Renewed Gold Mining in Planned in Baja California Sur: Location, Current Plans, Environmental Issues at Mines and Initial Observations about the Current Plans

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How much gold has been identified?

Table 3: Proven and Probable Reserves and In-Pit Inferred Resources

Classification	Total Ore kt	g/t-Au	Au (kg)	Au (koz)	Waste (kt)	Total (kt)	Strip Ratio
Proven	7,147	1.17	8,332	268			
Probable	30,801	1.06	32,580	1,047			
P & P	37,948	1.08	40,912	1,315	135,393	173,341	3.57
In-Pit Inferred	631	0.89	563	18			

- Paredones Amarillos 2008 Technical Report

San Antonio Project
Inferred Mineral Resource Estimate @ December 31,2007[1,2,3]

DEPOSIT	CUT-OF GRADE	ROCK GROUP[4]	TONNES	GRADE	AU PRODUCT
	g/t Au		T x 10^6	g/t Au	Ounces x 10^6
LOS PLANES	0.4 g/t Au	Oxidized	10.54	1.18	0.40
	0.4g/tAu	Sulphide	20.04	1.4	0.90
		Total	30.58	1.32	1.30
LAS COLINAS	0.4 g/t Au	Oxidized	0.37	0.92	0.01
	0.4g/tAu	Sulphide	5.25	0.83	0.14
		Total	5.62	0.83	0.15

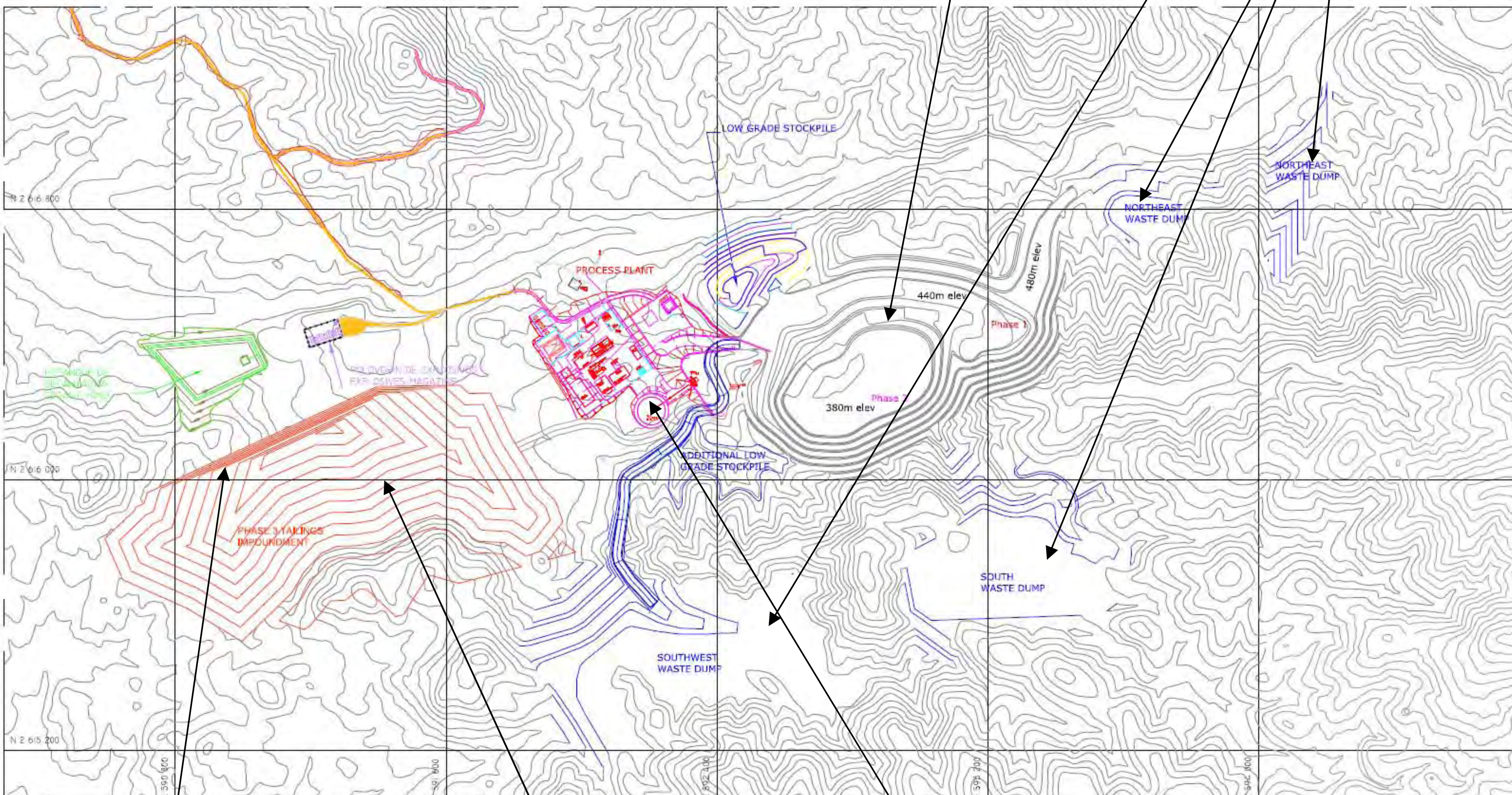
(1) It cannot be assumed that all or any part of an Inferred Mineral Resource will be upgraded to an Indicated or Measured Resource as a result of continued exploration.
(2) Mineral Resources which are not mineral reserves do not have demonstrated economic viability.
(3) Numbers may not add up, due to rounding.
(4) 'Oxidized' refers here to rock affected by oxidation including weak-moderate-strong intensities.

