 ppm Ag, were submitted with the drill interval samples during the campaign. Assay values received from the laboratory show good correlation with the certified values within plus or minus 2 standard deviations. Overall the values reported for the standards and blanks submitted with the drill samples indicate good correlation with the certified values.

A total of 14 submitted standards returned results outside the plus or minus 3 standard deviation limits for the laboratory certified expected value, for which in each respective case the five adjacent drilling samples within the batch, relative to the standard, were reanalyzed.

As part of these rechecks, a total of 106 drill sample interval pulps were re-analyzed, together with 8 standards.

The results for the original and recheck samples show good correlation and hence suggest that the original standards which returned a large variation from the expected values were either erroneously submitted and/or recorded, or that preparation and handling of the standards introduced a degree of error greater than plus or minus 2 standard deviations.

During the review of standard reference materials (SRM's or standards), CAM noted that some of the low-value standards had a relatively large standard deviation when compared to the mean. While these standards are acceptable for determining if there are any bad batches, the best practices are to have a low standard deviation relative to the mean. CAM commented on this and Patagonia agreed to stop using standards with the high standard deviation relative to the means. Results for the other standards included in these batches showed good correlation being reporting within 2 standard deviations of the expected value.

## Field Duplicates – Trenching

A total of two field duplicates were taken during sawn trench sampling throughout the Cap Oeste Project area, which reported good repeatability and correlation within plus or minus 10 to 30 percent relative error limits namely 3.49 ppm Au versus 3.76 (7.5 percent) and 0.21 ppm Au and 0.27 ppm Au (plus or minus 25 percent).

A total of two field duplicates were taken peripheral to the Cap Oeste Project area, during exploration throughout the Cap Oeste Structural Corridor, which due to the low assay results received do not warrant statistical analysis.

#### Check Assays

Check assaying has been completed to date for a total of 433 drill interval samples from holes CO-001-R – CO-052-D, which overall comprises approximately 5.2 percent of that total drill sample interval population. These resubmitted samples are comprised of pulps (208 samples, 85 percent less than 80 microns or 200 mesh) and coarse rejects (225 samples, greater than 85 percent less than 1.7 mm or 10 mesh, predominantly from drill intervals over 0.5 g/t Au, which were collectively submitted with a total of 48 laboratory certified standards.

These samples were resubmitted to both:

- a) The original laboratory (i.e. Alex Stewart Assayers S.A.) comprising of 45 pulps and 193 coarse rejects plus 26 standards.
- b) A certified check laboratory (i.e. ACME Laboratories) comprising 163 pulps and 32 coarse rejects plus 22 standards.

Additionally, check assaying for Ag by the two laboratories was completed; however, certified standards containing significant concentrations of Ag were not included with these samples.

## 13.8 Check Assay Results

Statistical results for the check assay data were generated in Excel spreadsheets. Correlation coefficients indicate an excellent correlation for all of the gold values and the rechecks of pulps with the independent laboratory (i.e. ACME Laboratories), as well as an internal check of Alex Stewart Assayers S.A.

The interpretations of the scatter plots took into consideration the correlation of original and check assay values that were duplicated within plus or minus 10 and 20 percent limits, the linear regression trends generated by the respective values and the relative precision of the laboratory values reported for the standards that were submitted within the respective check assay batches.

CAM believes that the check assay results indicate that the database is acceptable.

## **13.9** Screen Fire Assays

A total of 20 coarse residues (95 percent less than 150 mesh) from original, individual high, mid-range and low grade sample intervals were analyzed by ACME Laboratories via the screen fire assay technique in order to determine the size/distribution character of gold mineralization. The technique is designed to concentrate the potentially larger gold particles in a coarse fraction sample, given the tendency for gold grains to flatten during grinding, and enable semi-quantitative analysis on the potential presence and effects of coarse gold on sample analysis reproducibility of relatively small (50-gram) sample sizes used routinely for analysis.

The results generally show good correlation particularly for values above approximately 20 ppm Au, however for values between 0.2 and 15 ppm Au several results show significant overall negative bias of the screen fire assay values with respect to the original assay values.

A significant portion of the ounces in the deposit are associated with very high-grade assays and these are always difficult to assay. CAM believes check assays including screen fire assays should continue on the

high grades but believes existing database is suitable for the calculation of Indicated and Inferred resources.

## 13.10 Adequacies of Sample Preparation, Security, and Analytical Procedures

CAM believes that preparation and analysis of samples are acceptable and within industry standards. Security measures were always in place and more than adequate to ensure integrity of the samples.

## 14.0 DATA VERIFICATION

Data was validated utilizing visual review of digital and paper files, as well as computer- aided checking systems. This validation also included the physical re-checking (in some case re-surveying) of field locations including survey stations, trenches and drill collars. Validation also included review of historic core samples and volumes of digital and paper data, including maps and assays. Data verification included database searches, certificate validation, and QA/QC tests on assay results. Other forms of validation included the twining of drill holes and trenches, , and review of the geophysical data. Robert Sanderfur, P.E., a Qualified Person, performed the data verification.

