CSA Global (UK) Ltd
(UK Office)

Suite 2, First Floor, Springfield House
Horsham, West Sussex
RH12 2RG
UNITED KINGDOM

T +44 1403 255 969
F +44 1403 240 896
E info@csaglobal.com
www.csaglobal.com

Effective Date: 28 March 2018

Report No: R191.2018

DUNDEE PRECIOUS METALS INC.

NI 43-101 Technical Report
Mineral Resource & Reserve Update

Chelopech Project

Chelopech, Bulgaria

By
Maria O'Connor (QP)
MAusIMM, MAIG

and

Karl van Olden (QP)
BSc (Eng), GDE, MBA, FAusIMM

and

Ross Overall (QP)
BSc (Hons), CSci, MIMMM, FGS

and

Simon Meik (QP)
BSc (Hons), PhD, FAusIMM (CP)

and

Petya Kuzmanova
MIMMM, CSci

For:

Dundee Precious Metals Inc.
1 Adelaide Street East
Suite 500, PO Box 195
Toronto, Ontario
M5C 2V9 Canada

Approved on behalf of CSA Global:

"signed and sealed"

Galen White
Managing Director - UK

Certificate of Qualified Person – Maria O'Connor

As a Qualified Person of this Technical Report on the Chelopech Project of Dundee Precious Metals - Chelopech, Bulgaria, I, Maria O'Connor do hereby certify that:

1) I am a Principal Resource Geologist of CSA Global (UK) Ltd and completed this work for CSA Global (UK) Ltd, Springfield House, Suite 2 First Floor, Horsham, West Sussex, RH12 2RG, UK Telephone (+44) 1403 255 969, e-mail: maria.oconnor@csaglobal.com.
2) The Technical Report to which this certificate applies is titled "NI 43-101 Technical Report, Mineral Resource and Reserve Update, Chelopech Project, Chelopech, Bulgaria" and is dated effective 28 March 2018.
3) I hold a BSc degree in Environmental Geochemistry from University College Dublin (2004) and am a registered Member in good standing of the Australian Institute of Geologists (AIG Membership Number 5931). I am familiar with NI 43-101 and, by reason of education, experience in the exploration, evaluation of high sulphide epithermal systems, and of mineral deposits in Europe, Australia and Africa, and professional registration; I fulfil the requirements of a Qualified Person as defined in NI 43-101. My experience includes over 13 years in geology and resource evaluation.
4) I have visited the project that is the subject of this Technical Report, between 16th to 17th January 2018.
5) I am responsible for Sections 1, 2.1 to 2.3, 2.4.1 to 2.4.3, 2.5, 3 to 9, 14, 23 and 25 to 27 of this Technical Report.
6) I am independent of the issuer as described in Section 1.5 of NI 43-101.
7) I have had prior involvement with the property that is the subject of this Technical Report, in relation to the preparation of an NI43-101 Technical Report titled "NI43-101 Technical Report, Mineral Resource and Mineral Reserve Update, Chelopech Project, Bulgaria", report number R116b.2016, with an effective date of 13th March 2016.
8) I have read NI 43-101 and the parts of the Technical Report I am responsible for have been prepared in compliance with this instrument.
9) As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the parts of Technical Report that I am responsible for contain all scientific and technical information that is required to be disclosed to make this report not misleading.

Dated this 28th day of March 2018.

"signed and sealed"

Maria O'Connor BSc, MAIG
Principal Resource Geologist
CSA Global (UK) Ltd.

Certificate of Qualified Person – Simon Meik

As a Qualified Person of this Technical Report on the Chelopech Project of Dundee Precious Metals - Chelopech, Bulgaria, I, Simon Meik do hereby certify that:

1) I am a Technical Consultant, residing at 76 Salvington Hill, Worthing, West Sussex, BN13 3BB, UK.
2) The Technical Report to which this certificate applies is titled "NI 43-101 Technical Report, Mineral Resource and Reserve Update, Chelopech Project, Chelopech, Bulgaria" and is dated effective 28 March 2018.
3) I hold a BSc degree and PhD in Minerals Engineering from the University of Birmingham, UK. I am a Chartered Professional Member of the Australasian Institute of Mining and Metallurgy (FAusIMM (CP), Membership Number 106146). I am familiar with NI 43-101 and, by reason of education, experience in laboratory research, pilot plant testing, mineral processing plant design, feasibility studies, plant commissioning and study/project/plant operations management in many aspects of small and large mineral processing plants; I fulfil the requirements of a Qualified Person as defined in NI 43-101. My work experience includes 38 years in the mining industry.
4) I have visited the project site that is the subject of this Technical Report on a regular basis since 2004, most recently on 22nd November 2017.
5) I am responsible for Sections 13 and 17 to 22 and 24 of this Technical Report.
6) I am not independent of the issuer as described in Section 1.5 of NI 43-101, although I have not been employed by Dundee Precious Metals Inc. since December 31st 2015.
7) I have had prior involvement with the property that is the subject of this Technical Report as Vice President – Processing and previously as Operations Manager of Dundee Precious Metals Inc. My involvement with the project since 2004 has included supervision of all metallurgical testwork, process development and overview of plant engineering designs together with "in-country" coordination of the EIA and preparation of the 2005 and 2009 updated Definitive Feasibility Studies, the 2012 PEA and the 2011, 2012, 2014 and 2016 NI43-101 Technical Reports.
8) I have read NI 43-101 and the parts of the Technical Report I am responsible for have been prepared in compliance with this instrument.
9) As of the effective date of the Technical Report to the best of my knowledge, information and belief, the parts of Technical Report that I am responsible for contains all scientific and technical information that is required to be disclosed to make this report not misleading.

Dated this 28th day of March 2018.

"signed and sealed"

Simon Meik BSc (Hons), PhD, FAusIMM (CP)
Technical Consultant
Formerly Corporate Director, Processing, Dundee Precious Metals Inc.

Certificate of Qualified Person – Karl van Olden

As a Qualified Person of this Technical Report on the Chelopech Project of Dundee Precious Metals - Chelopech, Bulgaria, I, Karl van Olden do hereby certify that:

1) I am a Principal Consultant and Manager-Mining for CSA Global Pty Ltd, Level 2, 3 Ord Street, West Perth, Western Australia, 6005, Aus Telephone +61 8 9355 1677, e-mail: csaaus@csaglobal.com
2) The Technical Report to which this certificate applies is titled “NI 43-101 Technical Report, Mineral Resource and Reserve Update, Chelopech Project, Chelopech, Bulgaria” and is dated effective 28 March 2018.
3) I hold a BSc Engineering degree in Mining from the University of the Witwatersrand, Johannesburg. I am a Fellow of the Australasian Institute of Mining and Metallurgy. I am familiar with NI 43-101 and, by reason of education, experience in the evaluation and mining of vein hosted mineral deposits in, Africa and Australia, and professional registration; I fulfil the requirements of a Qualified Person as defined in NI 43-101. My work experience includes 26 years in the mining industry.
4) I have visited the project that is the subject of this Technical Report, between 19th and 23rd of February 2018 for a total of 4 days.
5) I am responsible for Sections 2.4.4, 15 and 16 of this Technical Report.
6) I am independent of the issuer as described in Section 1.5 of NI 43-101.
7) I have had prior involvement with the property that is the subject of this Technical Report, in relation to the preparation of an NI43-101 Technical Report titled “NI43-101 Technical Report, Mineral Resource and Mineral Reserve Update, Chelopech Project, Bulgaria”, report number R116b.2016, with an effective date of 13th March 2016.
8) I have read NI 43-101 and the parts of the Technical Report I am responsible for which have been prepared in compliance with this instrument.
9) As of the effective date of the Technical Report to the best of my knowledge, information and belief, the parts of Technical Report that I am responsible for contains all scientific and technical information that is required to be disclosed to make this report not misleading.

Dated this 28th day of March 2018.

“signed and sealed”

Karl van Olden BSc (Eng)(Mining), GDE, MBA, FAusIMM
Manager Mining
CSA Global Ltd

Certificate of Qualified Person – Ross Overall

As a Qualified Person of this Technical Report on the Chelopech Project of Dundee Precious Metals - Chelopech, Bulgaria, I, Ross Overall do hereby certify that:

1) I hold the position of Corporate Senior Resource Geologist, of Dundee Precious Metals Inc. the parent company of Dundee Precious Metals Chelopech, 26 Bacho Kiro, Sofia 1000, Bulgaria.

2) The Technical Report to which this certificate applies is titled "NI 43-101 Technical Report, Mineral Resource and Reserve Update, Chelopech Mine, Chelopech, Bulgaria" and is dated effective 28 March 2018.

3) I hold a BSc degree from Camborne School of Mines, UK. I am a Chartered Professional Member of the institute of Materials, Minerals and Mining (CSci, MIMMM), Membership Number IOM/112/000538). I am familiar with NI 43-101 and, by reason of education, experience in underground mining, resource geology, exploration and geologic grade control; I fulfil the requirements of a Qualified Person as defined in NI 43-101. My work experience includes 12 years in the mining industry.

4) I have visited the project site that is the subject of this Technical Report on a regular basis since 2011, most recently on 8th February 2018.

5) I am responsible for the following sections of this Technical Report; Sections 10, 11 and 12.

6) I am not independent of the issuer as described in Section 1.5 of NI 43-101.

7) I have had prior involvement with the property that is the subject of this Technical Report as Corporate Senior Resource Geologist with Dundee Precious Metals Inc. I work in Bulgaria providing technical supervision for all of Dundee Precious Metal's operating mines and development projects. I am an author of the February 2016 NI43-101 Technical Report for the Chelopech Project.

8) I have read NI 43-101 and the parts of the Technical Report I am responsible for have been prepared in compliance with this instrument.

9) As of the effective date of the Technical Report to the best of my knowledge, information and belief, the parts of Technical Report that I am responsible for contains all scientific and technical information that is required to be disclosed to make this report not misleading.

Dated this 28th day of March 2018.

"signed and sealed"

Ross Overall BSc (Hons), CSci, MIMMM, FGS.
Corporate Senior Resource Geologist
Dundee Precious Metals Inc.

Report prepared for

Client Name	Dundee Precious Metals Inc.
Project Name/Job Code	Chelopech – DPM.RES.13
Contact Name	Ross Overall
Contact Title	Senior Resource Geologist – Corporate Services
Office Address	26 Bacho Kiro Street, 3rd Floor, Sofia 1000, Bulgaria

Report issued by

CSA Global Office	**CSA Global (UK) Ltd** (UK Office) Suite 2, First Floor, Springfield House, Springfield Road Horsham, West Sussex RH12 2RG UNITED KINGDOM **T** +44 1403 255 969 **F** +44 1403 240 896 **E** csauk@csaglobal.com
Division	Corporate

Report information

File name	88A0CAF0
Last edited	28/03/2018 4:43:00 PM
Report Status	DRAFT

Author and Reviewer Signatures

Coordinating Author	Maria O'Connor (QP) MAusIMM, MAIG	Signature:	*"signed and sealed"*
Coordinating Author:	Karl van Olden (QP) FAusIMM	Signature:	*"signed and sealed"*
Contributing Author:	Ross Overall (QP) MIMMM, FGS	Signature:	*"signed and sealed"*
Contributing Author:	Petya Kuzmanova MIMMM, CSci	Signature:	*"signed and sealed"*
Contributing Author:	Simon Meik (QP) BSc (Hons), PhD, FAusIMM (CP)	Signature:	*"signed and sealed"*
Peer Reviewer	Galen White FAusIMM, FGS	Signature:	*"signed and sealed"*
CSA Global Authorisation	Galen White FAusIMM, FGS	Signature:	*"signed and sealed"*

Notes to Reader

Purpose of this document

This Report was prepared exclusively for Dundee Precious Metals Inc. ("the Client") by CSA Global (UK) Ltd ("CSA Global"). The quality of information, conclusions, and estimates contained in this Report are consistent with the level of the work carried out by CSA Global to date on the assignment, in accordance with the assignment specification agreed between CSA Global and the Client.

Notice to third parties

CSA Global has prepared this Report having regard to the needs and interests of our client, for the purposes of the Client's reporting in accordance with NI43-101 (as defined herein) This Report is not designed for any other person's needs or interests. Third party needs, and interests may be distinctly different to the Client's needs and interests, and the Report may not be sufficient nor fit or appropriate for the third party.

Results are estimates and subject to change

The interpretations and conclusions reached in this Report are based on current scientific understanding and the best evidence available to the authors at the time of writing. It is the nature of all scientific conclusions that they are founded on an assessment of probabilities and, however high these probabilities might be, they make no claim for absolute certainty.

The ability of any person to achieve forward-looking production and economic targets is dependent on numerous factors that are beyond CSA Global's control and that CSA Global cannot anticipate. These factors include, but are not limited to, site-specific mining and geological conditions, management and personnel capabilities, availability of funding to properly operate and capitalize the operation, variations in cost elements and market conditions, developing and operating the mine in an efficient manner, unforeseen changes in legislation and new industry developments. Any of these factors may substantially alter the performance of any mining operation.

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Glossary

USD	United States of America dollars
%	Percent
µm	Micrometer, or 0.000001m
2D	Two-dimensional model or data
3D	Three-dimensional model or data
AAS	Atomic Absorption Spectrometry
Ag	Silver grade measured in parts per million
As	Arsenic grade measured in parts per million
Au	Gold grade measured in parts per million
BD	Bulk Density
BGN	Bulgaria's local currency, the Lev which is pegged to the Euro
CC	Correlation Coefficient
cfm	cubic feet per minute
cm	centimetre
Cu	Total copper grade as a % of the sample mass, sometimes written as TCu
CV	Coefficient of Variation. In statistics, the normalized variation value in a sample population
DTM	Digital Terrain Model. Three-dimensional wireframe surface model, for example, topography
E (X)	Easting. Coordinate axis (X) for meter based Projection, typically UTM. Refers specifically to meters east of a reference point (0,0)
EV	Expected Value
g	gram
g/m^3	grams per cubic metre
g/t	grams per tonne
HARD	Half the Absolute Relative Difference - used for comparing pairs
HOV	Hill of Values
HQ2	Size of diamond drill rod/bit/core
hr	Hours
HRD	Half Relative Difference - used for comparing pairs
ICP-MS	Inductively Coupled Plasma Mass Spectrometry
IRR	Internal rate of return
ISO	International Standards Organisation
JORC	Joint Ore Reserves Committee (The AusIMM)
kg	kilogram
kg/t	kilogram per tonne
km	kilometre
km^2	square kilometre
kt	kilotonnes
kW	kilowatt

kWh	Kilowatt-hour
kWhr/t	kilowatt hours per tonne
$L/hr/m^2$	litres per hour per square metre
LHOS	Long hole Open Stoping method of underground mining
LHR	Long Hole Raise / Raising
LM2	Labtechnics 2kg (nominal) pulverising mill
m	metre
M	Million
m^2	square metre
m^3	cubic metre
m^3/s	cubic metre per second
Ma	Million years
mBD	metres Below Datum
mE	metres East
mg	milligram
MIK	Multiple Indicator Kriging
Ml	Millilitre
mm	millimetre
mN	metres North
Moz	Million ounces
mRL	metres Relative Level
Mtpa	Million tonnes per annum
N (Y)	Northing. Coordinate axis (Y) for meter based Projection, typically UTM. Refers specifically to meters north of a reference point (0,0)
NPV	Net present value or net present worth (NPW)
NQ	A diamond drill core diameter of 75.7mm (outside of bit) and 47.6mm (inside of bit)
°C	degrees Celsius
OK	Ordinary Kriging
oz	Troy ounce (31.1034768 grams)
P80 -75 µm	Measure of pulverisation. 80% passing 75 microns
POX	Whole ore pressure oxidation process plant
ppb	parts per billion
ppm	parts per million
psi	pounds per square inch
QA/QC	Quality Assurance Quality Control
QC	quality control
Q-Q	Quantile-quantile plot
RC	Reverse circulation drilling method
RL (Z)	Reduced Level. Elevation of the collar of a drill hole, a trench or a pit bench above the sea level
ROM	Run of Mine
RQD	Rock quality designation
RSG	RSG Global

S	Sulphur
SD	standard deviation
SG	Specific Gravity
SGS	Société Générale de Surveillance International laboratory group
SLC	Sublevel Caving
t	tonnes
t/m^3	tonnes per cubic metre
tkm	Tonne-kilometre. Unit of measure of freight transport
TM	Trademark
tpa	tonnes per annum
tpd	tonnes per day
tpdrm	tonnes per drill metre
tph	Tonnes per hour
tpm	tonnes per month
tvm	tonnes per vertical metre
w:o	waste to ore ratio
Wt%	Percentage by weight

1. Summary

1.1 Introduction

CSA Global (UK) Ltd ("CSA Global") was requested by Dundee Precious Metals Chelopech ("DPMC"), to supervise, verify and validate the Mineral Resource Estimate ("MRE") and Mineral Reserve Estimate for its Chelopech underground copper and gold mine. The change being reported is an update to the Mineral Resource and Mineral Reserve Estimates. The authors of this technical report do not disclaim any responsibility for the Mineral Resource and Mineral Reserve Estimate presented herein.

DPMC is a wholly owned subsidiary of Dundee Precious Metals Inc. ("DPM"), a public company headquartered in Toronto, Canada and listed on the Toronto Stock Exchange (TSX: DPM). This report has been prepared for DPM to fulfil the requirements of National Instrument 43-101 Standards of Disclosure for Mineral Projects ("NI 43-101"), as it relates to the estimation and reporting of Mineral Resources and Mineral Reserves situated on properties owned and controlled by DPM and its subsidiaries.

The MRE reported herein is current as at December 31st, 2017 and has been used as the basis for estimating the Mineral Reserve Estimate as outlined in this document, current as at December 31st, 2017. The mined volumes used to deplete the resource are as at December 31st, 2017.

The MRE for Chelopech is reported in Table 2. The cut-off grade was selected in light of the economic sensitivities of the mine and informed by current mining practises.

1.2 Reliance on Other Experts

The authors of this Technical Report have reviewed available Client documentation relating to the mine and other public and private information as listed in the "References" section at the end of this Report. In addition, this information has been augmented by first-hand review and on-site observation and data collection conducted by the authors.

CSA Global is not qualified to provide extensive comment on legal, financial nor environmental issues associated with the Chelopech mine. Assessment of these aspects has relied on information provided by senior managers from DPMC and its advisors who act as QP for the chapters listed in Section 2.2.

1.3 Property Description and Location

1.3.1 Summary

The Chelopech mine is situated adjacent to the village of the same name, in the Sofia District of Bulgaria, 75 km east of the capital Sofia. It is situated approximately 470 km west of the Black Sea ports of Burgas. The village is located at the foot of the Balkan Mountains, at an elevation of approximately 700 m above sea level. The Mine area is bounded to the north by the foothills of the Balkan Range, to the east by a government-owned road maintenance organisation and residential housing, and by agricultural land to the south and west.

1.3.2 Mineral Rights and Tenement Description

The Mining Licence (Chelopech Concession) covers an area of 266 hectares which includes the area of the Chelopech deposit, where extraction and additional exploration area is allowed, and the areas for the additional auxiliary activities. Further exploration is allowed within the deposit boundaries storage only. DPMC has 100% ownership of the surface land upon which the facilities are constructed. DPMC operates under a Concession Contract signed with the Council of Ministers in 1999 granting concession rights to DPMC for a period of 30 years.

Surrounding the Mining Licence to the north, east and west is the exploration area called “Sveta Petka” covering around 4.8 km^2.

DPMC pays a royalty to the State in compliance with the terms under the Concession Agreement from 1999, which is 1.5% on the value of the payable metals (copper, gold and silver) in the mined ore determined as the product of the assayed gold and silver head grades in the actual ore tonnage mined and the arithmetic mean metal prices based on the LME price list for the preceding 6-month period.

1.3.3 Environmental Liabilities

The first requirement for obtaining approval to undertake new or major expansion projects is the approval of the appropriate EIA procedure. Approval of expansion and modernisation of mill and mine was done by environmental authorities with letter No OBOC-1512/25.06.2010 by the Ministry of Environment and Water (MoEW).

There are no additional environmental requirements to the property other than the existence of the current mining infrastructure, namely the underground mine, processing plant, flotation TMF, ancillary workshops and administration facilities. The amount of the financial guarantee for closure and rehabilitation of the site was determined, as part of the Closure and Rehabilitation Plan, initially completed and coordinated with the regional inspectorates of environment and water (RIEW), MoEW and MoEET (currently Ministry of Energy) in April and May 2010. In December 2015, competent authorities approved updated Closure and Rehabilitation Plan with revised value.

1.3.4 Royalties

The royalty charged to the mine as per the Concession Agreement is calculated using the base formula of 1.5% of the combined values of the metals (Cu, Au & Ag) mined during the previous quarterly period.

1.4 Accessibility, Local Resources and Infrastructure

Access to the Chelopech mine is via sealed major roads from the national capital of Sofia, approximately 75 km to the west. The principal rail and road links between Sofia and the country's largest port, Burgas, located on the Black Sea pass through the village of Chelopech and the Chelopech mine.

There has been a strong history of mining in the local region around the mine, with several large mines producing concentrate to feed a copper smelter at Pirdop, which is 10 km from the mine site.

Chelopech is well resourced, due to its proximity to major roads and rail, power lines, communication facilities, water sources and the town of Pirdop. The mine obtains power from the Bulgarian power grid and is permitted to obtain its water requirements from nearby storage facilities. The village of Chelopech, located approximately 1 km from the mine, has a population of approximately 1,700.

Chelopech lies at the base of a range of hills on gently undulating terrain. The plant site is located at approximately 730 m above sea level. The area has the climate of Subtropical Europe, featuring markedly higher winter and substantially lower summer precipitation. Winters are mild with -2°C average temperature, but during intensive cold spells temperatures may fall to -19°C. Summers are hot, reaching 36°C in warmer spells and exceeding 40°C in some locations. Mining operations are conducted all year round, with excess availability of the tailings management facility engineered as part of the construction process.

1.5 History

The mineral potential of the Chelopech area was first recognised in the mid-19th Century and the outcrop area was worked prior to the start of the Second World War. The mineral deposit was re-discovered in 1953, following drilling by Sofia Geological Exploration (SGE). Underground development began in late 1953 to gain bulk samples and to further evaluate the mineral deposit.

In 1990, the Bulgarian Government decreed that due to the high arsenic content, the concentrates could no longer be treated. In 1994, operations were restarted by Navan Bulgarian Mining BV, a Dutch registered subsidiary of Navan Mining Plc. Navan operated the Chelopech mine until late 2002, when Navan went into receivership. The operations continued under the direct control of an administrator appointed by Deutsche Bank AG of London. Mining operations continued whilst DPM negotiated the acquisition of the Bulgarian assets from Navan, including the mine.

The acquisition of Chelopech by DPM was completed in September 2003.

1.6 Geological Setting and Mineralization

Bulgaria is located on the southeast part of the Balkan Peninsula, which lies within the Alpine geosynclinal belt. Late Cretaceous, island-arc type, magmatic evolution resulted in the formation of the Srednogorie volcanic intrusive zone. The Chelopech mineral deposit is located within the Panagyurishte metallogenic district, a central part of the Srednogorie zone.