- San Antonio Project 2008 Technical Report

Paredones Amarillos Mine Plan

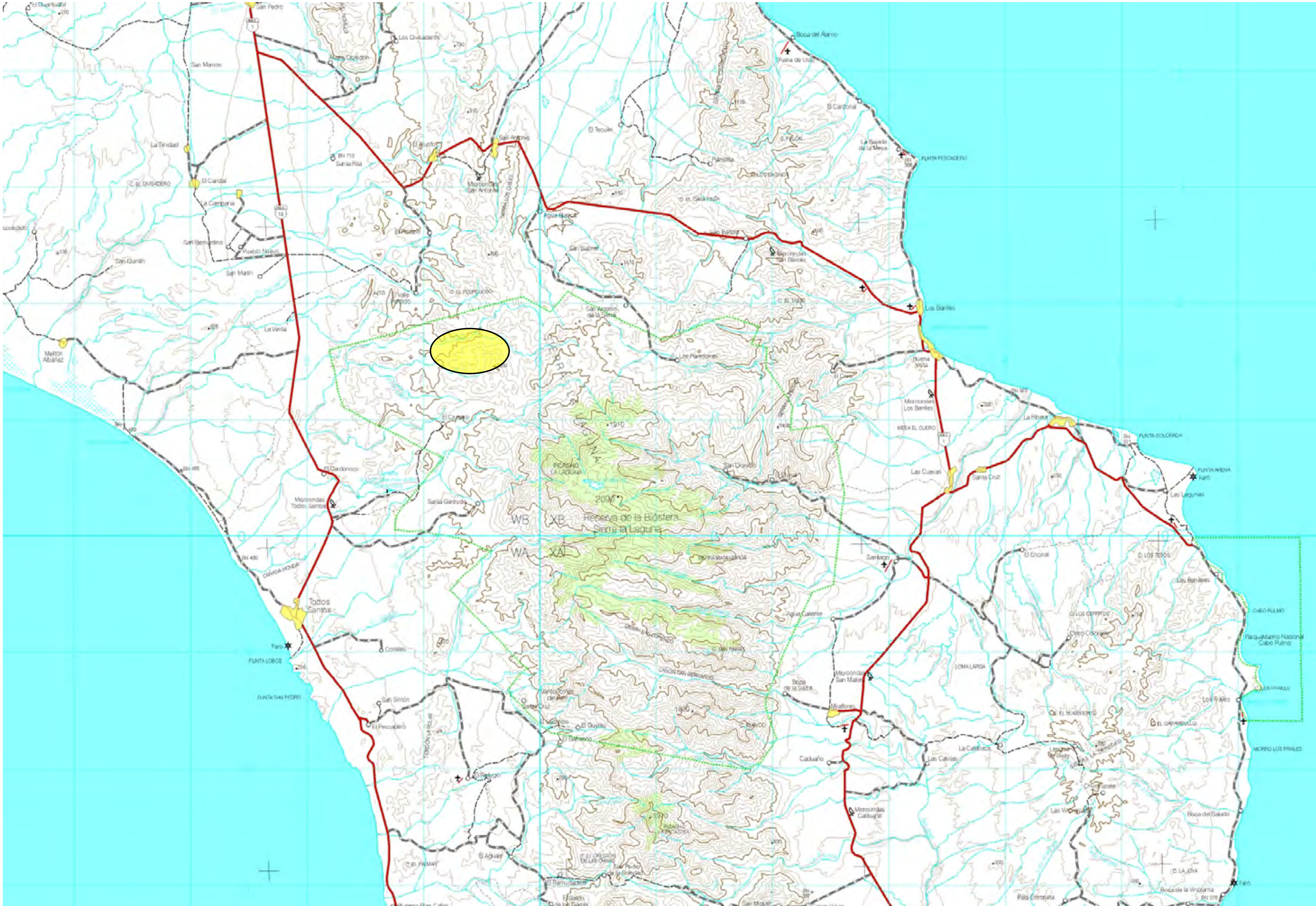
2008 Vista Gold NI43-101 Report

Open Pit Mine Waste Rock Piles

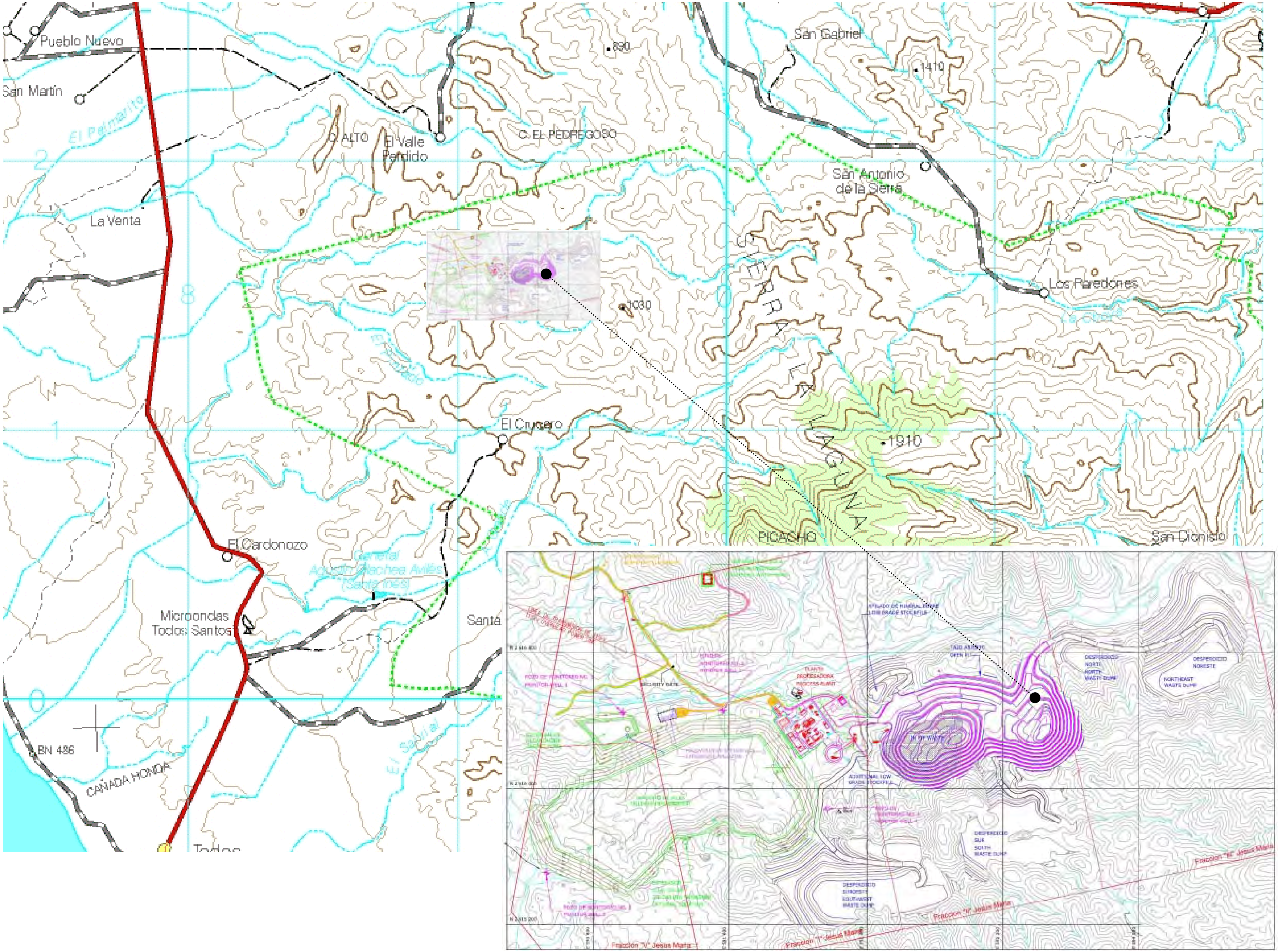


Tailings Dam Tailings Pile behind Dam

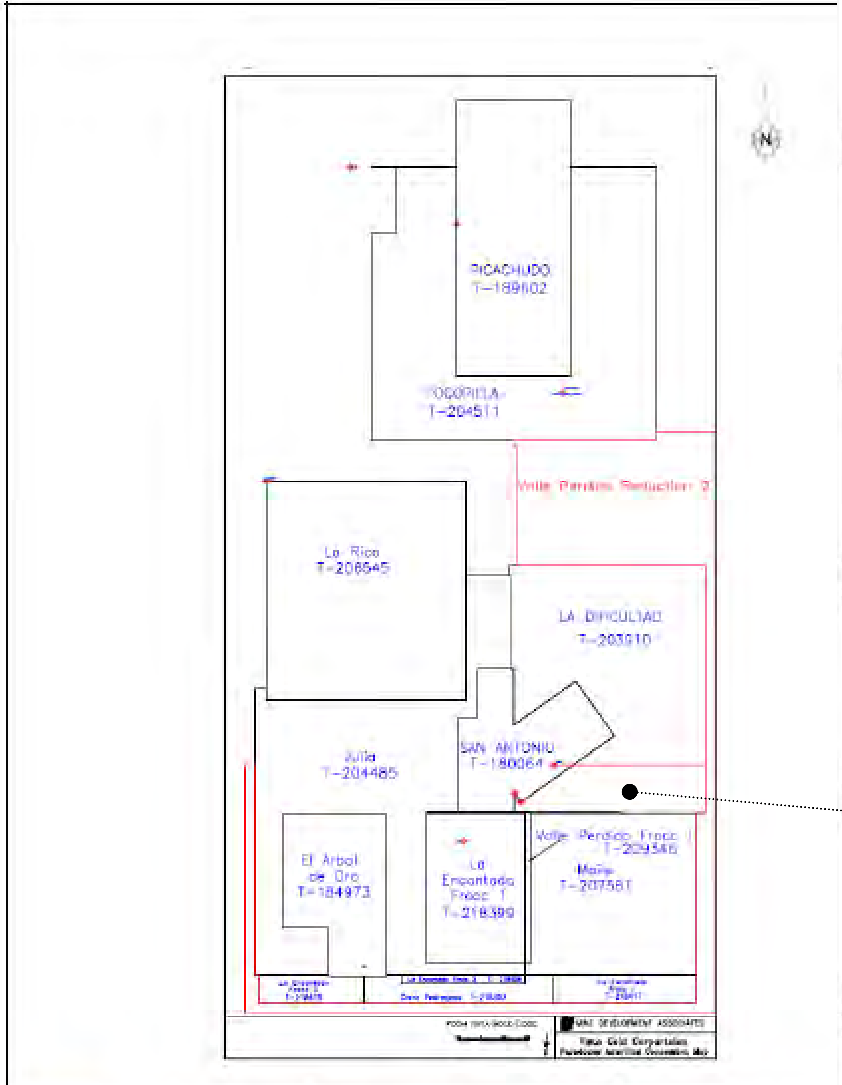
Gold Mill

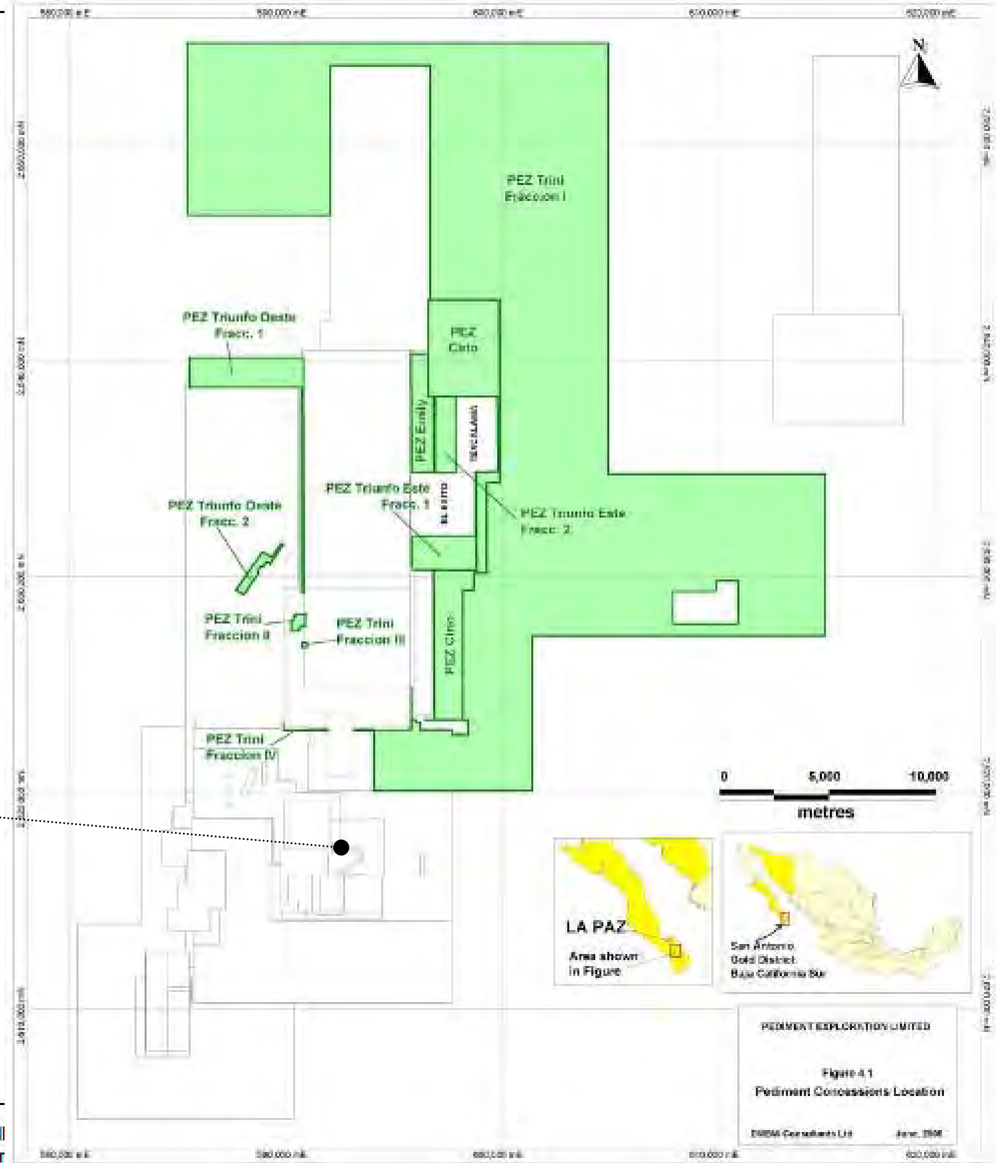


San Pedro
Los Divisaderos
San Moroni
La Trinidad
El Carrizal
La Campana
San Bernardino
Pueblo Nuevo
San Quintín
San Martín
Santa Rita
San Antonio
Agua Blanca
El Tecolote
El Cardonal
Boca del Alamo
Punta Pescadero
Los Barriles
Buena Vista
La Ribera
Punta Colorada
Punta Arena
Las Cuevas
Santa Cruz
Los Paredones
El Valle Perdido
La Venta
Melitón Albañez
El Carrizo
El Cardonoso
Santa Gertrudis
San Dionisio
Reserva de la Biósfera Sierra la Laguna
Picacho La Laguna
2090
1910
WB
XB
WA
XA
Todos Santos
Faro
Punta Lobos
Punta San Pedro
Cañada Honda
Santiago
El Encinal
Las Barracas
Cabo Pulmo
Parque Marino Nacional Cabo Pulmo
Agua Caliente
Loma Larga
Cerro Colorado
Miraflores
Boca de la Sierra
San Simón
El Pescadero
Los Frailes
Morro Los Frailes
La Calabaza
Las Cabras
Caduaño
Boca del Salado
El Aguaje
El Palmar
Plutarco Elías Calles
La Candelaria
San Miguel
Casas Viejas
Palo Escopeta
Boca de la Vinorama
La Vinorama
C. La Joya