Minor limitations on validation include the few supporting documents from the historic data set from Barrick; the Barrick data was only from trenches and was not used in Resource estimation. In most cases the data was re-generated, surveyed or duplicated for confirmation.

#### 14.1 Surface Topography

Surface topography was provided as elevations on a 5 by 5-metre grid in MapInfo format. These data were exported into the MicroModel software system and checked against surveyed drillhole collar elevations. The fit was found to be very good, and the surface topography was thus accepted.

#### 14.2 Standard Checks

CAM uses automated data processing procedures as much as possible in constructing and auditing geologic databases to assure consistency and minimize errors. These procedures depend heavily on consistent alphanumeric attribute codes and consistent and non-duplicated field labels and drillhole IDs. While many of the issues flagged by these automated procedures are obvious to a human, CAM requires a clean and consistent database before proceeding with geological modeling. Common inconsistencies in submitted databases include:

- 1. Misspellings;
- 2. Confusion of 0 (zero) and O or o;
- 3. Inconsistent use of upper and lower case;
- 4. Inconsistent usage or space \_ and -;
- 5. Trailing, leading or internal blanks. (blanks are routinely changed "\_" to positively identify this problem);
- 6. Inconsistent use of leading zeros in hole IDs;
- 7. Inconsistent analytical units (e.g. PPM, PPB, opt, %); and
- 8. Inconsistent coordinate systems and units and state plane and mine grid: feet and metres.

These issues are not uncommon for a project at this level of development and all of the corrections to the Cap Oeste database were obvious. CAM does not regard these issues as critical, but they need to be addressed as the project proceeds.

For manually generated databases, CAM generally regards an error rate of less than one in 500 good, an error rate of less than one in 100 acceptable and an error rate greater than two in 100 as unacceptable. The acceptability or unacceptability of the database also depends heavily on the impact of the errors. Hence the values for acceptability in unacceptability may easily change by an order of magnitude depending on the nature of the errors. For example a dropped decimal point in a value of 37 for an actual value is 0.37 is much more serious than the entry of a 0.36 for a 0.37. For computer-generated databases any errors may be indicative of problems in data processing procedures and these require resolution of the source of the problem.

CAM also reviews the procedures used to prepare the database and is particularly critical of the common practice of cutting and pasting to obtain the database. Different companies and even geologists within the same company have different methods for drilling, sampling, sample prep and analysis and record-keeping. In some cases it may be necessary to de-weight the results of certain drilling campaigns or types of drilling.

Over the years CAM personnel have developed a procedure for mathematical and statistically validating exploration databases. This check procedure includes:

- Check for duplicate collars.
- Check for twin holes.
- Check of surface collared holes against surface topography
- Check for statistically anomalous downhole surveys.
- Check for overlapping assays
- Check for 0 length assays
- Review of assay statistics by grade class.
- Review of assay statistics by length class.
- Checks for holes bottomed in ore
- Check for assay values successively the same.
- Check for assay spikes.
- Check for downhole contamination by decay analysis.
- Check of total grade-times-thickness globally and by mineral zone

In evaluating an existing database CAM uses values flagged by these automated procedures as a starting point for database review and has found that if the error rates in the statistically anomalous values is acceptable then the entire database is generally acceptable.

A few anomalies were noted, and forwarded to PGSA, but the number and type of anomalies were within industry norms for databases of this size, and even if the anomalies turn out to be errors, they would have no effect on the overall resource estimate. On the basis of these statistical checks, and the checks of data entry discussed previously, CAM believes that the exploration database has been prepared according to industry norms and is suitable for the development of geological and grade models.

The standard check includes an approximate accuracy calculation on the XYZ location of the drillhole based on the two limiting assumptions that the hole turns to the next downhole survey direction just after a survey and that it continues at the same direction to the next downhole survey point. Results of his calculation are given in Table 14-1.

Table 14-1   De-survey Differences of More than 2.5 metres								
Hole ID	Depth	DTOT	DX	DY	DZ			
CO-036-D	108.1	2.5	-1.4	2.0	-0.1			
CO-088-DR	50.0	2.5	-1.9	-0.9	-1.3			
CO-090-DR	40.0	2.5	-2.2	0.9	-0.9			
CO-034-D	150.0	2.7	2.4	0.0	1.2			
CO-059-D	58.0	2.7	-1.1	2.5	0.5			
CO-070-D	153.0	2.7	2.3	0.2	1.3			
CO-093-D	213.0	2.7	1.8	1.4	1.5			
CO-024-D	78.1	2.8	2.3	0.5	1.4			
CO-072-D	144.0	2.8	2.5	-0.1	1.3			
CO-083-DR	125.0	2.8	1.3	2.3	0.8			
CO-012-DR	55.0	2.9	1.5	1.9	1.6			
CO-054-DR	70.0	3.8	-3.1	1.8	-1.0			
CO-043-DR	110.0	4.0	1.7	3.0	2.1			
CO-057-DR	120.0	4.0	-2.1	-2.5	-2.4			
CO-050-D	111.0	4.1	-3.5	1.3	-1.5			
CO-089-DR	50.0	4.1	-3.6	0.8	-1.8			
CO-065-DR	186.0	4.2	0.5	3.8	1.8			
CO-087-DR	198.0	4.3	-0.8	4.1	1.0			
CO-082-DR	232.0	5.6	1.9	4.8	2.3			
CO-053-DR	86.0	5.8	3.1	3.8	3.1			
CO-081-DR	205.0	5.9	2.3	4.9	2.4			
CO-055-DR	186.0	6.0	3.1	4.4	2.6			
CO-085-DR	220.0	6.1	0.0	5.6	2.2			
CO-086-DR	226.0	6.1	2.0	4.9	3.0			
CO-056-DR	180.0	6.2	1.8	5.2	2.9			