The geology of the Panagyurishte metallogenic district comprises a basement of Precambrian granitoid gneisses intruded by Palaeozoic granites and overlain by Upper Cretaceous magmatic and sedimentary sequences. In some parts of the district, these rocks are overlain by upper Cretaceous to Palaeogene/Neogene foreland sediments.

Within the region, the Precambrian metamorphic basement consists of gneisses, amphibolites, and metasediments with the overlying Upper Cretaceous, volcano-sedimentary sequences hosting the Chelopech formation; the primary host to mineralisation. The Chelopech Formation reaches thicknesses of up to 2,000 m and consists of Lower and Upper units.

1.7 Deposit Types

Mineralisation is hosted within the Lower Chelopech Formation and is characterised by typical epithermal, high-sulphidation alteration. Alteration and mineralisation is typically zonal with central, high-grade units associated with well-developed stockworks and massive sulphide mineralisation. These units are surrounded by lower grade haloes dominated by disseminated sulphides and pervasive silica overprinting. These two zones are respectively referred to as "Stockwork" and "Silica Envelopes" and are used as hard boundaries during the estimation of Mineral Resources.

The mineralisation occurs in a range of different morphologies, including lens-like, pipe-like and columnar bodies that typically dip steeply towards the south. In gross terms, about 45% of the copper is in the form of arsenides and sulfosalts, 50% as chalcopyrite and 5% as oxides. Gold occurs in a variety of forms but is dominated by refractory species and is typically fine-grained averaging 5 to 20 microns in diameter.

The epithermal class of deposits, including Chelopech, were originally classed as "massive sulphide copper pyrite deposits". Recent studies indicate that an epigenetic origin for the mineralisation formed by the replacement of volcanic rocks is more suitable (Chambefort, 2005).

1.8 Exploration

Given the long exploration and operational history at Chelopech, a variety of drilling and sampling methods have been implemented (Table 1).

Table 1. Pre-DPMC and DPMC Drill Exploration and Operational statistics (as of 30th September 2017).

Data type	Number of Drill Holes	Total Meters
Pre-DPMC Surface Drill holes	448	267,177
Pre-DPMC Underground Drill holes	717	55,672
DPMC Surface Drill holes	78	36,050
DPMC Underground Drill holes	2,497	534,788
Total	3,572	893,687
Total Pre-DPMC	1,165	322,849
Total DPMC	2,117	570,838

Geophysical surveys at Chelopech include:

- In the near mine area, the Sveta Petka exploration license has been investigated during various ground magnetic survey campaigns since 2008. Scintrex and GEM magnetometers were used by different contractors to conduct the surveys. The resultant grids were joined together, processed with Geosoft and a 3D UBC magnetic model calculated.
- A total of 468 gravity survey points were measured in the Sveta Petka and Mining Concession areas. A 200m x 200m base grid was used with infill points over selected anomalous areas.
- Additionally, a complete Bouguer anomaly map was calculated using a combined (LIDAR and digitised topography) DEM grid.
- Filtered gravity (residuals, upward continuation) were calculated and used to allocate areas with potential for presence of large massive sulphide ore bodies. A 3D UBC gravity inversion of a block model density distribution was calculated.
- A Total of 148 full tensor of magnotelluric stations have been measured. The survey covers two blocks of Brevene exploration license at an approximate grid of 250m x 250m. At the southern portion of the Brevene exploration license, magnotelluric stations are allocated along line-section profiles.
- A 3D magnotelluric inversion of a block model of Resistivity distribution have been calculated for the Western and Eastern blocks. A 2D inversion model was also calculated along selected profiles. 1D inversions calculated for each station.
- The results of all geophysical works were incorporated into a 3D geological model for further analysis and interpretation.

1.9 Drilling

Resource development drilling at Chelopech has been completed at a nominal hole spacing of between 50 by 50 m and 25 by 25 m. Data provided for the MRE was supplied at a cut-off date of 30th September 2017. In summary the database consisted of a total of:

- 3,740 diamond drill holes for a total of 893,687.6 m
- 33,996 face samples
- 94,448 drill hole density samples
- 4,403 face sample density values

1.9.1 Pre-DPMC Drilling

The Chelopech Copper Processing Company (CCPC), Navan and Homestake have completed underground diamond drilling at the Chelopech mineral deposit and Sofia Geological Exploration (SGE) has carried out surface diamond drilling at the Chelopech copper-gold deposit since 1956.

1.9.2 DPMC Drilling

Table 15 lists the drilling undertaken by DPMC. Surface drilling targeting a geophysical anomaly north of the mine on the adjacent Smolsko exploration lease. The main objective of underground drilling is resource development and grade control and currently four drill rigs are in use; two for exploration and two for grade control.

The drill core is logged by competent geological personnel in a core shed established for this purpose. All logging information is collected digitally on tablet computers using Field Marshall software.

1.9.3 Core Orientation and Structural Logging

Between May 2009 and May 2015, core orientation was conducted using the Ezy-Mark™ system and an Orifinder DS1 tool has been used since May 2015.

1.9.4 Pre-DPMC Surveying

Pre-DPMC surveying of collars were undertaken using optical methods, with theodolites and survey traverses. Pre-DPMC downhole surveying was undertaken using a gyroscope, prior to 1994 and a (Reflex) Maxibore tool until 1999. Insignificant measured deviations resulted in dips and azimuths being measured at the collar and extended to depth between 1999 and 2002.

1.9.5 DPMC Surveying

DPMC collar surveying utilises a Leica TCRA 1203 total station surveying tool. The risk of significant error associated with the drill collar surveys is low. Downhole surveys since 2003 have been undertaken using a Reflex EX Shot tool, but not all underground drilling completed since 2005 has been systematically downhole surveyed. While the deviation is not expected to materially change the mineralised zones, all future drill holes should be downhole surveyed to accurate location.

1.10 Sample Preparation, Analyses and Security

1.10.1 Sampling Procedure

Drill sampling methods are consistent with good industry practice and are appropriate for use in the estimation of Mineral Resources.

Face samples are taken as horizontal panel chips on a 20 cm grid over the bottom half of each development drive advance. Each sample area is an average of 3 m in length. The samples are usually chosen based on different mineralisation and geological characteristics. These are considered to have the same statistical weighting in the estimation of resources as 3 m drill composite lengths.

The underground face sampling procedures and checks are considered appropriate with field duplicates, blanks and standards submitted for analysis as per the diamond core sampling protocols.

1.10.2 Analyses Procedure

Most sample preparation has been completed on site at the Chelopech laboratory. Up to early 2003, most analyses were completed on site at Chelopech; however, between 2003 and 2004 all drillhole analyses were completed at UltraTrace in Perth, Australia. Since late 2004, most of the drillhole samples have been analysed at the SGS operated laboratory on site at Chelopech with a small amount of exploration drillhole samples analysed at SGS Bor, Serbia. A detailed list of laboratories used is provided in Table 16.

1.10.3 Assay QA/QC

QA/QC prior to DPMC's involvement in 2003 consisted of field and laboratory duplicate checks and no significant bias was apparent. Dundee Precious Metals implemented a quality assurance and quality control program to provide confidence that sample assay results are reliable, accurate and precise. The following material is included in the DPMC QA/QC program:

- Two non-certified blanks (quartz sand and dolomitic limestone)
- Site specific Certified Reference Materials (CRMs), developed and certified by Geostats, together with commercially available Geostats CRMs have been used.
- Site field duplicate samples
- Internal (prep-lab) duplicates sent to SGS Chelopech
- External (umpire) duplicates sent to ALS Romania.

Face sample and drillhole QA/QC results for gold, copper and sulphur were acceptable, whilst silver and arsenic had some issues which were mostly related to the analytical method detection limits and sensitivity.

Results of the QA/QC program for this reporting period (October 2016 to September 2017) have been discussed in Sections 11.3.1 and 11.3.2 and are summarised below:

- The QA/QC procedures implemented at Chelopech are adequate to assess the repeatability, accuracy and precision of the assay results obtained.
- Copper umpire (external) duplicates showed acceptable repeatability and no fatal flaws were apparent. Gold external check samples show a 4% bias to the external check laboratory.
- Silver CRM failures are due to assays being reported in increments of 1.5 g/t which result in apparent failures.
- CRM results are mostly acceptable. Two of the DPM site standards showed bias in the copper assays and one CRM showed bias with gold values, but results are precise and

within 2SD of the expected value. It is recommended that these results be investigated and if necessary, the CRM expected values updated.

1.10.4 Security

Samples collected from underground development, underground drilling and surface drilling operations are transported to the site based geology core shed, where the samples are geologically logged and are prepared for chemical analysis. The sampling procedures are appropriate and adequate security exists on the site to minimise any risk of contamination or inappropriate mixing of samples. Sample tagging and a laboratory bar code system is in use to digitally track sample progress through to final chemical analysis.

1.11 Data Verification

DPM implemented an acQuire GIMS (Geological Informational Management System) in 2004, for managing all the drill hole and face sampling data. Data undergoes further validation by CSA Global through a series of Datamine loading macros. The Qualified Person, who relies upon this work, has reviewed the data and believes the data verification procedures undertaken adequately support the geological interpretations and the analytical and database quality, and therefore support the use of the data in mineral resource and mineral reserve estimation.

Data collection methods, regression analysis and QA/QC procedures for Density data have been reviewed and are considered appropriate for use in the estimation of resources.

The Chelopech database contains surface diamond drill holes, underground diamond drill holes and underground face samples. In 2007 study, a series of investigations were completed to test the appropriateness of combining the datasets for grade estimation. This review work was re-assessed in 2013 by Chelopech staff and no significant bias was established. These findings are considered current and relevant to this report.

Mr David Muir, CSA Global Senior Data Geologist visited Chelopech between the 28th September 2015 and 1st October 2015 to review DPMC data management and to audit the laboratory (SGS Chelopech) where, during the audit, no significant issues were observed. He has continued to collaborate with DPMC up to the present date and is still of the opinion that the DPMC data management procedure is robust and appropriate.

Ms Maria O'Connor, CSA Global Principal Resource Geologist visited Chelopech between the 16th January 2017 and 17th January 2017 to review DPMC data management and MRE workflow.

1.12 Mineral Processing and Metallurgical Testing

A comprehensive test work program was completed on drill core samples of representative mineralisation from each mining block of potential future ores as part of the original 2005 Definitive Feasibility Study (DPM, 2005). The metallurgical test work characterised the hardness and flotation parameters of each, and the work confirmed that the process flowsheet currently in operation was optimum to produce copper/gold concentrates, and no changes were recommended. An additional test program was completed in 2012 covering current and future ores which also confirmed the current flowsheet performance for the copper circuit and developed the optimum conditions for the future recovery of pyrite from the current process plant ore feed.

The expanded ore treatment process facility completed in early 2012 comprises crushing the mined ore in the underground primary jaw crushing circuit, grinding in a semi-autogenous grinding (SAG) milling circuit, primary rougher/scavenger and 3 stage cleaner flotation and concentrate dewatering. Tailings from the concentrator are thickened at the plant, pumped and then filtered at the backfill plant, from which they are then used as underground fill. When not being directed to the backfill plant, the tailings report to the current flotation tailings management facility (TMF).

Further plant upgrades have been completed more recently, including the replacement circuit for the second and third cleaners of the copper circuit in mid-2013 a new pyrite recovery circuit commissioned at the end of 2014.

1.13 Mineral Resource Estimates

Data provided for the MRE was supplied as at 30th September 2017. Mineral Resources were estimated by DPMC personnel under the supervision of Maria O'Connor, CSA Global Principal Resource Geologist. Validation of the Mineral Resource estimate was completed by CSA Global.

A 3-D block model using 10 mE x 10 mN x 10 mRL cell dimensions was created. This model honours wireframe volumes and was based on geological interpretations for the 2 styles of mineralisation. Grade estimation of copper, gold, silver, sulphur and arsenic was completed using Ordinary Kriging (“OK”). Block tonnage was estimated from the material in-situ dry bulk density by using OK where adequate density samples were available, and from the positive relationship to sulphur grade where density sampling was limited.

In addition to the geological model, a void model was constructed to represent the underground development and production as at 31st December 2017. This volume was depleted from the Mineral Resources Estimate.

Mineral Resources have been classified in accordance with the classification guidelines defined in the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Definition Standards on Mineral Resources and Mineral Reserves, dated May 10, 2014, adopted under NI 43-101. The criteria used to classify the Mineral Resources include the robustness of the input data, the confidence in the geological interpretation, the distance from data and geostatistical service variables, such as estimation variance.

The Mineral Resource Estimate for the Chelopech deposit is presented in Table 2. The MRE is reported exclusive of Mineral Reserves. The MRE as at the 31st December 2017 is reported based on an operating net profit cut-off greater than USD 0 and a gold equivalent cut-off of 3.0 g/t.

Table 2. Chelopech Mineral Resource Estimate as at 31st December 2017.

Dundee Precious Metals - Chelopech. Chelopech Mineral Resource Estimate as at 31st December, 2017									
Resource Category	MTonnes	Grades					Metal Content		
		Au (g/t)	Ag (g/t)	Cu (%)	S (%)	As (%)	Au (Moz)	Ag (Moz)	Cu (MLbs)
Measured	8.6	3.41	9.64	1.15	13.53	0.32	0.943	2.664	217
Indicated	4.3	3.33	9.74	1.00	12.69	0.26	0.457	1.335	94
Total M+I	12.9	3.39	9.67	1.10	13.25	0.30	1.400	3.999	311
Inferred	1.4	2.66	8.11	0.93	10.65	0.11	0.121	0.370	29

MRE is reported using a gold equivalent cut-off of 3 g/t and an operating net profit cut-off of >USD0
Tonnages are rounded to the nearest 1,000 tonnes to reflect this as an estimate
Metal content is rounded to the nearest 100 tonnes or 100 ozs to reflect this as an estimate
Gold equivalent (AuEQ) = [Au + Cu*2.06] based on a Cu price of $2.75/lb and Au price of $1250/oz
The Mineral Resource is reported exclusive of Mineral Reserves.

It is the QP's opinion that the Chelopech MRE has a low risk of being affected by factors such as geological understanding, data management, estimation methodology or classification strategy. The deposit geology is well understood, has been appropriately modelled in 3D and has adequate sampling data to support the grade and tonnage estimates. Recent reconciliation with production has verified the quality of the MRE.

CSA Global does not believe that the estimate of Mineral Resources may be materially affected by metallurgical, environmental, permitting, legal, title, taxation, socio-economic, marketing or political issues. However, CSA Global relies on information (as presented in Section 3) of this Technical Report about legal and environmental considerations.

Comparison of this MRE (after depletion of Mineral Reserves) as at 31st December 2017 with the previous MRE as at 31st December 2016 is presented in Table 46. The updated MRE shows an increase of 2% in the Measured and Indicated Mineral Resources primarily due to positive results from operational resource development drilling during the period 01 January 2017 to 31 December 2017.

1.14 Mineral Reserves Estimates

The Mineral Reserves statement as at 31st December 2017 is presented in Table 3. Depletion for mining has been completed to the end of December 2017. Mineral Reserves are reported using a Net Smelter Return (NSR) methodology.

There are numerous benefits of a NSR model compared to a single metal cut-off grade approach, such as:

1. Polymetallic ore can be converted into a profitability variable expressed in terms of USD/t.

2. Investigation of the potential viability of selected Mineral Reserves blocks can be quickly assessed.

3. The profitability of planned stopes can be assessed.

4. The effect of commodity price fluctuations can be quickly applied to the Mineral Reserves model.

Table 3. Chelopech Mineral Reserves as at 31st December 2017

Chelopech Ore Reserves as at 31st December, 2017										
Classification		Ktonnes	Grades					Metal Content		
			Au (g/t)	Ag (g/t)	Cu (%)	S (%)	As (%)	Au (Koz)	Ag (Koz)	Cu (MLbs)
PROVEN	Stopes	10,457	2.86	7.19	0.93	12.82	0.28	961	2,418	215
	Broken Stocks	21	2.62	4.39	0.75	11.17	0.27	2	3	0
	Stockpiles	22	3.90	7.90	1.01	13.62	0.27	3	5	0
PROBABLE	Stopes	7,517	3.36	6.14	0.85	12.20	0.26	811	1,484	141
	Ore Development	755	4.53	7.84	1.14	14.41	0.35	110	190	19
TOTAL PROVEN *		10,499	2.86	7.19	0.93	12.82	0.28	965	2,426	216
TOTAL PROBABLE		8,272	3.46	6.30	0.88	12.40	0.26	921	1,674	160
TOTAL *		18,771	3.13	6.79	0.91	12.63	0.28	1,886	4,101	376

*Including Broken Stocks & Stockpiles

Mineral Reserves are based on long term metals prices of USD 1,250/oz Au, USD 23/oz Ag and USD 2.75/lb Cu
Tonnage figures have been rounded to the nearest 10,000t to reflect this as an estimate.

Net changes in tonnes and contained metals from the 2016 to the 2017 Mineral Reserves estimate show reductions of 1.0 Mt in tonnage, 109,000 ounces of gold and 22 million pounds of copper. Corresponding percentage reduction are respectively 5% in tonnes, 5% in metal content for gold, and 6% in metal content for copper. The decrease can be attributed to 2017 mining depletion, which has been partially offset by addition of new stope and redesign of existing stopes.

The Mineral Reserves at Chelopech have been estimated by including several technical, economic and other factors. A change to any of the inputs would therefore have some effect on the overall results. CSA Global is comfortable that sufficient work has been done by DPM to ensure that minor changes in the mining and metallurgy factors are not likely to have any material effect on Mineral Reserves. CSA Global relies on information as presented in Section 3 of this Technical Report with respect to legal and environmental considerations.

CSA Global does not believe that the estimate of Mineral Reserves may be materially affected by metallurgical, environmental, permitting, legal, title, taxation, socio-economic, marketing or political issues. However, CSA Global relies on information (as presented in Section 3) of this Technical Report about legal and environmental considerations.

1.15 Development and Operations

With the Chelopech mine having reached its mine/mill expansion design rate of 2.2 Mtpa in late 2015, the operation will produce during the currently planned Life of Mine (LOM), in concentrate, a total of 1.33 Moz of gold, 2.47 Moz of silver and 1140 kt of copper metal for the years of 2018 through 2026.

Planned mining operations incorporate conventional long-hole open stoping (LHOS) with paste fill. The mine is developed beneath the existing sublevel caving operation and use a conveyor belt from the underground workings to surface for ore transport.

Current ore treatment processes comprise conventional crushing of ROM ore in a primary jaw crushing circuit, grinding in a SAG milling circuit, rougher/scavenger and 3 stage cleaner flotation and concentrate dewatering to produce the copper/gold concentrate, while the pyrite is recovered from the copper circuit cleaner tails. Copper concentrate is shipped to the DPM Tsumeb Smelter in Namibia with a portion being sold to Xiangguang Copper Co (XGC).

Tailings from the concentrator are thickened and directed to the mine backfill plant, with the balance discharged to the flotation TMF.

The concentrator operates 24 hours per day, 7 days per week, and is designed to process 275 tph at an operating availability of 91.3%, with an average annual ore throughput capacity of 2.2 Mt. In 2017, 2.219 Mt of ore were processed in 7,830 operating hours which is equivalent to a rate of 286 tph at ~90% availability.

1.16 Mine/Mill Expansion

The first phase of the concentrator upgrade commenced operations in February 2011. Ore was passed through the existing primary jaw crushing circuit and conveyed to the wet grinding circuit. The processing operation included a single stage semi-autogenous mill (8.2 m diameter SAG), a new Rougher/Scavenger flotation circuit (4 x 100 m^3 tank cells), with three stage cleaning, and concentrate dewatering. Subsequent phases to complete the concentrator upgrade (a new tailings water recovery thickener, concentrate filter, and upgraded water recovery systems) came on stream through 2011, to ultimately match the designed mine capacity of 2.2 Mtpa.

Tailings from the concentrator are thickened at the plant, pumped and then filtered at the backfill plant, from which it is then used as underground fill. This was completed in August 2010. The tailings report to the current flotation TMF when not being directed to the backfill plant.

The final upgrade to the copper circuit (cleaner circuit conditioning, and the replacement of the second and third cleaner stages) was installed progressively from late 2012, and completed in Q3, 2013. Optimisation of the circuit continued though to June 2014, as the volumes of the rougher/scavenger (bulk) concentrate containing the additional pyrite increased prior to the separation in the cleaner stages.

The pyrite recovery circuit was commissioned during the first quarter 2014, producing approximately 90% of the 169,000 tonnes of pyrite produced in 2014, 240,000 tonnes in 2015, 215,000 tonnes in 2016 and 249,000 tonnes in 2017. The upgrade of the site concentrates materials handling system enabling direct loading onto trains from the site stockpiles was operational by the end of the second quarter 2014.

1.17 Financial Summary

Based on the projected 2018-2026 ore production schedule operating costs and metal prices of USD 1,250 per troy ounce price for gold, USD 2.75 per pound for copper, and USD 23 per troy ounce for silver. The life of mine after tax NPV is estimated as USD 424 million when using a discount rate of 5.0%.

1.18 Interpretations and Conclusions

1.18.1 Geology and sampling procedures

During site visits by CSA Global in 2013, 2014, 2015, 2016 and 2017 meetings were held with DPM staff and the SGS laboratory manager. Data and procedures were reviewed in the mine office, underground operations, core yard, processing plant and SGS laboratory. Conclusions based on these site visits were that procedures are consistent with good industry practice.

1.18.2 Underground face sampling data

Development face samples are taken as horizontal panel chips on a 20 cm grid over the bottom half of each development drive advance. Each round is an average of 3 m in length. The samples are usually chosen based on different mineralisation and geological characteristics.

1.18.3 Geological model

CSA Global believes that the current understanding of geology and mineralisation controls is good, and that the current MRE model adequately predicts the in-situ grades and tonnes realised during underground development and mine production. Good comparison between the short term planning model, incorporating updated grade control geology mapping, sampling and drilling data with the MRE model demonstrates the robustness of the MRE model.

1.18.4 Assay QA/QC

Outcomes from the QA/QC results for gold, copper, silver, arsenic and sulphur samples for assays completed since the previous MRE have been reviewed and are summarised below:

- The QA/QC procedures implemented at Chelopech are adequate to assess the repeatability, accuracy and precision of the assay results obtained.
- Blank standards have no significant issues for all elements excepting some failures for copper but overall acceptable results.
- Field and internal duplicates show good repeatability with no significant bias for all elements. The over reporting bias observed in the previous MRE external Au checks

(umpires) is still present, but on the threshold of acceptability. A bias of 4% in the copper duplicates was observed and will be investigated, although considered acceptable.

- The following issues were noted with the CRMs:
    - Copper CRM bias – Most probably due to the digestion method used at the site laboratory not being the same as used in the Geostats round robin when assigning an expected value. DPMZ and DPMW over report, showing an 8% and 5% bias respectively.
    - Silver CRM failures – DPMC site specific standards mostly have acceptable accuracy except for one (DPMY) which over reports by 19%. Results are mostly below threshold and exaggerated by the assay precision (results are returned in increments of 1.5 g/t) as well as many of the standards having expected values close to the detection limit. As silver is a minor element this issue is not considered material to the MRE. Database validation

DPMC capture data daily into the acQuire GIMS, ensuring that the data is validated using constraints and triggers. Verification checks are also conducted on surveys, collar coordinates, lithology, and assay data.