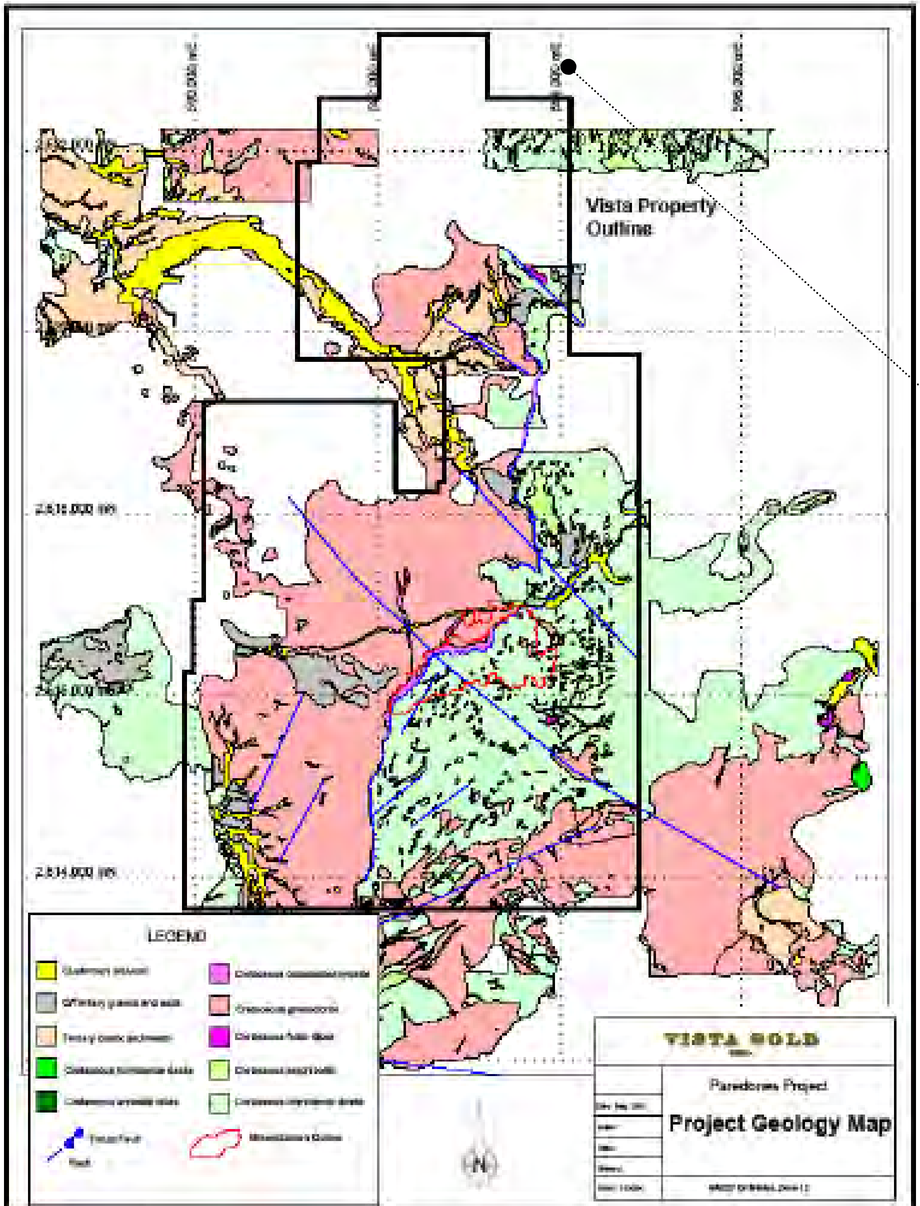


Pueblo Nuevo
San Martín
El Palmarito
La Venta
C. ALTO
El Valle Perdido
C. EL PEDREGOSO
San Gabriel
San Antonio de la Sierra
Los Paredones
SIERRA LA LAGUNA
1910
1030
PICACHO
El Crucero
El Cardonozo
Microondas Todos Santos
Santa
BN 486
CAÑADA HONDA
San Dionisio
El Saltal
ATEIO ABIERTO
OPEN PIT
DESPERDICIO NORTE
NORTH WASTE DUMP
DESPERDICIO NORESTE
NORTHEAST WASTE DUMP
DESPERDICIO SUR
SOUTH WASTE DUMP
DESPERDICIO SUROESTE
SOUTHWEST WASTE DUMP
PLANTA PROCESADORA
PROCESS PLANT
SECURITY GATE
ADDITIONAL LOW GRADE STOCKPILE
LOW GRADE STOCKPILE

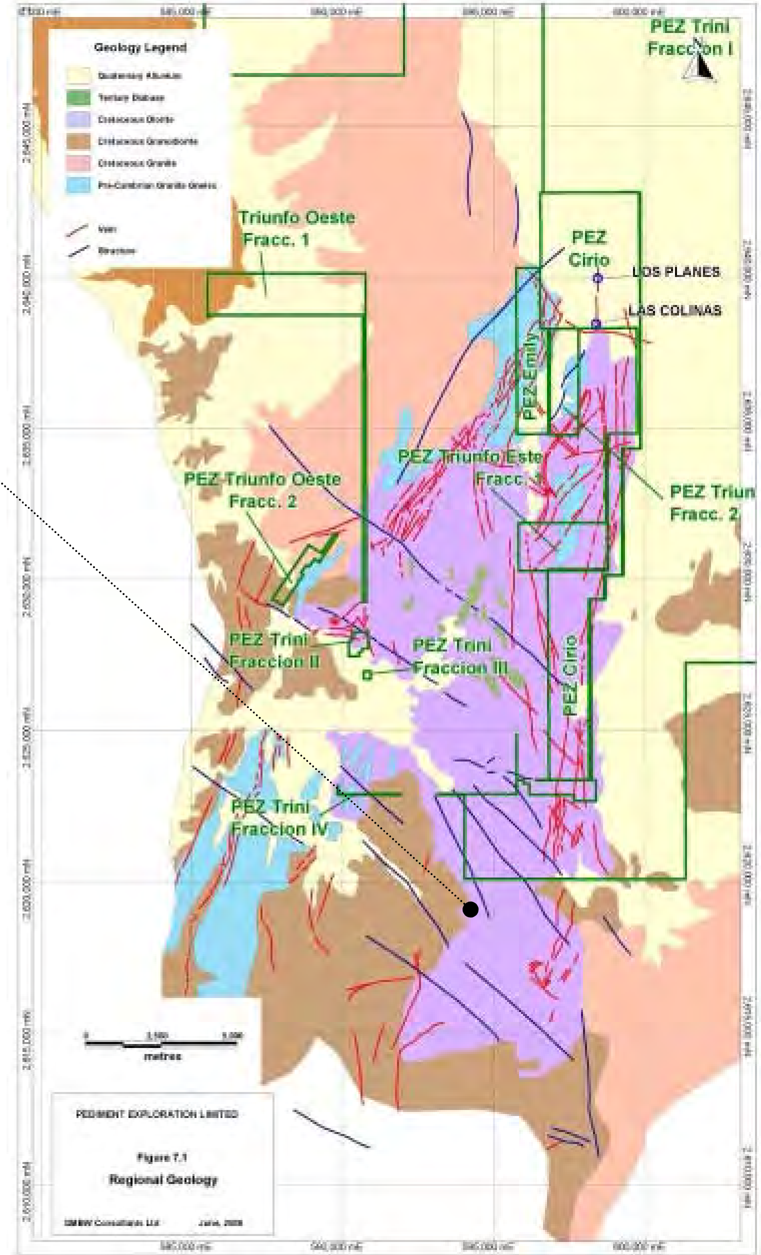




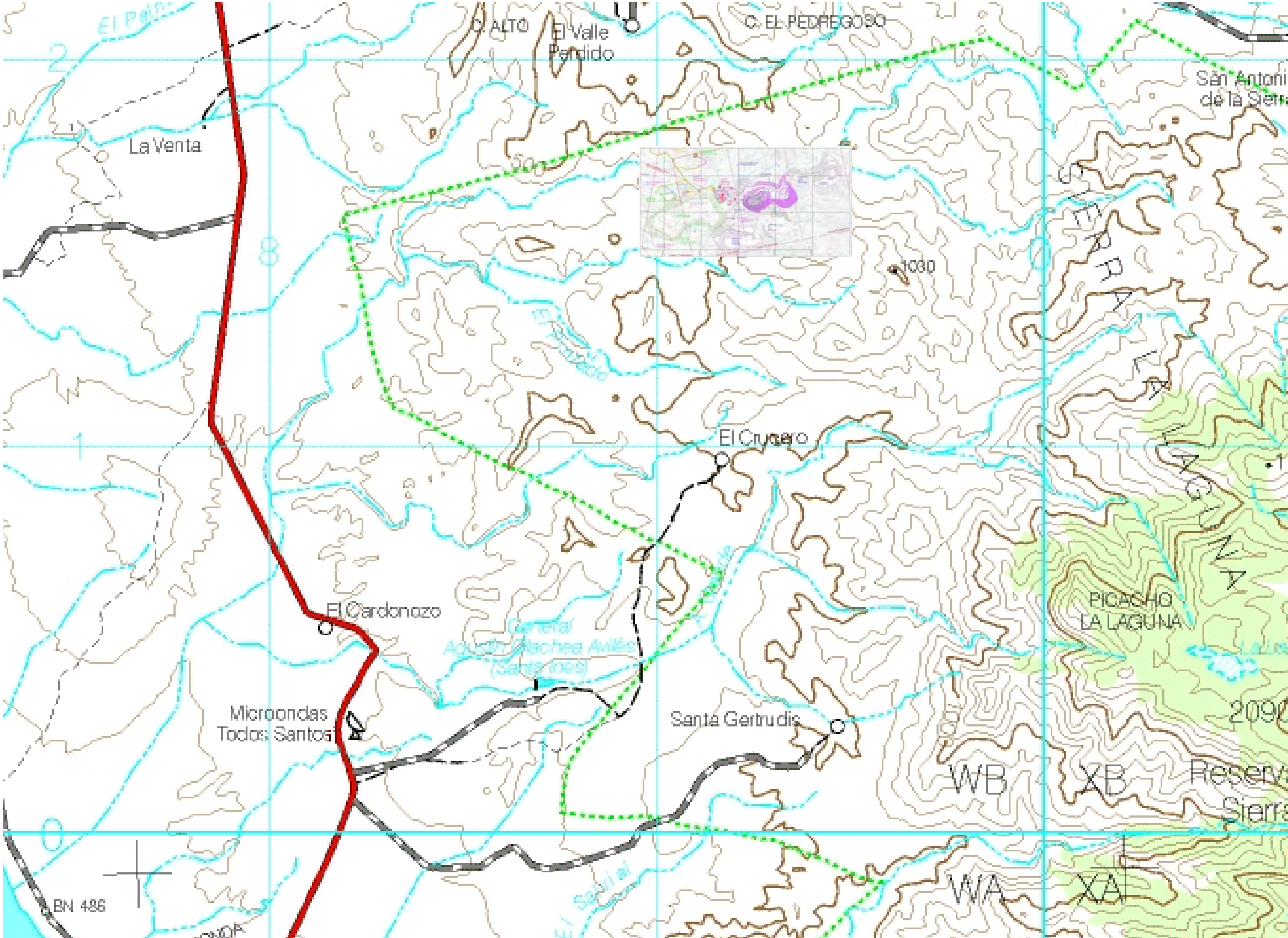
SRK Consulting	Paredones Amarillos, Baja California Sur, Mexico	Paredones Amarill Concession Locatior	
SRK Job No.: 172801	Source: MDA 2007	Date: 07/08/08	Approved: ALK
File Name: Figure 2-2.doc			Figure: 2-2



Vista Property Outline
LEGEND
VISTA GOLD
Paredones Project
Project Geology Map



Geology Legend
Quaternary Alluvium
Tertiary Diabase
Cretaceous Diorite
Cretaceous Granodiorite
Cretaceous Granite
Pre-Cambrian Granite Gneiss
Vein
Structure
PEZ Trini Fraccion I
Triunfo Oeste Fracc. 1
PEZ Cirio
LOS PLANES
LAS COLINAS
PEZ Emily
PEZ Triunfo Este Fracc. 1
PEZ Triunfo Oeste Fracc. 2
PEZ Trini Fraccion II
PEZ Trini Fraccion III
PEZ Cirio
PEZ Trini Fraccion IV
metres
PEDIMENT EXPLORATION LIMITED
Figure 7.1
Regional Geology


C. ALTO
El Valle Perdido
C. EL PEDREGOSO
San Antonio de la Sierra
La Venta
SIERRA LA LAGUNA
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El Cardonozo
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PICACHO LA LAGUNA
2090
WB
XB
WA
XA
Reserva Sierra
BN 486
HONDA
El Salvial

