

# **Amended and Restated NI 43-101 Technical Report Resource Update Mt. Todd Gold Project Northern Territory, Australia**

*Prepared for:*

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Effective Date: September 6, 2011

Original Issue Date: October 19, 2011

Issue Date of Amendment and Restatement: April 11, 2012

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I Rex Clair Bryan, Ph.D., do hereby certify that:

a) I am currently employed by Tetra Tech MM, Inc. at:

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b) This certificate applies to the Technical Report titled "Amended and Restated NI 43-101 Technical Report Resource Update Mt. Todd Gold Project Northern Territory, Australia" (Technical Report), effective September 6, 2011, originally issued October 19, 2011 and amended and restated April 11, 2012.

c) I graduated with a degree in Engineering (BS with honors) in 1971 and a MBA degree in 1973 from the Michigan State University, East Lansing. In addition, I graduated from Brown University, Providence, Rhode Island with a MS degree in Geology in 1977, and The Colorado School of Mines, Golden, Colorado, with a graduate degree in Mineral Economics (Ph.D.) in 1980. I have worked as a resource estimator and geostatistician for a total of thirty-one years since my graduation from university; as an employee of a leading geostatistical consulting company (Geostat Systems, Inc. USA), with large engineering companies such as Dames and Moore, URS, and Tetra Tech and as a consultant for more than 30 years. I am a Registered Member (#411340) of the Society for Mining, Metallurgy, and Exploration, Inc. (SME). 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.

d) I have visited and inspected the subject property from September 12th, 2011 to September 14th, 2011.

e) I am responsible for SECTIONS 1-12, 14-27 of this Technical Report.

f) I satisfy all the requirements of independence according to NI 43-101.

g) I have had prior involvement with Vista Gold Corp. on the property that is the subject of this Technical Report. My involvement has consisted of acting as an expert who was relied upon for previous Technical, Preliminary Economic Assessment, and Prefeasibility Reports.

h) I have read NI 43-101, Form 43-101F1, and the Companion Policy to NI 43-101 (43-101 CP) and the Technical Report has been prepared in compliance with NI 43-101, Form 43-101F1, and 43-101 CP.

i) As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the portions of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

j) I consent to the filing of the Technical Report with any stock exchanges or other regulatory authority and any publication by them, including electronic publication in the public company files on the websites accessible by the public, of the Technical Report.

Dated this 11<sup>th</sup> day of April 2012

***“Rex Clair Bryan, Ph.D.”*** - Signed

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Signature of Qualified Person

**Rex Clair Bryan, Ph.D.**

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Print name of Qualified Person

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b) This certificate applies to the Technical Report titled "Amended and Restated NI 43-101 Technical Report Resource Update Mt. Todd Gold Project Northern Territory, Australia" (Technical Report), effective September 6, 2011, originally issued October 19, 2011 and amended and restated April 11, 2012.

c) I graduated with an M.S. in Metallurgical Engineering and a Ph.D. in Mineral Economics from the Colorado School of Mines in 1974 and 1978, respectively. I have worked as a metallurgist/mineral economist for a total of 35 years and have been involved with the preparation of numerous reports, feasibility studies, and NI 43-101 documents. I am a Member of the Society for Mining, Metallurgy, and Exploration, Inc. (SME) and the Canadian Institute of Mining (CIM). 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.

d) I have not visited or inspected the subject property.

e) I am responsible for SECTION 13 of this Technical Report.

f) I satisfy all the requirements of independence according to NI 43-101.

g) I have had prior involvement with Vista Gold Corp. on the property that is the subject of this Technical Report. My involvement has consisted of acting as the Qualified Person for previous Technical, Preliminary Economic Assessment, and Prefeasibility Reports.

h) I have read NI 43-101, Form 43-101F1, and the Companion Policy to NI 43-101 (43-101 CP) and the Technical Report has been prepared in compliance with NI 43-101, Form 43-101F1, and 43-101 CP.

i) As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the portions of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

j) I consent to the filing of the Technical Report with any stock exchanges or other regulatory authority and any publication by them, including electronic publication in the public company files on the websites accessible by the public, of the Technical Report.

Dated this 11<sup>th</sup> day of April 2012

***“Deepak Malhotra, Ph.D.”*** - Signed

---

Signature of Qualified Person

**Deepak Malhotra, Ph.D.**

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Print Name of Qualified Person

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## ILLUSTRATIONS

All illustrations figures and tables have been included within the report text.

## 1.0 SUMMARY

The Mt. Todd property contains a number of known occurrences of gold, which have been explored and/or exploited to various degrees. The largest and best-known deposits are the Batman and Quigleys Deposits. Both of these have had historic mining, with Batman having the most production and exploration completed. Currently, only the Batman and Quigleys deposits have NI-43-101 (43-101) and Canadian Institute of Mining, Metallurgical, and Petroleum (CIM) compliant reported resources and only the Batman deposit has a 43-101 and CIM compliant reportable mineral reserves.

Vista Gold Corp (Vista) purchased the Mt. Todd property on March 1, 2006, and the acquisition was completed on June 16, 2006 when the mineral leases were transferred to Vista and funds were released from escrow. Tetra Tech, Inc. (Tetra Tech) was commissioned by Vista in September 2009 to prepare a NI 43-101 compliant Preliminary Feasibility Study (PFS) at an ore processing rate of 6.77 million tonnes per year (Mtpy) for the Mt. Todd Gold Project located in Northern Territory (NT), Australia. The PFS study at 6.77 Mtpy was issued October 1, 2010. Subsequently, Vista commissioned a second PFS at an ore processing rate of 10.65 Mtpy, which was issued January 28, 2011.

Prior to these two PFS studies, an initial NI43-101 Technical Report was completed on June 26, 2006. A Preliminary Economic Assessment report was completed on December 29, 2006; and an update to the resource report was completed in May 2008 and February 2009 based on additional exploration drilling completed by Vista during 2007 and 2008.

### 1.1 Location, Property Description, and Ownership

The Mt. Todd Project is located 56 kilometers (km) by road northwest of Katherine, and approximately 250 km southeast of Darwin in NT, Australia (FIGURE 1-1). Access to the property is via high quality, two-lane paved roads from the Stuart Highway, the main arterial within the territory.

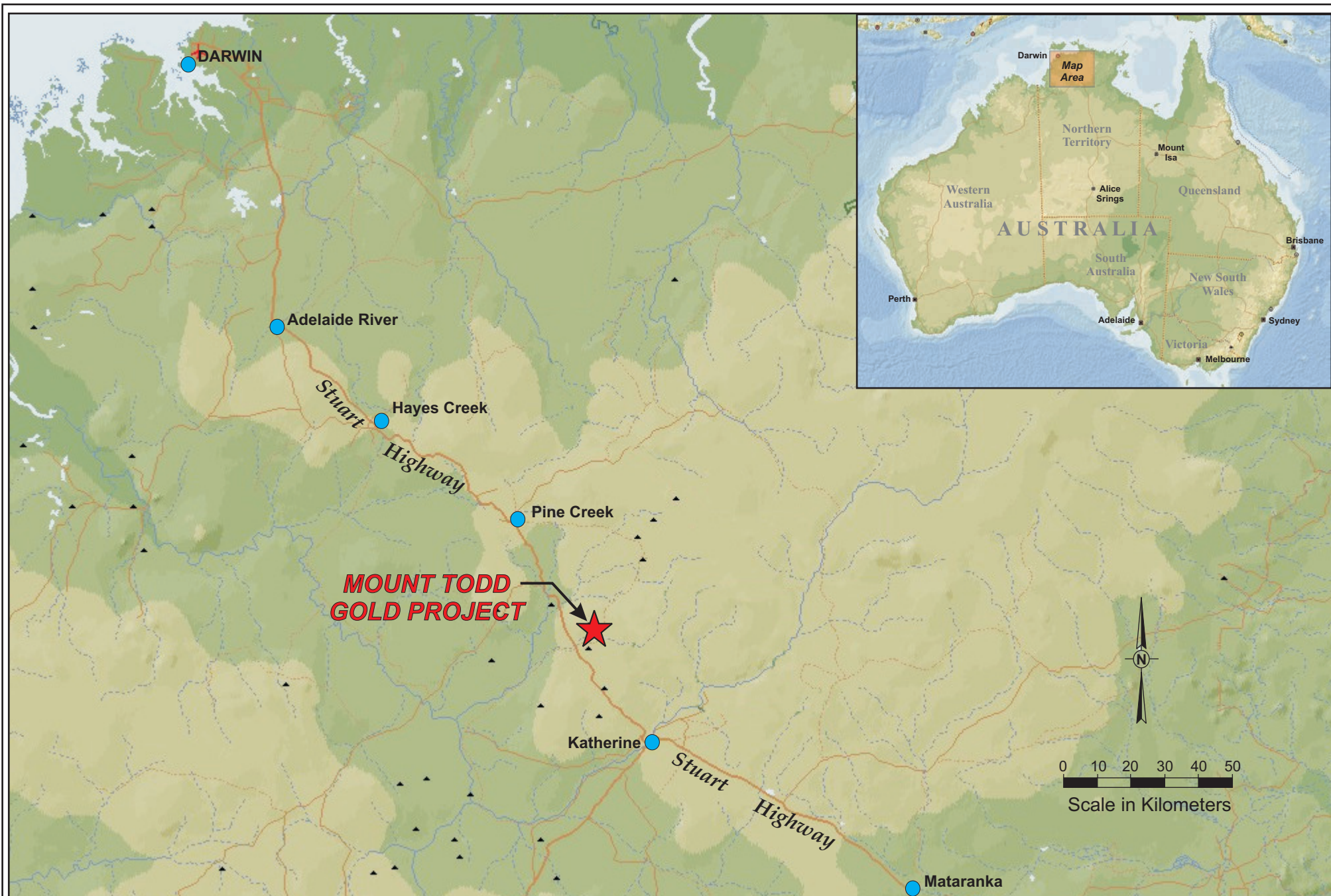
### 1.2 History

The Mt. Todd Gold Project has a long, well-documented history as presented in TABLE 1-1. In addition, it has a well-preserved and meticulously maintained database and supporting file system. The care and quality of these data speak well to the trust and integrity of the resultant studies that have been completed since the deposit was discovered.

While the property operated and closed due to bankruptcy, the failure of the project was not a result of a failure of the deposit and/or the resource estimate. The failure of the project was primarily a result of improper crushing and grinding, accompanied by poor recovery which resulted in higher than expected operating costs, and low gold prices. Had proper bulk sampling and testing been completed, a different process plant would have been built which would have been more appropriate for the deposit conditions.

The Batman resource estimate reconciled very well on a “global” basis, but had difficulties on a local basis. This was primarily due to improper modeling techniques that “over-smoothed” the grades and poor sampling techniques of the blast holes. The improper modeling of the resource was rectified in Vista’s original Technical Report (dated June 26, 2006) when the entire deposit was remodeled. Vista has continued to use modeling procedures that ensure the continued integrity of the resource estimates. Prior to closure in 2000, it appears that all of the sampling problems, as specified by the various consultants and reports, had been addressed and corrected.





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Prepared for:

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Project:

**Mt. Todd Gold Project**

Project Location:

**Northern Territory, Australia**

File Name:

**Fig1-1.cdr**

Project Number:

**114-311156**

Date of Issue:

**October 2010**

**Figure 1-1**  
**General Location Map**  
**Mt. Todd Gold Project**

**TABLE 1-1: Property History**  
**VISTA GOLD CORP. – MT TODD GOLD PROJECT**  
**May 2009**

<u>1986</u> October 1986 – January 1987:	Conceptual Studies, Australia Gold PTY LTD (Billiton); Regional Screening; (Higgins), Ground Acquisition by Zapopan N.L.
<u>1987</u> February: June-July: October:	Joint Venture finalized between Zapopan and Billiton. Geological Reconnaissance, Regional BCL, stream sediment sampling. Follow-up BCL stream sediment sampling, rock chip sampling and geological mapping (Geonorth)
<u>1988</u> Feb-March: March-April: May: May-June: July: July-Dec:	Data reassessment (Truelove) Gridding, BCL grid soil sampling, grid based rock chip sampling and geological mapping (Truelove) Percussion drilling Batman (Truelove) - (BP1-17, 1475m percussion) Follow-up BCL soil and rock chip sampling (Ruxton, Mackay) Percussion drilling Robin (Truelove, Mackay) - RP1-14, (1584m percussion) Batman diamond, percussion and RC drilling (Kenny, Wegmann, Fuccenecco) - BP18-70, (6263m percussion); BD1-71, (8562m Diamond); BP71-100, (3065m R.C.)
<u>1989</u> Feb-June:  June:  July-Dec:	Batman diamond and RC drilling:BD72-85 (5060m diamond); BP101-208, (8072m RC). Penguin, Regatta, Golf, Tollis Reef Exploration Drilling : PP1-8, PD1, RGP132, GP1-8, BP108, TP1-7 (202m diamond, 3090m RC); TR1-159 (501m RAB).  Mining lease application (MLA's 1070, 1071) lodged.  Resource Estimates; mining-related studies; Batman EM-drilling: BD12, BD8690 (1375m diamond); RC pre-collars and H/W drilling, BP209-220 (1320m RC); Exploration EM and exploration drilling: Tollis, Quigleys, TP9, TD1, QP1-3, QD1-4 (1141 diamond, 278m RC); Negative Exploration Tailings Dam: E1-16 (318m RC); DR1-144 (701. RAB) (Kenny, Wegmann, Fuccenecco, Gibbs).
<u>1990</u> Jan-March:	Pre-feasibility related studies; Batman Inclined Infill RC drilling: BP222-239 (2370m RC); Tollis RC drilling, TP10-25 (1080m RC).  (Kenny, Wegmann, Fuccenecco, Gibbs)
<u>1993 - 1997</u> Pegasus Gold Australia Pty Ltd.	Pegasus Gold Australia Pty Ltd reported investing more than \$200 million in the development of the Mt. Todd mine and operated it from 1993 to 1997, when the project closed as a result of technical difficulties and low gold prices. The deed administrators were appointed in 1997 and sold the mine in March 1999 to a joint venture comprised of Multiplex Resources Pty Ltd and General Gold Resources Ltd.



<u>1999 - 2000</u>	
March - June	Operated by a joint venture comprised of Multiplex Resources Pty Ltd and General Gold Resources Ltd. Operations ceased in July 2000, Pegasus, through the Deed Administrators, regained possession of various parts of the mine assets in order to recoup the balance of purchase price owed it. Most of the equipment was sold in June 2001 and removed from the mine. The tailings facility and raw water facilities still remain at the site.
<u>2000 – 2006</u>	
	Ferrier Hodgson (the Deed Administrators), Pegasus Gold Australia Pty Ltd; the government of the NT; and the Jawoyn Association Aboriginal Corporation (JAAC) held the property.
<u>2006</u>	
March	Vista Gold Corp. acquires concession rights from the Deed Administrators.

### 1.3 Ownership

The mineral leases (ML) consist of three individual tenements, MLN 1070, MLN 1071, and MLN 1127 comprising some 5,365 hectares. In addition, Vista controls exploration leases (EL) EL25668, EL25669, EL25576, and EL25670 comprising approximately 117,632 hectares. FIGURE 1-2 illustrates the general location of the tenements and the relative position of the two primary mineral deposits: Batman and Quigleys.

The agreement with the NT is for an initial term of five years commencing January 1, 2006, with an extension of five years at Vista's option and three additional years possible at the option of the NT. During the first five-year term, Vista must undertake a comprehensive technical and environmental review of the project to evaluate current site environmental conditions to develop a program to stabilize the environmental conditions and minimize offsite contamination. Vista must also review the water management plan and make recommendations and produce a technical report for the re-starting of the operations. During the term of the agreement, Vista must examine all technical, economic, and environmental issues, estimate the cost to rehabilitate the site, explore and evaluate the potential of the project, and prepare a technical and economic feasibility study for the potential development of the entire Mt. Todd Project site.

As part of the agreement, the NT has acknowledged its commitment to rehabilitate the site and that Vista has no obligations for pre-existing conditions until it submits and receives approval of a Mine Management Plan for resumption of mining operations. Vista provided notice to the NT Government in June 2010 that it wished to extend the agreement. In November, the NT Government acknowledged that Vista had fulfilled its obligations for the initial term, and the agreement has been extended for five years until December 31, 2015.

### 1.4 Geology and Mineralization

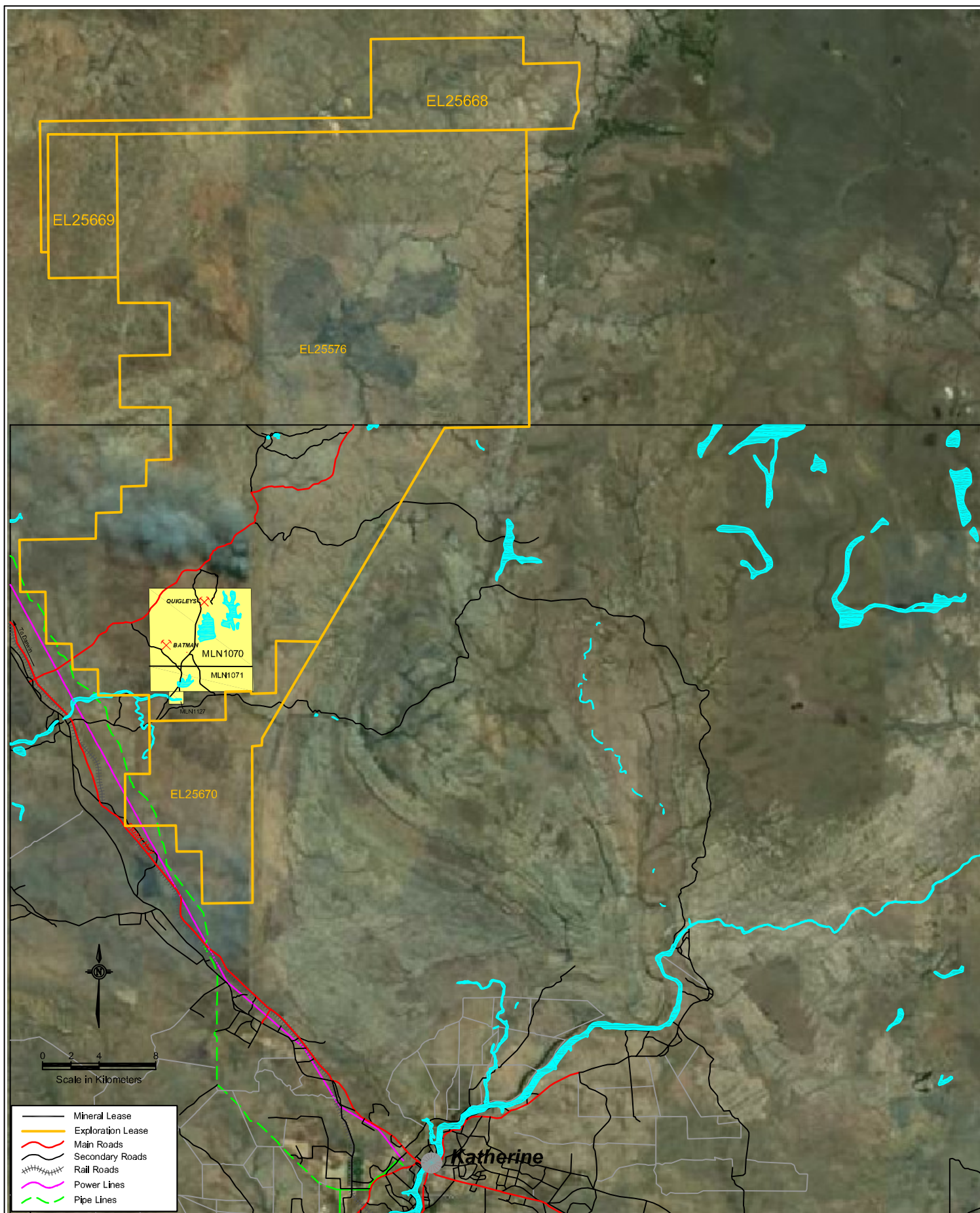
The Mt. Todd Project is situated within the southeastern portion of the Early Proterozoic Pine Creek Geosyncline. Meta-sediments, granitoids, basic intrusives, acid and intermediate volcanic rocks occur within this geological province.

The geology of the Batman Deposit consists of a sequence of hornfeld interbedded greywackes, and shales with minor thin beds of felsic tuff. Bedding is striking consistently at 325°, dipping at 40° to 60° to the southwest. Minor lamprophyre dykes trending north-south pinch and swell, crosscutting the bedding.

The deposits are similar to other gold deposits of the Pine Creek Geosyncline (PCG) and are classified as orogenic gold deposits in the subdivision of thermal aureole gold style. The Batman Deposit shares some characteristics with intrusion-related gold systems, especially in terms of the association of gold with bismuth and reduced ore mineralogies. This makes the

deposit unique in the PCG. The mineralization within the Batman Deposit is directly related to the intensity of the north-south trending quartz sulfide veining. The lithological units impact on the orientation and intensity of mineralization.

Sulfide minerals associated with the gold mineralization are pyrite, pyrrhotite, and lesser amounts of chalcopyrite, bismuthinite, and arsenopyrite. Galena and sphalerite are also present but appear to be post-gold mineralization and are related to calcite veining, bedding, and the east-west trending faults and joints.



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Prepared for:

**Vista Gold Corp.**

Project:

Mt Todd Gold Project

Project Location:

Northern Territory, Australia

File Name:

Fig1-2\_4-2.dwg

Project Number:

114-311156

Date of Issue:

September 2010

**Figure 1-2  
Concessions and  
Infrastructure Map**

## 1.5 Estimated Resources

At the present time, resources have only been estimated for the Batman and Quigleys deposits for the purposes of this report only the resource of the Batman deposit have been updated. Other deposits are known to be located and, in some cases, possess limited drillhole and other geologic information, but have not been investigated by Vista. Tetra Tech created three-dimensional computerized geologic and grade models of the Batman and Quigleys deposits. While the global model area also contains the Golf-Tollis and several other smaller deposits, no resources have been estimated for these deposits.

Tetra Tech used the geologic model that has evolved over the last few years, as adjusted by each exploration program, to guide the statistical and geostatistical analysis of the gold assay data. This model is a combination of lithologic and alteration data. The rock model was assigned a tonnage factor based on the oxidation state (i.e., oxidized, transition, primary). The tonnage factors are based on a number of tests from the core and, in Tetra Tech's opinion, are representative of the various rock units and are acceptable for estimation of the in-place geologic resources.

Estimation has been completed by using whole-block kriging techniques. This is the same estimation procedure as the previous Tetra Tech resource models, adjusted according to each successive drilling program. The estimation is completed as a "multi-pass-pass" process. That is, the first passes are for the estimating resources within the main core complex using only data from this zone. The additional passes are for the material outside of the main core complex using only assays from outside the core complex. The estimated gold resources were classified into measured, indicated, and inferred categories. The classification was accomplished by a combination of search distance, kriging variance, number of points used in the estimate, and number of sectors used. TABLE 1-2 details the results of the classification.

TABLE 1-2:    Resource Classification Criteria VISTA GOLD CORP. – MT TODD GOLD PROJECT October 2011							
Category	Search Range & Kriging Variance	No. of Sectors/ Max Pts per DH	Search Anisotropy	Min Points	Composite Codes	Block Codes	CORE
Indicated	Core Complex: 150 m & KV < 0.34 1 Pass	4/2	(1.0:0.7:0.4) [110:80:0]	2	1000	1000	CORE COMPLEX
Measured	Core Complex: 60 m & KV < 0.30 (overwrite Pass 1) Pass 2	4/3	(1.0:0.7:0.4) [110:80:0]	4	1000	1000	
Inferred	Core Complex KV >= 0.34 Step Classification	NA	NA	NA	1000	1000	
Inferred	Outside Core Complex: 150 m & KV <= 0.45 Pass 3	4/3	(1.0:0.7:0.4) [110:80:0]	3	500/3500	500/ 3500	OUTSIDE CORE COMPLEX
Inferred	Outside Core Complex: 50 m & KV < = 0.45 (overwrite Pass 3) Pass 4	4/3	(1.0:0.7:0.4) [110:80:0]	8	500/3500	500/ 3500	
Inferred	Primary Satellite Deposit: 150 m & KV < 0.45 Pass 5	4/3	(1.0:0.7:0.4) [110:80:0]	3	600	600	
Indicated	Primary Satellite Deposit: 50 m & KV < 0.34 (overwrite Pass 5) Pass 6	4/3	(1.0:0.7:0.4) [110:80:0]	8	600	600	
Inferred	Secondary Satellite Deposit: 150 m & KV < 0.45 Pass 7	4/3	(1.0:0.7:0.4) [110:80:0]	3	700	700	
Indicated	Secondary Satellite Deposit: 50 m & KV < 0.34 (overwrite Pass 7) Pass 8	4/3	(1.0:0.7:0.4) [110:80:0]	8	700	700	
INDEX							
Zone Codes	Zone Names	Search Anisotropy (Ellipsoid)					
3500	Footwall	Search Ranges (a:b:c) Proportion of Maximum Range for: a. Primary Axis Length: b. Secondary Axis Length: c. Tertiary Axis Length					
1000	Core Complex						
700	Secondary Satellite (n HW farthest from Core)	Orientation of Ellipse [1:2:3] 1. Azimuth of Primary Axis : 2. Dip of Primary Axis: 3. Rotation (Tilt) around Primary Axis					
600	Primary Satellite (in HW Nearest to Core)						
500	Hanging Wall Area						



TABLE 1-3 details the estimated in-place resources by classification and by cutoff grade for the Batman deposit and has been updated for this technical report. TABLE 1-4 details the in-place resources by classification and by cutoff grade for the Quigleys deposit which has not been updated for this technical report. All of the resources quoted are contained on Vista's mineral leases. The Reserve Case cutoff for the resource reporting is 0.4 grams of gold per tonne (g Au/t) and is bolded in the table. This cutoff value was determined using the three-year average gold price of \$950 in September 2010, details can be found in the previously prefeasibility study by Tetra Tech from January 2011.

<b>TABLE 1-3: Batman Deposit Classified Gold Resources</b> <b>VISTA GOLD CORP. – MT TODD GOLD PROJECT</b> <b>September 2011</b>			
<b>Cutoff Grade g Au/t</b>	<b>Tonnes (x1000)</b>	<b>Average Grade g Au/t</b>	<b>Total Au Ounces (x1000)</b>
<b>MEASURED</b>			
2.00	2,118	2.37	161
1.75	3,938	2.14	270
1.50	7,105	1.91	435
1.25	11,698	1.69	637
1.00	18,877	1.47	895
0.90	23,304	1.37	1,030
0.80	29,013	1.27	1,185
0.70	36,100	1.17	1,356
0.60	45,333	1.06	1,548
0.50	55,697	0.97	1,732
<b>0.40</b>	<b>67,166</b>	<b>0.88</b>	<b>1,897</b>
<b>INDICATED</b>			
2.00	3,924	2.55	322
1.75	6,830	2.26	496
1.50	11,692	1.99	748
1.25	20,417	1.72	1,131
1.00	35,562	1.46	1,672
0.90	44,842	1.36	1,955
0.80	57,375	1.24	2,296
0.70	73,944	1.13	2,695
0.60	95,785	1.02	3,150
0.50	122,985	0.92	3,630
<b>0.40</b>	<b>154,836</b>	<b>0.82</b>	<b>4,089</b>

<b>MEASURED + INDICATED (1)</b>			
2.00	6,042	2.49	484
1.75	10,768	2.21	766
1.50	18,797	1.96	1,184
1.25	32,115	1.71	1,769
1.00	54,439	1.47	2,568
0.90	68,146	1.36	2,985
0.80	86,388	1.25	3,482
0.70	110,044	1.14	4,051
0.60	141,118	1.04	4,699
0.50	178,682	0.93	5,362
<b>0.40</b>	<b>222,003</b>	<b>0.84</b>	<b>5,987</b>

NOTE (1): The sum of measured and indicated resources as reported under NI 43-101 is equivalent to mineralized material under SEC Industry Guide 7.

Tonnage, grades and totals may not total due to rounding

<b>INFERRED RESOURCES</b>			
<b>Cutoff Grade g Au/t</b>	<b>Tonnes (x1000)</b>	<b>Average Grade g Au/t</b>	<b>Total Au Ounces (x1000)</b>
2.00	3,183	3.14	322
1.75	4,560	2.76	405
1.50	6,301	2.44	495
1.25	10,599	2.01	685
1.00	17,891	1.64	945
0.90	23,624	1.48	1,121
0.80	30,907	1.33	1,319
0.70	41,619	1.18	1,576
0.60	54,075	1.06	1,836
0.50	74,461	0.92	2,194
<b>0.40</b>	<b>103,563</b>	<b>0.78</b>	<b>2,612</b>

NOTE: Tables above show the resources present and are not contained within a pit (i.e. all possible resources).

Tonnage, grades and totals may not total due to rounding

<b>TABLE 1-4: Quigleys Deposit Classified Gold Resources</b> <b>VISTA GOLD CORP. – MT TODD GOLD PROJECT</b> <b>October 2010</b>			
<b>Cutoff Grade g Au/t</b>	<b>Tonnes (x1000)</b>	<b>Average Grade g Au/t</b>	<b>Total Au Ounces (x1000)</b>
<b>MEASURED</b>			
2.00	30	2.27	2
1.75	50	2.11	3
1.50	87	1.90	5
1.25	136	1.71	7
1.00	222	1.48	11
0.90	263	1.39	12
0.80	305	1.32	13
0.70	355	1.24	14
0.60	428	1.14	16
0.50	511	1.04	17
<b>0.40</b>	<b>571</b>	<b>0.98</b>	<b>18</b>
<b>INDICATED</b>			
2.00	158	2.38	12
1.75	273	2.17	19
1.50	450	1.95	28
1.25	897	1.66	48
1.00	1,634	1.41	74
0.90	2,057	1.32	87
0.80	2,618	1.22	102
0.70	3,374	1.11	121
0.60	4,363	1.01	141
0.50	5,565	0.91	162
<b>0.40</b>	<b>6868</b>	<b>0.820</b>	<b>181</b>



<b>MEASURED + INDICATED (1)</b>			
2.00	188	2.36	14
1.75	323	2.16	22
1.50	537	1.94	34
1.25	1,033	1.66	55
1.00	1,856	1.42	85
0.90	2,320	1.33	99
0.80	2,923	1.23	115
0.70	3,729	1.12	135
0.60	4,791	1.018	157
0.50	6,076	0.919	179
<b>0.40</b>	<b>7,439</b>	<b>0.833</b>	<b>199</b>

NOTE (1): The sum of measured and indicated resources as reported under NI 43-101 is equivalent to mineralized material under SEC Industry Guide 7.

Tonnage, grades and totals may not total due to rounding

<b>INFERRED RESOURCES</b>			
<b>Cutoff Grade g Au/t</b>	<b>Tonnes (x1000)</b>	<b>Average Grade g Au/t</b>	<b>Total Au Ounces (x1000)</b>
2.00	335	2.35	25
1.75	559	2.16	39
1.50	975	1.93	60
1.25	1,854	1.66	99
1.00	3,193	1.43	147
0.90	3,950	1.34	170
0.80	4,795	1.25	193
0.70	5,871	1.16	219
0.60	7,473	1.05	252
0.50	9,416	0.95	287
<b>0.40</b>	<b>11,767</b>	<b>0.85</b>	<b>320</b>

Tonnage, grades and totals may not total due to rounding

### **Exploration Potential**

The following discussion details by deposit some of the more important areas that have been identified by Tetra Tech that are likely to result in increases in either the confidence of the resource estimate and/or the amount of the resource estimate for the individual deposits located on the Mt. Todd mineral leases.

### **Batman Deposit**

One of the results of the statistical and geostatistical analysis of the blasthole gold data and resulting creation of independent gold, copper, silver, lead, zinc, iron, and sulfur grade models was the identification of areas within the existing defined deposit that continue to be “under drilled” with regard to classification of the estimated resources. In general, as the depth of the main mineralized host and structure increases, the density of drilling decreases, although the 2008 exploration program did improve the deep drilling, the 2010 drilling program achieved results with high grade intercepts encountered at depth in newly modeled “bump out”. Continued definition of the high grade “bump out” or possible inflection of the core complex is advisable.

Some areas that contain no estimated resources, but in all likelihood, based on the geology and surrounding drillhole data, are mineralized and would contain resources if additional drilling were completed. In addition to these areas, the Batman deposit continues to be open in both the north and south directions. The last fence on the north and south sides of the deposit are mineralized and suggest that more “step-out” drilling is still needed.

Another feature that came to light from the 2007 to 2011 exploration-drilling program is the existence of new “parallel and/or sub-parallel” structures and mineralization to the east of the main core complex at the Batman deposit. Both of these parallel and/or sub-parallel structures warrant additional exploration drilling to better define these zones.

### **Quigleys and Golf-Tollis Deposits**

The Quigleys and Golf-Tollis deposits appear to be more structurally controlled than the Batman deposit with the mineralization occurring in narrower bands. Because of this, additional work will need to be undertaken in order to develop a more accurate geologic model and mineralization controls. Tetra Tech proposes that the following items be considered when preparing the work plan:

- Surface mapping and subsequent re-interpretation of the footwall contact relationship to the shear zone mineralization is recommended. Any additional structural complexity that results should, where appropriate, be used to refine the mineralized envelope upon which modeling updates are based;
- Optimization of the resource provides a focus to define areas requiring further investigation or infill drilling. Due to the high degree of variability in the deposit, infill drilling is best targeted at key areas of geological complexity;
- A model should be developed for the area outside the shear zone. This will require separation of areas of mineralization from unmineralized areas using a suitable constraining envelope; and
- The cause of an apparent bias between some of the old and new reverse circulation (RC) drilling should be confirmed to validate the inclusion of all samples in the resource calculation.

**The following summaries for SECTIONS 1.6-1.14 are taken in their entirety from the summary section of the Pre-Feasibility Study by Tetra Tech issued January 28, 2011. The following summary sections pre date the resource quoted in this technical report and are provided for context only.**

## **1.6 Reserve Case Mine Plan and Mineral Reserves**

Potentially mineable pit shapes were evaluated using a Lerchs-Grossman (LG) analysis performed with the GEMS® Whittle pit optimization software and the Mt. Todd mineral resource model. The optimization is an iterative process with initial parameters coming from the Mt. Todd October 1<sup>st</sup>, 2010 PFS. The final parameters incorporate mining costs developed during this study. The optimization runs used only Measured and Indicated material for processing. All Inferred material was considered as waste. The parameters assumed for the LG analyses are summarized in TABLE 1-5.

<b>TABLE 1-5: Reserve Case Parameters for Lerchs-Grossman Analyses</b> <b>VISTA GOLD CORP. – MT TODD GOLD PROJECT</b> <b>January 2011</b>	
Overall Pit Slopes	33° from pit centered azimuth ranging 10° – 150° 55° from pit centered azimuth ranging 150° – 10°
Gold Price	US\$1000 per toz Au
Gold Recovery	82 percent
Mining Cost	US\$1.40 per tonne mined
Processing Cost	US\$7.60 per tonne processed
Tailings Construction	\$1.00 per tonne processed
Tailings Reclamation	\$1.14 per tonne processed
Waste Dump Rehabilitation	\$0.12 per tonne waste
General and Administrative Cost	US\$0.60 per tonne processed

The Reserve Case LG shell is defined by the economic factors listed in TABLE 1-5. Varying gold prices were used to evaluate the sensitivity of the deposit to the price of gold as well as to develop a strategy for optimizing project cash flow. To achieve cash flow optimization, mining phases or push backs were developed using the guidance of Whittle pit shells at lower gold prices.

Using the Reserve Case, the ultimate pit was designed as an open-pit mine using large haul trucks, hydraulic shovels, and front-end loading equipment. Primary production is achieved using 21 cubic meter hydraulic shovels along with 180 tonne haul trucks. This equipment is used primarily for the movement of waste material.

Secondary production is achieved using a CAT 992 loader and smaller CAT 785C trucks. The 992 loader is assumed to have a 12 cubic meter bucket, and the CAT 785C trucks have a rated payload of 140 tonnes. The loader and smaller trucks are used primarily to move ore from the pit to the crusher and for reclaiming ore from stockpiles. Waste production from the 992 loader and 785C trucks is anticipated as well.

After the ultimate pit was designed, pits or phases within the ultimate pit were designed to enhance the project by providing higher-value material to the process plant earlier in the mine life. The design includes smoothed pit walls, haulage ramps, benches, and pit access. Phase 1 and phase 2 pit designs remain unchanged from the previous PFS work. Phase 3 was designed to the ultimate pit limit on the south, while phase 4 (the final pit phase) is used to achieve the ultimate pit in the north.

<b>TABLE 1-6: Classification of Reserve Case Mineable Reserves</b> <b>VISTA GOLD CORP. – MT TODD GOLD PROJECT</b> <b>January 2011</b>						
<b>Class</b>	<b>Ore Tonnes (x 1000)</b>	<b>Average Gold Grade (g Au/t)</b>	<b>Contained Gold (oz x 1000)</b>	<b>Waste Tonnes (x 1000)</b>	<b>Total Tonnes (x 1000)</b>	<b>Stripping Ratio (W:O)</b>
<b>Proven</b>	48,961	0.91	1,431			
<b>Probable</b>	100,913	0.83	2,681			
<b>Proven + Probable</b>	149,874	0.85	4,112	271,480	421,354	1.81

Note: Reserves are reported using a 0.40 g Au/t cutoff grade.

The Reserve Case production schedule for this PFS assumes a 10.65 Mtpy ore production rate, resulting in a 14-year operating life, as shown in TABLE 1-7.

<b>TABLE 1-7: Reserve Case Production Schedule</b> <b>VISTA GOLD CORP. – MT TODD GOLD PROJECT</b> <b>January 2011</b>				
<b>Year</b>	<b>“Ore” Tonnes (x 1000)</b>	<b>Avg. Grade (g Au/t)</b>	<b>Waste Tonnes (x 1000)</b>	<b>Stripping Ratio (W:O)</b>
PP1	1,084	0.68	6,287	5.80
1	12,210	0.86	22,965	1.88
2	13,584	0.90	25,048	1.84
3	11,997	0.90	24,400	2.03
4	10,650	0.95	25,578	2.40
5	6,200	0.71	27,824	4.49
6	8,175	0.67	25,041	3.06
7	13,198	0.79	24,662	1.87
8	11,158	0.76	24,710	2.21
9	8,990	0.66	22,655	2.52
10	13,626	0.78	20,386	1.50
11	12,102	0.86	14,158	1.17
12	13,379	0.93	5,940	0.44
13	11,310	1.09	1,805	0.16
14	2,213	1.40	22	0.01
<b>Total</b>	<b>149,875</b>	<b>0.85</b>	<b>271,480</b>	<b>1.81</b>

## 1.7 Limestone Quarry and Lime Production

Limestone is currently commercially produced near Katherine by quarrying the Katherine limestone beds. The Mt. Todd operation plans to ensure a supply of economic lime is available for use in the processing and water treatment areas of the operation. A limestone quarrying operation will be developed by mining a nearby outcropping of Katherine Limestone; a lime kiln plant will be established at the quarry to convert the limestone into lime.

## 1.8 Power Supply

The Power Engineers report, “Mt. Todd Power Station, Phase 3 Pre-Feasibility Study,” dated September 30, 2010, provides a detailed discussion of the generation equipment options available for onsite electrical supply to meet the power requirements of the re-commissioned Mt. Todd Gold Mine in NT, Australia operated by Vista. The site electrical power demands are a fixed constant operating load estimated at 46 megawatts (MW) with a minimum of startup/shutdown cycles. This load falls between gas turbine size categories so surplus generating capacity is expected if the load is met with a single turbine.

The cost analysis for this study is based on a 13-year operating plant life without annual pricing index. Fuel costs are based on a rate of \$5.75 (AUS) per gigajoule. Calculated 13-year project life costs (includes all capital and operating costs) are estimated \$0.0710 to 0.0950 (AUS) per kilowatt-hour for the 46 MW site demand compared to the commercially purchased electricity rate of \$0.1636 per kilowatt-hour (kWh) (adjusted for demand) for the same time period.

Five options were considered for generation of power at Mt Todd. A Rolls Royce Trent 60 WLE was selected for use in this study. This unit will generate power at a direct operating cost averaging \$0.0629 (AUD) per kWh over the life of the project.

## 1.9 Processing and Process Flowsheet

The Mt. Todd gold recovery process evolved both historically and through studies commissioned by Vista from Resource Development, Inc. (RDi). The evolved process uses proven technologies to recover 82 percent of the contained gold by carbon in leach (CIL) leaching. For purposes of this PFS, an ore feed grade of 1.08 g Au/t and an Ausenco adjusted plant feed rate of 1,427 tonnes per hour (t/h) (nominally 30,000 tonnes per day [tpd] or 10.65 Mtpy) was used. Note that Ausenco frequently describes their work as the “11Mtpy Engineering and Cost Study.”

Testwork at RDi on samples provided by Vista supports a process using conventional coarse crushing followed by HPGR crushing and ball mill grinding to produce a leach feed at P<sub>80</sub> 150 micrometer (µm) (100 mesh Tyler). The resulting pulp is then pre-aerated and subjected to CIL leaching followed by adsorption, desorption, and recovery (ADR) leading to gold doré. The CIL tailings are detoxified and sent to an impoundment, from which plant process water is recycled. The process is robust.

## 1.10 Tailings Disposal

A tailings disposal tradeoff study was completed in early 2010 in order to explore several options for tailings disposal, such as a dry stack facility, new tailings storage facility (TSF) designs for both thickened and conventional tailings, and several raises to the existing TSF. The 60 million tonne capacity raise to the existing TSF design (TSF1) was originally selected based on economic tradeoff studies and the relatively low cost per tonne of tailings stored. Since the total required tailings storage for the project is 150 million tonnes, a new TSF (TSF2)

has been designed to provide an additional 100 million tonnes of tailings storage. This provides extra storage as a contingency.