Table 14-1   De-survey Differences of More than 2.5 metres							
Hole ID Depth DTOT DX DY DZ							
CO-084-DR	214.0	6.4	1.2	5.6	2.8		
CO-080-DR	231.0	7.0	3.3	5.8	2.2		
CO-063-DR	120.0	7.9	3.0	6.1	4.0		
CO-062-DR	153.0	9.5	8.2	1.5	4.6		
CO-078-DR	232.0	9.8	-1.5	9.2	2.8		

This table indicates that for some holes the downhole XYZ location could be off by up to 9.8 metres. While a 9.8-metre difference is not significant in terms of the resource calculation it does have implications on the mineable continuity of the deposit. For this reason CAM recommends that all future holes be downhole gyroscopically surveyed and that some downhole surveys be duplicated to assure that the uncertainty in location is less than .5m.

#### 14.3 Drillhole Database

The Cap Oeste exploration database was provided to CAM as a Microsoft Access (MDB) database. CAM exported the data to ASCII and reformatted the data for import into the MicroModel geological modeling and mine planning system. Basic statistics on the database as provided the CAM are given in Table 14-2

Table 14-2 Drilling Statistics from Assay Database								
Item Number Length (m)								
Surveyed hole collars in Assay Database	95	11263.2						
Below-collar survey shots	183	9546.5						
Downhole survey shots down-hole (incl collars)	278	9546.5						
Holes with belowcollar downhole surveys	70	9565.6						
Surveys up-hole	0	0.0						
Assay intervals (Au ppm)	8600	9632.5						
Assayed intervals (Au ppm)	8600	9632.5						

## **15.0 ADJACENT PROPERTIES**

Exploration by PGSA continues peripheral to and along strike of the Cap Oeste Project, focused on the approximately six kilometre long Cap Oeste Structural Corridor. While CAM acknowledges that this ongoing work may lead to eventual expansion of the Cap Oeste Project, none of the exploration results from adjacent properties were used by CAM in preparing this report, and the mineral Resources estimated herein rely solely on the Cap Oeste database.

## 16.0 MINERAL PROCESSING AND METALLURGICAL TESTING

Bottle Roll tests have been performed by OMAC Laboratories, an affiliate of Alex Stewart Assayers with ISO 17025 accreditation, which is based in Loughrea, County Galway, Ireland.

To date a total of 15 bottle roll tests for Au have been completed for samples from the Cap Oeste Project, composited from 97 individual course rejects selected from 10 RC and diamond holes. The majority of these samples were taken throughout the oxidized portions of fault-hydrothermal breccia hosted Au mineralization at Cap Oeste.

Preparation of the individual drill sample intervals was carried out by Alex Stewart Assayers S.A. in Mendoza, Argentina whereby the selected coarse reject samples throughout mineralized intervals were ground to 95 percent less than 100 microns (# ASTM 140), homogenized and split into 800 gram pulps. The pulps were subsequently sent to OMAC where on receipt a total of 15 composites, each weighing 500 grams, were prepared from different intervals throughout the 10 drill holes.

Each of the composites was tested as follows:

- 45 element ICP scan after multi acid digestion.
- 50-gram Fire assay.
- Active Cyanide Leach on each 500-gram sample with 1 percent NaCN solution with sampling of the pregnant CN liquor after 6, 12 and 24 hours.
- Analysis of gold in solid residue after cyanidation by 50-gram fire assay method.

Results from the bottle roll leach tests showed good average recoveries after 6, 12 and 24 hrs of 96.3, 97 and 97.3 percent respectively as shown in Table 16-1. The three highest grade composite samples, between 17.5 to 26.75 ppm Au (average 22.67 ppm Au), returned an average recovery of 98.7, 98.5 and 99 percent after 6, 12 and 24 hrs respectively.