Open Pit Mine and Waste Rock Piles

Gold Mill

Tailings Dam and Tailings Pile behind Dam

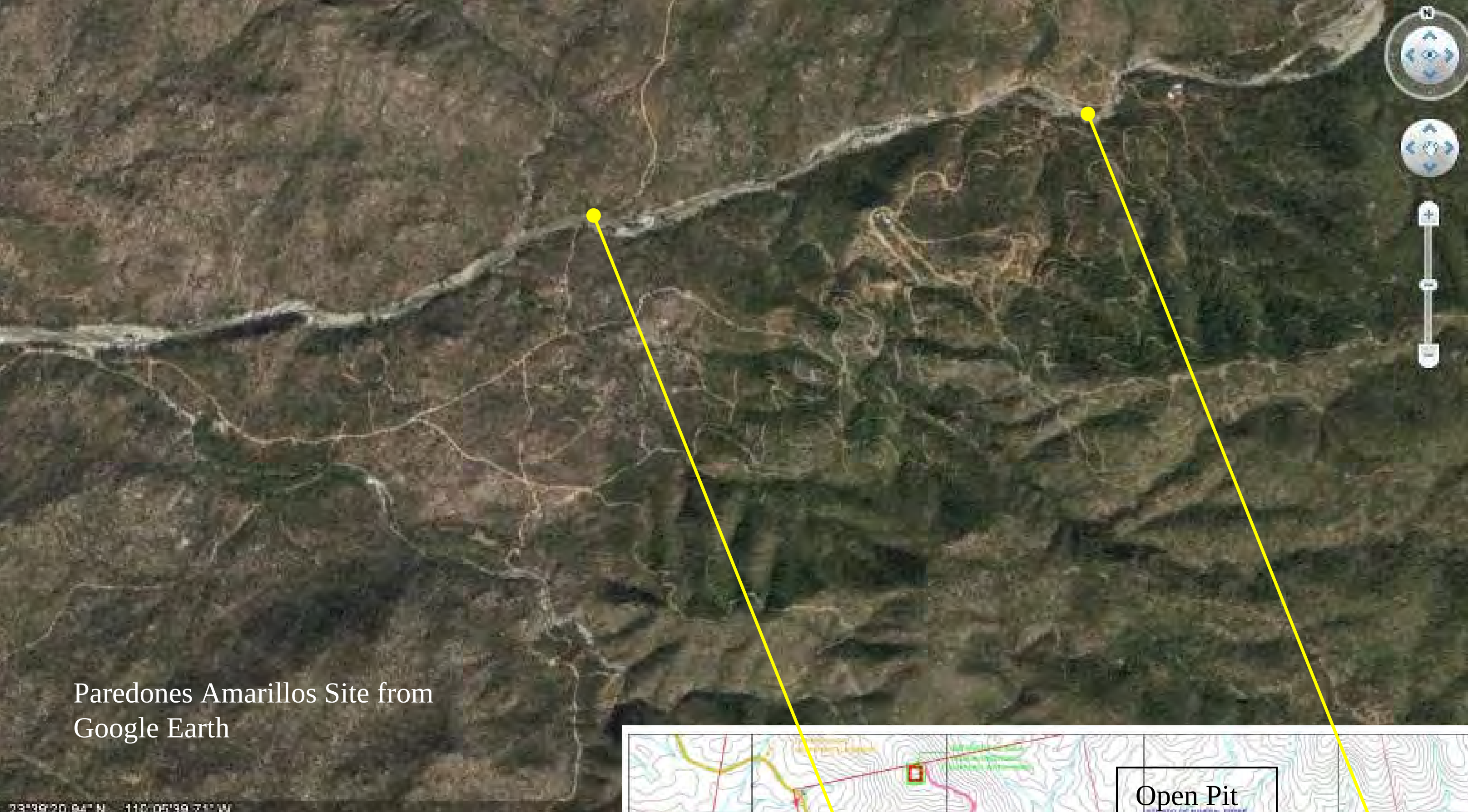
Kubaka Gold Mine and Mill Complex, 2003 - Kinross Gold

Magadan Region, Russia

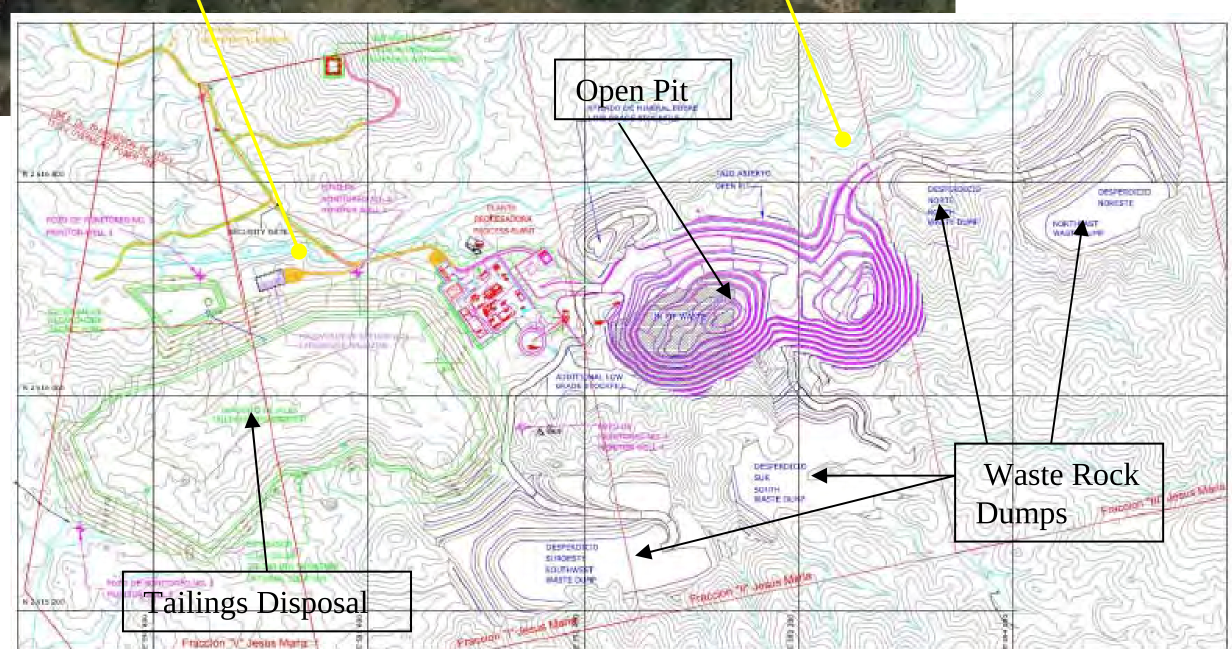
Paredones Amarillos Site from Google Earth - Roads show location of past exploration drill sites and location of proposed open pit mine

- Each mine involves unique circumstances under which a activities occur involving the five commonly recognized stages of work that are fundamental to the mining cycle, the “lifecycle” of a modern mine: prospecting, exploration, development, exploitation, and reclamation. These activities are sometimes conducted consecutively, one after the other, sometimes simultaneously – at the same time; and sometimes intermittently – with gaps in time, sometimes long gaps, between phases.

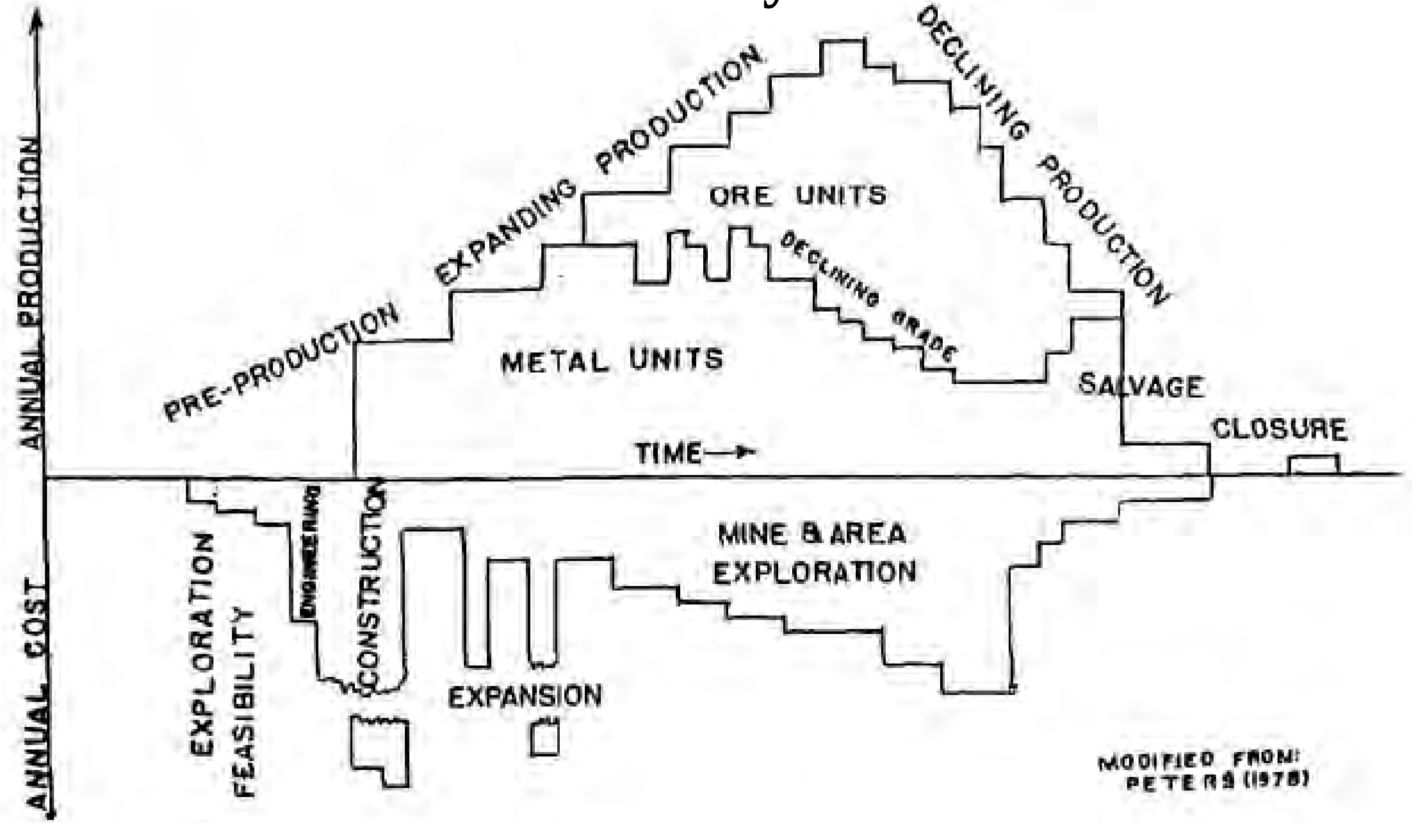
- Knowing how mines work and how the sequence of mining activities are spread out during the life of amine is fundamental to understanding how people and regulatory agencies can most effectively address the potential environmental and social impacts of mines.



Paredones Amarillos Mine Plan
- 2008 Technical Report



Mine Life Cycle and Mine Financial Life Cycle



The sequence of activities in the life of a mine can be called the "mining life cycle". In this figure, above the "Time" line, a bar graph that shows a "typical" rise and fall of ore production and onset of closure activities in the mining cycle. Below the "Time" line, the bar graph shows the rise and fall of capital and operating costs during the mining cycle.

The types of environmental and social impacts, the types of public policy decisions and the economical and financial aspects of mines vary widely for the different phases of mining activity.

What is needed to develop a mine?

- The development of a mine requires much more than finding a mineral deposit.

It requires:

- Land rights
- Water supply
- Power supply
- Transportation
- Financing
- Mine and Waste Management Plans
- Permits
- “Social License” and
- Ore

Land rights - The rights to use the land where the mineral and all mineral development facilities are located.

Water supply - Water is essential to mill operations to recover gold, and also used for equipment cleaning dust control, and drinking and washing

Power supply - Power is needed to operate the mill and mine equipment

Transportation - Transportation is required to move equipment to build the mine and mill, workers and process reagents and refined gold need to enter or leave the site

Financing - Money is needed to explore for and find minerals and fund design, permitting, development and operation the mine before income from gold sales begin

Mine and Waste Management Plans - Mine and Mine Waste management plans are needed to operate the mine economically - as inexpensively as possible - and to prevent releases of contaminants and other impacts of mining and mine waste management

Permits - Mines need approval of mine plans, water management plans, and a wide range of other permits before construction or operation can begin

"Social License" - Mines need support from political and social institutions on the local, national and international level

Ore - a mineral deposit that can be mined at a profit, more than "just a mineral deposit."

What do the companies with gold development projects in Baja California Sur say they have or plan to have to develop mines?

Land Rights: The Paradones Amarillos Project is located on mining concessions covering more than 3,710 hectares land that is owned by the Government of the Republic of Mexico, and to which there are no other legal claims of ownership. The area is approximately 7km south of the sub-delegation known as Valle Perdido and approximately 55km south of the city of La Paz, in the state of Baja California Sur.
(2008 VG TR p. I)

The San Antonio Project property consists of six exploration concessions staked and 100% owned by Pediment, through its wholly-owned Mexican subsidiary, **Compania Minera Pitalla S.A. de C.V**; these cover 37,800 hectares (ha), representing an additional 14 km of favourable geological trend.