Data undergoes further validation by CSA Global through a series of Datamine loading macros. The Qualified Person has reviewed the reports and believes the data verification procedures undertaken on the data collected from DPMC adequately support the geological interpretations and the analytical and database quality, and therefore support the use of the data in mineral resource and mineral reserve estimation.

1.18.5 Bulk Density

CSA Global's concludes that the in-situ dry bulk density data are collected using appropriate sampling methods and analysis procedures. The methods used to estimate density to determine the mineral resource tonnage, through a combination of Ordinary Kriging in areas of detailed sampling, and by application of the relationship between sulphur grade and density where insufficient samples are available, are suitable for this style of deposit and mineralisation.

1.18.6 Mineral Resource Estimation

The MRE for the Chelopech Deposit has been classified as Measured, Indicated and Inferred Mineral Resources following the guidelines specified by the CIM and adopted for technical reports complying with NI 43-101.

Validation of the estimated model using swath plots, histograms and probability plots of inputs and outputs and visual validation of cross sections showed that estimated block grades reflect the grade tenor of input data.

1.18.7 Mine Operations

Operations at the Chelopech mine have been updated significantly since DPM assumed ownership of the operation in 2003. The mining method has been changed, a completely new underground ore handling system has been constructed and a new mine access has been completed. The mine is now a mature steady-state operation with a high level of management control, up-to-date equipment and a workforce that can operate the systems adequately. The quality of the ore reserves mean that a high level of mine planning can be instituted and complied with.

It is CSA Global's belief that operations will continue at current levels, given the quality of management and technical support. Mining equipment is expected to be replaced and updated on a regular basis to ensure planned mechanical availability.

1.18.8 Process Plant

In combination with the improvements seen in the mine, the processing capabilities have been successfully upgraded to reach the levels required for a successful operation. The phased approach of the installation of the various facilities has been a significant contributor to the relatively seamless program of expansion. This enabled the combined operation to achieve the design capacity as soon as the upgraded ore supply system became operational.

1.19 Recommendations

1.19.1 Assay QA/QC

A quality assurance and quality control program has been implemented by Dundee Precious Metals to provide confidence that sample assay results are reliable, accurate and precise. No fatal flaws were observed, and the following is recommended:

- The bias in the external check gold assay results which was also observed in the external copper results between SGS Chelopech and ALS Rosia Montana is still a concern and requires ongoing monitoring.

- DPMC site specific standards show good precision and report within two standard deviations of the expected value, but exhibit bias (particularly with respect to copper values). It is recommended that the results of these are reviewed over the last three years to determine whether the results are consistent or whether drift has occurred. If the results are consistent, then the expected values should be adjusted accordingly. Note that as Geostats has certified these standards, they should be notified of the bias.

1.19.2 Geology and Mineral Resources

- Additional drilling of zones above 450 level in proximity to historical cave zones is warranted and as such is part of the long-term exploration strategy at Chelopech Mine. Measured and Indicated Mineral Resources in this area were not considered in current Mineral Reserves. Resource drilling activity will continue in 2018 and geotechnical assessment to better understand risk in cave zones before consideration for conversion to Mineral Reserves in due course.

- In conjunction with exploration drilling; grade control drilling to delineate the ore body boundaries will continue to improve the location of the ore boundaries and reduce the risk ore dilution and loss.
- Continue to review and monitor the 'representivity' of face samples for use in ongoing MRE work.
- Continue with structural data mapping and development of the structural model, to determine the paragenesis, pre-, syn- and post-mineralisation structures. Review the potential impact or application this structural data as an enhancement to the MRE modelling process.
- Use structural model to assist exploration drill targeting.
- Investigate the possibility of the use of lithogeochemical vectoring to generate exploration targets in where geophysics has not identified anything.
- When reporting Mineral Resources exclusive of Mineral Reserves, formulate an objective, repeatable process to create the wireframes that bound the areas around Mineral Reserves that are sterilised.

1.19.3 Mining and Processing

- Continue attention to the planning detail that has been successful at demonstrating continuous improvement at Chelopech.
- Continue current design and operating procedures to mitigate risks in extracting Block 19 and 103 Crown Pillars.
- Maintain the use of modern technology in equipment sourcing and utilisation.
- The positive attitude of the Chelopech personnel and their interest in continually improving should continue to be encouraged.
- Ensure designed operational practices are adhered to at all times.

1.19.4 2018 Operational Resource Development Drilling

In 2017, an underground resource development diamond drilling program of 41,706 metres was completed.

The key area explored was Zone 153 - a new high-grade zone discovered in Q4 of 2016 as part of the on-going 'Upper Levels' resource development drilling program. The focus of recent drilling has been on defining the shape and volume of the mineralised zone, improving confidence in the geological model and to add additional Mineral Resources in this area.

Metallurgical testwork on the Zone 153 material was undertaken in Q3 of 2017. The test work has shown it to be highly amenable to the current processing flow sheet.

Elsewhere, resource development drilling concentrated on the north-west part of deposit, in particular Target 148, with the aim of converting Inferred Mineral Resources to higher confidence Mineral Resource categories.

Further to this, the areas down plunge of Block 17, Block 18, Block 19, Block 103 and Block 150 were also tested during the year.

Currently DPMC's operational resource development drilling strategy for 2017 combines resource definition drilling designed to a 30 x 30 m drilling grid with infill grade control holes. Wider spaced resource definition drilling is employed to define Indicated Mineral Resources. Whilst operational infill drilling on a 15 m x 15 m drilling grid is designed to upgrade Indicated Mineral Resources to the Measured Mineral Resource category, to allow detailed production design and scheduling works.

The Mineral Resource development strategy for Chelopech has been planned for 2018, focusing on drilling of Zone 153, currently converted in Block 153, the upper levels of Block 150, 25, 5 in western area and northwest sections of the deposit. Other areas of focus include Target 148 and the surrounding areas, which have demonstrated high potential to host new mineralised zones.

In light of the positive results from extensional drilling from position G421-405-DDC, on level 405, the program will continue during 2018. Drilling will aim to expand the current mineralisation contours in upper levels of Block 150, Block 25 and Block 5 and convert Mineral Resources into Mineral Reserves.

Drilling towards Target 148 will continue in 2018. Additional drilling will determine the continuity of mineralization with the goal of converting this discovery into higher confidence Mineral Resource categories and ultimately Mineral Reserves.

Additionally, there are plans to test the following targets in 2018:

Extensional Drilling

- Extensional drilling in the areas close to Block 8 targeting the discovery of new and expansion of known ore bodies. Historic drilling results in combination with structural and geology models indicate un-tested mineralisation may be present in this area.

- Extensional drilling on a new target locality, called "700". The target area coincides with NW – SE structural trend which has been assessed as having high potential for hosting new mineralization. Based on historical mapping of silica envelope on the upper levels of southeast mining area and several historical holes which returned ore-grade mineralization, a 3D model of the target was generated and will be used for drill testing.

- Extensional drilling in a new target area termed "North", located in the northeast section of Chelopech deposit close to the boundary of Block 19 between 140 mRL and 160 mRL.

Grade Control Drilling

- Grade control drilling in Block 151 between levels 390 mRL and 330 mRL to expand the known orebody and convert Mineral Resources into Mineral Reserves;

For 2018, in total 44,000 m of Operational Resource Development drilling has been planned to cover the targets mentioned above. DPMC intends to spend $1,900,000 USD for Operational Resource Development drilling during 2018.

2. Introduction

2.1 Terms of Reference – CSA Global (UK)

CSA Global is an international independent geological and mining consultancy with offices in Australia, UK, Canada, Indonesia and South Africa. CSA Global (UK) Ltd ("CSA Global") was requested by DPMC to supervise, validate and verify the MRE and validate and verify the Mineral Reserve Estimate for its Chelopech underground gold and copper mine, located at Chelopech in Bulgaria. This report is prepared in accordance with the disclosure and reporting requirements set forth in the Toronto Stock Exchange Manual, NI 43-101, Companion Policy 43-101CP to NI 43-101, and Form 43-101F1 of NI 43-101.

The authors of this Technical Report do not disclaim any responsibility for the content contained herein and make appropriate caveats under Section 3 – Reliance on other Experts.

CSA Global (including its directors and employees) does not have nor hold:

- Any vested interests in any concessions held by DPM.
- Any rights to subscribe to any interests in any of the concessions held by DPM either now or in the future.
- Any vested interests either in any concessions held by DPM, or any adjacent concessions.
- Any right to subscribe to any interests or concessions adjacent to those held by DPM either now or in the future.

CSA Global's only financial interest is the right to charge professional fees at normal commercial rates, plus normal overhead costs, for work carried out in connection with the investigations reported here. Payment of professional fees is not dependent either on project success or project financing.

DPMC technical staff used geological data and interpretations, data relating to underground development and mined areas, drilling and assay data and other relevant technical data.

2.2 Principal Sources of Information

The data used to update the Mineral Resource Estimate reported herein is current as at September 30th, 2017 and the Mineral Resource has an effective date of December 31st, 2017 and has been used as the basis for estimating the Mineral Reserve Estimate as outlined in this document, with an effective date of December 31st, 2017. The mined volumes used to deplete the resource are as at December 31st, 2017.

This Technical Report is an update to the NI43-101 Technical Report dated 28th March 2016. (DPM, 2016). Set out below are the updates made to this technical report;

- Chapters 5, 8 and 23 are largely based on the 2016 Technical report (CSA Global, 2016). This information has been reviewed by DPMC technical staff and CSA Global in

2017 and remains current. The authors of this Technical Report do not disclaim any responsibility for the information contained in these sections.

- Information contained in all other Chapters has been reviewed and updated.

2.3 Units

All units of measurement used in this report are metric unless otherwise stated, and are contained in the List of Abbreviations of this Technical Report

2.4 Site Visit

2.4.1 Current Personal Inspection (1) - Geology

DPM Corporate Senior Resource Geologist, Mr. Ross Overall has been involved in the project since 2011, with the most recent site visit being February 8th, 2018. Historical and recent activities on site have included geological supervision, drilling review and guidance to the on-site technical team in the areas of DPM technical procedures and standards.

2.4.2 Data

CSA Global Senior Data Geologist, Mr. David Muir visited the project between the 28th September 2015 and the 1st October 2015 to review DPMC data management and to audit the laboratory (SGS Chelopech) and concluded that the DPMC data management procedure is robust and appropriate. The laboratory was audited, and no significant issues were observed.

Mr. Muir has continued to collaborate with DPMC in the areas of data review and communication up to the present date and remains of the opinion that the DPMC data management procedure is robust and appropriate.

Ms Maria O'Connor, CSA Global Principal Resource Geologist visited Chelopech between the 16th January 2017 and 17th January 2017 to review DPMC data management.

2.4.3 Mineral Resources

The most recent site visit to the Chelopech mining operation by CSA Global consultants was between 16th and 17th January 2018 inclusive and conducted by Principal Resource Geologist - Ms Maria O’Connor. During this site visits the following items were reviewed and discussed with DPMC Database Geologist - Elka Chokova, Senior Resource Geologist - Petya Kuzmanova:

- Data base verification and QA/QC results for the 2016 data. Reconciliation issues relating to Block 151 possibly due to a possible bias in the face sampling data for the area.

- Impact of the removal of face samples on the MRE classification for Block 151.

- Discovery of historically mined voids which affected the MRE tonnages for Block 150.

- Changes to the methodology for determining block mining profit.

2.4.4 Current Personal Inspection (2) - Mining and Mineral Reserves

CSA Global Manager of Mining, Mr. Karl van Olden visited the Chelopech site between 19th to the 23rd of February 2018 for the purposes of reviewing mining activity, practises, equipment, facilities, mine planning processes and work management system. He has continued following the technical processes of the mine on a regular basis through review of documentation and personal communication with key technical staff.

2.5 Cautionary Statements

2.5.1 Forward Looking Statements

This Technical Report contains “forward-looking information” or "forward-looking statements" that involve several risks and uncertainties. Forward-looking information and forward-looking statements include, but are not limited to, statements with respect to the future prices of gold and other metals, the estimation of Mineral Resources and Reserves, the realisation of mineral estimates, the timing and amount of estimated future production, costs of production, capital expenditures, costs (including capital costs, operating costs, cash cost per gold and silver oz and per copper lb and other costs) and timing of the development of new mineral deposits, success of exploration activities, permitting time lines, economic analysis, LOM, rates of production, annual revenues, IRR, NPV, currency fluctuations, requirements for additional capital, government regulation of mining operations, environmental risks, unanticipated reclamation expenses, title disputes or claims, limitations on insurance coverage and timing and possible outcome of pending litigation.

Often, but not always, forward-looking statements can be identified by the use of words such as “plans”, “expects”, or “does not expect”, “is expected”, “budget”, “scheduled”, “estimates”, “forecasts”, “intends”, “anticipates”, or “does not anticipate”, or “believes”, or variations of such words and phrases or state that certain actions, events or results “may”, “could”, “would”, “might” or “will” be taken, occur or be achieved.

Forward-looking statements are based on the opinions, estimates and assumptions of contributors to this report. Certain key assumptions are discussed in more detail herein. Forward looking statements involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of DPM to be materially different from any other future results, performance or achievements expressed or implied by the forward-looking statements.

Such factors include, among others: the actual results of current exploration activities; actual results of reclamation activities; conclusions of economic evaluations; changes in project parameters as plans continue to be refined; future prices of gold and other metals; possible variations in ore grade or recovery rates; failure of plant, equipment or processes to operate as anticipated; accidents, labour disputes and other risks of the mining industry; delays in obtaining governmental approvals or financing or in the completion of development or construction activities, fluctuations in metal prices, as well as those risk factors discussed or referred to in this report and in DPM’s latest annual information form under the heading "Risk

Factors" and other documents filed from time to time with the securities regulatory authorities in all provinces and territories of Canada and available at www.sedar.com.

There may be factors other than those identified that could cause actual actions, events or results to differ materially from those described in forward-looking statements, there may be other factors that cause actions, events or results not to be anticipated, estimated or intended. There can be no assurance that forward-looking statements will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements. Accordingly, readers are cautioned not to place undue reliance on forward-looking statements.

2.5.2 GAAP Measures

This Technical Report contains certain non-GAAP measures such as expected cash cost per tonne/ounce/pound and EBITDA. Such measures have non-standardized meaning under International Financial Reporting Standards ("IFRS") and may not be comparable to similar measures used by other issuers. See DPM's latest Management's Discussion and Analysis for more information about historical non-GAAP measures reported by DPM.

3. Reliance on Other Experts

The authors of this Technical Report have reviewed available Company documentation relating to the project and other public and private information as listed in the "References" section at the end of this Report. In addition, this information has been augmented by first-hand review and on-site observation and data collection conducted by the authors.

Validation of the historical data obtained from previous operators (which this Mineral Resource estimate is partly reliant on) is a process of continual improvement. The conclusions and estimates in this report may change over time depending on these improvements, future exploration results, mineral prices and other relevant market factors.

The Qualified Persons take responsibility for the content of this Technical Report and believe it is accurate and complete in all material aspects.

- CSA Global authors act as Qualified Persons for the following sections of this Technical Report; Sections 1, 2.1, 2.2, 2.3, 2.4.1 to 2.4.4, 2.5, 3 to 9, 14 to 16, 23 and 25 to 27.

- DPM authors act as Qualified Persons for the following sections of the Technical Report; Sections 10, 11, 12, 13 and 17 to 22.

In addition, the current report has used the findings of the 2007 and 2008 geological modelling "campaign" coordinated and documented by consulting geologists Jigsaw Geoscience Pty Ltd, Leapfrog modelling by Jun Cowan of Prestologic Pty Ltd, and petrology analysis performed by Dr Ivan Donchev in 2010 (Donchev 2010).

4. Property Description and Location

4.1 Background Information

Bulgaria is a Slavic Republic in south-eastern Europe, bounded to the north by Romania, to the west by Serbia and Macedonia, to the south by Greece and Turkey, and to the east by the Black Sea. The population is largely Eastern Orthodox Christian (~85%), with a Muslim minority (~13%). The capital city is Sofia and the population is approximately 7.3 million.

Bulgaria is a member of the European Union since 1 January 2007, is a full member of the Central European Free Trade Association. The local currency, the Lev (BGN), has been pegged to the Euro since 1999 (1.95583 BGN/EUR).

Bulgaria experienced strong economic growth, averaging 6 to 7% per annum from 2004. However, the economy experienced strong inflationary pressures, averaging 9.8% in 2007 and 12.5% in 2008. Amidst the financial crisis of 20117-2010, unemployment rates increased to 9.1% in 2009, while GDP growth contracted from 6.3% in 2008 to −4.9% in 2009. The crisis had a negative impact mostly on industry, with a 10% decline in the national industrial production index, a 31% drop in mining, and a 60% drop in "ferrous and metal production".

Educational standards within the country are high. Mineral exploration and mining were important under the communist regime, resulting in a large pool of qualified technical staff and operating personnel.

Bulgaria is well serviced by facilities and infrastructure. Large towns have the normal facilities provided in western European countries. The country is serviced by an extensive network of paved roads, except in the most mountainous districts. There is also a comprehensive rail network.

4.2 Project Location and Accessibility

The Chelopech mine is adjacent to the Chelopech village, in the Sofia District of Bulgaria, (coordinates 260,360 mE; 473,130 mN, UTM 35N), 75 km east of the capital Sofia (Figure 1). Chelopech is located approximately 350 km to the west by road and rail from the Black Sea ports of Burgas and Varna. Chelopech is located at the foot of the Balkan Mountains, at an elevation of approximately 700 m above sea level. The mine area is bounded to the north by the foothills of the Balkan Range, to the east by a government-owned road maintenance organisation and residential housing, and agricultural land to the west and south, respectively.

Figure 1. Chelopech Project Location Plan (DPMC, 2017).

Production Overview The operation is an underground gold-copper mine and processing facility, which commenced operations in 1954 and expanded these facilities in 1975. Since DPM's acquisition of Chelopech in 2004, operations have produced on average 60,000 ounces of gold and 10,000 tonnes of copper per annum between 2004 and 2008, contained in a sulphide concentrate grading between 15 and 17% copper, 20 to 30 g/t gold, and approximately 5% arsenic.

In 2011; production increased due to mine and mill expansion programs (Coffey 2011), and 1.3 million tonnes were mined and processed. This increased in 2013, to 2 million tonnes of ore mined and processed, producing 125,000 tonnes of concentrate, containing 21,000 tonnes of copper and 132 thousand ounces of gold. During 2016, 2.212 million tonnes of ore were mined and processed, producing 107,108 tonnes of Cu-Au concentrate and 214,775 tonnes of pyrite concentrate. The combined concentrates, contained 19,000 tonnes of copper and 166 thousand ounces of gold.

Due to the high arsenic content, all of the copper/gold concentrate produced is exported. Most is sent to the Tsumeb Smelter in Namibia, (100% owned by DPM), and from 2014 the remainder of the production is sent to Hong Kong Xiangguang Int. Holdings Ltd. In late 2012, the Company also entered into an agreement with Xiangguang Copper Co. for the sale of pyrite concentrate produced at the mine, with first delivery completed in March 2014.

4.3 Mineral Rights and Tenement Description

4.3.1 Summary

The Mining Licence (Chelopech Concession) covers an area of 452 hectares which includes the area of the Chelopech deposit, where extraction and additional exploration are allowed, and the areas for the additional industrial facilities. DPMC has 100% ownership of the land upon which the facilities are constructed. DPMC operates under a Concession Contract signed with the Council of Ministers in 1999 granting concession rights to DPMC for a period of 30 years. Under Bulgarian regulations, the Mining Licence area is applied for based on geographical coordinates. The physical boundaries of the Mining Licence are not surveyed and marked on the ground.

Surrounding the Mining Licence to the north, east and west is the exploration area called "Sveta Petka" covering around 4.8 km^2. DPMC applied for an exploration permit for the "Sveta Petka" area in the beginning of 2012. In August 2012, the Council of Ministers approved granting the exploration rights to DPMC for 3 years with the Resolution by the Ministry of Economics, Energy and Tourism (MoEET) and a contract was signed on January 29, 2013. The contract was extended, and it is valid until September 14, 2018. DPMC intends to renew this exploration license by way of an extension application, to be submitted in May 2018.

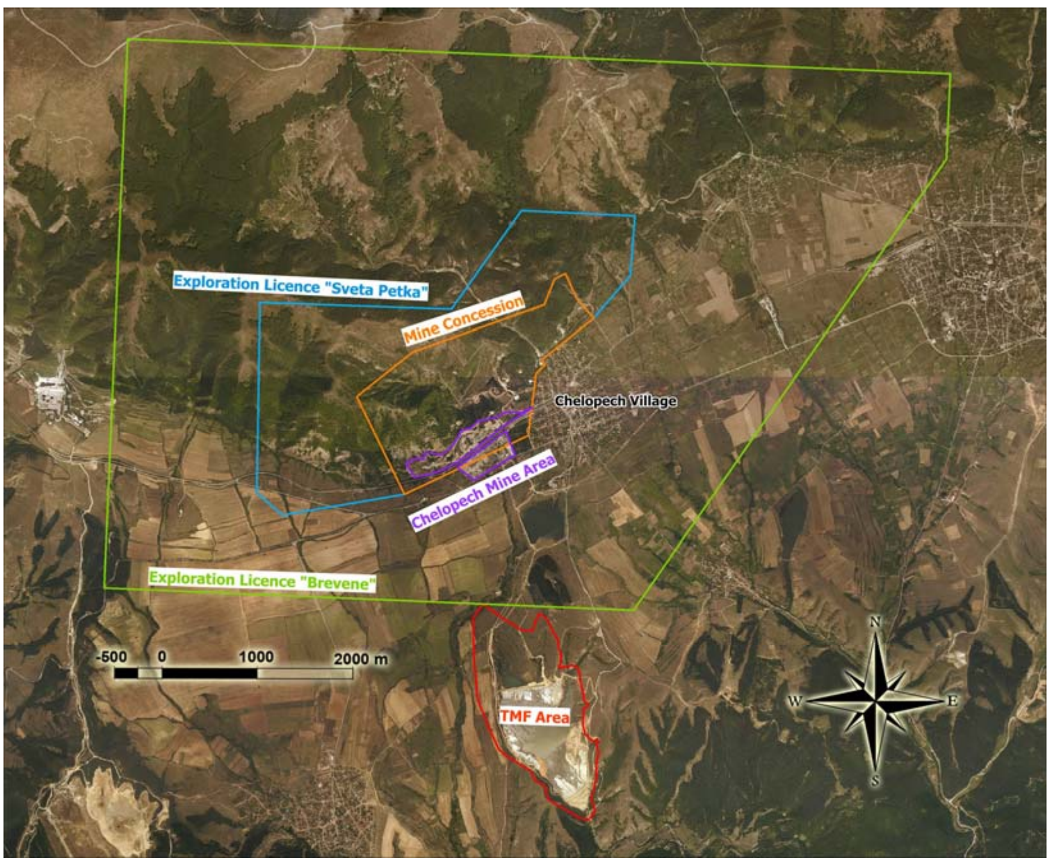

Figure 2. Plan of the Chelopech Project Licences (DPMC, 2017)

4.3.2 Mining Permit Terms and Conditions

The first requirement for obtaining approval to undertake new or major expansion projects is the approval of the appropriate EIA procedure. The original EIA application included the expansion of the mine and mill to 3 Mtpa, combined with the installation of a metals processing facility to treat the concentrate on site. This was submitted in November 2005 and approved in July 2008.

