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P-M-C

Phelps Dodge Mining Company; Cominco American, Inc.;
Great Basin Exploration and Mining; Inc;
White Knight Gold, Inc; Mine Reserves Associates;
Gold Bar Mine; Atlas Mining Company

MINE DEVELOPMENT ASSOCIATES

MINE ENGINEERING SERVICES

Technical Report

Afgan Project

Eureka County, Nevada USA

Prepared for

CASTLEWORTH VENTURES INC.

April 28, 2004

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MINE DEVELOPMENT ASSOCIATES
MINE ENGINEERING SERVICES

TABLE OF CONTENTS

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Section *Page*

Section *Page*

LIST OF TABLES

Section *Page*

LIST OF FIGURES

APPENDICES

MINE DEVELOPMENT ASSOCIATES
MINE ENGINEERING SERVICES

1.0 EXECUTIVE SUMMARY

This technical report was prepared at the request of Castleworth Ventures Inc. ("Castleworth"). The report was written in compliance with disclosure and reporting requirements set forth in the Canadian Venture Exchange ("CDNX") Corporate Finance Manual, National Instrument 43-101, Companion Policy 43-101CP, and Form 43-101F1. The resources for the Afgan deposit were estimated in March 2004 by Mine Development Associates ("MDA").

1.1 Introduction

The Afgan project is located about 28 miles northwest of Eureka in Eureka County, Nevada and consists of 73 unpatented lode mining claims. These claims cover an area of approximately 1,270 acres in all or portions of Sections 17, 18, 19, 20, 21, 28, 29, and 30, T22N, R51E, Mount Diablo Base and Meridian.

Afgan lies near the southeastern limit of an alignment of mineral deposits referred to as the Battle Mountain-Eureka gold trend. A variety of types and ages of mineral deposits, including sediment-hosted gold mineralization, are found in the trend. The Battle Mountain-Eureka trend, combined with the Carlin gold trend to the northeast, are widely believed to reflect major crustal structures and account for a significant number of the sediment-hosted, disseminated gold deposits in the western United States.

Castleworth acquired the Afgan project by way of a lease agreement with the Lyle F. Campbell Trust ("LFC Trust") executed on January 7, 2003. The agreement stipulates escalating annual advance royalty payments that total $95,000 through 2007 and $40,000 per year thereafter. The LFC Trust retains a gross royalty on commercial production that varies from 2.5% to 4.0% depending on the gold price. In addition, Castleworth is committed to annual work expenditures on the Afgan project that escalate from $15,000 in the first year to $60,000 in the fifth year and annually thereafter.

1.2 Geology and Mineralization

Gold occurs on the Afgan project as oxidized, epithermal, disseminated, sediment-hosted mineralization located primarily at the brecciated base of a clastic section identified as probable Webb Formation of Missippian age. The Webb Formation overlies the Devonian-aged Devils Gate Limestone, which hosts a small portion of the gold resource. The Devils Gate Limestone – Webb Formation contact is believed to be a fault that dips at low to moderate angles to the east. This fault contact is the principal control of the Afgan gold mineralization, although high-angle east-northeast-trending structures may also be of secondary importance in the localization of higher gold grades. Tertiary volcanosedimentary rocks unconformably overlie the Paleozoic rocks and are oriented roughly parallel to the Devils Gate Limestone – Webb contact.

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The model for the Afgan deposit is similar to that of other sediment-hosted gold deposits in Nevada, such as the Rain gold mine. At Rain, gold is associated with brecciated, oxidized, silicified and argillized mudstones, siltstones, and sandstones of the Webb Formation immediately above its unconformable contact with the Devils Gate Limestone.

1.3 Exploration and Mining History

Lyle F. Campbell originally located claims north of Afgan in the late 1970's and optioned the claims to American Selco, Inc. ("Amselco"). Amselco subsequently identified anomalous gold in outcrop to the south and staked the original claims of the Afgan claim block. Amselco later returned all claims to Lyle Campbell and ultimately the LFC Trust.

The property has been explored through a series of option and lease agreements between the LFC Trust and Amselco, Westley Explorations Inc., Hecla Mining Company ("Hecla"), Santa Fe Mining, Inc. ("Santa Fe"), Phelps Dodge Mining Company ("Phelps Dodge"), Great Basin Exploration and Mining, Inc. ("Great Basin"), Cominco American Inc. ("Cominco"), and White Knight Gold, Inc. ("White Knight") from 1980 through 1999. The LFC Trust also explored the project at various times when no leases were active. There has been no gold production from the Afgan project.

Table 1.1 shows the three historical estimates of the Afgan gold mineralization completed between 1991 and 1999. There are insufficient details available on the procedures used in these estimates to permit MDA to determine that any of the estimates meet NI 43-101 standards. The use of the terms "Geologic Reserves", "Mineable Reserves" and "Daylight Resource" in Table 1.1 reflect the terms used by the companies who prepared the estimates and are not consistent with National Instrument 43-101.

Table 1.1 Historic Afgan Project Mineral Inventory Estimates

Company	Year	Category (as reported)	Gold Price	Cutoff (oz Au/ton)	Tons (x 10^6)	Grade (oz Au/ton)	Total Gold Ounces
Phelps Dodge	1991				2.800	0.037	105,000
Great Basin	1992-1994	"Geologic Reserves"		0.016	1.625	0.032	52,000
Great Basin	1994-1995	"Mineable Reserves"	$350		1.240	0.031	38,400
LFC Trust	1999	"Daylight Resource"		0.015	1.265	0.034	43,000

The Phelps Dodge estimate used the polygonal method on cross sections. Mine Reserves Associates used computer modeling, geostatistical analysis, and floating cone techniques to complete the Great Basin estimations. The LFC Trust used polygonal methods on cross sections to estimate near-surface resources. MDA is unaware of any of the companies listed in Table 1.1 having undertaken density measurements of the mineralized and unmineralized rock units at Afgan.

1.4 Drilling and Sampling

Table 1.2 summarizes the various drilling programs undertaken on the Afgan project. The digital database created by MDA contains 134 holes, for a total of 44,760 ft of drilling. The only holes on the Afgan project known to MDA but not included in the database are 15 shallow air-track holes drilled by the LFC Trust in 1988 for assessment purposes; none of these 15 holes reportedly penetrated bedrock. The database consists entirely of drill samples, including samples from Great Basin's nine core or partially cored holes, with the remainder being samples collected as drill cuttings from reverse circulation ("RC"), air-track, and conventional rotary drilling.

Table 1.2 Afgan Drilling Summary

Company	Year	Rotary		RC		Air-track		Core		Total Drill Holes	Total Footage
		No.	Feet	No.	Feet	No.	Feet	No.	Feet		
Amselco	1981	24	6,860							24	6,860
Hecla	1986			8	2,850					8	2,850
LFC Trust	1989-90[1]				0	9	994			9	994
Santa Fe	1988-89			7	2,590					7	2,590
Phelps Dodge	1990-91			63	15,640					63	15,640
Great Basin	1993	[2][2]	604	6+[1][2]	4,107			9	4,370	15	9,081
Cominco	1996			8	6,745					8	6,745
TOTAL		24	7,464	92	31,932	9	994	9	4,370	134	44,760

1 15 air-track holes drilled in 1988 not included in database or Table 1.2.
2 Holes in [brackets] drilled as pre-collars to core holes.

MDA knows little concerning the sampling methods, sample handling, sample security and details of assay techniques employed in the various drilling programs undertaken on the Afgan project. Gold appears to have been primarily analyzed by fire assay, with grade determinations by both gravimetric methods and atomic absorption. Systematic, consistently implemented data checks and validation procedures were lacking in the various exploration programs at Afgan. No serious problems are evident from what little data are available, however, which consists of internal assay laboratory check assays and limited re-assaying of pulps. The only twin hole data consists of five Phelps Dodge RC twins of the five 1989 LFC Trust air-track holes. While this represents a limited dataset, no biases of significance are evident.

The shallow nature of the drilling, combined with the scarcity of notations on the drill logs of significant water flows, suggests that down-hole contamination was not a serious issue at Afgan. Visual inspection of the drill hole data on sections supports this conclusion.

1.5 Metallurgical Testing

No formal metallurgical testwork has been completed on the Afgan mineralization, although cyanide leach assays were performed on a limited number of the LFC Trust and Phelps Dodge samples, however. Cyanide extractions average 90% for all data, with mineralization hosted by the Webb Formation averaging 92% and Devils Gate Limestone mineralization averaging 79%. About 80% of the gold mineralization modeled by MDA is hosted by the Webb Formation.

Considerable additional metallurgical testwork is required to adequately categorize the Afgan mineralization and to evaluate viable processing options.

1.6 Mineral Resource Estimation

Mineral resources reported for the Afgan project were modeled and estimated by MDA in accordance with Canadian Institute of Mining, Metallurgy and Petroleum (CIM) definitions. Gold resources estimated by MDA are summarized in Table 1.3.

Table 1.3 Afgan Gold Resources

Indicated Resources

Cutoff (oz Au/ton)	Tons	Au Grade (oz Au/ton)	Au Ounces
0.010	1,851,000	0.027	50,000
0.030	572,000	0.056	32,000
0.050	234,000	0.081	19,000
0.080	90,000	0.116	10,000
0.100	57,000	0.132	7,500
0.150	16,000	0.171	2,700

Inferred Resources

Cutoff (oz Au/ton)	Tons	Au Grade (oz Au/ton)	Au Ounces
0.010	1,286,000	0.026	34,000
0.030	283,000	0.065	18,000
0.050	131,000	0.094	12,000
0.080	85,000	0.112	10,000
0.100	68,000	0.118	8,100
0.150	3,600	0.265	1,000

No Measured resources are reported due to the general lack of documentation regarding the sampling, sample handling, sample preparation, analytical procedures, and QA/QC practices, as well as the lack of survey data for many drill hole locations and the absence of density data. There are no mineral reserves calculated for the project.

Conservative tonnage factors of 12.5 and 14.0 ft^3/ton were chosen for mineralization hosted within the Devils Gate Limestone and Webb Formation, respectively, based upon measurements from a nearby gold system hosted in similar rock units. Numerous detailed measurements are needed to adequately characterize the densities of the mineralized and unmineralized rock units at Afgan.

The gold resources lie within a semi-continuous zone that extends for over 4,100 ft in a north-northeast direction and 1,500 ft east-west. The resources are open for possible expansion in several areas, including both up-dip and down-dip in the north, and in all directions in the southernmost portion of the deposit. In addition, structural controls beyond the east-dipping fault contact are poorly understood. A program of surface mapping is needed to better understand possible controls on the gold mineralization exerted by high-angle structures before further exploratory drilling is undertaken.

2.0 INTRODUCTION AND TERMS OF REFERENCE

Mine Development Associates (MDA) has prepared this technical report for the Afgan project at the request of Castleworth Ventures Inc. ("Castleworth"). Castleworth obtained an interest in the Afgan project, located near Eureka, Nevada, from the Lyle F. Campbell Trust ("LFC Trust") on January 7, 2003.

The purpose of this report is to provide a technical summary of the Afgan project for Castleworth and to satisfy Castleworth's obligation to file a technical report to be made available to the public. The technical report was written in compliance with disclosure and reporting requirements set forth in the Canadian Venture Exchange ("CDNX") Corporate Finance Manual, National Instrument 43-101, Companion Policy 43-101CP, and Form 43-101F1. The resources for the Afgan deposit were estimated in March 2004 by MDA.

The scope of this study included a review of pertinent technical reports and data, provided to MDA by Castleworth and the LFC Trust, relative to the general setting, geology, project history, exploration activities and results, methodology, quality assurance, interpretations, resources and metallurgy.

The author's mandate was to comment on substantive public or private documents and technical information listed in Section 22. The mandate also required on-site inspections and preparation of an independent technical report containing the author's observations, conclusions and recommendations. A site inspection was conducted on April 12, 2004.

Currency, units of measure, and conversion factors used in this report include:

Linear Measure

1 inch	= 2.54 centimeters
1 foot	= 0.3048 meter
1 yard	= 0.9144 meter
1 mile	= 1.6 kilometers

Area Measure

1 acre		= 0.4047 hectare
1 square mile	= 640 acres	= 259 hectares

Capacity Measure (liquid)

1 US gallon	= 4 quarts	= 3.785 liter

Weight

1 short ton	= 2000 pounds	= 0.907 tonne
1 pound = 16 oz	= 0.454 kg	= 14.5833 troy ounces

Analytical Values	percent	grams per metric tonne	troy ounces per short ton
1%	1%	10,000	291.667
1 gm/tonne	0.0001%	1	0.0291667
1 oz troy/short ton	0.003429%	34.2857	1
10 ppb			0.00029
100 ppm			2.917

Currency Unless otherwise indicated, all references to dollars ($) in this report refer to currency of the United States.

Frequently used acronyms and abbreviations

AA	atomic absorption spectrometry
Au	gold
BLM	U.S. Department of the Interior, Bureau of Land Management
CIM	Canadian Institute of Mining, Metallurgical, and Petroleum
°F	degrees Fahrenheit
FA-AA	fire assay with an atomic absorption finish
ft	foot or feet
in	inch
NSR	net smelter return
opt	troy ounces per short ton
oz Au/t	troy ounces gold per short ton (oz/ton)
RC	reverse circulation drilling method
ton	short ton

3.0 DISCLAIMER

MDA has relied almost entirely on data and information provided by the LFC Trust and Castleworth for the completion of this report, including the supporting data for MDA's estimate of the mineral resource at the Afgan project. Almost all of the data utilized by MDA to complete this report is the result of work by prior operators of the Afgan project. Many of the conclusions made in this report are based entirely on the work of these previous operators.

MDA reviewed the project data and drill hole database, visited the project site, collected samples, and verified drill locations. MDA believes that the data presented by Castleworth and the LFC Trust are generally an accurate and reasonable representation of the Afgan gold project.

Although MDA is not a "Qualified Person" for assessing the validity of unpatented claims, MDA has reviewed copies of the stamped 2003-2004 Notice of Intent to Hold documentation from Esmeralda County and a receipt from the Bureau of Land Management evidencing payment of claim holding fees for 2003-2004.

MDA did not investigate the environmental or social-economic issues associated with the Afgan project and the authors are not "Qualified Persons" for these issues in Nevada. These issues will have to be assessed during any feasibility work contemplated on the property. Although MDA is not a "Qualified Person" in regards to the investigation of environmental issues, based on MDA's review of the project site, there appear to be no obvious outstanding environmental issues of significance at the Afgan project.

Officers of Castleworth and representatives of the LFC Trust have each verified that a lease agreement is in place between the two companies in regards to the Afgan project. MDA has not reviewed the lease option document itself; details of the agreement as stated in this report were made available to MDA verbally by Castleworth.

4.0 PROPERTY DESCRIPTION AND LOCATION

4.1 Location

The Afgan project is located in Eureka County, north-central Nevada, about 28 miles northwest of Eureka, the county seat (Figure 4.1). The property lies at the southern end of the Roberts Mountains in the Great Basin portion of the Basin and Range Province. Afgan is not situated within a previously established mining district.

4.2 Land Area

The Afgan project consists of 73 unpatented lode mining claims that cover an area of approximately 1,270 acres within Eureka County, Nevada. These claims are administered by the US Department of Interior, Bureau of Land Management ("BLM") on federally owned lands.

4.3 Mining Claim Description

The US BLM administers the lands in the Afgan area under the Federal Land Policy and Management Act of 1976. The mining claim group covers all or portions of Sections 17, 18, 19, 20, 21, 28, 29, and 30, T22N, R51E, Mount Diablo Base and Meridian.

A listing of the claim names and BLM recordation information is presented in Appendix A.

4.4 Agreements and Encumbrances

The unpatented lode mining claims are all held by the LFC Trust of Reno, Nevada and are in good standing, with all holding fees paid for the assessment year ending on September 1, 2004. The claims will remain in effect for as long as the claim holding fees are paid to both the U.S. government and the county. The claims must also be maintained by insuring that the claim posts and location notices are properly upright and visible.

The unpatented claims are subject to a lease agreement between Castleworth and the LFC Trust, which was executed on January 7, 2003. Terms of the lease agreement include a $10,000 cash payment on signing (paid) and subsequent annual payments of $10,000 in 2004 (paid), $15,000 in 2005, $20,000 in 2006, and $40,000 in 2007 and annually thereafter. Castleworth is also obligated to pay a gross royalty on commercial production from the Afgan project that varies from 2.5% to 4.0% depending on the gold price. All of the payments outlined above are advance royalty payments and therefore are applicable against the production royalty payments. In addition, Castleworth is committed to annual work expenditures on the Afgan project that escalate from $15,000 in the first year to $60,000 in the fifth year and annually thereafter.

The areas of defined gold resources are located within the claims listed in Appendix A and shown on Figure 4.2.

4.5 Environmental Liabilities

Disturbance associated with the exploration work completed at the Afgan project to date is limited to the construction of drill access roads and drill pads, some of which have been reclaimed. No mining operations have been undertaken at the project site. It is possible that further reclamation of the drill roads and sites will be required in the future and this represents the only environmental liability noted by MDA during its site visit.

The historic Pony Express Trail passes through the Afgan project south of the resource area. This portion of the trail is presently a graded dirt road that is in active use. MDA is uncertain if the proximity of the Afgan deposit to the Pony Express Trail would present any special operating permit requirements.

A Plan of Operations is required to be filed with and approved by the BLM prior to any further significant on-site activities, which would include additional drilling.