The Project is located next to the historic mining town of San Antonio and about 45 km southeast by paved Highway No. 1 from the port city of La Paz. Historic production of about 115,000 ounces of gold was reported from numerous small mines over the period 1862 to 1915.
(2009 Pediment Technical Report, p.5)

Water - Paredones Amarillos

- On December 5, 2008, Vista completed another transaction to purchase the land for a desalination plant for the Paredones project. The property is located on the Pacific Coast, 25 kilometers SW of the project. The four-acre parcel of land is zoned for industrial use and approval has been received from the Municipality of La Paz for the installation of the desalination plant.-www.vistagold.com (VG) 2009 Annual General Meeting (AGM) Materials

- Due to the scarcity of surface water and political sensitivities regarding the use of groundwater, the Company has elected to construct and operate a desalination plant on the Pacific Coast. Water would be pumped approximately 45 kilometers to the site. Annual water consumption is estimated to be 1.4 million cubic meters. [3836 m3/day – 3.836 million liters per day - approximately 1,000,000 gallons per day. The new Cabo-area desalination plant produces 5 times as much water, about 20 million liters per day] 2008-09-08 VG Update/Press Release

- The desalination plant is to be located on the west coast of Baja California Sur, near the area known as “Boca del Palmerito”, about 34km (straight line) from the project site. 2008 VG TR p. 17-26

Power:
[Vista Gold[expects that energy for the project will be supplied by the Comisión Federal de Electrícidad from an existing sub-station located approximately 18 kilometers north of the project. It is anticipated that diesel fuel for the project will be provided in bulk quantities by Petroleos de Mexico. Fuel prices in Mexico are subsidized and have not experienced the volatility seen in other locations.
2008-09-08 VG PR Update

The peak power demand is projected to be 10.8 MW and the annual energy consumption will be 93.1million kwh. The current power cost is estimated at $0.112 per kwh and was obtained by Vista Gold during their May 2007 visit to the local power company. [$10.424 million in electricity cost per year].
2007 VG TR p. 150

Transportation:
The project site is currently accessible by government-maintained dirt roads from the north and the west. The main access will be from the north. The Company plans to widen and improve approximately 10 kilometers of existing roads and to construct approximately 8 kilometers of new road immediately north of the project.
2008-09-08 VG Update

Financing:

Vista plans to utilize outside sources to provide the additional capital required for the project capital costs and will be proceeding to examine various project financing alternatives, including debt and equity components. Vista has already purchased the major mill equipment for the project and intends to identify the remaining long delivery items for order. In addition, during the same period Vista intends to retain project engineers to prepare a detailed design of the project and to examine alternative construction management and project execution arrangements. Upon successful completion of project financing, and the issuance of a new Change of Land Use Permit, construction on the Paredones project could begin shortly thereafter.

www.vistagold.com 2009 VG AGM Materials

Capital Costs

- Life-of-Mine capital costs excluding closure totals US$205.4million.
- Mine closure costs are an additional US$7.2million.
- Preproduction capital costs are US$197.2million.
- Ongoing capital accounts for the remaining mine life.
- Capital cost estimates are in Q3 2008 US constant dollar terms.

2008 VG TR p. 17-27

Economic Analysis

- A 15-month pre-production rate is required to allow for pre-stripping and mine development.
- The mine will have an estimated life of 9.5 years given the reserves described in this report and the assumed 11,000t/d production rate.
- Revenue from gold sales are based upon a market price of S$850/oz during the first 3 years of production and US$725/oz thereafter. Gold treatment and refining charges are at US$4.00/oz including transportation and insurance charges.

The Paredones Amarillos Life-of-Mine plan and economics are based on:

- Proven and Probable reserves, no resources are included;
- A mine life of 9.5yrs, at a designed plant throughput rate of 11ktpy;
- An overall average metallurgical recovery rate of 91.5% Au, over the LoM;
- A cash operating cost of US$419/oz-Au;
- Initial capital costs of US$197.2million, comprised of initial capital costs of US$164.8million, US$17.9million contingency, and US$14.5million pre-production development.
- Sustaining capital over the LoM is estimated to be US$33.0million Mine closure cost, included in the above estimates is US$7.2million; and
- A salvage value of US$24.8million is assumed.

2008 VG TR p. 17-33

Mine, Mill, and Waste Management Plans:

Proven and Probably Reserves – volumes used for sizing mine plan

Total Ore - 37,948,000 tons
Ore grade – gold content – 1.08 grams/ton – [part per million]
Gold (in total ore) - kilograms – 40,912
Gold (in total ore) – ounces – 1,315,000
Waste rock – tons – 135,393
Strip ratio/ ratio of waste rock to ore – 3.57 2008 VG TR p.V

[998.1 KILOGRAMS OF ORE FOR EACH GRAM OF GOLD]
[925,000 TONS OF ORE FOR EVERY ONE TONS OF GOLD]

Mine Waste rock dumps will be placed northeast, south and southwest of the pit. The area used to dump the waste rock is approximately 110.7ha, and the area to be covered by the tailings impoundment facility is approximately 116ha, including the decantation pond. As reported in the original project EIS, the potential for acid generation in the waste rock is low, therefore, the conceptual closure plan emphasizes long-term physical stability rather than chemical stability.

The ultimate open pit area is approximately 58.7ha. The pit will be comprised of two distinct pits (East & West) which will be scheduled to allow a significant amount of waste from the East Pit to be placed in the West Pit.
2008 VG TR p. 17-26

Mill/Processing Plant

- The processing plant area will be approximately 16.72ha. The beneficiation process will include crushing, milling, classification, leaching, thickening, cyanide detoxification and gold recovery circuits.
- Tailings will be sent to the tailings impoundment facility as a slurry from the secondary thickener tank located at the processing plant, after the detoxification process.

Summary of Process Operating Conditions

- The mill will be designed to treat 11,000t/d of the Paredones Amarillos ore using crushing, semi-autogenous (SAG) and ball mill grinding, whole-ore leach and carbon-in-pulp (CIP) process circuits.
- Based on the test results, the following process conditions and parameters are recommended for design of the commercial plant:
- Primary grind of P80 of 160µm (90 mesh).
- Initial NaCN concentration of 0.75 to 1g/L. The NaCN concentration should be tested in the decay mode in the plant. However, piping should be built to add NaCN to the subsequent tanks;... and

The recommended NaCN destruction method would be the addition of ferrous sulfate to the high rate thickener underflow solids. It will result in total cyanide of less than 10ppm in the thickener paste to the TSF.

2008 VG TR p. 17-26

Vista Gold Corp. (TSX & AMEX: VGZ) is pleased to announce that it has reached an agreement in principal with A.M. King Industries, Inc. (“A.M. King”) and Del Norte Company Ltd., a wholly owned subsidiary of A.M. King, to purchase gold processing equipment to be used at Vista’s Paredones Amarillos gold project in Baja California Sur, Mexico. The equipment includes a 10,000 tonne per day semi-autogenous (SAG) grinding mill, two ball mills, gyratory crusher and a shorthead cone crusher, along with other related components, spare parts, and other process plant equipment.

[The listed mill equipment is the crushing and grinding part of the mill not the cyanide leaching, gold recovery, cyanide destruction or tailings thickening equipment needed. VG financial reports say they paid $16million (US) for this equipment.]

2008-01-20 VG Press Release

The tailings storage facility (TSF) will have the capacity to contain 40Mt of paste tailings. Construction of the tailings embankment will be completed primarily with waste rock derived from mine pre-stripping and waste rock removal operations.
2008 VG TR p. I

Tailings Design
- Paredones has been the subject of previous feasibility and detailed engineering studies. The current design is similar to previous designs which considered a whole ore leaching process and conventional tailings disposal. The current mining plan incorporates tailings thickening to paste consistency as a means of conserving water and reducing the potential for tailings seepage.

Tailings Design (continued)

Construction of the tailings embankment will be completed primarily with waste rock from mine pre-stripping and waste rock removal operations. A zoned rock fill embankment is proposed with an inner zone of compacted waste rock placed with controlled lift thickness and an outer shell of uncompacted waste rock placed in 5 to 10m lifts. The maximum impoundment floor to dam crest distance is 86m.

- The design incorporates four construction phases. Phase 1, tailings storage site preparation will include local foundation grading in the impoundment interior and waste rock placement in a ring-dyke arrangement. Fine-grained alluvial soil will be placed over the foundation and waste rock fill as a geomembrane liner bedding fill layer. The perimeter embankment will be raised in three phases by the downstream construction methods. The geomembrane liner will be extended to the final embankment crest which will range from 506 to 520m.

2008 VG TR P. 17–17 – 17-19

[Tailings management plans are evolving…]
- Through its Mexican operating subsidiary, MPA, Vista is applying for permits that will enable on-site investigation and related site studies to be conducted. Site studies will include excavation of test pits and geotechnical drilling to confirm previously completed geotechnical data, identify construction borrow materials and evaluate foundation conditions in the tailings impoundment and process facilities areas.

In addition, rheological, geochemical and geotechnical testing of tailings samples prepared from representative ore-grade core and bench scale milling and thickening will allow the design of the tailings disposal facility to be advanced to feasibility level. Geochemical characterization of the tailings in accordance with Mexican regulations (NOM-141-SEMARNAT-2003) is planned to support the detailed engineering design.

The preliminary feasibility design, presented herein, will be updated to feasibility level when the aforementioned site specific data are available.

Golder has encountered nothing in its site visit or in its review of the previously completed studies that would suggest that material changes to the prefeasibility level design contained herein will result from the completion of the planned site investigations and related studies.

Tailings Characteristics

- Tests indicate that the tailings are not hazardous by Mexican standards: therefore, the special hazardous waste disposal facility design requirements do not apply. Tests of the tailings solids indicate a moderate potential for the overall tailings to generate acid, but more conclusive evidence requires a humidity cell test.

It is important to note that of the five distinct types of ore processed, four of them produce tailings that have a high probability of generating acid, while the fifth type is net neutralizing to the extent that it provides a significant buffer for the other four tailings types.

Information available at this time suggests that the tailings impoundment should be designed and reclaimed with the assumption that the tailings will be acid generating until more definitive information becomes available. 2007 VG TR p. 33

Mine Waste Characteristics

As reported in the original project EIS, the potential for acid generation in the waste rock is low, therefore, the conceptual closure plan emphasizes long-term physical stability rather than chemical stability. 2008 VG TR p. 17-26

[T]est results indicate that the waste rock is not hazardous by Mexican standards, the special hazardous waste disposal facility design requirements do not apply.

Further, only a few of the samples indicate a potential for acid generation, and the volume of this material is expected to be a very small percentage of the total waste rock. Some humidity cell testwork has been performed.

The completed humidity cell tests suggest that the potentially acid generating waste will not generate acid. Confirmation tests should be conducted for a longer period of time in order to confirm these results. 2007 VG TR p. 140

Permits

- The Paredones Amarillos Gold Project is located in a special use area within the buffer zone of the Sierra Laguna Biosphere Reserve. The special use area forms the northern limit of the buffer zone and has unimpeded access from the north.

- In early 2008, Vista announced that it had received correspondence from the local La Paz office of the Mexican Environmental and Natural Resource Service ("SEMARNAT") which indicates that staff in that office are of the opinion that the Change of Land Use Permit approved by SEMARNAT in 1997 in relation to the Paredones Amarillos gold Project is no longer valid. This permit is necessary for the development of the project to proceed. Vista's advisors and counsel in Mexico have advised Vista that they believe that the permit remains valid. However, Vista's legal counsel in Mexico has advised Vista that a new Change of Land Use Permit application would be the most expeditious way to obtain the necessary approvals.

- Since the last permitting up-date provided by the Company (a July 2, 2008 press release), the Company has been involved in a steady dialogue with the government officials in BCS and in Mexico City. On August 6, 2008 the Company filed a request for a Temporary Occupation Permit for the use of the federal ground in the project area for the life of the project. This request is presently in the review process and management hopes to receive this permit at the end of this year. 2008-09-08 VG PR Update

Permits- continued:

The Company and its advisors are currently engaged in a series of discussions with SEMARNAT and the Mexican National Commission for Natural Protected Areas regarding the documentation required for the Change of Land Use Permit application, which will be submitted as soon as the agreement is reached in regard to the required accompanying documentation.