Table 16-1 Bottle Roll Results													
	Sample Co	mposite Deta	ails				Recovery					50Au4	
Sample		Oxide		Mineralization	Au4 50gm Fire Assay	6 h	ours	12	hours	24	hours	Gold in CN	Head Au
Comp	Hole No.	State	Depth m	туре	Au (ppm)	Au (mag)	% Recoverv	uA (maa)	% Recoverv	Au (maa)	% Recoverv	Residue Au(ppm)	(ppm)
1	CO-001-R	Ox	44-50, 55-57	Hyd Bx	1.22	1.14	96.0	1.15	96.5	1.16	97.5	0.03	1.19
2	CO-001-R	Ox	50-55	Hyd Bx	23.75	23.04	99.2	22.92	98.7	22.95	98.8	0.27	23.22
3	CO-006-R	Ox	21-31	Cr Bx	0.86	0.88	95.2	0.88	95.2	0.87	94.6	0.05	0.92
4	CO-007-R	Ox-POx	49-54	Hyd Bx	3.70	3.12	93.3	3.13	93.6	3.11	93.1	0.23	3.34
5	CO-008-R	OX	40-41, 44-50	Hyd Bx	1.37	1.42	98.0	1.40	97.2	1.40	97.2	0.04	1.44
6	CO-008-R	Ox-POx	41-44	Hyd Bx	8.05	7.53	96.8	7.47	96.0	7.47	96.0	0.31	7.78
7	CO-011-DR	Ox	103.9-106.95, 111.65-113.45	Hyd Bx	0.55	0.56	96.2	0.57	98.3	0.57	98.3	0.01	0.58
8	CO-011-DR	Ox	106.95-111.65	Hyd Bx	4.60	4.37	97.5	4.40	98.3	4.46	99.6	0.02	4.48
9	CO-015-D	Ox	77.95-79	Hyd Bx-Diss	17.50	17.39	99.2	17.32	98.8	17.36	99.0	0.18	17.54
10	CO-028-R	Ox	19-31	Hyd Bx	2.67	2.04	93.7	2.12	97.5	2.12	97.2	0.06	2.18
11	CO-030-R	Ox	19-29	Hyd Bx	1.23	1.22	91.2	1.26	94.3	1.27	94.8	0.07	1.34
12	CO-031-R	Ox	11-18, 20-22	Cr Bx-Hyd Bx	0.61	0.60	97.4	0.61	98.4	0.61	98.4	0.01	0.62
13	CO-031-R	Ox	18-20	Hyd Bx	8.80	8.79	99.7	8.76	99.3	8.76	99.3	0.06	8.82
14	CO-036-D	Ox	47.8-51.6, 57.9- 60.1	Hyd Bx	0.62	0.59	93.4	0.60	94.4	0.61	95.3	0.03	0.64
15	CO-036-D	Ox	51.6-57.9	Hyd Bx	26.75	25.95	97.6	26.10	98.1	26.39	99.2	0.21	26.60
					Total Pop	oulation							
				Average	6.8		96.3		97.0		97.2		
				Min	0.6		91.2		93.6		93.1		
				Max	26.8		99.7		99.3		99.6		
				Std Dev	8.4828		2.40086		1.78873		1.95155		
					High	Grade Sam	ples						
				Average	22.67		98.7		98.5		99.0		

One of the composites (No. 4) that returned relatively lower recoveries (93.3 percent recovery after 6 hours) consists of oxidized and partially oxidized mineralized material. The other composite sample (No. 6) with a similar mix of materials returned a higher average recovery of 96.3 percent. During these tests no lime or cyanide consumption concentrations were analyzed.

On receipt of the Au Bottle Roll results OMAC Laboratories was subsequently instructed to conduct Bottle Roll analysis for Ag on the same composite samples for which results are still pending.

A further 47 sample intervals have been submitted for Bottle Roll testing for both Au and Ag for a range of grind sizes through oxidized, partial oxidized and un-oxidized portions of the Cap Oeste Project mineralization, for which results are pending.

While preliminary, these results indicate that oxidized mineralization is amenable to cyanide extraction of gold. CAM agrees that Ag recoveries need to be estimated for the same Oxide composites, as well as lime and cyanide consumptions. Given that a very significant proportion of the mineral resources at Cap Oeste are contained within primary sulphide mineralization, recoveries of both Au and Ag in partially oxidized and unoxidized material need to be evaluated on a priority basis.



#### 17.0 MINERAL RESOURCE ESTIMATE

The Cap Oeste resource estimate was based on data provided to CAM by Patagonia Gold. Data included the exploration database, surface topography and interpreted cross-sections. CAM did exploratory data analysis (EDA), statistics and geostatistics on assays and composites and developed a resource model. Robert Sanderfur, P.E., a Qualified Person, performed the Resource estimation.

#### 17.1 Block Model

The project is still in the exploration stage, and mining methods and bench heights have not been reviewed. It may be possible to extract the resource using conventional open pit mining operations. However, it seems that a portion of the deposit may be mined by selective underground techniques. CAM therefore selected a block size of 1 m x 1 m vertically and across strike and 5 m along strike. This block size needs to be revised as further work is done on the project. Because of the choice of this relatively small block size, CAM has elected to state the Resource in terms of a selective mining operation, both underground and open pit. CAM felt that cutoff grades of either 0.3 or 0.5 gpt Au are acceptable for Oxides, and 1.0 gpt for Non-Oxides. The basic block parameters are shown in Table 17-1.