This approval for the complete project was subsequently revoked by the Bulgarian Supreme Administrative Court on 15 April 2010. The application was resubmitted with a simplified scenario of expanding the underground mine and mill to a capacity of 2 Mtpa, and to produce copper-gold concentrate following the approval by Bulgarian Authorities of the 2010 LOM Plan. Approval of expansion and modernisation of mill and mine was done by environmental authorities with letter No OBOC-1512/25.06.2010 by MoEW. Additional approval of expansion the underground mine and mill to a capacity of 2.2 Mtpa was done by environmental authorities with letter No 26-00-11956/16.03.2016 by the regional inspectorates of environment and water (RIEW) - Sofia.

DPMC pays a royalty to the State in compliance with the terms under the Concession Agreement, which is 1.5% on the value of the payable metals (copper, gold and silver) in the mined ore determined as the product of the assayed gold and silver head grades in the actual ore tonnage mined and the arithmetic mean metal prices based on the LME price list for the preceding 6-month period.

4.3.3 Environmental Liabilities

There are no additional environmental requirements to the property other than the existence of the current mining infrastructure, namely the underground mine, processing plant, flotation TMF, ancillary workshops and administration facilities.

The amount of the financial guarantee for closure and rehabilitation of the site was determined, as part of the Closure and Rehabilitation Plan, completed and coordinated with RIEW, MoEW and MoEET in April and May 2010. After project coordination, DPMC established financial security for its obligations through an insurance policy for USD 25 million and submitted it to the MoEET in November 2010. In 2010, the form of the financial security was changed from insurance policy to bank guarantee and was submitted to the MoEET in November 2010. In 2011, the insurance policy was transferred into bank guarantee for 20,730,687 Euro which is renewed on an annual basis in November. In December 2015, competent authorities (Ministry of Energy) approved an updated Closure and Rehabilitation Plan with revised value of 13,949,832 Euro.

4.3.4 Royalties

The royalty charged to the project as per the Concession Agreement is calculated using the base formula of 1.5% of the combined values of the metals (Cu, Au & Ag) mined during the previous quarterly period.

4.3.5 Risks

To the extent known, the authors of this technical report are not aware of any significant factors or risks that may affect access, licence title or the ability to perform work on the property.

5. Accessibility, Climate, Local Resources, Infrastructure and Physiography

5.1 Accessibility

The Chelopech mine is easily accessible via sealed major roads from the national capital of Sofia, approximately 75 km to the west. The principal rail and road links between Sofia and the country's largest port, Burgas, located on the Black Sea pass through the village of Chelopech and the Chelopech mine.

A recent road upgrade program connecting the major cities throughout Bulgaria has substantially improved the road system around the region, resulting in significantly improved road access to and from the site by road transport throughout the year.

Since mid-2014, all of the copper and pyrite concentrates produced are transported by rail directly from the operating site to the Port of Burgas for shipment abroad.

5.2 Infrastructure

Chelopech is well resourced, due to its proximity to major roads, power lines, communication facilities, water sources and the nearby towns of Zlatitsa and Pirdop. The site obtains power from the Bulgarian power grid and is permitted to obtain its water requirements from nearby storage.

Power is supplied from the Bulgarian national transmission and distribution system, at 110 kV, via substations at Stolnik and Zlatitza to the mine substation (110/6 kV) with two transformers (16 MVA each) located in the southeast area of the mine. Most of the distribution system consists of above ground transmission lines.

The mine currently has a permit to obtain its fresh water requirements from the local Kachulka Dam (owned by the Chelopech Municipality). Additional water requirements are supplemented by mine-site catchments and recycled water from the recently upgraded tailings management facility (TMF). Additional supply should it be required, is available in the future from the Dushantzi Dam for which usage permits are in place.

5.3 Local Resources

The village of Chelopech, located approximately 1 km from the Chelopech mine, has a population of approximately 1,700, whilst the nearest major settlement of Zlatitza, some 4 km to the west of Chelopech, has a population of approximately 5,600.

Small villages are dispersed widely throughout the Sofia District. Much of the population outside the City of Sofia is involved in subsistence farming, particularly the growing of roses, lavender and sunflowers for oil production on the poorly developed soils characteristic of the region. The other main land use within Sofia District is state-controlled forestry.

There has been a strong history of mining in the local region around the mine, with several large (treated ore throughputs >15,000 tpd) mines producing concentrate to feed a significant copper smelter at Pirdop, located approximately 10 km from Chelopech.

The Chelopech mine operation currently employs approximately 950 people on site with the majority from surrounding communities.

5.4 Physiography and Climate

Chelopech site is located at approximately 730 m above sea level at the base of a range of gently undulating hills which rise to over 1000 m above sea level. The area immediately surrounding the mine is comprised of grassland.

The area has the climate of Subtropical Europe, featuring markedly higher winter and substantially lower summer precipitation.

Winters are relatively mild with -2°C average temperature, but during intensive cold spells temperatures may fall to -19°C. Summers are hot, reaching 36°C in warmer spells and exceeding 40°C in some locations.

The average annual precipitation is 704 mm. The bulk of this falls in autumn and winter, occasionally as snow in the coldest months with highest rainfall occurring in December (96 mm average).

Average annual evaporation is 1,051 mm, similar overall to annual rainfall in magnitude, but opposite in seasonal sense.

Estimated 1:100-year rainfall events are 117 mm for 24 hours duration, and 184 mm for 72 hours. Probable Maximum Precipitation (PMP) estimates are up to 383 mm for 24 hours and 605 mm for 72 hours.

Mining operations are conducted all year round, with excess availability of the tailings management facility engineered as part of the construction process.

6. History

6.1 Pre-DPM Exploration History

The mineral potential of the Chelopech area was first recognised in the mid-19th Century and the outcrop area was worked prior to the start of the Second World War. The mineral deposit was re-discovered in 1953, following drilling by Sofia Geological Exploration (SGE). Underground development began in late 1953 to gain bulk samples and to further evaluate the mineral deposit.

The various mineralised bodies that constitute the Chelopech deposit (locally called "Blocks") were discovered as follows:

- Pre-1958: Blocks 16, 17, 18 and 150.
- 1960: Block 10
- 1962: Block 19
- 1964: Block 103
- 1970: Block 151

Beginning in 1956, exploration shafts were excavated, and diamond holes were drilled, with underground production commencing in 1964. The mine, then part of several state-owned enterprises, was fully operational between 1970 and 1990, producing bulk copper-gold and pyrite concentrates.

In 1990, the Bulgarian Government decreed that due to the high arsenic content, the concentrates could no longer be treated at the nearby Aurubis copper smelter (formerly MDK-Pirdop), and the mine was put into care and maintenance. Production of ore treated at the mine between 1954 and 1992 is estimated to be ~8.2 Mt, at an average grade of 1.0% Cu and 2.7 g/t Au. A complete rebuild of the processing plant was carried out in the mid-1970s.

In 1994, operations were restarted by Navan Bulgarian Mining BV, a Dutch registered subsidiary of Navan Mining Plc., with the re-treatment of approximately 100 kt of stockpiled low-grade concentrate. Following a number of ownership changes over the next 5 years, in 1999, the Council of Ministers and Chelopech EAD signed a concession agreement for the extraction of gold-copper ore from the mine, and the company name was changed to Navan Chelopech AD (Navan).

Navan operated the Chelopech mine until late 2002, when Navan went into receivership. The operations continued under the direct control of an administrator appointed by Deutsche Bank AG of London. Mining operations continued whilst DPM negotiated the acquisition of the Bulgarian assets from Navan, including the mine. The acquisition of Chelopech by DPM was completed in September 2003.

During the later period of production, ore treated at Chelopech between 1994 to the end of 2002 is estimated to be in the order of 4.8 Mt, at an average grade of 1.4% Cu and 3.9 g/t Au.

6.2 DPM Ownership History

Since DPM assumed ownership in 2003, the company has conducted systematic exploration programs within the Chelopech mine and near mine areas. This lead to the discovery of further mineralised zones or "Blocks" as listed below.

- 2005: Blocks 149
- 2009: Blocks 145 and 147
- 2010: Block 152 and targets 181 and 182
- 2011: Blocks 144
- 2014: Block 149 South
- 2017: Block 153

Production since the year DPM assumed ownership in 2003, is presented in Table 4 below:

Table 4. Chelopech Production, since 2003.

Year (Jan-Dec)	Tonnes	Copper (%)	Gold (g/t)
2003	522,291	1.55	3.94
2004	624,310	1.58	3.76
2005	911,179	1.58	4.20
2006	920,150	1.41	3.97
2007	906,070	1.34	3.92
2008	911,381	1.17	4.08
2009	957,043	1.39	4.31
2010	1,088,431	1.46	3.86
2011	1,309,924	1.46	3.84
2012	1,813,633	1.28	3.69
2013	2,029,702	1.21	3.51
2014	2,053,612	1.17	3.72
2015	2,039,921	1.10	3.71
2016	2,211,814	0.98	3.43
2017	2,232,799	0.91	3.75

6.3 Previous Mineral Resources Estimates

Navan completed various Mineral Resources estimations for the Chelopech mine since 1994. Prior to 1999, these estimates were completed offsite using a polygonal cross-section estimation method. Since 1999, the Mineral Resources model has been generated onsite by Chelopech geologists, using Ordinary Kriging ("OK") with the Gemcom Mining software. Initially only copper and gold content was estimated, however, from 2000 onwards; copper, gold, silver, sulphur and arsenic content has been estimated.

Since DPM's acquisition in 2003; RSG Global completed Mineral Resources estimates in March 2003, November 2004 and December 2006, as part of the feasibility study, using OK (RSG, 2004 and A, 2006). In addition, Coffey Mining completed a verification resource estimate in late 2007. FinOre Mining Consultants completed Mineral Resource estimates in August 2005. The results of the original RSG Global, Coffey Mining and FinOre Mining Consultants estimates are presented in Table 5, and have been reported using a 4.0 g/t gold equivalent cut-off (gold equivalent = Au g/t + 2 x Cu%).

The Mineral Resources reported by DPM have been reported in a manner consistent with CIM guidelines and in accordance with NI 43-101 guidelines. See Chapter 14 for the current Mineral Resource Estimate and Chapter 15 for the current Mineral Reserves Estimate.

Table 5. Resource Estimates completed by RSG Global, Coffey Mining and FinOre Mining Consultants for the years 2003 to 2007.

Chelopech Copper/Gold Mine Resource Estimates Completed by RSG Global, Coffey Mining and FinOre Mining Consultants Reported above 4.0 g/t AuEq (Au+2xCu), Ordinary Kriging						
Classification	**Tonnes (M)**	**Cu (%)**	**Au (g/t)**	**Ag (g/t)**	**S (%)**	**As (%)**
	Mar-03					
Measured	3.8	1.6	3.8	15	16	0.5
Indicated	14	1.5	4	10	14	0.5
Measured + Indicated	17.9	1.5	4	11	15	0.5
Inferred	27.4	1.4	3.7	9	12	0.4
	Nov-04					
Measured	3.1	1.8	4.7	21	19	0.5
Indicated	21.8	1.4	3.9	9	14	0.4
Measured + Indicated	24.9	1.5	4	10	15	0.4
Inferred	6.5	1.2	3.2	12	12	0.4
	Aug-05					
Measured	5.7	1.7	4.4	15.2	16.8	0.5
Indicated	18.5	1.3	3.6	7.1	13	0.4
Measured + Indicated	24.2	1.4	3.8	9	13.9	0.4
Inferred	11.7	0.9	2.9	6.4	10.5	0.2
	Dec-06					
Measured	7.2	1.8	4.5	16	18	0.5
Indicated	16.9	1.4	4	8	14	0.4
Measured + Indicated	24.1	1.5	4.2	10	15	0.5
Inferred	6.2	1.3	3.9	14	14	0.4
	Dec-07					
Measured	10	1.8	4.4	14	17	0.5
Indicated	14.9	1.4	4.4	8	14	0.4
Measured + Indicated	24.9	1.5	4.4	10	15	0.5
Inferred	3.9	1.6	1.2	4	15	0.4

In 2008, Mineral Resources estimated by Coffey Mining were released, based on the upgrade to 2 Mtpa and using an updated gold equivalent formula of Au + 2.5xCu. Mineral Resources were reported at a 3.2 g/t Au cut-off, as reported in the March 2009 NI 43-101 technical report (Coffey 2009).

Similarly, in 2009 and 2010, Mineral Resource estimates were performed by Coffey Mining, based on a gold equivalent formula of Au + 2.5xCu and at a 3.2 g/t Au cut-off, as reported in the January 2010 and March 2011 (DPM, 2011).

Table 6 presents a summary of the Mineral Resource estimates for 2008, 2009 and 2010.

Table 6. Mineral Resource Estimates completed by Coffey Mining 2008 to 2010.

Chelopech Copper/Gold Mine Resource Estimate Completed by Coffey Mining Reported above 3.2 g/t AuEq (Au+2.5xCu), Ordinary Kriging						
Classification	**Tonnes (M)**	**Cu (%)**	**Au (g/t)**	**Ag (g/t)**	**S (%)**	**As (%)**
	September 2008					
Measured	15.7	1.5	4.1	10.8	15.1	0.5
Indicated	19.1	1.1	3.5	7.4	13.9	0.3
Measured + Indicated	34.8	1.3	3.8	8.9	14.5	0.4
Inferred	9.8	0.9	2.7	11.4	11.8	0.3
	September 2009					
Measured	15.7	1.5	4.1	10.8	15.1	0.5
Indicated	19.1	1.1	3.5	7.4	13.9	0.3
Measured + Indicated	34.8	1.3	3.8	8.9	14.5	0.4
Inferred	9.8	0.9	2.7	11.4	11.8	0.3
	September 2010					
Measured	15.8	1.6	4.2	10.9	15.8	0.5
Indicated	12.7	1.1	4.0	7.2	14.5	0.3
Measured + Indicated	28.5	1.4	4.1	9.1	15.3	0.4
Inferred	8.1	0.9	2.9	10.3	11.0	0.3

Note: depleted for mining to 30 September for all years

In 2011 and 2012, Mineral Resources were estimated by DPM and reviewed and supervised by Coffey Mining. In 2011, Mineral Resources were based on a gold equivalent formula of Au + 2.25xCu and at a 3.0 g/t Au cut-off, in 2012 gold equivalent formula was updated and all estimated blocks greater than 3 g/t gold equivalent grade, and with a recovered value greater than USD 0/t, are reported as presented in Table 7.

Table 7. Mineral Resource Estimate completed by Coffey Mining 2011 (DPM).

Chelopech Copper/Gold Mine Resource Estimate Completed by Coffey Mining In 2011 Reported above 3.0 g/t AuEq (Au+2.25xCu),Ordinary Kriging In 2012 Reported above 3.0 g/t AuEq (Au+2.06xCu), Profit/t > 0						
Classification	**Tonnes (M)**	**Cu (%)**	**Au (g/t)**	**Ag (g/t)**	**S (%)**	**As (%)**
	September 2011					
Measured	16.4	1.5	4.1	11.1	15.7	0.5
Indicated	13.5	1.1	4.1	7.8	14.7	0.3
Measured + Indicated	29.9	1.3	4.1	9.6	15.3	0.4
Inferred	9.6	0.8	2.5	10.1	12	0.2
Note: depletion for mining to 30 September 2011						
	September 2012					
Measured	15.1	1.5	4.1	10.3	15.4	0.5
Indicated	14.0	1.1	4.0	8.5	14.9	0.3
Measured + Indicated	29.1	1.3	4.1	9.4	15.2	0.4
Inferred	9.3	0.9	2.9	10.6	12.1	0.2

Note: depletion for mining to 31 December 2012

In 2013, Mineral Resources were estimated by DPM personnel under the supervision of Malcolm Titley of CSA Global. Validation of the Mineral Resource estimate was completed by CSA Global. All blocks with greater than 3 g/t gold equivalent grade based on a gold equivalent formula of Au + 2.06xCu, and with an estimated net profit value greater than USD 0/t, are reported as presented in Table 8.

Table 8. Chelopech Mineral Resource Estimate as at 31st December 2013.

Dundee Precious Metals - Chelopech. Chelopech Mineral Resource Estimate as at 31st December, 2013						
Classification	**Tonnes (M)**	**Cu (%)**	**Au (g/t)**	**Ag (g/t)**	**S (%)**	**As (%)**
Measured	18.6	1.35	4.07	9.72	15.78	0.42
Indicated	10.2	1.06	3.95	8.39	13.72	0.31
Measured + Indicated	28.7	1.25	4.03	9.25	15.05	0.38
Inferred	8.2	0.92	2.71	11.23	11.96	0.19

Note: depleted for mining to 31 December 2013

In 2015, DPM adopted a new method for the reporting of Measured and Indicated Mineral Resources. Estimates of Measured and Indicated Mineral Resources are reported, exclusive of those Mineral Resources modified to produce the Mineral Reserves. The resultant Mineral Resource statements for Chelopech are set out below, in Table 9, Table 10 and Table 11. **Chelopech Mineral Resource Estimate as at 31st December 2016.**

Table 9. Chelopech Mineral Resource Estimate as at 31st December 2014.

Dundee Precious Metals - Chelopech.									
Chelopech Mineral Resource Estimate as at 31st December, 2014 After Depletion of Mineral Reserves									
Resource Category	MTonnes	Grades					Metal Content		
		Au	Ag	Cu	S	As	Au	Ag	Cu
		(g/t)	(g/t)	(%)	(%)	(%)	(Moz)	(Moz)	(MLbs)
Measured	6.0	3.79	9.48	1.25	14.68	0.38	0.727	1.818	165
Indicated	5.3	3.35	8.64	0.99	12.73	0.28	0.573	1.479	116
Total M+I	11.3	3.58	9.08	1.13	13.76	0.33	1.299	3.297	281
Inferred	8.3	2.66	11.27	0.91	12.16	0.18	0.712	3.021	167

Note:

1. MRE is reported using a gold equivalent cut-off of 3 g/t and an operating net profit cut-off of >USD0
2. Tonnages are rounded to the nearest 1,000 tonnes to reflect this as an estimate
3. Metal content is rounded to the nearest 100 tonnes or 100 ozs to reflect this as an estimate
4. Gold equivalent (AuEq) = [Au + Cu*2.06] based on a Cu price of $2.75/lb and Au price of $1250/oz
5. Mineral Resources excluded all blocks already classified as Mineral Reserves

Table 10. Chelopech Mineral Resource Estimate as at 31st December 2015.

Dundee Precious Metals - Chelopech. Chelopech Mineral Resource Estimate as at 31st December 2015									
Resource Category	MTonnes	Grades					Metal Content		
		Au	Ag	Cu	S	As	Au	Ag	Cu
		(g/t)	(g/t)	(%)	(%)	(%)	(Moz)	(Moz)	(MLbs)
Measured	8.4	3.51	9.91	1.15	13.70	0.32	0.942	2.663	211
Indicated	5.8	3.17	9.78	0.93	12.76	0.22	0.591	1.823	118
Total M+I	14.2	3.37	9.86	1.06	13.32	0.28	1.533	4.486	329
Inferred	2.8	2.44	9.08	0.82	11.78	0.11	0.220	0.817	51

Notes:

1. The MRE is reported using a gold equivalent cut-off of 3 g/t and an operating net profit cut-off of >USD0
2. Tonnages are rounded to 1,000 tones and Metal to 100 tonnes or 100 oz to reflect this as an estimate
3. Metal content is rounded to the nearest 100 tonnes or 100 ozs to reflect this as an estimate
4. Gold equivalent (AuEq) = [Au + Cu*2.06] based on a Cu price of $2.75/lb and Au price of $1250/oz
5. Mineral Resources excluded all blocks already classified as Mineral Reserves

Table 11. Chelopech Mineral Resource Estimate as at 31st December 2016.

Dundee Precious Metals - Chelopech. Chelopech Mineral Resource Estimate as at 31st December 2016									
Resource Category	MTonnes	Grades					Metal Content		
		Au	Ag	Cu	S	As	Au	Ag	Cu
		(g/t)	(g/t)	(%)	(%)	(%)	(Moz)	(Moz)	(MLbs)
Measured	8.8	3.45	9.46	1.13	13.36	0.32	0.972	2.664	218
Indicated	3.9	3.44	9.93	0.97	12.99	0.24	0.428	1.235	83
Total M+I	12.6	3.45	9.61	1.08	13.25	0.29	1.399	3.899	301
Inferred	1.8	2.44	7.46	0.96	10.89	0.12	0.138	0.421	37

Notes:

1. The MRE is reported using a gold equivalent cut-off of 3 g/t and an operating net profit cut-off of >USD0
2. Tonnages are rounded to 1,000 tones and Metal to 100 tonnes or 100 oz to reflect this as an estimate
3. Metal content is rounded to the nearest 100 tonnes or 100 ozs to reflect this as an estimate
4. Gold equivalent (AuEq) = [Au + Cu*2.06] based on a Cu price of $2.75/lb and Au price of $1250/oz
5. Measured and Indicated Mineral Resources exclude material converted to Mineral Reserves.

7. Geological Setting and Mineralization

7.1 Regional Setting

Bulgaria is located on the southeast part of the Balkan Peninsula, which lies within the Alpine geosynclinal belt. In the southern Balkans; two branches of this belt can be distinguished, the Carpathian-Balkan branch to the north and the Dinaric-Hellenic branch to the south (Figure 3).

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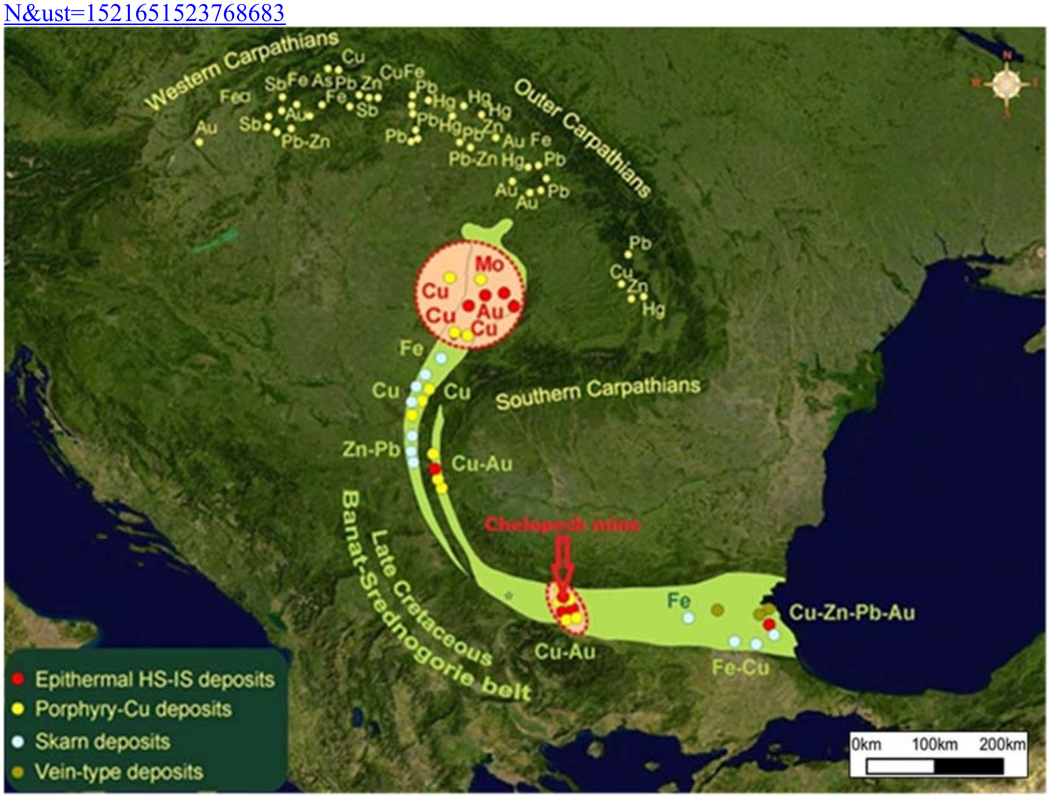


Figure 3. Apuseni – Banat – Srednogorie belt (DPMC).