The design for the raises to TSF1 was adapted from the MWH design completed in 2006, with some modifications to accommodate the projected capacity of the facility. The facility will be constructed in six separate stages, using centerline construction techniques for the first raise and upstream construction techniques for subsequent raises. The embankments will be constructed with 2.5:1 (horizontal [H] to vertical [V]) downstream slopes and 2:1 (H:V) upstream slopes. Three saddle dams will be constructed to contain the tailings on the west side of the facility. It was assumed that all of the existing toe drains, under-drains, and decant towers installed at the existing facility will be fully operational when tailings deposition begins and that minimal construction will be required to raise or extend the drains and towers to the required elevation at each stage.

TSF2 will be completed in four construction stages using upstream raise construction methods. The embankments will be constructed with 3:1 (H:V) upstream and downstream inter-bench slopes and five-meter wide benches at the downstream crest of each stage, yielding an overall slope of 3.2:1 (H:V). The crest will be 30 m wide and will slope at 0.5 percent from the high point in the southeast corner to the tie-in with existing ground near Mt. Todd. The facility will be fully lined and will include a system of toe drains, under-drains, and over-drains, as well as a new water reclaim system. A small surface water diversion will be constructed at the southwest corner of the proposed facility to direct Horseshoe Creek away from the new TSF footprint.

## **1.11 Environmental Conditions**

The primary environmental issue at the Mt. Todd site is water management resulting from the project shutdown without implementation of closure or reclamation activities. All of the water retention ponds (excluding the raw water pond) and the pit contain acidic (~pH 3-4.5) water with elevated concentrations of regulated constituents.

### **1.11.1 Permitting**

In 2007, Vista became the operator of the Mt. Todd site and accepted the obligation to operate, care for and maintain the assets of the NT Government on the site. As part of the agreement, the NT Government acknowledged its commitment to rehabilitate the site and that Vista has no obligations for pre-existing conditions until it submits and receives approval of a Notice of Intent (NOI) for resumption of mining operations. A decision on the appropriate permitting route will be initiated by submission of an NOI to the Department of Regional Development, Primary Industry, Fisheries and Resources (DRDIPFR), now the Department of Resources (DOR).

A referral and assessment process will determine how the Environment Protection and Biodiversity Conservation Act (EPBC Act) will be applied. The EPBC Act addresses the protection of matters of national environmental significance which include flora, fauna, ecological communities and heritage places. If significant impacts are likely to occur, the project will require formal assessment either through preparation of a Public Environmental Report (PER) or an Environmental Impact Statement (EIS).

### **1.11.2 Water Management**

Current and historic evidence indicates that Mt. Todd waste rock, ore, and tailings contain sulfides capable of generating acid and metal laden leachates (ARD/ML). ARD/ML currently occurs or is found in the waste rock dump and associated pond (RP1), the lean ore stockpile and associated pond (RP2), exposed pit walls and associated pit lake (RP3), the heap leach pad (HLP) and associated pond and moat, the plant runoff pond (RP5), and within the tailings storage facility (RP7).



The Edith River and tributaries are protected beneficial use under the Water Act 2000 for aquatic ecosystem protection. As a result, discharges from the site are regulated under the Mt. Todd Project Waste Discharge License (WDL 135) which allows controlled discharges from RP1 to the Edith River during high flow events. The impacted water is sufficiently diluted during high flow events to ensure downstream compliance with established copper criteria which in turn dilutes other regulated constituents to acceptable levels. Improvements to the water management system have reduced uncontrolled discharges during the wet seasons.

In August 2009, Vista commissioned a water treatment plant (WTP) to treat ARD/ML water at a capacity of 193 cubic meters per hour (m<sup>3</sup>/hr). Pilot studies showed that lime treatment removed 98 percent of the cadmium, 98.8 percent of aluminum, and greater than 99 percent of the copper and zinc in acidic water from the waste rock dump pond (RP1). The treated solution including the reaction by-products (gypsum and metal hydroxide compounds) flows by gravity to the tailings storage facility (RP7). Testing is underway to define the operational conditions required to meet standards to discharge treated water after clarification either on a continuous basis or during the wet season. Based on recent measurements (flow meter installed in the Existing WTP influent pipe in December 2010), ARD/ML is treated at a rate of approximately 360 m<sup>3</sup>/hr (HydroGeoLogica, Inc. and Tetra Tech, 2010).

### **1.11.3 Baseline Studies**

Site characterization studies were conducted at the Mt. Todd site in support of the 1992 Draft EIS (Zapopan, 1992). Vista is conducting additional baseline studies as required by the site waste discharge license and to support design, permitting, operations, and closure. Baseline studies currently being conducted or to be implemented include:

- Surface water and groundwater characterization;
- Soils;
- Geochemical characterization;
- Biological resources (aquatic and benthic, vegetation and wildlife);
- Cultural and archaeology; and
- Socio-economics.

These environmental baseline studies can be completed within one year or less.

### **1.11.4 Reclamation and Closure**

The major and immediate environmental challenges for Mt. Todd are the management of ARD/ML currently contained in several water storage facilities and the management of precipitation and surface water runoff reporting to mine-related surface disturbance. ARD/ML is currently managed through a combination of practices including evaporation, active water treatment, pumping excess water to the Batman Pit, and controlled and uncontrolled discharges to creeks in the vicinity of Mt. Todd and the Edith River during major flow events. Recent upgrades to the pumping system have reduced the frequency of uncontrolled effluent releases from the ponds to the Edith River and its tributaries.

Throughout the mine-life, Vista should anticipate, plan, design for, and implement effective plans for:

- Year-round collection, containment, and treatment of all ARD/ML prior to effluent release;



- Identification of potentially acid-generating (PAG) and non-PAG materials, as well as materials that have the potential to leach constituents in concentrations above applicable water quality-based effluent standards (metalliferous);
- Selective handling of PAG and non-PAG material and potentially direct treatment of PAG materials throughout the mine-life to prevent or reduce the generation of ARD/ML;
- Separation of nonimpacted surface and ground water from PAG and metalliferous materials, and ARD/ML;
- Short- and long-term hydrologic isolation of PAG and metalliferous materials from ground and surface water;
- Facility and site-wide closure; and
- Control of storm-water to prevent excessive erosion and sedimentation.

Specific recommendations related to these and other closure and water treatment needs are provided in Section 21-Recommendations.

The major facilities that currently exist at Mt. Todd, which are included as part of the 10.65 Mtpy mine plan, are as follows:

- Batman Pit;
- Batman Pit Lake (RP3);
- Waste Rock Dump (WRD);
- WRD Pond (RP1) and pumping system;
- TSF;
- TSF Pond (RP7);
- Process Plant and Operations Area;
- Process Plant Runoff Pond (RP5) and pumping system;
- HLP;
- HLP Pond and pumping system;
- Low Grade Ore Stockpile (LGO);
- LGO Pond (RP2) and pumping system;
- Existing Water Treatment Plan (WTP); and
- Mine roads and other ancillary facilities (e.g., pipelines).
- The new facilities proposed for closure and the mine-life water treatment system are as follows:
  - Run-on diversions up-gradient of the RP1, TSF1, and WRD;
  - New WTP;
  - Linear Low Density Polyethylene (LLDPE) (or equivalent)-Lined Equalization Pond;
  - LLDPE (or equivalent)-Lined Sludge Disposal Cell;
  - TSF1 and TSF2 Closure Spillways;
  - Modified TSF1 Decant Ponds;

- Modified TSF2 Sumps;
- LLDPE (or equivalent)-Lined TSF1 Collection Ditch;
- LLDPE (or equivalent)-Lined TSF2 Collection Ditch;
- LLDPE (or equivalent)-Lined LGO2 Collection Ditch;
- LLDPE (or equivalent)-Lined LGO2 Sump;
- Collection Ditch at toe of closed WRD;
- Modified HLP Seepage Collection Pump and Pipeline;
- Pumps and pipelines;
- Clay Borrow Area; and
- Three Anaerobic treatment wetlands (or equivalent passive/semi-passive water treatment system).

A PFS-level Closure Plan (PFCP) is included as an appendix (Appendix J) to the PFS. The PFCP includes descriptions, approximate dimensions, and performance criteria for proposed facilities. Arrangements and design drawings and details for these facilities have not been completed at this stage of the planning process.

The closure and water management goals for Mt. Todd include:

- Control acid-generating conditions;
- Reduce or eliminate the acid and metal loads of seepage and runoff water;
- Minimize adverse impacts to the surface and ground water systems surrounding Mt. Todd;
- Physical and chemical stabilization of mine waste and other mine-related surface disturbances;
- Protect public safety;
- Comply with the WDL and applicable Edith River water quality-based effluent standards; and
- Comply with NT Government regulations governing mine development and closure.

Closure plans and strategies for each major facility at Mt. Todd and the mine-life water treatment system are summarized in Appendix J.

Closure and water treatment costs were estimated at a  $\pm 25$  percent level of accuracy based on the following:

- 10.65 Mtpy mine plan and existing engineering and data presented in the PFS;
- Geochemical testing program and results (Appendix H);
- Mine-life (i.e., pre-production phase of 2 years, production phase of 15 years, closure phase of 3 years, post-closure phase of 6 years) water balance simulations, water quality estimates, and water management plans (Appendix I);
- Use of existing and new water management systems and infrastructure;
- Estimates of environmental conditions throughout the mine-life;
- NT Government mine closure and environmental protection regulations and guidelines;

- Published unit costing references;
- Tetra Tech's recent mine closure and water treatment costing experience; and
- Best professional judgment.

As summarized in TABLE 1-8 the PFS-level cost estimates for implementing the closure and mine-life water treatment plans are \$67,864,000 and \$36,590,000, respectively.

<b>TABLE 1-8: Prefeasibility-Level Closure and Mine-Life Water Treatment Cost Estimate</b> <b>VISTA GOLD CORP. – MT TODD GOLD PROJECT</b> <b>January 2011</b>	
<b>Area</b>	<b>Cost<sup>1</sup></b>
Tailings Storage Facility 1 (TSF1)	\$ 9,101,000
Tailings Storage Facility 2 (TSF2)	\$ 19,018,000
Heap	\$ 2,585,000
Process Plant And Pad Area	\$ 11,280,000
Batman Pit	\$ 205,000
Waste Rock Dump	\$ 8,620,000
WRD Retention Pond	\$ 1,709,000
Low Grade Ore Stockpile 1 (LGO1)	\$ 128,000
Low Grade Ore Stockpile 2 (LGO2)	\$ 244,000
Mine Roads	\$ 3,786,000
Clay Borrow Area	\$ 135,000
Sludge And Equalization Pond Closure	\$ 273,000
<b>Total Direct Closure Cost</b>	<b>\$ 57,084,000</b>
Mobilization/Demobilization (Assume On-Site Mining Equipment Fleet Used)	\$ 0-
Incidentals (Communication, Misc. Supplies, Etc.) = 0.5 % Of Total Direct Cost	\$ 385,000
Haul Road Maintenance During Closure = 0.5 % Of Total Direct Cost	\$ 385,000
Engineering Re-Design = 2 % Of Total Direct Cost	\$ 1,540,000
Contingency = 8 % Of Total Direct Cost	\$ 6,160,000
<b>Total Indirect Cost<sup>2</sup></b>	<b>\$ 8,470,000</b>
Annual Site Maintenance and Monitoring For 6 Years Post Closure	\$ 2,310,000
<b>Total Closure Cost</b>	<b>\$ 67,864,000</b>
<b>Water Treatment System Facility/Component</b>	
Active Water Treatment And Sludge Disposal System Construction	\$ 4,169,000
Passive Water Treatment System #1, #2 & #3	\$ 15,314,000
<b>Total Direct Water Treatment Construction Cost</b>	<b>\$ 19,483,000</b>
Pre-Production Period (Years -2 and -1) Water Treatment O&M, Reagent and Pumping <sup>3</sup>	\$ 5,545,000
Production Period (Years 1 through 15) Water Treatment O&M, Reagent and Pumping <sup>3</sup>	\$ 6,125,000
Closure Period (Years 16 through 18) Water Treatment O&M, Reagent and Pumping <sup>3</sup>	\$ 2,612,000
Post-Closure Production Period (Years 19 through 24) Water Treatment O&M, Reagent and Pumping <sup>3</sup>	\$2,825,000
<b>Total Mine-Life Water Treatment O&amp;M, Reagent and Pumping<sup>3</sup></b>	<b>\$ 17,107,000</b>
<b>Total Mine-Life Water Treatment Costs</b>	<b>\$ 36,590,000</b>

- <sup>1</sup> Cost rounded to nearest \$1,000 in current \$.
- <sup>2</sup> Includes indirect costs associated with the construction of Water Treatment System
- <sup>3</sup> Includes Plant O& M, Lime, and Water and Sludge Pumping

The major closure and water treatment assumptions used for the development of the closure plan are provided in Appendix J and summarized in Section 5.4-Environmental Conditions.

## **1.12 Economic Evaluation**

The financial results presented in this PFS have been developed co-operatively between Vista, Tetra Tech, and other consultants. The financial results are presented in constant dollars with the mine and mill capital having been estimated in the second and fourth quarters of 2010, respectively. A five percent discount rate has been applied to the financial analysis. Besides the Reserve case, sensitivity analyses were completed using varying gold prices, currency exchange rates, capital cost estimates and operating cost estimates. Unless otherwise noted, an US/AUD conversion rate of 0.85 was used. Unless specifically noted, all monetary values in the entire document are in US dollars.

### **1.12.1 Reserve Case**

The Reserve Case project entails mining 149,875,000 ore tonnes over a 15-year period. The scenario requires that 10.65 Mtpy ore be mined and processed assuming \$1,000/toz Au, an exchange rate of 0.85 US/AUD dollars, and metallurgical recoveries of 82 percent. Note that the actual 3-year average gold price is \$1,023/toz Au; however, both Tetra Tech and Vista agreed to use \$1,000/toz Au for the Reserve Case analysis.

### **1.12.2 Capital Costs**

Estimated capital expenditures for the life-of-mine Reserve Case are estimated to be \$851.1 million; this being a combination of \$589.6 million start-up capital and \$261.5 million sustaining capital, both including working capital and contingency. TABLE 1-10 provides a summary of the project capital over the life of the proposed operation.

### **1.12.3 Mine Operating Costs**

Mine operating costs have been estimated for each year of operations based on production requirements with the estimates comprising labor, fuel, material, equipment, and maintenance. A summary of the mine operating costs per tonne ore processed are presented in TABLE 1-9 for the 10.65 Mtpy Reserve Case.

### **1.12.4 Process Operating Costs**

The Reserve Case process operating costs range from \$6.76 to \$6.79/t ore during the years of operation. Included in these costs are operating expenses for the water treatment and tailings facilities. The process plant operating costs by year are given in TABLE 1-11.

**TABLE 1-9: Mine Operating Cost Summary (000) Per Tonne Ore Processed**  
**VISTA GOLD CORP. – MT TODD GOLD PROJECT**  
**January 2011**

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ore Mined	10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	775
Total mining costs	50,882	55,947	55,555	55,046	49,107	41,713	59,865	46,330	32,800	58,451	23,991	39,725	29,086	9,747	1,145
Mine Operating Cost / tonne	\$4.78	\$5.25	\$5.22	\$5.17	\$4.61	\$3.92	\$5.62	\$4.35	\$3.08	\$5.49	\$2.25	\$3.73	\$2.73	\$0.92	\$1.48

<b>TABLE 1-10: Summary of Project Capital Costs (000)</b> <b>VISTA GOLD CORP. - MT. TODD GOLD PROJECT</b> <b>January 2011</b>			
<b>CAPITAL (\$000'S)</b>	<b>LOM</b>	<b>INITIAL</b>	<b>SUSTAINING</b>
<b>MINE CAPITAL</b>			
<b>Primary:</b>			
Open Pit Mine Equipment	98,792	46,483	52,309
Lime Operation Mine Equip	5,617	5,617	0
<b>Sub-Total Primary</b>	<b>104,409</b>	<b>52,100</b>	<b>52,309</b>
<b>Ancillary:</b>			
General Surface Mobil Equipment	18,596	8,404	10,191
<b>Sub-Total Ancillary</b>	<b>18,596</b>	<b>8,404</b>	<b>10,191</b>
<b>Miscellaneous:</b>			
Mine Office, Shop and Warehouse	2,268	2,268	0
Mining Development Supply and Labor Op Costs	9,394	9,394	0
<b>Sub-Total Miscellaneous</b>	<b>11,662</b>	<b>11,662</b>	<b>0</b>
<b>TOTAL MINE CAPITAL (Before Contingency)</b>	<b>134,667</b>	<b>72,166</b>	<b>62,500</b>
<b>Mine Capital Contingency</b>	<b>9,759</b>	<b>5,615</b>	<b>4,144</b>
<b>PLANT CAPITAL</b>			
Process Plant	269,243	269,243	0
Onsite Infrastructure	22,503	22,503	0
Mobile Equipment, Spares, First-Fills	11,223	11,223	0
Power Generating Station	37,678	37,678	0
Site Demolition	3,664	3,664	0
<b>TAILING STORAGE FACILITIES CAPITAL</b>			
Pre-production WTF + Tailings Management	4,777	4,777	0
TSF Fine Grading, Equipment, Piping, Drains	71,304	5,258	66,046
TSF Bulk Earthwork	88,555	4,193	84,362
<b>TOTAL PLANT + TAILINGS STORAGE</b>	<b>508,948</b>	<b>358,539</b>	<b>150,408</b>
<b>INDIRECT PROCESS</b>			
Temporary Construction Facilities	6,999	6,999	0
Commissioning	5,599	5,599	0
<b>Total Indirect Process</b>	<b>12,598</b>	<b>12,598</b>	<b>0</b>
<b>TOTAL PLANT + TAILING + INDIRECT CAPITAL (Before Contingency)</b>	<b>521,546</b>	<b>371,137</b>	<b>150,408</b>

<b>Plant Capital Contingency</b>	<b>60,208</b>	<b>51,202</b>	<b>9,006</b>
<b>EPCM TOTAL (PLANT &amp; TAILING)</b>	<b>73,504</b>	<b>68,600</b>	<b>4,904</b>
<b>OTHER CAPITAL</b>			
Off-site Infrastructure / Accommodation Village	16,268	16,268	0
Excess Water Treatment Facility	17,985	0	17,985
Permitting	2,500	2,500	0
Recruit and Training	1,700	1,500	200
Lime Kiln/Processing	6,158	6,158	0
<b>Total Other Capital</b>	<b>44,611</b>	<b>26,426</b>	<b>18,185</b>
<b>Other Capital Contingency</b>	<b>6,692</b>	<b>3,964</b>	<b>2,728</b>
<b>Total Contingency</b>	<b>76,659</b>	<b>60,781</b>	<b>15,878</b>
<b>TOTAL CAPITAL</b>	<b>850,987</b>	<b>599,111</b>	<b>251,876</b>
<b>TOTAL WORKING CAPITAL CHANGES</b>	<b>102</b>	<b>(9,528)</b>	<b>9,630</b>
<b>TOTAL CAPITAL + WORKING CAPITAL CHANGES</b>	<b>851,088</b>	<b>589,583</b>	<b>261,506</b>

NOTE: Some rounding may occur due to truncation of the numbers.



**TABLE 1-11: Process Operating Cost Summary (000)\***  
**VISTA GOLD CORP. – MT TODD GOLD PROJECT**  
**January 2011**

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ore Processed	10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	775
Total processing costs	72,159	72,109	72,120	72,080	72,169	72,200	72,366	72,286	72,277	72,213	72,213	72,201	72,019	72,068	5,535
Ore Processing Cost / tonne	\$6.78	\$6.77	\$6.77	\$6.77	\$6.78	\$6.78	\$6.79	\$6.79	\$6.79	\$6.78	\$6.78	\$6.78	\$6.76	\$6.77	\$7.14

\*Note: Gold doré refining, transport and treatment charges are \$4.50/toz Au, but are included separately in the cash flow analyses.

### **1.12.5 Cash Flow Analyses**

The cash flow analysis developed for the Reserve Case includes all mining, processing, tails disposal, and reclamation.

Cash flow analyses at \$1,000/toz Au and a US/AUD exchange rate of 0.85 results in a project pretax NPV of \$385.336 million and a pre-tax Internal Rate of Return of 13.9 percent and a post-tax rate of return of 10.7 percent, both evaluated at a 5 percent discount rate. Note that 3,371,914 toz Au are recovered during the operating life. TABLE 1-12 is the cash flow associated with the Reserve Case scenario.

### **1.12.6 Sensitivity Gold Price Sensitivities**

Gold Price sensitivity analyses were performed on the Reserve Case reflecting Au prices from \$850 to \$1,150 in increments of \$50. A graph showing the results of these sensitivities is shown in FIGURE 1-3.

**Mt. Todd - 10.65Mtpa (28 January 2011)**

**Mt. Todd - 10.65Mtpa (28 January 2011)**

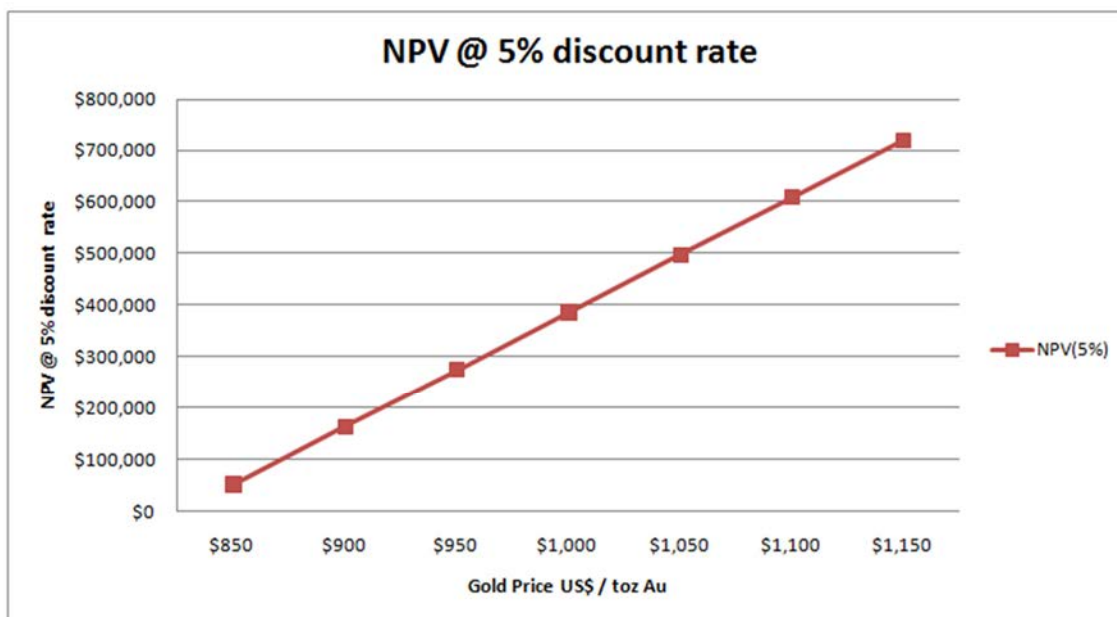
**Mt. Todd - 10.65Mtpa (28 January 2011)**

**Mt. Todd - 10.65Mtpa (28 January 2011)**

**Mt. Todd - 10.65Mtpa (28 January 2011)**

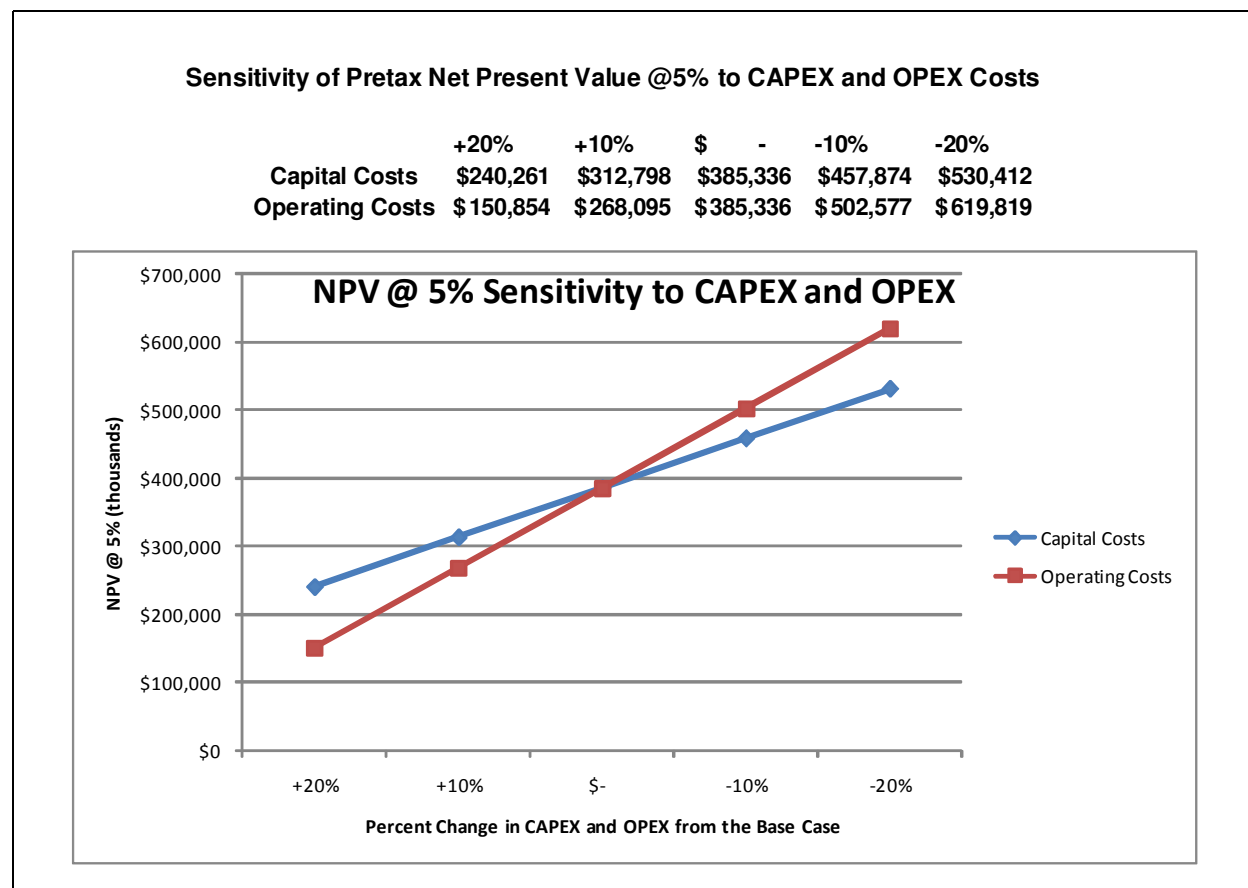
**FIGURE 1-3: Sensitivity of Pretax Net Present Value to Gold Price @ 5 % Discount Rate (000's)**

PRICE (\$/oz)	\$	850	\$	900	\$	950	\$	1,000	\$	1,050	\$	1,100	\$	1,150
NPV(5%)		\$51,470		\$162,759		\$274,047		\$385,336		\$496,625		\$607,914		\$719,202



Capital and Operating Cost sensitivity analyses were performed on the Pretax Reserve Case reflecting mutually exclusive increases and decreases of 10 percent and 20 percent for both. A graph showing the results of these sensitivities is shown in FIGURE 1-4.

**FIGURE 1-4: Sensitivity of Pretax Net Present Value to CAPEX and OPEX @ 5% Discount Rate (000's)**



### 1.12.7 Sensitivities Deviating from the Reserve Case

Sensitivity analysis performed on the Reserve Case scenario at a Au price of \$1,350/toz Au and 1.00 US/AUD exchange rate yielded an after tax NPV of \$944.470 million at a five percent discount rate (note that this sensitivity is outside the range of those shown in Figure 1-3).

A second sensitivity considered a Au price of \$950/toz Au and 0.85 US/AUD exchange rate. The analysis resulted in an after tax NPV of \$274.047 million at a five percent discount rate.

## 1.13 Conclusions

Vista's exploration and development work on the Mt. Todd Gold Project, and specifically the Batman and Quigleys deposits, continues to provide strong justification for additional expenditures and efforts to develop a new mine at this site and progress the project through full feasibility. In addition to the Batman and Quigleys deposits, other known deposits/areas that warrant addition exploration include the following.

### Golf and Tollis Deposits

While the Quigleys and the Golf Tollis deposits have had limited drilling and some surface production, they have not been explored using the lessons learned at Batman. The exploration to date has concentrated on near-surface oxide gold mineralization with few, if any, deep drillholes existing. In addition, the Batman structural interpretation has not been applied to

these deposits either. Since these deposits are known to contain gold mineralization, a more systematic exploration program is warranted.

### **Exploration Leases**

A significant portion of the exploration leases is yet to be systematically explored and evaluated. The broad structural and geologic trends that host the Batman, Quigleys, and Golf Tollis deposits may well host other deposits. Much of what Vista has learned from more detailed exploration of the Batman deposit has yet to be applied to these other areas; therefore, these areas remain highly prospective.

## **1.14 Recommendations**

Based on Tetra Tech's review of the database, previous studies and work products, and as an outgrowth of the recent mineral resource modeling and PFS update, Tetra Tech provides the following list of recommendations for Vista's consideration. **It would like to note that much of the proposed work plan from the January 28, 2011 report is either completed and/or ongoing as part of the Definitive Feasibility Study that Vista is in the process of completing. Recommendations from the January 28, 2011 report made by Tt that Vista has completed prior to the issuing of this report have been removed.**

### **1.14.1 Geology and Exploration**

#### **Quigleys and Golf-Tollis Deposits**

The Quigleys and Golf-Tollis Deposits appear to be more structurally controlled than Batman with the mineralization occurring in narrower bands. Tetra Tech proposes that the following items be considered when preparing the ongoing work plan:

- Surface mapping and subsequent re-interpretation of the footwall contact to the shear zone mineralization are recommended. Any additional structural complexity that results should, where appropriate, be used to refine the mineralized envelope upon which modeling updates are based.
- Optimization of the resource provides a focus to define areas requiring further investigation or infill drilling. Due to the high degree of variability in the deposit, infill drilling is best targeted at key areas of geological complexity.
- A model should be developed for the area outside the shear zone. This will require separation of areas of mineralization from unmineralized areas using suitable envelope constraints.
- The cause of the apparent bias between some of the old and new RC drilling should be confirmed to validate the inclusion of all samples in resource calculations.

#### **Other Mineralized Occurrences**

Several other known mineral occurrences are found on the concession; these are Golf, Tollis, and Horseshoe deposits. There are some indications of prior exploration work, based on maps and minor references that have involved geologic, geochemical, geophysical, and drilling. While a lower priority than Batman and Quigleys, efforts should be undertaken that:

- Locate all available data and confirm, if possible, the validity;
- Re-assess the data to determine if additional exploration work is warranted; and
- Develop appropriate programs that systematically attempt to define the size and tenor of the mineralization present.

### **1.14.2 Closure**

The following closure studies are recommended:

- Complete a waste and cover material hydraulic properties analysis;
- Complete a precipitation-watershed yield study;
- Complete the waste rock management plan;
- Complete the site-wide soils, closure cover, and reclamation materials inventory and characterization study; and
- Conduct a waste and closure cover erosion and sediment control study.

## 1.15 Limitations

Tetra Tech is not aware of any potential limitations to the project that would materially change any of the data, resource estimates, environmental considerations, socio-economic factors, or conclusions presented within this report that are outside of the normal factors that may impact mining projects, such as, price variability, exchange rates, permitting time, etc. With respect to the Mt. Todd Gold Project, the land tenure is secured by agreement with all of the potentially affected parties, the existing environmental liabilities are well documented and have been adequately addressed, potential new environmental issues are part of this and future studies and are not anticipated to materially impact the path forward, the site has good existing infrastructure, power and water, exploration and development drilling will continue, and metallurgical testing and analyses continues to occur.



## 2.0 INTRODUCTION

The Mt. Todd property contains a number of known occurrences of gold, which have been explored and/or exploited to various degrees. The largest and best-known deposits are the Batman and Quigleys deposits. Both of these have had historic mining, with Batman having the most production and exploration completed. Currently, only the Batman and Quigleys deposits have CIM compliant reported resources and only the Batman deposit has CIM compliant reportable mineral reserves. Vista Gold Corp ("Vista") purchased the Mt. Todd property on March 1, 2006, and the acquisition was completed on June 16, 2006 when the mineral leases transferred to Vista and funds were released from escrow.

Tetra Tech MM, Inc. ("Tetra Tech") was commissioned by Vista in September 2009 to prepare a NI 43-101 compliant Preliminary Feasibility Study (PFS) at an ore processing rate of 6.77 million tonnes per year (Mtpy) for the Mt. Todd Gold Project (the "Project") located in Northern Territory ("NT"), Australia. The PFS study at 6.77 Mtpy was issued October 1, 2010. Subsequently, Vista commissioned a second PFS at an ore processing rate of 10.65 Mtpy, issued January 28, 2011.

Prior to the two PFS studies an initial NI43-101 Technical Report was completed on June 26, 2006. A Preliminary Economic Assessment report was completed on December 29, 2006, an update to the resource report was completed in May 2008 and February 2009.

Based on additional drilling conducted in 2010 and 2011, Vista commissioned Tt to produce this technical report to provide a resource update for the Batman deposit by Tt.

Tetra Tech has amended and restated this report to comply with changes requested by the British Columbia Securities Commission (BCSC) by letter correspondence dated March 21, 2012. The BCSC requested that the report state the qualified person/persons whom are responsible for sections 15-22, originally included in this report. In addition the BCSC has requested the reliance on Patricia Moran Ph.D. be clarified and restated.

It is Tetra Tech's opinion that this amendment satisfies all requested changes made by the BCSC. Tetra Tech notes that all changes requested by the BCSC and made by Tetra Tech do not change the results of technical report.

### 2.1 Terms of Reference

This report has been prepared in accordance with the guidelines provided in National Instrument 43-101, amended in June 30, 2011, and in accordance with the CIM Standards of Disclosure for Mineral Projects. The Qualified Person responsible for this report is Rex Bryan, Ph.D., Senior Geologist of Tetra Tech. Qualified Persons and the sections to which they are responsible are presented in TABLE 2-1.

<b>TABLE 2-1: Listing of Qualified Persons</b> <b>VISTA GOLD CORP. – MT TODD GOLD PROJECT</b> <b>October 2010</b>		
<b>Qualified Person</b>	<b>Firm</b>	<b>Report Section</b>
Rex Bryan Ph.D.	Tetra Tech MM, Inc.	1-12, 14-28
Deepak Malhotra Ph.D.	Resource Development Inc.	13

Neither Tetra Tech nor any of its employees and associates employed in the preparation of this report has any beneficial interest in Vista or in the assets of Vista. Tetra Tech will be paid a fee for this work in accordance with normal professional consulting practice.

## 2.2 Sources of Information and Data

Data for this resource update has been provided by Vista.

## 2.3 Property Inspection by Qualified Person

Dr. Rex Bryan conducted a site visit from September 12<sup>th</sup> to 14<sup>th</sup> 2011. Dr. Bryan spent three days on site and reviewed the current database and archived supporting material, core logging, sampling procedures, handling and security measures, QA/QC procedures and inspected modern and historically collected core.

## 2.4 Effective Date

The effective date of this report is September 6<sup>th</sup> 2011. The effective data represents the completion date of the most current resource estimation.

## 2.5 Units and Abbreviations

Unless explicitly stated otherwise, all units presented in this report are in metric units (i.e. metric tonnes, kilometers (km), centimeters (cm), percent (%), grams per metric tonne, and parts per million (ppm)).

TABLE 2-2 sets forth certain standard conversions from Standard Imperial units to the International System of Units (or metric units) TABLE 2-3 sets forth commonly used concentrations for Au.

<b>TABLE 2-2: Standard Conversion Factors</b> <b>VISTA GOLD CORP. – MT TODD GOLD PROJECT</b> <b>October 2011</b>		
<b>To Convert From</b>	<b>To</b>	<b>Multiply by:</b>
Acres	Hectares	0.4047
Square Mile	Hectares	258.9988
US gallon	Liter	3.7854
M <sup>3</sup> per hour	US gallon per minute	4.403
Inch	Meters	0.0254
Feet	Meters	0.3048
Yard	Meters	0.9144
Miles	Kilometers	1.6093
Tons (short)	Tonnes	0.9072
Troy Ounce / Ton (short)	Gram / Tonne (ppm)	34.2857

**All dollars are presented in US dollars unless otherwise noted.** For the purpose of this report the exchange rates are \$0.85 = AUD\$1.00 except as needed for the sensitivity analysis. Common units of measure and conversion factors used in this report include:

<b>TABLE 2-3: Commonly Used Concentrations Factors</b> <b>VISTA GOLD CORP. – MT TODD GOLD PROJECT</b> <b>October 2011</b>			
	Percent	Gram / Tonne or (ppm)	Troy Ounce / Ton (short)
1%	1	10,000	291.667
1 gram / Tonne or (ppm)	0.0001	1	0.0291667
1 Troy Ounce / Ton (short)	0.003429	34.2857	1
1 ppb	0.0000001	0.001	0.000029

***Frequently used acronyms and abbreviations***

AA	=	atomic absorption spectrometry
Ag	=	silver
Au	=	gold
°C	=	degrees Centigrade
CIC	=	Carbon-in-column
CIM	=	Canadian Institute of Mining, Metallurgical, and Petroleum
CIP	=	Carbon-in-pulp
°F	=	degrees Fahrenheit
FA	=	Fire Assay
ft	=	foot or feet
g	=	gram(s)
g Au/t	=	grams gold per tonne
g/kWh	=	grams per kilowatt hour
g/t	=	grams per tonne
h	=	hour
ICP	=	Inductively Coupled Plasma Atomic Emission Spectroscopy
km	=	kilometer
kV	=	kilovolts
kWh	=	Kilowatt hour
kWh/t	=	Kilowatt hours per tonne

L	=	liter
m	=	meter(s)
m <sup>2</sup>	=	square meter(s)
m <sup>2</sup> /t/d	=	square meters per tonne per day
m <sup>3</sup>	=	cubic meter(s)
m <sup>3</sup> /h	=	cubic meter(s) per hour
mm	=	millimeter
Mtpy	=	million tons or tonnes per year
MW	=	megawatts
NSR	=	net smelter return
toz Ag/t=		troy ounces silver per short ton (oz/ton)
toz Au/t=		troy ounces gold per short ton (oz/ton)
ppm	=	parts per million
ppb	=	parts per billion
RC	=	reverse circulation drilling method
SAG	=	semi-autogenous grinding
ton	=	short ton(s)
tonne	=	metric tonne
t/m <sup>3</sup>	=	tonne per cubic meter
tpd	=	metric tonnes per day
tph	=	tonnes per hour
µm	=	micron(s)
%	=	percent
tpy	=	tons (or tonnes) per year
tpm	=	tons (or tonnes) per month

### Abbreviations of the Periodic Table

actinium = Ac	aluminum = Al	americium = Am	antimony = Sb	argon = Ar
arsenic = As	astatine = At	barium = Ba	berkelium = Bk	beryllium = Be
bismuth = Bi	bohrium = Bh	boron = B	bromine = Br	cadmium = Cd
calcium = Ca	californium = Cf	carbon = C	cerium = Ce	cesium = Cs
chlorine = Cl	chromium = Cr	cobalt = Co	copper = Cu	curium = Cm
dubnium = Db	dysprosium = Dy	einsteinium = Es	erbium = Er	europium = Eu
fermium = Fm	fluorine = F	francium = Fr	gadolinium = Gd	gallium = Ga
germanium = Ge	gold = Au	hafnium = Hf	hahnium = Hn	helium = He
holmium = Ho	hydrogen = H	indium = In	iodine = I	iridium = Ir
iron = Fe	juliotium = JI	krypton = Kr	lanthanum = La	lawrencium = Lr
lead = Pb	lithium = Li	lutetium = Lu	magnesium = Mg	manganese = Mn
meltnerium = Mt	mendelevium = Md	mercury = Hg	molybdenum = Mo	neodymium = Nd
neon = Ne	neptunium = Np	nickel = Ni	niobium = Nb	nitrogen = N
nobelium = No	osmium = Os	oxygen = O	palladium = Pd	phosphorus = P
platinum = Pt	plutonium = Pu	polonium = Po	potassium = K	prasodymium = Pr
promethium = Pm	protactinium = Pa	radium = Ra	radon = Rn	rhodium = Rh
rubidium = Rb	ruthenium = Ru	rutherfordium = Rf	rhenium = Re	samarium = Sm
scandium = Sc	selenium = Se	silicon = Si	silver = Ag	sodium = Na
strontium = Sr	sulphur = S	technetium = Tc	tantalum = Ta	tellurium = Te
terbium = Tb	thallium = Tl	thorium = Th	thulium = Tm	tin = Sn
titanium = Ti	tungsten = W	uranium = U	vanadium = V	xenon = Xe
ytterbium = Yb	yttrium = Y	zinc = Zn	zirconium = Zr	

### **3.0 RELIANCE ON OTHER EXPERTS**

No experts have been relied on for the completion of this report.

## 4.0 PROPERTY DESCRIPTION AND LOCATION

### 4.1 Location

The Mt. Todd Project is located 56 km by road northwest of Katherine, and approximately 250 km southeast of Darwin in the NT of Australia. Access to the property is via high quality, two-lane paved roads from the Stuart Highway, the main arterial within the territory (FIGURE 4-1).