Table 17-1 Model Geometric Parameters							
Origin (metres) Number of Block Size (metres)							
Northing	4687322.59	Rows	320	Row	5.00		
Easting	2390661.48	Columns	700	Column	1.00		
Elevation	200.00	Benches	300	Bench	1.00		
Rotation Angle (320.00)							

#### 17.1.1 Sections

A total of 30 sections separated by 25 to 75 metres looking toward the northwest were provided as MapInfo MID and MIF files. Five layers were provided on each section as follows:

- Drillholes plus surface topography.
- Grid.
- Lithology.
- Mineralogy.
- Oxidation.

CAM experienced some difficulty in converting the provided sections in MapInfo format into a form usable for geological modeling. While the sections were acceptable for visual review and interpretation, labeling and coordinate inconsistencies required modification before they were useful in preparing a geological model. These conditions, plus the fact that on the intermediate sections the potential ore envelopes were not interpreted to their full probable extent, as well as the possible inconsistencies discussed under exploratory data analysis of the 1.0-metre composites, compelled CAM to develop a grade model using the geometry of the grade intervals.

The drillhole plus surface topography were used to check the consistency of the CAM de-survey algorithm against the MapInfo de-survey algorithm; the grid was not used. Oxidation lines from all the sections were tessellated (converted to a network of triangular surfaces) to define a surface representing the bottom of oxidation. Oxide was defined as blocks above the surface Non-Oxide blocks for defined as any blocks below the surface. Any blocks outside the plan extent of the surface were also defined as Non-Oxide.

Some minor data inconsistencies were observed and reported to Patagonia as follows:

- Section file name inconsistencies were noted and corrected;
- In the plan view of the sections the N was in some cases omitted from the section label and there were sometimes blanks between the N and the numeric section designation. CAM changed all section labels to N followed by the numeric section designation;
- Multiple oxidation levels variously labeled as "oxidation level", "oxidation\_level" or simply "oxidation" were provided for some sections. These inconsistencies were corrected.
- The density file had a number of inconsistent attribute codes.
- Preliminary inspection revealed that the coordinate systems used in the grid files were not consistent. An arbitrary easting site coordinate of 4800 was picked. Of the 30 sections provided by the client, 26 showed a corresponding plot coordinate of 250, 3 corresponded to an x plot coordinate of 800 and 1 corresponded to 750. Obviously, all the grids must be consistent with each other.
- The data files contain lithology and mineralogy characterizations for various units. There were a number of different spellings for the various units which are not a problem in themselves, but best practices require consistency throughout the database.

None of the above noted difficulties or inconsistencies were deemed sufficiently substantial to prevent CAM from developing a reliable block model for Resource evaluation.

#### 17.2 Assay Data Base Analyses

Review of sections while on-site indicated that almost all mineralization was controlled by a planar structure. The first part of the CAM exploratory data analysis of the database consisted of determining the nature of mineralization relative to this planar structure. A plan plot of assay grades rotated parallel to the strike is given in Figure 17-1. This shows that the mineralization in plan view appears to mostly occur in a band approximately 200 metres wide.



Figure 17-1 Assay Grades X Y Plot, view toward south. (Azm 130, Plunge 120, Rotated along Strike, Green>=1, Blue>=3, Red>=5)

A plot looking along the strike of the mineralization is shown in Figure 17-2. This figure shows that at least some of the 200 metres of strike width is due to the dip of the mineralization. To facilitate analysis of grade relative to the plane of the mineralization, the data was rotated to where the mineralization was mostly contained in the Z plane.



Although it is not possible to draw definitive views from a 2-D representation it appears that the resource is not closed off by drilling.

CAM calculated the average grade of assay intervals and 5-metre increments relative to the new Z and obtained the average grades shown in figure 17-3.



Although the mean grades in Figure 17-3 are possibly influenced by high-grade outliers this is one of the most remarkable true planar structures observed by CAM. (CAM has observed similar zoning many times in true vein-type deposits, but typically there is more undulation relative to a true plane.)

A cumulative frequency plot of Au (ppm) plus 0.01 is shown in figure 17-4.





This gold assay cumulative frequency plot in Figure 17-4 clearly shows a mixture of two (or depending on the additive constant, three) log normal distributions. Examination of the plot at a larger scale indicated that the distribution of assay values became more erratic at approximately 35 ppm as shown by the horizontal line. The fact that the upper tail of the distribution is consistent with the lower portion means that there is not a compelling need to cap the distribution.

A cumulative frequency plot of Ag (ppm) plus 0.1 is shown in figure 17-5. This silver assay cumulative frequency plot is similar to that for the gold assay in that it shows a mixture of two (or depending on the additive constant, three) log normal distributions. Closer examination of the plot at a larger scale indicated that the high tail became more erratic at 350 ppm as shown by the horizontal line. The fact that the upper tail of the distribution is consistent with the lower portion means there is not a compelling need to cap the distribution.