Figure 4.1 Location Map

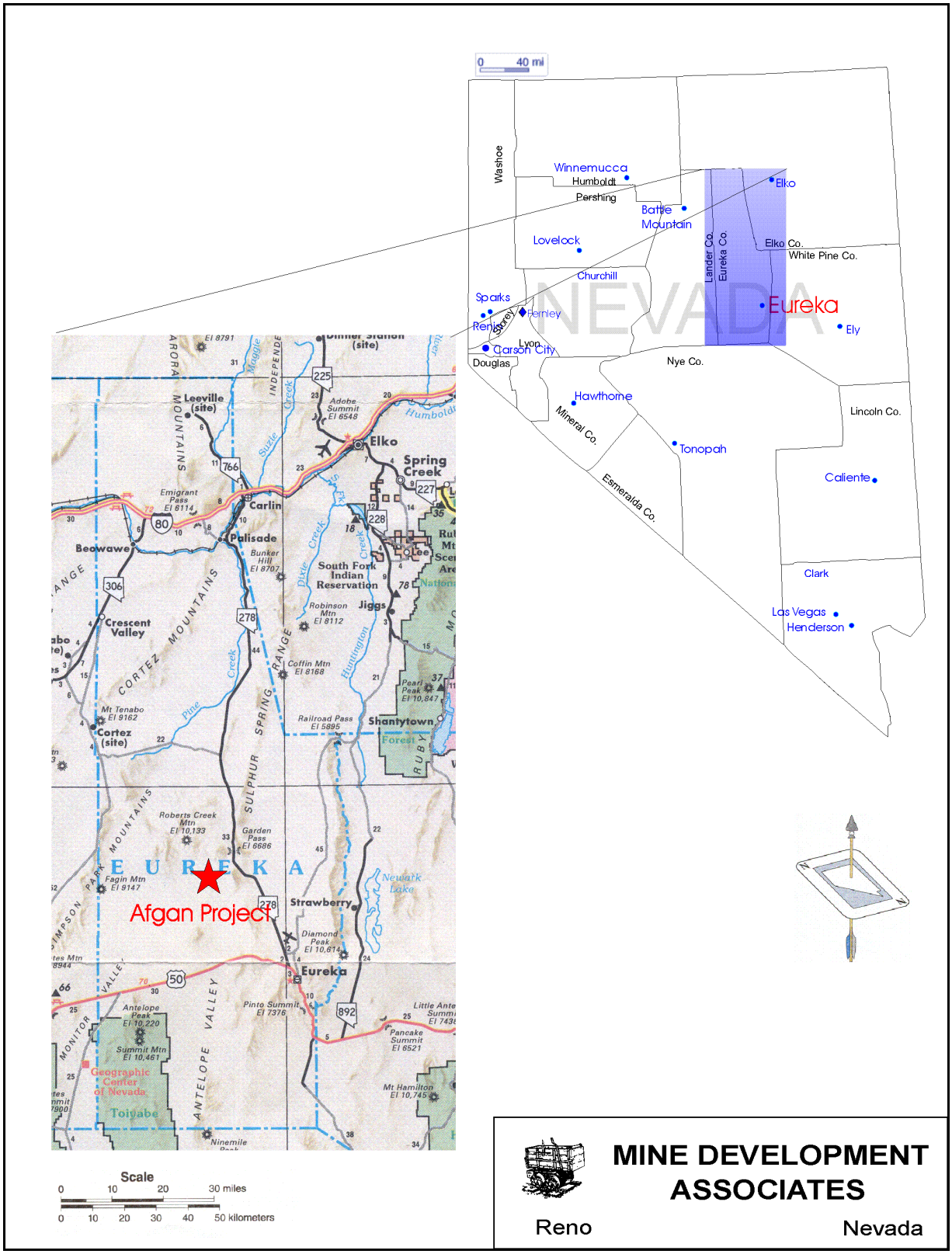
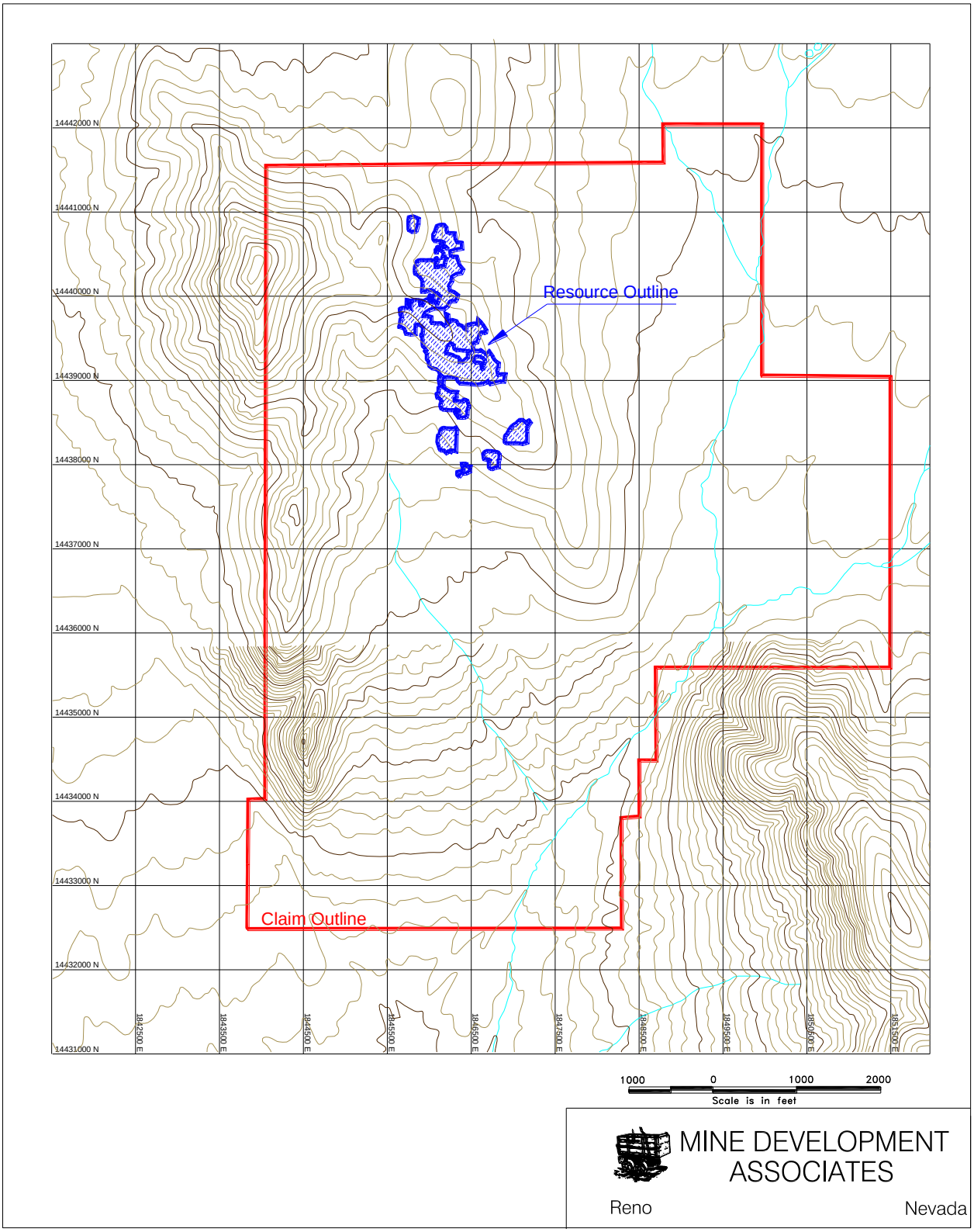


Figure 4.2 Claim Map with Resource Outline



5.0 ACCESS; CLIMATE; LOCAL RESOURCES; INFRASTRUCTURE; AND PHYSIOGRAPHY

5.1 Access

The Afgan project is located north of U.S. Highway 50 and west of Nevada State Route 278 at the southern end of the Roberts Mountains in Eureka County, Nevada. The property can be reached by heading west from the town of Eureka on U.S. 50 for approximately 15 miles, turning right at the sign for Roberts Creek and proceeding north on an improved graded dirt road for 13 miles, turning right onto a smaller graded dirt road and continuing northeast for one mile, and turning left onto a two-track road into the project area.

Figure 4.1 shows a map of the general area, as well as access to the property.

5.2 Climate

The climate of the area is semi-arid and moderate. Average annual precipitation in Eureka County is 10 to 15 inches (Roberts and others, 1967). Average July temperatures range from 65°F to 75°F at lower elevations, with the high temperature exceeding 90° an average of 13 days a year. Winter temperatures average between 20°F and 30°F at lower elevations, with the possibility of frost anytime between September and June. Elevations on the property vary between about 6,450 and 7,000 ft. All expected exploration work can be conducted on the Afgan project year-round.

The evaporation potential greatly exceeds the precipitation on an average annual basis in the area, creating a negative water balance. The overall climate should permit operations all year, although freezing winter temperatures need to be considered in the design of any heap leach processing system.

5.3 Local Resources and Infrastructure

Limited lodging, supplies, and labor are available in Eureka, which is located about 28 miles southeast of the property. The 2000 census reported the population of Eureka to be 1,651. Larger towns include Ely with a population of 4,041 in 2000, located about 80 miles southeast of Afgan, and Elko with a population of 16,708 in 2000, located about 100 miles north-northeast of the property. A power line crosses the Roberts Creek access road about 5 miles south of the project area. No data have been compiled on the water resources, but the Kobeh Valley to the south could have the potential to provide adequate water supplies for possible ore processing needs.

5.4 Physiography

The Afgan project lies along the southern edge of the Roberts Mountains, an eastward-tilted, generally north-trending, block-faulted range of the Basin and Range Province. Kobeh Valley lies to the south. While the topography of the deposit area itself is hilly, the surrounding flat-lying areas provide sites for any mining facilities that may be required, including waste dumps, heap leach pads, plant sites, etc. (Figure 5.1). Figure 5.2 shows Afgan, vegetation characteristic of the area, and the network of drill roads.

"Seventyfive" peak, as identified on the Roberts Creek Mountain U. S. Geological Survey 7.5 minute quadrangle map, is the highest point in the project area at an elevation of 7506 ft.

Sagebrush is the most common type of vegetation in this part of the Great Basin. Hillside slopes within the project area sustain pinon and juniper trees, while rabbit brush, mountain mahogany, and white sage dominate the low-lying areas (Roberts and others, 1967).

Figure 5.1 Topography of the Afgan project Area
(Photo taken from Roberts Creek access road in the Kobeh Valley, looking north)

Resource area located in hills in right mid-ground; "Seventyfive" peak lies in center mid-ground; Gold Ridge, Gold Pick and Gold Stone inactive mine area visible in Roberts Mountains on left. "Seventyfive" peak is underlain by Devils Gate Limestone, which can be seen dipping easterly in the photo.

Figure 5.2 Afgan Project and Deposit Area
(Photo taken from Roberts Creek access road in the Kobeh Valley, looking north)

(Deposit lies beneath low ridge from center to right of photo. Drill access roads are visible along the ridge. High point to the left is "Seventyfive" peak)

6.0 HISTORY

6.1 Exploration and Mining History

The Afgan project lies about 25 miles northwest of the active Archimedes open pit heap leach gold mine in the Eureka mining district, nine miles east of the inactive heap leach Gold Bar mine, and four miles southeast of the inactive Gold Pick open pit gold mine. However, the Afgan project itself does not lie within an established mining district. There is no known history of mining on or immediately adjacent to the property. Hurban (1999) summarized the exploration history of the Afgan project and much of the following information is taken from that report.

Lyle Campbell originally located the Samarkand claims north of Afgan in the late 1970's and optioned the claims to American Selco, Inc. ("Amselco"). Amselco then staked the original 73 claims of the Afgan claim block in early 1980, based on the presence of anomalous gold in samples of chert breccia (Niles, 1981). Following geologic mapping and geochemical sampling, Amselco drilled 24 conventional rotary holes in July and August of 1981 to test two areas of anomalous gold in rock and soil. Several 15- to 20-ft intercepts with gold values ranging from 0.010 to 0.032 oz Au/ton were returned (Niles, 1981). These intercepts were associated with chert, siliceous siltstone, and jasperoid. Amselco later returned all claims to Lyle Campbell and ultimately the LFC Trust.

Westley Explorations Inc. ("Westley") staked claims east and north of the Afgan claims in 1985 and 1986, some of which comprise the northeastern corner of the present claim block. There is no evidence that Westley completed any significant exploration work within the present limits of the Afgan project. In 1986 Hecla Mining Company ("Hecla") leased the Afgan claims from the LFC Trust and undertook an 8-hole reverse circulation ("RC") drilling program (Janney, 1986). An anomalous gold value was returned from a single 5-ft interval (Janney, 1986). Hecla apparently did no further work on the property.

In 1988 the LFC Trust drilled 15 shallow air-track assessment holes on the property, testing soil anomalies that Amselco had identified along its southernmost geochemical line (Hall, 1988). Although MDA was not provided with formal records of these holes and they are not in the digital database, none of them reportedly penetrated through the alluvium. In June 1988 Santa Fe Mining, Inc. ("Santa Fe") staked claims adjacent to the Afgan claim block and drilled four RC holes within what is now the Afgan project. After leasing the Afgan claims from the LFC Trust, Santa Fe drilled an additional 11 RC holes on their claims and the Afgan claims in July of 1989, including five that lie within the present Afgan claim block. The numbering sequence of the Santa Fe drill holes and a sketch location map of the holes attached to one of the drill logs suggest that two additional holes were drilled, although no geologic logs or assay certificates for these holes were found in the documents provided to MDA. If the holes were indeed drilled, neither would have been within the current Afgan project.

In August 1989 the LFC Trust drilled five air-track holes for assessment purposes and encountered anomalous gold mineralization in the lower parts of the holes (Hall, 1989). A year later, the LFC Trust drilled four additional air-track holes to satisfy assessment requirements; MDA does not have formal records of these holes, although Hall (1990) reported that no anomalous gold values were intersected.

At about the same time, Phelps Dodge Mining Company ("Phelps Dodge") negotiated a short-term lease with an option to purchase the Afgan project from the LFC Trust (Hurban, 1999).

From December 1990 through February 1991, Phelps Dodge drilled 63 RC holes on the property immediately south of the area drilled by Amselco in 1981. These holes were designed to follow up on the mineralization identified in the 1989 assessment drilling by the LFC Trust. Five of the Phelps Dodge holes were twins of the LFC Trust's 1989 holes. Phelps Dodge's drilling program is the largest undertaken to date on the Afgan project; gold mineralization was intercepted in 55 of the 63 holes. Phelps Dodge also collected some cyanide assay data (see Section 16) and conducted an estimate of the mineralization present on the project (see Section 6.2.) before relinquishing its interest in the property in 1991.

Great Basin Exploration and Mining, Inc. ("Great Basin") staked claims south of the Afgan claims based on the results of a regional reconnaissance program in 1991. In 1992 Great Basin negotiated a drilling option to lease the Afgan claims and held the project through 1994 (Hurban, 1999). A regional gravity survey was conducted in 1991 and a helicopter-supported electromagnetic survey that collected magnetic, radiometric, VLF, and six-channel electromagnetic data was competed in 1992 (Koehler, 1994). Great Basin then drilled six RC and 9 core holes that tested targets developed from the results of the geophysical surveys and geologic mapping. Significant gold mineralization was encountered in seven of the holes and suggested to Koehler (1994) the presence of a mineralized system measuring 770 by 200 by 50 ft, open to the northeast and southwest. The gold was intersected in what was thought to be the Mississippian Webb Formation just above its contact with the Devonian Devils Gate Limestone. The highest gold values were encountered in a matrix-supported breccia in the basal Webb Formation (Koehler, 1994). Great Basin re-examined work by prior companies during 1994 (Koehler, 1995) and contracted an outside source to perform a mineral inventory calculation, as described in Section 6.2.

After a merger of Great Basin with Fischer-Watt Gold Company, Inc. ("Fischer-Watt"), Fischer-Watt and Cominco American Inc. ("Cominco") formed a joint venture and leased the Afgan claims from the LFC Trust in 1995 and 1996. The joint venture was operated by Cominco, who completed an in-house CS-AMT geophysical survey and then undertook a three-phase 16-hole RC drilling program in the Afgan project and Great Basin's claims to the south. Eight of these holes were collared with the current Afgan claims. Most of the Cominco drilling was south of the previously drilled mineralization, with a final 1560-ft hole drilled into the mineralized area previously identified by the Phelps Dodge drilling. As far as is known to MDA, this was the last drilling carried out on the Afgan project.

In 1999 White Knight Gold, Inc. ("White Knight") leased the property from the LFC Trust. White Knight compiled data and completed geologic mapping and rock chip sampling on the property. Hurban's (1999) report summarized work on the property to that date. MDA has no information on any exploration activity on the Afgan claims since 1999.

Castleworth acquired its interest in the Afgan project on January 7, 2003 (see Section 4.4). Castleworth has not completed substantive work on the project to date.

Table 6.1 Summary of Afgan Project Drilling by Company

Company	Drill Hole ID	No. of Holes	Footage
Amselco	322-D-1 to 22; 322-D-3a and 322-D-9a	24	6,860
Hecla	ANR-1 to 8	8	2,850
Santa Fe	RM-9 to 13; RS-1 and RS-4	7	2,590
LFC Trust	AF89-1 to 5; AFN90-1 to 4	9	994
Phelps Dodge	AF90-6 to 24; AF91-25 to 68	63	15,640
Great Basin	ANC- 1 and 2; ANR-3 to 9; ANR93-10 to 15	15	9081
Cominco	CAK-1 to 3; CAK-12 to 16	8	6,745
TOTAL		*134*	*44,760*

6.2 Historic Resource Estimates

Several estimates in respect of mineralization at the Afgan Project were completed between 1991 and 1999. There are insufficient details available on the procedures used in these estimates to permit MDA to determine that any of the estimates meet NI 43-101 standards. Accordingly, these resource figures are presented here merely as an item of historical interest in respect of an exploration target and should not be construed as being representative of actual Mineral Resources (under NI 43-101) present at the Afgan Project.

Table 6.2 shows the three mineral inventory estimates prepared by or for some of the companies who have been involved with the Afgan project. The use of the terms “Geologic Reserves”, “Mineable Reserves” and “Daylight Resource” in Table 6.2 reflect the terms used by the companies who prepared the estimations and are not consistent with National Instrument 43-101. MDA knows little of the techniques and parameters used in these estimates. Since the proper categorization of resources into the Measured, Indicated and Inferred categories of mineralization has not been applied to the estimations in Table 6.2, and the fact that it is not clear as to whether these categories contribute to the “Mineable Reserves” estimate provided in Table 6.2, MDA believes that none of these estimates were prepared in full compliance with the provisions of National Instrument 43-101.

Table 6.2 Historic Afgan Project Mineral Inventory Estimates

Company	Year	Category (as reported)	Gold Price	Cutoff (oz Au/ton)	Tons (x 10^6)	Grade (oz Au/ton)	Total Gold Ounces
Phelps Dodge	1991				2.800	0.037	105,000
Great Basin	1992-1994	"Geologic Reserves"		0.016	1.625	0.032	52,000
Great Basin	1994-1994	"Mineable Reserves"	$350		1.240	0.031	38,400
LFC Trust	1999	"Daylight Resource"		0.015	1.265	0.034	43,000

Phelps Dodge completed the most extensive drilling of the Afgan project, drilling 63 RC holes in 1991. Based on that drilling, Rassuchine (1991) calculated that there were 2.8 million tons with 0.037 oz Au/ton for a total of 105,500 ounces of gold. This mineralization remained open to the southwest. According to Hurban (1999), Phelps Dodge "used the polygonal method and based calculations on interpreted mineralized blocks in cross section."

Great Basin contracted Mine Reserves Associates to evaluate the drilling data by Amselco and Phelps Dodge and calculate an estimate of ore reserves (Hurban 1999). The calculations of Mine Reserve Associates were based on "computer modeling, geostatistical analysis, geologic reserve calculation and mineable reserve calculation using the floating cone technique" and calculated a strip ratio of 2.7:1 waste:ore (Hurban, 1999). The exact date of this work is not known but can be inferred to have been during Great Basin's tenure on the property, or sometime from 1992 through 1994 and possibly early 1995.

According to Hurban (1999) and personal communications to MDA by LFC Trust representatives, the LFC Trust calculated an "informal 'daylight'" resource in 1999 using polygonal methods. This 'daylight' calculation was intended to estimate near-surface resources for potential start-up ore and entailed the use of "some geologic control by termination of polygons at geologic contacts" (Hurban, 1999). The strip ratio of the resulting estimate was suggested by LFC Trust personnel to be less than 1:1 waste:ore. Hurban (1999) further reports that a tonnage factor of 14 cubic ft per ton was employed.

MDA is unaware of any of the companies listed in Table 6.2 having undertaken density measurements on representative samples of mineralized and unmineralized rock units at Afgan. The only tonnage factor used that is known to MDA is 14 cubic ft per ton of ore, which was applied by the LFC Trust. Hurban (1999) reports that this value was used to deliberately understate the tons calculated, which implies that no actual density data were considered. MDA concludes that it is likely that generalized, unsupported tonnage factors were used in the mineral inventory estimations discussed above.

7.0 GEOLOGIC SETTING

7.1 Regional Geology

The Afgan project is located at the intersection of major structural features of widely differing ages – the eastern edge of the Late Devonian to Early Pennsylvanian Antler orogenic belt, the southeastern end of the Cortez (Battle Mountain-Eureka) trend of Tertiary-aged mineralization, and the extreme southern end of the mid-Miocene Northern Nevada Rift.

During Paleozoic time, this part of Nevada was the site of miogeosynclinal deposition of predominantly limestone and dolomite with lesser amounts of shale and quartzite ranging in age from Cambrian through Mississippian. To the west in the eugeosyncline, clastic sediments, chert, and volcanic rocks were being deposited contemporaneously. Eastward-directed compression in the Late Devonian initiated the Antler orogeny, during which the siliceous sediments and volcanic rocks of the western eugeosynclinal assemblage were thrust eastward over the carbonate sequences of the autochthon. The eastern limit of this regional thrust, the Roberts Mountains allochthon, lies not far to the east of the Afgan project. As the Antler highland rose, clastic sediments were shed eastward in front of the orogen, forming an overlap assemblage of Mississippian to Permian clastics. The Antler orogeny ended in the Early Pennsylvanian.

In Late Permian to Early Triassic time, the compressional Sonoma orogeny again caused thrusting from the west, but the main features of this structural event lie west of Eureka County. Intrusive activity of Jurassic and Cretaceous age, as well as probable Late Jurassic to early Eocene regional metamorphism and east- and west-directed thrusting, indicate there was orogenic activity during Mesozoic time in northeastern Nevada (Thorman and others, 1991). Folds and thrusts that pre-date the Early Cretaceous Newark Canyon Formation are reported in the Eureka area (Roberts and others, 1967, citing Nolan, 1962), but there is no direct evidence of these events in the immediate Afgan area.