#### 4.1.1 Tenements

The concession consists of three individual mineral leases, MLN1070, MLN1071, and MLN1127 comprising some 5,365.27 hectares. In addition, Vista controls exploration leases, EL25668, EL25669, EL25576, and EL25670 comprising approximately 117,632 hectares. FIGURE 4-2 illustrates the general location of the tenements and the relative position of the two primary mineral deposits: Batman and Quigleys.

#### 4.1.2 Lease and Royalty Structure

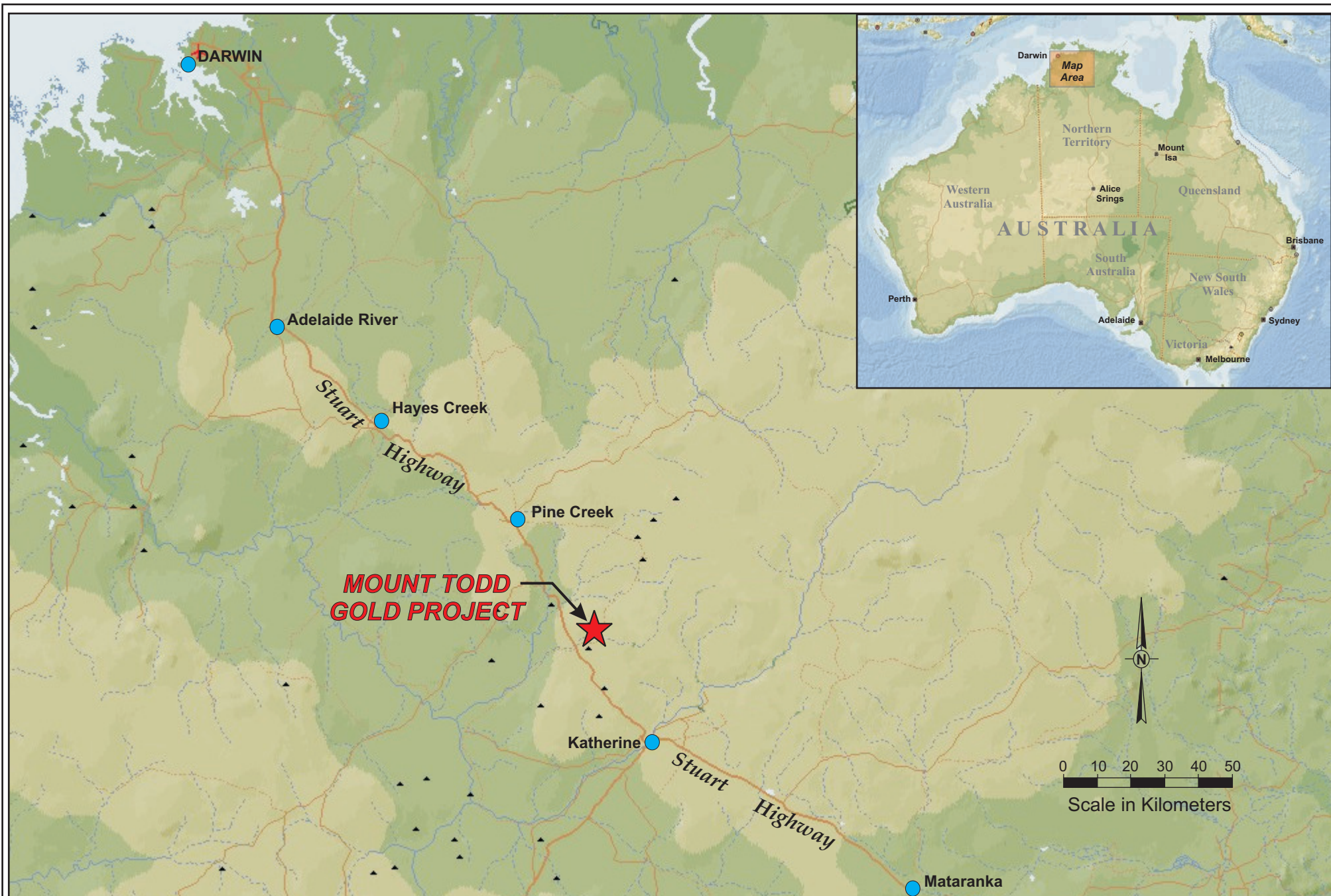
The agreement with the NT is for an initial term of five years commencing January 1, 2006, with an extension of five years at Vista's option and three additional years possible at option of the NT. During the first five-year term in accordance with the conditions of the agreement, Vista has undertaken a comprehensive technical and environmental review of the project to evaluate current site environmental conditions and developed a program to stabilize the environmental conditions and minimize offsite contamination. Vista has also reviewed the water management plan and implemented recommendations. Vista has developed a technical and economic report for the re-starting of operations.

Vista provided notice to the NT government in June 2010 that it wished to extend the agreement. In November, the NT government acknowledged that Vista had fulfilled its obligations for the initial term, and the agreement has been extended for five years until December 31, 2015.

Vista paid the NT's costs of management and operation of the Mt. Todd site up to a maximum of AUD\$375,000 during the first year of the term, and assumed site management and pay management and operation costs in following years. In the agreement, the NT acknowledges its commitment to rehabilitate the site and that Vista has no rehabilitation obligations for pre-existing conditions until it submits and receives approval of a Mine Management Plan for the resumption of mining operations. Recognizing the importance placed by the NT upon local industry participation, Vista has agreed to use, where appropriate, NT labor and services during the period of the agreement in connection with the Mt. Todd property, and further, that when a production decision is reached, to prepare and execute a local Industry Participation Plan.

The agreement with the JAAC called for Vista to issue common shares of Vista with a value of CAD\$1.0 million as consideration for the JAAC entering into the agreement and for rent for the use of the surface overlying the mineral leases during the period from the effective date until a decision is reached to begin production. Vista pays the JAAC AUD\$5,000 per month in return for consulting with respect to Aboriginal, cultural, and heritage issues.





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Project:

**Mt. Todd Gold Project**

Project Location:

**Northern Territory, Australia**

File Name:

**Fig1-1.cdr**

Project Number:

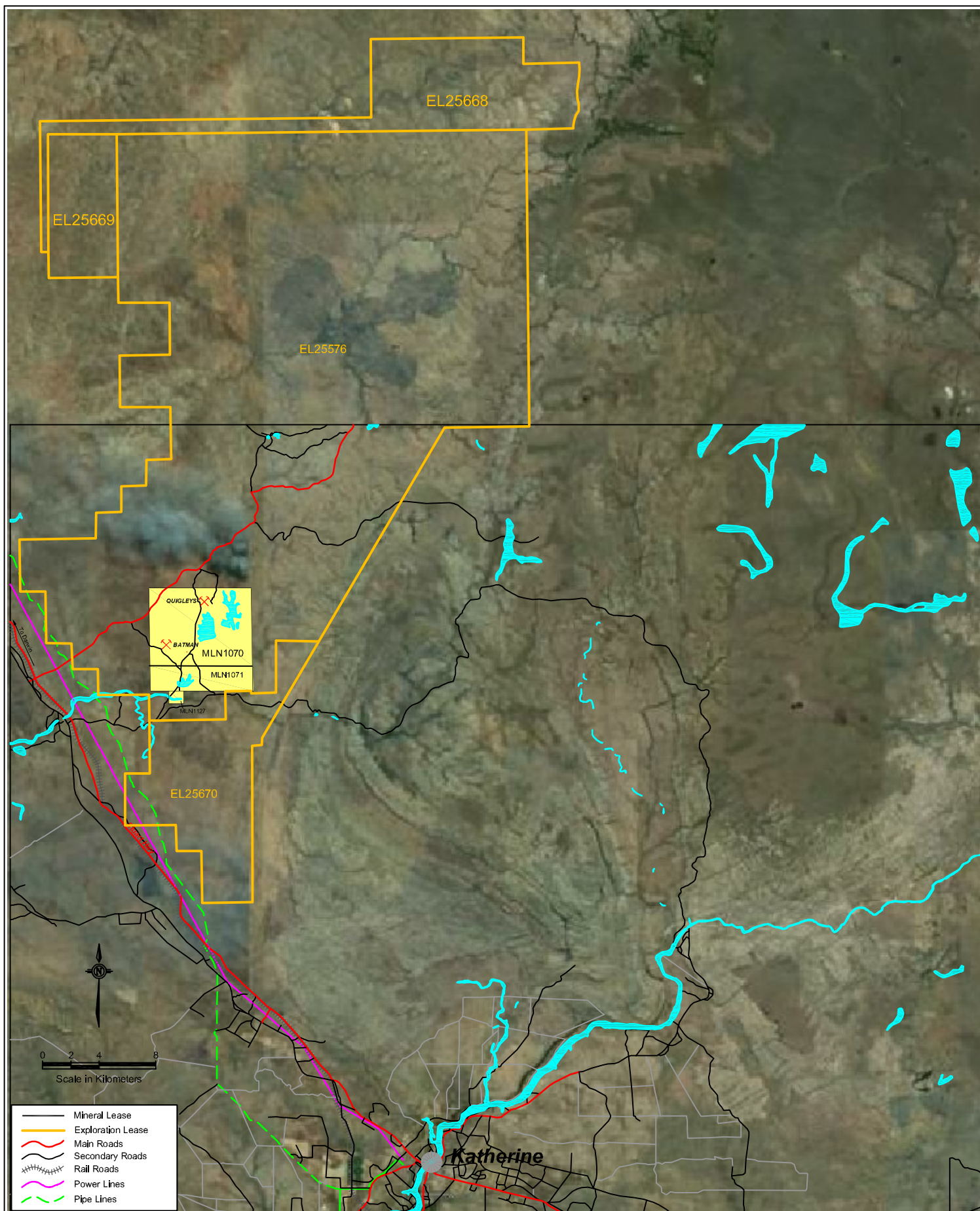
**114-311156**

Date of Issue:

**October 2010**

**Figure 4-1**  
**General Location Map**  
**Mt. Todd Gold Project**





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Project:

**Mt Todd Gold Project**

Project Location:

**Northern Territory, Australia**

File Name:

**Fig1-2\_4-2.dwg**

Project Number:

**114-311156**

Date of Issue:

**September 2010**

**Figure 4-2  
Concessions and  
Infrastructure Map**

If the Mt. Todd Project proves feasible for economic development of the mineral leases including a fully funded site reclamation bond, Vista will establish a technical oversight committee with representatives of the NT and the JAAC. Additionally, Vista will offer the JAAC the opportunity for joint venture participation in the operation on a 90 percent Vista/10 percent JAAC basis. For rent of the surface during production, Vista (or the Joint Venture if formed) will pay the JAAC an annual amount equal to one percent of the annual value of production with an annual minimum of AUD\$50,000. As part of the agreement, Vista will endeavor to use services and labor provided by the JAAC when feasible. Vista and the JAAC may form a 50/50 exploration joint venture to explore JAAC lands outside the mineral leases.

## 4.2 Environmental Liabilities

### 4.2.1 Comments On Known Liabilities

The primary environmental issue at the Mt. Todd site is water management resulting from the project shutdown without implementation of closure or reclamation activities. All of the water retention ponds (excluding the raw water pond) and the pit contain acidic water with elevated concentrations of regulated constituents, including:

- Batman Pit (RP3);
- WRD retention pond (RP1);
- TSF and pond (RP7);
- The HLP;
- The plant runoff pond (RP5); and
- Low grade ore stockpile pond (RP2).

This water has been managed through a combination of evaporation, pumping to RP3 for containment, and controlled discharge to streams during major flow events. Historically, average wet season rainfall in the area results in uncontrolled overflow from RP1, RP2, and RP5 to the Edith River due to the high amount of precipitation received in short periods of time coupled with insufficient pumping capabilities. Other uncontrolled discharges to the Edith River during the wet season include surface seeps from the heap leach facility and surface seeps and underflow from the TSF dam. Vista adopted the water management plan developed by MWH (2006b) which appears to be successful at minimizing impacts on the Edith River downstream of the Mt. Todd site.

The existing water treatment plant (Existing WTP) is being used to raise the pH and reduce metals concentrations in water from site retention ponds prior to its discharge into the TSF. Pending approval, the water management plan will be further refined to optimize the ability to discharge water and eliminate the reliance on RP3 as a repository for contaminated waters. The challenges posed by ARD/ML are significant but are believed to be manageable.

Additional hydrogeologic investigations will be necessary to improve the understanding of operational dewatering requirements as well as fully develop the site water balance. These investigations will provide the necessary information to characterize the existing groundwater conditions and develop a more rigorous groundwater monitoring program for the site. It is noted that dewatering was minimal and very manageable during previous operations at the Mt. Todd site. However, the hydrogeology of the mining area has not been investigated in sufficient detail to comment conclusively on the future dewatering requirements or provide a dewatering cost estimate at this time.

Additional information will need to be gathered to assess the quantity of salvageable soil from new disturbances (e.g., expansion of WRD and Batman, TSF2), verify that sufficient quantities

of growth medium will be available for closure of proposed and existing facilities. The adequacy of available soils for supporting plant growth and suitability for use as liner/cap material also needs to be evaluated.

The 1992 Draft EIS identified the following as the specific environmental issues to be considered for the project (Zapopan, 1992):

- Control of ARD;
- Heap leach solution containment;
- Tailings containment;
- Water management;
- Conservation of the Gouldian finch (*Erythrura gouldiae*) in the Yinberrie Hills;
- Impacts on Aboriginal sites of cultural significance;
- Impacts on historical and Aboriginal archaeological sites;
- Rehabilitation planning;
- Impacts of noise, dust, and blasting;
- Impacts on vegetation and fauna;
- Impacts on regional urban and social infrastructure; and
- General site management issues, such as weeds, mosquito-borne diseases, wildlife, and workforce behavior.

The Gouldian finch was classified as "Endangered" in 2001 by the NT Parks and Wildlife Commission (MWH, 2006a). The conservation of the Gouldian finch was an important consideration at the start of mining operations in 1993, when it was thought that the finch was confined to the Yinberrie Hills. However, the range of the finch is now believed to be broader than initially identified and less emphasis is being placed by the NT Government on this issue. There are currently believed to be no specific conservation practices enforced at the Mt. Todd site for the finch.

The Jawoyn people have strong involvement in the planning for the future of the Mt. Todd Project. Vista Gold has a good relationship with the Jawoyn, and at this time they have raised no concerns about re-opening the mine.

### 4.3 Permitting

In 2006, Vista, including its wholly-owned subsidiary Vista Gold Australia Pty Ltd., acquired the Mt. Todd Project through various contracts executed with the NT Government, Ferrier Hodgson as the deed administrator for Pegasus Gold Australia Pty Ltd., and the Jawoyn Association Aboriginal Corporation (JAAC). These contracts gave Vista the right to explore and develop the mineral resources of the associated Mining Licenses.

On January 1, 2007, Vista became the operator of the Mt. Todd site and accepted the obligation to operate, care for and maintain the assets of the NT Government on the site. Vista developed an Environmental Management Plan (EMP) for the care and maintenance of the Mt. Todd Mine Site in accordance with the provisions of the Mineral Leases 1070, 1071 and 1127 granted under the Mining Act (Vista, 2007a). The EMP identifies the environmental risks found at the Mt. Todd site in its present state of operations and defines the actions that Vista is taking to control, minimize, mitigate and/or prevent environmental impacts originating at the Mt. Todd site. As part of the agreement, the NT Government acknowledged its commitment to



rehabilitate the site and that Vista has no obligations for pre-existing conditions until it submits and receives approval of Notice of Intent (NOI) for resumption of mining operations.

The first step in formal mine permitting will be submission of a NOI to the NT Government. This document are intended to cover all the major issues relating to the mine development and provide sufficient information (background and technical) to allow a preliminary assessment by the Department of Resources (DoR), formerly Department of Regional Development, Primary Industry, Fisheries and Resources (DRDPIFR). Ultimately, the adequacy of the Mt. Todd Project NOI will be assessed against the following requirements:

- Description of mining activities;
- Description of the existing environment;
- Safety, health and environmental issues relevant to the mining activities and the management system to be implemented;
- Description of current and proposed mine workings and infrastructure; and
- A plan and costing of closure activities.

Simultaneously, an Environment Protection and Biodiversity Conservation Referral (EPBC Referral) will be submitted to the Commonwealth's Department of Sustainability, Environment, Water, Population and Communities (SEWPaC). SEWPaC will assess the EPBC Referral and make recommendations about whether or not the project should be approved to proceed.

DoR will determine if the proposed project should be referred to the Environment, Heritage and the Arts Division (EHA) of the Department of Natural Resources, Environment, the Arts and Sport (NRETAS) for assessment under the NT Environmental Assessment Act as detailed in FIGURE 4-3 (DRDPIFR, 2008a). If the DoR recommends referral, NRETAS, with input from the SEWPaC regarding the EPBC Referral, will advise on the requirement for either a Public Environmental Report (PER) or an Environmental Impact Statement (EIS).

The guidelines provided by NRETAS indicate that:

- A PER is required to assist in assessing environmental impacts that are considered significant but limited in extent; while
- An EIS is required to assist in assessing environmental impacts that are significant either in terms of site-specific issues, off-site issues and conservation values and/or the nature of the proposal.

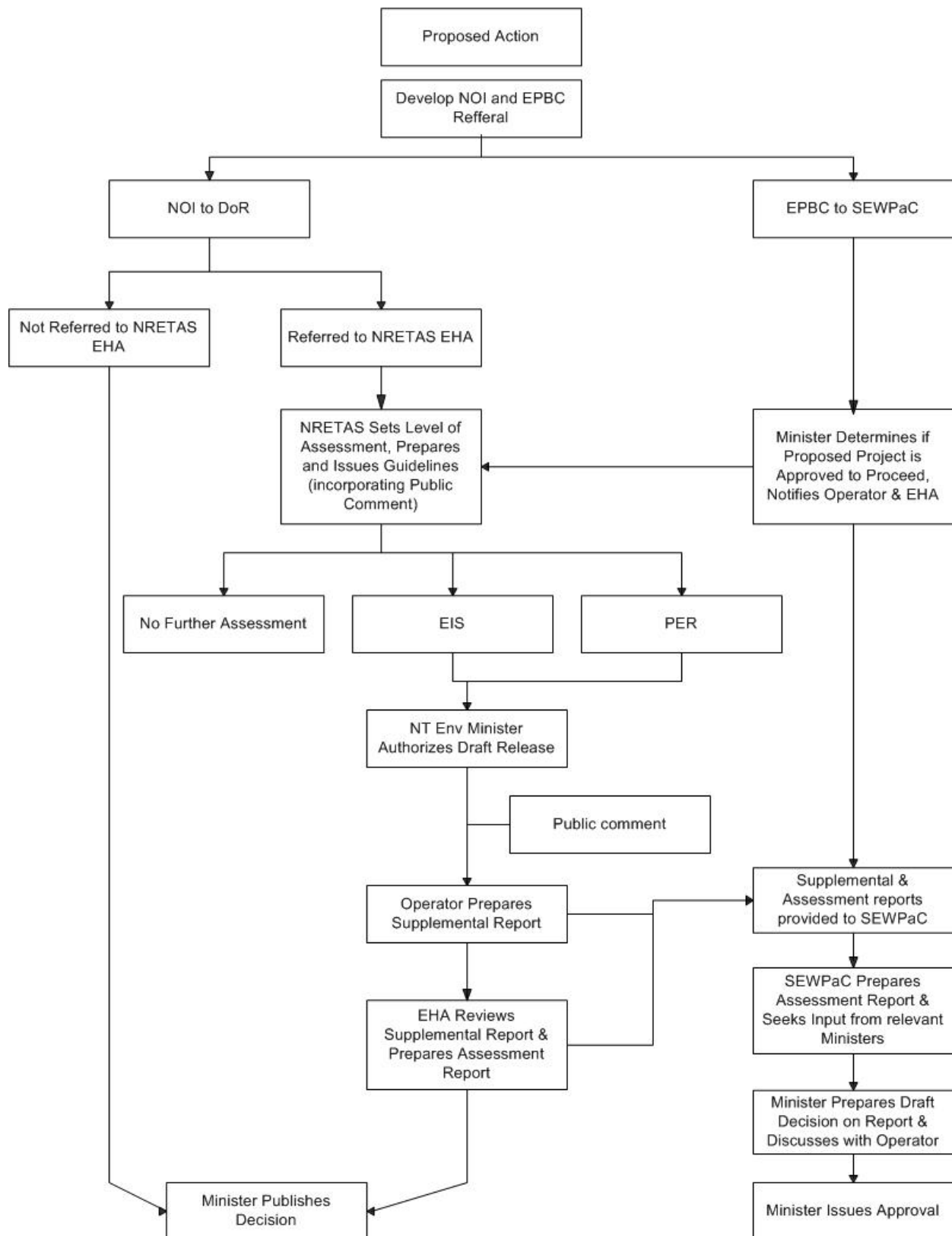
An NT Environmental Minister will review the PER or EIS and authorize a draft release with a public comment period. A Supplemental Report will be prepared for review by EHA which addresses concerns from the public. Both the Supplement Report and an Assessment Report to be prepared by EHA based on the Supplement Report will be issued to SEWPaC which will prepare a draft decision for issuance and approval prior to publication of the final decision.

The estimated costs and timing of the possible paths associated with the environmental assessment process are provided in TABLE 5-1. These costs are based on estimates provided by Gustavson (2006) updated assuming an 18 percent increase in costs since 2006 (Engineering News Record, 2006) and guidance from GHD (GHD, 2010a). An allocation of \$650,000 for permitting and \$1,850,000 for baseline studies for the Mt. Todd Project has been included in the project budget for the next stage. This estimate assumes the permitting process will include an EIS; however, it is unclear at this time whether DoR will refer the project.

#### **4.3.1 Existing Environmental Conditions**

The following description of the existing environmental conditions at the Mt. Todd site is taken from Chadwick T&T Pty LTD (2009):

- Waste Discharge License 135 (EPA NT, 2005);
- Draft Waste Discharge License 178 (NT Government, 2010);
- Mt. Todd Environmental Management Services – Report 1: Environmental Assessment (MWH, 2006a);
- Mt. Todd Environmental Management Services – Report 2: Water Management (MWH, 2006b);
- Mt. Todd Gold Project Preliminary Economic Assessment (Gustavson, 2006);
- Environmental Management Plan (Vista, 2007a);
- Mt. Todd Waste Discharge License Report, 2006 – 2007 (Vista, 2007b);
- Mt. Todd Blueprint Rehabilitation Strategy (BRS) Report (DRDPIFR, 2008b);
- Mt. Todd Strategic Rehabilitation Reference Group: Status Update Papers in lieu of Meeting 11 (DRDPIFR, 2008c);
- Mt. Todd Mine Site Status Report, April 2008 to October 2008 (Vista, 2008);
- Mt. Todd Water Treatment Plant Commissioning Report (Vista, 2009);
- Mt. Todd Water Management Plan, 2010 – 2011 (Vista, 2010); and
- Mt. Todd Water Balance - Care and Maintenance Model Calibration and Forward Modeling Predictions (HydroGeoLogica, Inc. and Tetra Tech, 2010).



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**Vista Gold Corp.**

Project:

Mt. Todd Gold Project

Project Location:

Northern Territory, Australia

File Name:

Fig4-3.jpeg

Project Number:

114-311156

Date of Issue:

01/26/2011

**Figure 4-3  
ENVIRONMENTAL  
ASSESSMENT PROCESS**

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

### **5.1 Accessibility**

The Mt. Todd Project is located 56 km by road northwest of Katherine, and approximately 250 km southeast of Darwin in the NT of Australia (see FIGURE 4-1). Access to the mine is via high quality, two-lane paved roads from the Stuart Highway, the main artery within the territory.

### **5.2 Climate and Physiography**

The Mt. Todd area has a sub-tropical climate with a distinct wet season and dry season. The area receives most of its rainfall between the months of January and early March. The temperature usually ranges from 25° to 35° C (77° to 95° F). Between November and December, temperatures can reach 40° C (104° F). Winter temperatures in the dry season are warm in the daytime, but can drop to 10° C (50° F) at night.

### **5.3 Local Resources and Infrastructure**

Access to local resources and infrastructure is excellent. The Mt. Todd Project is located sufficiently close to the city of Katherine to allow for an easy commute for workers. Because the area has both historic and current mining activity, the area contains a skilled mining workforce. In addition, Katherine offers all of the necessary support functions that are found in a medium sized city with regard to supplies, hotels, communications, etc.

The property has an existing high-pressure gas line and an electric line that was used by previous operators. In addition, both wells for potable water and a dam for process water are also located on or adjacent to the site. Finally, a fully functioning tailings dam is also present on site.

The concessions are within 2 to 3 km of the Nitmiluk Aboriginal National Park on the east. This National Park contains a number of culturally and geologically significant attractions. The proximity to the National Park has not historically yielded any impediments to operating. It is not expected to yield any issues to renewed operation of the property in the future.

## 6.0 HISTORY

The Mt. Todd Project area has significant gold deposits located on it and is located 250 km southeast of Darwin in the NT of Australia. It is situated in a well-mineralized historical mining district that supported small gold and tin operations in the past.

The Shell Company of Australia (Billiton), who was the managing partner in an exploration program in joint venture with Zapopan NL, discovered the Mt. Todd mineralization, or more specifically the Batman Deposit, in May 1988. Zapopan acquired Shell's interest in 1992 by way of placement of shares to Pegasus Gold. Pegasus progressively increased their shareholding until they acquired full ownership of Zapopan in July 1995.

Feasibility studies for Phase I, a heap leach operation which focused predominately on the oxide portion of the deposit, commenced during 1992 culminating in an EPCM award to Minproc in November of that year. The Phase I project was predicated upon a 4 Mtpy on an annualized basis heap leach plant designed to recover 90,000 ounces per year on an annualized basis over a life of 4 years. This came on stream in late 1993. The treatment rate was subsequently expanded to a rate of 6 million tonnes per year on an annualized basis in late 1994.

A comparison of actual and predicted production figures is printed in TABLE 6-1.

<b>TABLE 6-1: Heap Leach – Feasibility Estimates vs. Actual Production</b> <b>VISTA GOLD CORP. – MT TODD GOLD PROJECT</b> <b>June 2009</b>		
<b>Category</b>	<b>Feasibility Study</b>	<b>Actual Production</b>
Tonnes Leached - million	13.0	13.2
Head Grade – g Au/t	1.2	0.96
Recovery - %	65	53.8
Gold Recovered -toz	320,000	220,755
Cost/tonne – A\$	7.13	8.33
Cost/oz – A\$	281	500

Note: All tonnages and grades shown in TABLE 6-1 are historical numbers and are not NI43-101 compliant.

Phase II involved expanding to 8 Mtpy and treatment through a flotation and CIL circuit. The feasibility study was conducted by a joint venture between Bateman Kinhill and Kilborne (BKK) and was completed in June 1995. The feasibility study indicated that treatment of transitional and primary ore from the Batman pit would provide an 8-year mine life to recover 2 million ounces at a cost of AUD\$369 (US\$266) per ounce. Capital cost for Phase II was estimated at AUD\$207.8 million.

The Pegasus Board approved the project on August 17, 1995, and awarded an EPCM contract to BKK in October 1995. Commissioning commenced in November 1996. Final capital cost to complete the project was AUD\$232 million (US\$181 million).

Design capacity was never achieved due to inadequacies in the crushing circuit. An annualized throughput rate of just under 7 Mtpy was achieved by mid 1997; however, problems with the flotation circuit which resulted in reduced recoveries necessitated closure of this circuit.



Subsequently, high reagent consumption as a result of cyanide soluble copper minerals further hindered efforts to reach design production. Operating costs were above those predicted in the feasibility study.

The spot price of gold deteriorated from above \$400 in early 1996 to below \$300 per ounce during 1997. According to the 1997 Pegasus Gold Inc. Annual Report, the economics of the project were seriously affected by the slump. Underperformance of the project and higher operating costs led to the mine being closed and placed on care and maintenance on November 14, 1997.

In February 1999, General Gold agreed to form a joint venture with Multiplex Resources and Pegasus Gold Australia to own, operate, and explore the mine. Initial equity participation in the joint venture was General Gold two percent, Multiplex Resources 93 percent, and Pegasus Gold Australia five percent. The joint venture appointed General Gold as mine operator, which contributed the operating plan in exchange for a 50 percent share of the net cash flow generated by the project, after allowing for acquisition costs and environmental sinking fund contributions. General Gold operated the mine from March 1999 to July 2000.

## 6.1 History of Previous Exploration

The Batman gold prospect, located about 3.5 km west of Mt. Todd, is part of a goldfield that was worked from early in the 20<sup>th</sup> century. Gold and tin were discovered in the Mt. Todd area in 1889. Most deposits were worked in the period from 1902 to 1914. A total of 7.80 tonnes of tin concentrate was obtained from cassiterite-bearing quartz-kaolin lodes at the Morris and Shamrock mines. The Jones Brothers reef was the most extensively mined gold-bearing quartz vein, with a recorded production of 28.45 kg. This reef consists of a steeply dipping ferruginous quartz lode within tightly folded greywackes.

The Yinberrie Wolfram field, discovered in 1913, is located 5 km west of Mt. Todd. Tungsten, molybdenum and bismuth mineralization was discovered in greisenised aplite dykes and quartz veins in a small stock of the Cullen Batholith. Recorded production from numerous shallow shafts is 163 tonnes of tungsten, 130 kg of molybdenite and a small quantity of bismuth.

Exploration for uranium began in the 1950s. Small uranium prospects were discovered in sheared or greisenised portions of the Cullen Batholith in the vicinity of the Edith River. The area has been explored previously by Esso for uranium without any economic success.

Australian Ores and Minerals Limited ("AOM") in joint venture with Wandaroo Mining Corporation and Esso Standard Oil took out a number of mining leases in the Mt. Todd area during 1975. Initial exploration consisted of stream sediment sampling, rock chip sampling, and geological reconnaissance for a variety of commodities. A number of geochemical anomalies were found primarily in the vicinity of old workings.

Follow-up work concentrated on alluvial tin and, later, auriferous reefs. Backhoe trenching, costeaning, and ground follow-up were the favored mode of exploration. Two diamond drillholes were drilled at Quigleys Reef. Despite determining that the gold potential of the reefs in the area was promising, AOM ceased work around Mt. Todd. The Arafura Mining Corporation, CRA Exploration, and Marriaz Pty Ltd all explored the Mt. Todd area at different times between 1975 and 1983. In late 1981, CRA Exploration conducted grid surveys, geological mapping and a 14-diamond drillhole program, with an aggregate meterage of 676.5 m, to test the gold content of Quigleys Reef over a strike length of 800 m. Following this program CRAE did not proceed with further exploration.

During late 1986, Pacific Gold Mines NL undertook exploration in the area which resulted in small-scale open cut mining on the Quigleys and Golf reefs, and limited test mining at the Alpha,

Bravo, Charlie and Delta pits. Ore was carted to a CIP plant owned by Pacific at Moline. This continued until December 1987. Pacific Gold Mines ceased operations in the area in February 1988 having produced approximately 86,000 tonnes grading 4 g Au/t gold (**Historic reported resource, not NI43-101 compliant.**). Subsequent negotiations between the Mt. Todd JV partners (Billiton and Zapopan) and Pacific Gold Mines resulted in the acquisition of this ground and incorporation into the Joint Venture.

TABLE 6-2 presents the most important historical events in a chronologic order.

<b>TABLE 6-2: Property History</b> <b>VISTA GOLD CORP. – MT TODD GOLD PROJECT</b> <b>June 2009</b>	
<u>1986</u> October 1986 – January 1987:	Conceptual Studies, Australia Gold PTY LTD (Billiton); Regional Screening; (Higgins), Ground Acquisition by Zapopan N.L.
<u>1987</u> February: June-July: October:	Joint Venture finalized between Zapopan and Billiton. Geological Reconnaissance, Regional BCL, stream sediment sampling. Follow-up BCL stream sediment sampling, rock chip sampling and geological mapping (Geonorth)
<u>1988</u> Feb-March: March-April:  May: May-June: July:  July-Dec:	Data reassessment (Truelove) Gridding, BCL grid soil sampling, grid based rock chip sampling and geological mapping (Truelove) Percussion drilling Batman (Truelove) - (BP1-17, 1475m percussion) Follow-up BCL soil and rock chip sampling (Ruxton, Mackay) Percussion drilling Robin (Truelove, Mackay) - RP1-14, (1584m percussion)  Batman diamond, percussion and RC drilling (Kenny, Wegmann, Fuccenecco) - BP18-70, (6263m percussion); BD1-71, (8562m Diamond); BP71-100, (3065m R.C.)
<u>1989</u> Feb-June:     June:  July-Dec:	Batman diamond and RC drilling:BD72-85 (5060m diamond); BP101-208, (8072m RC). Penguin, Regatta, Golf, Tollis Reef Exploration Drilling: PP1-8, PD1, RGP132, GP1-8, BP108, TP1-7 (202m diamond, 3090m RC); TR1-159 (501m RAB).  Mining lease application (MLA's 1070, 1071) lodged.  Resource Estimates; mining-related studies; Batman EM-drilling: BD12, BD8690 (1375m diamond); RC pre-collars and H/W drilling, BP209-220 (1320m RC); Exploration EM and exploration drilling: Tollis, Quigleys, TP9, TD1, QP1-3, QD1-4 (1141 diamond, 278m RC); Negative Exploration Tailings Dam: E1-16 (318m RC); DR1-144 (701. RAB) (Kenny, Wegmann, Fuccenecco, Gibbs).
<u>1990</u>	Pre-feasibility related studies; Batman Inclined Infill RC drilling: BP222-239 (2370m

Jan-March:	RC); Tollis RC drilling, TP10-25 (1080m RC). (Kenny, Wegmann, Fuccenecco, Gibbs)
<u>1993 - 1997</u> Pegasus Gold Australia Pty Ltd.	Pegasus Gold Australia Pty Ltd reported investing more than \$200 million in the development of the Mt. Todd mine and operated it from 1993 to 1997, when the project closed as a result of technical difficulties and low gold prices. The deed administrators were appointed in 1997 and sold the mine in March 1999 to a joint venture comprised of Multiplex Resources Pty Ltd and General Gold Resources Ltd.
<u>1999 - 2000</u> March - June	Operated by a joint venture comprised of Multiplex Resources Pty Ltd and General Gold Resources Ltd. Operations ceased in July 2000, Pegasus, through the Deed Administrators, regained possession of various parts of the mine assets in order to recoup the balance of purchase price owed it. Most of the equipment was sold in June 2001 and removed from the mine. The tailings facility and raw water facilities still remain at the site.
<u>2000 – 2006</u>	Ferrier Hodgson (the Deed Administrators), Pegasus Gold Australia Pty Ltd, the government of the NT, and the Jawoyn Association Aboriginal Corporation (JAAC) held the property.
<u>2006</u> March	Vista Gold Corp. acquires concession rights from the Deed Administrators.

## 6.2 Historic Drilling

The following discussion centers on the historic drillhole databases that were provided to Tetra Tech for use in this report. Based on the reports by companies, individuals and other consultants, it is Tetra Tech's opinion that the drill-hole databases used as the bases of this report contain all of the available data. Tetra Tech is unaware of any drillhole data that have been excluded from this report.

### 6.2.1 Batman Deposit

There are 730 historic drillholes in the Batman Deposit assay database. FIGURE 6-1 shows the drillhole locations for the Batman Deposit. These holes include 225-diamond drill core ("DDH"), 435 reverse circulation holes ("RVC"), and 70 open rotary holes ("OP"). Nearly all of the DDH and RVC holes were inclined 60° to the west. Samples were collected in one-meter intervals. DDH holes included both HQ and NQ core diameters. Core recoveries were reported to be very high with a mean of 98 percent. The Central area of the deposit was extensively core-drilled. Outside of the Central area, most of the drillholes were RVC and OP holes. All drillholes collars were surveyed by the mine surveyor. Down-hole surveys were conducted on most drillholes using an Eastman single shot instrument. All holes were logged on site.

A series of vertical RVC infill holes were drilled on a 25-meter-by-12.5-meter grid in the core of the deposit to depths between 50 and 85 m below the surface. Zapopan elected to exclude these holes from modeling the Batman Deposit because the assays from these holes seemed to be downwardly biased and more erratic compared to assays from inclined RVC holes. Of the possible reasons cited as to why vertical RVC holes might report lower grades and have a more erratic character, the 1992 Mining & Resource Technology Pty Ltd ("MRT") report states that *"the orientation of vertical holes sub-parallel to mineralization caused preferential sampling of*

*barren host rocks...*". This statement was, at least in part, borne out by the later sampling work done on the blastholes as it was credited with part of the reproducibility problems that were encountered when the Batman Deposit was being mined.

### 6.2.2 Drillhole Density and Orientation

Pegasus was aware of the problem of drillhole density within the Batman Deposit. According to Pegasus management, the decision to not drill out the lower portion of the Batman Deposit was based on economic considerations. Section 7.0 of the 1995 BKK feasibility study detailed the decrease in drillhole density with depth. At the time of that study, there were 593 holes in the assay database of which 531 were used in the construction of the MRT block model. Reserve Services Group ("RSG") reported that the drilling density in the Central area oxide and transition zone ore was generally 25 m by 25 m. The spacing was wider on the periphery of the ore envelope. The drilling density in the Central area of the primary ore ranged from 50 m by 50 m, but decreased to 50 m by 100 m and greater at depth.

At the time of The Winters Company's ("TWC") site visit in 1997, the drillhole database numbered 730 holes. It is not known if any holes were excluded from the Pegasus exploration models. Most of the new drilling that had been added since the 1994 MRT model was relatively shallow. TWC reviewed PGA's 50-meter drill sections through the Batman Deposit and saw that there was a marked decrease in drillhole spacing below 1000 RL (the model has had constant 1000 m added to it in order to prevent elevations below 0 (sea level) and have been denoted as RL for relative elevation) and another sharp break below 900 RL. The drillhole spacing in the south of 1000 N on the 954 RL bench plan approached 80 m by 80 m. Pegasus was able to get around this problem by using very long search ranges in its grade estimation. In the main ore zone, Pegasus used maximum search distances in the north and east directions of nearly 300 m.

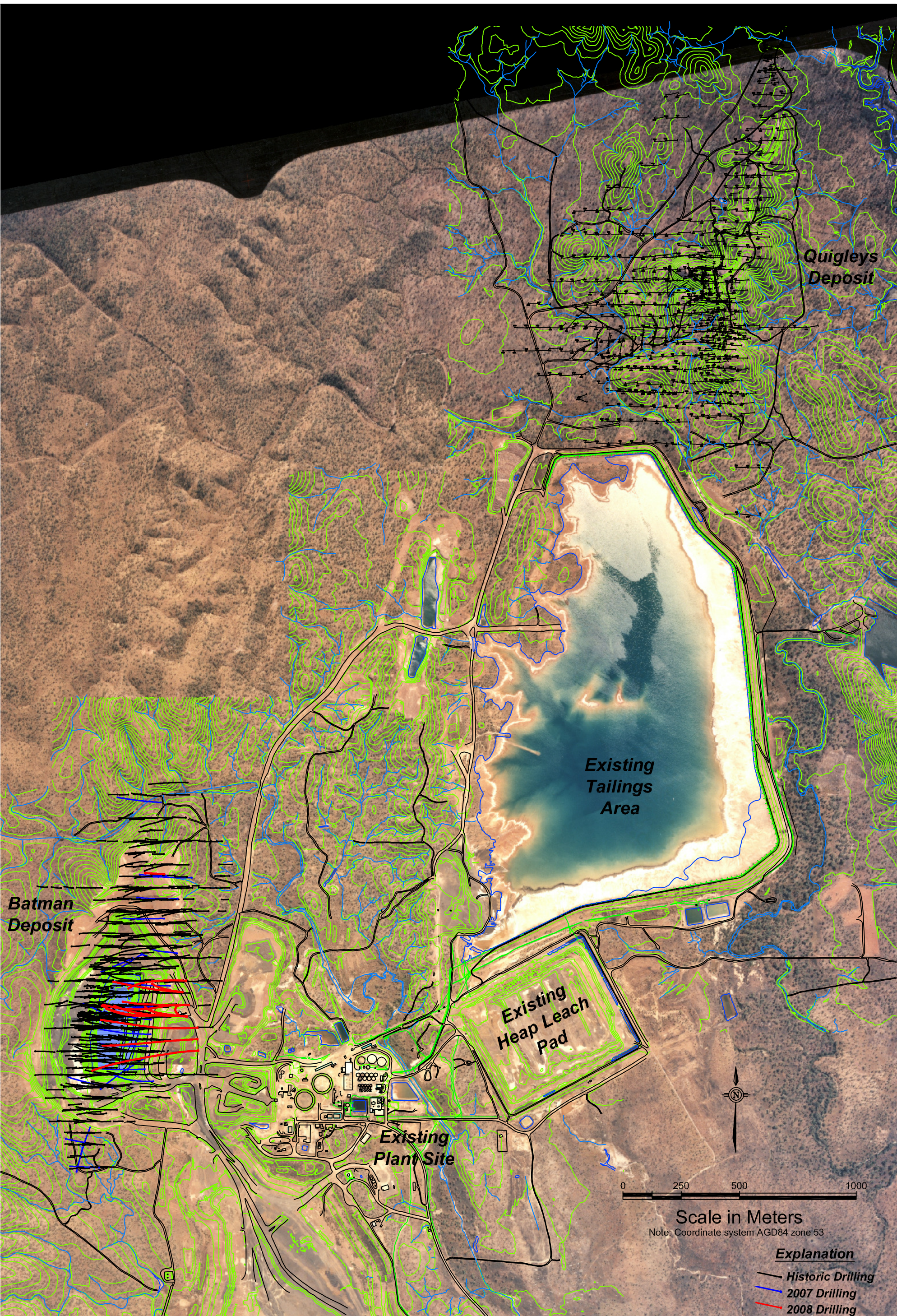
Another potential problem related to drilling is the preferred orientation of the drillholes. Most of the holes in the assay database are inclined to the west to capture the vein set which strikes N10° to 20°E, dips east, and which dominates the mineralized envelope. This orientation is the obvious choice to most geologists since these veins are by far the most abundant. Ormsby (1997) discussed that while the majority of mineralization occurs in these veins, the distribution of gold mineralization higher than 0.4 g Au/t is controlled by structures in other orientations, such as east-west joints and bedding. For this reason, Ormsby stated, *"The result is that few ore boundaries (in the geological model) actually occur in the most common vein orientation."* If this is truly the case, the strongly preferential drilling orientation has not crosscut the best mineralization and in cases may be sub-parallel to it.