#### 17.2.1 Variograms

For log-normally distributed data, log variograms generally give the most consistent and easily interpreted results. CAM constructed a number of variograms and found that the most representative for gold was the downhole variogram. This is quite common in deposits where there are a relatively small number of individual holes separated by distances large compared to the downhole assay. For data analysis CAM prefers the downhole variogram based on the assays because it avoids the artificial reduction of the nugget effect due to compositing.

The downhole variogram for Au (ppm) plus 0.01 is shown in Figure 17-6. This figure also shows the individual variograms for all of the holes (the erratic black lines). The average of all the individual downhole variograms is the red line. The green horizontal line is the variance of all the data. The interpreted sill is the horizontal black line and the interpreted range is at the vertical black line. The interpreted range is 35 metres. CAM normally defines material as indicated if it is within 70.7 percent of the range of the variogram or in this case approximately 25 metres. However, because a significant portion of the ounces are contained in the high-grade tail of the distribution, CAM reduced the distance to 25 metres for this initial estimate. CAM believes it is likely that if additional close-spaced drilling is performed in the plane of the vein it may be possible to extend this range.



#### 17.2.2 Composite Exploratory Data Analysis

One-metre length composites were selected for this resource estimate because most of the assay intervals were 1.0 metre, and given the very high-grade of some of the assays, it appears that a selective mining method might be considered. The plan views of composite data, cumulative frequency plots and downhole variograms were visually very similar to assays. The discussion and figures for the assays apply to 1.0-metre length composites as well. This is to be expected since most of the assay intervals were 1.0 metre.

A box plot of Au (ppm) versus oxidation is shown in Figure 17-7. This figure indicates that the mean grade of gold is higher in the Non-Oxide than in the Oxide.





Figure 17-7 Box Plot of Au (ppm) versus oxidation.

Box plots of 1.0 metre composites for:

- Au (ppm) versus oxidation;
- Au (ppm) versus lithology;
- Au (ppm) versus mineralization;

Analysis and comparison of these plots indicated that:

- The mean grade of gold is higher in the Non-Oxide than in the Oxide.
- It appears that hydrothermal breccia has the highest grade mineralization;
- The most compelling control on mineralization appears to be distance relative to the central plane of the mineralization.

To investigate the correlation between the crystal tuff in the footwall of the fault (unit VfTx, coded as lithology 30) and distance from the plane of the mineralization, CAM constructed a plot showing the number of Vtftx composites relative to distance to the plane of the mineralization. This figure showed a fairly good correlation with the number of Vtftx composites and distance from the plane of the mineralization. However, the mineralization appeared to be narrower than the width of a large number of Vtftx composites. PGSA noted in drill logs that Au values occur locally as disseminated mineralization in the crystal tuff, usually at the base of the mineralization, so CAM elected not to use mineralization as a control on grade interpolation.

CAM examined the statistics of 1 m composites as a function of lithology, mineralogy and distance from the plane of the vein (figures 17-8, 17-9, and 17-10). The most apparent control on mineralization was distance from the plane of the vein. CAM therefore elected to constrain grade interpellation by choosing a very narrow search sub-parallel to the plane of the vein.



Figure 17-8. Box Plot of Au (ppm) versus lithology.



Figure 17-9 Box Plot of Au (ppm) versus mineralization type.

On the basis of the aforementioned figures and issues with the interpreted sections as previously discussed, CAM elected not to use mineralogy or lithology as a control in interpolation. The most compelling control on mineralization appears to be distance relative to the plane of the mineralization.

Nevertheless, CAM believes that mineralogy and lithology will eventually play an important role in the system and it may be useful to add constraints based on these parameters in the future.

## 17.3 Resource Calculation Results

A relatively large number of resource estimation runs were made. As work progressed, variables were added and some of the early results were rerun because of the manner in which the MicroModel search is specified.

Final resource numbers include two possible scenarios with a number of parameters in common including:

- Indicated if the nearest composite is within the 20 meters of the block.
- Inferred tonnes and associated ounces for blocks beyond 20 metres from the nearest composite.
- Oxide material is that above the tessellated oxide surface.
- Non-Oxide material is below the tessellated oxide surface or outside the plan extent of the oxide surface.

The final resource corresponds to an open pit case with a search box with half dimensions of 50 by 50 by 2 metres search for the 6 nearest composites, one composite minimum. Grade estimation was done using inverse distance squared.

## **17.4** Resource Tabulation

Indicated and Inferred resources for Cap Oeste are given in Tables 17-2 and 17-3 respectively.

The mineral Resources and Reserves in this estimate were calculated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council on Dec 11, 2005.

Mineral Resources which are not mineral Reserves do not have demonstrated economic viability. The estimate of mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.

The quantity and grade of reported Inferred resources in this estimation are conceptual in nature and it is uncertain if further exploration will result in conversion of an Inferred Resource to Indicated or Measured Resources on the property.