The tectonic regime turned to extension, possibly as early as the early Cretaceous and certainly by the Eocene in this region (Roberts and others, 1967; Thorman and others, 1991). There is local evidence of late Cretaceous to early Tertiary normal faulting (Roberts and others, 1967), but extensive extension throughout the region occurred from the Eocene period onward (Thorman and others, 1991). It is this Tertiary to Quaternary extension that produced the Basin and Range physiography seen throughout most of Nevada today. In the Roberts Mountains, immediately to the north of Afgan, the Paleozoic eastern assemblage, western assemblage, and overlap rocks as well as Tertiary lava flows are cut by younger-over-older faults that dip 40-20° westward, tilting the sediments and volcanic rocks up to 40° to the east. These faults were originally steeper but were rotated to their current dips by continuing extension throughout the region (Smith and others, 1991). Volcanism and intrusive activity accompanied Cenozoic extension in northern Nevada, with volcanic activity in the region beginning at least in the Eocene and continuing to Quaternary time. In the mid-Miocene, the north-northwest-trending Northern Nevada Rift formed, extending from the northern border of Nevada to the southern Roberts Mountains. This rift is seen as a prominent aeromagnetic anomaly of regional scale and was accompanied by mafic volcanism and intrusion.

Afgan lies in the southeastern portion of an alignment of mineral deposits called the Cortez or Battle Mountain-Eureka trend. A variety of types and ages of mineral deposits, including sediment-hosted gold mineralization, are found in the trend. In addition, the trend appears to be characterized by Mesozoic and Cenozoic intrusions, aligned structural windows through the Roberts Mountains thrust, high-angle faults, aeromagnetic anomalies, and a linear feature seen on satellite imagery (Percival and others, 1988). It has been noted (Percival and others, 1988) that the Battle Mountain-Eureka trend and the Carlin trend to the northeast "account for a significant number of the sediment-hosted, disseminated gold deposits in the western United States." Shawe (1991) believes that these and other mineralized trends in the region reflect major crustal structures that directly or indirectly influenced mineralization.

7.2 Local Geology

In the Roberts Mountains, the Ordovician Vinini Formation of the western assemblage, consisting of siliceous sediments, cherts and volcanic rocks, is exposed above the Roberts Mountains thrust. In a north-northwest belt through the central part of the range, windows of presumably autochthonous eastern assemblage carbonates are exposed, including the Devonian Nevada Group and the overlying Devils Gate Limestone. Mississippian Webb Formation, which is part of the overlap assemblage, is also present in the range. Tertiary volcanic and sedimentary rocks overlie the earlier sequences along the eastern and southern parts of the range. The Paleozoic and Tertiary rocks were tilted to the east during Tertiary extension.

The Eureka County geologic map (Roberts and other, 1967) shows the Afgan project as being underlain by Tertiary volcanic rocks on the east and the Devonian Nevada Group on the west, with a very small exposure of the Ordovician Vinini Formation lying east of a north-trending fault in the central part of the property. Quaternary sediments cover much of property.

It is evident from the geologic maps produced by the various companies who have explored the property that outcrops are not common within large areas of the Afgan claims. There is general agreement by the company geologists whose maps were provided to MDA that the limestone exposed in the western part of the Afgan project is Devonian Devils Gate Limestone. The Devils Gate Limestone in the Afgan area is a medium- to thick-bedded, gray, medium- to fine-grained limestone with calcite veinlets and cavity fillings. It weathers to massive, light gray outcrops. From work in the broader area surrounding the Afgan project, Hurban (1999) found that the Devils Gate Limestone is at least 1,000 ft thick and conformably overlies the Bay State Dolomite of the Nevada Group to the west of the Afgan claims. Koehler (1994) and Hurban (1999) reported that the Devils Gate Limestone is fossiliferous in the general area of the Afgan project. MDA observed that the Devils Gate Limestone dips easterly to northeasterly at approximately 30º near the top of "Seventyfive" peak (Figure 5.1), where fossils also can be found.

To the east of the Devils Gate Limestone on the Afgan project are small, sparse outcrops of moderately to strongly argillized and silicified gray siltstone and mudstone, with lesser amounts of sandstone, pebble conglomerate, quartzite, and chert. Jasperoid breccia occurs at the basal contact of this unit with the Devils Gate Limestone. Amselco, Hecla, and Phelps Dodge geologists all interpreted these rocks as the westerm assemblage Ordovician Vinini Formation in thrust contact with the Devils Gate Limestone. Later workers, including Great Basin (Koehler, 1994, 1995) and Cominco (Suda, 1997) geologists as

well as Hurban (1999), interpreted these exposures and similar rocks in drill holes as the Mississippian overlap assemblage Webb Formation in either an unconformable (Koehler, 1994) or low-angle fault contact (Hurban, 1999) with the Devils Gate Limestone. The interpretation of these rocks as Webb Formation is based on the presence of sandy, gritty siltstone, but Hurban (1999) and Suda (1997) concede that it is possible these rocks are part of the Vinini Formation. There are no reports of fossils from the Webb/Vinini clastic sediments on the Afgan project, which is very likely a function of the paucity of outcrop and the fact that almost all of the drilling has been rotary methods. The Vinini Formation elsewhere in the Roberts Mountains has distinctive graptolites in the shale beds (Roberts and others, 1967), which would give clear evidence of the nature of the formation if they could be found on the property, either in outcrop or in drill core.

Jasperoid, jasperoid breccia, and silicified breccia are commonly found in Webb/Vinini siltstones near their contact with the Devils Gate Limestone. Koehler (1994) believed that the upper contact of the Devils Gate Limestone was an unconformity and that the presence of erosional remnants of the Webb on the Devils Gate and rapid changes in relief of the top of the Devils Gate Limestone in drill holes suggested the presence of paleokarstic topography. He interpreted the brecciation of the basal Webb as hydrothermal. Hurban (1999) disagreed, claiming that there "is no convincing evidence of karst development along the" contact of the Webb Formation and Devils Gate Limestone. Hurban also cited the lack of exotic clasts and only sparse vugs in the basal breccia of the Webb as evidence that the breccia is a fault breccia. Niles (1981), who believed that the siltstones were Vinini Formation, interpreted the chert breccia as a fault breccia related to the thrust contact. He further theorized that friction from the fault movement may have melted the cherts to produce the silicification in the fault zone and the underlying Devils Gate Limestone.

Although Koehler (1994, 1995) mapped as Webb Formation what the previous geologists had called the Vinini Formation, he did map a small area of Vinini close to the southeasternmost extent of pre-Quaternary rocks on the Afgan claims. This interpretation was based solely on drilling, from which he inferred a thrust contact of the Vinini Formation with the underlying Webb Formation. From the lithologic descriptions in his reports, it is not clearly evident that the two formations are different, but he does note that strong shearing and folding characterize the Vinini and that its contact with the underlying Webb is either sharp or a gouge zone.

MDA believes that the question of whether the Paleozoic units to the east of the Devils Gate Limestone are part of the Vinini or Web Formations, or both, remains an open question. This unit(s) will be referred to in this report as the "Webb", however, as this represents the most recent, relatively widely accepted interpretation.

Tertiary deposits underlie the eastern portion of the Afgan claims and include conglomerate, reddish-brown sandy claystone, rhyolite tuff, fresh-water limestone, and aphanitic basalt or basaltic andesite with interbedded volcaniclastic sandstone. Basalt dikes cutting the claystone are noted in some drill hole logs. The basalt, basaltic andesite, and basalt dikes may be related to formation of the Northern Nevada Rift. Tertiary and Quaternary gravels overlie much of the property.

The entire Paleozoic-Tertiary package at Afgan is tilted at low to moderate angles towards the east. As seen in the cross section on Figure 9.1, the Tertiary-Paleozoic contact closely parallels the Devils Gate

Limestone-Webb contact. As the Tertiary rocks are considered to be post-mineral, this suggests that the mineralized Devils Gate Limestone-Webb contact was subhorizontal at the time of mineralization.

Numerous north-northeast- and northeast-trending normal faults were interpreted in the Afgan resource area by Phelps Dodge and Great Basin on the basis of drilling data. Koehler (1994, 1995) suggests that the northeast-trending faults may be older and that, because they are parallel to gold mineralization in the area drilled by Great Basin, they may have been conduits for the mineralizing fluids. Koehler (1994, 1995) believes that the north-northeast-trending faults are younger since they offset northeast-trending faults that he thought to be associated with higher-grade gold mineralization. An approximately east-trending fault is shown in the vicinity of Amselco hole 322-D-10 on the maps by Phelps Dodge, Great Basin, and Hurban (1999). Koehler (1994) interprets this as a right-lateral strike-slip fault with about 600 ft of displacement. This fault is shown to be truncated by one of the north-northeast-trending faults.

The north-northeast, northeast, and east-northeast trending faults have been interpreted to form a series of horsts and grabens extending the whole length of the Afgan project (Koehler, 1995). The northernmost holes on and near the northern Afgan boundary that were drilled by Santa Fe indicate the presence of a deep graben filled with Tertiary rocks. South of that graben, the mineralized area drilled extensively by Amselco and Phelps Dodge sits on a possible horst block.

Figure 7.1 Regional Geology

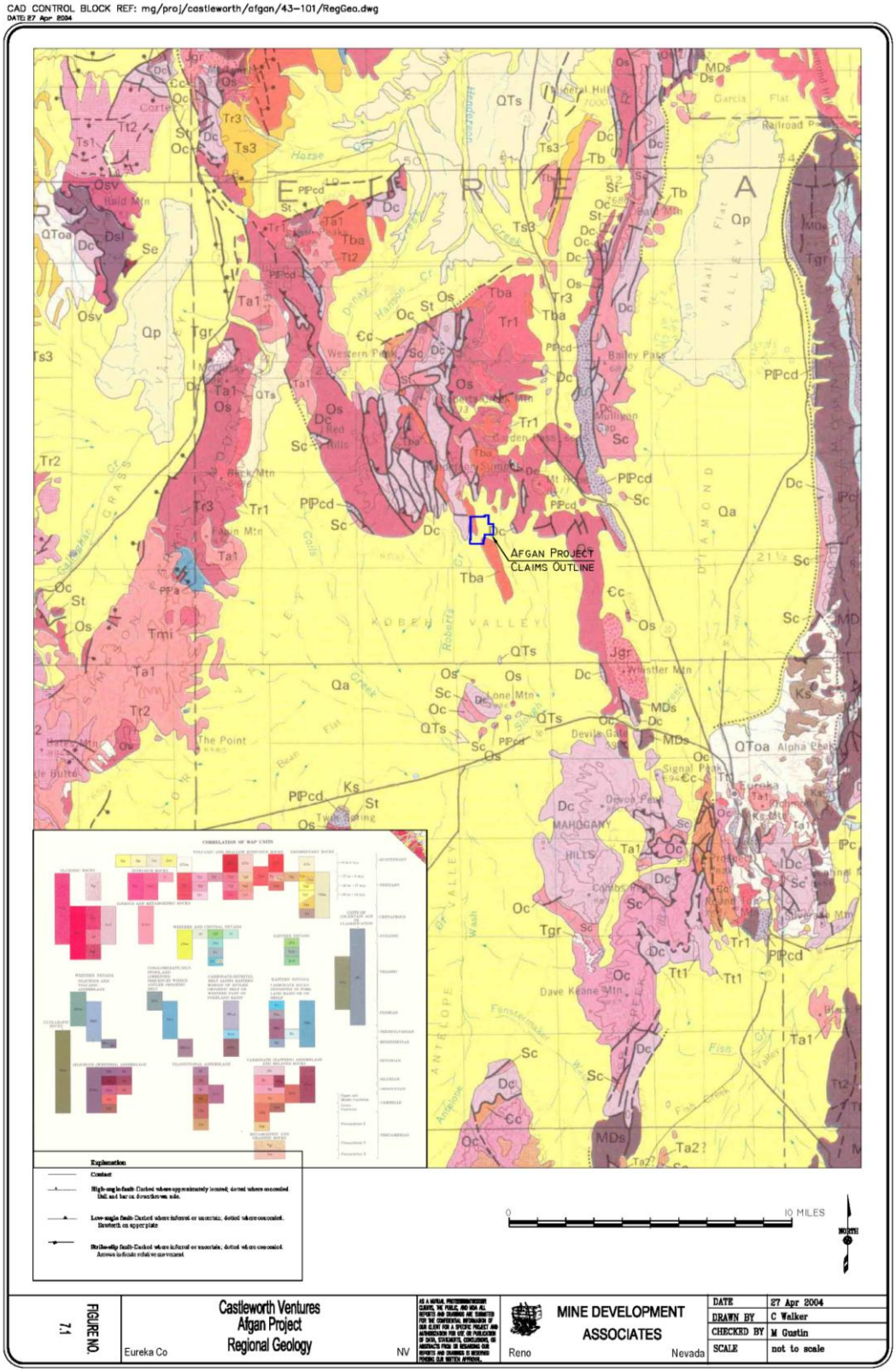
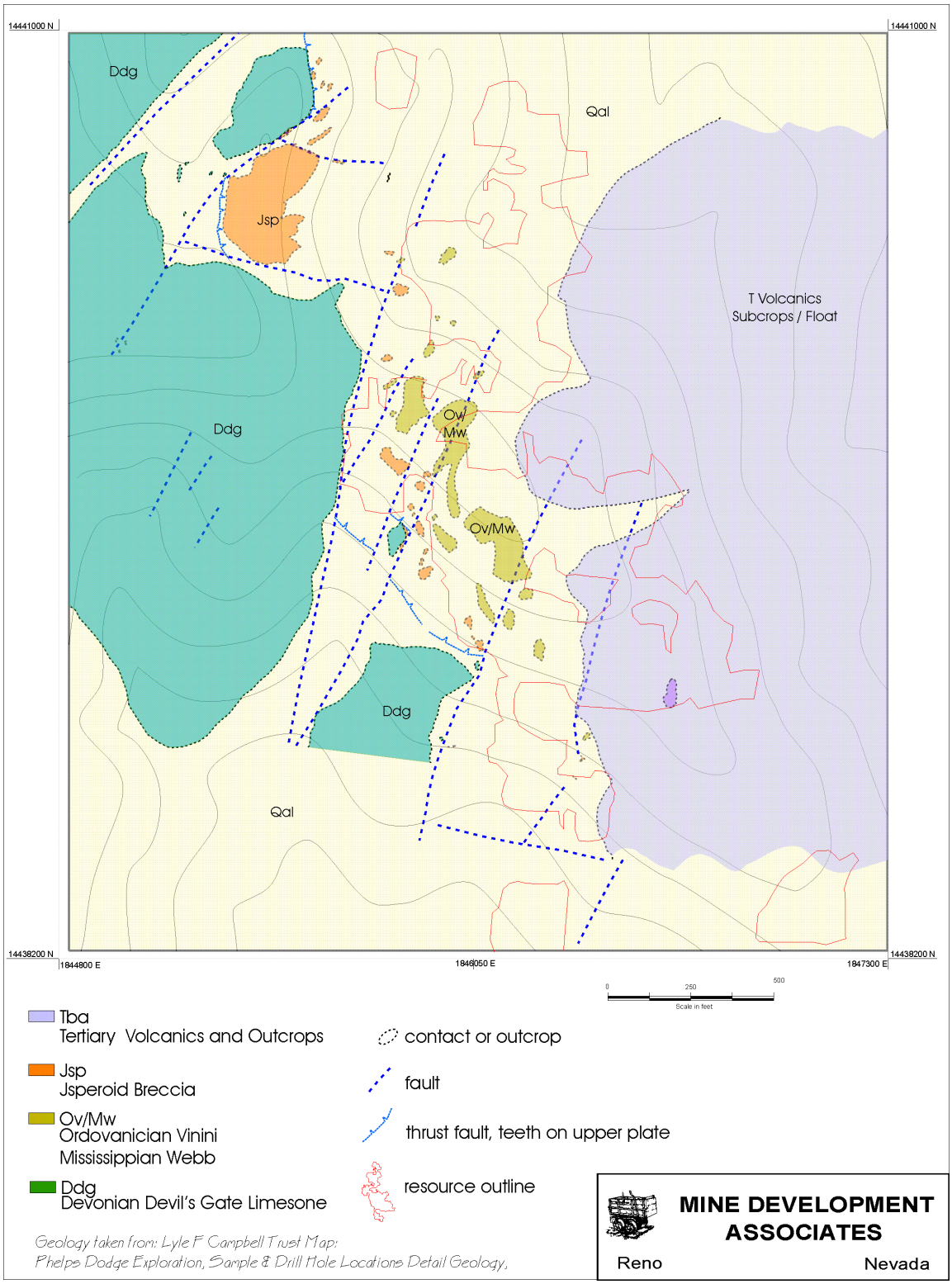


Figure 7.2 Local Geology – Afgan Area



8.0 DEPOSIT TYPE

Mineralization on the Afgan project consists of epithermal, disseminated, sediment-hosted gold. Deposits of this general type occur in a variety of host rocks in north-central Nevada. The Afgan mineralization appears to be most similar to that found in the Rain district at the southern end of the Carlin trend in Elko County. The Rain Mine, located within the Rain district, is being actively exploited by Newmont Mining Corporation.

In the Rain district, at least six disseminated, sediment-hosted gold deposits have been found associated with the northwest-striking Rain fault or other nearby faults (Thoreson, 1991; Mathewson and Beetler, 1998a, b). The gold primarily occurs in the Webb Formation just above its unconformable contact with the Devils Gate Limestone. The contact is characterized by a 5- to 20-ft thick zone of red clay. According to Kizis (1998, p. 65-66), porosity along the contact was created by collapse of the lower Webb Formation due to hydrothermal dissolution of the underlying limestone. These collapse breccias, as well as fluidized hydrothermal breccias, are cited as favorable sites for gold deposition at Rain. Gold is associated with brecciated, oxidized, silicified, and argillized mudstones, siltstones, and sandstones of the Webb Formation and is usually accompanied by silicification and strong barite veining. At the Rain deposit itself, the mineralization is in the form of a flat, blanket-like orebody adjacent to the Rain fault, which is thought to have served as a channel for the mineralizing fluids. Jasperoid along the trace of the fault is brecciated and contains veins of barite and scattered gold mineralization.

Gold mineralization on the Afgan project was deposited in brecciated siltstones of what appears to be the Webb Formation, at and immediately above its contact with the Devils Gate Limestone. Lesser, but important amounts of mineralization occur in the adjacent Devils Gate Limestone as well. As at Rain, the Afgan mineralization is associated with oxidized, silicified, and argillized siltstones and mudstones. In the drill logs and reports provided to MDA, there was no mention of barite at Afgan, however, in contrast to the mineralization at Rain.

The closest large sediment-hosted gold deposit to the Afgan project is the Gold Bar Mine, located in the southwestern Roberts Mountains about 9 miles west-northwest of Afgan. Gold Bar was originally mined by Atlas Mining Company, but is presently inactive. It differs from mineralization at Afgan primarily in the host rocks and relative lack of influence of brecciation on mineralization. At Gold Bar, gold occurs in a thin-bedded, carbonaceous limy siltstone associated with limestone, calcareous siltstone, and mudstone that form the Upper Denay Formation of the Devonian Nevada Group. Abundant pyrite, traces of sphalerite, and kerogen characterize the host rocks. Hydrothermal fluids apparently rose along a northwest-trending fault, concentrating mineralization at the intersection with northeast-trending faults. Mineralization occurs primarily in favorable limy siltstones. Permeability was increased by dissolution of interstitial calcite accompanied by recrystallization of matrix clays (a phenomenon referred to as “sanding”) and replacement of calcite by hydrothermal silica. Gold is spatially associated with sanding (Masinter, 1991) and, when oxidized, occurs with calcite, quartz, hematite, and clays.

9.0 MINERALIZATION

Gold mineralization found on the Afgan project consists of oxidized, epithermal, disseminated, sediment-hosted mineralization primarily at the brecciated base of a clastic section identified as probable Webb Formation immediately above its contact with the Devils Gate Limestone. This contact dips at low to moderate angles to the east (Figure 9.1). Modeling by MDA has produced a block model of the Afgan deposit in which approximately 80% of the mineralized blocks are modeled as being the Webb Formation, while 20% are modeled as the Devils Gate Limestone (see Section 17). The gold mineralization is modeled by MDA to lie within a semi-continuous zone that extends for over 4,100 ft in a north-northeast direction and 1,500 ft east-west (Figure 4.2). Except for the lack of reported barite at Afgan, the mineralization strongly resembles that at the Rain Mine in Elko County, as described in Section 8.

Types of alteration associated with the gold mineralization at Afgan, as described in drill logs and company reports, include silicification and argillization. Iron oxides are very commonly noted in drill holes on the Afgan project, and essentially the entire mineralized zone modeled by MDA is described as being oxidized. This oxidation may take the form of liesegang banding or the presence of hematite, limonite and/or jarosite, often as fracture coatings. According to Koehler (1994), specular hematite associated with brecciation was spatially related to the highest gold values in the Great Basin drill holes. Argillic alteration and the presence of clay minerals are also noted in many of the drill logs, being most extensive in areas where the matrix of the basal Webb breccia is completely altered to clay.