Vertically oriented RVC holes were not included in the drillhole database for the 1994 MRT model because their assay results appeared to be too low compared to other hole orientations. If vertical hole orientations were actually underestimating the gold content during exploration drilling, the vertical and often wet blastholes, which are used for ore control, pose a similar problem and will need to be addressed prior to commencing any new mining on the site.

### 6.2.3 Quigleys

TABLE 6-3 details the Quigleys exploration database as of the time of this report. FIGURE 6-1 also shows the drillhole locations for the Quigleys Deposit.





Issued by:	Prepared for:	File Name:
	<b>Vista Gold Corp.</b>	Fig6-1.dwg
	Project:	Project Number:
	Mt Todd Gold Project	114-311156
Project Location:	Date of Issue:	
	Northern Territory, Australia	



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**Figure 6-1**  
**Drillhole Location Map**  
**Batman & Quigleys Deposits**



<b>TABLE 6-3: Summary of Quigleys Exploration Database</b> <b>VISTA GOLD CORP. – MT TODD GOLD PROJECT</b> <b>June 2009</b>			
<b>Drillholes</b>	<b>Gold Assays (approx 1m)</b>	<b>Copper Assays (approx 1m)</b>	<b>Lithologic Codes</b>
632	49,178	41,673	51,205

Snowden completed a statistical study of the Quigleys drillhole database in order to bias test it. A comparison of historic and recent data by Snowden suggested that a bias might exist. Further study concluded that a bias is not apparent where all drilling is oriented in a similar direction (and not clustered). This suggests the inclusion of assay data from all phases of drilling is reasonable. The March 2008 report entitled “Mt. Todd Gold Project, Gold Resource Update” contains additional information regarding the Snowden findings.

### 6.3 Historic Sampling Method and Approach

NQ core intervals were sawed lengthwise into half core. HQ core was quartered. RVC samples were riffle split on site and a 3- to 4-kg sample was sent to an assay lab. The 1992 MRT resource report commented that many of the RVC holes were drilled wet and that Billiton and Zapopan were aware of possible contamination problems. Oddly, in some comparison tests, DDH holes had averaged assays five percent to six percent higher than RVC holes; for that reason, MRT elected to exclude RVC holes from the drillhole database for grade estimation of the Central area of the Batman Deposit.

Since the property is currently not operating, Tetra Tech did not witness any drilling and sampling personally. We have taken the following discussion from reports by the various operators and more importantly, from reports by independent consultants that were retained throughout the history of the property to audit and verify the sampling and assaying procedures. It is Tetra Tech’s opinion that the reports by the various companies and consultants have fairly represented the sampling and assaying history at the site and that the procedures implemented by the operators, most notably GGC, have resulted in an assay database that fairly represents the tenor of the mineralization at Batman.

### 6.4 Historic Sample Preparation, Analysis, and Security

The large number of campaigns and labs used in the Mt. Todd drilling effort has resulted in a relatively complex sampling and assaying history. The database developed prior to August of 1992 was subjected to a review by Billiton, and has been subjected to extensive check assays throughout the project life. Furthermore, a number of consultants have reviewed the integrity of the database and have been content with the data for modeling purposes.

Drillhole samples were taken on one-meter intervals, though there are instances of two-meter intervals in the typically barren outlying holes. The procedure involved sawing the NQ core lengthwise in half. HQ core was quartered. RVC samples were riffle split on site and a 3- to 4-kg sample was sent to the laboratory for analyses. PAH stated that they actually witnessed the sample preparation process at a number of steps and concurred with the methods in use; however, PAH also noted that they would prefer that the sample cuts following the ring grinding process be conducted with a splitter rather than a scoop. While free gold is not a problem in this deposit, the potential does exist for segregation based upon particle hardness, which could bias assay results.

Pegasus (and Zapopan NL, before) conducted a check assay program which is consistent with industry practice. Every 20th assay sample was subjected to assay by an independent lab. Standards were run periodically as well, using a non-coded sample number to prevent inadvertent bias in the labs.

Billiton conducted an audit/analysis of the data set available in 1992, which resulted in a number of recommendations. Generally, factoring of any kind, particularly upward, can be a source of problems and is not recommended practice. The four percent adjustment applied to a portion of the pre-1989 data set is unlikely to introduce a significant problem. Similarly, averages of multiple samples were placed into the assay field designated AU\_PREF, which is also a potential source of error, as it creates a set of samples whose variance will be somewhat lower than the single-assay population. Again, the number of samples subjected to averaging is less than one in ten, so the net effects are negligible.

While the concerns mentioned thus far are relatively minor, it was PAH's feeling that a more detailed examination of the assay set would be in order. The first concern focused on the integrity of the AU\_PREF assays, which were calculated from a number of methods depending upon date drilled and the existence of check assays. PAH ran regressions and correlations on AU\_PREF against the primary and repeat assays of the Batman Deposit and noted that their data set contained 39 percent more samples than the feasibility dataset, most of which have been prepared under the more stringent and repeatable guidelines as specified by Pegasus and others.

The results indicated that at higher grades, the AU\_PREF assay differed by less than one percent (on average) from the primary and repeat assays. Agreement with the primary assay was within one percent over the entire range, which, indicates that AU\_PREF, even with the averaged data, does not materially differ from the source assays. The average difference between the regressed grade and AU\_PREF becomes larger at lower grades, particularly at less than 0.5 g au/t. This effect is probably due to detectability differences between the different labs and the mathematical effect of even small differences on low-grade samples.

#### **6.4.1 Sample Analysis**

According to reports by Pegasus, various consultants, and others, the early exploration assays were largely done at various commercial labs in Pine Creek and Darwin. Later assays were done at the Mt. Todd mine site lab. At least three different sample preparation procedures were used at one time or another. All fire assays were conducted on 50-gram charges. Based on these reports, it appears that the assay labs did use their own internal assay blanks, standards, and blind duplicates.

Assay laboratories used for gold analysis of the Batman drill data were Classic Comlabs in Darwin, Australia Assay Laboratories in Pine Creek and Alice Springs and Pegasus site Laboratory.

The exploration data consist of 91,225 samples with an average and median length of 1 meter. The minimum sample length is 0.1 m and the maximum sample length is 5 m. 137 samples are less than 1 meter and 65 samples are over one meter in length.

All exploration drill data were used for the resource estimate. Four-meter down hole composite samples were calculated down hole for the resource estimate. The assay composited data were tabulated in the database field called "Comp". The weighted average grades, the length, and the hole were recorded.

#### **6.4.2 Check Assays**



Extensive check assaying was carried out on the exploration data. Approximately five percent of all RVC rejects were sent as duplicates and duplicate pulps were analyzed for 2.5 percent of all DDH intervals. Duplicate halves of 130 core intervals were analyzed as well. Overall, Mt. Todd's check assay work is systematic and acceptable. The feasibility study showed that the precision of field duplicates of RVC samples is poor and that high errors exist in the database. The 1995 feasibility study stressed that because of the problems with the RVC assays, the RVC and OP assays should be kept in a separate database from the DDH assays. However, since that time, the majority of the identified assaying issues have been corrected by GGC based on recommendations of consultants. It is Tetra Tech's opinion that the assay database used in the creation of the current independent resource estimation exercise is acceptable and meets industry standards for accuracy and reliability.

### 6.4.3 Security

Tetra Tech is unaware of any "special" or additional security measures that were in place and/or followed by the various exploration companies, other than the normal practices of retaining photographs, core splits, and/or pulps of the samples sent to a commercial assay laboratory.

## 6.5 Historic Process Description

The Mt. Todd deposit is large, but low-grade gold deposit. The average grade of the gold mineralization is approximately 1 g Au/t. The gold mineralization occurs in a hard, uniform greywacke host and is associated with sulfide and silica mineralization which has resulted from deposition along planes of weakness that had opened in the host rock. Gold is very fine grained (<30 microns) and occurs with both silica and sulfides. The host rock is very competent with a Bond Work Index of 23 to 30.

Pegasus Gold Australia Pty Ltd. and earlier owners did extensive metallurgical testing from 1988 to 1995 to develop a process flowsheet for recovering gold from low-grade extremely hard rock. The treatment route, based on the metallurgical studies, was engineered to provide for the recovery of a sulfide flotation concentrate which was subsequently reground and leached in a concentrate leach circuit. Flotation tailings were leached in a separate CIL circuit.

The designed process flowsheet for the Mt. Todd Project is given in FIGURE 6-2. A brief description of the major unit operations is as follows:

**Crushing:** Four stages of crushing were employed to produce a product having a  $P_{80}$  of 2.6 mm. The primary crusher was a gyratory followed by secondary cone crushers in closed circuit. Barmac vertical shaft impact crushers were used for tertiary crushing in closed circuit and quaternary crushing stages. The crushed product was stored under a covered fine ore stockpile.

**Grinding:** The crushed product was drawn from the fine ore stockpile into three parallel grinding circuits, each consisting of an overflow ball mill in closed circuit with cyclones to produce a grind with a  $P_{80}$  of 150 microns.

**Flotation:** Cyclone overflow was sent to the flotation circuit where a bulk concentrate was supposed to recover seven percent of the feed with 65 to 70 percent of the gold.

**CIL of Tailing:** The flotation tailing was leached in carbon-in-leach circuit. The leach residue was sent to the tailings pond. Approximately 60 percent of the gold in the flotation tailings was supposed to be recovered in the CIL circuit.

**CIL of Flotation Concentrate:** The flotation concentrate was reground in Tower mills to 15 microns and subjected to cyanide leaching to recover the bulk of the gold in this product

(94.5 percent of the flotation concentrate). The leach residue was sent to the tailings pond.

**Process Recycle:** The process water was recycled to the milling circuit from the tailings pond. The overall gold recovery was projected to be 83.8 percent for the proposed circuit. However, during the initial phase of plant optimization, problems were encountered with high levels of cyanide in the recycled process water which, when returned to the mill, caused depression of pyrite and much lower recoveries to the flotation concentrate. As a result, the flotation plant was shut down and the ground ore was directly sent to the CIL circuit. The modified process flowsheet is given in FIGURE 6-3. Without the flotation circuit, the CIL plant recovered 72 to 75 percent of the gold.

The plant was shut down and placed on care and maintenance within one year of startup due to a collapse in gold price, under performance of the process plant and higher than projected operating costs.

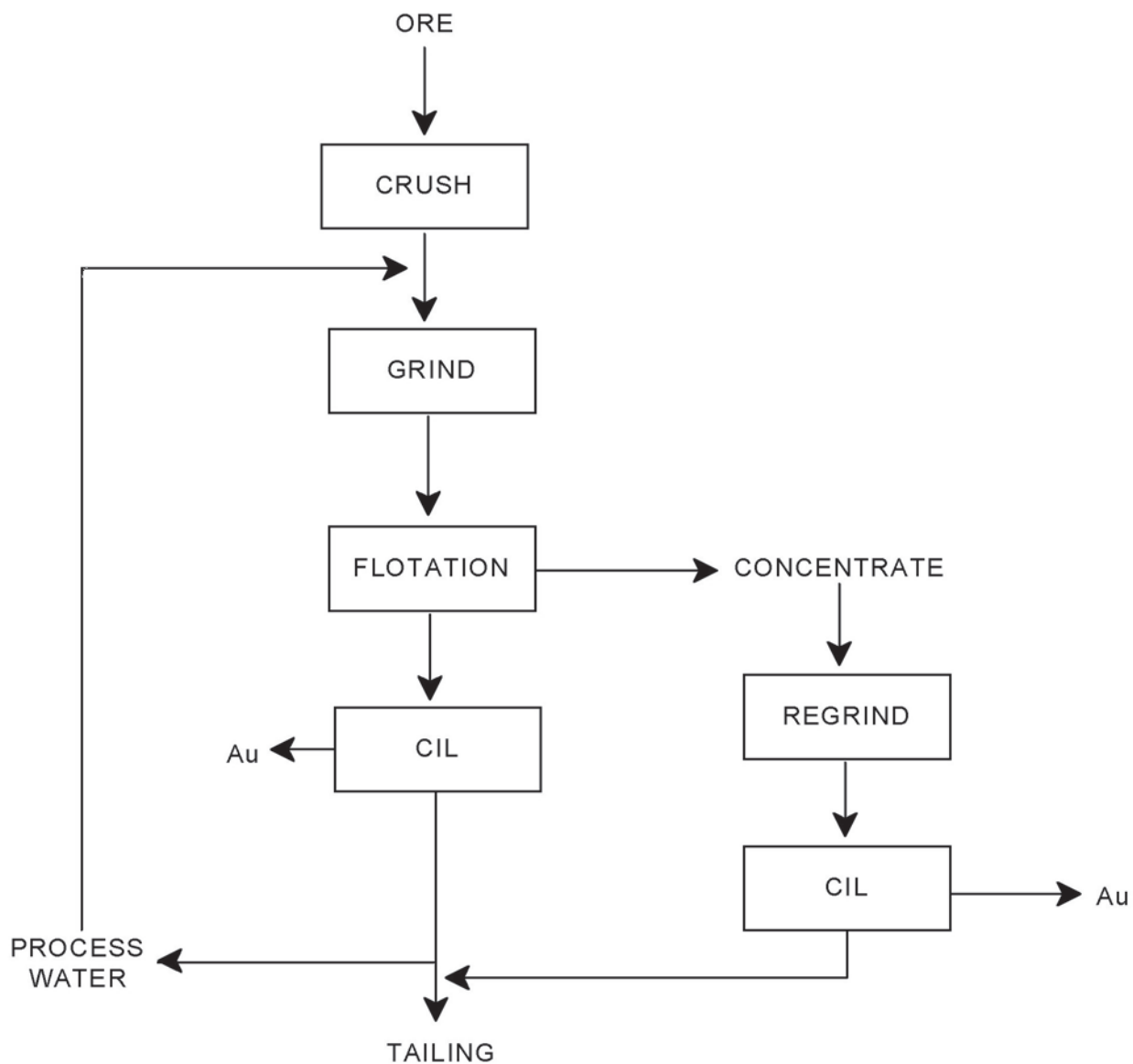
## 6.6 Technical Problems with Historical Process Flowsheet

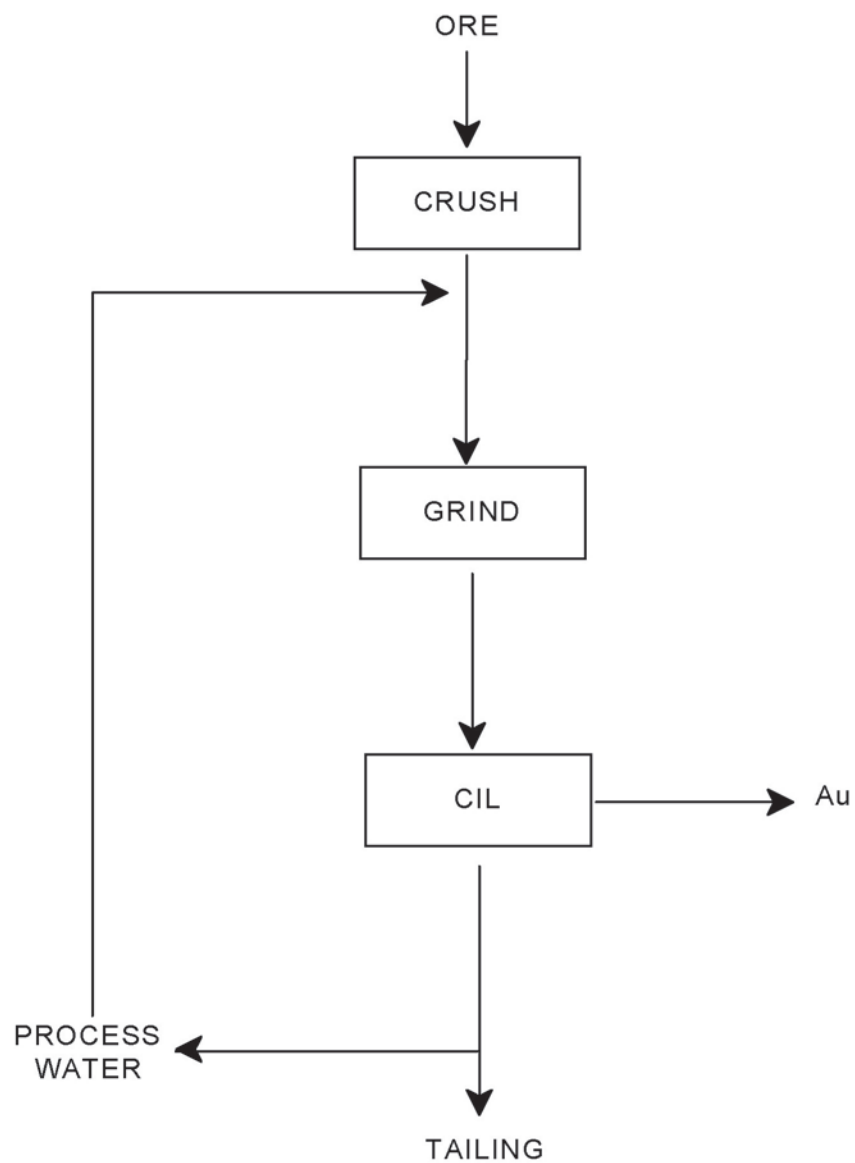
Besides the collapse in the gold price, there were several technical problems with the design flowsheet. These technical problems have been documented by plant engineers, The Winters Company, and other investigators. They are briefly discussed in this section.

### 6.6.1 Crushing

The four-stage crushing circuit was supposed to produce a product with  $P_{80}$  of 2.6 mm. Also, the tonnage was projected to be 8 million tonnes per year on an annualized basis. The actual product achieved in the plant had a  $P_{80}$  of 3.2 to 3.5 mm and the circuit could handle a maximum of 7 million tonnes per year on an annualized basis. This resulted in an increased operating cost for gold production.

A four-stage crushing/ball mill circuit was selected over a SAG/ball mill/crusher circuit because crushers were available from the Phase I heap leach operation and could be used in the Phase II program. The use of this available equipment did reduce the overall capital cost.





The following problems were encountered with the crushing circuit:

- The mechanical availability of the Barmac vertical shaft impact crushers was extremely poor.
- The Barmac crushers were not necessarily the best choice for the application. The three-stage crusher product could have been sent to the mills which would have had to have been larger size mills.
- The crushing circuit generated extreme amounts of fines and created environmental problems. The dust also carried gold with it. The dust levels increased the wear on machinery parts and were a potential long-term health hazard.
- The use of water spray to keep the dust down resulted in use of large amounts of fresh water. This was a strain on the availability of fresh water for the plant.

GGC operated a whole-ore cyanide leach facility but no technical reports describing their process have been located by Vista to date.

### **6.6.2 Grinding Circuit**

The SAG mill/ ball mill / crusher (ABC circuit) would have been a better selection of the comminution circuit rather than the four-stage crushing/ball milling circuit. The circuit was tested, but not implemented in the final flowsheet for reasons discussed in the previous section.

### **6.6.3 Flotation Circuit**

The flotation circuit was supposed to recover 60 to 70 percent of the gold in a bulk sulfide concentrate which was seven percent of the feed material. The flotation circuit recovered  $\pm 1\%$  of the weight of material and less than 50 percent of the gold values. This was due to the significant amount of cyanide in the recycle process water which depressed the sulfide minerals in the flotation process. If the process water had been detoxified, the problems would not have occurred. This was not done because of the cost associated with a cyanide detoxification plant.

Additional problems which were overlooked during the testwork and design of the plant included the following:

- The presence of cyanide soluble copper was known but was not taken into consideration during the design of the process flowsheet; and
- Removal of copper from the bulk sulfide in the form of a copper concentrate would have reduced the consumption of cyanide as well as the amount of WAD cyanide in the recycled process water. Pilot plant testing was undertaken in the plant to produce copper concentrate. Documented results do indicate  $\pm 60$  percent of copper recovery at a concentrate grade of  $+10\%$  Cu. Approximately 45 percent of the gold reported to this concentrate. However, from our discussions with the engineering contractors and the Pegasus staff running the pilot plant, a copper concentrate assaying over 20 percent was achieved in some of the later tests.

### **6.6.4 CIL of Flotation Concentrate and Tailings**

A portion of the copper was depressed with cyanide with the recycle process water in the flotation process. Hence, the cyanide consumption was high even in the leaching of the flotation tailings. The availability of dissolved oxygen in leaching terms was very low thereby resulting in poor extraction of gold in the leach circuit. This resulted in an estimated reduction of 40 percent of gold recovery in the circuit.

## 7.0 GEOLOGICAL SETTING AND MINERALIZATION

### 7.1 Geological and Structural Setting

The Mt. Todd Project is situated within the southeastern portion of the Early Proterozoic Pine Creek Geosyncline (FIGURE 7-1). Meta-sediments, granitoids, basic intrusives, acid and intermediate volcanic rocks occur within this geological province.

Within the Mt. Todd region, the oldest outcropping rocks are assigned to the Burrell Creek Formation. These rocks consist primarily of interbedded greywackes, siltstones, and shales of turbidite affinity, which are interspersed with minor volcanics. The sedimentary sequence incorporates slump structures, flute casts and graded beds, as well as occasional crossbeds. The Burrell Creek Formation is overlain by interbedded greywackes, mudstones, tuffs, minor conglomerates, mafic to intermediate volcanics and banded ironstone of the Tollis Formation. The Burrell Creek Formation and Tollis Formation comprise the Finnis River Group.

The Finnis River Group strata have been folded about northerly trending F1 fold axes. The folds are closed to open style and have moderately westerly dipping axial planes with some sections being overturned. A later north-south compression event resulted in east-west trending open style upright D2 folds.

The Finnis River Group has been regionally metamorphosed to lower green schist facies.

Late and Post Orogenic granitoid intrusion of the Cullen Batholith occurred from 1789 Ma to 1730 Ma, and brought about local contact metamorphism to hornblende hornfels facies.

Unconformably overlying the Burrell Creek Formation are sandstones, shales and tuffaceous sediments of the Phillips Creek sandstone, with acid and minor basic volcanics of the Plum Tree Creek Volcanics. Both these units form part of the Edith River Group, and occur to the south of the Project Area.

Relatively flat lying and undeformed sediments of the Lower Proterozoic Katherine River Group unconformably overlie the older rock units. The basal Kombolgie Formation forms a major escarpment, which dominates the topography to the east of the Project Area.

### 7.2 Local Geology

The geology of the Batman Deposit consists of a sequence of hornfelsed interbedded greywackes, and shales with minor thin beds of felsic tuff. Bedding is striking consistently at 325°, dipping at 40 to 60° to the southwest. Minor lamprophyre dykes trending north-south pinch and swell, cross cutting the bedding.

Nineteen lithological units have been identified within the deposit and are listed in TABLE 7-1 below from south to north (oldest to youngest).

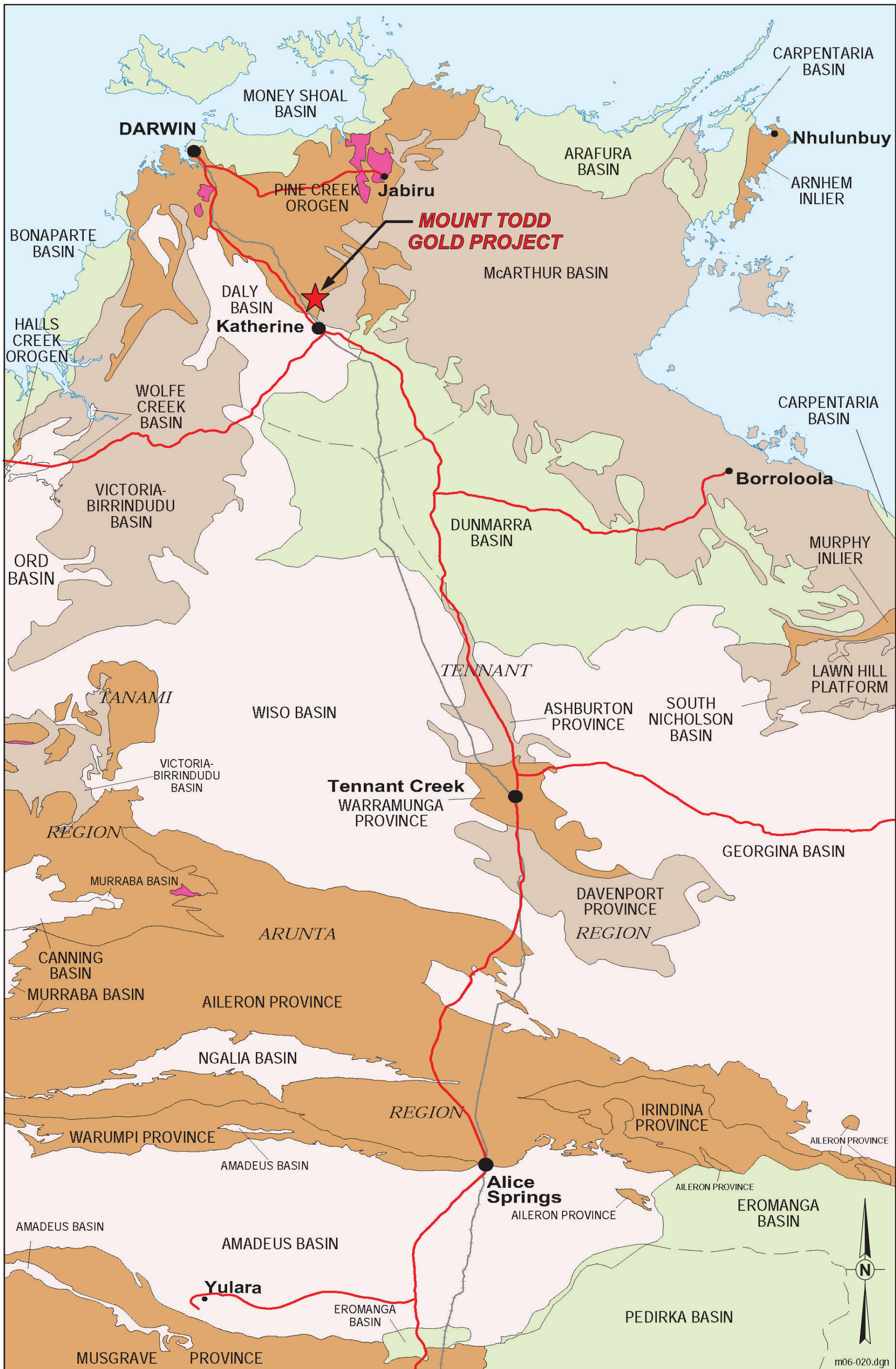
<b>TABLE 7-1: Geologic Codes and Lithologic Units</b> <b>VISTA GOLD CORP. – MT TODD GOLD PROJECT</b> <b>June 2009</b>		
<b>Unit code</b>	<b>Lithology</b>	<b>Description</b>
1	GW25	greywacke
2	SH24	shale
3	GW24A	greywacke
4	SHGW24A	shale/greywacke
5	GW24	greywacke
6	SHGW23	shale/greywacke
7	GWSH23	greywacke/shale
8	GW23	greywacke
9	SH22	shale
10	T21	felsic tuff
11	SH21	shale
12	T20	felsic tuff
13	SH20	shale
14	GWSH20	greywacke/shale
15	SH19	shale
16	T18	felsic tuff
17	SH18	shale
18	GW18	greywacke
Int	INT	lamprophyre dyke

Bedding parallel shears are present in some of the shale horizons (especially in units SHGW23, GWSH23 and SH22). These bedding shears are identified by quartz/ calcite sulphidic breccias. Pyrite, pyrrhotite, chalcopyrite, galena and sphalerite are the main primary sulfides associated with the bedding parallel shears.

East west trending faults and joint sets crosscut bedding. Only minor movement has been observed on these faults. Calcite veining is sometimes associated with these faults. These structures appear to be post mineralization.

Northerly trending quartz sulfide veins and joints striking at 0° to 20°, dipping to the east at 60° are the major location for mineralization in the Batman Deposit. The veins are 1 to 100 mm in thickness with an average thickness of around 8 to 10 mm. The veins consist of dominantly quartz with sulfides on the margins. The veining occurs in sheets with up to 20 veins per horizontal meter. These sheet veins are the main source of mineralization in the Batman Deposit.





Produced by Cartographic Section, Northern Territory Geological Survey, March 2006.





## **7.3 Mineralization**

A variety of mineralization styles occur within the Mt. Todd area. Of greatest known economic significance are auriferous quartz-sulfide vein systems. These vein systems include the Batman, Jones, Golf, Quigleys and Horseshoe prospects, which occur within a north-northeast trending corridor, and are hosted by the Burrell Creek Formation. Tin occurs in a north-northwest trending corridor. The tin mineralization comprises cassiterite, quartz, tourmaline, kaolin, and hematite bearing assemblages, which occur as bedding parallel breccia zones and pipes. Polymetallic Au, W, Mo, and Cu mineralization occurs in quartz-greisen veins within the Yinberrie Leucogranite; a late stage highly fractionated phase of the Cullen Batholith.

### **7.3.1 Batman Deposit**

#### **Local Mineralization Controls**

The mineralization within the Batman Deposit is directly related to the intensity of the north-south trending quartz sulfide veining. The lithological units impact on the orientation and intensity of mineralization.

Sulfide minerals associated with the gold mineralization are pyrite, pyrrhotite and lesser amounts of chalcophyrite, bismuthinite and arsenopyrite. Galena and sphalerite are also present, but appear to be post-gold mineralization, and are related to calcite veining in the bedding plains and the east-west trending faults and joints.

Two main styles of mineralization have been identified in the Batman Deposit. These are the north-south trending vein mineralization and bedding parallel mineralization.

#### **North-South Trending Corridor**

The north-south trending mineralization occurs in all rock units and is most dominant in the shales and greywackes designated SHGW23. Inspection of grade control and exploration data, drill logs, diamond core and the pit has shown that the north-south trending mineralization can be divided into 3 major zones based on veining and jointing intensity.

#### **Core Complex**

Mineralization is consistent and most, to all, joints have been filled with quartz and sulfides. Vein frequency per meter is high in this zone. This zone occurs in all rock types.

#### **Hanging Wall Zone**

Mineralization is patchier than the core complex due to quartz veining not being as abundant as the core complex. The lithology controls the amount of mineralization within the hanging wall zone. The hanging wall zone doesn't occur north of T21. South of reference line T21 to the greywacke shale unit designated GWSH23, the mineralization has a bedding trend. A large quartz/ pyrrhotite vein defines the boundary of the hanging wall and core complex in places.

#### **Footwall Zone**

Like the Hanging Wall Zone, the mineralization is patchier than the core complex and jointing is more prevalent than quartz veining. Footwall Zone mineralization style is controlled by the lithology and occurs in all lithological units.

Narrow bands of north-south trending mineralization also occur outside the three zones, but these bands are patchy.

### **Bedding Parallel Mineralization**

Bedding parallel mineralization occurs in rock types SH22 to SH20 to the east of the Core complex. Veining is both bedding parallel and north south trending. The mineralization appears to have migrated from the south along narrow north-south trending zones and “balloon out” parallel to bedding around the felsic tuffs.

#### **7.3.2 Quigleys Deposit**

The Quigleys Deposit mineralization was interpreted by Pegasus and confirmed by Snowden to have a distinctive high-grade shallow dipping 30°-35° NW shear zone extending for nearly 1 km in strike and 230m vertical depth within a zone of more erratic lower grade mineralization. The area has been investigated by RC and diamond drilling by Pegasus and previous explorers on 50m lines with some infill to 25m.

Drillhole intersections generally revealed an abrupt change from less than 0.4 g Au/t to high grade (>1 g Au /t) mineralization at the hanging wall position of the logged shear, but also revealed a gradational change to lower grade mineralization with depth. Some adjacent holes were also noted with significant variation in the interpreted position of the shear zone, and some of the discrepancies appeared to have been resolved on the basis of selection of the highest gold grade. While the above method may result in a valid starting point for geological interpretation, the selection of such a narrow high grade zone is overly restrictive for interpretation of mineralization continuity and will require additional work prior to estimating any resources.

It was further thought that while the shear might be readily identified in diamond drillholes, interpretation in RC drilling, and in particular later interpretation from previously omitted RC holes, must invoke a degree of uncertainty in the interpretation.

The conclusion was that, while the shear zone was identifiable on a broad scale, the local variation was difficult to map with confidence and therefore difficult to estimate with any degree of certainty at this time.

## 8.0 DEPOSIT TYPE

According to Hein (2003), the Batman and Quigleys gold deposits of the Mt. Todd Mine are formed by hydrothermal activity, concomitant with retrograde contact metamorphism and associated deformation, during cooling and crystallization of the Tennysons Leucogranite and early in D2 (Hein, submitted for publication). It is speculated that pluton cooling resulted in the development of effective tensile stresses that dilated and/or reactivated structures generated during pluton emplacement and/ or during D1 (Furlong et al., 1991), or which fractured the country rock carapace as is typical during cooling of shallowly emplaced plutons (Knapp and Norton, 1981). In particular, this model invokes sinistral reactivation of a northeasterly trending channelization basement strike-slip fault, causing brittle failure in the upper crust and/or dilation of existing north-northeasterly trending faults, fractures, and joints in competent rock units such as meta-greywackes and siltstones. The generation of dilatant structures above the basement structure (i.e., along a northeasterly trending corridor overlying the basement fault), coupled with a sudden reduction in pressure, and concomitant to brecciation by hydraulic implosion (Sibson, 1987; Je'brak, 1997) may have facilitated channelization of predominantly metamorphic fluid in the intermediate contact metamorphic aureole (possibly suprahydrostatic-pressured) and into the upper crust (Furlong et al., 1991; Cox et al., 2001). Rising fluids decompressed concurrent with mineral precipitation. Throttling of the conduit or fluid pathways probably resulted in over pressuring of the fluid (Sibson, 2001), this giving way to further fracturing, etc. Mineral precipitation accompanied a decrease in temperature although, ultimately, the hydrothermal system cooled as isotherms collapsed about the cooling pluton (Knapp and Norton, 1981).

Gold mineralization is constrained to a single mineralizing event that included:

- Retrogressive contact metamorphism during cooling and crystallization of the Tennysons Leucogranite;
- Fracturing of the country rock carapace;
- Sinistral reactivation of a NE-trending basement strike-slip fault;
- Brittle failure and fluid-assisted brecciation; and
- Channelization of predominantly metamorphic fluid in the intermediate contact metamorphic aureole into dilatant structures.

The deposits are similar to other gold deposits of the PCG and are classified as orogenic gold deposits in the subdivision of thermal aureole gold style. The Batman Deposit shares some characteristics with intrusion-related gold systems, especially in terms of the association of gold with bismuth and reduced ore mineralogies. This makes the deposit unique in the PCG.

## 9.0 EXPLORATION

Vista exploration staff conducted a surface exploration program, including prospecting, rock sampling and GPS surveying of drillhole collars and grid pickets on the Mt. Todd Exploration Licenses from April to July, 2008. Equipment and personnel were mobilized from the Mt. Todd Mine site. The work was conducted by geologists and field technicians.

During the 2008 field season, the exploration effort was focused on four areas: Red Kangaroo Dreaming (“RKD”), Mt. Todd mine site area, Tablelands area and Wolfram Hill. All prospects can be accessed from the Mt. Todd mine site easily via existing roads. A total of 216 rock samples were collected from all areas as presented in Table 9-1. These prospect areas were chosen for further exploration as they were along strike (or proximal) of a mineralized northeast regional trend which hosts the Batman Pit and numerous gold prospects.

<b>TABLE 9-1: 2008 Rock Samples</b> <b>VISTA GOLD CORP. – MT TODD GOLD PROJECT</b> <b>June 2009</b>	
<b>Prospect</b>	<b>Samples Collected</b>
Red Kangaroo Dreaming (RKD)	145
Mt. Todd Mine Site Area	52
Tablelands Area	6
Wolfram Hill Area	13
<b>Total Samples</b>	<b>216</b>

RKD was explored by the previous operator (Pegasus: 38 RC holes, 58 RAB holes). Mineralization was defined along a south trending 575 meter strike length. The area sampled during the 2008 program is west and south of the main RKD mineralized zone. The rock sampling was conducted to confirm both historical gold anomalies and soil anomalies from the 2007 Vista soil sampling program. At RKD, 145 samples were collected and submitted for analysis.

Prospecting and rock sampling was conducted at the Mt. Todd mine site to locate mineralization proximal to Batman pit. Approximately 52 samples were collected and submitted for analysis. The area sampled includes the area south of the waste dump and heap leach pad. The sampled area contains historical soil and rock chip Au anomalies that have seen limited exploration.

In the Wolfram Hill area, 13 samples were collected and submitted for analysis. There are numerous historical gold anomalies in the Wolfram Hill area that have seen limited exploration. The area that was sampled includes historical shafts and adits from previous tungsten mining operations.

Limited sampling at Tablelands area, 33 km northeast of the Batman pit (14 km northeast of RKD), comprised only six samples. Previous drilling by past operators returned a near surface assay of 36 g Au/t as well as other anomalous values.

All observations and sampling are recorded as “stations” which have UTM coordinates that are located in the field with a GPS unit.

An ICP multi-element suite was utilized to analyze the rock samples from RKD, Mt. Todd mine site area, Tablelands area and Wolfram Hill prospect by ALS Chemex Labs in Adelaide, South Australia. The ICP analysis consist of a multi-element suite that reports analyses for base and precious metals, pathfinder elements for these commodities, as well as elements useful for mapping bedrock geology.

Concurrent with the rock sampling, from April to July 2008, drillhole collar locations and grid pickets were surveyed at Tablelands prospects using a GPS unit. Accurate drillhole locations has enabled the compilation of an accurate database for further drill planning and geological interpretation.

## 9.1 Results

Approximately 1100 m due west of the RKD prospect, a 600 meter long arsenic soil anomaly was prospected and sampled during the 2008 exploration program. Historical rock samples have assayed up to 17.37 g Au/t within the anomaly. During the program, a topographic ridge corresponding within the southern portion of the anomaly was explored. The ridge was sampled along 500 m with 41 samples collected. Of the samples collected almost half (46 percent) were over 0.3 g Au/t (ranging from 0.3 to 2.36 Au/t). No known drilling has been conducted on the anomaly and the mineralized ridge, although historical drillholes are collared 500 m west and 200 m south of the current target. Further field work is recommended including mapping, rock sampling and further soil sampling to define the anomaly and develop a drill target.

At the Wolfram Hill prospect, the 2008 rock sampling located anomalous gold, silver, copper, and tungsten anomalies including one sample which assayed 2.33 g Au/t, 738 g Ag/t, 37.8 %Cu and 0.21 %W. Only preliminary work was conducted in 2008; further work is warranted due to the significant gold, silver and copper values that were delineated in 2008 and by previous operators. It should also be noted that other historic tungsten occurrences, similar to the Wolfram Hill prospect, in the Pine Creek Orogen, also have significant enrichment of tantalum (it is currently unclear if the Wolfram Hill prospect has been explored for or historic samples have been analyzed for tantalum). Tantalum mineralization is present in a number of deposit styles including pegmatites and polymetallic veins of which both are found at the Wolfram Hill prospect.

Preliminary reconnaissance exploration was completed at the Tablelands prospect and additional work is recommended to follow up anomalous gold mineralization identified by previous operators.

South of the waste dump at the Mt. Todd mine site, a spot gold anomaly of 1.2 g Au/t confirms historical gold anomalies of 1.99 to 14.2 g Au/t. All three samples occur along a 200 meter strike length which trends north-south. The area sampled south of the heap leach pad also had isolated spot gold anomalies up to 2.29 g Au/t. Further work is required and recommended to locate and further refine known areas of gold mineralization proximal to the Mt. Todd mine site.