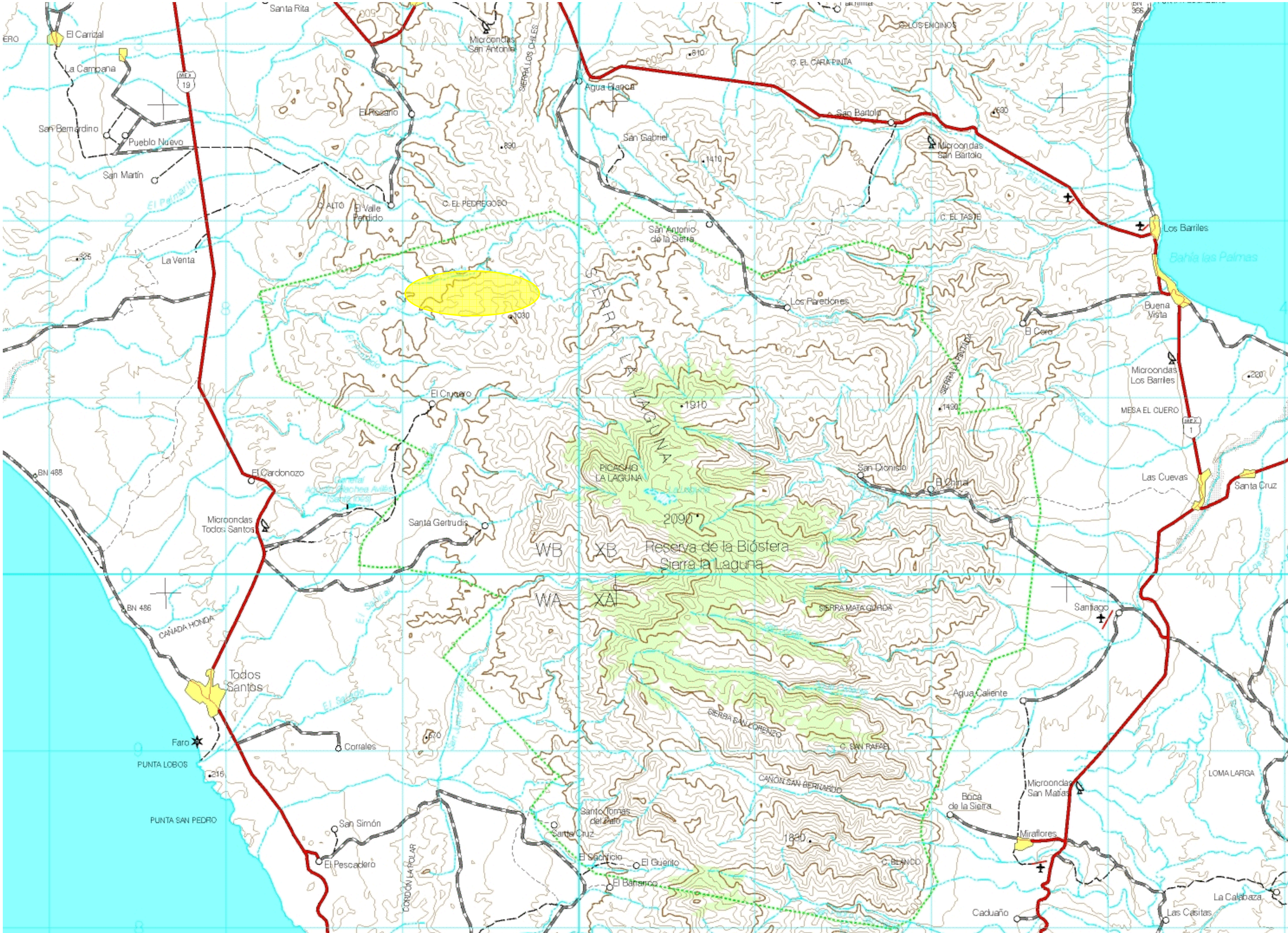
Based on earlier discussions with the Secretary of SEMARNAT and as previously reported, Vista's management expects the application to be processed promptly and by law within 60 working days after its filing; in accordance with those terms established in the applicable legal provisions. Vista expects that matters relating to the Change of Land Use Permit will be resolved shortly. Additional information is contained in the Company's press releases dated April 30, May 8, and May 21, 2008. 2008-09-08 VG PR Update

“Social License”:

Socio-economic Considerations

The project is remotely located and is not expected to directly affect any local inhabitants. The access road improvements will benefit the villages of Valle Perdido and El Rosario. The Company is currently working with the local education and health care authorities and has become a “social partner” with the elementary school in El Rosario.

The Company is unaware of any social issues related to the development of the project. 2008-09-08 VG PR Update



Santa Rita
El Carrizal
La Campana
MEX 19
Microondas San Antonio
SIERRA LOS CHILES
C. LOS ENCINOS
C. EL CARA PINTA
Agua Blanca
El Rosario
San Bernardino
Pueblo Nuevo
San Gabriel
San Bartolo
Microondas San Bartolo
San Martín
El Palmarito
C. ALTO
El Valle Perdido
C. EL PEDREGOSO
C. EL TASTE
Los Barriles
San Antonio de la Sierra
Bahía las Palmas
La Venta
Los Paredones
Buena Vista
El Coro
SIERRA LA LAGUNA
Microondas Los Barriles
MESA EL CUERO
MEX 1
El Crucero
PICACHO LA LAGUNA
BN 488
El Cardonozo
San Dionisio
El Chinal
Las Cuevas
Santa Cruz
Microondas Todos Santos
Santa Gertrudis
Reserva de la Biósfera Sierra la Laguna
WB
XB
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XA
BN 486
CAÑADA HONDA
SIERRA MATA GORDA
Santiago
Todos Santos
Agua Caliente
Faro
Corrales
SIERRA SAN LORENZO
C. SAN RAFAEL
PUNTA LOBOS
LOMA LARGA
CAÑÓN SAN BERNARDO
Microondas San Matías
Boca de la Sierra
PUNTA SAN PEDRO
San Simón
Santo Tomás del Palo
Santa Cruz
Miraflores
El Pescadero
CORDÓN LA POLAR
El Sacrificio
El Güerito
C. BLANCO
El Barranco
La Calabaza
Caduaño
Las Casitas
El Refugio
2090
1910
1490
1410
1030
1830

ENVIRONMENTAL EFFECTS OF GOLD MINE WASTES

Mine pits and underground workings, overburden piles, waste rock dumps, tailings impoundments, and spent leach piles in the gold industry are potential sources of environmental contamination. While all are not waste management units, these are areas in which toxic contaminants are commonly found and have the potential to escape into the environment.

Toxicants associated with these areas may include cyanide, cyanide-metal complexes, heavy metals, and acid rock drainage.

These toxicants may degrade ground water, surface water, soil, and air quality during mine operation and after mine closure.

USEPA, EXTRACTION AND BENEFICIATION OF ORES AND MINERALS VOLUME 2 - GOLD, http://www.epa.gov/osw/nonhaz/industrial/special/mining/techdocs/gold.pdf

Goldstrike Mine, Nevada, US, September 2006

Ground Water/Surface Water

The primary concerns for ground and surface water at mine sites are chemical and physical contamination associated with mine operation. Acid formed by the oxidation of sulfide minerals may be a source of long-term problems at facilities that extract and beneficiate sulfide ores. In addition to wastes, reagents, such as sodium cyanide, used during beneficiation may also be released to ground and/or surface water. Mine rock dumps, disturbed areas, and haul roads may contribute sediment and increase the total solids load to surface water bodies.

Goldstrike Mine, Nevada, US, September 2006

Acid Generation

Acid rock drainage refers to drainage that occurs as a result of the natural oxidation of sulfide minerals contained in rock that is exposed to air and water. This phenomenon is often referred to as acid mine drainage (AMD); however, it is not necessarily confined to mining activities and can occur wherever sulfide-bearing rock is exposed to air and water. Not all operations that expose sulfide-bearing rock will generate acid drainage.

The potential for acid drainage to occur depends on the amount and frequency of precipitation, the acid generation and neutralization potential of the rock, presence of oxygen, and the design of the disposal unit (e.g., encapsulation).

Bellavista Gold Mine, Costa Rica
https://nacla.org/node/5357

Water percolating through mine workings or piles such as tailings or waste rock may leach sulfides from the ore and surrounding rock and result in the formation of acid drainage. This acid solution may be discharged to ground or surface water, depending on the hydrology of the site. The acid generation potential, as well as the potential for release of other constituents, is increased after the rock is exposed to the atmosphere (i.e., an oxidizing environment). The rate of acid generation is also influenced by the presence or absence of bacteria.

Ortiz Gold Mine, New Mexico

Waste Rock Dump Slope Failure

Photo 1. Aerial view of initial dump slide area – 1994.

Photo 2. Aerial view of 1996 slide area. Note native bedrock material at toe of slide.

Photo 22. Overview of reclamation area: main waste rock dump and Lookout Pit.

Kinross Gold, Hayden Hill Mine Nomination for BLM Mineral Environmental Award 2004
http://www.kinross.com/investors/pdf/hardrock-nomination-hayden-hill.pdf

Heap Leach Tailings Slope and Liner Failures: Bellavista Gold Mine, Costa Rica

https://nacla.org/node/5357
2007 Heap Leach Pad Slope Failure

AIDA, Costa Rica Bans Open-Pit Mining
http://www.aida-americas.org/aida.php?page=miramar.press2002_07

Glencairn Gold Corp. shareholders on Thursday approved changing the company's name to Central Sun Mining Inc.[since acquired by b2gold Corp - www.b2gold.com]…and consolidating shares on a 1:7 basis. Earlier this month, the Toronto-based mining company, ... reported its third-quarter profit plummeted after a nearly US$54-million writedown on its Bellavista mine in Costa Rica.

Jack Caldwell, Glencairn becomes Central Sun Mining; but still no light in Costa Rica on Bellavista http://ithink.mining.com/2007/12/01/glencarin-becomes-central-sun-mining-but-still-no-light-in-costa-rica-on-bellavista/

A multinational coalition of environmental and human rights organisations [comprised of AIDA USA and AIDA Costa Rica, CEUS de Golfo, EARTHWORKS, Friends of the Earth, and MiningWatch Canada]is calling on Canadian mining company Glencairn Gold Corporation to disclose information about suspected cyanide and metals pollution from its Bellavista gold mine in Costa Rica. Glencairn shut down the mine in late July, following heavy rains that caused substantial earth movements, and has reported in financial statements that the mine "may remain closed indefinitely", but has not made available any information about the extent of current or potential damage. The groups also demand proper clean-up and remediation of any current or future contamination.

Bellavista is an open pit gold mine, and uses cyanide heap-leaching – in which huge piles of crushed ore are soaked with a cyanide solution – to extract gold.

Proyecto Asis, Costa Rican gold mine suspended over pollution risks, November 23, 2008
http://www.institutoasis.com/conservation-costa-rica/2008/11/costa-rican-gold-mine-suspended-over.html

“Both San Antonio and El Triunfo bustled with frontier commerce through the end of the 19th century, when the ore began running out. Then a hurricane flooded the mines in 1918 and sounded the death knell; by 1925, both towns were virtually abandoned.”

Moon Travel Guides, El Triunfo and San Antonio

http://www.moon.com/destinations/mexico/baja-cabo/cabo/east-cape-and-sierra-de-la-laguna/sierra-de-la-laguna/san-pedro-san-bartolo/el-triunfo-and-sa

Paredones Amarillos Site from Google Earth

Milled tailings are susceptible to leaching because of the increased surface area exposure of minerals not extracted during milling. Surface water discharges and seeps from tailings impoundments may contain elevated concentrations of metals leached from the tailings. Acid drainage from tailings impoundments may contribute to the leaching and mobility of metals.