Silicification and the formation of jasperoid associated with the Webb and Devils Gate Limestone units are seen in surface outcrops and are also frequently noted in the drill logs. The basal Webb breccia is usually moderately to completely silicified, and thinner units within the Webb are also silicified. The uppermost Devils Gate Limestone is also frequently altered to jasperoid in mineralized areas.

Massive calcite and calcite veins are reported in a number of the drill holes. Based on their presence in Cominco hole CAK-1, where the veining is associated with higher values of gold and trace elements, Suda (1997) interpreted the calcite as a product of decalcification.

While the bulk of the mineralized zone follows the easterly dipping Devils Gate Limestone – Webb contact zone fairly closely, there is evidence that higher-grade mineralization may occur along cross-cutting high-angle structural zones. Specifically, the strongest gold mineralization defined to date lies on section 14439100 N (Figure 9.1). Relationships derived from geologic logs of the drill holes suggest that the Devils Gate Limestone – Webb contact is offset on this section. No significant offset is apparent in the adjoining sections to the north and south, however. This suggests that a structure striking close to east-west is responsible for the offset of the contact. MDA believes that the structure may strike east-northeast, but this is not certain. A similar structure may cross-cut the system on section 14439700 N, although the lack of drilling immediately to the north makes this interpretation more speculative. In any case, the coincidence of an approximate east-west fault offset on section 14439100 N with the strongest mineralization identified on the project to date suggests that the structure may be related to the mineralization. Alternatively, the geologic relationships could be related to caving of the Webb Formation into karstic features developed in the uppermost Devils Gate Limestone.

The mineralization modeled by MDA is open for possible expansion in several areas. The northernmost 600 ft of the resource is open up-dip to the west through to where the Devils Gate Limestone – Webb contact reaches the surface. Outcrops of jasperoid are common near the surface projection of this contact (Figure 7.2). Although the grades encountered in the drill holes down-dip from these jasperoids are relatively low, near-surface intersections within the deposit to the south are often thicker and of higher grade than deeper, down-dip intersections.

The Afgan mineralization is frequently open down-dip north of section 14439000 N, although the prospective zone likely deepens rapidly.

Cominco drilled a 1,560 ft hole (CAK-16) in the southern portion of the resource area in search of deep, high-grade mineralization similar to that found beneath some other sediment-hosted disseminated deposits in northeastern Nevada. Although only weakly anomalous gold values were found, Suda (1997) interpreted their presence along with evidence of decalcification as suggestive of potential for high-grade, deep mineralization in this area, possibly within the Nevada Group which underlies the Devils Gate Limestone.

Drilling by Great Basin in 1993 encountered previously unknown gold mineralization in holes ANR-7, 8, and 9 and ANC93-10 and 93-14, which define the southernmost portions of the MDA resource. Gold occurs in an argillically altered, oxidized, matrix-supported breccia in the basal 30 to 60 ft of the Webb in these holes. Although the shallowest drill hole intercept in this mineralization is 180 ft below surface, the grades encountered in the holes are often higher than the average Afgan intersections. For examples, hole ANR-9 intersected 0.1 oz Au/ton over a 40-ft interval, which MDA believes to be close to true width. This southern mineralization may be parallel to northeast-trending faults (Koehler 1994, 1995). The resources defined in this area are open to varying extents in all directions

Figure 9.1 Afgan Au Cross Section 14439100 N

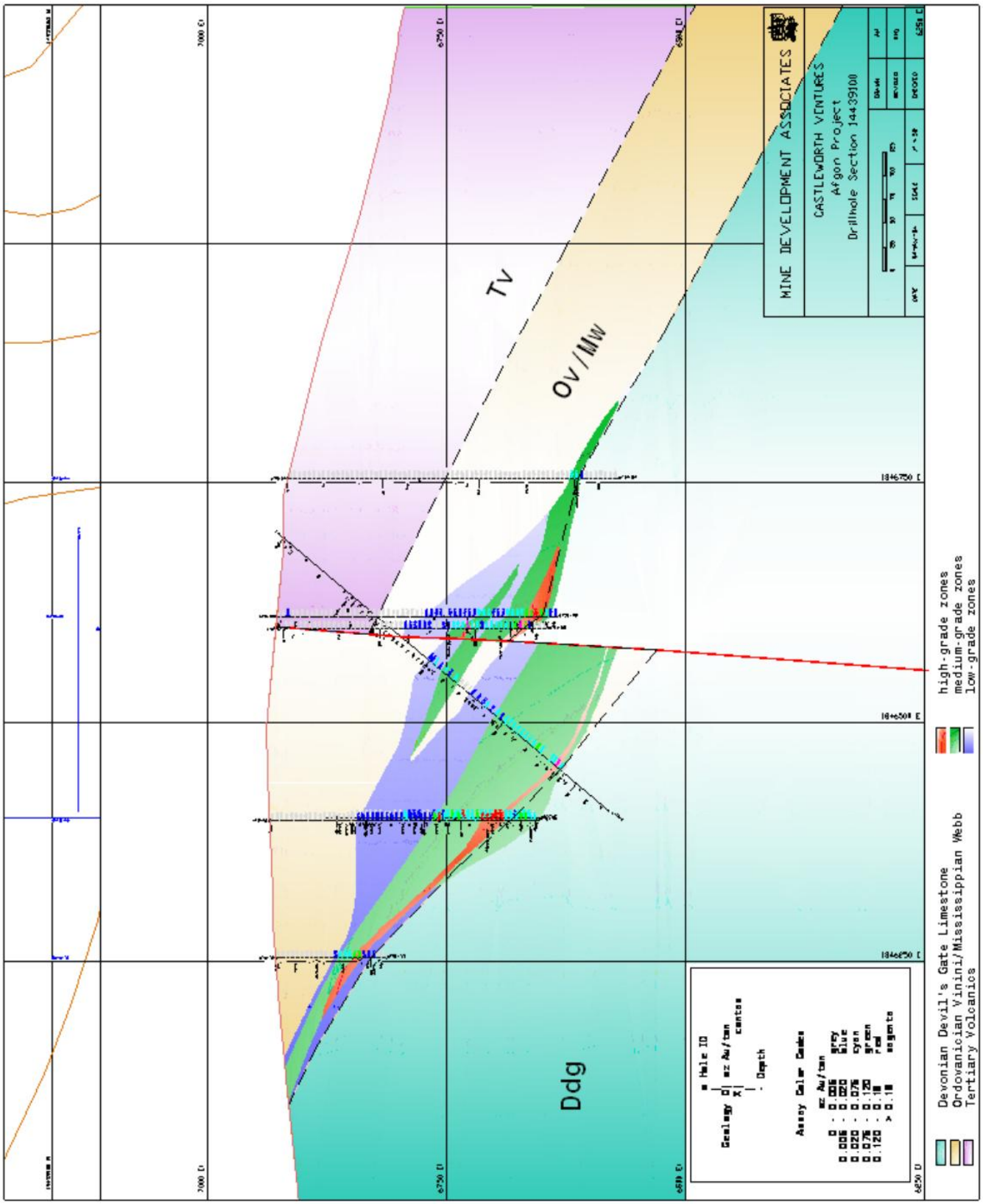
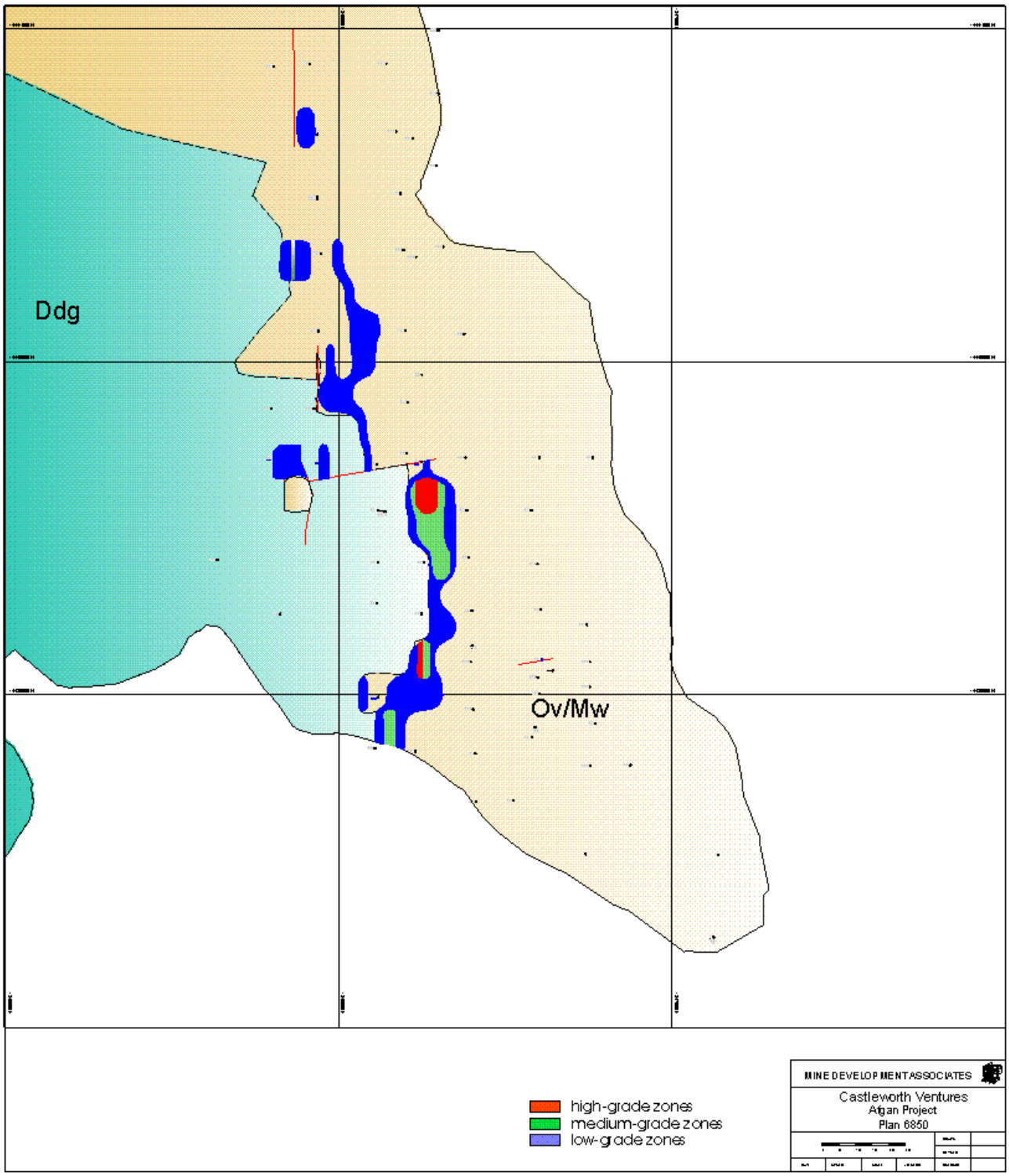


Figure 9.2 Afgan Au Level Plan Map
(elevation 6850 ft)



10.0 EXPLORATION BY ISSUER

Castleworth has not completed any substantive exploration work on the Afgan project to date. A summary of the work completed by previous operators is presented in Section 6.1.

11.0 DRILLING

11.1 Summary

Table 11.1 summarizes the various drilling programs undertaken on the Afgan project. The digital database created by MDA contains 134 holes, for a total of 44,760 ft of drilling. Figure 11.1 shows the locations of the drill holes. The only holes on the Afgan project known to MDA but not included in the database are 15 shallow air-track holes drilled by the LFC Trust in 1988 for assessment purposes. None of these 15 holes reportedly penetrated bedrock.

Down-hole survey data were provided to MDA only for one Cominco hole (CAK-16). For all of the other drill holes, constant dip angles are assumed in the database. This assumption is likely to introduce increasing error with increasing depth of the drill holes, although the shallow nature of most of the holes would minimize these possible errors.

Drill hole collars for 29 of the Phelps Dodge, 12 Great Basin, and one Hecla hole were identified on the ground and surveyed using a hand-held GPS unit with no differential correction by Tom Gesick, a representative of the LFC Trust. The GPS northings and eastings provided to MDA by Gesick were entered into the database for these holes. A table of collar locations provided to MDA, including elevations, for the 16 Cominco drill holes was used in the MDA database, although MDA has no knowledge of how these locations were determined. Locations for all of the remaining holes were digitized by MDA from plan maps at various scales that accompanied internal reports of the operators. Drill hole locations on these maps often conflicted with one another, which creates some uncertainty as to the locations of these holes in the database.

After entering the coordinates of the drill holes into the database, all of the holes were ‘pressed’ onto a 3-D topographic surface of the project area in order to assign collar elevations to the database.

The drill hole locations are entered into the database in UTM Zone 11, NAD 27 coordinates expressed in U.S. Feet.

Table 11.1 Afgan Drilling Summary

Company	Year	Rotary		RC		Air-track		Core		Total Drill Holes	Total Footage
		No.	Feet	No.	Feet	No.	Feet	No.	Feet		
Amselco	1981	24	6,860							24	6,860
Hecla	1986			8	2,850					8	2,850
LFC Trust	1989-90[1]				0	9	994			9	994
Santa Fe	1988-89			7	2,590					7	2,590
Phelps Dodge	1990-91			63	15,640					63	15,640
Great Basin	1993	[2][2]	604	6+[1][2]	4,107			9	4,370	15	9,081
Cominco	1996			8	6,745					8	6,745
TOTAL		24	7,464	92	31,932	9	994	9	4,370	134	44,760

3 15 air-track holes drilled in 1988 not included in database or Table 11.1.
4 Holes in [brackets] drilled as pre-collars to core holes.

11.2 Drill Data

The drill hole database for the Afgan project is summarized in Table 11.2.

Table 11.2 Afgan Drill Hole Database - Summary

Item	Value
Number of Drill Holes	134
Drill Hole Footage	44,760
Average Length (ft)	334.0
Footage Sampled & Assayed	39,320
Footage With No Assays	5,440
Drill Hole Assays	7,409
Down Hole Surveys	1

Note: Fifteen drill holes not included in database; see text.

Item	Hole ID	Northing (ft)	Easting (ft)	Elevation (ft)	Depth (ft)
Minimum Northing of Collar	CAK-14	1846371	14433091	6436	860
Maximum Northing of Collar	RM-9	1846125	14441643	6888	400
Minimum Easting of Collar	AFN90-3	1845209	14435976	6611	115
Maximum Easting of Collar	RM-11	1848698	14440746	6620	400
Minimum Elevation of Collar	CAK-14	1846370	14433090	6436	860
Maximum Elevation of Collar	AF90-14	1846250	14439554	7000	300
Minimum Depth of Hole	322-D-3	1845698	14441521	6903	25
Maximum Depth of Hole	CAK-16	1846604	14438914	6920	1,560

Summary statistics for the gold assay data are summarized in Table 11.3 by drill type and Table 11.4 by company.

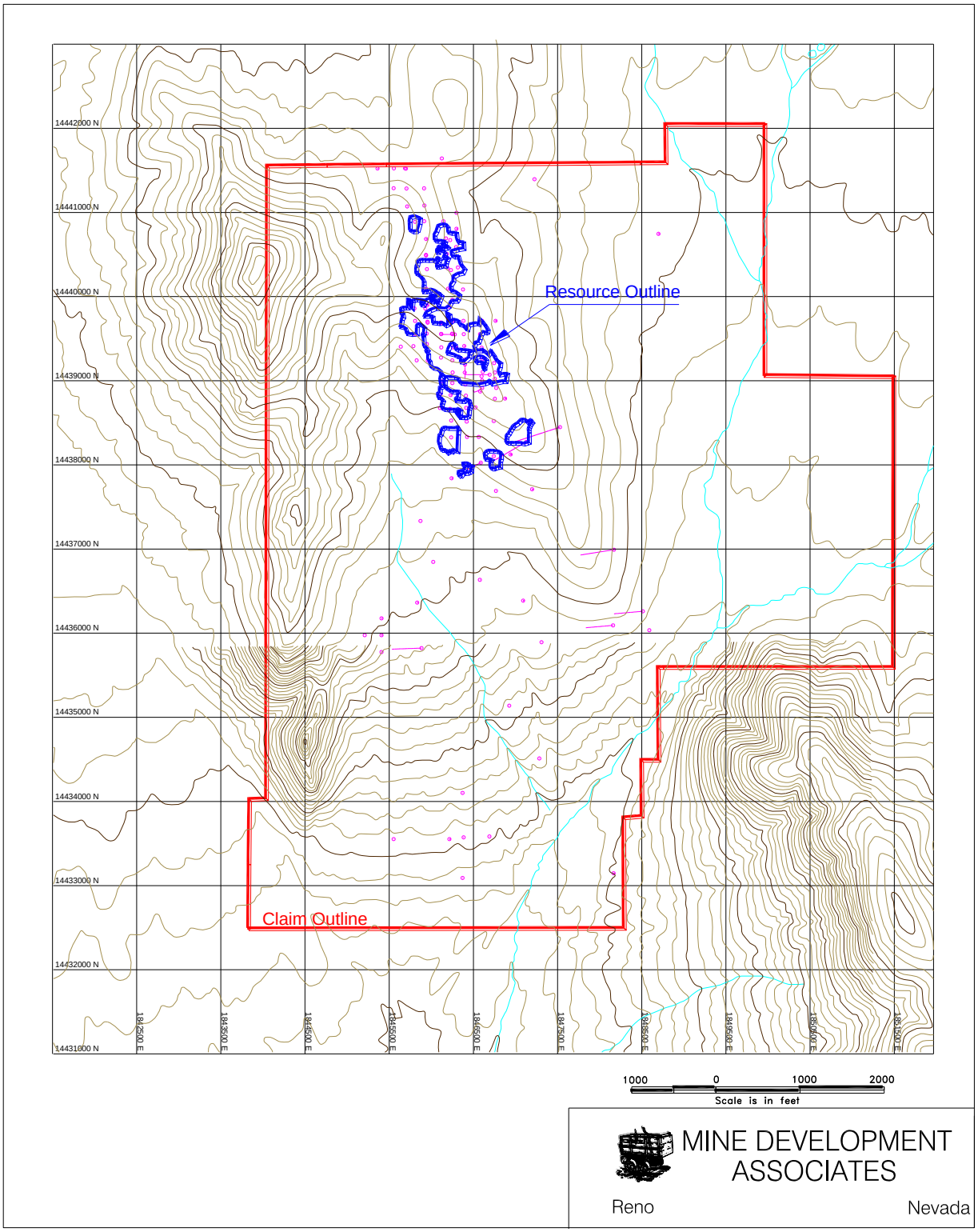
Table 11.3 Afgan Drill Hole Database – Sample Statistics by Drill Type

Drill Type	Samples		Au Grade (oz Au/ton)				
	Number	Avg. Length (ft)	Mean	Min	Max	Std. Dev.	CV
Air-track	198	5.0	0.008	0	0.114	0.020	2.491
Rotary	1,366	5.0	0.002	0	0.110	0.005	3.072
RC	5,619	5.4	0.003	0	0.331	0.015	4.880
Core	226	5.4	0.017	0	35	0.041	2.340
Total	*7,409*	*5.3*	*0.003*	*0*	*0.331*	*0.016*	*4.591*

Table 11.4 Afgan Drill Hole Database – Sample Statistics by Company

Company	Samples		Au Grade (oz Au/ton)				
	Number	Avg. Length (ft)	Mean	Min	Max	Std. Dev.	CV
Amselco	1,366	5.0	0.002	0	0.110	0.005	3.072
Hecla	508	5.0	0	0	0.002	0	16.786
LFC Trust	198	5.0	0.008	0	0.114	0.020	2.491
Santa Fe	394	5.0	0	0	0.004	0	2.927
Phelps Dodge	3,123	5.0	0.005	0	0.331	0.020	3.689
Great Basin	638	8.3	0.006	0	0.318	0.026	3.982
Cominco	1,182	5.1	0	0	0.013	0.001	2.856
	7,409	*5.3*	*0.003*	*0*	*0.331*	*0.016*	*4.591*

Figure 11.1 Drill Hole Location Map – Afgan



11.3 Conventional Rotary Drilling and Logging

Amselco drilled the first known holes on the Afgan project in July and August, 1981. These consisted of 24 vertical holes ranging in depth from 25 to 485 ft, for a total of 6,860 ft. According to the report by Hurban (1999), the holes were all conventional rotary holes; this is supported by the geologic log sheets that are printed with the title "Rotary Percussion Drill Log." Geologic logs with hand-written gold assays shown on the logs for each of the drill holes were provided to MDA.