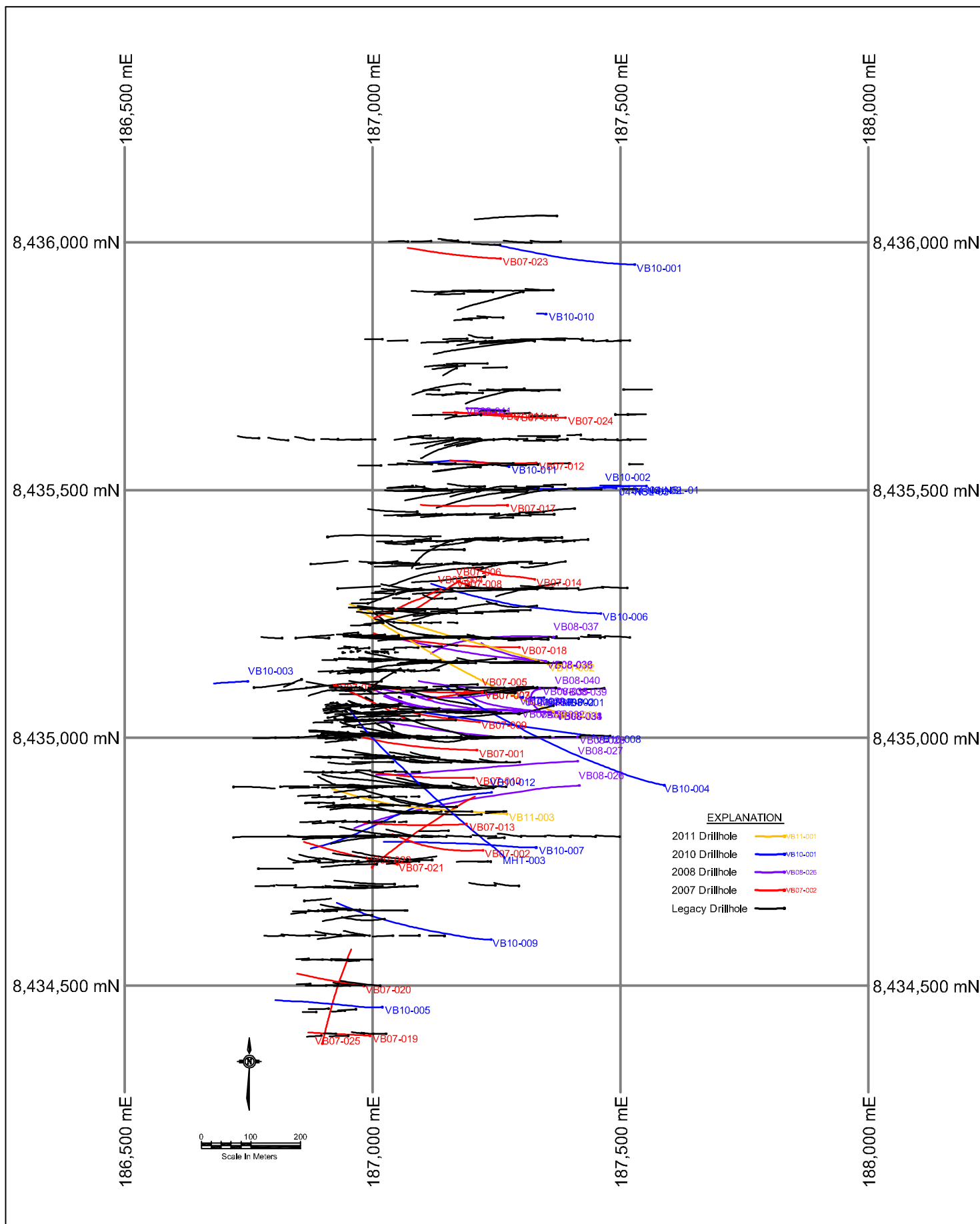
## 10.0 DRILLING

In 2010 and 2011 the Vista exploration program at the Batman deposit consisted of 22 diamond core and reverse circulation drillholes containing some 9647.5 meters that targeted both infill definitional drilling and step-out drilling. In 2011 Vista has continued to drill following drillhole VB11-003, however the results after VB11-003 were not received in time to be included in this report. TABLE 10-1 contains information of the 22 drillholes completed. A total of 9,635 assays from 22 drillholes were added for this resource. FIGURE 10-1 is a plan map that details the locations of all exploration drillholes drilled at the Batman deposit up to and including VB11-003.

**TABLE 10-1: Drillholes Added For Resource Update**  
**VISTA GOLD CORP. - MT TODD GOLD PROJECT**  
**October 2011**

Hole ID	Northing m (MGA94 z53)	Easting m (MGA94 z53)	Elevation (m above msl)	Bearing (degrees)	Dip (degrees)	Total Depth (m)	Hole Type
01-MBP-001	8435081.0	187346.1	146.1	270.6	-77.0	95.0	RC
01-MBP-002	8435081.4	187326.1	145.7	270.6	-77.0	42.0	RC
01-MBP-003	8435081.7	187303.0	144.4	270.6	-77.0	24.0	RC
04-NSL-01	8435507.8	187552.7	140.0	270.6	-61.7	191.8	Diamond, RC pre collar 132
04-NSL-02	8435507.1	187517.5	142.4	270.6	-60.0	102.0	RC
04-NSL-03	8435504.0	187491.6	144.2	270.6	-60.0	84.0	RC
MHT-003	8434758.5	187266.2	144.9	319.2	-25.0	499.4	Diamond
VB10-001	8435954.6	187528.9	138.2	274.0	-62.3	550.8	Diamond, RC pre collar 132
VB10-002	8435505.0	187468.4	147.4	269.8	-55.6	287.4	Diamond
VB10-003	8435114.2	186748.0	163.5	267.0	-80.1	525.7	Diamond
VB10-004	8434904.4	187589.0	141.7	280.8	-59.4	864.4	Diamond, RC pre collar 150
VB10-005	8434456.9	187019.6	148.8	268.4	-61.4	418.8	Diamond, RC pre collar 84
VB10-006	8435250.9	187460.3	145.3	273.8	-62.3	721.7	Diamond, RC pre collar 120
VB10-007	8434778.8	187330.1	144.4	270.0	-66.0	727.2	Diamond, RC pre collar 120
VB10-008	8435004.5	187446.0	145.0	274.9	-60.8	735.5	Diamond, RC pre collar 161.1
VB10-009	8434593.3	187239.0	148.7	270.0	-60.0	669.6	Diamond, RC pre collar 87
VB10-010	8435855.3	187349.9	167.8	271.0	-67.0	48.0	RC
VB10-011	8435547.2	187275.2	162.4	279.4	-68.5	630.5	Diamond
VB10-012	8434890.0	187240.0	150.0	263.4	-55.0	725.9	Diamond
VB11-001	8435053.8	187364.6	146.4	290.6	-50.0	596.1	Diamond
VB11-002	8435149.0	187354.7	143.4	288.6	-50.0	572.9	Diamond
VB11-003	8434846.7	187271.4	149.2	273.6	-55.0	535.0	Diamond





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Prepared for:

**Vista Gold Corp.**

Project:

Mt Todd Gold Project

Project Location:

Northern Territory, Australia

File Name:

Fig10-1.dwg

Project Number:

114-311156

Date of Issue:

October 2011

**Figure 10-1**  
**Drillhole Location Map**  
**Batman Deposit to VB11-003**

## 10.1 Sampling

The sampling method and approach was similar to what has historically been used at Mt. Todd. The drill core, upon removal from the core barrel, is photographed, geologically logged, geotechnically logged, and placed into metal core boxes. The metal core boxes are transported to the sample preparation building where the core is marked and sawn into halves. One-half is placed into sample bags as one-meter sample lengths, and the other half retained for future reference. The only exception to this is when a portion of the remaining core has been flagged for use in the ongoing metallurgical testwork.

In the few case of short reverse circulation drillholes reverse circulation pre collars, Vista employed a rifle splitter to collect one meter samples intervals the entire length drilled by reverse circulation. Of the 22 drillholes 1,381.1 m were drilled using reverse circulation, accounting for 14%.

The bagged samples have sample tags placed both inside and on the outside of the sample bags. The individual samples are grouped into “lots” for submission to ALS Chemex for preparation and analytical testing. All of this work was done under the supervision of a Vista geologist.

## 11.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

The following section describes the sample preparation, analyses and security undertaken by Vista only for exploration drilling added for this resource update. Details regarding prior procedures can be found in previously issued technical reports.

### 11.1 Sample Preparation

The diamond drilling program was conducted under the supervision of the Geologic Staff which was composed of a Chief Geologist, several contract expatriate geologists, and a core handling/cutting crew. The core handling crew was labor recruited locally.

Facilities for the core processing included an enclosed logging shed and a covered cutting and storage area that was fenced in. Both of these facilities were considered to be limited access areas and kept secured when work was not in progress.

The diamond drill core was boxed and stacked at the rig by the drill crews. Core was then picked up daily by members of the core cutting crew and transported directly into the logging shed.

Processing of the core included photographing, geotechnical and geologic logging, and marking the core for sampling. The nominal sample interval was 1 meter. When this process was completed, the core was moved into the core cutting/storage area where it was laid out for sampling. The core was laid out for the following procedures:

- One-meter depth intervals were marked out on the core by a member of the geologic staff;
- Geotechnical logging was done in accordance with the instructions received from SRK;
- Core orientation (bottom of core) was marked with a solid line when at least three orientation marks aligned and used for structural measurements. When orientation marks were insufficient an estimation orientation was indicated by a dashed line,
- Geologic logging was then done by a member of the geologic staff. Assay intervals were selected at this time and a cut line marked on the core. The standard sample interval was one-meter, with a minimum of 0.2m and a maximum of 1.2m. Of the 9,635 assay added for this resource update 41 intervals were outside of the previously described optimal interval length. With the minimum being 5cm and the maximum being 5.4m. It has incorporated these samples within the resource as is, but recommends that future sampling adhere to the optimal sample range. Sample intervals were constrained by lithologic, alteration and structural boundaries,
- Blind sample numbers were then assigned based on pre-labeled sample bags. Sample intervals were then indicated in the core tray at the appropriate locations; and
- Each core tray was photographed and restacked on pallets pending sample cutting and stored on site indefinitely.

The core was then cut using diamond saws with each interval placed in sample bags. At this time, the standards and blanks were also placed in plastic bags for inclusion in the shipment. Standards, blanks and duplicates were inserted at a minimum ratio of 1 in 20. At suspected high grade intervals additional blank sample were added. Standard reference material was sourced from Ore Research & Exploration Pty Ltd and provided in 60g sealed packets. When a sequence of 5 samples was completed, they were placed in a shipping bag and closed with a zip tie. All of these samples were kept in the secure area until crated for shipping.

Samples were then placed in crates for shipping with 100 samples per crate (20 shipping bags). The crates were secured with padlocks and numbered globe seals as soon as they were loaded. The secured crates were stacked outside the core shed until picked up for transport.

## 11.2 Sample Analyses

The following laboratories were used for lab preparation, analyses, and check analyses.

TABLE 11-1: Assay and Preparation Laboratories Vista Gold Corp. - Mt Todd Gold Project August 2011			
Laboratory	Address	Purpose	Abbreviation
ALS   Minerals	31 Denninup Way Malaga, WA 6090	Main assay analyses	ALS
ALS   Minerals	13 Price St Alice Springs, NT 0870	Sample Preparation	ALS Alice Springs
Genalysis Laboratory Services (Intertek Group)	15 Davison St Maddington, WA 6109	Check Analyses	Genalysis
North Australian Laboratories Pty Ltd	MLN 792 Eleanor Rd Pine Creek, NT 0847	Alternative assay analyses	NAL
Northern Territory Environmental Laboratories (Intertek Group)	3407 Export Dr Berrimah, NT 0828	Check Analyses	NTEL

The majority of the samples were transported first to ALS in Alice Springs for sample preparation. After preparation, samples were then forwarded on to ALS in Malaga for assay analyses. One in every 20 pulp and reject was sent from ALS in Alice Springs to NAL, Vista was notified by email which samples were sent to NAL.

Following completion of assay results, all pulps and reject material was shipped back to the Mt Todd Project site and stored.

## 11.3 Sample Security

ALS was selected as the primary laboratory for all further preparation and analysis. The closest ALS facility with the capability of preparing the samples to the desired specifications was their sample preparation facility located in Adelaide. A series of padlocks were purchased for the sample crates and keys to these padlocks were sent to the sample preparation facility. ALS was instructed to notify Vista immediately if a crate of samples arrived without the padlocks or if the globe seals were missing or showed evidence of tampering.

Sample shipments were scheduled for approximately once a week. The sealed crates were picked up on site by the transport company for road transport to the preparation facility. A chain-of-custody note was prepared and signed by both the shipping company and the geologist supervising the loading. These chain-of-custody notes were attached to the sample inventory and filed in the geologist office on site.

When the shipment left site, sample transmittals were prepared and e-mailed to ALS. When the shipment arrived at the preparation facility the samples were lined out and a confirmation of sample receipt was e-mailed back to Vista.

## 12.0 DATA VERIFICATION

### 12.1 Drill Core and Geologic Logs

As stated earlier in this report, the Mt. Todd Project has an excellent drillhole database comprised of drill core, photographs of the drill core, assay certificates and results, and geologic logs. The meticulous preservation of the drill core and associated “hard copies” of the data are a testament to the originators of the project and the subsequent companies that have worked on the project. All data are readily available for inspection and verification. In addition, most of the subsequent companies or their consultants that have examined the project have completed checks of the data and assay results. Other than the “normal” types of errors inherent in a project this size, (i.e. mislabeled intervals, number transpositions, etc.), which were corrected prior to Tetra Tech’s resource estimation, it is Tetra Tech’s opinion that the databases and associated data are of a “high quality” in nature.

Tetra Tech found no significant discrepancies with the existing drillhole geologic logs and is satisfied that the geologic logging, as provided for the development of the three-dimensional geologic models, fairly represents both the geologic and mineralogic conditions of each of the deposits that comprise the Mt. Todd Project.

### 12.2 Topography

The topographic map of the project area was delivered electronically in an AutoCAD® compatible format and represent the topography in half meter accuracy. The native coordinate system of the topography is MGA94 zone 53, and for this resource update and as the project goes forward MGA94 zone 53 will be the used coordinate system. The surveyed drillhole collar coordinates, once translated to MGA94 zone 53 agree well with the topographic map; it is Tetra Tech’s opinion that the current topographic map is accurate and accurately represents the topography of the project area. In addition, it is suitable for the development of the geologic models, resource estimates, and mineral reserve estimates.

### 12.3 Verification of Analytical Data

As part of the 2007 exploration program, Vista embarked on a program to both verify the historic assay results and ensure that any future analytical work meets all current NI 43-101 standards for reporting of mineral resources. This program consisted of two components; re-assaying of a portion of the historic drillholes, and assaying of the new core drillholes.

Vista completed a multi-phase program to evaluate the accuracy of gold assays generated by North Australian Labs (NAL) on Mt. Todd core samples. The test involved three phases including, 1) cross checking assay standards used in the program between NAL and ALS-Chemex, 2) preparing and assaying 30, 1-meter intervals of remaining half-core and detailed analysis of crushing and analytical performance between the two labs, and 3) screen sieve assay analysis of 45 coarse reject samples plus the 45 comparable remaining half core samples.

Analysis of the results from the two labs confirmed that finer material tends to be higher grade and that this fine material had been preferentially lost through the coarse-weave sample bags during storage and handling of the coarse reject samples. The test also showed good reproducibility between labs in all tests at grade ranges typical of the deposit. Greater variance, which is not unexpected, showed up in the few samples assaying in the 5-20 g Au/t range.

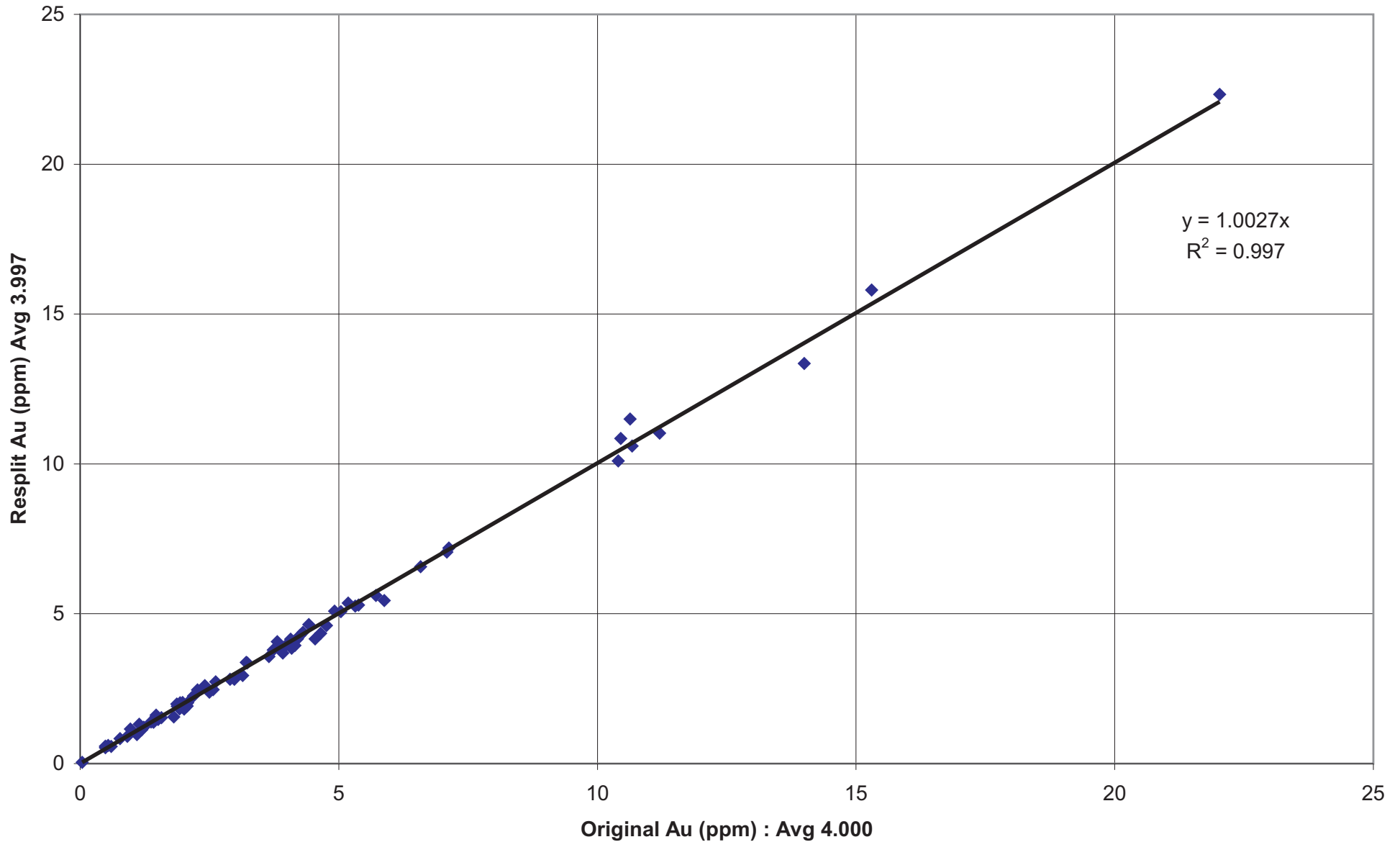
FIGURES 12-1, 14-2, and 12-3 detail the results of the analytical check program that was completed on the 2007 exploration drillholes. The program was designed to check both internal laboratory accuracy and inter-laboratory accuracy. NAL was the primary laboratory for

completion of the sample analyses. ALS Chemex in Sydney, Australia performed the inter-laboratory analyses. As can be seen from the plots, the correlation coefficient was 99.7 percent for the resplits of original assays, 99.2 percent for pulp repeats, and 98.6 percent for inter-laboratory analyses, respectively.

Vista continued their verification program as part of the 2008-2011 exploration programs.



# NAL Resplit Analysis (n=76)



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Prepared for:

**Vista Gold Corp.**

Project:

**Mt. Todd Gold Project**

Project Location:

**Northern Territory, Australia**

File Name:

**Fig12-1.dwg**

Project Number:

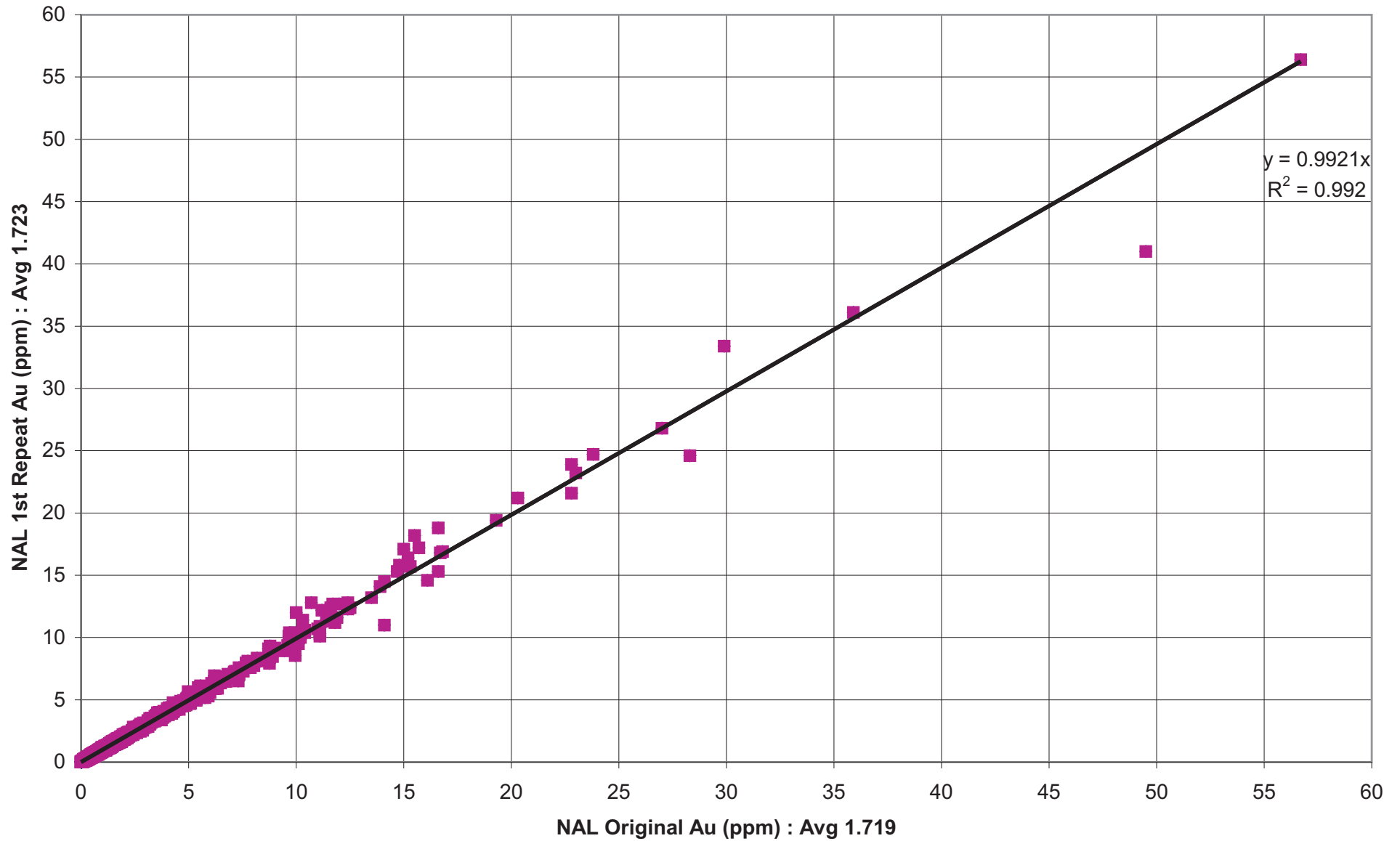
**114-311156**

Date of Issue:

**Sept/2010**

**Figure 12-1**  
**NAL Resplit Analysis (n=76)**

# NAL Pulp Repeats (n=2,948)



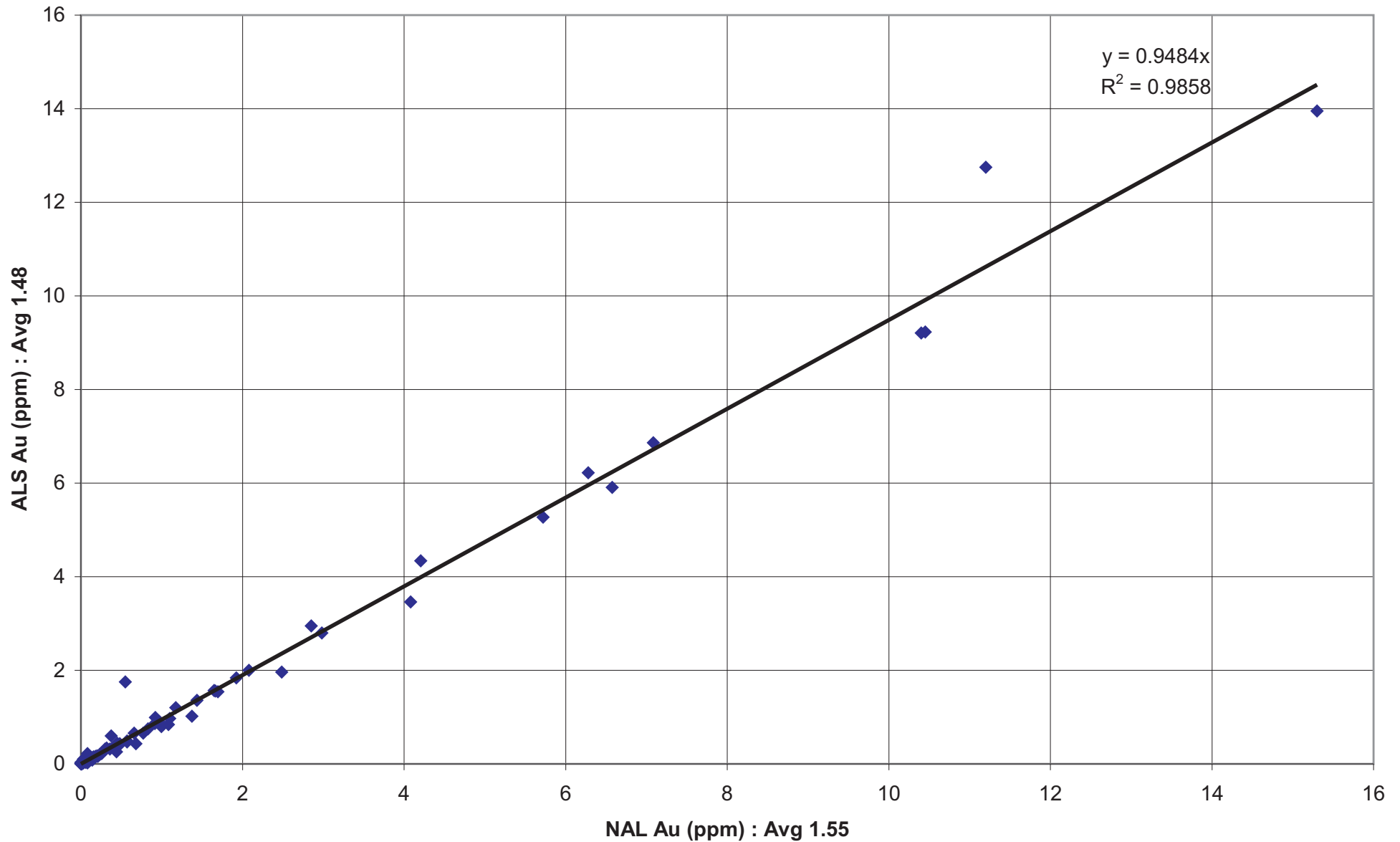
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Prepared for:  
**Vista Gold Corp.**  
 Project:  
**Mt. Todd Gold Project**  
 Project Location:  
**Northern Territory, Australia**

File Name:  
**Fig12-2.cdr**  
 Project Number:  
**114-311156**  
 Date of Issue:  
**Sept/2010**

**Figure 12-2**  
**NAL Pulp Repeats (n=2,948)**

# Original Pulp Cross Lab Checks (n=78)



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Prepared for:

**Vista Gold Corp.**

Project:

**Mt. Todd PreFeasibility Study**

Project Location:

**Northern Territory, Australia**

File Name:

**Fig12-3.dwg**

Project Number:

**114-311156**

Date of Issue:

**Sept/2010**

**Figure 12-3**  
**Original Pulp Cross Lab Checks (n=78)**

## 13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

The Mt. Todd project was an operating gold mine in the 1990's. Previous operators successfully recovered gold from the oxide portion of the deposit, but encountered difficulties in processing the ore as the mine transitioned from the oxide heap leach operation to a sulfide milling operation. Some of the metallurgical challenges encountered, but not adequately addressed at that time were: hard ore (23.5-Bond ball mill work index), cyanide-soluble secondary copper minerals, and inefficient flotation sulfide mineral recovery resulting from presence of free cyanide in the process make-up water. Vista Gold Corp. (Vista) acquired the project with the belief that each of these challenges could be overcome through the use of current technology, adequate metallurgical testing and higher gold prices.

In 2006 Vista retained RDi to evaluate the metallurgical characteristics of the Mt. Todd deposit and develop a process flowsheet that would optimize the recovery of gold through the efficient use of proven processing technologies. Testwork has also been undertaken at several other testing facilities including; Krupp Polysius Research Center Germany, JK Tech Pty. Ltd. Australia, Pocock Industrial, Inc. Utah, and Kappas, Cassidy and Associates Nevada. The extensive metallurgical testwork has resulted in an economically viable process flowsheet which has overcome the metallurgical challenges encountered by earlier operators.

The process flowsheet discussed in this section has the following significant advantages over earlier processing options:

- Better characterization of the resources at site has indicated that copper may not be as important an issue as indicated by a reviewer of the historic processing challenges encountered by earlier operators. This has resulted in the development of the ore-cyanidation leach process presented in the process flowsheet;
- Incorporation of the HPGR technology in the comminution circuit to handle the extremely hard and coarsening of the grind has resulted in a significant reduction in the energy requirement for the proposed flowsheet; and
- Pre-aeration of the ground ore with lime has resulted in a reduction of the cyanide consumption in the process.

These processing advantages combined with higher gold price significantly improve the viability of the proposed operation.

### 13.1 Historical Review of Conceptual Process Flowsheet

RDi reviewed historical metallurgical testwork for the Mt. Todd project conducted in 2006 and proposed a conceptual process flowsheet that could potentially overcome the technical problems encountered by previous operators. The proposed flowsheet consisted of crushing and grinding the ore followed by floating the sulfides and gold in the rougher flotation. The objective of the rougher flotation step was to maximize recoveries of gold, copper and other sulfides. Rougher tailings would have negligible amounts of sulfides and would be non-acid generating thereby allowing the tailings to be sent to the existing tailings pond. Rougher concentrate containing 85 percent or more of the gold content in the ore would be reground and selectively floated to recover copper and gold in a cleaner concentrate which would assay over 20 percent Cu. The concentrate would contain approximately 50 percent of the gold and would be sold to a smelter. Cleaner tailings would be cyanide leached in the CIL circuit. Leach residue would be subjected to cyanide destruction and the sulfides would be sent to a separate tailings pond. The tailings pond would be constantly monitored to ensure that acid is not generated.

To confirm this flowsheet, RDi undertook a testing program in late 2006 utilizing core samples provided by Vista Gold. The core samples consisted of approximately 3 kg each of ten drill core reject samples stored for several years. The composite sample prepared for the study assayed 1.78 g Au/t, 448 ppm Cu, and 1.43 percent  $S_{\text{Total}}$ . Based on sequential copper analyses, the copper present in the composite consisted of three percent oxide copper, 63 percent secondary copper and 34 percent primary copper. The major sulfide mineral in the sample was pyrite. Froth flotation using a simple reagent suite consisting of potassium amyl xanthate, Aeropromotor 3477 and methyl isobutyl alcohol recovered approximately 82 percent of gold and 90 percent of copper in a rougher concentrate at a primary grind of  $P_{80}$  of 200 mesh. Following regrind, the rougher concentrate was upgraded to  $\pm 19$  percent Cu in two cleaner flotation stages. Additional cleaner stages could not be tested due to limited sample availability. Cyanide leaching of the cleaner tailings which contained  $\pm 35$  percent of the gold extracted 84 percent of the gold in the tailing. The limited open-circuit testwork indicated that the proposed conceptual process flowsheet should work for the deposit.

### 13.2 Metallurgical Testwork

Vista Gold conducted the first of the two exploration programs on the Mt. Todd Project in 2007. Part of the core from the 2007 drilling program was used for metallurgical testing to confirm the conceptual process flowsheet. The composite sample was very hard (Bond ball mill work index of 23.9 Kwh/t) and averaged 1.37 g Au/t, 447 ppm Cu and 0.92 percent  $S_{\text{Total}}$ . The metallurgical testwork indicated that gold recovery into the rougher flotation concentrate was  $\pm 80$  percent at a primary grind of  $P_{80}$  of 200 mesh. Copper in the rougher concentrate could not be upgraded to provide concentrate assaying  $\pm 20$  percent Cu. The best results were  $\pm 6$  percent Cu using the same test procedure as employed for earlier core testing (2006).

Similar metallurgical results were obtained on a composite using 2008 core samples. This composite assayed 0.89 g Au/t and 450 ppm Cu. The poor metallurgical performance results obtained on the 2007/2008 core sample composites prompted a study to determine the reasons for the differences in metallurgical response compared to the historic core. The results, summarized in TABLE 16-1, indicated that historical core had copper predominantly as secondary copper which is known to be a major consumer of cyanide. The major sulfide mineral was pyrite. However, 2007 and 2008 drill core had primary copper as predominant copper species and pyrrhotite as major sulfide mineral. Pyrrhotite is known to float readily as compared to pyrite and is significantly more difficult to depress in the flotation process. Thus, it was difficult to selectively float copper minerals and produce a copper concentrate.

As a result of flowsheet changes and the incorporation of HPGR technology, power requirements have dropped.

Historical drill core stored at site, i.e. sample material used in the earlier conceptual studies, was predominantly from the transition zone. Subsequent studies have confirmed that ore with similar characteristics (i.e., transition zone sulfide minerals) accounted for less than five percent of the remaining resources at the mine. Over 95 percent of the resources were typical of ore encountered in 2007 and 2008 drilling. Hence, copper may not be as important an issue as indicated by a review of the historical processing challenges encountered by earlier operators.

<b>TABLE 13-1: Assays of Various Composite Samples</b> <b>VISTA GOLD CORP. – MT TODD GOLD PROJECT</b> <b>June 2009</b>			
<b>Parameter</b>	<b>Historical Core</b>	<b>2007 Drilling</b>	<b>2008 Drilling</b>
g Au/t	1.78	1.3	0.89
Cu <sub>Total</sub> , ppm	448	447	450
Cu <sub>AcidSol</sub> , ppm	14	19	24
Cu <sub>CNSol</sub> , ppm	295	68	65
S <sub>Total</sub> , %	1.42	0.92	
<b>Cu Distribution, %</b>			
Oxide	3.1	4.3	5.3
Secondary	65.8	15.3	14.4
Primary	31.1	80.4	80.3
Primary Sulfide Mineral	Pyrite	Pyrrhotite	Pyrrhotite

While this ore characterization study was on-going, the issue of ore hardness was also evaluated by RDi. It is widely recognized that the energy required to grind the material to a desired size in a conventional flowsheet increases as the hardness of the ore increases. Taking advantage of the basic principle “that it is cheaper to crush than to grind” since crushing requires less energy than grinding, testwork was undertaken to evaluate HPGR in order to reduce energy requirements for the process flowsheet. Based on subsequent laboratory studies, the energy requirements for the flowsheet shown in FIGURE 13-1 was determined. The results found in TABLE 16-2 indicate a significant reduction in power requirements by incorporating HPGR in the grinding circuit and changing the process to whole ore leach at a coarse grind size. As a result of flowsheet changes and the incorporation of HPGR technology power requirements dropped from 33.70 kwh/t to 18.11 kwh/t. The reduction in energy consumption was  $\pm 25$  percent when HPGRs were incorporated into the circuit. JK Tech Pty Ltd. conducted comminution tests on five samples of drill core from Mt. Todd Mine for Vista Gold Corporation<sup>4</sup>. This testing included SAG Mill Comminution (SMC), Bond Rod Mill Work Index (BRMWI), Bond Ball Mill Work Index (BBMWI), Bond Abrasion Index (BAI) and HPGR testing. These results confirmed earlier finding that the ore was “very hard”, compared to a database of other ores, and this hardness did not exhibit a large variability across the range of samples tested.

Ausenco Services Pty Ltd. undertook a technical evaluation of the various comminution circuits based on the testwork undertaken by JK Tech Pty Ltd.<sup>5</sup>. They evaluated six different processing options and concluded that Vista should adopt a comminution flowsheet based on a secondary crush, HPGR and ball mill circuit for treating the Batman deposit. This circuit would have 23 percent reduction in energy requirements over the conventional SABC circuit.



<b>TABLE 13-2: Energy Requirements for Different Process Flowsheets</b> <b>VISTA GOLD CORP. – MT TODD GOLD PROJECT</b> <b>June 2009</b>		
	<b>Process</b>	
	<b>Flotation Process (P<sub>80</sub>=200 mesh)</b>	<b>Direct Leach (P<sub>80</sub>=100 mesh)</b>
<b>Conventional Crush/Grind</b>		
Power, kwh/t	33.70	24.06
Steel, kg/t	0.72	0.66
<b>HPGR/Grind</b>		
Power, kwh/t	24.22	18.11
Steel, kg/t	0.79	0.72

A decision was made not to recover copper as by-product as a result of better understanding the mineralogy of the Batman Deposit through the metallurgical testing completed on the drill core from the 2007 drill program. RDi evaluated a whole ore leach option to determine the viability of this flowsheet at a coarser grind. Based on past experience, pyrrhotite can be pacified with a pre-aeration of the pulp at pH 11. The process flowsheet evaluated for whole ore leach is given in FIGURE 16-1.

Testwork was systematically undertaken to evaluate and optimize the various process parameters one-at-a-time. The parameters evaluated included grind size, pre-aeration time, cyanide concentration (in both maintained and decay modes), leach time and carbon-in-pulp gold recovery (CIP). The successful completion of each subsequent test and the definition of the optimal range of the corresponding variables resulted in an improvement in the process flowsheet. As this was a process that occurred over a period of time, the CIP test was the last variable tested. Results from the CIP tests, shown in the TABLE 16-3, incorporate the optimal ranges determined by previous tests. It is important to note that the results of the CIP tests are best estimates of the expected gold recovery from the proposed process flowsheet. Carbon adsorption of the gold and subsequent gold assay of the carbon reduces the inherent sampling and assaying errors of direct measurement of low grade solutions.

The Mt. Todd project can be expected to recover 82 percent of the contained gold with the proposed process flowsheet.

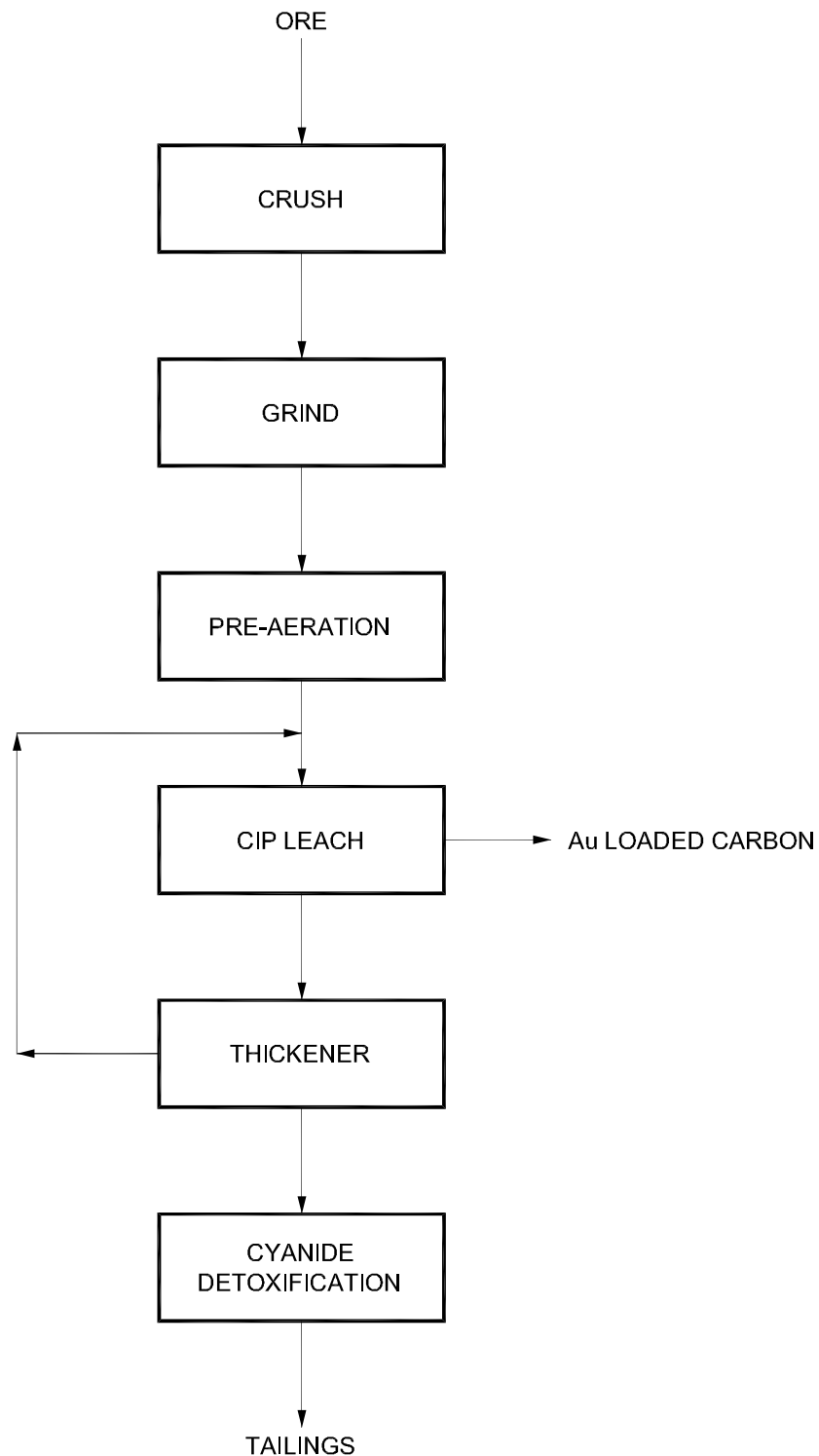
RDi provided cyanide leach residue to Pocock Industrial, Inc. to develop data for design of thickening and filtration equipment for the project. The testwork undertaken included flocculant screening tests, conventional and dynamic thickening tests, viscosity tests and vacuum filtration tests to size horizontal belt filters<sup>6</sup>. The highlights of the study indicated the following:

Results from particle size analyses showed the leach residue to have a P<sub>80</sub> of 195 µm.