Mill Tailings at Samarta Gold Mill, Buryatia, Russia, 2005

Tailings present a major business risk to the mining industry" and an environmental risk."

- A series of major tailings failures around the world in the 1990's while individually related to specific technical issues were more fundamentally indicative of need for improved care and management practices by tailings dam and facility owners and operators.

Eaton, Tim, Working for Responsible Management Responsible of Tailings Facilities of Facilities, on behalf of the Mining Association of Canada (MAC) Tailings Working Group, A Tailings and Mine Waste ''08 October 21, 2008 Vail, Colorado
http://www.infomine.com/publications/docs/Eaton2008.pdf

Aerial View of Omai Gold Mine and Mill Complex, Guyana

Tailings failures can have major environmental impacts and their impacts on the company reach far beyond the cost of rehabilitating the mess.
83 reported significant tailings dam failures between 1961 and 2004
- 65 between 1961 and 1996
- 16 between 1997 and 2004

Including several causing loss of life
- El Cobre (Chile, 1965) -> 200 dead, town destroyed
- Mir (Bulgaria, 1966) -unquantified loss of life
- Bilbao (Spain, 1969) -unquantified loss of life
- Mufulira (Zambia, 1970) -89 miners dead
- Bafokeng (S. Africa, 1974) -12 miners dead
- Mochikoshi#1 (Japan, 1978) -1 dead
- Arcturus (Zimbabwe, 1978) -1 dead
- Stava (Italy, 1985) -268 dead
- Jinduicheng (China, 1988) -20 dead

Merriespruit (S. Africa, 1994) -17 dead
Surigaodel Norte (Philippines, 1995) -12 dead

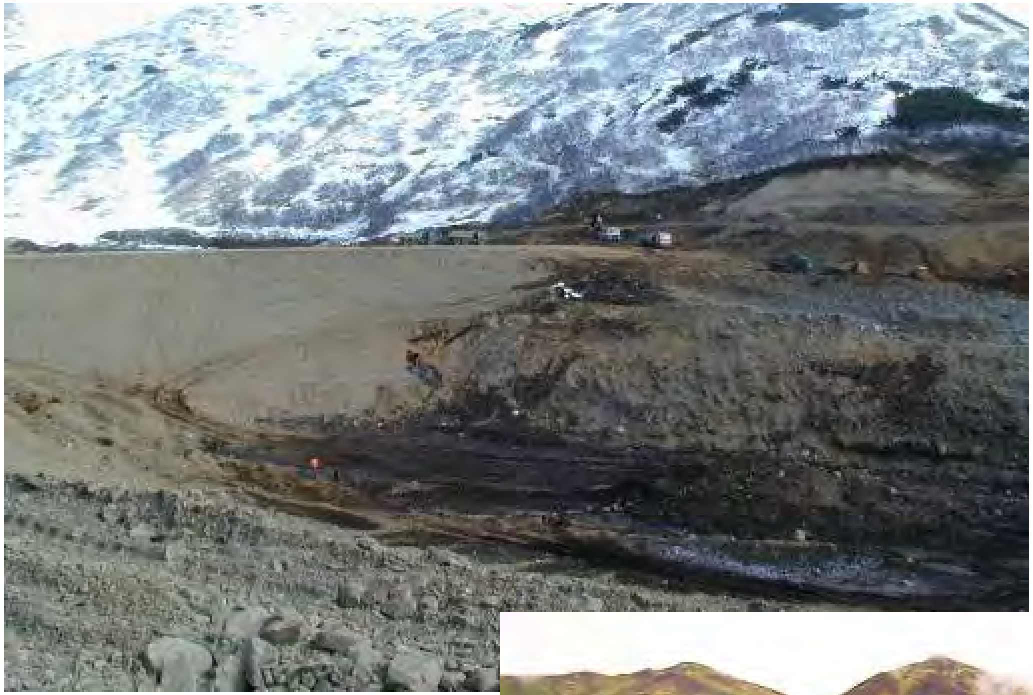
Eaton, Tim, Working for Responsible Management Responsible of Tailings Facilities of Facilities
, on behalf of the Mining Association of Canada (MAC) Tailings Working Group,
Tailings and Mine Waste ''08 October 21, 2008 Vail, Colorado
ttp://www.infomine.com/publications/docs/Eaton2008.pdf

Stava Valley Italy, 1985 - Before and After Tailings Spill

Images of Tailings Dam Break and Cyanide Spill Sites, from Eaton 2008

Tailings Pond Liner Installation: An Example with Some Problems

Aginskii Tailings Dam, Kamchatka, Russia, During Liner Installation showing Substrate - “Pillotka” under Liner, Geo-Membrane over Sub-Strate, and Liner Film with Welded Seams - 2005 [Substrate more typically specified as sand rather than pebbles and cobbles]



Aginskii Gold Mill Tailings Dam During Slope Construction Before Liner Installation - 2004 - [Note wet zone at base of construction area]

Aginskii Tailings Dam After Liner Installation - 2005

Aginskoe Liner 2005 looking downstream - black

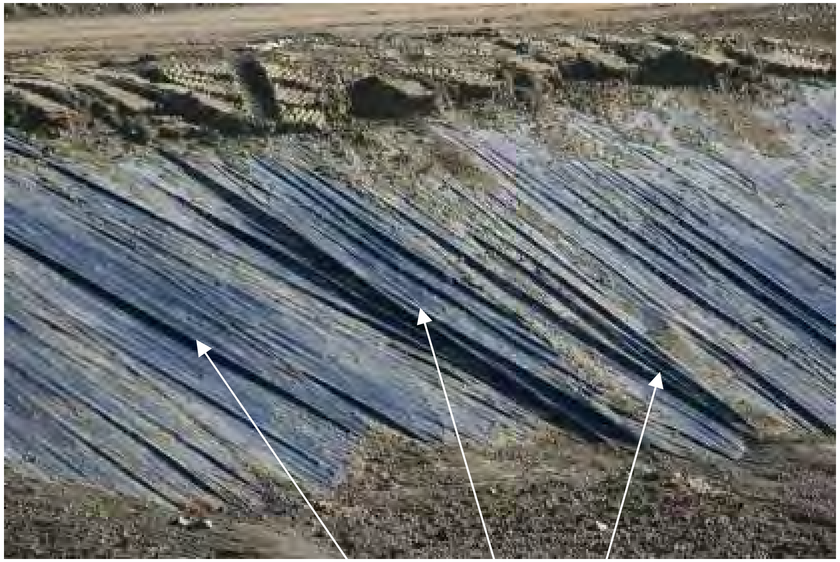
liner surface evident on upper and lower ponds

Aginskoe Liner 2005 looking downstream - black liner surface evident on upper and lower ponds

Aginskoe Liner 2007 - Liner on upper pond shows extensive tearing of geomembrane - white material - and liner surface - black material

Aginskoe Liner 2007 - liner surface exposed during 2005 - a black surface - completely replaced by white surface by 2007

Aginskoe 2007 Liner - Close-up view of tears and breaks in geomembrane previously installed at tailings facility

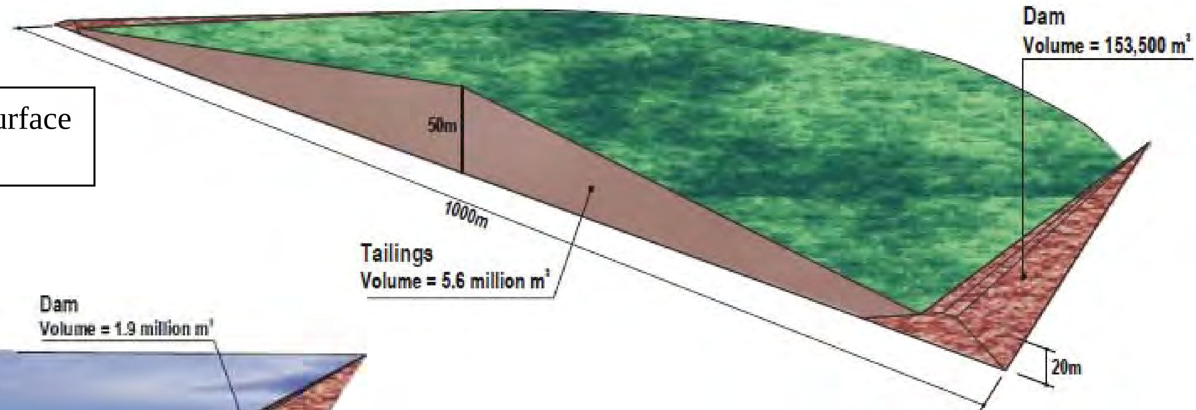


Aginskoe 2007 Liner - Wrinkles in, and overlaps of, liner materials illustrate faulty liner system installation and maintenance..

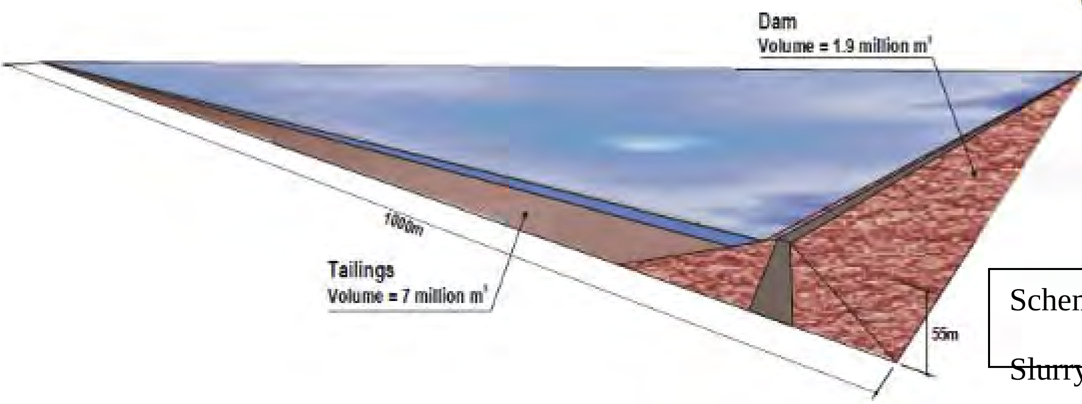
Aginskoe 2007 Liner - Extensive pattern of holes in liner material demonstrates that potential to prevent leaks has been destroyed for this portion of the liner

“Paste – The Future of Tailings Disposal?

- In the last decade paste technology has progressed from a research based backfill idea to a widely accepted, cost effective backfill method with the potential to radically change the way tailings are disposed of on surface.



Schematic Cross-Section of a Surface Paste Disposal Dam



Schematic Cross-Section of a Conventional Slurry Tailings Dam

Paste is simply dewatered tailings with little or no water bleed that are non-segregating in nature. It can be ‘stacked’ on surface and the risks associated with dam failure significantly reduces since there is no liquid containment and therefore no mechanism for the tailings to travel for tens of kilometres downstream in the event of a containment failure.

- The operating costs for the preparation and transportation of paste may be higher but life-of-mine cost analysis shows comparable costs to conventional disposal with significant environmental benefits. In addition, the eco-political impact of non water-retaining tailings dams could reduce permitting time considerably.

Paste-The Future of Tailings Disposal, 1Golder Associates (UK) Ltd, 2001
http://www.golder.com/archive/skelleftea2001pastedisposal.pdf

Thickened Tailings, Such as Paste, Offer Effective Disposal Alternatives

As standard industry methods for tailings disposal receive mounting economic and social scrutiny, paste may become an increasingly attractive option

Frank Palkovits, Thickened Tailings Offer Effective Disposal Alternatives,WOMP/EMJ, 2007 http://www.womp-int.com/2007vol9.htm#tailings

A paste deposit, as shown here, is one alternative among many in a range of possible thickened tailings formulations. The right choice for any specific tailings application depends on a variety of of factors.