The only other conventional rotary drilling on the property known to MDA consisted of a total of 604 ft of pre-collar drilling for two core holes (ANC 93-14 and ANC 93-15) drilled by Great Basin in November and December, 1993. There are neither geologic logs nor gold assays of the rotary portion of these two holes.

11.4 Air-track Drilling and Logging

Twenty-four air-track holes were drilled on the Afgan project by the LFC Trust for assessment purposes. According to Hall (1988), the LFC Trust drilled 15 shallow air-track holes to depths of between 10 and 30 ft for assessment purposes in 1988. These holes were designed to test soil geochemical anomalies outlined by Amselco in 1981. None of the holes reportedly penetrated bedrock and no assay results are known to MDA. Catear Exploration Drilling was the drilling contractor for these holes. These 15 holes are not included in the MDA database.

Assessment drilling by the LFC Trust in August 1989 consisted of five air-track holes (AF89-1 through 89-5 in the MDA database). Catear Exploration Drilling of Winnemucca, Nevada ("Catear") used a Gardner Denver GD3100 rig for this program. The holes ranged in depth from 90 to 136 ft, for a total of 601 ft of drilling. Perfunctory geologic logs and a table showing what were apparently the original assays for these holes were provided to MDA.

In August 1990, four air-track holes were drilled by the LFC Trust for assessment purposes (AFN 90-1 through AFN 90-4). Catear was contracted for the program and used a Gardner Denver GD 3600 conventional air-track drill rig. The four holes totaled 393 ft, ranging from 63 to 115 ft in depth. Brief geologic logs and assays for the four holes were provided to MDA.

11.5 Reverse Circulation Drilling and Logging

Hecla, Santa Fe, Phelps Dodge, Great Basin, and Cominco drilled 92 RC holes on the Afgan property between 1986 and 1996. The geologic logs of these holes supplied to MDA were prepared by geologists and representatives of the respective companies.

In 1986, Hecla drilled eight vertical RC holes on the property, totaling 2,850 ft. The depth of the holes ranged from 105 to 565 ft. The geologic logs indicate that the drilling company was Lang; no details about the drill rig were provided to MDA.

Santa Fe Mining drilled seven RC holes (RS-1, RS-4, and RM 9-13) on the property during 1988 and 1989 for a total of 2,590 ft, as well as an additional eight holes drilled in the area but outside the current

claim boundaries during the same timeframe. All seven holes drilled on the property were vertical and ranged from 230 to 500 ft in depth. Geologic logs and assay reports for the holes were provided to MDA, although there was no information on the nature of the drilling equipment. RM-10 encountered artesian water flowing at an estimated 250-300 gallons per minute.

Phelps Dodge undertook the most extensive drill program on the property, drilling 63 RC drill holes (AF90-6 through AF91-68) in December 1990 through February 1991 using a track-mounted rig from Eklund Drilling Company. All of the holes were vertical except AF91-43. The holes were logged by Phelps Dodge geologic staff, and the logs and assay sheets were provided to MDA. Phelps Dodge drilled a total of 15,640 ft, with the depths of individual holes ranging from 45 to 505 ft.

In 1993 Great Basin drilled seven angle RC holes on the property, for a total of 4,107 ft, with one of the holes drilled as a pre-collar for a core hole. Depths ranged from 505 to 705 ft in the six complete RC holes (ANR-3 through 8). ANR-9 was drilled for the first 605 ft using RC, with coring continuing to a depth of 891.6 ft. All of the RC drilling was done by Lang, but no information was provided to MDA on the type of equipment used.

The most recent drilling was undertaken by Cominco in 1996. Cominco drilled 16 vertical RC holes, of which eight were collared within the Afgan property (CAK1-3, 12-16), while the rest were located on the adjacent Kobeh claims to the south. A total of 6,745 ft were drilled on the Afgan claims. Fifteen of Cominco's 16 holes ranged in depth from 505 to 860 ft, with the remaining hole being the deepest hole drilled at Afgan at 1,560 ft. Copies of geologic logs by Cominco staff and assay certificates were provided to MDA, along with a drill hole location map and two cross sections. The first twelve holes were drilled in April and May using an Eklund TH-1000 drill. Three more holes were drilled by Eklund in July. The final deep hole was drilled in December using a Drilling Services-Boyle Brothers drill of unspecified type. A down-hole survey of this hole was completed by Scientific Drilling International.

11.6 Core Drilling and Logging

Great Basin drilled the only known core holes on the Afgan project. In June 1993, two core holes (ANC-1 and 2) were drilled by McFeron & Marcus using H-size core to depths of 444.7 and 406.3 ft. Assays were obtained on only portions of each hole. Partial core recovery information was gathered for one of the holes.

In 1993 Great Basin extended RC hole ANR-9 from 607 to 891.6 ft using HC core; the drilling company and nature of the equipment are not known to MDA. Assays for part of the cored section of the hole, but no core recovery data, were provided to MDA. In November and December of 1993, Great Basin drilled an additional six core holes (ANC93-10 through 93-15), of which the last two were pre-collared with a rotary rig and cased to depths of 300 and 304 ft. These six holes ranged in depth from 437.2 to 821.3 ft. Portions of all six holes were assayed, and core recovery information was recorded for most of the cored lengths. McFeron & Marcus was the drilling contractor for these holes, but no details on the equipment were provided to MDA.

Great Basin's core drilling amounted to nine holes for a total of 4,370 ft. Detailed geologic logs by Great Basin staff were provided to MDA.

11.7 Results of Drilling Outside of the Extents of the MDA Resource

A number of holes have been drilled outside the limits of the Afgan resource modeled by MDA but within the Afgan project. No sample in any of these holes has an assay value greater than or equal to 0.010 oz Au/ton.

12.0 SAMPLING METHOD AND APPROACH

12.1 Summary

The Afgan sample database consists entirely of drill samples, including samples from Great Basin's nine core or partially cored holes, with the remainder being samples collected as drill cuttings from RC, air-track, and conventional rotary drilling. The drill logs provided to MDA were inconsistent in their recording of drilling and sampling conditions.

The presence of groundwater was noted in seven of the Phelps Dodge holes. Santa Fe encountered artesian water flowing at an estimated 250-300 gallons per minute in hole RM-10. Some logs for other holes report wet or dry conditions, but generally the logs have no information on sampling conditions.

12.2 Conventional Rotary Sampling

No samples were taken from the rotary pre-collar footage of the two Great Basin core holes. Casing was set through the rotary pre-collars to prepare each hole for the core drilling.

Drill logs indicate that Amselco's 24 rotary holes were sampled and assayed for gold on 5-ft intervals for the entire length of each hole. No assay reports were in the material provided to MDA, but gold assays were hand-recorded on the geologic logs.

In hole 322-D-3a, the geologic log records poor sample recoveries were encountered while drilling unmineralized Tertiary tuff. Three 5- to 20-ft intervals in tuff at the bottom of the hole produced no chips. Poor circulation was reported for a 5-ft interval in hole 322-D-15. Two additional holes had two to four 5-ft intervals where no samples were recovered. MDA has no further information on the sample quality or sampling methods used in this program.

12.3 Air-track Sampling

A brief report by Hall (1990) indicates that a Jones splitter was used to split samples for four LFC Trust air-track holes drilled in 1990 (AFN90-1 through 90-4). The samples were taken on 5-ft intervals for the entire length of each of these holes. Assay reports from the lab were provided to MDA, but no further information on this sampling was made available to MDA.

Samples were also taken on 5-ft intervals for the entire length of the five air-track holes drilled for 1989 assessment requirements (AF89-1 through 5; Hall, 1989); no details on sampling procedures were provided to MDA. A 25-ft interval of poor recovery was noted within an unmineralized portion of AF89-1. One 5-ft interval had no sample in AF89-2.

The original assay certificates for the LFC Trust holes were not provided to MDA, although a table in the materials provided seems to show the values of the original assaying. The prepared pulps were re-assayed a year later by Bondar Clegg for Phelps Dodge, and copies of these assay reports were provided to MDA.

12.4 Reverse Circulation Sampling

Seven of Hecla's eight RC holes were sampled and assayed on 5-ft intervals according to drill logs and assay certificates provided to MDA. The entire lengths of holes AF-1 through 4 were sampled. Sampling of holes AF-5, 7, and 8 started at bedrock (50, 75, and 75 ft, respectively) and continued through to bottom of each hole. Other than one mention of caving in a hole and a notation that one 5-ft interval had poor recovery, there is no indication of any problems with drilling or sample recovery on the geologic logs. MDA has no further information on sample quality or sampling methods used in Hecla's program. The drill logs for Hecla's hole AF-6 show no assays, perhaps because the hole entered Devonian Devils Gate below alluvium.

Three of Santa Fe's 15 RC holes on and adjacent to the Afgan project were not sampled or assayed (RM-6, 14, and 16), and two more were not assayed for gold (RM-8 and 10). The first four holes (RS-1 through 4) were sampled on 5-ft intervals but only for selected portions of the hole. The remaining holes (RM 5, 7, 9, 11-13) were sampled and assayed for gold on 5-ft intervals for the entire length of the holes. With one exception, the geologist's logs do not indicate any sampling or drilling problems, but no other information on sample quality or technique was available to MDA. The log of hole RM-5 mentioned that casing was blowing out and that there was caving in the hole.

Phelps Dodge's drilling program apparently began with re-assaying the air-track samples drilled by the LFC Trust in 1989 (AF89-1 through 5). Phelps Dodge then proceeded to drill 63 RC holes on the property with samples taken and assayed at 5-ft intervals for the entire length of the holes. Except for assay reports, MDA has no further information on sample quality or sampling methods used in Phelps Dodge's program.

Great Basin drilled seven RC holes, including ANR-9 that was continued with core drilling. For the RC drilling, sampling and assaying were done on 10-ft intervals for the entire length of the holes. Except for a 30-ft interval of no return deep in ANR-7, which is part of a weakly mineralized zone, the continuity of assays and lack of negative comments in the geologic logs suggest that there were no major sampling problems. MDA has no further information on sample quality or sampling methods used in Great Basin's program.

Samples were collected every 10 ft while in alluvium for the first two (CAK-1 and 2) of Cominco's eight RC holes drilled on the Afgan project, changing to 5-ft intervals once bedrock was reached. The remaining holes were sampled similarly except that no samples of alluvium were collected. All holes were sampled to their total depth. Suda (1997) remarked that the final deep hole (CAK-16) was stopped earlier than planned because of poor drill rates and that the drilling was hampered by poor weather and faulty drill equipment, but samples were recovered for the full length of this 1,560-ft hole. MDA has no further information on sample quality, recovery or sampling methods used in Cominco's program.

12.5 Conventional Rotary and Reverse Circulation Sample Contamination

Due to the nature of rotary and RC drilling, the possibility of contamination of drill cuttings from intervals higher in the hole is a concern, especially when groundwater is encountered or drilling fluids were added. The geologic logs and other data provided to MDA often lack the detailed documentation

needed to properly evaluate the possibility of contamination. Possible to severe contamination was noted on the geologic logs for 59 sample intervals, but only one assayed 0.005 oz Au/ton or higher. This sample, which assayed 0.068 oz Au/ton, was the only sample with identified contamination that was included in MDA's mineral domains. The sample is consistent with assays from surrounding uncontaminated samples from both AF89-3 and nearby holes and therefore was accepted in the database.

The shallow nature of the drilling, combined with the scarcity of notations on the drill logs of significant water flows, suggests that contamination was not a serious issue at Afgan. The drill hole assays were inspected on cross sections nonetheless in an effort to discern if a systematic cyclicity over 20-ft intervals (typical drill rod length) could be detected. An analysis of this type may detect probable contamination problems, but cannot definitively determine that no contamination was occurring. This analysis failed to find any evidence of a systematic contamination problem within the mineralized zones.

12.6 Core Sampling

Sample lengths in Great Basin's nine core holes were irregular, but often in the range of four to six ft. Sampling tended to start at the first appearance of significant amounts of breccia, continuing until just beyond the contact with Devils Gate Limestone; half or more of the length of each hole was not sampled. Except for a 19-ft interval of no recovery at a depth of about 600 ft in hole ANC 93-14, the geologic logs do not indicate any significant problems with core recovery. The missing interval is bounded on both sides by unmineralized samples. The exact split of core sent for assay is not known by MDA, nor are any more specifics about the logging and sampling procedures employed.

13.0 SAMPLE PREPARATION, ANALYSIS, AND SECURITY

13.1 Summary

MDA knows very little of the sampling methods, sample handling, sample security and details of assay techniques employed on any of the programs undertaken at Afgan. The following sections summarize the extent of MDA's knowledge.

13.2 Analytical Procedures

The information supplied to MDA regarding Amselco's drilling program did not indicate which assay lab they used or any information on the assaying technique. No copies of assay certificates were included; the gold assays entered into the MDA database were recorded in oz Au/ton by hand on the geologic logs. It appears that the lower detection limit was 0.001 oz Au/ton; all values recorded on the logs as less than 0.001 oz Au/ton were entered into the MDA database as 0.

For seven of their eight holes at Afgan, Hecla used Rocky Mountain Geochemical of Nevada to perform gold and arsenic analyses. Samples from the remaining hole apparently were not assayed. Gold values were determined by atomic absorption ("AA") after a one-hour roast and aqua regia digestion. Arsenic values were determined colorimetrically. The lower detection limits for gold and arsenic appear to have been 0.02 ppm and 5 ppm; values shown as less than 0.02 ppm Au or 5 ppm As were entered into the MDA database as 0. Copies of original assay certificates were provided to MDA and used to create the database.

Lyle Campbell used Geochemical Services Inc. ("GSI") to assay samples from the nine air-track holes drilled for assessment purposes in 1989 and 1990. Multi-element inductively coupled plasma ("ICP") analyses were obtained from 5g samples in addition to gold analyses of an unknown type. Copies of the original assay certificates were supplied to MDA for the four holes drilled in 1990 (AF90-1 through 90-4). All of the gold assays by GSI were below the detection limit, which was not specified but was likely 0.005 ppm. There is a table indicating that GSI also assayed the five holes drilled in 1989 (AF89-1 through 89-5). There are also Bondar Clegg assay reports in the name of Phelps Dodge for all five of the 1989 holes; MDA believes that these are check assays. Bondar Clegg assayed the prepared pulps for gold by fire assay; the lower detection limit was 0.002 oz Au/ton, with values for samples with less than 0.002 oz Au/ton shown in the database as 0. Bondar Clegg re-assayed selected samples from four of the five holes for gold using cyanide leach. Copies of the original assay certificates were supplied to MDA, but no details on the methodology were included on those certificates. These cyanide analyses are also included in the database.

Santa Fe used American Assay Laboratories to assay holes RS-1 and RS-4. Copies of the original assay reports were provided to MDA and used in the MDA database. The assay report copies did not include the cover sheet with information on the assay technique used, but it appears from the data that the lower detection limit was 0.005 ppm Au. Analyses were also provided for silver, arsenic, antimony, and mercury, although only the gold values were entered into the database.

Samples from hole RM-9 through RM-13 were analyzed by Chemex Laboratories Inc ("Chemex"). Gold was assayed by fire assay with an AA finish, with a lower detection limit of 0.005 ppm. Although Chemex also assayed for silver, arsenic, mercury, and antimony, those results are not included in the database. Copies of the assay certificates were supplied to MDA.

Bondar Clegg was the assay laboratory used by Phelps Dodge for their 63-hole RC drilling program. Copies of the original assay certificates were supplied to MDA and assay results were also hand-written on the geologic logs; database entries for gold were taken from the assay certificates. Gold was analyzed by 30g fire assay with an AA finish. The lower detection limit was 0.005 ppm; values for samples with less than 0.005 ppm Au are shown in the database as 0. The assay certificates show that the few samples with assays greater than 1 ppm Au were re-assayed, with results reported in oz Au/ton, suggesting that the re-assays were by fire assay with a gravimetric finish. Sample weights were also provided. Multi-element geochemical analyses were performed, but the results are not included in the MDA database. Selected samples from four of the holes (AF90-22, AF91-33, AF91-48, AF91-50) were also analyzed for gold by Bondar Clegg by cyanide leaching. Copies of the original assay certificates of these cyanide analyses were supplied to MDA, but no details on the methodology or lower detection limit were included on the certificates.

Barringer Laboratories Inc. ("Barringer") assayed samples from all 15 of Great Basin's core and RC holes by fire assay with an AA finish (Koehler, 1994). Cone Geochemical also assayed samples from hole ANR-9. Copies of original Barringer assay reports were provided to MDA for holes ANC 93-10 through ANC 93-15. Geologic logs of all of Great Basin's holes include handwritten assay results for gold and other metals, and these values were entered into the database for the holes lacking original assay certificates. Inspection of the assays suggests that the lower detection limit of the Barringer analyses was 0.002 ppm Au.

Cominco used Chemex to assay samples from their eight drill holes at Afgan. Gold was assayed by fire assay with an AA finish on 10g samples, with a lower detection limit of 5 ppb. Chemex also assayed for silver, arsenic, mercury and antimony, but those results were not entered into the database. Copies of the original assay certificates were provided to MDA and those values were used for the database.

14.0 DATA VERIFICATION

MDA has relied on sampling and analytical data provided by the LFC Trust for purposes of this report. No drill sample material was available for analysis by MDA. MDA has attempted to verify the data to the extent that is possible. For example, assay results from twin hole pairs and available check assay data have been examined.

MDA constructed the database using information from the original exploration companies provided by the LFC Trust. Entries for all numerical data, including gold assays, were checked as they were being entered into the database.

The following discrepancies in the drill hole azimuths provided to MDA were noted for four of the Great Basin RC holes. A copy of the weekly drill report included in the report by Koehler (1994) gives azimuths for ANR-3, ANR-4 and ANR-5 that differ by 10-12 degrees from the azimuths shown on the geologic logs. The geologic log for hole ANR-8, does not show an azimuth; the table of all Afgan drill holes presented in Hurban (1999) shows the azimuth as 240º, while the weekly drill report in Koehler (1994) shows the azimuth as 253º. For the two remaining holes shown on the same table in the weekly drill report, the azimuths agree with those shown on the geologic logs. MDA chose to use the azimuths shown on the geologic logs for the database, while the azimuth shown in the Hurban (1999) table was used for ANR-8.

Suda (1997) described Cominco's drill program and reported that hole CAK-1 was a deepened offset of hole RS-4 that was drilled by Santa Fe (37 ft distant). Suda's drill hole location map supports this statement. However, a drill hole collar map by Hurban (1999) that shows much of the prior drilling on the Afgan project shows these two holes as being over 700 ft apart. It seems likely that Hurban incorrectly plotted Santa Fe holes RS-1, RS-4, and RM-13 relative to the Cominco holes.

14.1 QA/QC, Check Samples, Check Assays

Systematic, consistently implemented data checks and validation procedures appear to be lacking in the various exploration programs at Afgan. While this may partially be a reflection of the fact that Castleworth was not able to obtain all of the previous operators' data, many QA/QC procedures were not commonly followed or documented at the time of the Afgan exploration programs.

Internal check assays were performed by the primary assay labs on 198 samples from 50 of the holes drilled by Phelps Dodge, Cominco, and Santa Fe (Figure 14.1). These values were entered by MDA into the database, checked, and averaged with the original assays. The average values were then used by MDA in the modeling of the Afgan deposit. A second check assay was run on one sample from each of three of Phelps Dodge's holes. The second check agreed with the two previous assays for two of those samples, and all three values were averaged in these cases. The second check assay on the third sample was much higher than the original and first check assays, however, and MDA chose to exclude the spurious check assay from the average value.

Phelps Dodge apparently re-assayed 120 pulps from the entire length of the five LFC Trust holes drilled in 1989 (Figure 14.2). These were not included in the averages used by MDA.

The internal laboratory check assays compare very well with the original assays. These checks test the ability of the primary lab to reproduce its assay results on the same pulps, however, so these checks only test analytical precision. Any problems with sub-sampling, cross-contamination of samples, accuracy, etc. would not be detected by these check assays.

The Phelps Dodge checks of the LFC Trust pulps compare reasonably well, although there is more scatter than usually observed for repeat analyses on pulps. In addition, the scatter is biased towards higher LFC Trust values throughout the range of values.