- The flocculant selected for the study was high molecular weight, low charge density anionic polyacrylamide (Hychem AF303).
- The unit area for conventional thickening was determined to be 0.125 m<sup>2</sup>/Mtpd with 70 percent underflow solids using 10-15 g/mt of flocculant.

- The design basis for a high rate thickener was determined to be  $7.33 \text{ m}^3/\text{m}^2\text{hr}$  of feed loading with maximum 70 percent underflow solids.
- For paste thickening (74 to 75 percent solids), the recommended design basis net feed loading was determined to be  $7.3$  to  $8.3 \text{ m}^3/\text{m}^2\text{hr}$ .
- The horizontal belt filtration rate ranged from 65.88 to 1076 dry  $\text{kg}/\text{m}^2\text{hr}$  depending on the moisture content of the filter cake (i.e., 15 to 18 percent).

Kappes, Cassiday and Associates undertook limited tailing characterization testwork which included detoxification of leached tailings followed by characterization and environmental testing of the detoxified tailings<sup>7</sup>. The  $\text{SO}_2$ /air process produced less than 50 ppm WAD cyanide following the detoxification process using 2.3 grams of SMBS per gram of total cyanide.



Issued by:



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Prepared for:

**Vista Gold Corp.**

Project:

Mt Todd Gold Project

Project Location:

Northern Territory, Australia

File Name:

Fig16-1.dwg

Project Number:

114-311156

Date of Issue:

Sept/2010

**Figure 13-1  
Leach Process Flowsheet**

<b>TABLE 13-3: Leach Test Results (P<sub>80</sub>=100 mesh)</b> <b>VISTA GOLD CORP. – MT TODD GOLD PROJECT</b> <b>June 2009</b>							
Test No.	Cyanide Maintain/Decay	Leach Time, Hours	Extraction %		Residue g Au/t	Cal. Head g Au/t	NaCN Consumption Kg/t
			Au	Cu			
72	Decay	24	82.6	13.5	0.20	1.14	0.60
76	Decay	30	80.4	14.3	0.20	1.03	0.54
78	Maintain	30	82.2	14.5	0.17	0.93	0.60
80	Decay	36	82.2	15.0	0.14	0.79	0.54
82	Maintain	36	84.0	16.3	0.14	0.85	0.59
99	Decay	CIP 24+6	82.3	14.1	0.19	1.05	0.52
100	Decay	CIP 24+6	82.0	15.6	0.18	1.01	0.58
101	Decay	CIP 24+6	85.4	14.4	0.15	1.04	0.40
102	Decay	CIP 24+6	86.7	14.4	0.15	1.15	0.46

Note: Leach tests at 40% solids, pH 11 with 1 g/L NaCN initial addition. CIP tests run with 20 g/L carbon added after 24 hrs. All tests have 4 hours pre-aeration.

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1. Metallurgical Review of Mt. Todd Project: Progress Report No. 1, RDi report dated May 19, 2006.
2. Preliminary Metallurgical Testing of Mt. Todd Ore: Progress Report No. 2, RDi Report dated May 9, 2007.
3. Metallurgical Testing of Mt. Todd Samples, RDi Report dated July 29, 2009.
4. Comminution Test Report on Five Samples from Mt. Todd Mine, JK Tech. Pty. Ltd., June to August 2009.
5. JKSImMet Circuit Simulations for the 11 mt Vista Gold Mt. Todd Plant, Ausenco Report dated August 19, 2009.
6. Flocculant Screening, Gravity Sedimentation, Pulp Rheology and Vacuum Filtration Studies for Vista Gold Mt. Todd Project, Pocock Industrial Inc. Report dated October 2009.
7. Mt. Todd Project Report of Tailings Characterization Test Work, KCA Report dated May 6, 2010.

## 14.0 MINERAL RESOURCE ESTIMATES

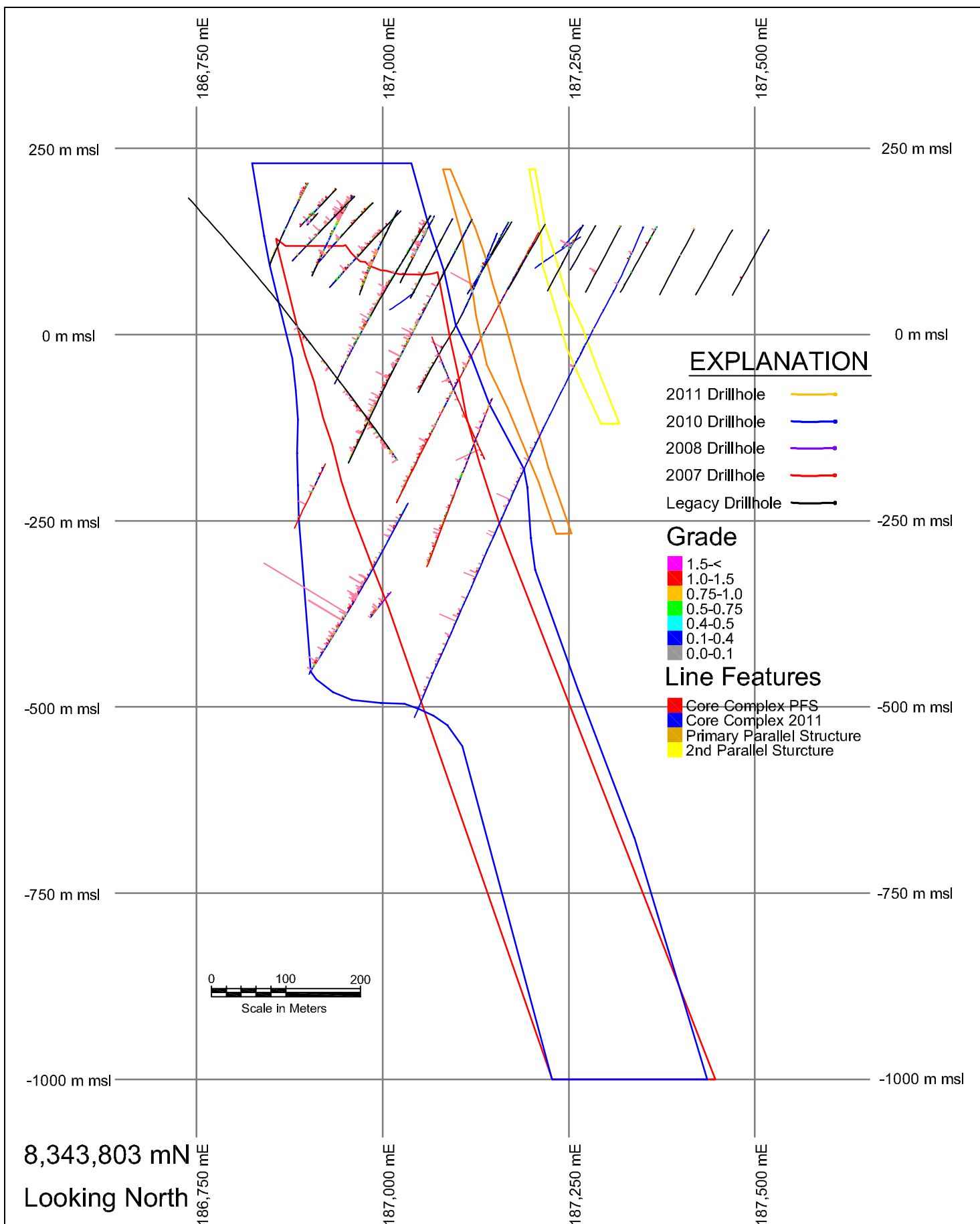
The following sections summarize the thought process, procedures, and results of Tetra Tech's independent estimate of the contained gold resources of the Batman and Quigleys Deposits. Only the Batman and Quigleys deposits currently have classified resource estimates.

**The resource estimation of the Quigleys deposit has not been updated for this report and is presented here in its entirety from the previously issued preliminary feasibility study from January 28<sup>th</sup> 2011.**

### 14.1 Geologic Modelling

The Batman deposit resource has been updated to reflect the increase in available data provided by drilling conducted in 2010 and the first three holes drilled in 2011. The core complex wireframe, which represents the main body of the mineralized shear zone, was adjusted and resized to accommodate this new data. The most significant changes to the core complex wireframe were made in the lower foot wall. Deep step-out drilling by Vista has indicated a "bump out" or possibly inflection point in the lower footwall of the core complex previously not drill tested (FIGURE 14-1). The newly interpreted "bump" feature correlates well with the previously indicated higher grade plunge of the core complex.

In addition to resizing the core complex wireframe, two structures paralleling the core complex to the east were also interpreted and constructed into wireframes and used for this resource estimate (FIGURE 14-1). The newly interpreted parallel structures represent an echoing of the main mineralization controls of the core complex nearer the surface and to the east. Wireframes for the parallel structures were interpreted on section using Au mineralization, veining percentage, visual sulfide percentages, structural orientations and multi element data.



Issued by:



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Prepared for:

**Vista Gold Corp.**

Project:

**Mt Todd Gold Project**

Project Location:

**Northern Territory, Australia**

File Name:

**Fig 14-1.dwg**

Project Number:

**114-311156**

Date of Issue:

**Oct. 2011**

**Figure 14-1  
Geologic Modelling  
EW Section 9WE**



## 14.2 Batman Deposit Density Data

A total of 16,373 samples were tested for bulk density (diamond core). These bulk densities were carried out on a 10 to 15 cm piece of core from a meter sample. Based on this work, the bulk densities applied to the resource model are presented in TABLE 14-1.

<b>TABLE 14-1: Summary of Batman SG Diamond Core Data by Oxidation State</b> <b>VISTA GOLD CORP. – MT TODD GOLD PROJECT</b> <b>March 2008</b>						
<b>Oxidation</b>	<b>No of samples</b>	<b>Min</b>	<b>Max</b>	<b>Mean</b>	<b>Variance</b>	<b>CV</b>
Oxide	2,341	1.77	3.28	2.47	0.04	0.08
Transitional	1,316	2.07	3.55	2.67	0.01	0.04
Primary	12,716	1.58	3.90	2.77	0.006	0.03

In addition, one hundred fist-sized grab samples (50 from 1060 level and 50 from 1040 level) were collected and sent to Assay Corp for moisture and bulk density determination and are presented in TABLE 14-2. Results show that the average moisture content is less than one percent and the average SG for the 1060 RL (all primary) is 2.77 and 1140 RL (mixture of primary and transitional) is 2.74. These results match the predicted specific gravity within the existing and new block models.

<b>TABLE 14-2: Batman Pit Sample SG Data</b> <b>VISTA GOLD CORP. – MT TODD GOLD PROJECT</b> <b>March 2008</b>				
	<b>1060-1068 RL</b>		<b>1146- 1140RL</b>	
	<b>SG</b>	<b>Moisture%</b>	<b>SG</b>	<b>Moisture%</b>
Number of samples	50	50	50	50
Average bulk density (t/cm)	2.77	0.01	2.74	0
Median bulk density (t/cm)	2.78	0	2.76	0
Maximum bulk density (t/cm)	2.88	0.18	2.83	0.07
Minimum bulk density (t/cm)	2.54	0	2.52	0
Standard deviation.	0.05	0.03	0.07	0.01

### 14.3 Quigleys Deposit Drillhole and Density Data

The Quigleys Deposit is approximately 3.5 kilometers northeast of the Batman deposit. The deposit is not as deep as the Batman Deposit. It reaches a maximum depth of approximately 200 m. The deposit has been sampled with 57,600 m of drilling by 631 drillholes, with the majority reaching a depth of 100m at a 60 degree dip; oriented 83 degrees azimuth. Assays were taken at a nominal one meter interval. Geologic interpretation in section produced wireframes modeling thin ore zones dipping west. Material inside the wire frames has been given a code of 1. Outside the ore zones, the material has been given a code of 9999.

Zone 1 gold grades range from .001 to 21.75 g Au/t., averaging 0.703 g Au/t. Zone 9999 gold grades range from 0.001 to 11.318, with an average of 0.148 g Au/t. The gold grades have a lognormal distribution for both Zone 1 and 9999, with observable outlier values at the highest grades. Discussion of the capping composite gold grade values is presented in the Quigleys block modeling section.

Bulk density data were supplied by Pegasus for two ore types and waste within the oxide, transition and primary zones, based on a total of 39 samples collected from recent RC drilling. The two ore densities supplied were for stockwork and shear, with the density of the shear material substantially higher, particularly in the transition and primary zones. These samples were over 1-m to 2-m intervals and thus selected the narrow high grade portion of the shear zone as originally interpreted by Pegasus. The final mineralization envelope was much broader than this, and the bulk density was therefore estimated by assuming the final envelope contained 15 percent shear and 85 percent stockwork and weighting the density values accordingly. TABLE 14-3 contains the SG data assigned to the Quigleys area according to oxidation state.

<b>TABLE 14-3: Quigleys Deposit SG Data</b> <b>VISTA GOLD CORP. – MT TODD GOLD PROJECT</b> <b>March 2008</b>	
Oxide within modeled shear (t/cm)	2.60
Oxide Waste (t/cm)	2.62
Transition within modeled shear (t/cm)	2.65
Transition Waste (t/cm)	2.58
Primary within modeled shear (t/cm)	2.70
Primary Waste (t/cm)	2.61

More confidence in the geological interpretation would be needed to ascertain the geometry of the high-grade portion of the shear zone. Alternatively, it may be appropriate, with a more detailed density study, to weight the high-grade blocks with a higher density.

### 14.4 Drillhole Data Batman and Quigleys

An Access database set up in Gemcom has been recreated from the old exploration database. Tables for the grade control database have been inserted into this database.

#### 14.4.1 Batman Exploration Database

TABLE 14-4 is a summary of the Batman exploration database that formed the basis of the resource estimation of that deposit.

TABLE 14-4: Summary of Batman Exploration Database						
VISTA GOLD CORP. – MT TODD GOLD PROJECT						
October 2011						
Drillhole Statistics						
	Northing (m) MGA94 z53	Easting (m) MGA94 z53	Elevation (m)	Azimuth	Dip	Depth (m)
Minimum	8,434,383.0	186,719.3	110.0	0.0	25.0	0.0
Maximum	8,436,053.0	187,589.0	223.5	319.2	90	864.4
Average	8,435,151.6	187,126.9	168.6	240.8	61.5	154.7
Range	869.7	1670.0	113.5	319.2	65.0	864.4
Cumulative Drillhole Statistics						
Total Count	795					
Total Length (m)	122,971.1					
Drillhole Grade Statistics						
Label	Number	Average	Std. Dev.	Min.	Max	Missing
Au (GPT)	118,550	1.0373	1.8100	0.0499	172.370	0
Cu (%)	22,221	0.0396	0.0608	0.000	2.4	96,339

The pre-2007 exploration database consisted of 743 drillholes, 226 diamond holes and 517 percussion holes. A total of 97,810 samples existed within that exploration database. Diamond core is a combination of NQ and HQ, with the NQ core being sawed into half splits and the HQ core being sawed into quarter splits.

Problems have been identified from the original Batman exploration database:

- Only one gold field existed in the database called “Au Preferred”. Au Preferred was a factored gold grade;
- Zones of non-assayed mineralized core were incorrectly coded and given 0 grade; and
- Some samples with assays below detection have been incorrectly coded as not sampled.

Original assays from logs and/or laboratory assay sheets have shown that there are up to 15 gold assay fields (five different splits with three gold fields). The Au Preferred is usually the average of the gold assay, but with the early data, notably the Billiton data, the Au Preferred has been factored. Exactly how this factoring was calculated is a question. Billiton reports suggest that different laboratories along with the orientation of drillholes have impacted on the grade

returned from the laboratory and factors to counter this have been applied in the calculation of the Au Preferred field.

MicroModel® files have been found containing 80 percent of the original assay data. Inspection of these data has shown codes, in some cases, were used for below detection (- 0.800 or - 0.008) while other times below detection was given a grade (0.005 or 0 or 0.001) instead of the code. Missing samples were given a code (- 0.900 or - 0.009 or - 0.700). Sometimes these codes have been misused with below detection codes being used instead of missing samples and vice versa. This has impacted on the Au Preferred field in the database. Original lab assay data sheets and logs have been used to fix this problem.

After going through all the logs and laboratory assays, the data have now been corrected and reloaded into the database. Codes have been allocated, with below detection assays given a grade of 0.005, which is half the detection limit of 0.01 and missing samples given a code – 9.000.

The assays in the database have been split into different tables to save room and make the processing of the data more efficient. The gold fields have been split up into six different tables, depending on the number of duplicate samples. Gold1 is the first assay taken, Gold2 the second assay taken and so on to Gold5. An Auav (average gold grades) table has also been added for the average gold grade from the five gold assay tables. The Au Preferred field has been retained in the present drillhole database. A separate table has also been created for the multi-element data.

The resource update described in this report is supported by 19 core holes drilled in 2010 and 3 core holes drilled in 2011. The 22 core holes added and used for this resource update account for 9,612 Au assay intervals for 9,235.94 linear meters of sampling.

In 2011 Vista commissioned a third party contractor to construct a project database consolidating all available drillhole data. There are 13 data tables included in the database including which are shown in TABLE 14-5 below. Instances where tables are tagged as “old”, current data collection and interpretation and previousdata collection and interpretation were incompatible and unable to be reconciled into one table.

<b>TABLE 14-5: Mt Todd Project Access® Database</b> <b>VISTA GOLD CORP. – MT TODD GOLD PROJECT</b> <b>October 2011</b>	
<b>Table Name</b>	<b>Description</b>
<b>tbIDHCollar</b>	Contains all collar details with hole co-ordinates in either MGA94 or AMG84, Zone 53
<b>tbIDHAlteration</b>	Alteration logs of Batman_2010 and Goldeneye_2010 drillholes
<b>tbIDHAlteration_old</b>	Alteration logs of Batman_2007, Batman_2008 and Pre2007 drillholes. These holes were logged using a different spreadsheet structure – where each key alteration mineral has its own column heading.
<b>tbIDHAssays</b>	All gold assays, with Lab Batch number recorded where available. There is NO calculated Au field averaging the lab repeat values.
<b>tbIDHAssays_ME</b>	All other multi-element assays with Sample_ID only, and Lab Batch number where available.
<b>tbIDHGeol</b>	All geological logs based on the 2010 logging system. Where possible data (matching columns) from Pre2007 logs were imported into this 2010 system.
<b>tbIDHGeotech</b>	Full geotechnical logs from Batman_2007, 2008 and 2010 and Goldeneye_2010 drilling were imported. Some Recoveries, RQD, Hardness and Fracture% data were extracted from the Pre2007 data.
<b>tbIDHQAQC</b>	Standard, blanks, field duplicates, pulp repeats, coarse rejects assays both Au and multi-elements from Batman_2007, 2008 and 2010 and Goldeneye_2010 drilling.
<b>tbIDHStructure_Orientation</b>	All structure data using the Batman_2010 file structure (many do not have a Beta measurement)
<b>tbIDHSulphides</b>	Sulphide data logs of Batman_2010 and Goldeneye_2010 drillholes
<b>tbIDHSulphides_old</b>	Sulphide data logs of Batman_2007, Batman_2008 and Pre2007 drillholes. These holes were logged using a different spreadsheet structure – where each key sulphide mineral has its own column heading.
<b>tbIDHSurvey</b>	Down hole survey data from all datasets. Survey method/type was recorded wherever the data was available.
<b>tbIDHVeins</b>	Vein data logs of Batman_2010 and Goldeneye_2010 drillholes

#### 14.4.2 Quigleys Exploration Database

TABLE 14-6 details the Quigleys exploration database.

TABLE 14-6: Summary of Quigleys Exploration Database						
VISTA GOLD CORP. – MT TODD GOLD PROJECT						
August 2011						
Drill Hole Statistics						
	Northing (m) AMG84 z53	Easting (m) AMG84 z53	Elevation (m)	Azimuth	Dip	Depth (m)
Minimum	8,430,1876	188,445.7	129.7	0	45	0
Maximum	8,432,290	189,746.5	209.0	354.0	90	330.5
Average	8,431,129.5	189,230.8	155.9	83.4	62.5	91.3
Range	2,104.0	1,300.8	79.3	354.0	45.0	330.5
Cumulative Drill Hole Statistics						
Total Count	795					
Total Length (m)	118,550					
Assay Length (m)	1 (approx)					
Drill Hole Grade Statistics						
Label	Number	Average	Std. Dev.	Min.	Max	Missing
Au (GPT)	52,152	0.2445	0.8764	0	36.00	82
Cu (%)	40,437	0.0105	0.0305	0	2.98	11,897

#### 14.5 Batman Block Model Parameters

TABLE 14-7 details the physical limits of the Batman deposit block model utilized in the estimation of mineral resources.



<b>TABLE 14-7: Block Model* Physical Parameters – Batman Deposit</b> <b>VISTA GOLD CORP. – MT TODD GOLD PROJECT</b> <b>August 2011</b>				
<b>Direction</b>	<b>Minimum (m) MGA94 z53</b>	<b>Maximum (m) MGA94 z53</b>	<b>Block size</b>	<b>#Blocks</b>
y-dir	8,433,801 mE	8,436,213 mE	12m	201
x-dir	185,999mN	187,931mN	12m	161
z-dir	-994 m	224m	6 m	203
* Model changed from previous Tetra Tech estimates to reflect the new 2011 drillhole locations and depths.				

## 14.6 Quigleys Block Model Parameters

Quigleys' block model parameters are shown in TABLE 14-8. The model consists of 37,082 blocks within the modeled ore zones (blocks within the modeled ore grade zones are coded as 1). Each of the blocks is 250 m<sup>3</sup> (5x25x2m) with a defined density of 2.77 (692.5 tonnes).

<b>TABLE 14-8: Block Model* Physical Parameters – Quigleys Deposit</b> <b>VISTA GOLD CORP. – MT TODD GOLD PROJECT</b> <b>October 2010</b>				
<b>Direction</b>	<b>Minimum(m) AMG84 z53</b>	<b>Maximum(m) AMG84 z53</b>	<b>Block size</b>	<b># Blocks</b>
x-dir	188,250 mE	189,900 mE	5m	330
y-dir	8,430,337.5 mN	8,432,487.5mN	25m	86
z-dir	-200 m	208m	2m	204

## 14.7 Mineral Resource Estimate

At the present time, resources have only been estimated for the Batman and Quigleys deposits. Tetra Tech created three-dimensional computerized geologic and grade models of the Batman and Quigleys deposits.

**The resource estimation of the Quigleys deposit has not been updated for this report and is presented here in its entirety from the previously issued preliminary feasibility study from January 28<sup>th</sup> 2011.**

The geologic model of the Batman and Quigleys deposits was originally created by GGC and audited by Tt. For this resource update of the Batman deposit the geologic model has been updated by Tt to accommodate additional drilling in 2010 and the first 3 drillholes of 2011. The geologic model was constructed by creating three-dimensional wire-frames of the main geologic units, oxidation types, and mineralizing controls and super-imposing them on each other to create an overall numeric code that details all of the input parameters. GGC created the model based on the prior work of others, recommendations of other consultants, and General Gold's own experience. It is Tetra Tech's opinion that the GGC geologic model and the updates made accurately portray the geologic environment of the Batman Deposit.

Tetra Tech used the geologic model to guide the statistical and geostatistical analysis of the gold assay data. The analysis of the gold assays further confirmed the geologic divisions made by in the geologic model. Gold grades were estimated into the individual blocks of the model by ordinary, whole-block kriging. Variograms and kriging search parameters are the same as used for the more detailed Appendix A of the January 28 2011 prefeasibility study, Discussion of the findings of a series of geostatistical studies can be found in that document.

The rock model was then assigned a tonnage factor based on the oxidation state (i.e., oxidized, transition, primary). The tonnage factors were based on a number of tests from the core and, in Tt's opinion, are representative of the various rock units, and are acceptable for estimation of the in-place geologic resources.

The estimated gold resources were classified into measured, indicated, and inferred categories for both the Batman and Quigleys deposits according to the parameters detailed in TABLE 14-9 and TABLE 14-10.

TABLE 14-9: Resource Classification Criteria VISTA GOLD CORP. – MT TODD GOLD PROJECT October 2011							
Category	Search Range & Kriging Variance	No. of Sectors/ Max Points per DH	Search Anisotropy	Min Points	Composite Codes	Block Codes	CORE
Indicated	Core Complex: 150 m & KV < 0.34 1 Pass	4/2	(1.0:0.7:0.4) [110:80:0]	2	1000	1000	CORE COMPLEX
Measured	Core Complex: 60 m & KV < 0.30 (overwrite Pass 1) Pass 2	4/3	(1.0:0.7:0.4) [110:80:0]	4	1000	1000	
Inferred	Core Complex KV >= 0.34 Step Classification	NA	NA	NA	1000	1000	
Inferred	Outside Core Complex: 150 m & KV <= 0.45 Pass 3	4/3	(1.0:0.7:0.4) [110:80:0]	3	500/3500	500/ 3500	OUTSIDE CORE COMPLEX
Inferred	Outside Core Complex: 50 m & KV <= 0.45 (overwrite Pass 3) Pass 4	4/3	(1.0:0.7:0.4) [110:80:0]	8	500/3500	500/ 3500	
Inferred	Primary Satellite Deposit: 150 m & KV < 0.45 Pass 5	4/3	(1.0:0.7:0.4) [110:80:0]	3	600	600	
Indicated	Primary Satellite Deposit: 50 m & KV < 0.34 (overwrite Pass 5) Pass 6	4/3	(1.0:0.7:0.4) [110:80:0]	8	600	600	
Inferred	Secondary Satellite Deposit: 150 m & KV < 0.45 Pass 7	4/3	(1.0:0.7:0.4) [110:80:0]	3	700	700	
Indicated	Secondary Satellite Deposit: 50 m & KV < 0.34 (overwrite Pass 7) Pass 8	4/3	(1.0:0.7:0.4) [110:80:0]	8	700	700	
INDEX							
Zone Codes	Zone Names	Search Anisotropy (Ellipsoid)					
3500	Footwall	<b>Search Ranges (a:b:c)</b> Proportion of Maximum Range for: a. Primary Axis Length: b. Secondary Axis Length: c. Tertiary Axis Length					
1000	Core Complex						
700	Secondary Satellite (n HW farthest from Core)	<b>Orientation of Ellipse [1:2:3]</b> 1. Azimuth of Primary Axis : 2. Dip of Primary Axis: 3. Rotation (Tilt) around Primary Axis					
600	Primary Satellite (in HW Nearest to Core)						
500	Hanging Wall Area						

<b>TABLE 14-10: Quigleys Resource Classification Criteria</b> <b>VISTA GOLD CORP. – MT TODD GOLD PROJECT</b> <b>October 2011</b>			
<b>BATMAN (March 2008 &amp; February 2009)</b>			
<b>Category</b>	<b>Search Range &amp; Kriging Variance</b>	<b>No. of Sectors/ Max Points per DH</b>	<b>Min Points</b>
Measured	Zone 1: 20 m search & KV < 0.335	4/3	7
Indicated	Zone 1: 20-40 m search & KV < 0.335	4/3	6
Inferred	Zone 1 40-200 m search & < 0.335 Zone 9999 < 25 m	4/3	3

The classification was accomplished by a combination of search distance, kriging variance, number of points used in the estimate, and number of sectors used. TABLES 14-11 and 14-12 detail the results of the classification. All of the resources quoted are contained on Vista's mineral leases. FIGURE 14-2 is three relative block count histograms of measured, indicated and inferred overlaid for the Batman deposit. The histograms for measured and indicated are higher grade and have a tighter distribution than that of the inferred class. This is a direct outcome of the ongoing drilling programs based on geostatistics designed to enhance the classification within higher gold grade portions of the block model. FIGURE 14-3 illustrates one of the several methods used to validate the block model. The figure shows the cumulative frequency plot of blocks, composites, and assays. The three overlaid plots show the expected decrease in the variability of the gold distributions going from assays to comps and then to kriged blocks. Additional verification of the block model was done. These were the use of jackknife studies (model validation) where known assays were estimated using surrounding samples, visual inspection of the kriged blocks models in section and plan and the inspection of gold histograms of assays, composites and blocks. More detail on the different model validation techniques employed can be found in Appendix A of the January 28 2011 prefeasibility study.

TABLES 14-11 and 14-12 detail the estimated in-place resources by classification and by cutoff grade for the Batman and Quigleys deposits respectively. All of the resources quoted are contained on Vista's mineral leases. The Reserve Case cutoff for the resource reporting is 0.4 g Au/t and is bolded in the table. This cutoff value was determined in the June 11, 2009 "Mt Todd Gold Project Updated Preliminary Economic Assessment Report" using then-current gold price and cost assumptions. The estimate of in-place resources remains consistent with those reported in the 2009 report.

**TABLE 14-11: Batman Deposit Classified Gold Resources**

**VISTA GOLD CORP. – MT TODD GOLD PROJECT**

**September 2011**

<b>Cutoff Grade g Au/t</b>	<b>Tonnes (x1000)</b>	<b>Average Grade g Au/t</b>	<b>Total Au Ounces (x1000)</b>
<b>MEASURED</b>			
2.00	2,118	2.37	161
1.75	3,938	2.14	270
1.50	7,105	1.91	435
1.25	11,698	1.69	637
1.00	18,877	1.47	895
0.90	23,304	1.37	1,030
0.80	29,013	1.27	1,185
0.70	36,100	1.17	1,356
0.60	45,333	1.06	1,548
0.50	55,697	0.97	1,732
<b>0.40</b>	<b>67,166</b>	<b>0.88</b>	<b>1,897</b>
<b>INDICATED</b>			
2.00	3,924	2.55	322
1.75	6,830	2.26	496
1.50	11,692	1.99	748
1.25	20,417	1.72	1,131
1.00	35,562	1.46	1,672
0.90	44,842	1.36	1,955
0.80	57,375	1.24	2,296
0.70	73,944	1.13	2,695
0.60	95,785	1.02	3,150
0.50	122,985	0.92	3,630
<b>0.40</b>	<b>154,836</b>	<b>0.82</b>	<b>4,089</b>
<b>MEASURED + INDICATED (1)</b>			
2.00	6,042	2.49	484
1.75	10,768	2.21	766
1.50	18,797	1.96	1,184
1.25	32,115	1.71	1,769
1.00	54,439	1.47	2,568



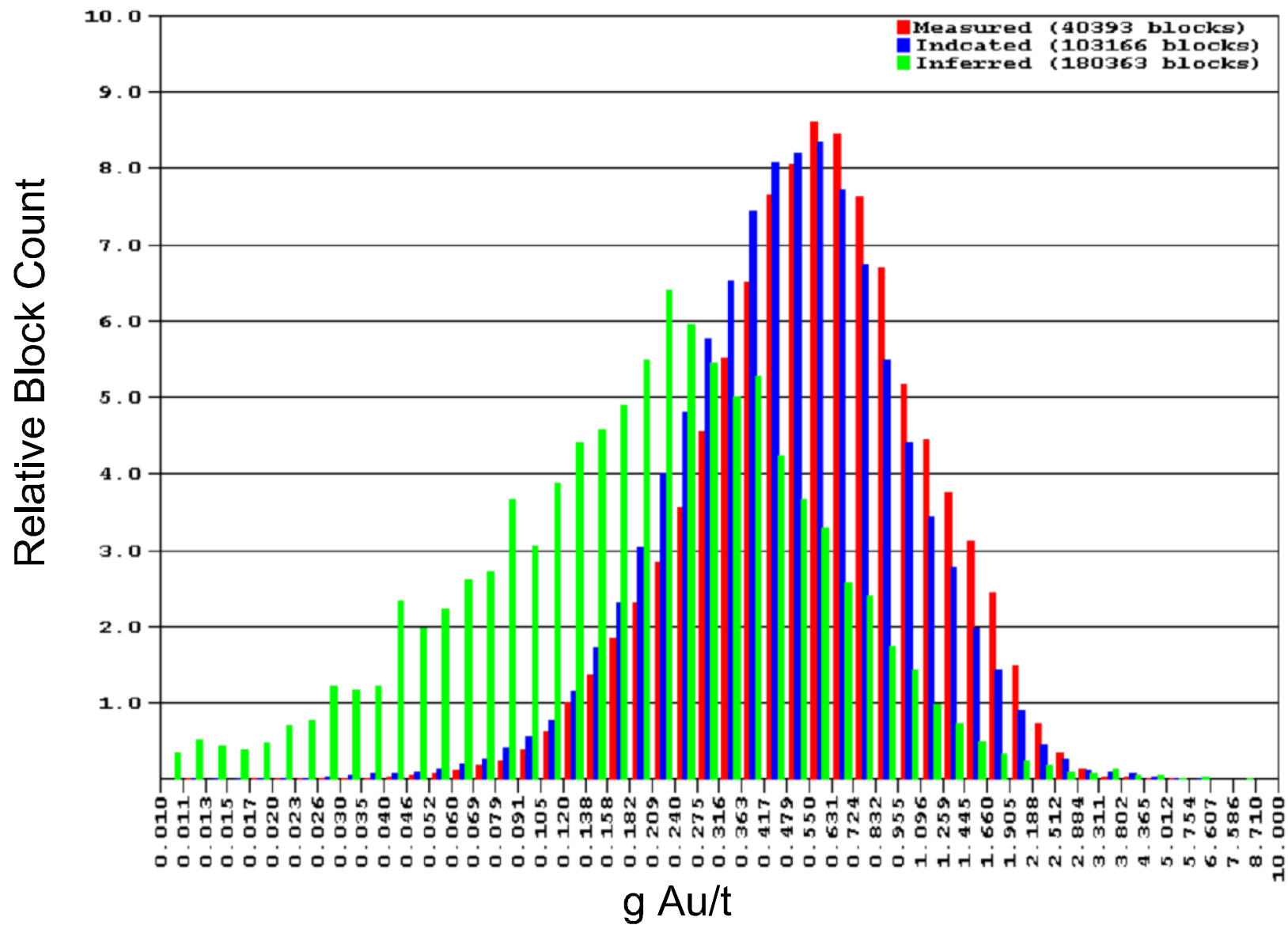
0.90	68,146	1.36	2,985
0.80	86,388	1.25	3,482
0.70	110,044	1.14	4,051
0.60	141,118	1.04	4,699
0.50	178,682	0.93	5,362
<b>0.40</b>	<b>222,003</b>	<b>0.84</b>	<b>5,987</b>

NOTE (1): The sum of measured and indicated resources as reported under NI 43-101 is equivalent to mineralized material under SEC Industry Guide 7.

Tonnage, grades and totals may not total due to rounding.

INFERRED RESOURCES			
Cutoff Grade g Au/t	Tonnes (x1000)	Average Grade g Au/t	Total Au Ounces (x1000)
2.00	3,183	3.14	322
1.75	4,560	2.76	405
1.50	6,301	2.44	495
1.25	10,599	2.01	685
1.00	17,891	1.64	945
0.90	23,624	1.48	1,121
0.80	30,907	1.33	1,319
0.70	41,619	1.18	1,576
0.60	54,075	1.06	1,836
0.50	74,461	0.92	2,194
<b>0.40</b>	<b>103,563</b>	<b>0.78</b>	<b>2,612</b>

Tonnage, grades and totals may not total due to rounding.



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**Vista Gold Corp.**

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Mt Todd Gold Project

Project Location:

Northern Territory, Australia

File Name:

Figure14-2to3.dwg

Project Number:

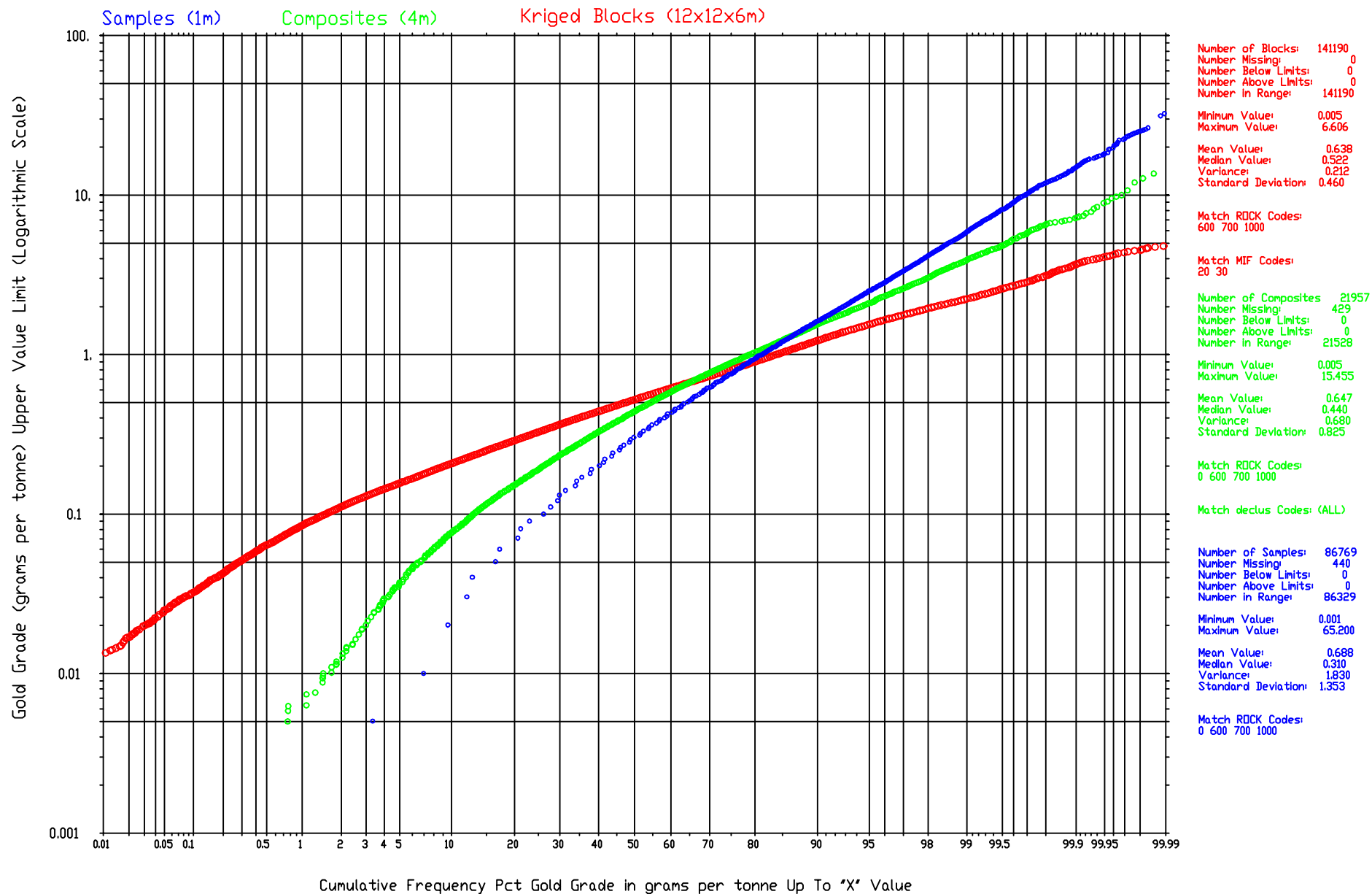
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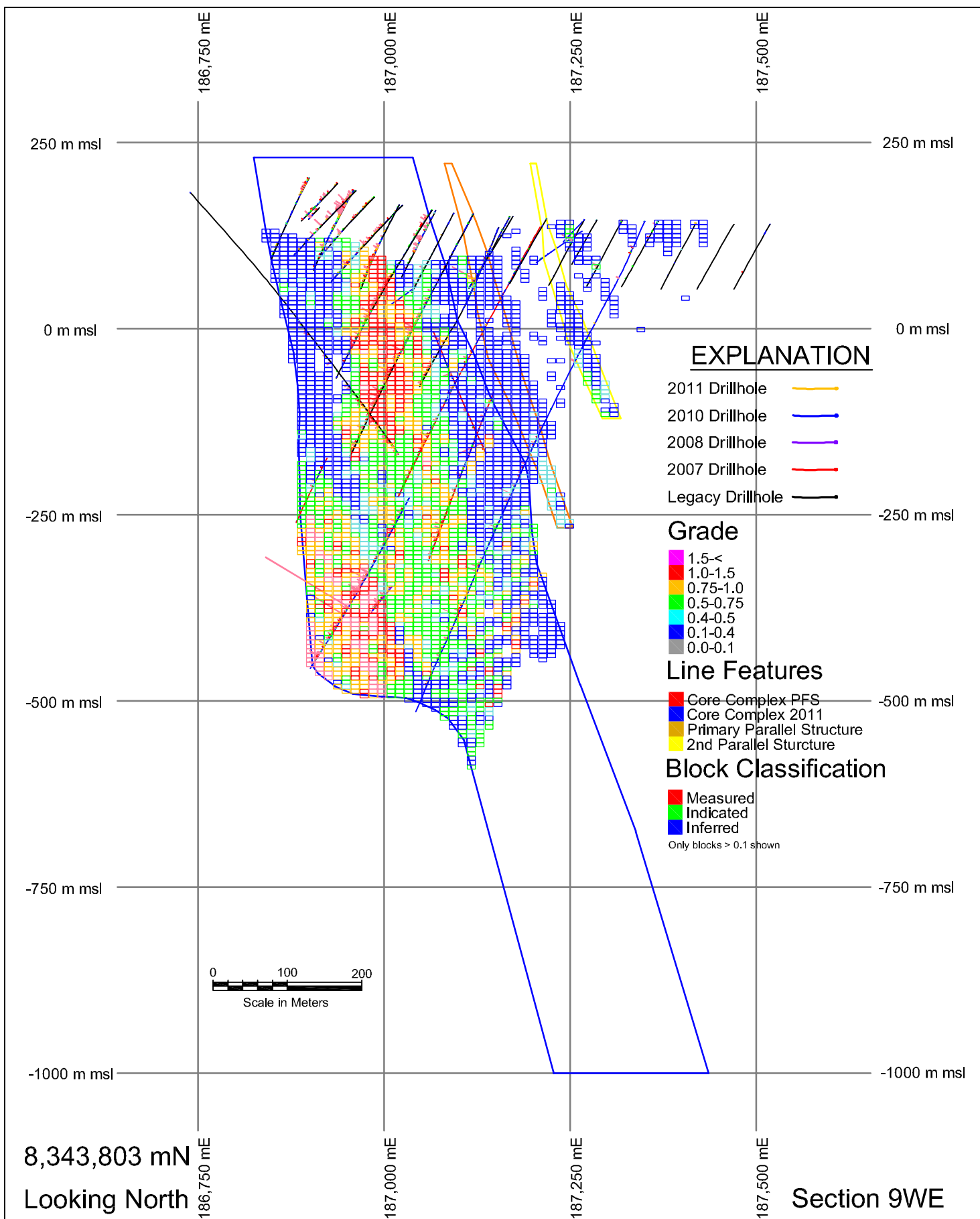
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**Figure 14-2**