Desalination:

Baja California Sur (BCS) is an arid sparsely populated coastal state in northwest Mexico. Population growth, agriculture and booming tourism have lead to severe overexploitation of underground aquifers and saline intrusion. This paper reviews the current water and energy situation in BCS. The state enjoys very high levels of solar radiation, typically above 5 kWh/m^2/day, and the suitability of renewable energy powered desalination for BCS is discussed, including past efforts in BCS and present challenges for this technology. Bermudez-Contreras, A., Thomson, M., Infield, D.G., Renewable energy powered desalination in Baja California Sur, Mexico, CREST (Centre for Renewable Energy Systems Technology), Loughborough University, LE11 3TU, UK, Available online 19 January 2008. http://www.desline.com/articoli/8924.pdf

Cabo San Lucas Desalination Project Parameters:

Capacity .... 200 liters per second
Investment * .... $28 Million US
Cost by m3 .... $0.90 / m3
Period of concession .... 20 years
Beginning of construction .... May 2005
Tests of operation……………… Jan. 2007
Beginning of operations .... March 2007

Seawater Desalination as an alternative solution for potable water in Mexico: Seawater Desalination Plant Cabo San Lucas, B.C.S., Mexico, 2007 http://www.apwa.net/documents/meetings/congress/2007/handouts/3992.pdf

[Paradones Amarillos Water need projected at 44 lps based on 1.4 million m3/yr.]

Potential Impacts of Seawater Desalination Project on the Marina Environment include:

- **Desalination facilities can cause significant adverse effects on marine organisms unless properly designed, sited and operated.**
- **Reviewing desalination intakes and outfalls – both open-water and subsurface – will require evaluating alternative locations and mitigation measures that avoid or minimize adverse effects on marine biological resources and that, where feasible, restore those resources.**
- **Desalination facilities proposing to co-locate with coastal power plants raise unique issues.** P.65

A Review of a Desalination Project should include descriptions and analysis of:

- **Ambient or background conditions, including daily and seasonal variations the existing level of water quality impairment, etc.**
- **Facility operating rates and discharge constituents of those rates.**
- **Types and amounts of chemicals and compounds used during the processes and maximum expected concentrations in the discharge**
- **Plume-modeling to show areal extent of salinity ranges in various conditions (including worst-case).**
- **Capacity of the wastewater treatment or landfill to allow separation of solids or chemicals from the discharge.**
- **Fate and transport modeling showing how the discharge would interact with the receiving water.**
- **The "worst-case" situation – i.e. the condition during which the facility would have the greatest adverse effects – for example, when the facility operates at full capacity during an ebb tide and no or low currents so that little mixing occurs.**
- **Marine organizations present and how they would be affected by salinity changes, including how the affects vary by life stage.** P. 78 California Coastal Commission, Seawater Desalination and the California Coastal Act of 2004, http://www.coastal.ca.gov/energy/14a-3-2004-desalination.pdf

Arsenic Contamination:

“... analyses indicated that the composite [ore] sample contained small amounts of copper (256ppm) and arsenic (1291ppm).”
2008 VG TR p. 14-4

Concentrations of arsenic and fluoride above Mexican drinking water standards have been detected in aquifers of various areas of Mexico. This contamination has been found to be mainly caused by natural sources. However, the specific processes releasing these toxic elements into groundwater have been determined in a few zones only. Many studies, focused on arsenic-related health effects, have been performed at Comarca Lagunera in northern México. High concentrations of fluoride in water were also found in this area. The origin of the arsenic there is still controversial. Groundwater in active mining areas has been polluted by both natural and anthropogenic sources. Arsenic-rich minerals contaminate the fractured limestone aquifer at Zimapán, Central México.

Tailings and deposits smelter-rich fumes polluted the shallow granular aquifer. Arsenic contamination has also been reported in the San Antonio–El Triunfo mining zone, southern Baja California, and Santa María de la Paz, in San Luis Potosí state.
Armienta, M. A., and Segovia, N., Arsenic and Fluoride in the groundwater of Mexico, Environ Geochem Health (2008) 30:345–353
http://www.springerlink.com/content/v43462xt3106k827/

The San Antonio-El Triunfo mining district, located at a mountainous region 45 km southeast of La Paz, Baja California, has been worked since the late 1700s. Mine waste material produced during 200 years of mineral extraction area poses a risk of local groundwater pollution and eventually, regional pollution to the Carrizal (west basin) and the Los Planes (east basin) aquifers. There are different types of deposits in the mining area. These are dominated by epithermal veins, in which arsenopyrite is an important component.

[E]ven though the amount of mine waste is relatively small in comparison to the large scale area, significant As in groundwater derived from the mine waste piles is found locally in the groundwater…. The highest values of total dissolved solids (TDS) and As are in the mineralized area where the mining operations occurred (F1500 ppm TDS and 0.41 ppm As). The lowest concentrations of TDS and As are, in general, away from the mineralized area (F500 ppm TDS and 0.01 ppm As)…. The arsenic concentrations vary seasonally, especially after the heavy summer thunderstor

A. Carrillo-Chávez, J. I. Drever and M. Martínez, Arsenic content and groundwater geochemistry of the San Antonio-El Triunfo, Carrizal and Los Planes aquifers in southernmost Baja California, Mexico, Environmental Geology, V39N11, October, 2000 http://www.springerlink.com/content/2mblv6p7lldmbm4q/

Arsenolite (As_2O_3) was historically produced as a byproduct of gold and silver extraction in Southernmost Baja California Peninsula. There are in the San Antonio-El Triunfo area more than 800,000 tons of mine waste material with an average content of 4% arsenic oxide.

The chemical reaction to produce arsenic trioxide (arsenolite) was the oxidation of arsenopyrite (AsFeS) with gold (ore) to produce iron oxide (Fe_2O_3) with gold and releasing SO_2 and As_2O_3 fumes. During the process the arsenic fumes sublimated onto the inner walls of old, mineral processing plants.

When the chambers filled up, they were periodically emptied out on big piles of oxidized tailings. But once the plants were abandoned, the chambers remain half filled with approximately 600 tons of pure arsenolite.

Arsenic trioxide waste at La Oroyo, Peru

Carrillo. A and Drever, J. I., Environmental Assessment of the Potential for Arsenic Leaching into Groundwater from Mine Wastes in Baja California Sur, Mexico, Geofisica Internacional V37N1, UNAM 1998http://redalyc.uaemex.mx/redalyc/pdf/568/56837104.pdf

Initial Observations

Land rights:
Vista Gold acknowledges that land rights questions continue in report to shareholders at 2009 Annual General Meeting.

Water supply:
Water supply costs - construction, pipeline, operations, energy not in 2008 Tech. Report cost summary.

Power supply:
Power needs may be revised as cost of full feasibility study design is developed. On-site solar systems would provide independent sources of power, generate revenue by selling unused power to the grid and provide sustainable economic development after mining.

Transportation:
Cyanide transportation safety issues not identified or addressed.
Cost of road upgrade not identified.

Financing:
Amount of financial needed from outside source not identified.

Mine and Waste Management Plans:
Full “bankable feasibility study-level” design and financial analysis not available.

Detailed site characterization including ground water aquifers, alluvial water distribution and spring locations not available.

Detailed geochemical characterization of ore and waste rock yet to be completed

Acid drainage potential identified for portions of waste rock and mill tailings but no data, short-term or long-term, are available.

Management plan for identified acid generating potential tailings and waste not available [conceptual plans are not engineering designs]

Waste rock dumps proposed without storm-water run-on controls and liners.

Management of high arsenic content of ores and waste rock not addressed.

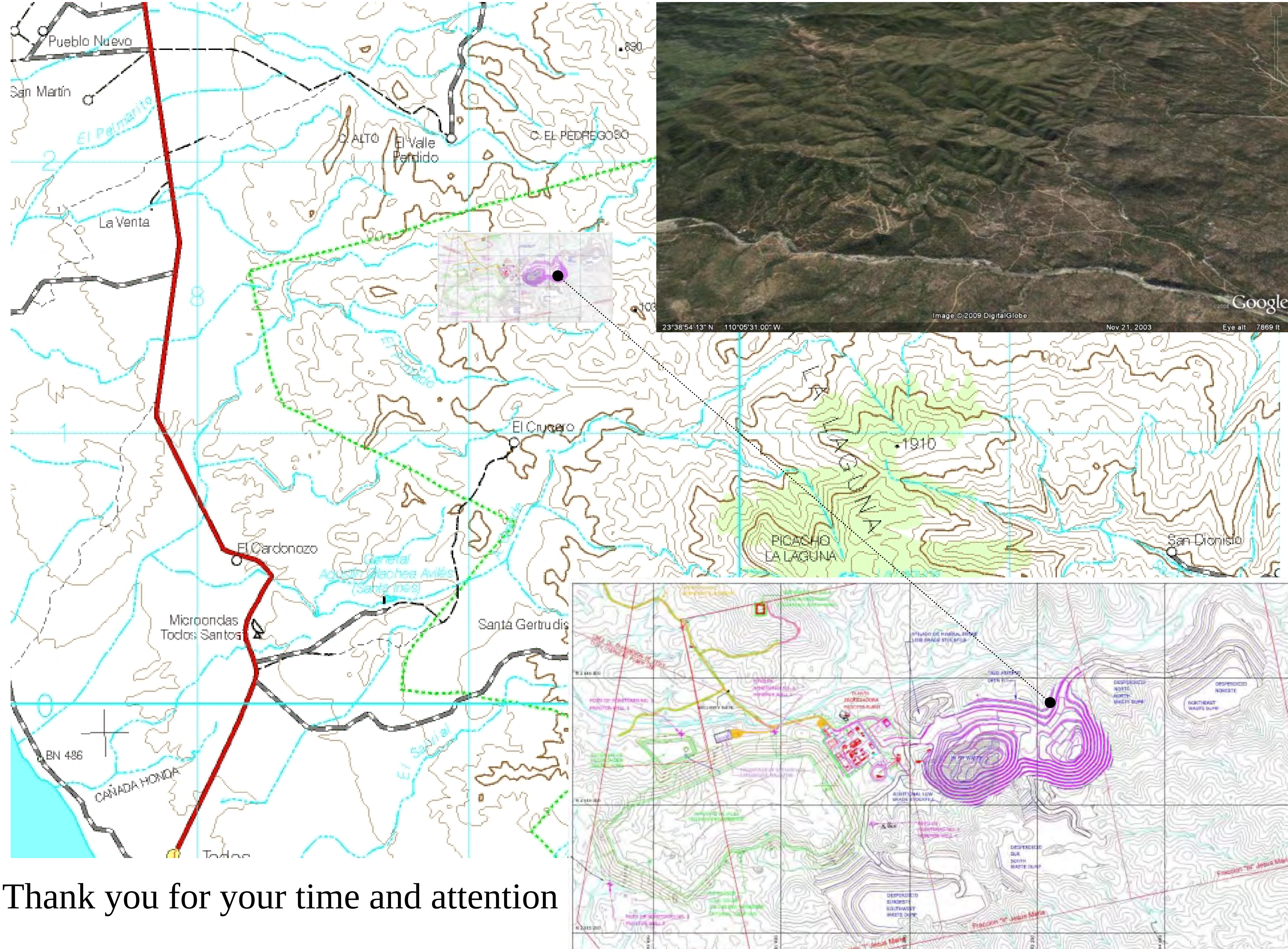
Interim plans in case of stop-start operations or unforeseen shut down not identified.

Permits
Biosphere Reserve established since previous Mexican permits issued.
Consultations regarding permits continues.
Operating plans appear to have major modifications from previous design reviewed by regulatory agencies

"Social License"
"The project is remotely located and is not expected to directly affect any local inhabitants. The access road improvements will benefit the villages of Valle Perdido and El Rosario. The Company is currently working with the local education and health care authorities and has become a "social partner" with the elementary school in El Rosario.

"The Company is unaware of any social issues related to the development of the project"

Ore
Project feasibility assumes $850/oz gold for the first three years and $725/oz gold for remaining 6.5 years of operating life.



Thank you for your time and attention