MDA lacks check assays for any of the Amselco, Hecla, and Great Basin drill holes.

Figure 14.1 Internal Laboratory Check Assays

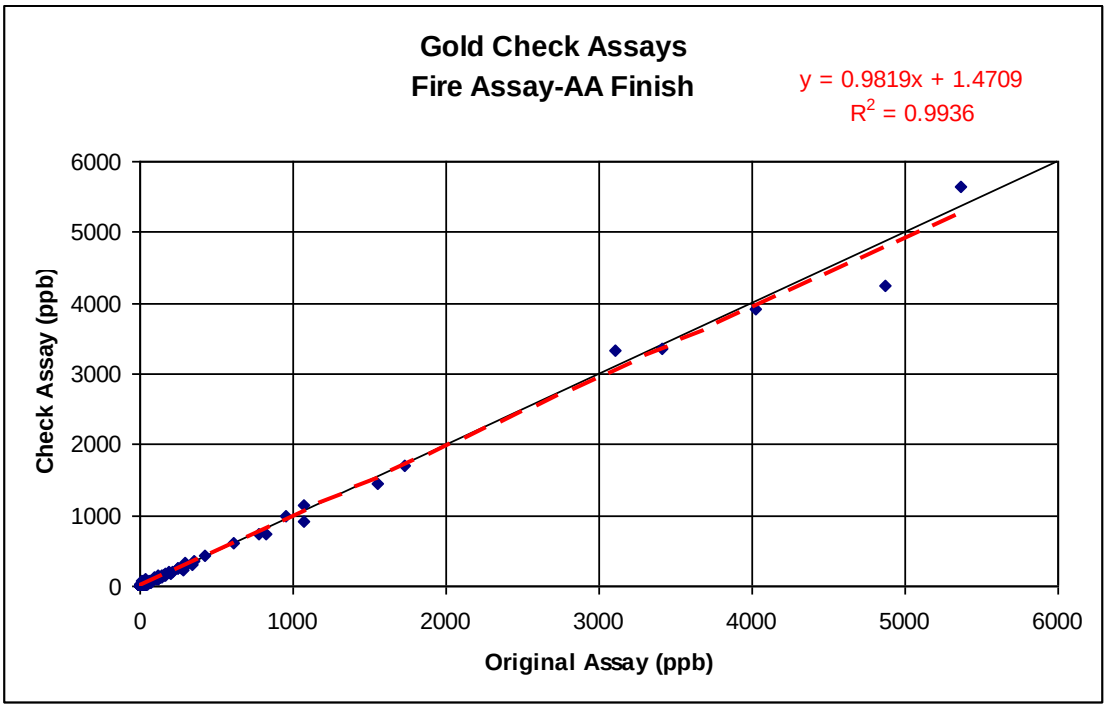
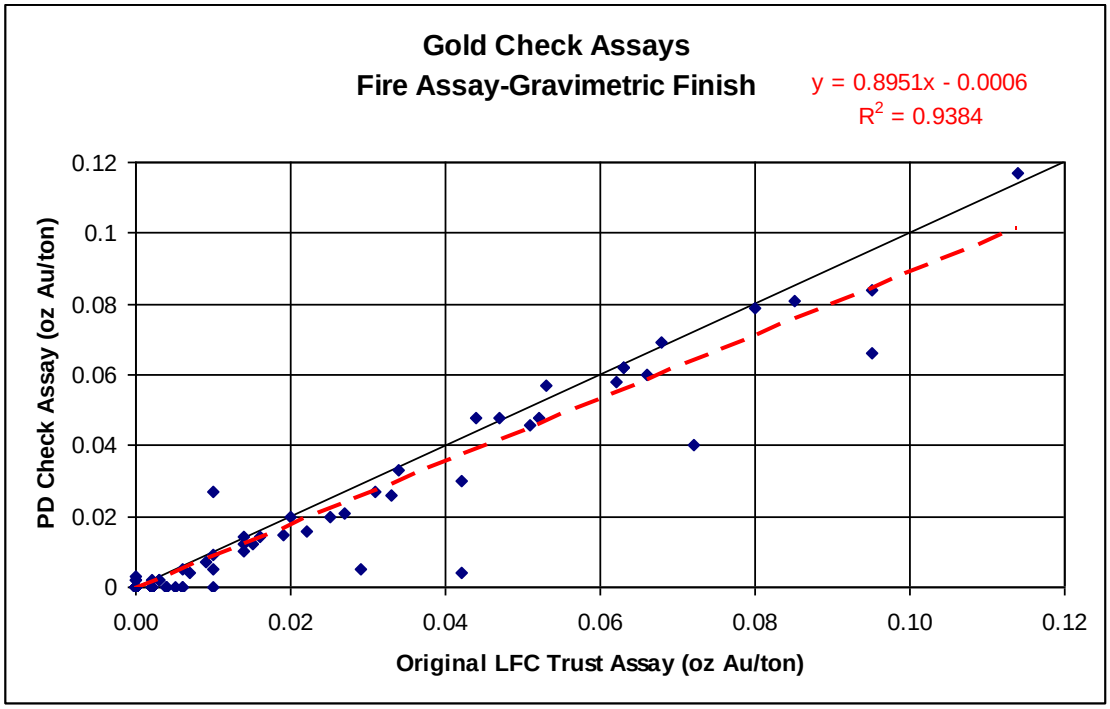


Figure 14.2 LFC Trust Original Assays vs Phelps Dodge Re-Assays of Pulps



14.2 Twin Hole Comparisons

Hole 322-d-3, drilled to a depth of 25 ft, was twinned by 322-d-3a, while 322-d-9, drilled to 45 ft, was twinned by 322-d-9a. The later holes of the twin pairs were drilled to significantly deeper depths. No significant mineralization was intercepted in the twinned intervals of either set of these conventional rotary holes.

Phelps Dodge twinned each of the five 1989 LFC Trust air-track holes with RC holes, which were drilled to deeper depths than the original holes. Comparisons of four out of the five twin sets are shown in Figure 14.4; the fifth twinned interval did not intersect significant gold mineralization in either hole. The locations of the mineralized intervals in the RC and air-track twin hole pairs compare well. The magnitudes of the mineralized intervals show reasonable variations in three of the four pairs. AF89-3 reported higher grades than AF90-8, but there is insufficient data to conclude that there were any systematic biases.

Koehler (1993) reports that Great Basin drilled two angled core holes (ANC-1 and 2) to confirm the gold assays found by Phelps Dodge in their vertical hole AF91-50. Neither ANC-1 nor ANC-2 actually twins AF91-50, although ANC-2 is angled to test the mineralized zone directly beneath the collar of AF91-50 and therefore samples the same general mineralized area. MDA inspected these holes visually on cross section and found a strong correspondence in both the location and tenor of the mineralized intercepts.

Cominco's hole CAK-1 was reported to offset Santa Fe's hole RS-4 by 37 ft (Suda (1997). Neither hole intercepted significant gold mineralization.

14.3 Sample Recovery

The database includes a minor amount of drill sample recovery information. Sample weights of 550 samples within mineral domains defined by MDA are available, but the lack of information on the splitting of sample at the drill rig renders these data almost useless. Samples with very low reported weights, which likely indicate poor sample recovery during the drilling process, may be an exception to this, however. Figure 14.3 suggests that samples weighing less than 8 lbs may indicate poor recovery at the drill rig.

Statistics of all samples within the mineral domains that have reported weights and samples within the mineral domains weighing less than seven lbs are shown in Table 14.1. The statistical profiles of both data sets are comparable, suggesting that the lower weight samples do not introduce any grade bias. Due to the lack of further information, the lower weight samples were not excluded from the database.

Figure 14.3 Weight of Samples Within MDA Mineral Domains

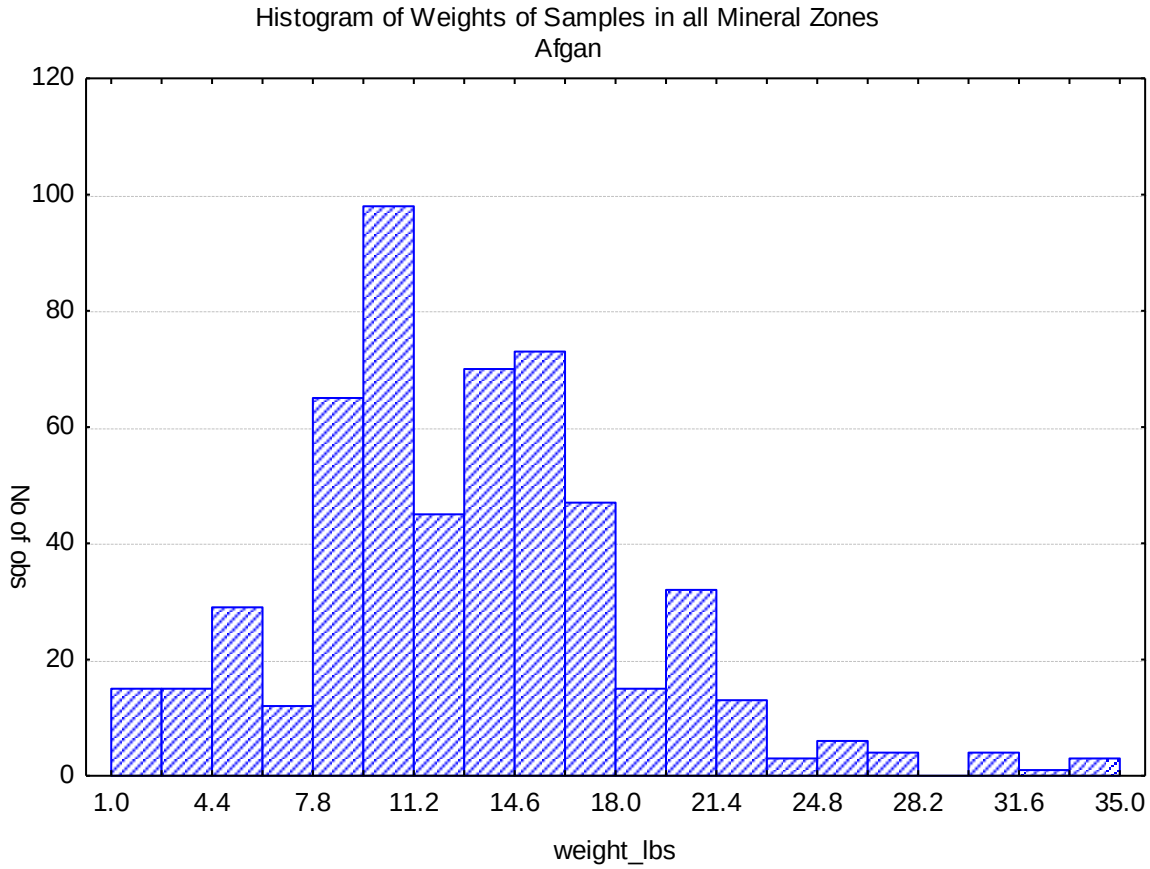


Table 14.1 Statistics of Samples with Weight Data and Lying within MDA Mineral Domains

Samples Weights in all Modeled Zones

	Valid N	Median	Mean	Std. Dev.	CV	Min.	Max.	Units
Hole ID	48							
Depth From	550	140	137			0	360	feet
Depth To	550	145	142			5	365	feet
Length	550	5.0	5.0			5.0	5.0	feet
oz Au/ton	550	0.015	0.027	0.040	1.472	0.001	0.331	oz Au/ton
Domain	550	100				100	400	
Weight	550	12	13	6	0.4	1	35	lbs

Sample Weights <8lbs within all Modeled Zones

	Valid N	Median	Mean	Std. Dev.	CV	Min.	Max.	Units
Hole ID	23							
Depth From	71	175	158			0	330	feet
Depth To	71	180	163			5	335	feet
Length	71	5.0	5.0			5.0	5.0	feet
oz Au/ton	71	0.015	0.029	0.036	1.241	0.003	0.161	oz Au/ton
Domain	71	100				100	400	
Weight	71	5	5	2	0.4	1	7	lbs

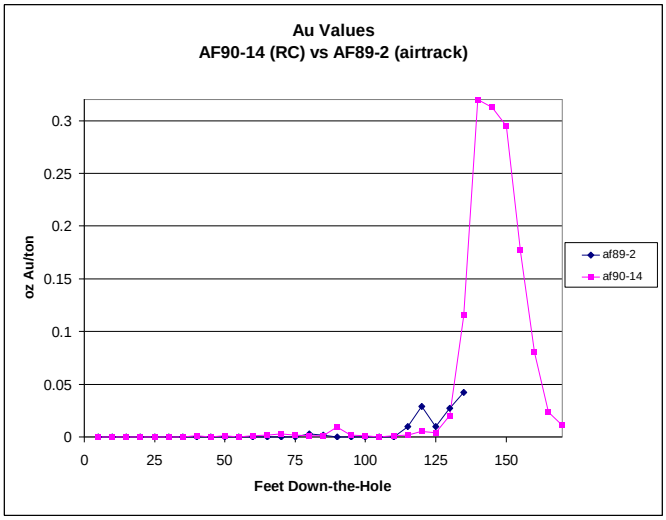
Poor recovery was noted on drill logs for 18 samples lying within mineral domains modeled by MDA. Six of these samples also reported sample weights, which varied from two to five lbs. In light of the lack of further data, in combination with the fact that drill intervals characterized by poor recoveries can provide representative samples, these samples were allowed to remain in the database.

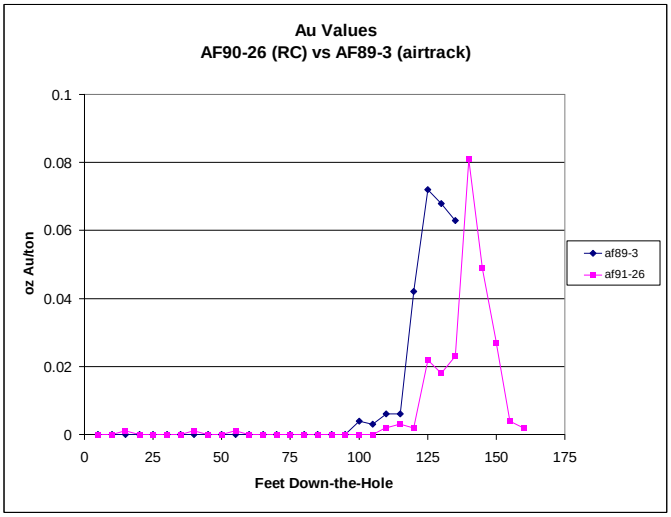
14.4 MDA Surface Samples

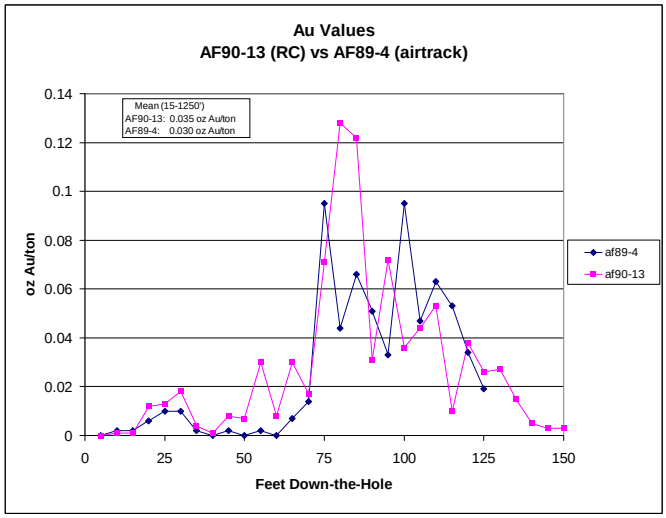
MDA collected three rock chip samples from the Afgan project during its site visit and submitted the samples to Chemex for gold analyses. The samples were assayed by one assay ton fire assay with an AA finish.

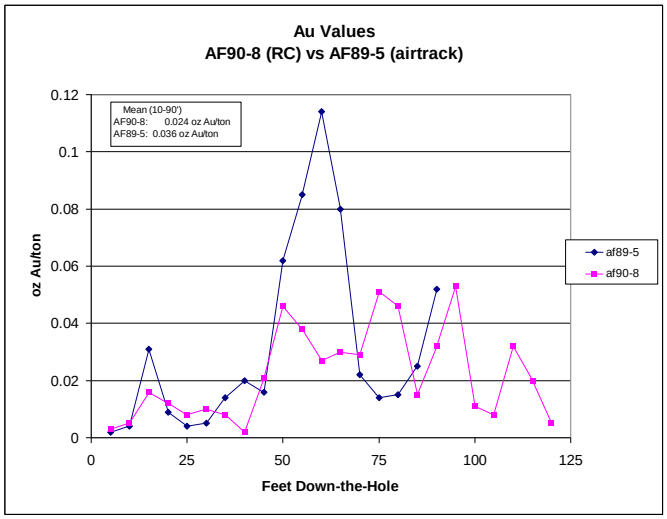
Two samples were taken from jasperoidal replacements of thinly bedded, fine grained Webb sediments close to the Devils Gate Limestone – Webb contact. These samples returned 0.560 and 0.191 ppm Au. The third sample, which assayed 0.023 ppm Au, was collected from loose material scraped up by a bull dozer from altered and highly limonitic Webb sediments near an unidentified drill site. These samples confirm the presence of anomalous gold mineralization within hydrothermally altered Webb sediments in surface outcrops.

Figure 14.4 Twin Hole Comparisons
AF89-2/AF90-14, AF89-3/AF90-26, AF89-4/AF90-13 and AF89-5/AF90-8









15.0 ADJACENT PROPERTIES

There are no mining properties immediately adjacent to the Afgan project, although the inactive Gold Pick, Gold Ridge, and Gold Stone open pit gold mining area is located about four miles to the northeast. Claims held by the LFC Trust, but not subject to the Castleworth – LFC Trust agreement, lie immediately south of the Afgan project. The general area is also the site of active exploration programs and valid claims could exist adjacent to other portions of Afgan. No significant exploration work, such as trenching and drilling, was noted by MDA on adjacent ground during the site visit.

16.0 MINERAL PROCESSING AND METALLURGICAL TESTING

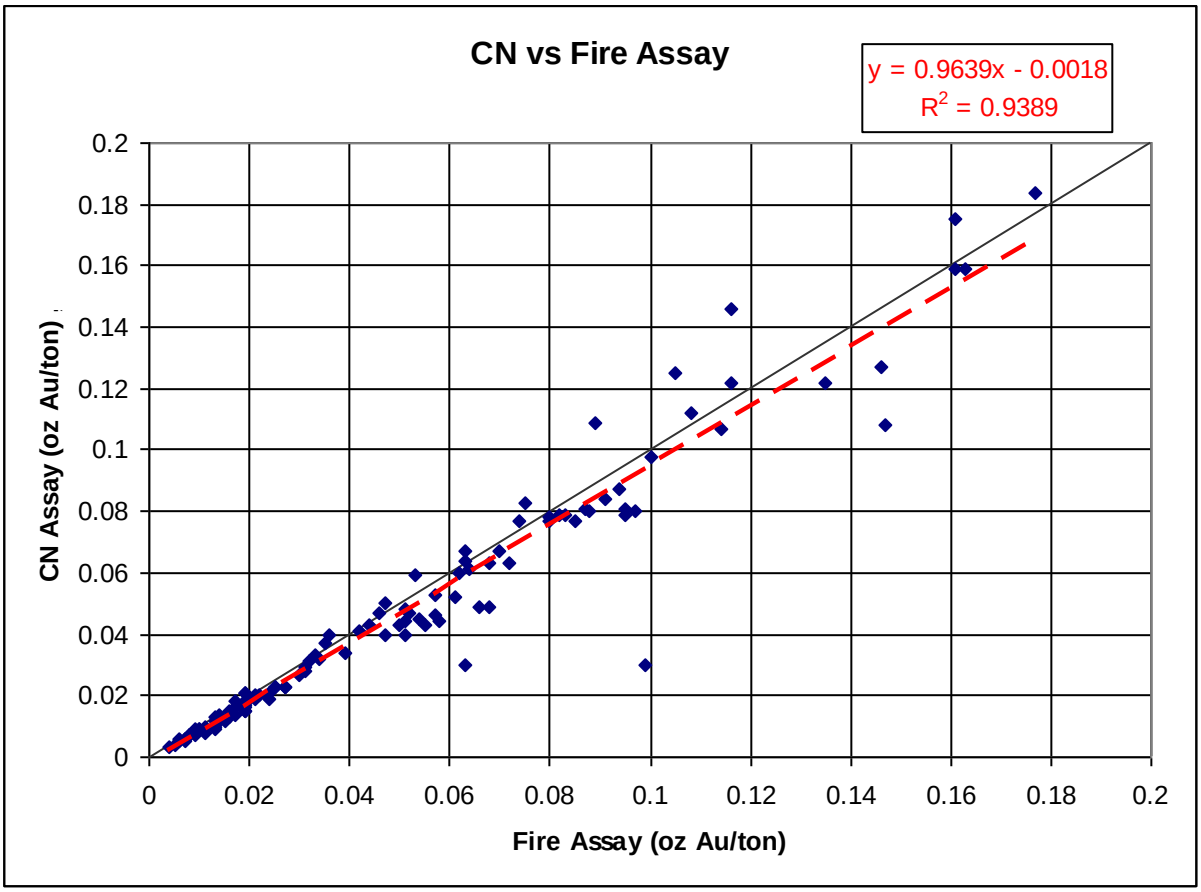
The only work related to metallurgy known by MDA to have been completed at Afgan consists of cyanide leach assays. The details of the cyanide analyses are not known to MDA. Cyanide assays were provided to MDA for holes AF89-2 through 5 (LFC Trust) and AF90-22, AF91-33, AF91-48 and AF91-50 (Phelps Dodge), for a total of 111 analyses. In addition, check cyanide assays were completed on five of the 111 samples. All of the cyanide samples are included in the mineral domains modeled by MDA. Table 16.1 presents the basic statistics of the cyanide assays in terms of percent cyanide extraction (cyanide assay/fire assay) and Figure 16.1 shows the relationship between the original fire assay and cyanide assay results.