**Relative Block Count Histograms Measured,  
Indicated and Inferred - Batman Deposit**





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File Name:

Fig 14-4.dwg

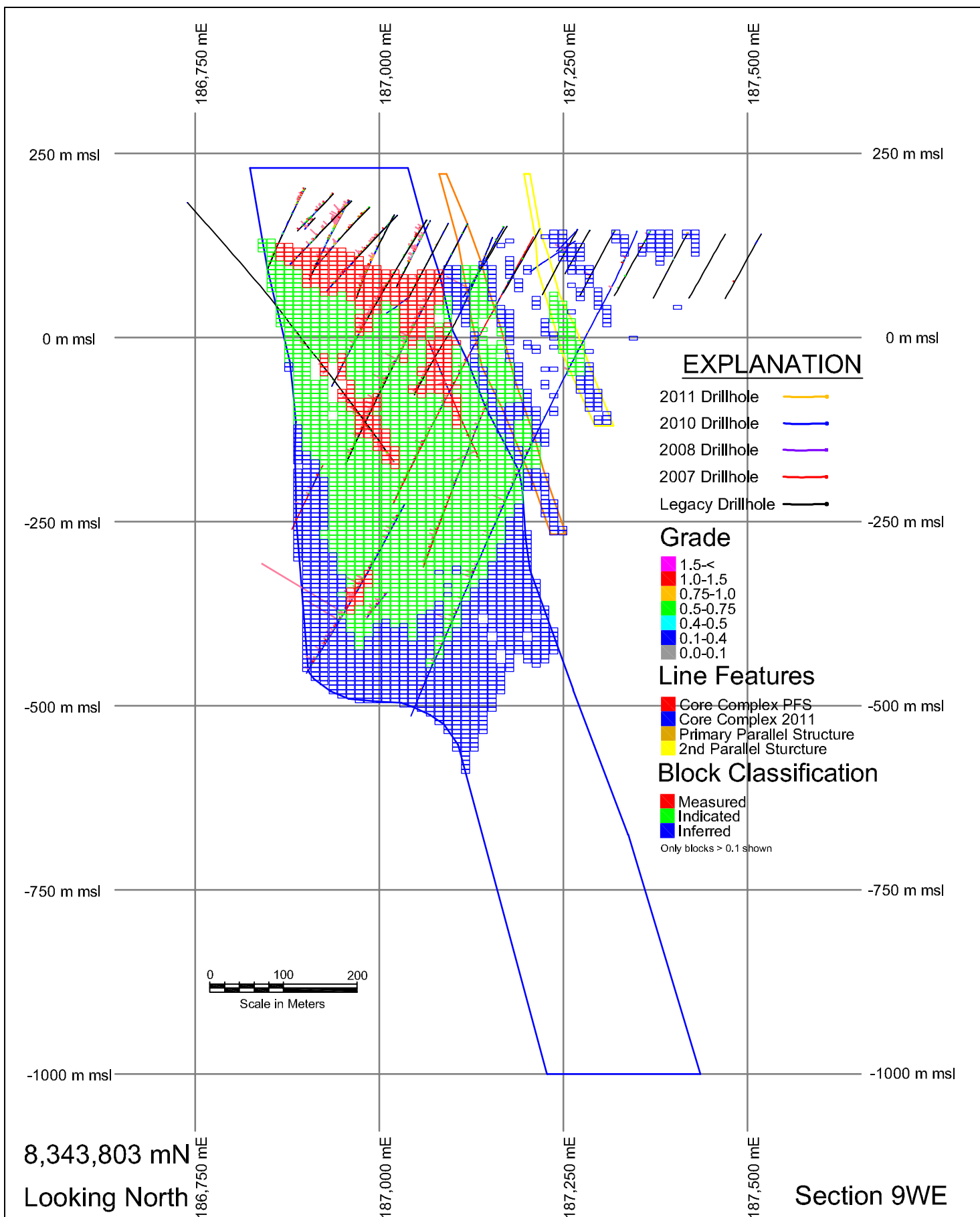
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**Figure 14-4**  
**Block Model Au - Batman**  
**Deposit**



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File Name:

Fig 14-5.dwg

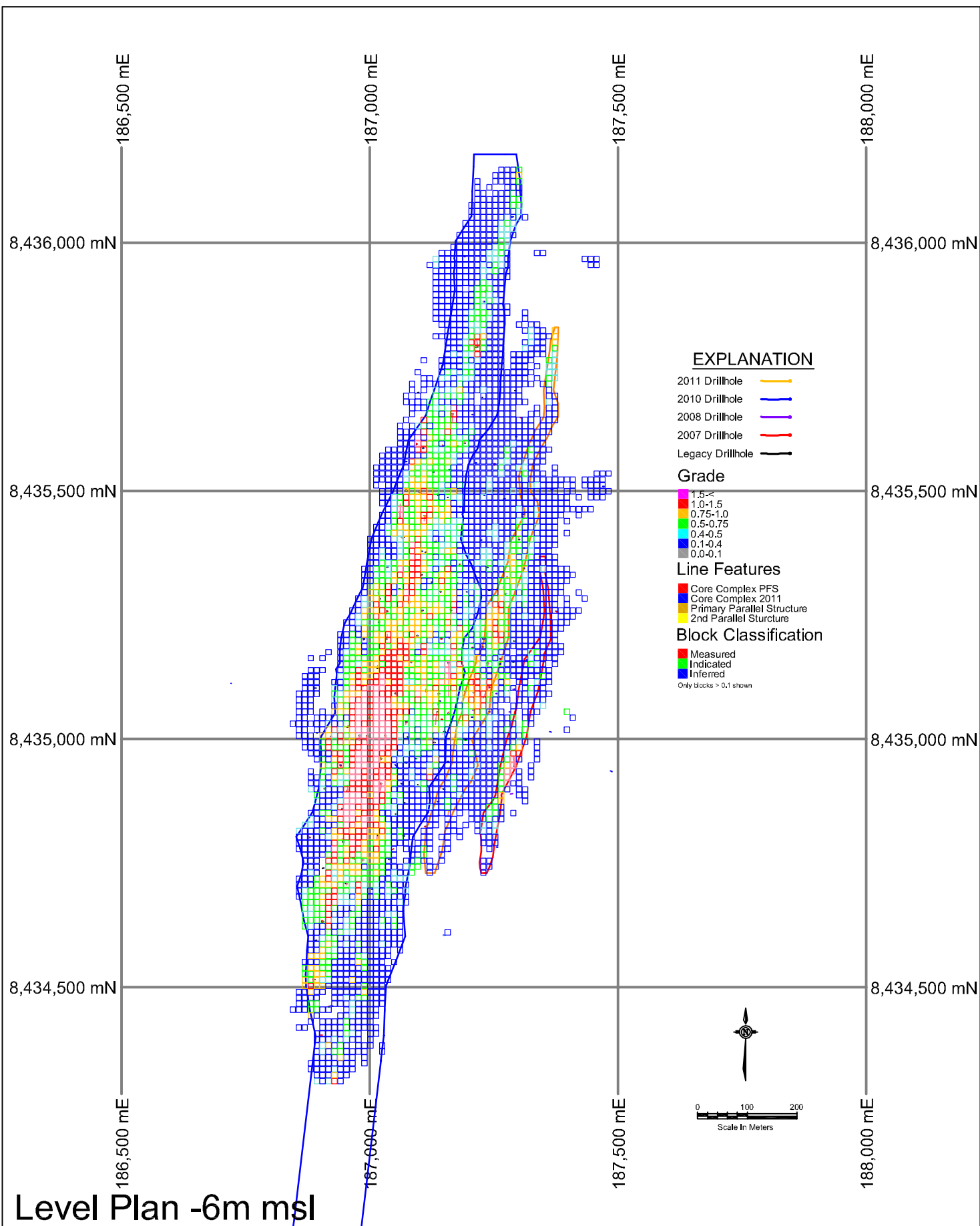
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**Figure 14-5**  
**Block Model Classification -**  
**Batman Deposit**



Level Plan -6m msl

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Project Location:

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File Name:

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Project Number:

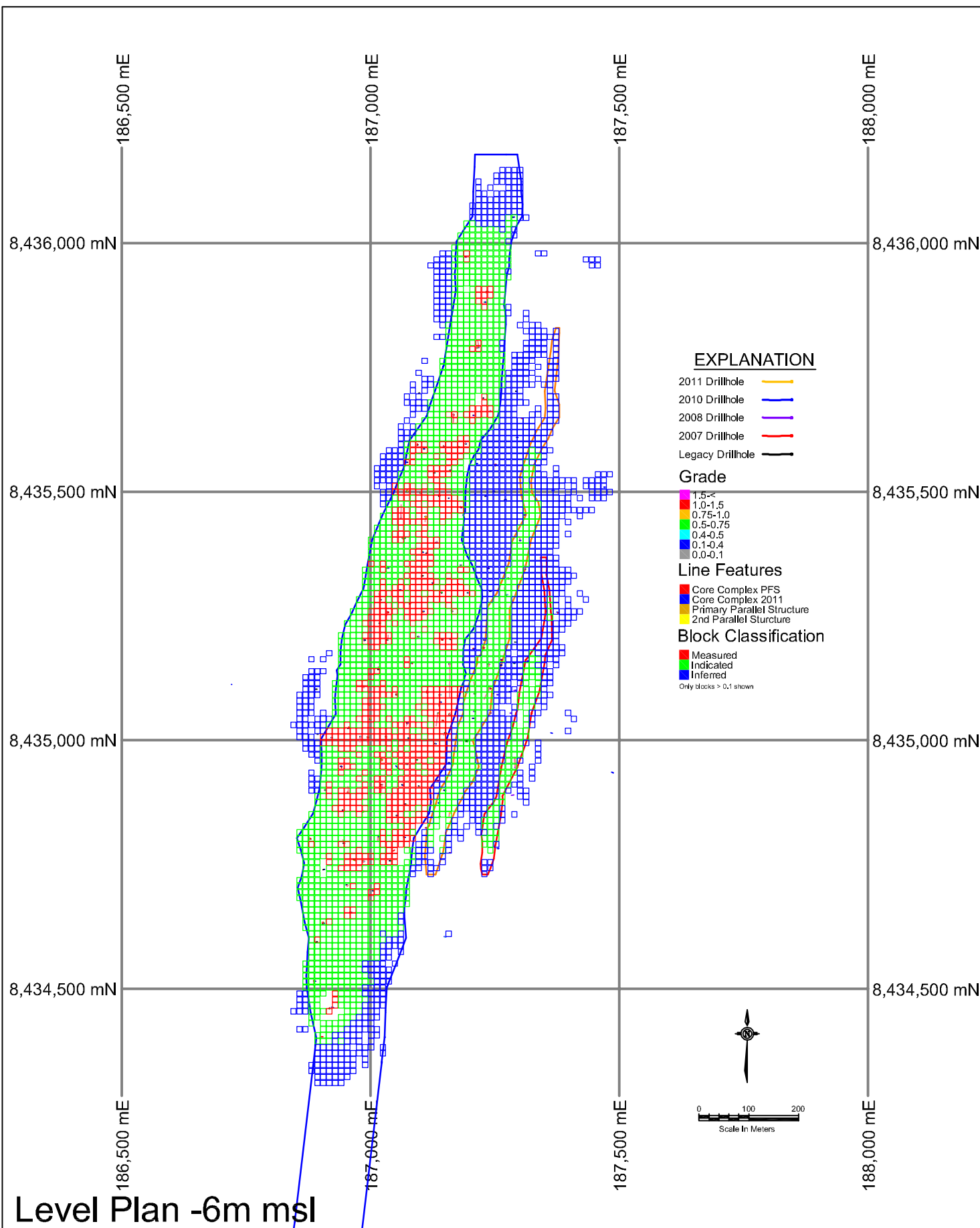
114-311156

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October 2011

**Figure 14-6**  
**Blocks Kriged Au - Level Plan**  
**- Batman Deposit**





Level Plan -6m msl

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Project:

Mt Todd Gold Project

Project Location:

Northern Territory, Australia

File Name:

Fig14-7.dwg

Project Number:

114-311156

Date of Issue:

October 2011

**Figure 14-7**  
**Blocks Classified MIF - Level**  
**Plan - Batman Deposit**

<b>TABLE 14-12: Quigleys Deposit Classified Gold Resources</b> <b>VISTA GOLD CORP. – MT TODD GOLD PROJECT</b> <b>October 2010</b>			
<b>Cutoff Grade g Au/t</b>	<b>Tonnes (x1000)</b>	<b>Average Grade g Au/t</b>	<b>Total Au Ounces (x1000)</b>
<b>MEASURED</b>			
2.00	30	2.27	2
1.75	50	2.11	3
1.50	87	1.90	5
1.25	136	1.71	7
1.00	222	1.48	11
0.90	263	1.39	12
0.80	305	1.32	13
0.70	355	1.24	14
0.60	428	1.14	16
0.50	511	1.04	17
<b>0.40</b>	<b>571</b>	<b>0.98</b>	<b>18</b>
<b>INDICATED</b>			
2.00	158	2.38	12
1.75	273	2.17	19
1.50	450	1.95	28
1.25	897	1.66	48
1.00	1,634	1.41	74
0.90	2,057	1.32	87
0.80	2,618	1.22	102
0.70	3,374	1.11	121
0.60	4,363	1.01	141
0.50	5,565	0.91	162
<b>0.40</b>	<b>6868</b>	<b>0.820</b>	<b>181</b>
<b>MEASURED + INDICATED (1)</b>			
2.00	188	2.36	14
1.75	323	2.16	22
1.50	537	1.94	34
1.25	1,033	1.66	55
1.00	1,856	1.42	85

0.90	2,320	1.33	99
0.80	2,923	1.23	115
0.70	3,729	1.12	135
0.60	4,791	1.018	157
0.50	6,076	0.919	179
<b>0.40</b>	<b>7,439</b>	<b>0.833</b>	<b>199</b>

NOTE (1): The sum of measured and indicated resources as reported under NI 43-101 is equivalent to mineralized material under SEC Industry Guide 7.

Tonnage, grades and totals may not total due to rounding.

INFERRED RESOURCES			
Cutoff Grade g Au/t	Tonnes (x1000)	Average Grade g Au/t	Total Au Ounces (x1000)
2.00	335	2.35	25
1.75	559	2.16	39
1.50	975	1.93	60
1.25	1,854	1.66	99
1.00	3,193	1.43	147
0.90	3,950	1.34	170
0.80	4,795	1.25	193
0.70	5,871	1.16	219
0.60	7,473	1.05	252
0.50	9,416	0.95	287
<b>0.40</b>	<b>11,767</b>	<b>0.85</b>	<b>320</b>

Tonnage, grades and totals may not total due to rounding.

**The following SECTIONS, 15 to 22, are for advanced stage properties only. The Mt Todd Gold Project is considered an advanced stage property; however, the following sections have not been re-evaluated based on the updated resource estimate presented in this report. The following sections are transcribed from SECTION 1.0 (the SUMMARY) of the January 28 2011 Prefeasibility Study (PFS) that is filed on SEDAR ([www.sedar.com](http://www.sedar.com)) and are included here for context and completeness.**

## 15.0 MINERAL RESERVE ESTIMATES

Mineral reserves have not been re-estimated for the resource described in the SECTION 14.0 of this report. The following reserves are transcribed from the summary section of the January 28 2011 PFS report and are based on the resource quoted in January 28 2011. Mineral reserves are included here for context.

Potentially mineable pit shapes were evaluated using a Lerchs-Grossman (LG) analysis performed with the GEMS® Whittle pit optimization software and the Mt. Todd mineral resource model. The optimization is an iterative process with initial parameters coming from the Mt. Todd October 1<sup>st</sup>, 2010 PFS. The final parameters incorporate mining costs developed during this study. The optimization runs used only Measured and Indicated material for processing. All Inferred material was considered as waste. The parameters assumed for the LG analyses are summarized in TABLE 15-1.

<b>TABLE 15-1: Reserve Case Parameters for Lerchs-Grossman Analyses</b> <b>VISTA GOLD CORP. – MT TODD GOLD PROJECT</b> <b>January 2011</b>	
Overall Pit Slopes	33° from pit centered azimuth ranging 10° – 150° 55° from pit centered azimuth ranging 150° – 10°
Gold Price	US\$1000 per toz Au
Gold Recovery	82 percent
Mining Cost	US\$1.40 per tonne mined
Processing Cost	US\$7.60 per tonne processed
Tailings Construction	\$1.00 per tonne processed
Tailings Reclamation	\$1.14 per tonne processed
Waste Dump Rehabilitation	\$0.12 per tonne waste
General and Administrative Cost	US\$0.60 per tonne processed

The Reserve Case LG shell is defined by the economic factors listed in TABLE 15-1. Varying gold prices were used to evaluate the sensitivity of the deposit to the price of gold as well as to develop a strategy for optimizing project cash flow. To achieve cash flow optimization, mining phases or push backs were developed using the guidance of Whittle pit shells at lower gold prices.

Using the Reserve Case, the ultimate pit was designed as an open-pit mine using large haul trucks, hydraulic shovels, and front-end loading equipment. Primary production is achieved using 21 cubic meter hydraulic shovels along with 180 tonne haul trucks. This equipment is used primarily for the movement of waste material.

Secondary production is achieved using a CAT 992 loader and smaller CAT 785C trucks. The 992 loader is assumed to have a 12 cubic meter bucket, and the CAT 785C trucks have a rated payload of 140 tonnes. The loader and smaller trucks are used primarily to move ore from the pit to the crusher and for reclaiming ore from stockpiles. Waste production from the 992 loader and 785C trucks is anticipated as well.

After the ultimate pit was designed, pits or phases within the ultimate pit were designed to enhance the project by providing higher-value material to the process plant earlier in the mine life. The design includes smoothed pit walls, haulage ramps, benches, and pit access. Phase 1 and phase 2 pit designs remain unchanged from the previous PFS work. Phase 3 was designed to the ultimate pit limit on the south, while phase 4 (the final pit phase) is used to achieve the ultimate pit in the north.

<b>TABLE 15-2: Classification of Reserve Case Mineable Reserves</b> <b>VISTA GOLD CORP. – MT TODD GOLD PROJECT</b> <b>January 2011</b>						
<b>Class</b>	<b>Ore Tonnes (x 1000)</b>	<b>Average Gold Grade (gm/t)</b>	<b>Contained Gold (oz x 1000)</b>	<b>Waste Tonnes (x 1000)</b>	<b>Total Tonnes (x 1000)</b>	<b>Stripping Ratio (W:O)</b>
<b>Proven</b>	48,961	0.91	1,431			
<b>Probable</b>	100,913	0.83	2,681			
<b>Proven + Probable</b>	149,874	0.85	4,112	271,480	421,354	1.81

Note: Reserves are reported using a 0.40 g Au/t cutoff grade.

The Reserve Case production schedule for this PFS assumes a 10.65 Mtpy ore production rate, resulting in a 14-year operating life, as shown in TABLE 15-3.

<b>TABLE 15-3: Reserve Case Production Schedule</b> <b>VISTA GOLD CORP. – MT TODD GOLD PROJECT</b> <b>January 2011</b>				
<b>Year</b>	<b>“Ore” Tonnes (x 1000)</b>	<b>Avg. Grade (g Au/t)</b>	<b>Waste Tonnes (x 1000)</b>	<b>Stripping Ratio (W:O)</b>
PP1	1,084	0.68	6,287	5.80
1	12,210	0.86	22,965	1.88
2	13,584	0.90	25,048	1.84
3	11,997	0.90	24,400	2.03
4	10,650	0.95	25,578	2.40
5	6,200	0.71	27,824	4.49
6	8,175	0.67	25,041	3.06
7	13,198	0.79	24,662	1.87
8	11,158	0.76	24,710	2.21
9	8,990	0.66	22,655	2.52
10	13,626	0.78	20,386	1.50
11	12,102	0.86	14,158	1.17
12	13,379	0.93	5,940	0.44
13	11,310	1.09	1,805	0.16
14	2,213	1.40	22	0.01
<b>Total</b>	<b>149,875</b>	<b>0.85</b>	<b>271,480</b>	<b>1.81</b>



## 16.0 MINING METHODS

**Mining methods have not been re-evaluated for this report. Details regarding mining methods can be found in the January 28 2011 PFS report.** The Mt. Todd project has been planned as an open-pit truck and shovel operation. The truck and shovel method provides reasonable cost benefits and selectivity for this type of deposit. Only open-pit mining methods are considered for mining at the Mt Todd Gold Project.

## 17.0 RECOVERY METHODS

**Recovery methods have not been re-evaluated for this report. Details regarding recovery methods can be found in the January 28 2011 PFS report. The following recovery methods are transcribed from the summary section of the January 28 2011 PFS report. Recovery methods are included here for context**

### 17.1 Processing and Process Flowsheet

The Mt. Todd gold recovery process evolved both historically and through studies commissioned by Vista from Resource Development, Inc. (RDi). The evolved process uses proven technologies to recover 82 percent of the contained gold by carbon in leach (CIL) leaching. For purposes of this PFS, an ore feed grade of 1.08 g Au/t and an Ausenco adjusted plant feed rate of 1,427 tonnes per hour (t/h) (nominally 30,000 tonnes per day [tpd] or 10.65 Mtpy) was used. Note that Ausenco frequently describes their work as the “11Mtpy Engineering and Cost Study.”

Testwork at RDi on samples provided by Vista supports a process using conventional coarse crushing followed by HPGR crushing and ball mill grinding to produce a leach feed at P<sub>80</sub> 150 micrometer (µm) (100 mesh Tyler). The resulting pulp is then pre-aerated and subjected to CIL leaching followed by adsorption, desorption, and recovery (ADR) leading to gold doré. The CIL tailings are detoxified and sent to an impoundment, from which plant process water is recycled. The process is robust.

### 17.1 Tailings Disposal

A tailings disposal tradeoff study was completed in early 2010 in order to explore several options for tailings disposal, such as a dry stack facility, new tailings storage facility (TSF) designs for both thickened and conventional tailings, and several raises to the existing TSF. The 60 million tonne capacity raise to the existing TSF design (TSF1) was originally selected based on economic tradeoff studies and the relatively low cost per tonne of tailings stored. Since the total required tailings storage for the project is 150 million tonnes, a new TSF (TSF2) has been designed to provide an additional 100 million tonnes of tailings storage. This provides extra storage as a contingency.

The design for the raises to TSF1 was adapted from the MWH design completed in 2006, with some modifications to accommodate the projected capacity of the facility. The facility will be constructed in six separate stages, using centerline construction techniques for the first raise and upstream construction techniques for subsequent raises. The embankments will be constructed with 2.5:1 (horizontal [H] to vertical [V]) downstream slopes and 2:1 (H:V) upstream slopes. Three saddle dams will be constructed to contain the tailings on the west side of the facility. It was assumed that all of the existing toe drains, under-drains, and decant towers installed at the existing facility will be fully operational when tailings deposition begins and that minimal construction will be required to raise or extend the drains and towers to the required elevation at each stage.

TSF2 will be completed in four construction stages using upstream raise construction methods. The embankments will be constructed with 3:1 (H:V) upstream and downstream inter-bench slopes and five-meter wide benches at the downstream crest of each stage, yielding an overall slope of 3.2:1 (H:V). The crest will be 30 m wide and will slope at 0.5 percent from the high point in the southeast corner to the tie-in with existing ground near Mt. Todd. The facility will be fully lined and will include a system of toe drains, under-drains, and over-drains, as well as a new water reclaim system. A small surface water diversion will be constructed at the southwest corner of the proposed facility to direct Horseshoe Creek away from the new TSF footprint.

## 18.0 INFRASTRUCTURE

**Infrastructure has not been re-evaluated for this report. Details regarding infrastructure can be found in the January 28 2011 PFS report. The following text regarding infrastructure is transcribed from the summary section of the January 28th 2011 PFS report. Infrastructure is included here for context**

### 18.1 Power Supply

The Power Engineers report, "Mt. Todd Power Station, Phase 3 Pre-Feasibility Study," dated September 30, 2010, provides a detailed discussion of the generation equipment options available for onsite electrical supply to meet the power requirements of the re-commissioned Mt. Todd Gold Mine in NT, Australia operated by Vista. The site electrical power demands are a fixed constant operating load estimated at 46 megawatts (MW) with a minimum of startup/shutdown cycles. This load falls between gas turbine size categories so surplus generating capacity is expected if the load is met with a single turbine.

The cost analysis for this study is based on a 13-year operating plant life without annual pricing index. Fuel costs are based on a rate of \$5.75 (AUS) per gigajoule. Calculated 13-year project life costs (includes all capital and operating costs) are estimated \$0.0710 to 0.0950 (AUS) per kilowatt-hour for the 46 MW site demand compared to the commercially purchased electricity rate of \$0.1636 per kilowatt-hour (kWh) (adjusted for demand) for the same time period.

Five options were considered for generation of power at Mt Todd. A Rolls Royce Trent 60 WLE was selected for use in this study. This unit will generate power at a direct operating cost averaging \$0.0629 (AUD) per kWh over the life of the project.

## 19.0 MARKET STUDIES AND CONTRACTS

**Market studies and contracts have not been evaluated for this report and no specific reference can be made to the January 28 2011 PFS.**

## 20.0 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

**Environmental studies, permitting and social or community impact have not been re-evaluated for this report. The following analysis is transcribed from the summary of section of the January 28 2011 PFS report and are included here for context.**

The primary environmental issue at the Mt. Todd site is water management resulting from the project shutdown without implementation of closure or reclamation activities. All of the water retention ponds (excluding the raw water pond) and the pit contain acidic (~pH 3-4.5) water with elevated concentrations of regulated constituents.

### 20.1.1 Permitting

In 2007, Vista became the operator of the Mt. Todd site and accepted the obligation to operate, care for and maintain the assets of the NT Government on the site. As part of the agreement, the NT Government acknowledged its commitment to rehabilitate the site and that Vista has no obligations for pre-existing conditions until it submits and receives approval of a Notice of Intent (NOI) for resumption of mining operations. A decision on the appropriate permitting route will be initiated by submission of an NOI to the Department of Regional Development, Primary Industry, Fisheries and Resources (DRDIPFR), now the Department of Resources (DoR).

A referral and assessment process will determine how the Environment Protection and Biodiversity Conservation Act (EPBC Act) will be applied. The EPBC Act addresses the protection of matters of national environmental significance which include flora, fauna, ecological communities and heritage places. If significant impacts are likely to occur, the project will require formal assessment either through preparation of a Public Environmental Report (PER) or an Environmental Impact Statement (EIS).

### 20.1.2 Water Management

Current and historic evidence indicates that Mt. Todd waste rock, ore, and tailings contain sulfides capable of generating acid and metal laden leachates (ARD/ML). ARD/ML currently occurs or is found in the waste rock dump and associated pond (RP1), the lean ore stockpile and associated pond (RP2), exposed pit walls and associated pit lake (RP3), the heap leach pad (HLP) and associated pond and moat, the plant runoff pond (RP5), and within the tailings storage facility (RP7).

The Edith River and tributaries are protected beneficial use under the Water Act 2000 for aquatic ecosystem protection. As a result, discharges from the site are regulated under the Mt. Todd Project Waste Discharge License (WDL 135) which allows controlled discharges from RP1 to the Edith River during high flow events. The impacted water is sufficiently diluted during high flow events to ensure downstream compliance with established copper criteria which in turn dilutes other regulated constituents to acceptable levels. Improvements to the water management system have reduced uncontrolled discharges during the wet seasons.

In August 2009, Vista commissioned a water treatment plant (WTP) to treat ARD/ML water at a capacity of 193 cubic meters per hour (m<sup>3</sup>/hr). Pilot studies showed that lime treatment removed 98 percent of the cadmium, 98.8 percent of aluminum, and greater than 99 percent of the copper and zinc in acidic water from the waste rock dump pond (RP1). The treated solution including the reaction by-products (gypsum and metal hydroxide compounds) flows by gravity to the tailings storage facility (RP7). Testing is underway to define the operational conditions required to meet standards to discharge treated water after clarification either on a continuous basis or during the wet season. Based on recent measurements (flow meter installed in the

Existing WTP influent pipe in December 2010), ARD/ML is treated at a rate of approximately 360 m<sup>3</sup>/hr (HydroGeoLogica, Inc. and Tetra Tech, 2010).

### **20.1.3 Baseline Studies**

Site characterization studies were conducted at the Mt. Todd site in support of the 1992 Draft EIS (Zapopan, 1992). Vista is conducting additional baseline studies as required by the site waste discharge license and to support design, permitting, operations, and closure. Baseline studies currently being conducted or to be implemented include:

- Surface water and groundwater characterization;
- Soils;
- Geochemical characterization;
- Biological resources (aquatic and benthic, vegetation and wildlife);
- Cultural and archaeology; and
- Socio-economics.

These environmental baseline studies can be completed within one year or less.

### **20.1.4 Reclamation and Closure**

The major and immediate environmental challenges for Mt. Todd are the management of ARD/ML currently contained in several water storage facilities and the management of precipitation and surface water runoff reporting to mine-related surface disturbance. ARD/ML is currently managed through a combination of practices including evaporation, active water treatment, pumping excess water to the Batman Pit, and controlled and uncontrolled discharges to creeks in the vicinity of Mt. Todd and the Edith River during major flow events. Recent upgrades to the pumping system have reduced the frequency of uncontrolled effluent releases from the ponds to the Edith River and its tributaries.

Throughout the mine-life, Vista should anticipate, plan, design for, and implement effective plans for:

- Year-round collection, containment, and treatment of all ARD/ML prior to effluent release;
- Identification of potentially acid-generating (PAG) and non-PAG materials, as well as materials that have the potential to leach constituents in concentrations above applicable water quality-based effluent standards (metalliferous);
- Selective handling of PAG and non-PAG material and potentially direct treatment of PAG materials throughout the mine-life to prevent or reduce the generation of ARD/ML;
- Separation of unimpacted surface and ground water from PAG and metalliferous materials, and ARD/ML;
- Short- and long-term hydrologic isolation of PAG and metalliferous materials from ground and surface water;
- Facility and site-wide closure; and
- Control of storm-water to prevent excessive erosion and sedimentation.

Specific recommendations related to these and other closure and water treatment needs are provided in Section 21-Recommendations.

The major facilities that currently exist at Mt. Todd, which are included as part of the 10.65 Mtpy mine plan, are as follows:

- Batman Pit;
- Batman Pit Lake (RP3);
- Waste Rock Dump (WRD);
- WRD Pond (RP1) and pumping system;
- TSF;
- TSF Pond (RP7);
- Process Plant and Operations Area;
- Process Plant Runoff Pond (RP5) and pumping system;
- HLP;
- HLP Pond and pumping system;
- Low Grade Ore Stockpile (LGO);
- LGO Pond (RP2) and pumping system;
- Existing Water Treatment Plan (WTP); and
- Mine roads and other ancillary facilities (e.g., pipelines).
- The new facilities proposed for closure and the mine-life water treatment system are as follows:
  - Run-on diversions up-gradient of the RP1, TSF1, and WRD;
  - New WTP;
  - Linear Low Density Polyethylene (LLDPE) (or equivalent)-Lined Equalization Pond;
  - LLDPE (or equivalent)-Lined Sludge Disposal Cell;
  - TSF1 and TSF2 Closure Spillways;
  - Modified TSF1 Decant Ponds;
  - Modified TSF2 Sumps;
  - LLDPE (or equivalent)-Lined TSF1 Collection Ditch;
  - LLDPE (or equivalent)-Lined TSF2 Collection Ditch;
  - LLDPE (or equivalent)-Lined LGO2 Collection Ditch;
  - LLDPE (or equivalent)-Lined LGO2 Sump;
  - Collection Ditch at toe of closed WRD;
  - Modified HLP Seepage Collection Pump and Pipeline;
  - Pumps and pipelines;
  - Clay Borrow Area; and
  - Three Anaerobic treatment wetlands (or equivalent passive/semi-passive water treatment system).



A PFS-level Closure Plan (PFCP) is included as an appendix (Appendix J) to the PFS. The PFCP includes descriptions, approximate dimensions, and performance criteria for proposed facilities. Arrangements and design drawings and details for these facilities have not been completed at this stage of the planning process.

The closure and water management goals for Mt. Todd include:

- Control acid-generating conditions;
- Reduce or eliminate the acid and metal loads of seepage and runoff water;
- Minimize adverse impacts to the surface and ground water systems surrounding Mt. Todd;
- Physical and chemical stabilization of mine waste and other mine-related surface disturbances;
- Protect public safety;
- Comply with the WDL and applicable Edith River water quality-based effluent standards; and
- Comply with NT Government regulations governing mine development and closure.

Closure plans and strategies for each major facility at Mt. Todd and the mine-life water treatment system are summarized in Appendix J.

Closure and water treatment costs were estimated at a  $\pm 25$  percent level of accuracy based on the following:

- 10.65 Mtpy mine plan and existing engineering and data presented in the PFS;
- Geochemical testing program and results (Appendix H);
- Mine-life (i.e., pre-production phase of 2 years, production phase of 15 years, closure phase of 3 years, post-closure phase of 6 years) water balance simulations, water quality estimates, and water management plans (Appendix I);
- Use of existing and new water management systems and infrastructure;
- Estimates of environmental conditions throughout the mine-life;
- NT Government mine closure and environmental protection regulations and guidelines;
- Published unit costing references;
- Tetra Tech's recent mine closure and water treatment costing experience; and
- Best professional judgment.

As summarized in TABLE 20-1 the PFS-level cost estimates for implementing the closure and mine-life water treatment plans are \$67,864,000 and \$36,590,000, respectively.

<b>TABLE 20-1: Prefeasibility-Level Closure and Mine-Life Water Treatment Cost Estimate</b> <b>VISTA GOLD CORP. – Mt TODD GOLD PROJECT</b> <b>January 2011</b>	
<b>Area</b>	<b>Cost<sup>1</sup></b>
Tailings Storage Facility 1 (TSF1)	\$ 9,101,000
Tailings Storage Facility 2 (TSF2)	\$ 19,018,000
Heap	\$ 2,585,000
Process Plant And Pad Area	\$ 11,280,000
Batman Pit	\$ 205,000
Waste Rock Dump	\$ 8,620,000
WRD Retention Pond	\$ 1,709,000
Low Grade Ore Stockpile 1 (LGO1)	\$ 128,000
Low Grade Ore Stockpile 2 (LGO2)	\$ 244,000
Mine Roads	\$ 3,786,000
Clay Borrow Area	\$ 135,000
Sludge And Equalization Pond Closure	\$ 273,000
<b>Total Direct Closure Cost</b>	<b>\$ 57,084,000</b>
Mobilization/Demobilization (Assume On-Site Mining Equipment Fleet Used)	\$ 0-
Incidentals (Communication, Misc. Supplies, Etc.) = 0.5 % Of Total Direct Cost	\$ 385,000
Haul Road Maintenance During Closure = 0.5 % Of Total Direct Cost	\$ 385,000
Engineering Re-Design = 2 % Of Total Direct Cost	\$ 1,540,000
Contingency = 8 % Of Total Direct Cost	\$ 6,160,000
<b>Total Indirect Cost<sup>2</sup></b>	<b>\$ 8,470,000</b>
Annual Site Maintenance and Monitoring For 6 Years Post Closure	\$ 2,310,000
<b>Total Closure Cost</b>	<b>\$ 67,864,000</b>
<b>Water Treatment System Facility/Component</b>	
Active Water Treatment And Sludge Disposal System Construction	\$ 4,169,000
Passive Water Treatment System #1, #2 & #3	\$ 15,314,000
<b>Total Direct Water Treatment Construction Cost</b>	<b>\$ 19,483,000</b>
Pre-Production Period (Years -2 and -1) Water Treatment O&M, Reagent and Pumping <sup>3</sup>	\$ 5,545,000
Production Period (Years 1 through 15) Water Treatment O&M, Reagent and Pumping <sup>3</sup>	\$ 6,125,000
Closure Period (Years 16 through 18) Water Treatment O&M, Reagent and Pumping <sup>3</sup>	\$ 2,612,000
Post-Closure Production Period (Years 19 through 24) Water Treatment O&M, Reagent and Pumping <sup>3</sup>	\$2,825,000
<b>Total Mine-Life Water Treatment O&amp;M, Reagent and Pumping<sup>3</sup></b>	<b>\$ 17,107,000</b>
<b>Total Mine-Life Water Treatment Costs</b>	<b>\$ 36,590,000</b>

<sup>1</sup> Cost rounded to nearest \$1,000 in current \$.

- <sup>2</sup> Includes indirect costs associated with the construction of Water Treatment System
- <sup>3</sup> Includes Plant O& M, Lime, and Water and Sludge Pumping

The major closure and water treatment assumptions used for the development of the closure plan are provided in Appendix J of the January 28 2011 PFS and summarized in Section 5.4- Environmental Conditions of that report.

## 21.0 CAPITAL AND OPERATING COSTS

**Capital and operating costs have not been re-estimated for the resource described in the SECTION 14.0 of this report. The following capital and operating costs are transcribed from the summary of January 28 2011 PFS report and are based on the resource quoted in January 28 2011. Capital and operation costs are included here for context.**

### 21.1 Capital Costs

Estimated capital expenditures for the life-of-mine Reserve Case are estimated to be \$851.1 million; this being a combination of \$589.6 million start-up capital and \$261.5 million sustaining capital, both including working capital and contingency. TABLE 20-2 provides a summary of the project capital over the life of the proposed operation.

### 21.2 Mine Operating Costs

Mine operating costs have been estimated for each year of operations based on production requirements with the estimates comprising labor, fuel, material, equipment, and maintenance. A summary of the mine operating costs per tonne ore processed are presented in TABLE 20-1 for the 10.65 Mtpy Reserve Case.

### 21.3 Process Operating Costs

The Reserve Case process operating costs range from \$6.76 to \$6.79/t ore during the years of operation. Included in these costs are operating expenses for the water treatment and tailings facilities. The process plant operating costs by year are given in TABLE 20-3.

**TABLE 21-1: Mine Operating Cost Summary (000) Per Tonne Ore Processed**  
**VISTA GOLD CORP. – MT TODD GOLD PROJECT**  
**January 2011**

<b>Year</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>
<b>Ore Mined</b>	10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	775
<b>Total mining costs</b>	50,882	55,947	55,555	55,046	49,107	41,713	59,865	46,330	32,800	58,451	23,991	39,725	29,086	9,747	1,145
<b>Mine Operating Cost / tonne</b>	\$4.78	\$5.25	\$5.22	\$5.17	\$4.61	\$3.92	\$5.62	\$4.35	\$3.08	\$5.49	\$2.25	\$3.73	\$2.73	\$0.92	\$1.48

<b>TABLE 21-2: Summary of Project Capital Costs (000)</b> <b>VISTA GOLD CORP. - MT. TODD GOLD PROJECT</b> <b>January 2011</b>			
<b>CAPITAL (\$000'S)</b>	<b>LOM</b>	<b>INITIAL</b>	<b>SUSTAINING</b>
<b>MINE CAPITAL</b>			
<b>Primary:</b>			
Open Pit Mine Equipment	98,792	46,483	52,309
Lime Operation Mine Equip	5,617	5,617	0
<b>Sub-Total Primary</b>	<b>104,409</b>	<b>52,100</b>	<b>52,309</b>
<b>Ancillary:</b>			
General Surface Mobil Equipment	18,596	8,404	10,191
<b>Sub-Total Ancillary</b>	<b>18,596</b>	<b>8,404</b>	<b>10,191</b>
<b>Miscellaneous:</b>			
Mine Office, Shop and Warehouse	2,268	2,268	0
Mining Development Supply and Labor Op Costs	9,394	9,394	0
<b>Sub-Total Miscellaneous</b>	<b>11,662</b>	<b>11,662</b>	<b>0</b>
<b>TOTAL MINE CAPITAL (Before Contingency)</b>	<b>134,667</b>	<b>72,166</b>	<b>62,500</b>
<b>Mine Capital Contingency</b>	<b>9,759</b>	<b>5,615</b>	<b>4,144</b>
<b>PLANT CAPITAL</b>			
Process Plant	269,243	269,243	0
Onsite Infrastructure	22,503	22,503	0
Mobile Equipment, Spares, First-Fills	11,223	11,223	0
Power Generating Station	37,678	37,678	0
Site Demolition	3,664	3,664	0
<b>TAILING STORAGE FACILITIES CAPITAL</b>			
Pre-production WTF + Tailings Management	4,777	4,777	0
TSF Fine Grading, Equipment, Piping, Drains	71,304	5,258	66,046
TSF Bulk Earthwork	88,555	4,193	84,362
<b>TOTAL PLANT + TAILINGS STORAGE</b>	<b>508,948</b>	<b>358,539</b>	<b>150,408</b>
<b>INDIRECT PROCESS</b>			
Temporary Construction Facilities	6,999	6,999	0
Commissioning	5,599	5,599	0
<b>Total Indirect Process</b>	<b>12,598</b>	<b>12,598</b>	<b>0</b>
<b>TOTAL PLANT + TAILING + INDIRECT CAPITAL (Before Contingency)</b>	<b>521,546</b>	<b>371,137</b>	<b>150,408</b>
<b>Plant Capital Contingency</b>	<b>60,208</b>	<b>51,202</b>	<b>9,006</b>
<b>EPCM TOTAL (PLANT &amp; TAILING)</b>	<b>73,504</b>	<b>68,600</b>	<b>4,904</b>

<b>OTHER CAPITAL</b>			
Off-site Infrastructure / Accommodation Village	16,268	16,268	0
Excess Water Treatment Facility	17,985	0	17,985
Permitting	2,500	2,500	0
Recruit and Training	1,700	1,500	200
Lime Kiln/Processing	6,158	6,158	0
<b>Total Other Capital</b>	<b>44,611</b>	<b>26,426</b>	<b>18,185</b>
<b>Other Capital Contingency</b>	<b>6,692</b>	<b>3,964</b>	<b>2,728</b>
<b>Total Contingency</b>	<b>76,659</b>	<b>60,781</b>	<b>15,878</b>
<b>TOTAL CAPITAL</b>	<b>850,987</b>	<b>599,111</b>	<b>251,876</b>
<b>TOTAL WORKING CAPITAL CHANGES</b>	<b>102</b>	<b>(9,528)</b>	<b>9,630</b>
<b>TOTAL CAPITAL + WORKING CAPITAL CHANGES</b>	<b>851,088</b>	<b>589,583</b>	<b>261,506</b>

NOTE: Some rounding may occur due to truncation of the numbers.