7.2 Local Geology

Late Cretaceous, island-arc type, magmatic evolution resulted in the formation of the Srednogorie volcanic intrusive zone. The Chelopech mineral deposit is located within the Panagyurishte metallogenic district, a central part of the Srednogorie zone.

The geology of the Panagyurishte metallogenic district comprises a basement of Precambrian granitoid gneisses intruded by Palaeozoic granites and overlain by Upper Cretaceous magmatic and sedimentary sequences. In some parts of the district, these rocks are overlain by upper Cretaceous to Palaeogene/Neogene foreland sediments.

Basement rocks form a series of uplifted north-east striking horsts and/or anticlinal structures between which a series sub-parallel grabens host Cretaceous sequences. To the north and towards Chelopech, the Srednogorie massif forms the basement.

Regionally, the Panagyurishte mineral district is defined by a well-known north-north-west alignment of porphyry-copper deposits (e.g. Elatsite, Assarel and Medet) and epithermal Cu-Au deposits (e.g. Chelopech, Elshitsa and Radka). These deposits lie oblique to the east-west orientation of the adjacent Srednogorie belt (Chambefort, 2005). Associated alluvial deposits (Topolnitza and Luda Yana) and minor vein-hosted gold deposits (Svishti Plas) have been previously exploited on a small scale.

The geology of the Panagyurishte metallogenic district is illustrated in Figure 4.

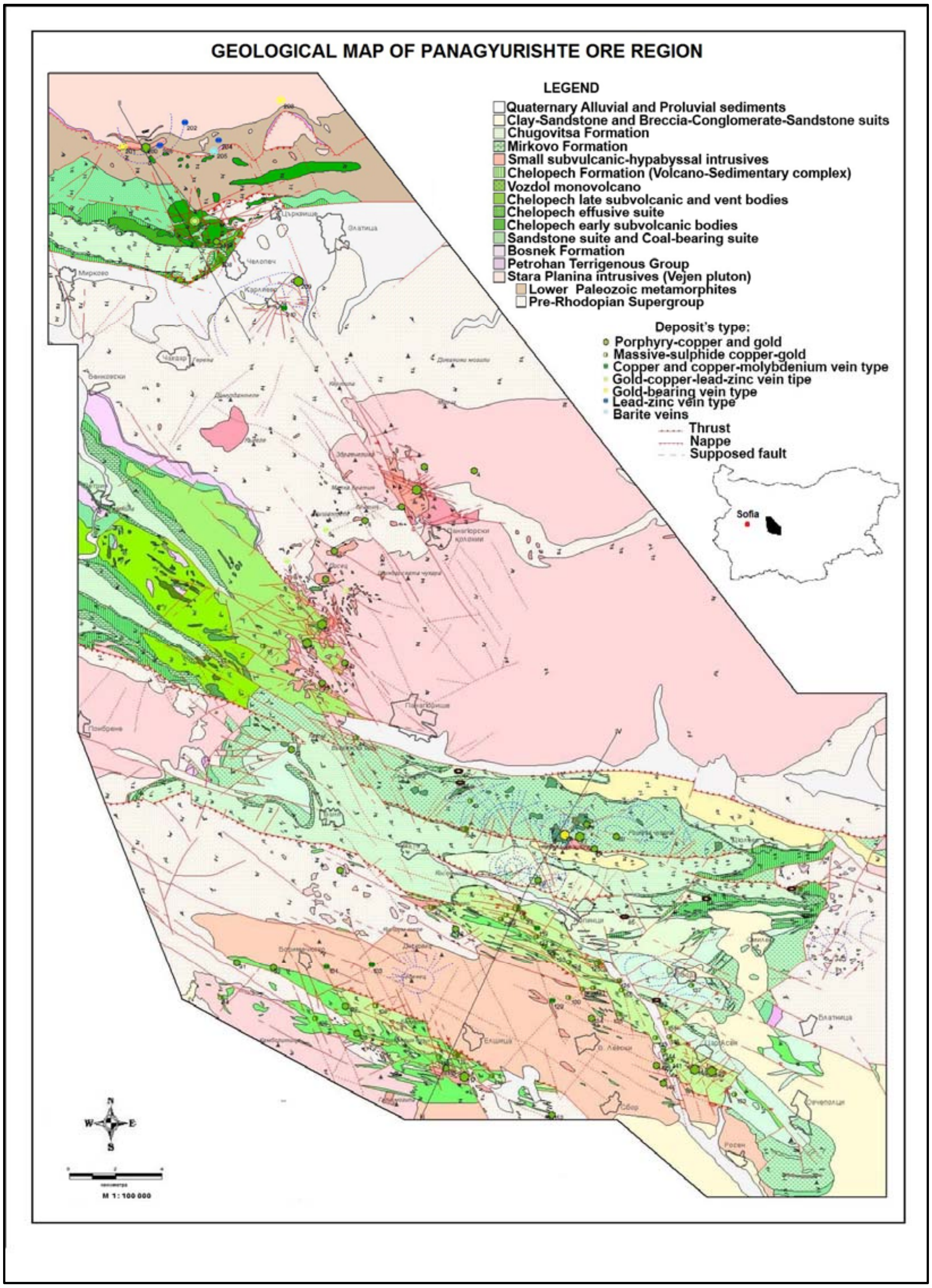


Figure 4. Regional Geology of the Panagyurishte Metallogenic District (modified after P.Popov & K.Popov, 2000).

7.3 Property Geology

The Chelopech region consists of a Precambrian metamorphic basement consisting of gneisses, amphibolites, and metasediments overlain by Upper Cretaceous, volcano-sedimentary sequences which include the Chelopech formation; the primary host to mineralisation.

The Chelopech Formation reaches thicknesses of up to 2,000 m and consists of Lower and Upper units.

The Lower Chelopech Unit is comprised of a basal sequence of siltstones and calcareous argillites with subordinate terrigenous sandstones and angular conglomerates. Upwards these sediments become intercalated and eventually superseded by volcanic sequences including andesites, andesitic agglomerates, andesitic lapilli and psammitic tuffs.

The Upper Chelopech Unit of Coniacian-Santonian age (Lower Senonian) comprises a complex of andesitic and dacitic lavas and tuffs with siliciclastic, volcaniclastic and argillaceous sediments intruded by sub-volcanic bodies of porphyritic andesites. The Upper Chelopech Formation passes up and laterally from mixed (terrigenous-volcanogenous) gritty sandstones, with volcanogenic exhalative iron-manganese oxide horizons, into volcanogenic talus breccias and agglomeratic tuffs of andesitic affinity.

Mineralization is hosted within the Lower Chelopech Formation and occurs within sulphide-rich zones characterised by significant silica overprinting. These zones are typically surrounded by alteration haloes dominated by both silica and sericite alteration textures.

Orebodies form both complex branched units and discrete pipes and veins and are grouped into two major mining areas, the Central and Western Zones (Figure 6).

The Central zone consists of 8 mineralised bodies, referred to as Ore Blocks, namely:

- Blocks 16, 17, 18, 19, 5, 25, 10 and 8

The Western zone consists of a further 10 blocks, namely:

- Blocks: 103, 150, 151, 144, 145, 147, 149, 149 South, 152 and 153.

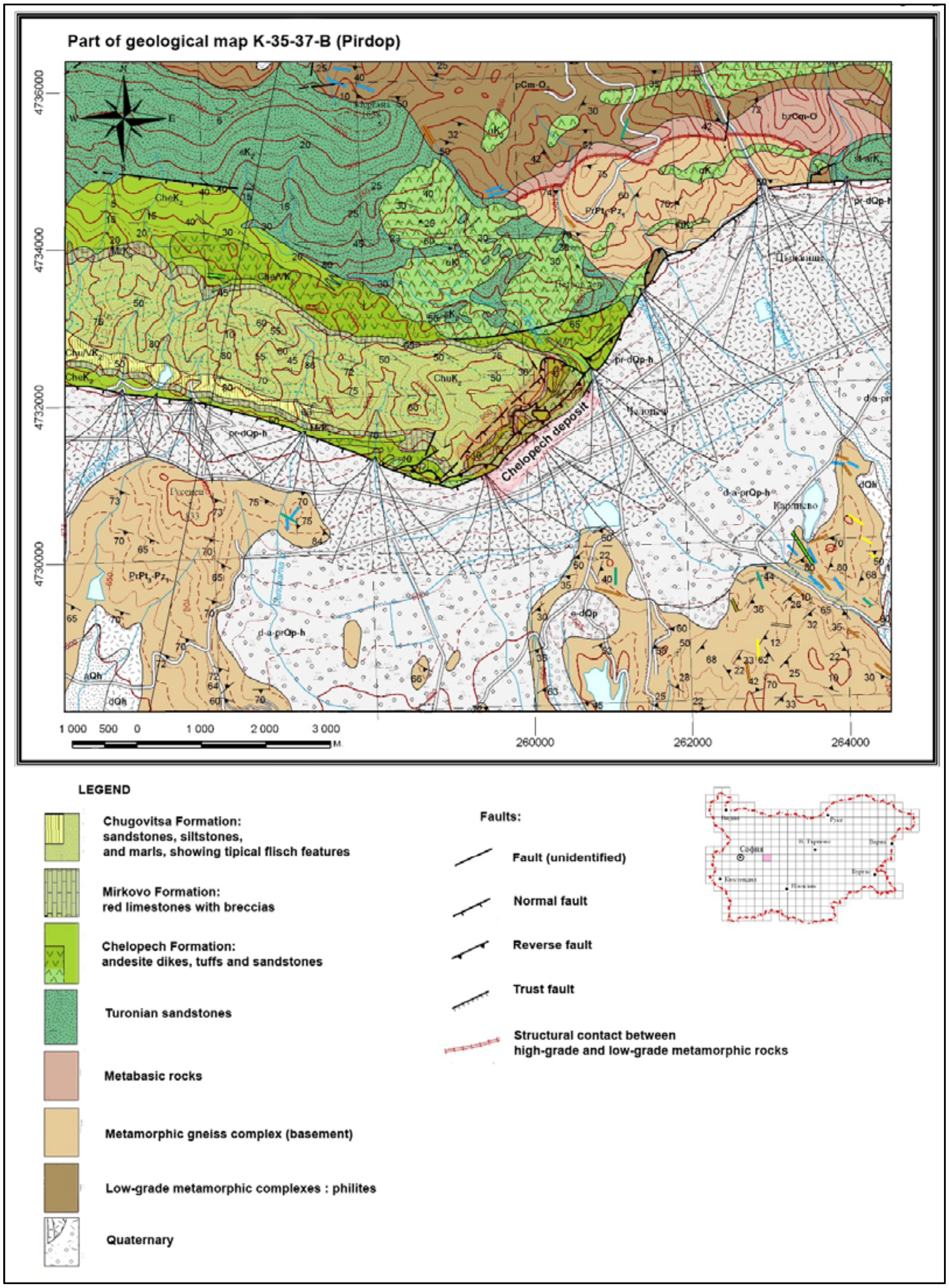


Figure 5. Geology of area surrounding the Chelopech Deposit, with approximate location of the mine (M. Antonov, S. Gerdjikov, L. Metodiev et. al. 2011) (with simplified legend).

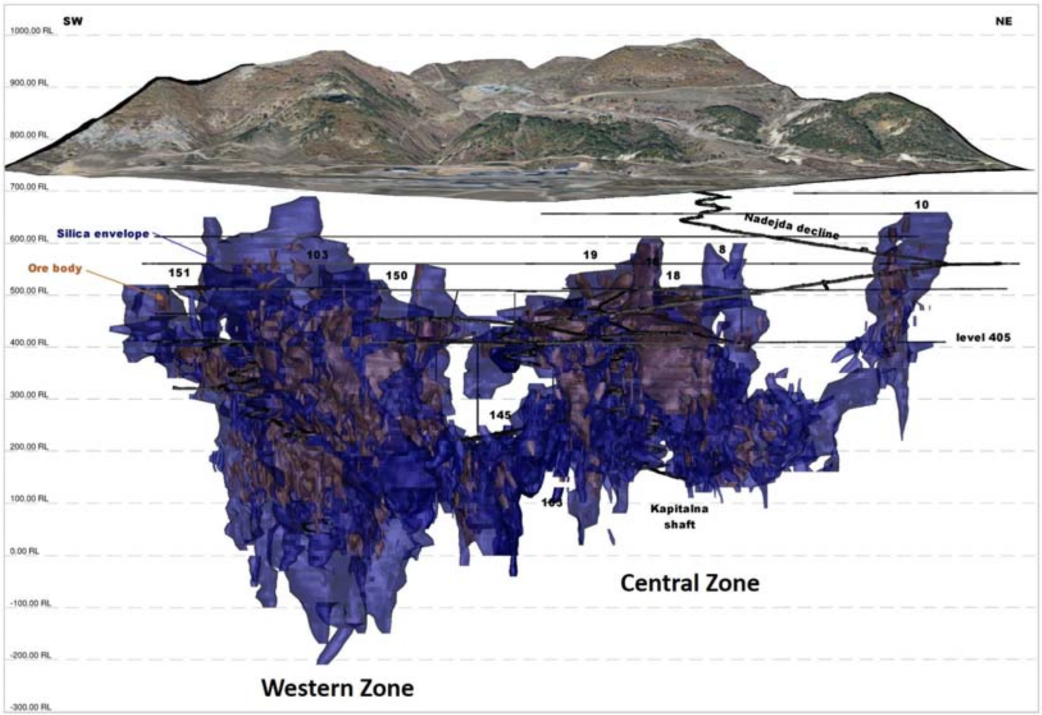


Figure 6. 3D view section of Chelopech Deposit, with orebodies numbered (DPMC, 2017).

7.4 Structure

During 2007, a major synthesis of the Chelopech host rocks to a depth of greater than 2 km was completed by a team consisting of Chelopech and other DPM technical staff and the 2 Geoscience consulting group (Jigsaw, 2007).

The Jigsaw study concluded that the architecture and kinematics of the Chelopech hydrothermal system are characterised by multiple fault and fluid flow events. Mineralising fluids have entered the ore system as a series of repeated pulses, with fluid physical properties evolving throughout. This pulsing nature of the fault-fluid system has created a complicated high-sulphidation epithermal ore-bearing system with a series of ore bodies of differing geological character. Metal zonation (from Pb-Zn rich in the ENE, to Cu-Au rich in the WSW) suggests that deeper parts of the hydrothermal system may be located to the southwest.

Late and post-mineralisation faulting has served to modify the original shape and distribution of the epithermal mineralisation, most likely displacing it in a gross normal and sinistral sense. Based on this interpretation; several target areas have been defined in and around the Chelopech mineral deposit (Jigsaw, 2007).

In 2008, Jigsaw undertook further mapping and re-logging programs to review the relationship between primary and secondary permeability controls on the steeply-plunging mineralised blocks. The kinematics and overprinting relationships of the major structures were further studied to assist with targeting (Jigsaw 2008).

At the district scale, the main structural elements identified during this study include:

1. A series of steeply dipping, NW-trending transfer structures which include a single strike-slip displacement on the order of hundreds of metres located within the overlying Senonian sediments

2. N to NNW striking, steep, normal offsets with throw displacements of 50 – 150 m within the Senonian – Turonian unconformity

3. Steeply dipping east-west trending basin margin parallel structures which domain/partition and offset the known ore blocks with copper mineralisation.

In 2009, Prestologic Pty Ltd updated the Leapfrog grade and alteration model as well as the clay minerals model for which ASD (Analytical Spectral Device) by Terraspect was used. The aim of those models was to confirm the current understanding of the 3-dimensional continuity of the Chelopech mineral deposit. This is the third Leapfrog modelling work conducted on the Chelopech Cu-Au deposit. The first study was conducted in December 2006 and was followed up by a second study in June 2008.

The first Leapfrog geologic modelling study concluded that the 3-dimensional grade and alteration patterns could be explained in terms of a conjugate or an orthorhombic fault/shear pattern, to explain the steeply plunging prolate shape fabrics of the Chelopech ore bodies.

This change in plunge within certain ore bodies proved difficult to explain until the most recent study, which found that the single thrust orientation hypothesis (dipping ~23/150) was an oversimplification. The latest study confirmed that there are several shallow-dipping grade continuities while, the high-grade continuities can be explained in terms of a series of planar zones that share a common intersection line.

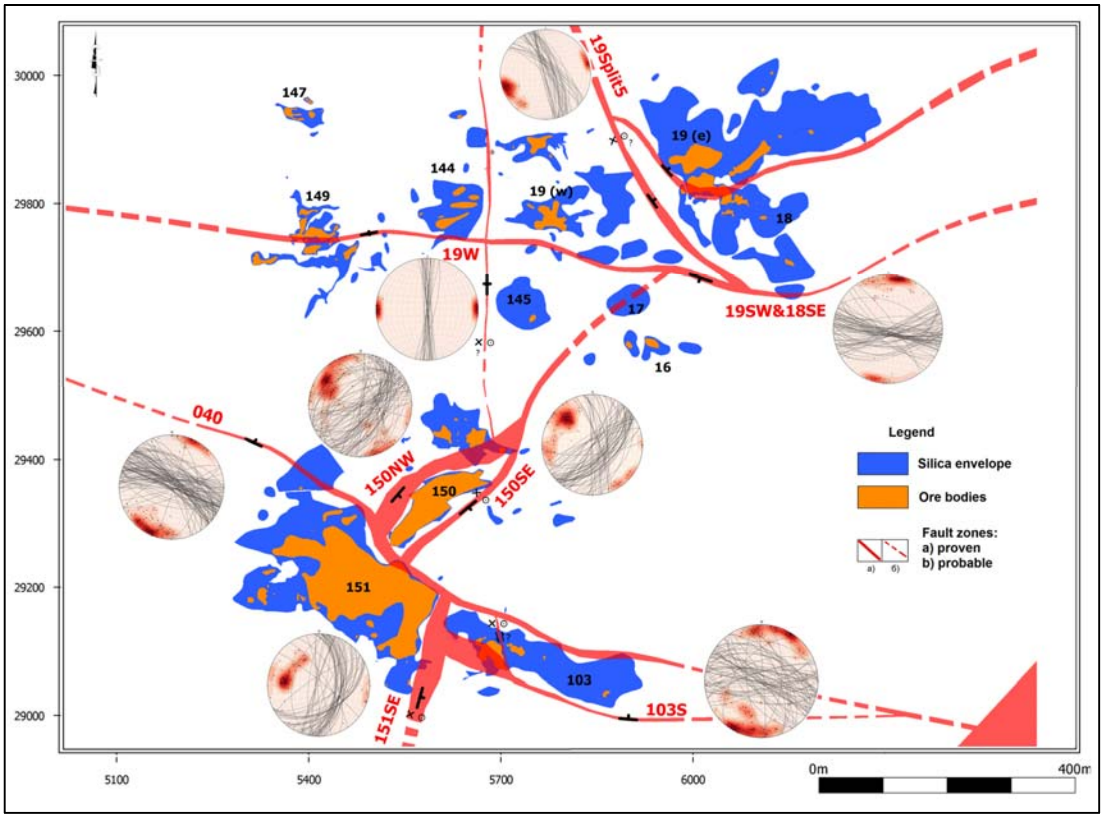


Figure 7. Plan of level 220 with major mineralized trends and major fault zones in the deposit (DPMC, 2017)

In 2013 the Chelopech Geology team started developing a detailed structural model of the deposit, based on all underground mapping. The structural data (dip direction, dip) is organised for the needs of different users (e.g. mine engineers, geomechanics, exploration geologist etc.). All structural measurements are digitized and are represented as surfaces with interpretation between mining levels and pillars.

This work informed a reinterpretation of the silica domain and in 2014. This update included all geological observations taken from capital development along with the Chelopech 3D structural model.

7.5 Alteration

The Chelopech mineral deposit is characterised by an alteration style typical of epithermal, high-sulphidation deposits. Recent studies have recognised three principal alteration zones moving outwards from a central part of the system to its extremities. The innermost part consists of an advanced argillic zone characterised by the presence of vuggy silica, massive silica and a chalcedony. All economic mineralisation is focused in this area with mineralisation typically associated with a host dominated by 50 to 75% SiO_2 content. Surrounding this inner zone is a quartz sericite zone followed by a propylitic zone (Chambefort, 2005).

This zonation forms the basis of the mineral resource domains, with the central high grade units associated with well-developed stockworks and massive sulphide mineralisation surrounded by lower grade haloes dominated by disseminated sulphides and pervasive silica overprinting (Figure 7). These are respectively referred to as “Stockwork” and “Silica Envelopes” and form hard boundaries during the estimation of resources in Section 14.

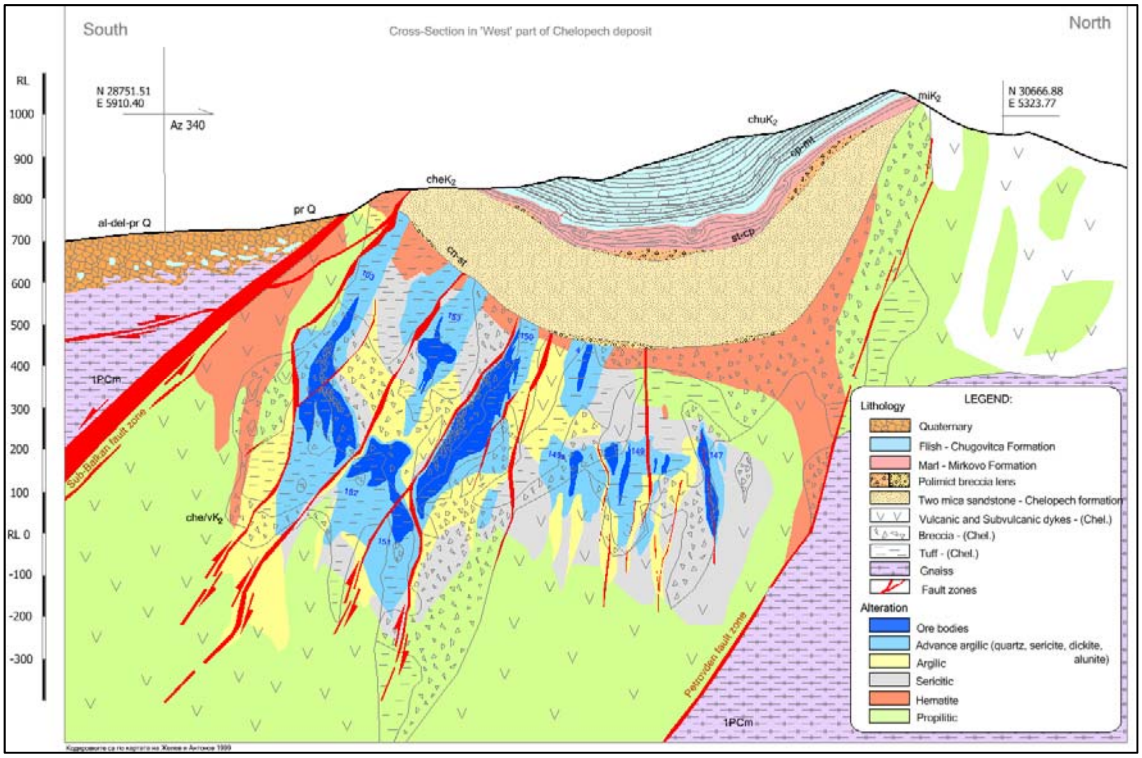


Figure 7. Vertical cross section through Western Zone (looking W) with alteration, lithology and mineralization (blue) (DPMC, 2017).