	Table 17-2 Indicated Resources								
Oxide/Non-Oxide	Cutoff Au (ppm)	Tonnes	Au Grade (ppm)	Contained Au (ounces)	Ag Grade (ppm)	Contained Ag (ounces)			
	0.00	15,424,042	0.21	105,011	6.04	2,993,391			
	0.30	1,911,998	1.27	78,028	30.74	1,889,762			
Ovida	0.50	1,044,233	2.01	67,368	44.89	1,507,060			
Oxide	1.00	441,750	3.82	54,198	73.92	1,049,927			
	3.00	130,822	8.91	37,458	145.13	610,400			
	5.00	70,460	13.24	30,001	207.06	469,062			
	0.00	8,617,305	0.29	81,865	7.90	2,189,411			
	0.30	1,316,224	1.70	71,814	41.54	1,757,989			
Non Ovido	0.50	822,130	2.49	65,701	57.34	1,515,663			
Non Oxide	1.00	394,940	4.41	55,979	96.57	1,226,223			
1	3.00	110,864	11.72	41,768	243.99	869,685			
	5.00	70,179	16.35	36,898	326.68	737,083			
	0.00	24,041,347	0.24	186,876	6.71	5,182,802			
1	0.30	3,228,222	1.44	149,842	35.15	3,647,751			
Total Indicated	0.50	1,866,363	2.22	133,069	50.37	3,022,723			
I otal Indicated	1.00	836,690	4.10	110,177	84.61	2,276,151			
	3.00	241,686	10.20	79,225	190.48	1,480,085			
	5.00	140,639	14.80	66,899	266.75	1,206,145			

Table 17-3 Inferred Resources									
Oxide/Non-Oxide	Cutoff Au (ppm)	Tonnes	Au Grade (ppm)	Contained Au (ounces)	Ag Grade (ppm)	Contained Ag (ounces)			
	0.00	17,443,930	0.11	64,310	3.42	1,917,075			
	0.30	1,154,369	1.01	37,562	23.53	873,387			
Ovido	0.50	603,533	1.59	30,872	35.55	689,765			
Oxide	1.00	247,988	2.89	23,063	57.65	459,615			
	3.00	43,826	8.90	12,547	171.00	240,947			
	5.00	16,806	17.06	9,221	346.20	187,064			
	0.00	23,903,984	0.18	141,655	4.28	3,290,320			
	0.30	2,229,978	1.63	116,695	33.60	2,408,687			
Non Ovido	0.50	1,400,547	2.37	106,542	46.20	2,080,371			
Non Oxide	1.00	664,924	4.19	89,484	76.22	1,629,341			
	3.00	235,446	8.98	67,955	147.12	1,113,629			
	5.00	167,430	11.01	59,288	168.02	904,443			
	0.00	41,347,914	0.15	205,965	3.92	5,207,395			
	0.30	3,384,347	1.42	154,257	30.16	3,282,074			
Total Informad	0.50	2,004,080	2.13	137,414	42.99	2,770,136			
rotal mierred	1.00	912,912	3.83	112,547	71.17	2,088,956			
	3.00	279,271	8.97	80,501	150.86	1,354,576			
	5.00	184,236	11.57	68,509	184.27	1091,507			

#### 17.5 Recommendations for Resource Estimation

- Additional step-out drilling is required to more adequately define the total Project Resource.
- Additional sampling is needed at approximate grade control separation to define the short range mineable continuity of the deposit. It is essential that these holes be gyroscopically downhole surveyed with the reproducibility of the downhole surveys verified by duplicates. Depending on the experience of the drillers, deflections may provide a means of obtaining data on the short range mineable continuity of the deposit. Once these data are available a review of mining methods including bench height analysis should be undertaken.
- Improved consistency in data handling is desirable.
- QA/QC checking should be continued, with particular attention to sampling and assaying of the high-grade samples.
- Once the above steps have been taken, a review of mining methods, including bench height analysis, should be undertaken.

# 18.0 OTHER RELEVANT DATA OR INFORMATION

CAM is unaware of any other information not included herein, the omission of which would tend to make this report misleading.

# **19.0 ADDITIONAL REQUIREMENTS FOR TECHNICAL REPORTS ON DEVELOPMENT PROPERTIES AND PRODUCTION PROPERTIES**

This report does not establish or describe any mineral Reserves, or any development or production scenarios.

CAM 087114 Patagonia Gold: Cap Oeste Project (43-101) 10 October 2008

## 20.0 INTERPRETATIONS AND CONCLUSIONS

Following are CAM interpretations and conclusions with regard to the Cap Oeste Project:

- 1. Exploration has defined a zone of significant epithermal gold-silver mineralization at Cap Oeste, hosted within and adjacent to a moderate to high angle normal fault over widths of 5-40 metres and a minimum strike length of one kilometre.
- 2. Technical work has been conducted in a professional manner and carried out to NI 43-101 standards including the analysis, quality assurance and quality control protocols.
- 3. Drill intercepts identified as significant to delineation of a precious metals resource have been verified and substantiated sufficiently to pursue a Resource calculation.
- 4. Work on the property has been successful in identifying mineralization of potential economic interest, and further work is warranted.