Table 16.1 Percent Cyanide Extraction Statistics by Lithology (Cyanide Assay/Original Assay)

Lithology	Cyanide Extraction (%)					
	No.[1]	Mean	Min	Max	Std. Dev.	CV
Webb	102	92	69	126	11	0.11
Devils Gate	11	79	30	104	22	0.28
All	*113*	*91*	*30*	*126*	*13*	*14*

[1] Includes samples that straddle lithologic boundary; total of 111 cyanide analyses.

Figure 16.1 Original Fire Assay versus Cyanide Assay Results



Cyanide extractions for all of the Afgan samples tested average 91%, with Webb mineralization averaging 92% and Devils Gate Limestone mineralization averaging 79% (based on only a few Devils Gate Limestone samples). Almost 80% of the gold mineralization modeled by MDA is hosted by the Webb.

Considerable additional metallurgical testwork would be required to adequately categorize the Afgan mineralization and to evaluate viable processing options.

17.0 MINERAL RESOURCE ESTIMATE

Mineral resource estimation reported here for the Afgan project follows the guidelines of Canadian National Instrument 43-101. The modeling and estimate of gold resources was done by Michael M. Gustin, MDA Senior Geologist, who is considered a Qualified Person by the definitions and criteria set forth in NI 43-101. There is no affiliation between Mr. Gustin and Castleworth except that of an independent consultant/client relationship. There are no mineral reserves estimated for the Afgan project.

17.1 Definitions

The resources stated in this report for the Afgan project conform to the definitions adopted by the Canadian Institute of Mining, Metallurgy and Petroleum ("CIM"), August 20, 2000, and meet the criteria of those definitions, where:

> *A Mineral Resource is a concentration or occurrence of natural, solid, inorganic or fossilized organic material in or on the Earth's crust in such form and quantity and of such a grade or quality that it has reasonable prospects for economic extraction. The location, quantity, grade, geological characteristics and continuity of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge.*
>
> *A 'Measured Mineral Resource' is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, physical characteristics are so well established that they can be estimated with confidence sufficient to allow the appropriate application of technical and economic parameters, to support production planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that are spaced closely enough to confirm both geological and grade continuity.*
>
> *An 'Indicated Mineral Resource' is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, physical characteristics can be estimated with a level of confidence sufficient to allow the appropriate application of technical and economic parameters, to support mine planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that are spaced closely enough for geological and grade continuity to be reasonably assumed.*
>
> *An 'Inferred Mineral Resource' is that part of a Mineral Resource for which quantity and grade or quality can be estimated on the basis of geological evidence and limited sampling and reasonably assumed, but not verified, geological and grade continuity. The estimate is based on limited information and sampling gathered through appropriate techniques for locations such as outcrops, trenches, pits, workings and drill holes.*

17.2 Data

MDA created a model for estimating the gold resources for the Afgan project from data provided to MDA by the LFC Trust and Castleworth. Numerous reports, maps, assay certificates, drill logs, geologic maps, and cross sections from previous operators of the project were received from the LFC Trust in hardcopy form. Hardcopy data received from the LFC Trust were used to construct a database that included: drill hole collar locations, survey information, and analytical data; drill hole location maps; and drill hole cross sections and geology.

The drill hole data were checked and a few minor errors were discovered and corrected prior to importing the information into a Surpac® mining software database. Analytical results that were less than the detection limit were set to zero, while missing samples were set to -1. All subsequent modeling of the Afgan resource was performed using Surpac®.

17.3 Deposit Geology Pertinent to Resource Estimation

Gold mineralization at Afgan is focused along the contact of the Devils Gate Limestone and Webb. This contact dips gently to the east. Jasperoid is common in the uppermost Devils Gate Limestone and more broadly in the Webb within the mineralized areas. Although the overwhelming bulk of the Afgan mineralization lies close to the contact, it is possible that some high-angle structures that cut and displace the contact are related to higher grade mineralization.

The Afgan resource has been drilled in a loosely defined 100-ft grid in the southern portion of the deposit, increasing to about 200 ft in the north.

No samples within mineral domains defined by MDA were logged as being unoxidized. Two intervals in two holes, for a cumulative total of 75 ft, were logged as being a mix of oxide and sulfide; the overwhelming bulk of the mineralization was logged as oxide. Modeling of the oxidation state of the mineralization was therefore not necessary.

17.4 Density

MDA is unaware of any density determinations by the various operators of the Afgan project. MDA therefore assigned densities to the mineralization.

Mineralization similar to that found in the Devils Gate Limestone at Afgan is discussed in a technical report on the Pan gold project, located in Eureka County, Nevada (Muerhoff, 2003). At Pan, specific gravity determinations on two Devils Gate Limestone composites yielded 2.51 g/cm^3 and 2.59 g/cm^3; Muerhoff (2003) chose a value of 2.6 g/cm^3 for the resource estimation, which equates to a tonnage factor of 12.3 ft^3/ton. Due to the lack of data at Afgan, MDA chose a tonnage factor of 12.5 ft^3/ton for the Devils Gate Limestone mineralization at Afgan.

The Pan project also has significant resources hosted by the Pilot Shale, which consists of thinly bedded, fine-grained sediments that are similar to the Webb sediments at Afgan. Nine samples of Pilot Shale mineralization at Pan yielded specific gravities ranging from 2.39 g/cm^3 to 2.78 g/cm^3 (Muerhoff, 2003).

A value of 2.4 g/cm^3, or a tonnage factor of 13.3 ft^3/ton, was used in the resource estimation at Pan. MDA used a tonnage factor of 14.0 for the Webb mineralization at Afgan. This relatively low density was chosen due to the common notations in the drill logs of brecciation in the mineralized intervals, as well as to be conservative due to the lack of hard data.

Numerous detailed measurements are needed to adequately characterize the densities of the mineralized and unmineralized rock units at Afgan.

17.5 Afgan Resource Model

MDA modeled and estimated the gold resources at Afgan by evaluating the drill data statistically, constructing geologic and mineral domains on cross sections, refining the mineral domain interpretations on level plans, performing geostatistics in an attempt to establish estimation parameters, and estimating gold grades into a three-dimensional block model. Surpac® mining software was used for the block modeling and estimation.

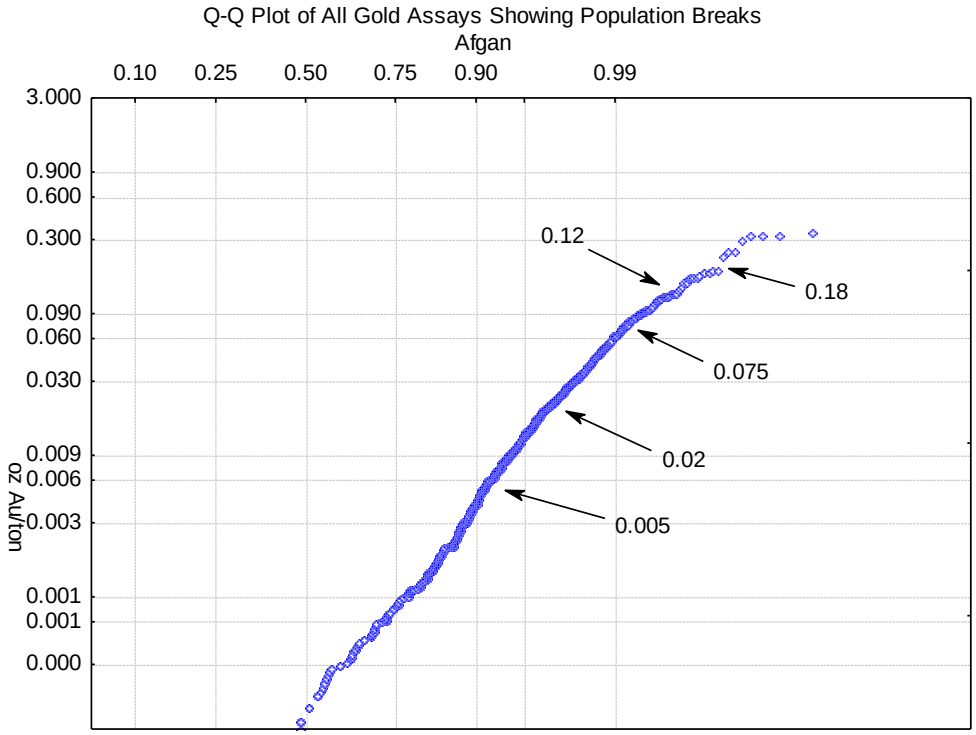
Summary statistics of the drill hole sample data within the Afgan project are shown in Table 17.1.

Table 17.1 Descriptive Statistics of Afgan Gold Assays

	Valid N	Median	Mean	Std. Dev.	CV	Min.	Max.	Units
Hole ID	133							
Northing	7720	14439098	14438452			14433091	14441643	feet
Easting	7720	1846371	1846471			1845209	1848698	feet
Elevation	7720	6675.2	6578.1			5374.5	6997.5	feet
From	7720	180.0	230.4			0.0	1555.0	feet
To	7720	185.0	236.1			5.0	1560.0	feet
Length	7720	5.0	5.8	14.0	2.4	1.0	640.0	feet
oz Au/ton	7409	0.000	0.003	0.015	4.699	0.000	0.331	oz Au/ton
oz Au/ton Cap	7409	0.000	0.003	0.015	4.662	0.000	0.331	oz Au/ton
Domain	885					100	400	

The gold grade distribution for all drill hole assays in the Afgan database was examined in order to identify natural population breaks (Figure 17.1). The distribution shows distinct breaks at about 0.005, 0.020, 0.075, 0.120 and 0.180 oz Au/ton.

Figure 17.1 Afgan Au Sample Data



East-west cross sections were plotted on 100 ft intervals across the Afgan deposit. The topographic profile and drill hole traces were placed on each set of cross sections, and gold assays, lithologic codes, and oxidation codes were plotted along the drill hole traces. MDA first modeled the geology on the cross sections. Geologic contacts of the major lithologic units were drawn to honor the coded drill hole lithologies as well as surficial geologic mapping provided to MDA. High-angle faults were interpreted where abrupt discontinuities in the lithologic contacts were present.

Gold grades on cross sections were then reviewed to determine if any of the gold grade populations identified in the grade distribution plot (Figure 17.1) represented continuous zones of mineralization. MDA found that grade domains of 0.005 to 0.02, 0.02 to 0.075, and greater than 0.075 oz Au/ton showed the best continuity, and these grade ranges were assigned to mineral domains 100, 200 and 300, respectively. A cross sectional grade model was created on the geologic sections that outlined these grade domains. The cross sectional grade domain envelopes were then digitized, the envelopes were sliced and transferred to 20-foot-spaced level maps, and the final grade zones were refined and digitized from these plans. The Devils Gate Limestone lithology was similarly digitized on section, sliced to plan, and refined.

The drill hole assays were assigned to a grade domain, if applicable, based on the cross sectional envelopes. The descriptive statistics and grade distributions of the drill hole assays by zone were examined and assay caps for each zone were chosen (Table 17.2 and Figure 17.2).

Table 17.2 Descriptive Statistics of Afgan Gold Assays by Grade Zone

Zone 100, 200, & 300 Assays

	Valid N	Median	Mean	Std. Dev.	CV	Min.	Max.	Units
Hole ID	72							
Northing	885	14439554	14439563			14437945	14440896	feet
Easting	885	1846229	1846226			1845800	1847139	feet
Elevation	885	6768.9	6764.2			6161.6	6997.5	feet
From	885	160.0	169.3			0.0	813.0	feet
To	885	165.0	174.4			5.0	819.2	feet
Length	885	5.0	5.1	0.7	0.1	2.0	10.2	feet
oz Au/ton	871	0.012	0.026	0.039	1.496	0.000	0.331	oz Au/ton
oz Au/ton Cap	871	0.012	0.026	0.038	1.480	0.000	0.331	oz Au/ton
Domain	885					100	300	

Zone 100 Assays

	Valid N	Median	Mean	Std. Dev.	CV	Min.	Max.	Units
Hole ID	68							
Northing	571	14439700	14439729			14437945	14440896	feet
Easting	571	1846205	1846199			1845800	1846755	feet
Elevation	571	6772.5	6762.4			6252.0	6997.5	feet
From	571	160.0	165.0			0.0	510.0	feet
To	571	165.0	170.1			5.0	520.0	feet
Length	571	5.0	5.1	0.5	0.1	2.6	10.0	feet
oz Au/ton	560	0.008	0.009	0.005	0.567	0.000	0.039	oz Au/ton
oz Au/ton Cap	560	0.008	0.009	0.005	0.567	0.000	0.039	oz Au/ton
Domain	571					100	100	

Zone 200 Assays

	Valid N	Median	Mean	Std. Dev.	CV	Min.	Max.	Units
Hole ID	45							
Northing	253	14439275	14439305			14438049	14440347	feet
Easting	253	1846236	1846243			1845800	1847139	feet
Elevation	253	6785.9	6787.1			6180.8	6986.3	feet
From	253	130.0	158.8			0.0	690.0	feet
To	253	135.0	163.9			5.0	699.2	feet
Length	253	5.0	5.1	0.9	0.2	2.0	10.2	feet
oz Au/ton	250	0.031	0.038	0.023	0.602	0.001	0.174	oz Au/ton
oz Au/ton Cap	250	0.031	0.038	0.023	0.602	0.001	0.174	oz Au/ton
Domain	253					200	200	

Table 17.2 Descriptive Statistics of Afgan Gold Assays by Grade Zone (cont)

Zone 300 Assays

	Valid N	Median	Mean	Std. Dev.	CV	Min.	Max.	Units
Hole ID	17							
Northing	61	14439098	14439086			14438104	14440693	feet
Easting	61	1846253	1846412			1846115	1847053	feet
Elevation	61	6727.5	6685.3			6161.6	6946.8	feet
From	61	190.0	253.6			5.0	813.0	feet
To	61	195.0	258.7			10.0	819.2	feet
Length	61	5.0	5.1	0.4	0.1	3.6	6.2	feet
oz Au/ton	61	0.116	0.131	0.071	0.541	0.024	0.331	oz Au/ton
oz Au/ton Cap	61	0.116	0.129	0.069	0.538	0.024	0.331	oz Au/ton
Domain	61					300	300	

Figure 17.2 Afgan Au Sample Data by Grade Zone

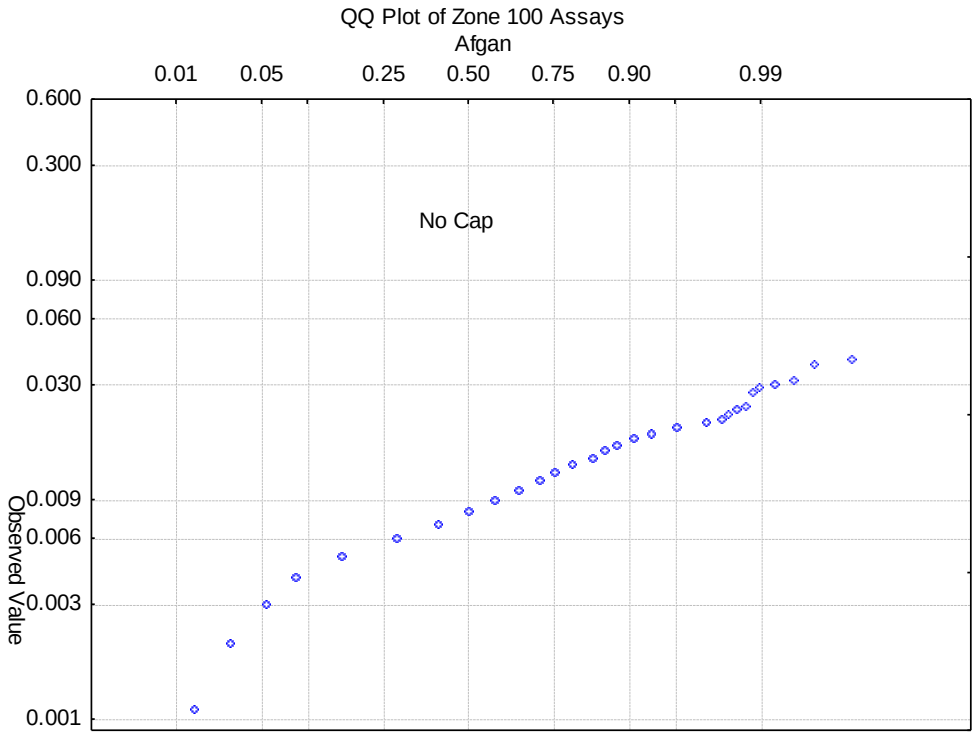
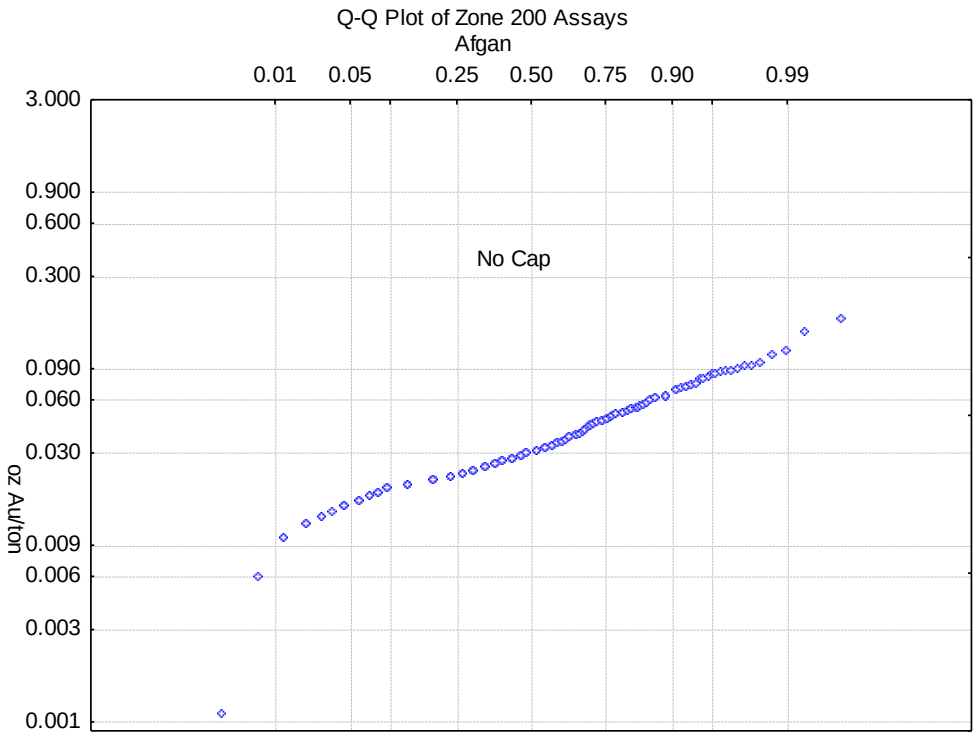
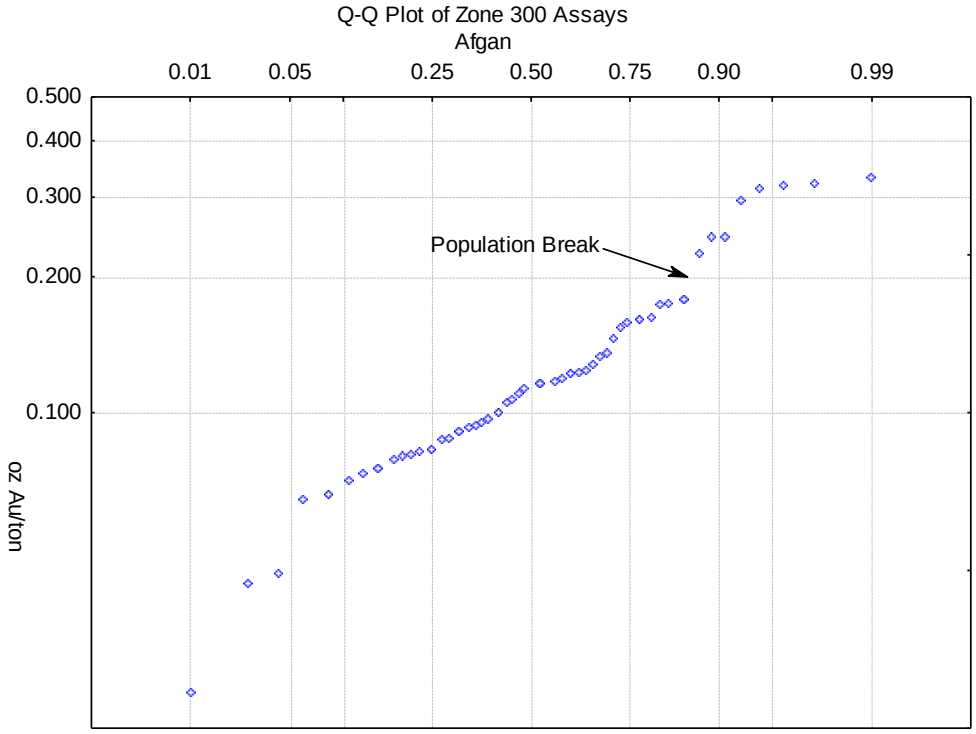


Figure 17.2 Afgan Au Sample Data by Grade Zone (cont)





No assay caps were applied to any of the grade domains. The grade distribution of domain 300, however, shows a significant break at about 0.2 oz Au/ton. The same break is evident in the entire sample population (Figure 17.1), but the grade range from 0.18 oz Au/ton and higher is not continuous and substantial enough to model separately. The higher grade population evident in domain 300 was treated differently in the estimation routine instead of applying an assay cap, as discussed below.