7.6 Mineralization

Three successive mineralisation stages have been recognised at Chelopech, including an early Fe-S stage consisting mainly of disseminated and massive pyrite, a second Cu-As-S stage which is the economic Cu and Au stage, and a late Pb-Zn stage. These display different geometries, including veins, breccias, massive and disseminated sulphides.

The mineralisation occurs in a range of different morphologies, including lens-like, pipe-like and columnar bodies that typically dip steeply towards the south. The mineralised zones vary from 40 to 200 m in length, are 20 to 130m thick, and can extend at least 390 m down plunge. Sub-vertical vein mineralisation is volumetrically the most important mineralisation style at Chelopech (Chambefort, 2005).

Definitions to quantify the textural features were developed for the 2004 RSG Global estimate, as presented in Table 12 and Table 13. These codes are used to generate the Silica and Stockwork envelopes during modelling and leading up to estimation. The codes have since been updated to include the presence, or absence, of sulfosalts (enargite, tennantite, luzonite).

Table 12. Copper Mineralization Styles.

Mineralization Style	Description/Definition
Massive / Semi-Massive Sulphide (MS)	> 80% sulphide pyrite + veins of Tennantite (TN) and/or Enargite (EN).
Massive / Semi-Massive Sulphide (PMS)	> 80% sulphide veins of pyrite (PY) only.
Normal Stockwork Sulphide (NS)	Sulphide veins with TN and/or EN occurring less than (on average) 0.3m apart. And the average width of the veins is greater than 1cm.
Normal Stockwork Sulphide (PNS)	Sulphide veins with PY only occurring less than (on average) 0.3m apart (>30%vol) and average width >1cm
Weak Stockwork Sulphide (WS)	Sulphide veins with TN and/or EN occurring greater than (on average) 0.3m apart and average width <1cm.
Weak Stockwork Sulphide (PWS)	Sulphide veins with PY only occurring greater than (on average) 0.3m apart (<30%vol) and average width <1cm.
Disseminated Sulphide (DS)	Less than 40% TN and/or EN in replacement or disseminated form.
Disseminated Sulphide (PDI)	Less than 40% pyrite in replacement or disseminated form. No Tennantite (TN) and /or Enargite (EN) veins.
Gold (AU)	Visible Au and/or >80% sulphide veins of TN and/or EN
Silica Envelope (SE)	Silica envelope without MS, NS & WS

Table 13. Types of mineralisation and geometry of ore bodies.

Block	Type of mineralisation	Width/Horizontal extent/Vertical extent (m)
bl. 5	normal stockwork	40/50/40
bl. 8	normal stockwork	30/60/70
bl. 10	massive sulphide to normal stockwork	40/50/300
bl. 16	normal and weak stockwork	25/50/150
bl. 17	normal stockwork	40/130/230
bl. 18	normal stockwork	75/160/380
bl. 19	normal to weak stockwork	130/250/440
bl. 25	massive sulphide to normal stockwork	20/50/40
bl. 103	weak stockwork and disseminated	70/260/280
bl. 144	normal to weak stock stockwork	5-20/100/110
bl. 145	normal to weak stockwork and disseminated	5-20/80/110
bl. 149	massive sulphide to normal and weak stockwork	5-20/180/230
bl. 149South	normal to weak stockwork and disseminated	10-20/70/120
bl. 147	normal stockwork	5-15/90/220
bl. 150	massive sulphide to normal and weak stockwork	20-70/250/420
bl. 151	massive sulphide to normal stockwork	100/230/480
bl. 152	normal stockwork	50/100/80
bl. 153	normal stockwork	50/100/70

Sulphide mineralogy is dominated by pyrite, marcasite, melnikovite, tennantite, enargite-luzonite, and chalcopyrite, together with subordinate famatinite, sphalerite and galena. In gross terms, about 45% of the copper is in the form of arsenides and sulfosalts, 50% as chalcopyrite and 5% as oxides.

Quartz, barite and kaolinite are the dominant gangue minerals with chlorite, ankerite and gypsum subordinate.

Gold occurs in a variety of forms, both as native metal with admixed silver in a stoichiometric form approximating to Au_3Ag and in auriferous tellurides. The gold is fine grained (5 to 300 microns, with 5 to 20 microns the norm). Metallurgical studies have shown a significant proportion of the gold is refractory, typically:

- 45% intergrown within pyrite, chalcopyrite and sphalerite
- 25% intergrown with enargite, luzonite, tennantite, tetrahedrite and bornite
- 20% finely intergrown with chalcedonic silica
- 10% as free gold.

Silver-bearing rock and native silver are usually spatially associated or finely intergrown with pyrite and galena (62%) with enargite, tennantite and tetrahedrite (15%) and as electrum (23%).

Other major sulphides and arsenides exhibit simple crystalline and intergrown forms with the pyrite and occur in intra-crystal spaces as replacements, as replacements of pyrite, as crosscutting veinlets and as overgrowths. Intergrowths of the cupriferous minerals are commonplace, both as aggregates and as complex textures with several intergrown minerals.

8. Deposit Types

Bulgaria can also be sub-divided into several structural and metallogenic zones. These structural-metallogenic zones are separated from each other by major structural discontinuities or deep faults. Within these zones, specific mineralisation types and ages are found.

1. Mineralization in the Rhodope zone is typically characterised by:
   - Vein and replacement-type lead-zinc and fluorite deposits (the most common)
   - Low sulphidation epithermal gold deposits
   - Alpine-type chromite deposits
   - Granite skarn-type scheelite deposits.
2. Mineralization in the Srednogorie zone is typically characterised by:
   - Porphyry copper
   - Cupriferous Skarns
   - Volcanogenic massive pyrite deposits.
   - Massive sulphide copper pyrite deposits
3. Mineralization in the Kraishtide zone is characterised by granite associated vein gold-arsenopyrite deposits.
4. Mineralization in the Moesian zone is characterised by sedimentary salt, gypsum, kaolin and manganese deposits.
5. Mineralization in the Balkan zone is typically characterised by:
   - Bleiberg-type sediment-hosted polymetallic deposits
   - Vein-type gold deposits.

The epithermal class of deposits (including Chelopech) were originally classed as “massive sulphide copper pyrite deposits”. Recent studies indicate that an epigenetic origin for the mineralisation formed by the replacement of volcanic rocks is more suitable (Chambefort, 2005).

Current models (e.g. Hedenquist et al., 1994) for high sulfidation epithermal systems suggest silification was early and related to initial gas expansion (SO_2, HCl) that separated from a denser, metal-bearing brine at depth. This gaseous solution mixed with meteoric waters to produce sulphuric acid. At Chelopech, multiple events related to both silification and mineralisation, were probably driven by pressure fluctuations, degassing and fault-valve activity above a metal-bearing brine fluid at depth.

Lack of stockwork chalcopyrite-bornite bearing quartz veins with sequential potassic – phyllic to propylitic alternation haloes, felsic intrusives and abundance of Cu-arsenides at Chelopech suggests porphyry Cu mineralisation is not present.

High As-S systems represent a change in fluid conditions which have commonly been observed in the youngest paragenetic stages of porphyry copper mineralisation. The fluids responsible at Chelopech are of a different character and are more acidic and possibly more reduced remnants of a de-gassed brine material, capable of chloride-gold transport. Therefore, porphyry copper conditions may have occurred further out in the Chelopech district, and (if not exposed) may be preserved at depth (RSG Global, 2007).

9. Exploration

9.1 Introduction

Given the long exploration and operational history at Chelopech, a variety of drilling and sampling methods have been implemented. A summary of the drilling and sampling completed to date is presented in **Error! Reference source not found.** and Table 15. A description of the current exploration activities is provided in subsequent sub-sections.

9.2 Underground Face Sampling

Underground face sampling has been routinely performed since the commencement of mining development (Table 14.Underground **Face Sampling data (as at 30th September 2017).**). All mine developments; both capital and operational are sampled. In addition to being used for production, underground face sampling results are used in resource estimation. For more details about sampling procedure refer to Section 11.1.2.

A comparative study of underground face samples against other sample types at Chelopech, was completed in 2007. This review work was reassessed in 2013 by DPMC staff and no significant bias between face samples and other sample types was observed. For more details of this review refer to Section 12.1.

Table 14.Underground Face Sampling data (as at 30th September 2017).

Period	Company	Samples	Assays
June 1956 to February 1992	State Owned (incl. Polimet)	7,220	27,518
Mine closed March to December 1992			
March 1992 to August 2003	Navan (incl.) Homestake	8,494	41,017
DPMC September 2003 to September 2017	DPMC	18,282	91,269
Total		33,996	159,804
Total Pre-DPMC		15,714	68,535
Total DPMC		18,282	91,269

9.3 Underground Mapping

Underground mapping is a routine activity and is performed by qualified mine geologists. Mapping of underground levels is completed during and following the completion of development, and prior to mining. Detailed lithological, alteration, textural and structural data is collected and transferred onto 1:200 scale plans and then digitised into GEMS mining software for interpretation and creation of the structural model. The structural model is used as the basis of geological interpretation for the mineral resource model.

9.4 Geophysics

9.4.1 Geo-electric Surveys

Titan-24 Distributed Array surveys using Direct Current Induced Polarisation (DCIP) and Magnetotellurics (MT) were undertaken on the Chelopech Mine property, by Quantec Geoscience Inc., between September 4th and October 10th, 2004. A total of 38.4 line-km of MT and DCIP were surveyed on thirteen, 200m spaced, 2.4 to 4.8 km long, northwest-southeast profiles, and one 2.4 km long baseline.

Data acquisition was followed by 2D inversion of DCIP and MT dataset performed by Quantec. Additional 3D inverted model for Chargeability and Resistivity delivered from DCIP was calculated in-house.

9.4.2 Ground Gravity and Magnetic Surveys.

In the near-mine area, the Sveta Petka exploration licence has been investigated during various ground magnetic survey campaigns since 2008. Scintrex and GEM magnetometers were used by different contractors to conduct the surveys. The resultant grids were joined together, processed with Geosoft and a 3D UBC magnetic model calculated.

A total of 468 gravity survey points were measured in Sveta Petka and Mining Concession areas. A 200m x 200m base grid was used with infill points over selected anomalous areas.

Additionally, a complete Bouguer anomaly map was calculated using combined (LIDAR and digitised topography) DEM grid.

Filtered gravity (residuals, upward continuation) were calculated and used to allocate areas with potential for presence of large massive sulphide ore bodies. A 3D UBC gravity inversion of a block model density distribution was calculated.

A Total of 148 full tensor of magnotelluric stations have been measured. The survey covers two blocks of Brevene exploration license at an approximate grid of 250m x 250m. At the southern portion of the Brevene exploration license, magnotelluric stations are allocated along line-section profiles.

A 3D magnotelluric inversion of a block model of Resistivity distribution have been calculated for the Western and Eastern blocks. A 2D inversion model was also calculated along selected profiles. 1D inversions calculated for each station.

The results of all geophysical works were incorporated into a 3D geological model for further analysis and interpretation.

10. Drilling

10.1 Introduction

Resource development drilling at Chelopech has been completed at a nominal hole spacing of between 50 by 50 m and 25 by 25 m. Most surface holes are vertical or steeply inclined and average 600 to 700 m in depth, with some holes exceeding 1,000 m. Underground drilling, originally horizontal, is now inclined in all orientations to achieve the best angle of intersection. Data provided was from a cut-off date of the 1st of October 2017. Data consists of both Historical and DPMC drilling data and is summarised in Table 15 and presented graphically in Figure 8.

Table 15. Drilling Data Details (as of 30th September 2017).

Operator	Period	Company	Size	Number	Average Length	Total Meters
Pre-DPMC Surface Drilling	June 1956 to February 1992	State Owned (incl. Polimet)	*Various sizes	439	607	266,451
	Mine closed March to December 1992					
	January 1993 to August 2003	Navan (incl.) Homestake	*Various sizes	9	81	726
	Total Pre-DPMC Surface Drilling			**448**	**596**	**267,177**
Pre-DPMC Underground Drilling	June 1956 to February 1992	State Owned (incl. Polimet)	*Various sizes	233	121	28,144
	Mine closed March to December 1992					
	January 1993 to August 2003	Navan (incl.) Homestake	BQ, NGM	484	57	27,527
	Total Pre-DPMC Underground Drilling			**717**	**78**	**55,671**
DPMC Surface Drilling	September 2003 to September 2016	Exploration	*Various sizes	78	462	36,050
DPMC Underground Drilling	September 2003 to September 2017	Exploration	BQ, NQ, NQ-2, HQ, LTK60, NGM	1077	289	311,284
		Grade Control Drilling	BQ, NQ, NQ-2	1420	157	222,585
	Total DPMC Underground Drilling			**2,497**	**228**	**533,869**
Total				**3,740**	**239**	**892,768**

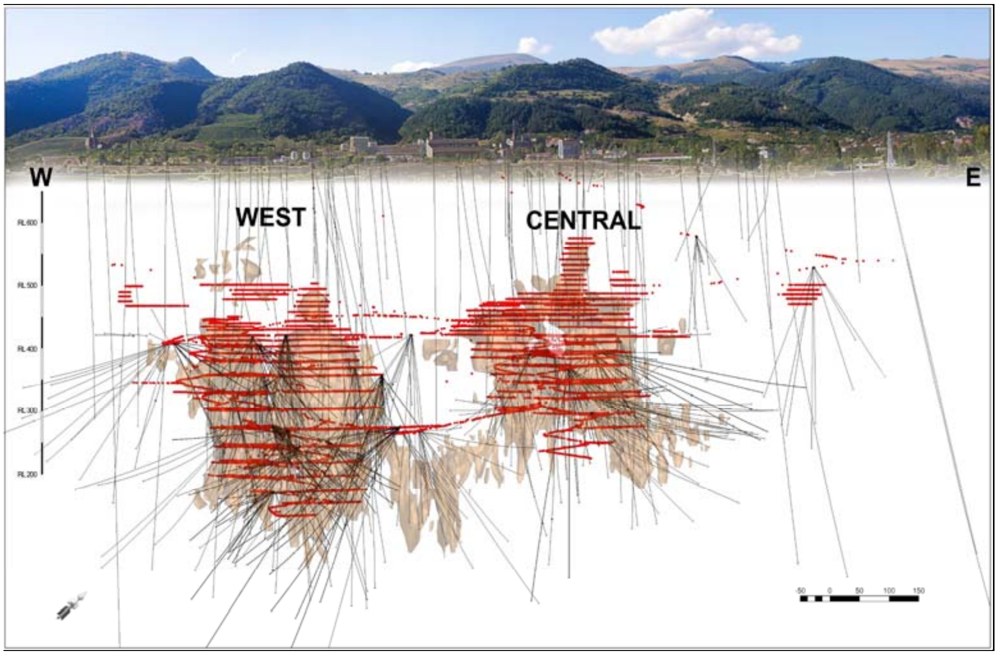


Figure 8. 3D representation of the Chelopech deposit with diamond drill holes and underground face samples in red, looking north. For clarity: not all data has been displayed in the image. (DPMC, 2014).

10.2 Pre-DPMC Drilling

10.2.1 Surface Drilling

Sofia Geological Exploration (SGE) has carried out surface diamond drilling at the Chelopech copper-gold deposit since 1956. Their surface holes were drilled at various sizes and core recovery was reportedly routinely measured during the drilling process. A historic recovery of 87 % in the waste and 97 % in the mineralised zones is reported though there is no data to verify these figures.

10.2.2 Underground Diamond Drilling

The Chelopech Copper Processing Company (CCPC), Navan and Homestake have completed underground diamond drilling at the Chelopech mineral deposit during the pre-DPMC period.

The early underground diamond drilling completed by CCPC, was dominantly horizontal, and designed to locate the lateral boundaries of mineralisation interpreted from the surface drilling.

Since Navan's involvement, modern diamond drills have been introduced with better capabilities with drilling inclined normal to mineralisation and along section lines.

Homestake drilled 18 holes between 1995 and 1998. All holes were drilled using formalised standards and procedures. Core recoveries were measured for Homestake drilling and it is reported that appropriate care was taken to achieve high core recoveries.

Up until the start of 2003; a Longyear LM22 (TT-46, 34 mm core) and two Diamec 262 (NGM, which is slightly bigger than NQ core) drilling rigs, with NGM wire lines, were in use. For more details refer to Table 15.

10.2.3 Diamond Drilling Logging

Historically, core was logged either underground or at surface in a logging facility. Geological logs were created primarily by using a graphical schematic strip log with lithology, mineralogy and structural annotations added. Core descriptions recorded lithology, texture, alteration and mineralisation style.

10.3 DPMC Drilling

10.3.1 Surface Diamond Drilling

External to the immediate resource development area, DPMC completed the first phase of surface drilling on a 200 by 200 m grid in 2006 and 2007, targeting a geophysical anomaly north of the mine. This is on the adjacent Smolsko exploration lease, which was transferred from Balkan Mineral and Mining EAD to Chelopech Mining EAD. The surface diamond drilling was completed by CM 1000, CM 1200 and DT 1000 drill rigs provided by Bulgarian Drilling Services Ltd. For more details refer to Table 15.

Follow up surface drilling from August to September 2010, on a 100 m infill grid, defined the presence of five separate narrow 3 to 10 m mineralised brecciated and silicified volcanic zones hosting sulphides and +/-sulfosalts. The surface diamond drilling was completed by Cristensen C5-10, Cristensen C5-14 and Knebel drill rigs provided by contract company Geops Ltd. The opportunity to convert these to a mineral resource with further drilling has been deferred.

10.3.2 Underground Diamond Drilling

The main objective of underground drilling is resource development and grade control with geological logging and grade analysis. Geotechnical assessment and metallurgical evaluation are completed when required. For more details refer to Table 15.

During 2004, two Diamec 262 drilling rigs, owned by DPMC and two Major Drilling (LM55 and LM75, NQ core) drill rigs were in use.

In mid-2005, the Major Drilling rigs were purchased by Dundee while, at the end of the year, one of the Diamec 262 (D1) drill rigs was decommissioned. In 2006 and 2007, three drill rigs were operating until December 2007, when DPMC purchased and commissioned a new LM55 with LM75 power pack.

In early 2010, DPMC commissioned an additional LM55 with LM75 power pack specifically to drill grade control holes. This rig is smaller and lighter than the others and was purchased with a telehandler for quick manoeuvrability. Once this rig was operational the last of the Diamec rigs was decommissioned.

In July, 2014 DPMC commissioned a mobile grade control drill rig, LM30SS. This is a compact, mobile unit that ensures quick set up time and ease of moving from site to site. It uses a CAT 346C Skid Steer carrier to power and transport the drill components.

Currently four drill rigs are in use; two drill rigs for exploration and two for grade control drilling a total of approximately 44,000 m annually.

10.3.3 Diamond Drilling-core logging

The diamond drilling at Chelopech is performed to a high standard. The key technical criteria observed by the drillers are:

- Inner tube splits and core lifters are washed prior to reuse in successive drill runs.
- Drill core is orientated on 3 m intervals (or on smaller intervals in ore zones) using an Ezy-Mark™ core orientation mechanical tool and Orifinder DS1 (using from May, 2015). Core orientations are also undertaken immediately after poor orientations.
- Wooden core blocks are placed between runs, recording the length of the run and core loss (if any).
- Forced breaks made by the drillers must be marked on the core on the both sides of the breaks with a red cross.
- Core is washed clean, free of surface mud or other drilling fluids.
- The core trays are clearly labelled with the Hole ID and depth, from and to, tray number.
- Transportation from the drilling site to the core yard is undertaken with great care to avoid disturbance of the core.

The drill core is logged by competent geological personnel in a core shed established for this purpose. All logging information is collected digitally on tablet computers using Field Marshall software.

The use of tablet computers ensures use of consistent logging using deposit specific codes. The presence of type lithology and alteration style boards supports good logging practice, and ensures methodical training of new staff.

The geological logging of the core is carried out at 1.5 m intervals through a system of codes for lithology, alteration, veins, mineralisation, etc., which are entered into a Geological Logging Sheet in tablets in Field Marshall. In practice the code system covers all possible variations of rocks, minerals, alteration and oxidation processes, veins and textures, ore mineralisation, etc. Once the logging is completed, the finished files are copied and placed on the geology server.

All core is photographed, both dry and wet, using a digital camera, and the photos are saved on the geology server. Core logging work flow is presented in Figure 9.

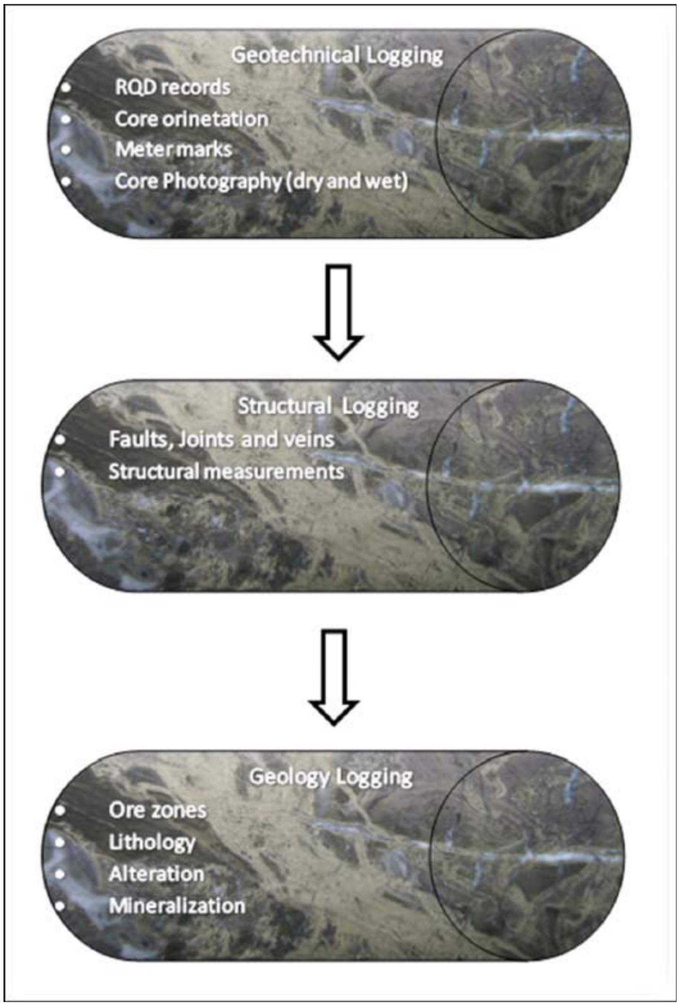


Figure 9. DPMC Drill Core Logging Flowchart (DPMC).