**TABLE 21-3: Process Operating Cost Summary (000)\***  
**VISTA GOLD CORP. – MT TODD GOLD PROJECT**  
**January 2011**

<b>Year</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>
<b>Ore Processed</b>	10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	775
<b>Total processing costs</b>	72,159	72,109	72,120	72,080	72,169	72,200	72,366	72,286	72,277	72,213	72,213	72,201	72,019	72,068	5,535
<b>Ore Processing Cost / tonne</b>	\$6.78	\$6.77	\$6.77	\$6.77	\$6.78	\$6.78	\$6.79	\$6.79	\$6.79	\$6.78	\$6.78	\$6.78	\$6.76	\$6.77	\$7.14

\*Note: Gold doré refining, transport and treatment charges are \$4.50/toz Au, but are included separately in the cash flow analyses.

## 22.0 ECONOMIC ANALYSIS

**Economics have not been re-analyzed for the resource described in the SECTION 14.0 of this report. The following economic analysis is transcribed from the summary of January 28 2011 PFS report and are based on the resource quoted in January 28 2011. Economic Analysis is included here for context.**

The financial results presented in this PFS have been developed co-operatively between Vista, Tetra Tech, and other consultants. The financial results are presented in constant dollars with the mine and mill capital having been estimated in the second and fourth quarters of 2010, respectively. A five percent discount rate has been applied to the financial analysis. Besides the Reserve case, sensitivity analyses were completed using varying gold prices, currency exchange rates, capital cost estimates and operating cost estimates. Unless otherwise noted, an US/AUD conversion rate of 0.85 was used. Unless specifically noted, all monetary values in the entire document are in US dollars.

### 22.1 Reserve Case

The Reserve Case project entails mining 149,875,000 ore tonnes over a 15-year period. The scenario requires that 10.65 Mtpy ore be mined and processed assuming \$1,000/toz Au, an exchange rate of 0.85 US/AUD dollars, and metallurgical recoveries of 82 percent. Note that the actual 3-year average gold price is \$1,023/toz Au; however, both Tetra Tech and Vista agreed to use \$1,000/toz Au for the Reserve Case analysis.

### 22.2 Cash Flow Analyses

The cash flow analysis developed for the Reserve Case includes all mining, processing, tails disposal, and reclamation.

Cash flow analyses at \$1,000/toz Au and a US/AUD exchange rate of 0.85 results in a project pretax NPV of \$385.336 million and a pre-tax Internal Rate of Return of 13.9 percent and a post-tax rate of return of 10.7 percent, both evaluated at a 5 percent discount rate. Note that 3,371,914 toz Au are recovered during the operating life. TABLE 22-1 is the cash flow associated with the Reserve Case scenario.

### 22.3 Sensitivity Gold Price Sensitivities

Gold Price sensitivity analyses were performed on the Reserve Case reflecting Au prices from \$850 to \$1,150 in increments of \$50. A graph showing the results of these sensitivities is shown in FIGURE 22-1.

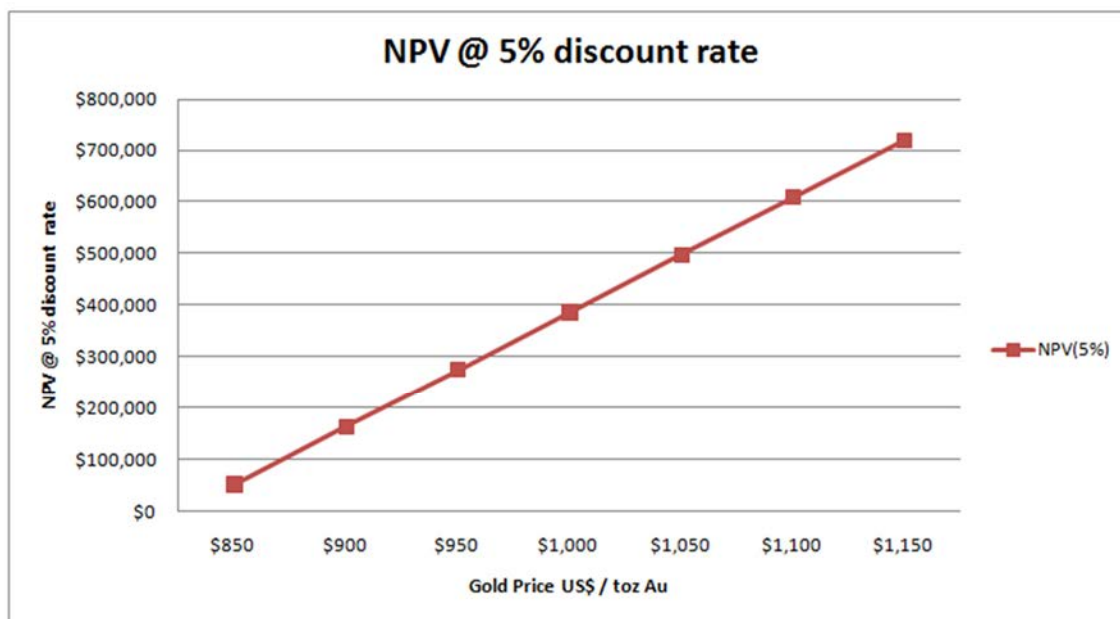
**Mt. Todd - 10.65Mtpa (28 January 2011)**

PROJECT PRODUCTION SCHEDULE / GOLD GRADES AND CONTENT																													
MINE		Total LOM	Project Year																										
			-2	-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ORE TONNAGE TO CRUSHER (000's)		149,875			10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	775										
ORE GRADE		0.853			0.93	1.02	0.95	0.95	0.61	0.62	0.87	0.77	0.63	0.86	0.92	1.04	1.13	0.66	0.47										
toz Au/tonne		0.027			0.030	0.033	0.031	0.031	0.020	0.028	0.025	0.020	0.028	0.030	0.034	0.036	0.021	0.015											
CONTAINED GOLD		127,900,394			9,950,173	10,876,180	10,118,272	10,143,927	6,472,261	6,611,008	9,267,222	8,213,125	6,701,086	9,193,713	9,779,633	11,127,334	12,003,292	7,081,749	361,418										
g Au		4,112,090			319,905	349,677	325,310	326,135	208,088	212,549	297,948	264,058	215,445	295,585	314,422	357,752	385,914	227,683	11,620										
WASTE TONNAGE MINED (000's)		271,480		6,287	22,965	25,048	24,400	25,578	27,824	25,041	24,662	24,710	22,655	20,386	14,158	5,940	1,805	22											
CAPITALIZED TONS (included in total material mined)		57,954		6,287		700	340	360	5,795	10,200			13,200		13,833	267													
TOTAL MATERIAL MINED		421,354		6,287	33,615	35,698	35,050	36,228	38,474	35,691	35,312	35,360	33,304	31,036	24,808	16,590	12,455	10,672	775										
STRIPPING RATIO		waste : ore	1.8		2.16	2.35	2.29	2.40	2.61	2.35	2.32	2.32	2.13	1.91	1.33	0.56	0.17	0.00											
MILL																													
ORE TONNAGE TO MILL (000's)		149,875			10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	10,650	775										
MILL FEED GRADE		0.853			0.93	1.02	0.95	0.95	0.61	0.62	0.87	0.77	0.63	0.86	0.92	1.04	1.13	0.66	0.47										
toz Au/tonne		0.027			0.030	0.033	0.031	0.031	0.020	0.028	0.025	0.020	0.028	0.030	0.034	0.036	0.021	0.015											
CONTAINED GOLD		127,900,394			9,950,173	10,876,180	10,118,272	10,143,927	6,472,261	6,611,008	9,267,222	8,213,125	6,701,086	9,193,713	9,779,633	11,127,334	12,003,292	7,081,749	361,418										
g Au		4,112,090			319,905	349,677	325,310	326,135	208,088	212,549	297,948	264,058	215,445	295,585	314,422	357,752	385,914	227,683	11,620										
MILL RECOVERY @ 82%		% recovery of Au	82%		82%	82%	82%	82%	82%	82%	82%	82%	82%	82%	82%	82%	82%	82%	82%										
GOLD RECOVERED		g Au	104,878,323		8,159,142	8,918,467	8,296,983	8,318,020	5,307,254	5,421,027	7,599,122	6,734,763	5,494,890	7,538,845	8,019,299	9,124,414	9,842,699	5,807,034	296,362										
toz Au			3,371,914		262,322	286,735	266,754	267,430	170,632	174,290	244,317	216,527	176,665	242,379	257,826	293,357	316,450	186,700	9,528										
REFINERY																													
PAYABLE GOLD TO REFINERY		g Au	104,878,323		8,159,142	8,918,467	8,296,983	8,318,020	5,307,254	5,421,027	7,599,122	6,734,763	5,494,890	7,538,845	8,019,299	9,124,414	9,842,699	5,807,034	296,362										
toz Au			3,371,914		262,322	286,735	266,754	267,430	170,632	174,290	244,317	216,527	176,665	242,379	257,826	293,357	316,450	186,700	9,528										

		Total LOM	Project Year																										
			-2	-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
OPERATING COSTS																													
MINE	\$000's	609,389																											
MILL	\$000's	1,026,251	2,291	3,254	72,159	72,109	72,120	72,080	72,169	72,200	72,366	72,286	72,277	72,213	72,213	72,201	72,019	72,068	5,535	944	838	830	377	377	377	364	317	268	
G&A	\$000's	82,786		5,483	5,483	5,483	5,483	5,483	5,483	5,483	5,483	5,483	5,483	5,483	5,483	5,483	5,483	5,483	5,535										
RECLAMATION	\$000's	67,864			2,560	161	526	124	511	393	4,114	17,190	3,406	1,149	1,378		278	34	2,056	10,478	10,166	10,755	385	385	385	385	385	658	
TOTAL OPERATING COSTS		\$1,786,290	\$2,291	\$8,737	\$131,084	\$133,699	\$133,683	\$132,731	\$127,268	\$119,788	\$141,827	\$141,289	\$113,966	\$137,295	\$103,064	\$117,408	\$106,866	\$87,331	\$9,284	\$11,423	\$11,004	\$11,585	\$763	\$763	\$763	\$749	\$702	\$927	
MILL OPERATING COSTS AFTER PRODUCTION		4,693																											
RECLAMATION COSTS AFTER PRODUCTION		33,985																											
OPERATING MARGIN		\$000's	\$1,745,043	(\$2,291)	(\$8,737)	\$132,579	\$154,023	\$134,348	\$135,966	\$46,034	\$57,119	\$104,092	\$77,244	\$65,282	\$106,714	\$156,169	\$176,839	\$210,140	\$101,807	\$5,251	\$4,737	\$5,253	\$4,681	\$15,716	\$15,716	\$15,716	\$15,741	\$15,829	(\$927)
CAPITAL COSTS																													
MINE EQUIPMENT	\$000's	134,687		72,166	21,930	4,933		3,249	15,932	2,863		413	2,836	7,482	2,836	27													
PLANT EQUIPMENT & CONSTRUCTION	\$000's	361,686	30,779	330,906		0		(0)									27												
TSF Fine Grading, Equipment, Piping, Drains	\$000's	71,304		5,258		247		267	252	192	34,980	23,192		4,940			1,472												
TSF Bulk Earthwork	\$000's	88,555		4,193		1,057		496	527	9,485	17,240		24,818		30,127		614												
OTHER/CONTINGENCY/EPCM	\$000's	194,774	15,279	140,528	1,942	376		62	270	1,322	194	8,745	3,259	779	2,074	142				133	426	1,260	555				9,804		
SUB-TOTAL	\$000's	\$850,987	\$46,059	\$553,052	\$23,872	\$6,871	\$804	\$4,312	\$26,991	\$20,488	\$43,725	\$26,864	\$28,433	\$14,496	\$33,104	\$645	\$9,091											\$9,804	
SALVAGE VALUE	\$000's	(70,559)																	(57,372)	\$133	\$426	\$1,260	\$555				(13,187)		
TOTAL CAPITAL		\$000's	\$780,427	\$46,059	\$553,052	\$23,872	\$6,871	\$804	\$4,312	\$26,991	\$20,488	\$43,725	\$26,864	\$28,433	\$14,496	\$33,104	\$645	\$9,091										(\$3,383)	
CHANGES TO WORKING CAPITAL		\$000's	102	2	3,635	(13,164)	2,533	(148)	94	(89)	578	(840)	810	787	(1,685)	122	(1,215)	1,177	291	6,553	585	15	7	(9)	(4)	(0)	(0)	68	
PRE-TAX CASH FLOWS		\$000's	\$964,514	(\$48,352)	(\$565,423)	\$121,872	\$144,620	\$133,692	\$131,560	\$19,132	\$36,053	\$61,208	\$49,570	\$36,062	\$93,903	\$122,943	\$177,410	\$199,872	\$101,516	\$56,071	\$4,019	\$4,486	\$15,169	\$15,719	\$15,716	\$15,741	\$15,830	\$2,388	
CUMM. PRE-TAX CASH FLOWS		\$000's	\$964,514	(\$48,352)	(\$613,775)	(\$491,903)	(\$347,283)	(\$213,591)	(\$82,031)	(\$62,899)	(\$26,846)	\$31,208	\$83,931	\$119,993	\$213,896	\$336,839	\$514,249	\$714,121	\$815,637	\$871,707	\$875,726	\$880,538	\$883,951	\$899,120	\$914,839	\$930,555	\$946,296	\$964,514	
DD&A		\$000's	850,987	9,212	117,199	121,974	123,348	123,509	115,159	14,071	13,394	20,765	25,977	30,801	27,362	29,886	21,270	17,715	12,028	9,129	2,535	2,491	1,486	475	475	448	363	111	9,804
PROFIT BEFORE TAX		\$000's	894,056	(11,503)	(126,949)	7,752	25,087	5,720	15,095	26,278	38,370	81,754	62,763	32,524	75,502	123,665	152,898	190,697	88,094	(1,947)	12,680	12,927	13,949	15,626	15,626	15,653	15,763	16,104	(10,073)
INCOME TAX - Australian & Northern Territories		\$000's	379,952								4,163	35,909	21,802	14,417	34,160	54,809	67,695	83,912	38,747		326	958	4,572	4,572	4,580	4,613	4,715		
NET INCOME AFTER TAXES		\$000's	\$514,105	(\$11,503)	(\$126,949)	\$7,752	\$25,087	\$5,720	\$15,095	\$26,278	\$34,207	\$45,845	\$40,960	\$18,107	\$41,342	\$68,856	\$85,202	\$106,786	\$49,346	(\$1,947)	\$12,680	\$12,601	\$12,991	\$11,054	\$11,054	\$11,073	\$11,150	\$11,388	(\$10,073)
AFTER-TAX CASH FLOW		\$000's	\$584,562	(\$48,352)	(\$565,423)	\$121,872	\$144,620	\$133,692	\$131,560	\$19,132	\$31,890	\$25,299	\$27,767	\$21,645	\$59,743	\$68,133	\$109,715	\$115,960	\$62,768	\$56,071	\$4,019	\$4,486	\$2,455	\$10,597	\$11,147	\$11,135	\$11,128	\$11,114	\$2,388
CUMM. AFTER-TAX CASH FLOW		\$000's	\$584,562	(\$48,352)	(\$613,775)	(\$491,903)	(\$347,283)	(\$213,591)	(\$82,031)	(\$62,899)	(\$31,009)	(\$5,710)	\$22,057	\$43,702	\$103,446	\$171,579	\$281,293	\$397,254	\$460,022	\$516,093	\$520,111	\$524,598	\$527,053	\$537,650	\$548,797	\$559,932	\$571,060	\$582,174	\$584,562

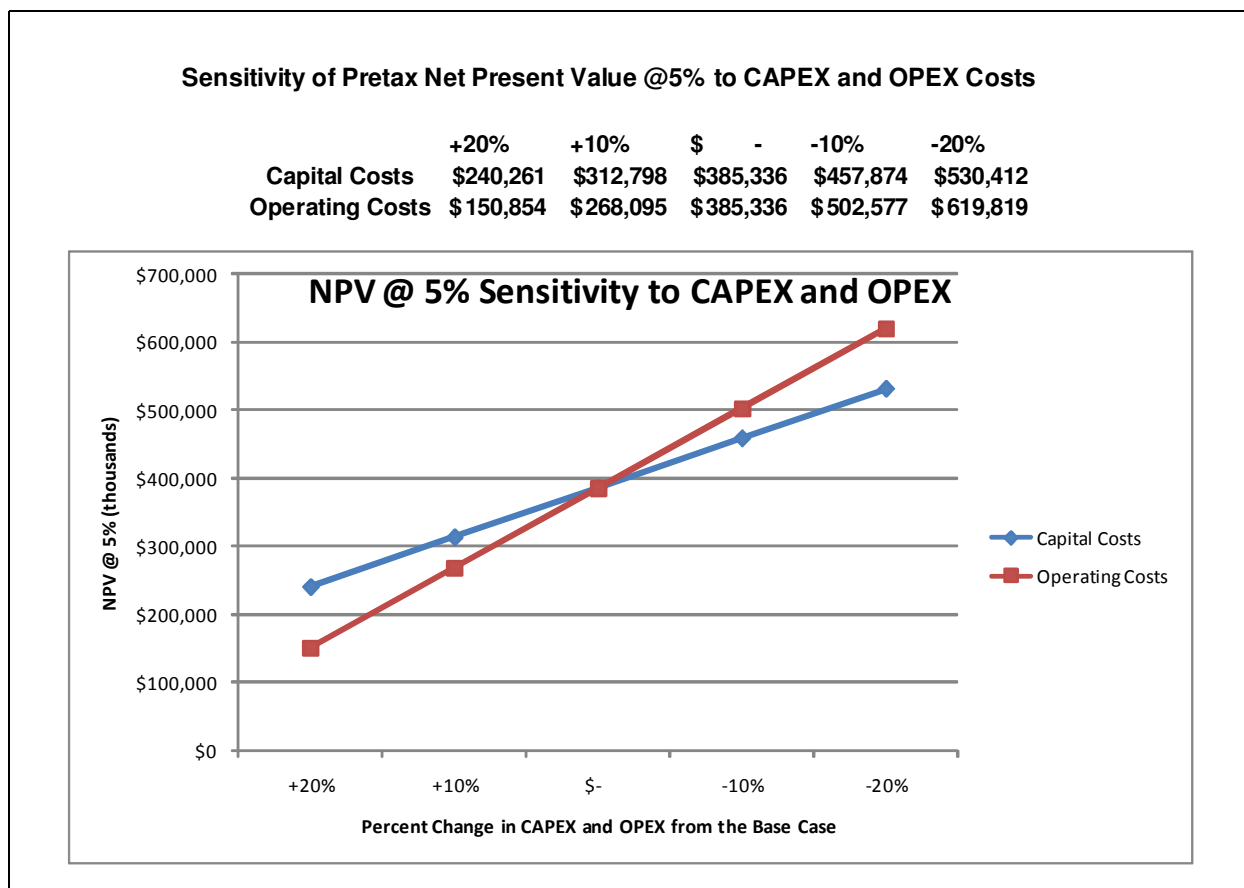
**FIGURE 22-1: Sensitivity of Pretax Net Present Value to Gold Price @ 5 % Discount Rate (000's)**

PRICE (\$/oz)	\$	850	\$	900	\$	950	\$	1,000	\$	1,050	\$	1,100	\$	1,150
NPV(5%)		\$51,470		\$162,759		\$274,047		\$385,336		\$496,625		\$607,914		\$719,202



Capital and Operating Cost sensitivity analyses were performed on the Pretax Reserve Case reflecting mutually exclusive increases and decreases of 10 percent and 20 percent for both. A graph showing the results of these sensitivities is shown in FIGURE 22-2.

**FIGURE 22-2: Sensitivity of Pretax Net Present Value to CAPEX and OPEX @ 5% Discount Rate (000's)**



## 22.4 Sensitivities Deviating from the Reserve Case

Sensitivity analysis performed on the Reserve Case scenario at a Au price of \$1,350/toz Au and 1.00 US/AUD exchange rate yielded an after tax NPV of \$944.470 million at a five percent discount rate (note that this sensitivity is outside the range of those shown in Figure 22-1).

A second sensitivity considered a Au price of \$950/toz Au and 0.85 US/AUD exchange rate. The analysis resulted in an after tax NPV of \$274.047 million at a five percent discount rate.

## 23.0 ADJACENT PROPERTIES

There are two major structural trends in the area (see FIGURE 15-1) that control most of the mineralization in the district. The northeast trending Cullen-Australus Corridor extends northeast and controls the deposits in the Pine Creek area including East Brilliant (Au), Saunders Rush (Au), Aston Hill (Au), etc. The Batman-Driffield trend within the tenements is northeast and is clearly defined by combined Landsat-Spot-aeromagnetic linear zones. There is a flexure in this trend around the Mountain View area that is associated with the Granitic Intrusive. The linear trends swing northwest in this area and define another mineralized linear zone linking Wandie-Moline and which is sub parallel to the Pine Creek linear.

Mineralization in the tenement blocks consists mainly of gold, tin, tungsten, with minor copper, lead, and zinc shows at Mountain View, Silver Spray, Tableland and Mt Diamond. Gold is usually associated with quartz veins and with chalcopyrite, arsenopyrite, pyrite, pyrrhotite and at Batman, minor bismuth and bismuthinite. At Batman, mineralization occurs as stockworks and sheeted quartz-sulfide veins. In other areas such as Quigleys, better grade mineralization is related to distinct shear zones that can have surrounding stockworks.

### 23.1 Yinberrie-EL 9733

Previous work defined two gold prospects. At Anomaly One, RC drilling by Billiton returned peak gold intercepts of 5 m of 2.93 g Au/t and 33 m of 1.21 g Au/t (including 6 m @ 2.54 g Au/t). Pegasus drill tested Anomaly One with 16 RC holes, for 1599 m on four sections between 10200N to 10700N. Intersections were from 2 to 8 m wide, grades from 1.05 to 3.14 g Au/t in strongly hornfelsed metasediments.

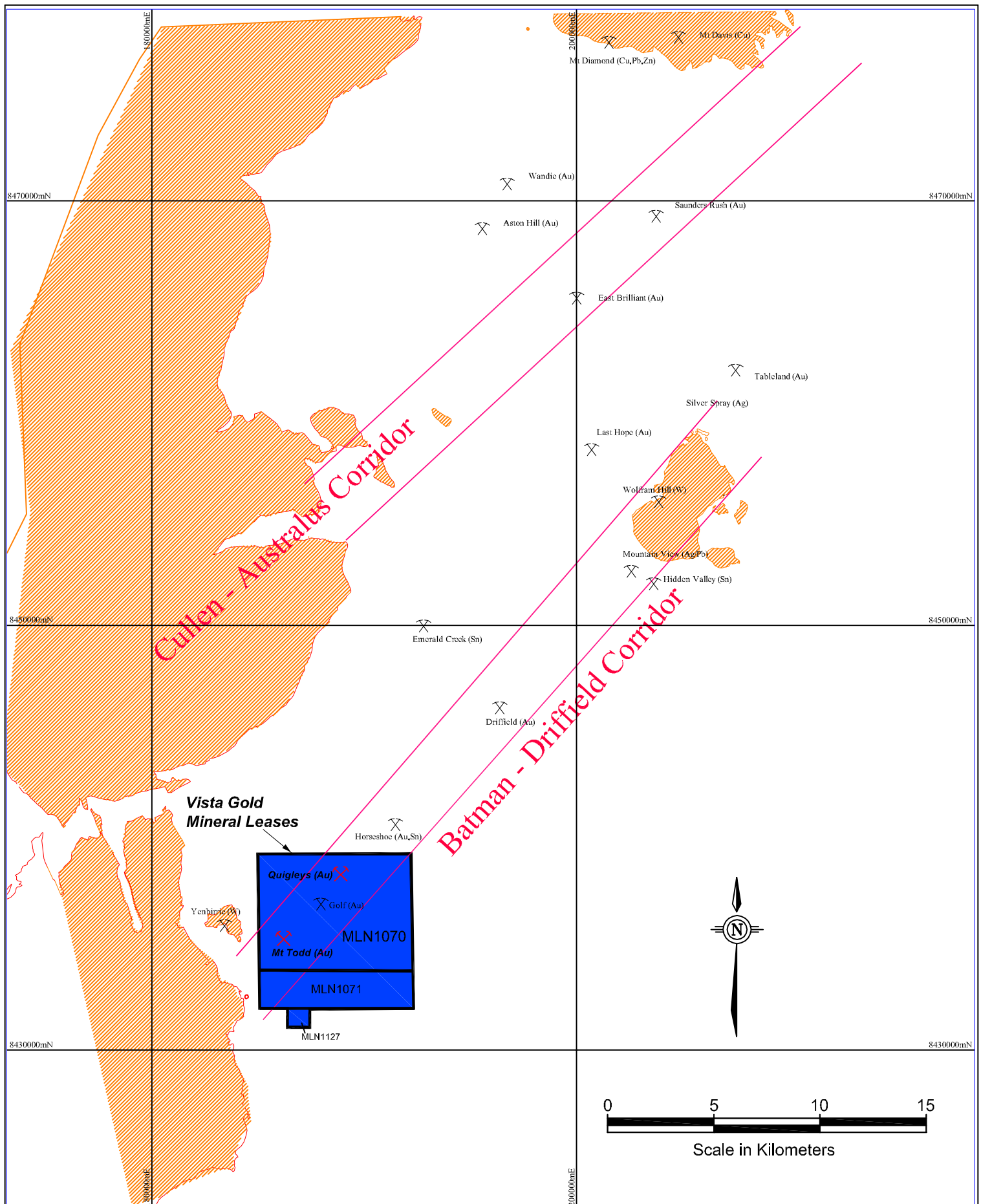
### 23.2 Horseshoe - EL 9735

This area was previously held as EL 7635 and Mineral Claims N1918 to N1923 and N3676 to N3683 (inclusive). Billiton work defined two significant gold anomalies: Central, at the northern end, now held under BJV tenement SEL9679, and Horseshoe at the south. At Central the best RC drill result was 9 m @ 4.2 g Au/t while 15 m @ 1.8 g Au/t gold at Horseshoe was drilled. The Pegasus work performed over 5 years downgraded the Central Prospect. RC drilling at Horseshoe, based on detailed mapping, indicates the prospect consists of a number of thin high-grade shears with minimal stockwork mineralization in foot and hanging wall.

### 23.3 Driffield-EL 9734

Previous mining at Driffield produced about 5,300toz of gold. Alluvial gold has also been worked on the EL and there are numerous small tin workings. Systematic exploration work carried out over previous years was collated, assessed and followed up. One diamond and sixty-six RC holes at six prospects were drilled by Pegasus for 4794 m at the Driffield Mining Center. Results indicated narrow lodes are only present. A further eleven RC holes were drilled at the Emerald Creek Prospect (670 m). No significant results were recorded.

Other prospects tested included Driffield North, Driffield West, Golden Slipper, and Driffield South. Results of five drillholes at Driffield North were disappointing. At Driffield West, nine RC holes were weakly anomalous, the best being DWRC 001 from 12 m, a length of 21 m @ 0.46 g Au/t; and from 45 m, 6 m @ 0.62 g Au/t. RAB drilling at Golden Slipper returned poor results and, while the bulk of rock chips at Driffield South were disappointing, some significant anomalies (+100 g Au/t) were recorded.



Issued by:



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Prepared for:

**Vista Gold Corp.**

Project:

**Mt Todd Gold Project**

Project Location:

**Northern Territory, Australia**

File Name:

**Fig15-1.dwg**

Project Number:

**114-311156**

Date of Issue:

**Sept/2010**

**Figure 23-1**  
**Structural Trends with**  
**Mines & Prospects**



While 1997 results failed to locate a significant deposit, exploration is incomplete and other anomalies remain to be evaluated and drill tested.

## 23.4 Barnjarn - SEL 9679

This tenement is a large block of ground (353 sub-blocks totaling 1,136 sq.km). Compilation of previous exploration data defined targets at Australis (flanks Mt Davis), Wandie/Saunders Rush/Brilliant, Everest, and Triple Bull. Further anomalies were defined at six other areas. Rock chip sampling by Pegasus at eight areas returned results from 0.76 to 24.3 g Au/t gold in fourteen samples. Soil sampling at nine prospects outlined anomalous zones. Preliminary RAB drilling was carried out at Everest, RKD extensions and GT prospects with inconclusive results. At RKD, 38 RC holes were drilled which intersected 1 to 4 m of mineralization, grading between 1.3 and 14.3 g Au/t. An airborne magnetic survey at 100 m spacing at 60 m mean terrain clearance was flown, and GLS and remote sensing studies completed. A total of 65 anomalies were defined by geochemical and/or structural means. A small resource has been interpreted at RKD and drilling at Mountain View, Cullen and Highway was proposed.

## 23.5 Summary

The Mt. Todd region, and particularly the Batman style of mineralization, is one of sheeted veins that develop into a broad two-to-three dimensional stockwork. The grade of the > 200 million mineralized tonnes averages a little less than 1 g Au/t (**Historical Pegasus estimate, not NI43-101 compliant (circa 1997)**), and is associated with low grade copper, mostly as chalcopyrite.

At Cadia Hill in New South Wales, the mineralization is similarly a sheeted vein, two to three dimensional stockwork grading around 0.9 g Au/t, associated with chalcopyrite grading < 0.2% copper. Exploration at Cadia was vigorously prosecuted and extremely persistent in testing of deeper combined magnetic/geochemical anomalies. This ultimately resulted in discovery, at depth, of the Ridgeway deposit (over 26 million tonnes at > 3 g Au/t and > 1% copper) (**Historical estimate, not NI43-101 compliant**).

Ridgeway is hosted by rocks similar to Cadia Hill, but there is a distinct increase in the quantity of mineralizing fluid. Quartz veining with chalcopyrite-gold mineralization increases very significantly in proportion to the hosting altered, but unmineralized granitoid. It indicates an area of more forceful injection of fluids and an area of greater structural preparation. The Mt. Todd region has a large endowment of gold.

Whatever the source of the fluids that caused the Mt. Todd mineralization, it is the view of others that there is a high probability that somewhere in the ground currently under lease, may be a far more significant moderate to high grade deposit.

## **24.0 OTHER RELEVANT DATA AND INFORMATION**

All relevant data and information has been included in this report. Past issued reports regarding the Mt. Todd Gold Project can accessed through [www.sedar.com](http://www.sedar.com).

## **25.0 INTERPRETATIONS AND CONCLUSIONS**

### **25.1 Interpretation**

It is Tetra Tech's opinion that all of the current Vista work meets and/or exceeds the current CIM standards for reporting of mineral resources. Any historic work that does not meet current standards has either been replaced with new data by Vista as part of their ongoing exploration program and/or has been identified within the body of this report. The work completed prior to Vista, was been completed by well-qualified technical professionals, reputable mining companies, and independent third-party contractors and laboratories according to standards that meet most of today's requirements; however, all of the Vista work completed meets and/or exceeds all of the current requirements.

The results of the 2010 and 2011 Vista exploration and development programs continue to provide strong support that the current geologic model and resource estimates are indicative of the mineralization present at Mt. Todd. The objective set forth and completed for the 2008 drilling program facilitated the completion of two prefeasibility studies. It is Tetra Tech's opinion, that like the successful 2008 drilling program, the 2010 and 2011 drill programs indicate Vista should advance toward full feasibility.

### **25.2 Conclusions**

Vista's exploration and development work on the Mt. Todd Gold Project and specifically the Batman and Quigleys deposits continue to provide strong justification for additional expenditures and efforts to develop a new mine at this site.

#### ***Exploration Leases***

A significant portion of the exploration leases is yet to be systematically explored and evaluated. The broad structural and geologic trends that host the Batman, Quigleys, and Golf Tollis deposits may well host other deposits. Much of what Vista has learned from more detailed exploration of the Batman deposit has yet to be applied to these other areas and therefore, these areas remain highly prospective.

## 26.0 RECOMMENDATIONS

Based on Tetra Tech's review of the database, previous studies and work products, and as an outgrowth of the recent mineral resource modeling, PEA, and the PFS, Tt recommends that the resources updated in this report be included as the project advances to a Feasibility Study and detailed engineering in support of the construction of a mine and process facility at the Project. The work programs suggested below involve optimizations typical of a project at this stage of development and in no way reflect material issues to the Project. **Recommendations from the January 28, 2011 report made by Tt that Vista has completed prior to the issuing of this report have been removed.**

### 26.1 Recommended Work Programs

#### 26.1.1 Resources

##### ***Quigleys and Golf-Tollis Deposits***

The Quigleys and Golf-Tollis deposits appear to be more structurally controlled than Batman with the mineralization occurring in narrower bands. Because of this, additional work will need to be undertaken in order to develop a more accurate geologic model and mineralization controls. Tetra Tech proposes that the following items be considered when preparing the work plan:

- Surface mapping and subsequent re-interpretation of the footwall contact to the shear zone mineralization are recommended. Any additional structural complexity that results should, where appropriate, be used to refine the mineralized envelope upon which modeling updates are based.
- Optimization of the resource provides a focus to define areas requiring further investigation or infill drilling. Due to the high degree of variability in the deposit, infill drilling is best targeted at key areas of geological complexity.
- A model should be developed for the area outside the shear zone. This will require separation of areas of mineralization from unmineralized areas using suitable envelope constraints.
- The cause of an apparent bias between some of the old and new RC drilling should be confirmed to validate the inclusion of all samples in resource calculations.

##### ***Additional Closure Recommendations***

The following information is needed to progress closure planning to the full feasibility level. The recommended work should be performed strategically so that decisions about closure can be made sequentially and at the appropriate phase of the project. The work items that are recommended for completion as part of the feasibility study are as follows:

- Waste and cover material hydraulic properties characterization and analysis;
- Improvement of the watershed hydrologic data collection system to enable an update of precipitation-yield characteristics of the site;
- Site-wide soils, closure cover, and reclamation material inventory and characterization to identify material sources, properties and balance; and
- Erosion and sediment control analysis.

##### ***Reclamation Material Inventory and Characterization***

Tetra Tech recommends that site-wide inventories be conducted to identify reclamation materials. We recommend inventories of the following materials:

- Non-PAG waste rock and other waste materials on site;
- Clay and low-permeability soils;
- Undisturbed or slightly disturbed soils, stockpiled soils, and regolith;
- Durable rock rip rap and gravels;
- Acid-resistant drain rock; and
- Organic wastes and amendments, etc.

These inventories should be followed by field-tests to determine the materials suitability for the anticipated uses. The potential sources of closure materials at Mt. Todd include, but are not limited to:

- Production of waste covers, riprap, drain and low-permeability clay materials excavated from the pit during mining;
- Production of waste covers, riprap, drain and low-permeability clay materials excavated from the borrow areas;
- Production of organic soil amendments developed by composting organic waste such as feedlot manure, crop stubble, biosolids, wood waste from logging operations, etc.;
- Uncontaminated fill material in materials storage yards, roads, and ancillary facilities;
- Uncontaminated material excavated for creation of the WRD, RP1 and TSF diversions; and
- Soil salvage from the footprint of TSF2 (and the expansion of the WRD and Batman Pit).

Inventories should define the location, volume, properties, uniformity, retrievability, and where necessary, acid-resistance of all potential sources of reclamation materials on or immediately adjacent to the site. Due to the significant cost associated with the excavation, processing (if necessary), transportation and distribution of these reclamation materials, Vista should evaluate approximate haul distance and road grades between each potential closure material source and major closure areas. This process will eliminate some potential sources from further consideration.

When the properties, volume and viability of closure material sources are determined based on site inventories, material balance and costs should be developed and the results be integrated into the closure planning process. The suitability of many of the existing on-site sources of durable rock riprap and gravels, acid-resistant drain rock, low-permeability clays, and other material have already been evaluated by Vista and others. However, the size of these inventories will likely need to be expanded to address the volumes of materials needed for closure.

Standard test references should be used to guide the analysis to assess the suitability of potential sources of durable rock riprap and gravels, acid-resistant drain rock, low-permeability clays, and other materials (e.g., ASTM). Based on an initial assessment of materials contained in each potential cover source, representative material samples should be collected and the following material properties should be determined as appropriate for the intended use of the material.

#### *Physical Parameters*

- Particle size distribution (dry sieve and hydrometer for < 2mm fraction);
- Atterberg limits;
- Specific gravity;
- Compaction curve (i.e. Proctor curve);
- Saturated hydraulic conductivity;
- Consolidation - saturated hydraulic conductivity tests; and,
- Soil water characteristic curve (moisture release curves) tests.

#### *Chemical Parameters*

- pH (saturated paste and KCl);
- Electrical Conductivity (saturated paste extract);
- Bulk Density;
- Organic Carbon;
- Sodium absorption ratio;
- Cation (Anion) Exchange Capacity;
- Total Nitrogen;
- Nitrate-Nitrogen;
- Available Phosphorus;
- Soluble cations (K, Ca, Mg, Na);
- Exchangeable Bases (K, Ca, Mg, Na Fe, Mn, and Ti) and Aluminum; and
- Acid Base Accounting (additional analysis may be necessary if NNP < + 20 Tons CaCO<sub>3</sub> equivalent/1000 tonne material or a neutralization potential ratio (NPR < 2).

Inventories and chemical and physical characterization can be completed relatively quickly (i.e., ~6 months) at an estimated cost of \$50,000 to \$60,000.

#### ***Waste and Cover Material Erosion and Sedimentation Analysis***

The erosion from tailings, waste rock, ancillary facility and closure covers should be evaluated to:

- Predict soil loss from facilities during operations and following closure;
- Develop and evaluate erosion and sediment control options; and,
- Predict the rate and magnitude of sediment loads to operational and closure storm water drainage systems (ponds, channels, sumps, etc.).

Vegetation monitoring data should be collected for the existing (and future) reclamation test plots. These data, and data from the characterization of waste and cover hydraulic properties should be used as inputs to empirical or process-based erosion and sedimentation prediction models (RUSLE, Water Erosion Prediction Project – WEPP, Erodibility Index Method, SEDCAD, and others) for the evaluation of facility drainage designs, sediment management plans and erosions and sediment control alternatives.

The estimated cost for these studies is between \$50,000 and 100,000.

## 26.2 Planned Work Commitments

The following planned work commitment was developed for the January 28 2011 PFS report. The timeline for completion was determined 12 to 18 months; at the time of this report approximately 9 months have lapsed. It would like to note that much of the proposed work plan from the January 28, 2011 report is either completed and/or ongoing as part of the Definitive Feasibility Study that Vista is in the process of completing

Vista, based on the above recommendations and their own work commitments, have developed a proposed work program to be completed during the next 12 to 18 months in order to advance the Batman deposit through completion of a feasibility study. This program is detailed in TABLE 21-1. As with these types of programs, some of the specific work items are dependent on the results of earlier items, and it is expected that some adjustments to the program will be made based on initial results. It is Tetra Tech's opinion that the proposed program is designed to address the most significant issues detailed in the recommendations above, is logical in its approach and well thought out, and is representative of the level of financial commitment necessary to complete the proposed work.

<b>TABLE 21-1: Proposed Work Plan and Budget</b> <b>VISTA GOLD CORP. – MT TODD GOLD PROJECT</b> <b>January 2011</b>	
<b>Description</b>	<b>Estimated Cost (Millions of \$)</b>
Batman Deposit Development Drilling	2.0 to 3.5
Exploration on Mineral Leases	0.5 to 1.0
Exploration on Exploration Leases	1.0 to 2.0
Permitting and Baseline Studies	2.5 to 3.8
Metallurgical Testing and Feasibility Study	4.0 to 6.0
<b>TOTAL</b>	<b>9.0 to 15.5</b>



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## APPENDIX

There are no appendices for this report.