## 21.0 RECOMMENDATIONS

Following are CAM recommendations with regard to the Cap Oeste project:

- 1. Additional step-out drilling is required to more adequately define the total Project Resource.
- 2. Additional sampling is needed at approximate grade-control separation to define the short-range mineable continuity of the deposit. It is essential that these holes be gyroscopically downhole surveyed with the reproducibility of the downhole surveys verified by duplicates.
- 3. Improved consistency in data handling is desirable, especially continued QA/QC work with particular attention to sampling and assaying of the high grades.
- 4. PGSA should carry out additional density measurements, using cores oven-dried at 105 degrees Celsius, and the cellophane-wrap immersion method.
- 5. Additional metallurgical testwork should be completed on gold and silver recoveries on existing Oxide composites, as well as consumption of lime and cyanide.
- 6. Additional bottle-roll testing should be carried out on primary sulphide mineralization
- 7. Continued exploration is recommended for the Cap Oeste Project. The basic program outline is presented in Table 21-1, and is dominated by a large drilling component. CAM agrees that significant additional in-fill and step-out drilling will be required to expand existing Resources and convert Resources to Reserves. Given the successful application of IP surveys in directly detecting mineralization and associated alteration, CAM also recommends further ground geophysical surveys as an aid to targeting, especially in covered areas.

Table 21-1 Proposed Work Program								
Category	Amount	Basis	Cost US\$					
Drilling - HQ/RC and other exp.	190 holes @ 120 m	US\$155/m avg	3,534,000					
External Consultants, Mapping, Surveying, Images, Environmental & other studies, Meteorological Station, Compensations, Water monitoring, misc. equipment and others			194,444					
staff, labor, camp expense	10 months	US\$ 30,000/mo	300,000					
assays and shipping, incl. QA/QC	7,000 samples	US\$ 70/sample	490,000					
Subtotal			4,518,444					
Contingency	(5%)		225,922					
Total			4,744,366					

Table 21-1 is the proposed work program for the Cap Oeste Project.

#### 22.0 REFERENCES

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## 23.0 DATE AND SIGNATURE

#### 23.1 Craig Bow

Craig S. Bow 9011 Cascade, Beulah, CO 81023 Phone (719) 485-4202, cellular (719) 252-0018 craigb@csbplats.com

I, Craig S. Bow, of Beulah, Colorado, do hereby certify that:

- I am an Independent Consulting Geologist, at the above address.
- I graduated from the Washington and Lee University in 1971 with a B.S. degree in Geology, and from the University of Oregon in 1979 with a Ph.D. in Geology. I am a Certified Professional Geologist # 08250 of the American Institute of Professional Geologists. I am a Fellow of the Society of Economic Geologists.
- I have practiced my profession continuously since 1979.
- 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.
- I am the author of sections 1-13, 15, 16, and 18-23 of the report entitled "NI 43-101 Technical Report Cap Oeste Project Santa Cruz province, Argentina" dated October 10, 2008 (the "Technical Report"). The Technical Report is based on my knowledge of the Project Area and resource database covered by the Technical Report, and on review of published and unpublished information on the property and surrounding areas. I conducted a site visit on April 22-24, 2008.
- 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.
- I am independent of Patagonia Gold or any of their subsidiary companies applying all of the tests in section 1.5 of National Instrument 43-101.
- 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.
- I consent to the filing of the Technical Report with any Canadian stock exchange and other regulatory authority and any publication by them, including electronic publication in the public company files on their website accessible by the public, of the Technical Report.

Dated this 10<sup>th</sup> day of October, 2008

Craig S. Bow, CPG


## 23.2 Robert Sandefur

Robert L. Sandefur 1139 South Monaco Denver, CO 80224 Phone (303) 472-3240 rlsandefur@aol.com

I, Robert L. Sandefur, of Denver, Colorado, do hereby certify that:

- I am an Independent Consulting Geostatistician, at the above address.
- I am a Certified Professional Engineer (Number 11370) in the state of Colorado, USA, and a member of the American Institute of Mining, Metallurgical and Petroleum Engineers (SME).
- I graduated from the Colorado School of Mines with a Professional (BS) degree in engineering physics (geophysics minor) in 1966 and subsequently obtained a Masters of Science degree in physics from the Colorado School of Mines in 1973.
- I have practiced my profession continuously since 1969.
- 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.
- I am the author of sections 14 and 17, of the report entitled "NI 43-101 Technical Report Cap Oeste Project Santa Cruz province, Argentina" dated October 10, 2008 (the "Technical Report"). The Technical Report is based on my knowledge of the Project Area and resource database covered by the Technical Report, and on review of published and unpublished information on the property and surrounding areas. I conducted a site visit on April 22-24, 2008.
- 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.
- I am independent of Patagonia Gold or any of their subsidiary companies applying all of the tests in section 1.5 of National Instrument 43-101.
- 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.
- I consent to the filing of the Technical Report with any Canadian stock exchange and other regulatory authority and any publication by them, including electronic publication in the public company files on their website accessible by the public, of the Technical Report.

Dated this 10<sup>th</sup> day of October, 2008

RI Sandefin

Robert L. Sandefur, P.E.