10.3.4 RQD Records

Summary geotechnical logging consists of recording RQD (Rock Quality Designation) and measuring recovery per drill run (complete core loss is recorded as "0" RQD). RQD is defined as the percentage cumulative length of core pieces longer than 10 cm in a run divided by the total length of the drill run converted to % (only the naturally broken pieces are measured; breaks made by the drillers are ignored).

10.4 Core Orientation and Structural Logging

10.4.1Core Orientation using Ezy-Mark™

Between May 2009 and May 2015, core orientation was conducted using the Ezy-Mark™ system which works by giving a gravity based bottom of the hole line using a series of orientation pins. The processing of the core is identical to the workflow outlined below, in 10.4.2.

Before orienting the drill core with Ezy-Mark™ core orientation mechanical tool, the geotechnician checks the quality of the orientation marks to ensure that they can be used to confidently orient the core.

Figure 10. Check on core orientation by Geotechnician using the Ezy-Mark™ system. (DPMC, 2013)

10.4.2 Core Orientation using Orifinder DS1

The Orifinder DS1 tool has been used from May, 2015. The use of this tool increases the quality of core orientation, saves time when checking the quality of core orientations and reduces orientation errors via the audit check feature. The tool acquires data wirelessly making it a “no manual required” drill-core orientation system designed for a one man drilling operation in harsh environments.

Figure 11. Process of core orientation at underground drill site by a driller using Orifinder controller. (DPMC, 2015).

The orientation marks are connected with a thick black line for the intervals with high confidence when at least two marks are within a tolerance of 10˚ of the orientation, and with a broken line for uncertain orientation, e.g. if there is a discrepancy between the directions of the marks or when some of the core pieces do not fit well together, or when at least two marks are within a tolerance between 10˚ and 15˚ of the orientation.

The alpha, beta and gamma angles for geological structures in the drill core are measured for:

- Planar structures - bedding, foliations, veins, joints, faults.
- Linear structures - fold axes (hinges), intersection lineations, stretching (extension) lineations and slickenlines.

Structural logs are captured in acQuire with alpha, beta and gamma angles converted to real space. These are then transferred through SQL scripts into GEMS.

10.5 Pre-DPMC Surveying

10.5.1 Drill hole Collars

Hole surveys were undertaken using optical methods consistent with good industry practice, using theodolites and survey traverses. Up to 1998, drill hole collars were surveyed with a theodolite (Theo 010 or Theo 020). Between 1998 and 2002 surveys were conducted using an electronic theodolite (Sokkia). Since 2002, a Leica 305 total station has been used. This equipment is used for both surface and underground drillhole collars.

10.5.2 Downhole Surveys

Prior to 1994, a gyroscope was used to survey downhole traces. Between 1996 and approximately 1999, a (Reflex) Maxibore tool was used for downhole surveying. From this, it was established that the drill holes on average, deviated less than 0.7 m over the total hole lengths. With such small magnitudes of downhole deviation, when the lengths of subsequent holes were reduced, downhole surveying was discontinued. Between 1999 and 2002, the dip and azimuth of the holes were measured at the collar and the data extended to the base of the hole.

10.6 DPMC Surveying

10.6.1 Grid Control

Both surface and underground survey control networks are based on the national triangulation network, with the development of local area survey network. Coordinates are transferred from the national triangulated grid 1970 to local mine grid and UTM WGS84 using a two point transformation (Table 16).

Table 16. Two point Transformations.

PointID	Point 1	Point 2
NAT Grid X	4603331.8	4605477.5
NAT Grid Y	8558286.5	8561697.7
NAT Grid Z	700	700
Mine Grid X	4365.666	7791.299
Mine Grid Y	28800.663	30923.104
Mine Grid Z	700	700
UTM X*	258500	262000
UTM Y*	4731000	4733000
UTM Z*	700	700

*UTM Zone WGS1984 Zone35N

10.6.2 Drill hole Collars

The Survey Department is responsible for setting out the collar positions, directions, and inclination/declination of both surface and underground drill holes, and for surveying the actual position, direction and inclination/declination upon completion. The latter coordinates are entered in the drillhole database. The Survey Department utilises a Leica TCRA 1203 total station surveying tool. The risk of significant error associated with the drill collar surveys is considered to be low.

10.6.3 Downhole Surveys

Since 2003, the dip and azimuth of holes were measured using a Reflex EZ shot which measures magnetic north, magnetic field and temperature, and allows accurate calibration of the results, i.e. spurious results can be excluded based on the magnetic susceptibility results.

During 2005, a review of the downhole surveys in the database was completed and it was found that during the original transfer of the database from GEMS to acQuire, the downhole depths were incorrectly transferred. The entire downhole survey database was checked, and all records modified to their original downhole location. This only affected holes drilled prior to 2003 and as most of the resource is defined by holes drilled after 2003 this is not considered a material issue.

Not all underground drilling completed since 2005 has been systematically downhole surveyed. While the deviation is not expected to materially change the mineralised zones, all future drill holes should be downhole surveyed to determine an accurate spatial location. Downhole surveying has been incorporated into a series of standardised DPMC procedures, which have been implemented at the Chelopech mine since 2005, with routine downhole surveys carried out every 30 m using four onsite single shot reflex tools. These tools are checked every month and calibrated when required.

10.6.4 Topography

In general, the topographic model follows the collar positions of surface drill holes. However, there are deviations due to the accuracy of the topography survey. As the mineral resource is not impacted by surface expression this inaccuracy is not considered material. In October 2013 an orthophoto map and DSM of the terrain around the mine and industrial site was created by “Solitech” EAD using Gatewing X100 and Trimble UX5 systems. The covered area is 68 square kilometers. The achieved accuracy is about 300 mm in 3D space.

10.7 Core Recovery

Core recovery measurements have been performed continuously since 2004 with excellent core recovery for all drill holes. 913 drill holes have no core recovery details and 416 historical holes have low priority data. Diamond core recovery is measured during the core mark-up process, prior to logging and cutting.

No issues were noted with core recovery. For more details refer to section 12.6.

10.8 2018 - Operational Resource Development Drilling

In 2017, an underground resource development diamond drilling program of 41,706 metres was completed.

The key area explored was Zone 153 - a new high-grade zone discovered in Q4 of 2016 as part of the on-going ‘Upper Levels’ resource development drilling program. The focus of recent drilling has been on defining the shape and volume of the mineralised zone, improving confidence in the geological model and to add additional Mineral Resources in this area.

Metallurgical testwork on the Zone 153 material was undertaken in Q3 of 2017. The test work has shown it to be highly amenable to the current processing flow sheet.

Elsewhere, resource development drilling concentrated on the north-west part of deposit, in particular Target 148, with the aim of converting Inferred Mineral Resources to higher confidence Mineral Resource categories.

Further to this, the areas down plunge of Block 17, Block 18, Block 19, Block 103 and Block 150 were also tested during the year.

Currently DPMC's operational resource development drilling strategy for 2017 combines resource definition drilling designed to a 30 x 30 m drilling grid with infill grade control holes. Wider spaced resource definition drilling is employed to define Indicated Mineral Resources. Whilst operational infill drilling on a 15 m x 15 m drilling grid is designed to upgrade Indicated Mineral Resources to the Measured Mineral Resource category, to allow detailed production design and scheduling works.

The Mineral Resource development strategy for Chelopech has been planned for 2018, focusing on drilling of Zone 153, currently converted in Block 153, the upper levels of Block 150, 25, 5 in western area and northwest sections of the deposit. Other areas of focus include Target 148 and the surrounding areas, which have demonstrated high potential to host new mineralised zones.

In light of the positive results from extensional drilling from position G421-405-DDC, on level 405, the program will continue during 2018. Drilling will aim to expand the current mineralisation contours in upper levels of Block 150, Block 25 and Block 5 and convert Mineral Resources into Mineral Reserves.

Drilling towards Target 148 will continue in 2018. Additional drilling will determine the continuity of mineralization with the goal of converting this discovery into higher confidence Mineral Resource categories and ultimately Mineral Reserves.

Additionally, there are plans to test the following targets in 2018:

Extensional Drilling

• Extensional drilling in the areas close to Block 8 targeting the discovery of new and expansion of known ore bodies. Historic drilling results in combination with structural and geology models indicate un-tested mineralisation may be present in this area.

• Extensional drilling on a new target locality, called "700". The target area coincides with NW – SE structural trend which has been assessed as having high potential for hosting new mineralization. Based on historical mapping of silica envelope on the upper levels of southeast mining area and several historical holes which returned ore-grade mineralization, a 3D model of the target was generated and will be used for drill testing.

• Extensional drilling in a new target area termed "North", located in the northeast section of Chelopech deposit close to the boundary of Block 19 between 140 mRL and 160 mRL.

Grade Control Drilling

• Grade control drilling in Block 151 between levels 390 mRL and 330 mRL to expand the known orebody and convert Mineral Resources into Mineral Reserves;

For 2018, in total 44,000 m of Operational Resource Development drilling has been planned covering the targets mentioned above. DPMC intends to spend $1,900,000 USD for Operational Resource Development drilling during 2018.

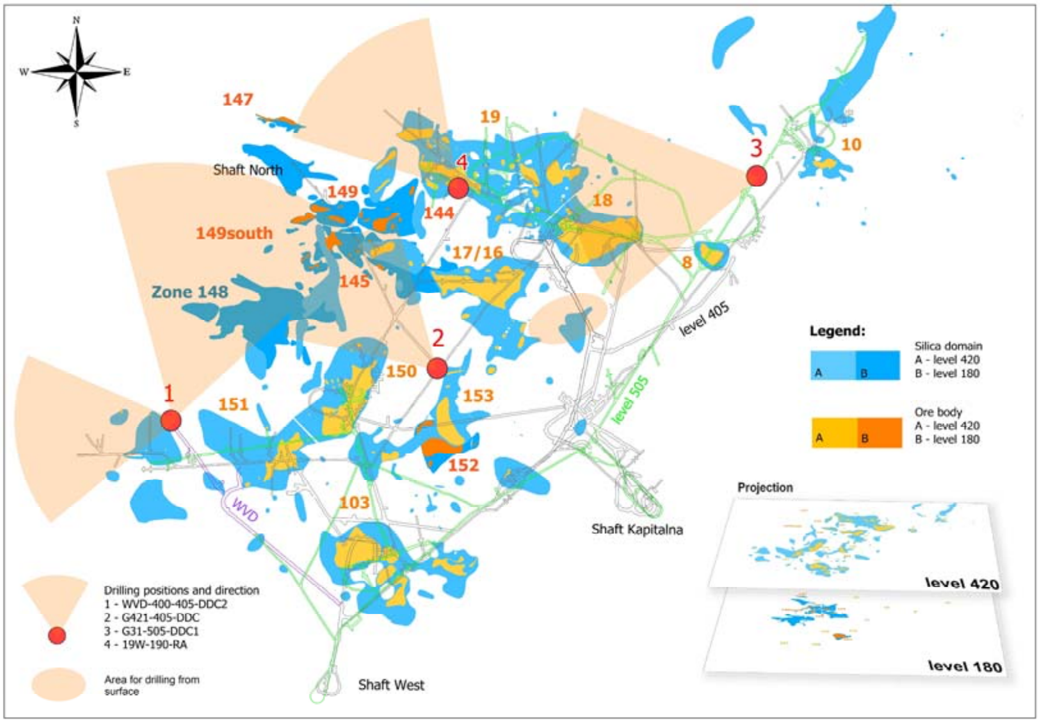


Figure 12. Overview map of the planned operational Resource Development drilling in Chelopech mine during 2018 (DPMC,2017).

11. Sample Preparation, Analyses and Security

11.1 Sample Preparation

11.1.1 Pre-DPMC: Sample Preparation

Introduction

Pre-DPMC Diamond drilling and underground face sampling procedures did not differ significantly from the current DPMC procedures. See Section 11.1.2 for further details of current procedures.

Bulk Density Sampling

The previous approach to the estimation of resource tonnage, prior to estimation of bulk density by using Ordinary Kriging and the relationship with sulphur grade, was to use a single bulk density assigned to each identified mineralised block.

11.1.2 DPMC: Sample Preparation

Resource Development Diamond Drilling Sampling

All drillcore is sampled in intervals up to a maximum of 2.2 m, with 1.5 m sample intervals being the most common length. Where there is a change of mineralisation type or structural contact within a mineralised zone, shorter intervals may be used, but not less 0.80 m (due to the requirement for a minimum quantity weight of the sample for analysis). Three sizes of core are drilled at the Chelopech mine, NQ and LTK60 for exploration and BQ for grade control drilling. NQ and LTK60 core is cut by diamond saw, with half core samples submitted for laboratory analysis and the residual half core retained in aluminium core trays, while all BQ core samples are submitted for analysis as whole core.

The core is cut in the core cutting facility along orientation lines (when no orientation line is present, it is noted on the core) and the right hand side of the core looking down-hole is sampled and the left hand side of the core is retained in the core tray for reference.

Samples are placed in heat resistant cotton bags which have dimensions of 35 by 25 cm. Sample tickets are uniquely numbered and placed in the bags with the samples. The weight of a diamond drill core sample varies between 3 and 7 kg. The sample bags are arranged in order on mobile racks and dried in the oven at 105°C for 8 to 10 hours. After drying, the bags are loading onto a 4x4 pick-up truck and then delivered directly to the on-site sample preparation and analytical laboratory where they are routinely assayed for Cu, Au, Ag, S, As, Pb and Zn.

Upon completion of the core logging, a SSF (sample submission form) containing a list of samples, standards and field duplicates is prepared for each batch. This is documented in the

Diamond Drilling Sample Journal on the server. Each SSF has unique number and two copies are prepared – one signed copy for the Laboratory and one for the DPMC archive.

The majority of the core drilled since 2003 has been photographed. The photographs are named, catalogued and saved on the geology server.

Diamond Drilling Sampling for Exploration projects

The drillcore is sampled in intervals up to a maximum of 1.5 m, with 1 m sample intervals being the most common length. Where there is a change of mineralisation type or structural contact within a mineralised zone, shorter intervals may be used, but not less 0.50 m (due to the requirement for a minimum quantity weight of the sample for analysis). Three sizes of core are drilled at the Exploration Projects, PQ and NQ, and BQ - only when needed. The core is cut by diamond saw, with half core samples submitted for laboratory analysis and the residual half core retained galvanized sheet iron core trays.

The core is cut in the core cutting facility along orientation lines (when no orientation line is present, it is noted on the core) and the right-hand side of the core looking down-hole is sampled and the left hand side of the core is retained in the core tray for reference.

Samples are placed in heat resistant cotton bags which have dimensions of 35 by 25 cm. Sample tickets are uniquely numbered and placed in the bags with the samples. The weight of a diamond drill core sample varies between 3 and 7 kg. The sample bags are arranged in plastic bags and tied with a uniquely numbered plastic link. About 10 samples are placed in a sack which is tied with a plastic link with a unique number (different numbering) and sent by truck to SGS Bor Laboratory.

Upon completion of the core logging, a unique SSF (sample submission form) containing a list of samples, standards and field duplicates is prepared for each batch. This is documented in the sample journal on the server. After receiving the samples, the laboratory sends a reconciliation form back to DPMC.

The majority of the core drilled since 2003 has been photographed. The photographs are named, catalogued and saved on the geology server.

Underground Face Sampling

Development face samples are taken as horizontal panel chips on a 20 cm grid over the bottom half of each development drive advance. Each round is an average of 3 m in length. The samples are usually chosen based on different mineralisation and geological characteristics.

The underground face sampling procedures and checks are considered appropriate with field duplicates, blanks and standards submitted for analysis as per the diamond core sampling protocols. The face samples have unique sample numbers and a unique SSF for each batch which are recorded in the Face Sample Journal on the server. All SSFs are saved in the DPMC archive.

Sample tickets are placed in the bags and have a numbering system which reconciles sample and assayed results in the database. The average weight of a face sample varies between 3 and 5 kg.

Bulk Density Sampling

Bulk density measurements have been routinely completed since the start of 2003 at the (ISO9002 rated) Eurotest-Kontrol facility in Sofia using an appropriate wax coating followed by water immersion method. The collection of bulk density data has recently been incorporated into DPMC's standard procedures which are applied to all diamond drilling, ore and development drives and stopes.

Bulk density measurements are collected as fist sized grab samples from underground, or 10 cm billets every 3 m along the length of the drill hole, including both ore and waste. Since the last MRE, bulk density samples are taken after a preliminary review of the proximity and density of neighbouring samples in the first few metres of a drill fan. This preliminary check ensures that oversampling of a particular area does not occur, since many holes are typically collared from one drill cubby due to the drilling patterns employed at the Chelopech Mine.

For exploration drillholes, bulk density measurements are collected by means of 10 cm billets every 5 m.

All bulk density measurements are assigned co-ordinates or to a bulk density table in the drill hole database.

In 2009, onsite density analysis was introduced and incorporated in the SGS managed onsite laboratory services. The determination of bulk density for rock or core samples is by paraffin wax and water immersion.

The underground bulk density grab samples are allocated unique numbers. Each batch of density samples has a unique SSF recorded in the Sample Diamond Drilling Journal for core samples and Bulk Density Journal for face samples.

QA/QC Sampling

The procedure for internal QA/QC sample submission is as follows:

- Certified Reference Materials (CRMs), also referred to as standards, are inserted in a ratio of 1:20
- Blanks are inserted in a ratio of 1:50
- Duplicates – field and crushed are inserted in a ratio of 1:20
- A naming convention for standards is used for QA/QC samples, so although the laboratory will know which samples are standard samples, they won't be able to identify which actual standard has been inserted.
- The samples are dispatched to the Laboratory with a unique SSF

The procedure for internal control QA/QC sample submission is as follows:

- Approximately 5 to 10 % of face and drill core pulp duplicates are sent for internal control

- The internal control samples have the same rules as the original samples with respect to standards, blank standards and SSF

The procedure for external (Umpire) QA/QC sample submission is as follows:

- All internal control pulp duplicates are submitted for umpire analysis
- Every twentieth core sample is submitted for umpire analysis
- Samples that have discrepancies between the geological description and chemical analysis are also submitted for umpire analysis
- Certified standards are inserted in a ratio of 1:20 for umpire analysis
- Blanks are inserted in a ratio of 1:50 for umpire analysis
- A naming convention for blanks and standards is used for QA/QC samples whereby standards are inserted into the sample stream with sequential sample numbers so that the laboratory won't be able to distinguish the standard samples from the umpire samples.
- The samples are sent, via courier, to the Laboratory with a unique SSF

QA/QC Sample Submission for Exploration Projects

Since May 24th 2017, DPM have implemented new procedures for the exploration projects. The sample submission procedure is as follows:

- Certified Reference Materials (CRMs), also referred to as standards, are inserted in a ratio of 1:20, (every 20th sample with a Sample ID that ends in 20, 40, 60, 80, or 100 in the sampling journal).
- Crushed blanks are inserted are inserted in a ratio of 1:20 (every 20th sample with a Sample ID that ends in 10, 30, 50, 70, or 90 in the sampling journal). Pulp blanks are only used when additional quality control monitoring of the analytical stage is required.
- Duplicates – field and coarse crush are inserted in a ratio of 1:20 (every 20th sample with a Sample ID that ends in 15, 35, 55, 75, 95 in the sampling journal).
- All routine samples and quality control samples are numbered consecutively therefore each project uses a standard batch size of 45 samples for laboratory submissions. Every batch must contain 38 or 39 routine samples as well as 7 or 6 QC samples and in addition SGS Bor will add 5 internal QC samples.
- The samples are dispatched to the Laboratory with a unique SSF. Each batch has a separate SSF in a sample shipment using the first sample number in the batch as a name.

11.2 Analyses

11.2.1 Summary

Since 2004, SGS has operated an onsite laboratory at Chelopech under the name 'Chemical Laboratory Dundee Precious Metals Chelopech managed by SGS' (herein referred to as 'SGS Chelopech'). At present; the majority of sample preparation (drying, crushing, pulverisation and splitting) is completed on site at SGS Chelopech with a small number of exploration drill holes analysed at SGS Bor, Serbia. However, in the past, sample analysis has been undertaken at a variety of laboratories. The sequence of laboratories used is listed in Table 17. **Sample Analyses and Laboratories engaged (1956-2017).** below.

Table 17. Sample Analyses and Laboratories engaged (1956-2017).

Period	Laboratory	Type of Samples	Number of Samples	Number of Assays
June 1956 to 2/1/1992	State Owned	Drill holes	48,778	212,012
	(incl. Polimet)	UG Face samples	7,220	27,486
January 1993 to 8/31/2003	Bondar Clegg, Canada	Drill holes	4,419	24,017
		UG Face samples	0	0
	OMAC, Ireland	Drill holes	1,319	6,595
		UG Face samples	0	0
	Navan	Drill holes	12,906	72,480
		UG Face samples	8,494	41,017
September 2003 to 1/1/2004	Ultra Trace, Perth, Australia	Drill holes	287	1475
	SGS, Chelopech, Bulgaria	Drill holes	1,244	6,220
		UG Face samples	438	2,190
January 2004 to 9/30/2017	Ultra Trace, Perth, Australia	Drill holes	16,863	86,396
	ALS, Perth, Australia	UG Face samples	8	40
	SGS, Chelopech, Bulgaria	Drill holes	332,941	2,292,093
		UG Face samples	17,842	95,976
	SGS, Bor, Serbia	Drill holes	7,602	54,728
Total			**460,361**	**2,922,725**

11.2.2 SGS: Sample Preparation and QA/QC procedures

SGS Chelopech operates its own sample preparation facility. The sample preparation rooms are clean and well maintained and compressed air is used to clean the crushing and pulverising equipment. The sample preparation procedure is presented in

Figure 13.