A three-dimensional model of the deposit was created with 20 ft x 20 ft x 20 ft blocks. In order for the block model to better fit the irregularly shaped limits of the various gold domains, blocks were subdivided into four sub-blocks where necessary by Surpac®, with each sub-block having dimensions of 10 ft x 10 ft x 10 ft. The grade domain limits, digitized from the 20-foot level plans, were then projected vertically to code the blocks to a grade zone. Blocks were similarly coded to Devils Gate Limestone lithology for the purposes of assigning densities. All blocks not coded as Devils Gate Limestone were then assigned as Webb. Although this resulted in Tertiary units being coded as Webb, there is no gold mineralization identified in the Tertiary rocks and therefore no impact in the resource modeling. Devils Gate Limestone and Webb blocks were assigned tonnage factors of 12.5 and 14.0, respectively. Descriptive statistics of assays within grade domains by lithology are shown in Table 17.3.

Table 17.3 Afgan Assays within All Grade Domains by Lithology

Webb Fm Assays within Zones 100, 200, & 300

	Valid N	Median	Mean	Std. Dev.	CV	Min.	Max.	Units
Hole ID								
Northing	731	14439554	14439564			14437945	14440896	feet
Easting	731	1846224	1846217			1845800	1847139	feet
Elevation	731	6792.0	6779.2			6161.7	6997.5	feet
From	731	145.0	159.2			0.0	813.0	feet
To	731	150.0	164.4			5.0	819.2	feet
Length	731	5.0	5.1	0.8	0.2	0.2	10.2	feet
oz Au/ton	725	0.014	0.028	0.041	1.477	0.000	0.331	oz Au/ton
oz Au/ton Cap	725	0.014	0.028	0.041	1.462	0.000	0.331	oz Au/ton
Domain	731					100	300	

Devils Gate LS Assays within Zones 100, 200, & 300

	Valid N	Median	Mean	Std. Dev.	CV	Min.	Max.	Units
Hole ID								
Northing	166	14439493	14439523			14438104	14440896	feet
Easting	166	1846236	1846267			1845807	1847028	feet
Elevation	166	6668.2	6696.2			6159.3	6964.4	feet
From	166	235.0	214.9			20.0	813.0	feet
To	166	240.0	220.0			25.0	819.2	feet
Length	166	5.0	4.9	0.7	0.1	0.2	6.2	feet
oz Au/ton	158	0.008	0.017	0.022	1.300	0.001	0.113	oz Au/ton
oz Au/ton Cap	158	0.008	0.017	0.022	1.300	0.001	0.113	oz Au/ton
Domain	166					100	300	

The drill hole assays were composited down-hole at 10-foot intervals on a zone-by-zone basis, so that only assays from grade domain 100 were used to create zone 100 composites, for example. Composites

with lengths of less than 5 ft (50% of composite length) were not utilized in the grade estimations. Summary statistics of the composite data are presented in Table 17.4

Table 17.4 Afgan Composite Statistics

	Valid N	Median	Mean	Std. Dev.	CV	Min.	Max.	Units
Hole ID	71							
Northing	499	14439554	14439550			14437945	14440896	feet
Easting	499	1846229	1846230			1845800	1847139	feet
Elevation	499	6770.0	6762.6			6165.9	6995.0	feet
From	499	155.0	168.4			0.0	805.5	feet
To	499	165.0	178.4			10.0	815.5	feet
Length	499	10.0	8.8	2.1	0.2	5.0	10.0	feet
oz Au/ton	499	0.013	0.027	0.039	1.457	0.000	0.318	oz Au/ton
Domain	499	100				100	400	

Variography was performed on composites from all grade zones separately and collectively at varying lags, azimuths and dips. Ultimately, consistent pairwise relative variograms with well-developed structures could only be generated on global and down-hole orientations using all grade domains collectively (Figure 17.3). Directional variograms often lacked sufficient data to define suitable structures. MDA believes that practical variograms will be generated with further drill sampling of the mineralized zones.

Three inverse distance to the third power passes were used to estimate gold grades into the three-dimensional block model. The estimation passes were performed independently on each of the grade domains, so that only composites coded to a zone were used to estimate the blocks for that zone.

The estimation parameters for the three estimation passes are shown in Table 17.5. The search ellipse was chosen to fit the geology of the mineralized easterly dipping Devils Gate - Webb contact zone. The first estimation pass utilized a maximum search distance of 60 ft along strike as well as down-dip of the mineralization, while the second pass used 125 ft. The maximum search distance was increased in the third pass to 285 ft in the strike and dip directions in order to estimate all blocks within the modeled grade zones. In order to properly treat the higher grade population within domain 300, as discussed above, composites with grades in excess of 0.2 oz Au/ton were only used in the first, most restrictive, pass. Each of the three passes only assigned grades to blocks that had not been estimated by previous passes.

Figure 17.3 Afgan Au Variogram – Global (Omni-directional)

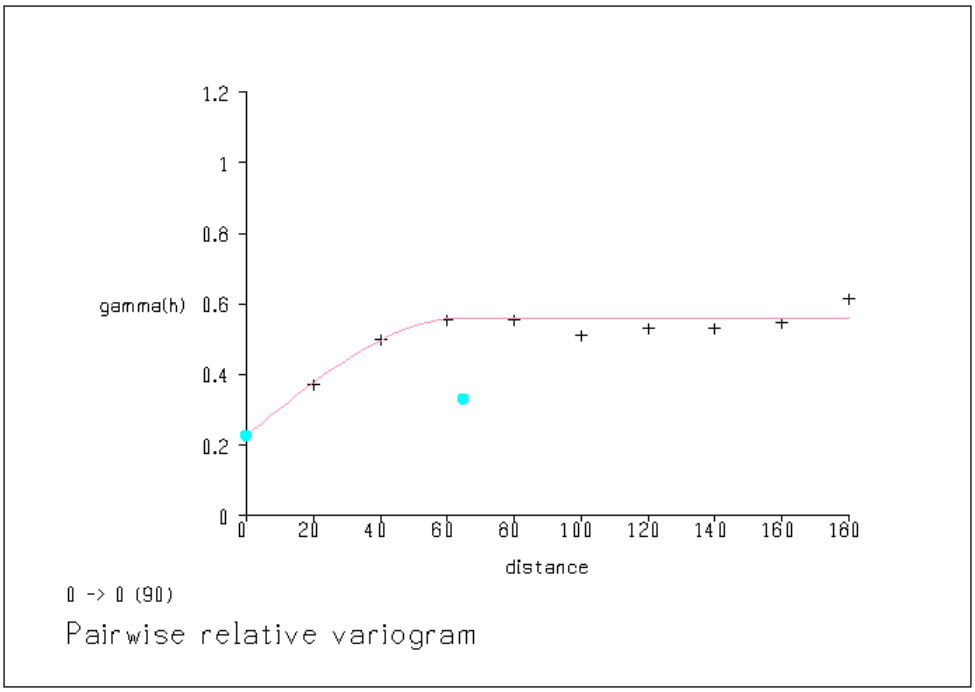


Table 17.5 Afgan Inverse Distance Estimation Parameters

Estimation Pass		1	2	3
No. of Composites	Min	1	1	1
	Max	8	8	12
Domain 300 Grade Constraint		None	<0.2 oz Au/ton	<0.2 oz Au/ton
Max Composites per Drill Hole		2	2	3
Azimuth of Major Axis		0º	0º	0º
Plunge of Major Axis		0º	0º	0º
Dip of Semi-Major Axis		-30º	-30º	-30º
Search Distance	Major	60’	125’	285’
	Semi-Major	60’	125’	285’
	Minor	30’	62.5’	142.5’

17.6 Afgan Resources

Gold resources for the Afgan project were classified by MDA on the basis of the distance of the model blocks to the nearest composite, the number of composites used to estimate the block grades, and the number of drill holes from which composites were used to estimate the block grades (Table 17.6).

Table 17.6 Afgan Resource Classification Parameters

Classification	Nearest Sample	Min No. of Drill Holes	Min No. of Samples
Indicated	≤ 125'	2	2
	OR		
	≤ 60'	1	2
Inferred	N/A	1	1

Indicated resource blocks are those blocks coded to the interpreted mineral domains that lie within 125 ft of the nearest composite coded to the same zone as the block and are estimated using composites from at least two drill holes, or those blocks that lie within 60 ft of the nearest composite coded to the same zone that are estimated with a minimum of two composites. Inferred resource blocks are those blocks coded to the mineral domains that are not assigned as Indicated.

Indicated and Inferred Afgan gold resources are presented in Table 17.7. No Measured resources are reported for the project due to the general lack of documentation regarding the sampling, sample handling, sample preparation, analytical procedures, and QA/QC practices, as well as the lack of survey data for many drill hole locations and the absence of density data.

Table 17.7 Afgan Gold Resources

Indicated Resources

Cutoff (oz Au/ton)	Tons	Au Grade (oz Au/ton)	Au Ounces
0.010	1,851,000	0.027	50,000
0.030	572,000	0.056	32,000
0.050	234,000	0.081	19,000
0.080	90,000	0.116	10,000
0.100	57,000	0.132	7,500
0.150	16,000	0.171	2,700

Inferred Resources

Cutoff (oz Au/ton)	Tons	Au Grade (oz Au/ton)	Au Ounces
0.010	1,286,000	0.026	34,000
0.030	283,000	0.065	18,000
0.050	131,000	0.094	12,000
0.080	85,000	0.112	10,000
0.100	68,000	0.118	8,100
0.150	3,600	0.265	1,000

Almost 80% of the Indicated and Inferred blocks are coded as Webb Formation, with the remaining being Devils Gate Limestone. Table 17.8 shows statistics of all estimated block grades by lithology.

Table 17.8 Afgan Block Grades by Lithology

Webb Blocks

	Valid N	Median	Mean	Std. Dev.	CV	Min.	Max.	Units
Northing	58974	14439615	14439600			14437855	14441045	feet
Easting	58974	1846165	1846189			1845675	1847225	feet
Elevation	58974	6785	6759			6065	6995	feet
ID3 oz Au/ton	58974	0.011	0.020	0.023	1.182	0.000	0.312	oz Au/ton
NN oz Au/ton	58974	0.012	0.020	0.025	1.249	0.000	0.318	oz Au/ton
No DH	58974	1.0	1.6			1.0	12.0	
No Comps	58974	2.0	3.0			1.0	12.0	
Domain	58974					100	300	
Nearest Dist	58974	69.7	72.9			2.2	284.6	feet
Ave Dist	58974	74.4	78.2			12.7	280.3	feet
Density	58974	14.0	14.0			14.0	14.0	ft3/ton

Devils Gate Blocks

	Valid N	Median	Mean	Std. Dev.	CV	Min.	Max.	Units
Northing	16903	14439585	14439546			14437745	14440965	feet
Easting	16903	1846195	1846217			1845645	1847175	feet
Elevation	16903	6685	6698			6065	6995	feet
ID3 oz Au/ton	16903	0.009	0.014	0.017	1.255	0.003	0.318	oz Au/ton
NN oz Au/ton	16903	0.009	0.014	0.020	1.450	0.001	0.318	oz Au/ton
No DH	16903	1.0	1.6			1.0	12.0	
No Comps	16903	2.0	2.9			1.0	12.0	
Domain	16903					100	300	
Nearest Dist	16903	72.4	75.3			3.7	245.5	feet
Ave Dist	16903	78.4	81.4			12.9	245.7	feet
Density	16903	12.5	12.5			12.5	12.5	ft3/ton

MDA completed a nearest neighbor estimate of the deposit as a check on the inverse distance model. At no cutoff grade, the tons and grade of all estimated blocks are essentially identical. Gold grade distribution curves for the inverse distance and nearest neighbor models, as well as composites and assays, are shown in Figure 17.4.

Figure 17.4 Distribution Plots of Block Models, Composites and Assays

18.0 MINERAL RESERVE ESTIMATE

Reserves for the Afgan deposit were not calculated for this study.

19.0 OTHER RELEVANT DATA AND INFORMATION

MDA is unaware of additional information concerning the Afgan project that is pertinent to this technical report.

20.0 INTERPRETATIONS AND CONCLUSIONS

The Afgan project contains a semi-continuous zone of gold mineralization that lies along the contact of the Devils Gate Limestone with overlying thinly bedded sediments that belong to the Vinini Formation and/or the Webb Formation. This contact dips easterly at shallow to moderate angles, with the bulk of the mineralization occurring in brecciated Webb/Vinini sediments that are frequently altered to jasperoid. The nature of the contact is uncertain, due to the lack of exposure in critical areas and the predominance of rotary drilling methods, but has been interpreted by most previous workers to be a structure.

While the lithologic contact served to localize the bulk of the gold mineralization, it is possible that high-angle structures also influenced the localization of higher grade areas. Specifically, geologic relationships on section 14439100 N and the surrounding sections are suggestive of a fault that trends close to east-west. The strongest gold mineralization identified on the project to date occurs on either side of this interpreted fault. The geologic relationships are also consistent with karstic collapse of the Devils Gate Formation with attendant brecciation in the overlying Webb/Vinini rocks, however.

Outcrops of jasperoidal or silicified Webb/Vinini siltstones are common in the Afgan deposit area close to the Devils Gate Limestone contact. MDA observed high-angle structural zones cutting the jasperoids. The significance of these structures is not known, but warrants further investigation. The possibility that these structures might reflect a high-angle fault near the western limit of the Webb/Vinini exposures that may have played a role in the mineralizing system should specifically be evaluated. In this regard, it is interesting to note that the westernmost, near-surface intercepts of Webb/Vinini mineralization are often thicker and better grade than the down-dip, deeper intersections.

The Afgan mineralization is open for modest expansion in several areas and testing of these areas will require further drilling. The resource is open up-dip (to the west) in the northern 600 ft length of the resource area. The largest outcroppings of jasperoid in the project lie within this untested area. Although the northern portion of the resource is relatively low-grade, the frequent increase in thickness and grade of the mineralization in the westernmost portions of the resource serves to enhance the target concept.

The down-dip, eastern extension of the Afgan mineralization is frequently open for expansion north of section 14439000 N, although this target zone deepens rapidly unless unrecognized block faulting displaces the lithologic contact back to shallower levels.

The southern limits of the Afgan resource area remain poorly defined. Although existing resources are relatively deep in the south, grades are higher than average and shallow, up-dip extensions are open for expansion.

21.0 RECOMMENDATIONS

MDA believes that there is good potential to modestly increase the resources on the Afgan project with additional surface geologic work and drilling. The surface work should be completed prior to initiating any drilling program.

While the surface distribution of rock units has been fairly well constrained by previous company geologists, the relationships between the gold mineralization and structural controls remain uncertain. It is clear that the contact between the Devils Gate Limestone and Webb Formation is a primary control on gold mineralization, and this contact is likely a fault. Other structures, particularly high-angle faults, may also exert important influences on the localization of the mineralization, however. The resource area therefore warrants additional mapping with the goal of elucidating possible structural controls on the mineralization.

Specifically, this geologic mapping should attempt to carefully define and understand the importance of the high-angle breccia zones that are frequently observed in outcrops of Webb Formation jasperoid within the resource area. These structures should be mapped and selectively sampled. An attempt should also be made to understand the tendency of the gold mineralization to be both thicker and higher grade near the present-day surface. Possible explanations for this relationship include coincidence, surface enrichment, or proximity to some unrecognized structure. The possible existence of an approximately east-west-trending structure on section 14439100 N, which is the best mineralized drill section to date, and other such structures elsewhere should also be investigated. Finally, a geophysical technique such as CS-AMT could be used in an attempt to determine if the mineralization hosted within the Paleozoic units is up-faulted to the east of the present resources.

A drill program could then commence, guided partially by the results of the surface investigations. Regardless of the results of the surface program, possible extensions of the resources up-dip, down-dip and to the south, as discussed in Section 20, require drill testing.

Before the Afgan project can proceed beyond this initial exploration stage, additional data must be collected. No Measured resources are currently reported for the project due to the lack of documentation regarding the sampling, sample handling, sample preparation, analytical procedures, and QA/QC practices. MDA recommends a drilling program designed to address the validation of the current drill hole database, if warranted by the results from the recommended exploration program discussed above. The assay database validation should include the twinning of holes from each of the previous drill operator's drilling programs. Representative samples for density determinations and metallurgical testing are also needed. The metallurgical testwork should be designed in consultation with a qualified metallurgical laboratory, with the goal of undertaking the initial steps of determining a viable processing flow sheet for the Afgan mineralization.

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23.0 CERTIFICATE OF AUTHOR

I, Michael M. Gustin, do hereby certify that:

1. I am currently employed as Senior Geologist by:

   Mine Development Associates, Inc.
   210 South Rock Blvd.
   Reno, Nevada 89502.

2. I graduated with a Bachelor of Science degree in Geology from Northeastern University in 1979 and a Doctor of Philosophy degree in Economic Geology from the University of Arizona in 1990.
3. I am a Registered Geologist in the State of Washington, a Licensed Professional Geologist in the State of Utah, a member of the Society of Mining Engineers, and a member of the Geological Society of Nevada.
4. I have worked as a geologist for a total of 23 years.
5. I have read the definition of "Qualified Person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for the purposes of NI 43-101.
6. I am responsible for the preparation of the technical report titled *Technical Report, Afgan Project, Eureka County, Nevada USA* and dated April 28, 2004 (the "Technical Report") relating to the Afgan project. I visited the Afgan project site on April 12, 2004.
7. I have not had prior involvement with the property that is the subject of this Technical Report.
8. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.
9. I am independent of the issuer applying all of the tests in Section 1.5 of National Instrument 43-101.
10. I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.
11. I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Dated this 28th day of April.

Signature of Qualified Person

Michael M. Gustin

Print Name of Qualified Person

APPENDIX A

AFGAN PROJECT UNPATENTED MINING CLAIMS