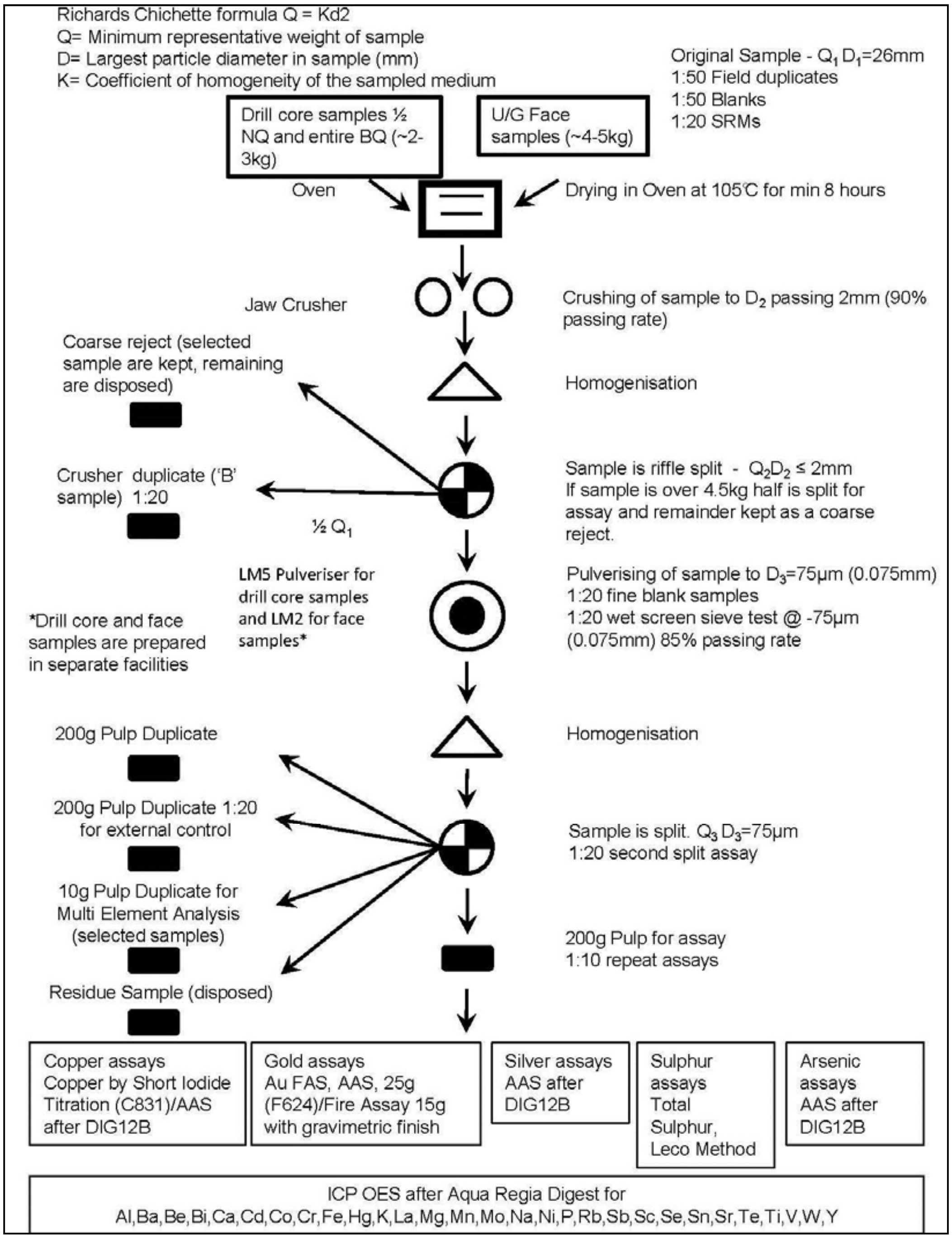


Figure 13. Sample Preparation Flow Chart for Drill Core and U/G Face Samples (DPMC, 2015).

11.2.3 SGS: Sample Analyses

SGS Chelopech assay methods are tabulated in Table 18, and are summarised as follows:

- *Au < 20 ppm*: 25-gram Fire Assay with AAS Finish;
- *Au > 20 ppm*: 25-gram Fire Assay with Gravimetric finish;
- *Ag, As, Pb, Zn*: Charge of 0.1 gram in 15 ml solution - AAS with Aqua Regia Digest;
- *Cu < 3 %:* Charge 0.1 gram in 15 ml solution - AAS with Aqua Regia Digest;
- *Cu > 3 %:* Acid Digestion with a titration finish.

Table 18. SGS Chelopech Laboratory Assay methods.

Element	Method	Detection Limit	Upper limit	Procedure	Description
Copper	CON13V	0.01 %	60.00 %	Copper by Short Iodide Titration (C831)	Short Iodide Titration (C831)
	AAS12B	2 ppm	100,000 ppm	AAS after DIG12B	Atomic absorption spectrometry after two-acid digests (with the designation "12" is based on a combination of 3:1 HCl : HNO3)
Gold	FAA25	0.01 ppm	1,000.00 ppm	Au FAS, AAS, 25g (F624)	Fire Assay, Atomic absorption spectrometry
	FA15G	3 ppm	1,000 ppm	Fire Assay 15g with gravimetric finish	Fire Assay, Gravimetric finish
Silver	AAS12B	1 ppm	100 ppm	AAS after DIG12B	Atomic absorption spectrometry after two-acid digests (with the designation "12" is based on a combination of 3:1 HCl : HNO3)
	AAS43B	50 ppm	20,000 ppm	AAS after DIG12B	Atomic absorption spectrometry after 4 acid digestion with higher elemental concentrations
Sulphur	CSA06V	0.05 %	55.00 %	Total Sulphur, Leco Method	Total Sulphur, leco Method (V829), Furnace/IR (Infrared)
Arsenic	AAS12B	0.01 %	10.00 %	AAS after DIG12B	Atomic absorption spectrometry after two-acid digests (with the designation "12" is based on a combination of 3:1 HCl : HNO3)
Lead	AAS12B	5 ppm	25,000 ppm	AAS after DIG12B	Atomic absorption spectrometry after two-acid digests (with the designation "12" is based on a combination of 3:1 HCl : HNO3)
Zinc	AAS12B	2 ppm	25,000 ppm	AAS after DIG12B	Atomic absorption spectrometry after two-acid digests (with the designation "12" is based on a combination of 3:1 HCl : HNO3)

SGS Bor assay methods are tabulated in the table below.

Table 19. SGS Bor Laboratory Assay methods.

Element	Method	Detection Limit	Upper limit	Procedure	Description
Copper	CON13V	0.01 %	60.00 %	Copper by Short Iodide Titration (C831)	Short Iodide Titration (C831)
	ICM40B	0.5	10,000 ppm	ICP-MS	49 elements by four-acid digestion/ ICP-MS
	IMS40B	0.5	10,000 ppm	ICP_OES and ICP-MS	36 elements by two-acid digestion/ICP_OES and ICP-MS
Gold	FAA505	0.01 ppm	1,000.00 ppm	Au FAS, AAS, 50g	Fire Assay, Atomic absorption spectrometry
Silver	AAS12B	1 ppm	100 ppm	AAS after DIG12B	Atomic absorption spectrometry after two-acid digests (with the designation "12" is based on a combination of 3:1 HCl : HNO3)
	ICM40B	0.02 ppm	10 ppm	ICP-MS	49 elements by four-acid digestion/ ICP-MS
	IMS40B	0.05 ppm	10 ppm	ICP_OES and ICP-MS	36 elements by two-acid digestion/ICP_OES and ICP-MS
Sulphur	ICM40B	0.01 %	5.00 %	ICP-MS	49 elements by four-acid digestion/ ICP-MS
	IMS40B	0.5 %	5.00 %	ICP_OES and ICP-MS	36 elements by two-acid digestion/ICP_OES and ICP-MS
Arsenic	ICM40B	1 ppm	10,000 ppm	ICP-MS	49 elements by four-acid digestion/ ICP-MS
	IMS40B	1 ppm	10,000 ppm	ICP_OES and ICP-MS	36 elements by two-acid digestion/ICP_OES and ICP-MS
Lead	ICM40B	0.5 ppm	10,000 ppm	ICP-MS	49 elements by four-acid digestion/ ICP-MS
	IMS40B	2 ppm	10,000 ppm	ICP_OES and ICP-MS	36 elements by two-acid digestion/ICP_OES and ICP-MS
Zinc	ICM40B	1 ppm	10,000 ppm	ICP-MS	49 elements by four-acid digestion/ ICP-MS
	IMS40B	0.5 ppm	10,000 ppm	ICP_OES and ICP-MS	36 elements by two-acid digestion/ICP_OES and ICP-MS

11.2.4 SGS: Laboratory Accreditation

On the basis of long term contracts both of the lab facilities at DPM Chelopech/Bulgaria and DPM Exploration in Bor/Serbia (AVALA doo) are under the full management of SGS Bulgaria LTD and are independent in their activities, with an SGS qualified laboratory manager on site at all times.

Management system control (MSC) accreditation procedures have been implemented in the Chelopech lab since 2004 and in the Bor lab since 2008.

Both of the laboratories operate to SGS Global and international standards under SGS's international accreditation. All methods and procedures are implemented together with international quality control protocols.

The lab facility in Chelopech has been ISO 9001:2008 certified since April 2013, updated to ISO 9001:2015 in April 2017.

11.2.5 SGS: Round Robin Analyses

Participation in the monthly SGS global and international round-robin program is usual practice for both of lab facilities managed by SGS. These regular surveys are used as a tool for the maintenance of high standards in mining and analytical industries and involve over one hundred laboratories from all parts of the world.

The DPM Chelopech lab facility has participated in the Geostats' Round Robin analysis programs since 2008, always placing in the top 30 for Au, Cu, Ag, As, S, Pb and Zn and several times has held first place for S, Cu and Au accuracy.

11.3 QA/QC

11.3.1 Pre-DPMC QA/QC: Pre-2003

Drill Core and Face Sample Assaying

The QA/QC undertaken prior to DPM`s involvement consisted of analysis of field duplicates and laboratory pulp duplicates. In summary, review of the available historical data showed:

- Poor precision for field duplicates, but due to the small number of pairs, a meaningful conclusion was not possible.
- Laboratory pulp duplicates exhibited an acceptable level of precision; although gold and silver pairs performed more poorly than copper, sulphur and arsenic pairs.
- Neither field nor laboratory duplicates exhibited significant bias.

11.3.2 DPMC QA/QC: 2003 – September 2016

During the period from 2003 to 2016, DPMC followed a detailed QA/QC program which included field duplicates, prep-lab pulps, coarse duplicates and Certified Reference Materials (CRMs). The quantity of QA/QC material analysed has increased with each reporting period and where issues were noted, these were generally resolved timeously. Overall, gold, copper and sulphur performed well, whilst silver and arsenic had some issues which were mostly related to the analytical method detection limits and sensitivity. Issues with gold and copper CRMs noted in the 2016 MRE review included:

- Bias was noted in individual CRMs and standards, but this is not systematic (i.e. some bias is positive and some negative).

- Copper CRM under reporting which was most probably due to the digestion method used at the site laboratory not being the same as used in the Geostats Round Robin when assigning an expected value to the CRM.

In addition, laboratory duplicates, pulp repeats and laboratory standards were analysed and reviewed, and no significant issues were noted.

Face sample QA/QC: 2003 – September 2016

From 2003 to 2010 QA/QC results showed:

- Acceptable accuracy and precision for Cu, Au, Ag and S.

- Arsenic pairs indicated poor inter-laboratory precision which could possibly be attributed to their different assaying techniques.

During the period from 2010 to 2016, face sample QA/QC undertaken consisted of analysis of field duplicates, crush duplicates, pulp duplicates and laboratory pulp splits. The pulp duplicates were taken every three months, amounting to 7% to 9% of face samples. In summary, results showed:

- Assay results from the field duplicates suggested poor precision, but due to the small number of pairs, a meaningful conclusion was not possible.

- Assay results for the laboratory pulp splits exhibited an acceptable level of precision; although silver pairs performed more poorly than copper, gold, sulphur and arsenic pairs. Duplicates exhibited no significant bias.

<u>*Umpire (External Check) Analyses*</u>

Prior to 2003, the primary laboratories for the face and drill hole samples were Chelopech Site Laboratory and OMAC (Loughrea, Co. Galway, Ireland), now called ALS Loughrea. Evrotest-Kontrol, Sofia, Bulgaria was used as the umpire laboratory. A small number of internal CRMs, which exhibited a high level of accuracy, were available for the Chelopech Site Laboratory data.

Reasonable precision levels were shown by the umpire assaying, although the Chelopech Site Laboratory assay values were marginally higher than the Evrotest-Kontrol, Sofia, Bulgaria assay results. No quality control data was available for the Evrotest-Kontrol, Sofia, Bulgaria assaying; therefore, the relative differences in the assay populations could not be quantified.

ALS in Vancouver, Canada and SGS Welshpool, Perth, Australia were used as the umpire laboratories between 2003 and 2012 and the primary laboratory was SGS Chelopech. No significant bias was observed, and the data was considered precise and accurate.

From 2012, on a three monthly basis, approximately 5% to10 % of all face and drill hole samples were sent to ALS, Rosia Montana, Romania for umpire analysis. Reasonable precision and repeatability was observed for the copper results and these data are considered precise and accurate. The bias in the external check gold assay results between SGS Chelopech and ALS Rosia Montana noted in the 2015 MRE update was investigated and now is approximately 2% to 3% versus 6% in 2015. However, the SGS Chelopech results under report relative to the external laboratory results and therefore would not appear to be overstating the gold grade.

11.3.3 DPMC QA/QC: October 2016 to September 2017

Introduction

A quality assurance and quality control program (QA/QC) has been implemented by Dundee Precious Metals Chelopech to provide confidence that sample assay results are reliable, accurate and precise.

DPMC Certified Reference Materials (CRMs) and Blanks

CRMs have a certified value and expected minimum and maximum values (which are twice the standard deviation from the certified value). DPMC's procedure for dealing with QA/QC failures is to re-assay the failed blank and five samples either side of it or re-assay the failed CRM and ten samples either side of it.

A total of 2,031 standard samples were submitted by DPMC in this review period. Site specific CRMs, developed and certified by Geostats, together with commercially available Geostats CRMs have been used and these have been summarised in Table 20. Two non-certified blank standards were used; BLANK_BEACH (quartz sand) for controlling the pulverization stage and BLANK_MIAL (dolomitic limestone) for controlling the sample crushing stage.

Table 20. DPMC CRMs used in Sampling.

StandardID	Element	Units	ExpectedValue	ExpectedStDev	ExpectedMin	ExpectedMax
DPMO	Ag	ppm	2.6	0.4	1.81	3.39
DPMO	As	pct	0.0741	0.0019	0.06669	0.08151
DPMO	Au	ppm	1.65	0.21	1.23	2.06
DPMO	Cu	ppm	2888	94	2699	3077
DPMO	S	pct	7.56	0.34	6.88	8.24
DPMR	Ag	ppm	5.79	0.3	5.19	6.38
DPMR	As	pct	0.1775	0.0041	0.15975	0.19525
DPMR	Au	ppm	2.64	0.13	2.38	2.9
DPMR	Cu	ppm	6922	148	6625	7218
DPMR	S	pct	11.27	0.22	10.84	11.71
DPMU	Ag	ppm	10.04	0.8	8.44	11.64
DPMU	As	pct	0.1066	0.00665	0.0933	0.1199
DPMU	Au	ppm	0.87	0.131	0.61	1.13
DPMU	Cu	ppm	4050	145.3	3759	4341
DPMU	S	pct	8.02	0.126	7.77	8.27
DPMV	Ag	ppm	8.2	0.722	6.76	9.65
DPMV	As	pct	0.1116	0.00705	0.0975	0.1257
DPMV	Au	ppm	1.89	0.113	1.66	2.11
DPMV	Cu	ppm	4586	207.2	4172	5000
DPMV	S	pct	9.05	0.272	8.51	9.6

StandardID	Element	Units	ExpectedValue	ExpectedStDev	ExpectedMin	ExpectedMax
DPMW	Ag	ppm	4.6	0.478	3.65	5.56
DPMW	As	pct	0.1385	0.00856	0.1214	0.1556
DPMW	Au	ppm	2.69	0.105	2.48	2.9
DPMW	Cu	ppm	6347	287.5	5772	6922
DPMW	S	pct	12.74	0.391	11.96	13.52
DPMY	Ag	ppm	8.71	0.974	6.76	10.66
DPMY	As	pct	0.8155	0.04739	0.7208	0.9103
DPMY	Au	ppm	2.91	0.064	2.79	3.04
DPMY	Cu	ppm	22200	820	20552	23839
DPMY	S	pct	12.97	0.412	12.14	13.79
DPMZ	Ag	ppm	4.02	0.461	3.1	4.94
DPMZ	As	pct	0.1441	0.00721	0.1297	0.1585
DPMZ	Au	ppm	5.48	0.258	4.97	6
DPMZ	Cu	ppm	6442	355.7	5731	7154
DPMZ	S	pct	22.7	1.047	20.6	24.79
GBMS304-1	Ag	ppm	1.4	0.5	0.4	2.4
GBMS304-1	As	pct	0.0168	0.002	0.0128	0.0208
GBMS304-1	Au	ppm	3.06	0.14	2.78	3.34
GBMS304-1	Cu	ppm	3156	151	2854	3458
GBMS304-1	S	pct	1.33	0.07	1.19	1.47
GBMS304-4	Ag	ppm	3.4	0.9	1.6	5.2
GBMS304-4	As	pct	0.0535	0.0048	0.0439	0.0631
GBMS304-4	Au	ppm	5.67	0.31	5.05	6.29
GBMS304-4	Cu	ppm	9786	378	9030	10542
GBMS304-4	S	pct	6.27	0.26	5.75	6.79
GBMS304-6	Ag	ppm	6.1	0.8	4.5	7.7
GBMS304-6	As	pct	0.266	0.017	0.232	0.3
GBMS304-6	Au	ppm	4.58	0.19	4.2	4.96
GBMS304-6	Cu	ppm	4241	215	3811	4671
GBMS304-6	S	pct	2.01	0.1	1.81	2.21
GBMS911-1	Ag	ppm	11.9	1	9.9	13.9
GBMS911-1	As	pct	0.0337	0.0052	0.0233	0.0441
GBMS911-1	Au	ppm	1.04	0.11	0.82	1.26
GBMS911-1	Cu	ppm	10034	399	9236	10832
GBMS911-1	S	pct	1.4	0.07	1.26	1.54
GBMS911-2	Ag	ppm	12.4	0.7	11	13.8
GBMS911-2	As	pct	0.0062	0.0014	0.0034	0.009
GBMS911-2	Au	ppm	2.88	0.11	2.66	3.1
GBMS911-2	Cu	ppm	1417	67	1283	1551
GBMS911-2	S	pct	1.3	0.1	1.1	1.5
GBMS911-3	Ag	ppm	1.7	0.4	0.9	2.5
GBMS911-3	As	pct	0.0013	0.0002	0.0009	0.0017
GBMS911-3	Au	ppm	1.33	0.12	1.09	1.57
GBMS911-3	Cu	ppm	7652	370	6912	8392
GBMS911-3	S	pct	0.99	0.05	0.89	1.09
GBMS911-4	Ag	ppm	17.9	1.4	15.1	20.7
GBMS911-4	As	pct	0.0036	0.0007	0.0022	0.005

StandardID	Element	Units	ExpectedValue	ExpectedStDev	ExpectedMin	ExpectedMax
GBMS911-4	Au	ppm	6.78	0.27	6.24	7.32
GBMS911-4	Cu	ppm	900	58	784	1016
GBMS911-4	S	pct	0.79	0.06	0.67	0.91
BLANK_BEACH	Ag	ppm	1	1		1.5
BLANK_BEACH	As	pct	0.01	0.01		0.1
BLANK_BEACH	Au	ppm	0.01	0.01		0.1
BLANK_BEACH	Cu	ppm	2			100
BLANK_BEACH	S	pct	0.06	0.12		0.4
BLANK_MIAL	Ag	ppm	1	1		1.5
BLANK_MIAL	As	pct	0.01	0.01		0.1
BLANK_MIAL	Au	ppm	0.01	0.01		0.1
BLANK_MIAL	Cu	ppm	20			100
BLANK_MIAL	S	pct	0.06	0.12		0.4

Issues were noted with some of the CRM results, which were investigated by the DPMC database administrator and comment was obtained from the onsite laboratory. The main issues and comments are listed below:

- Gold CRM – DPMU over reporting, DPMW and DPMZ is under reporting, but in 2SD interval.
- Copper CRM – under and over reporting – Most probably due to the digestion method used at the site laboratory not being the same as used in the Geostats Round Robin when assigning an expected value
- Silver CRM failures – Assays are reported in increments of 1.5 g/t which result in apparent failures (e.g. CRM DPMW has an expected value of 4.6 g/t, but results are reported at 4.5 or 6.0 g/t); close to detection limit – threshold.
- Arsenic CRM over reporting, but in 2SD interval.

CRM results are presented in Table 21 and Table 22 below and some control chart examples are plotted in Figure 14 (Au standard DPMV) and Figure 15 (Cu standard DPMZ).

Table 21. Table showing Mean biases for DPMC standards, assayed by SGS Chelopech Laboratory (Bias > 5% shown in orange).

Std Code	No. of Samples	Ag		As		Au		Cu		S		Comments
		Exp Value	Mean Bias	Exp Value	Mean Bias	Exp Value	Mean Bias	Exp Value	Mean Bias	Exp Value	Mean Bias	
DPMU	144	10.04	2%	0.1066	3%	0.87	10%	4050	-2%	8.02	2%	Failure Au
DPMV	354	8.2	0%	0.1116	6%	1.89	0%	4586	-2%	9.05	3%	Failure As, 354 Ag below threshold
DPMW	245	4.6	0%	0.1385	5%	2.69	-3%	6347	5%	12.74	4%	Failure As, 254 Ag below threshold
DPMY	226	8.71	16%	0.8155	9%	2.91	1%	22200	-1%	12.97	4%	Failure As, Failure Ag, but only 11 above threshold
DPMZ	204	4.02	0%	0.1441	3%	5.48	-3%	6442	8%	22.7	3%	Failure Cu

Most DPMC standards assayed by SGS Chelopech showed acceptable accuracy and precision for gold, with the exception of DPMU which over reports by 9.5%. DPMW and DPMZ are under reporting by about 3%. All standards are within the expected two SD range but the reasons for poor performance will be investigated with SGS Chelopech Laboratory.

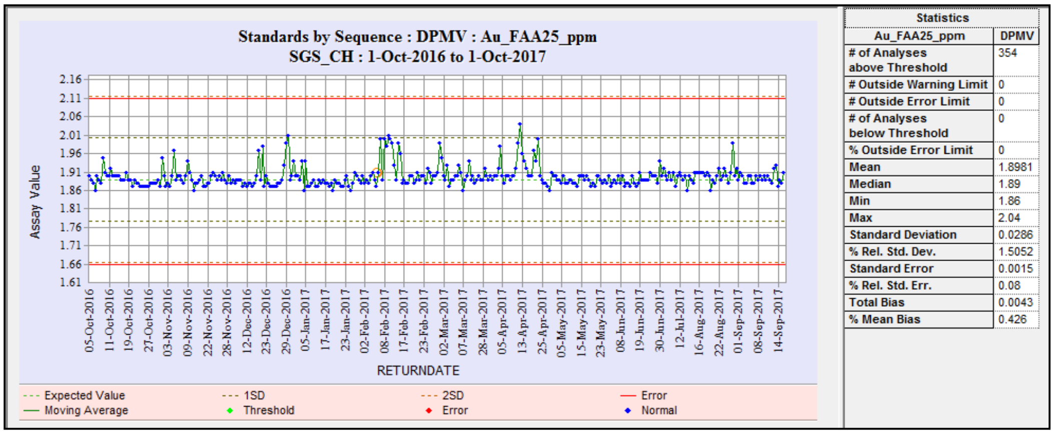


Figure 14. Standards by Sequence: DPMV – (Au_FAA25_ppm) shows good precision and accuracy.

Copper results are precise, but often inaccurate, with over reporting in DPMW by 5% and in DPMZ (Figure 15) by 8%. However, these CRM results are still within the expected two SD range. These bias issues have been discussed with the laboratory as it is an ongoing issue (observed during the previous MRE updates). The laboratory confirms their assumption that the bias is due to the digestion method used at the site laboratory not being the same as used in the Geostats Round Robin when assigning an expected value. These standards will be monitored going forward, but it is recommended that the historical results of the standards are reviewed and if necessary, the expected value updated to reflect the expected value for the assay method used.

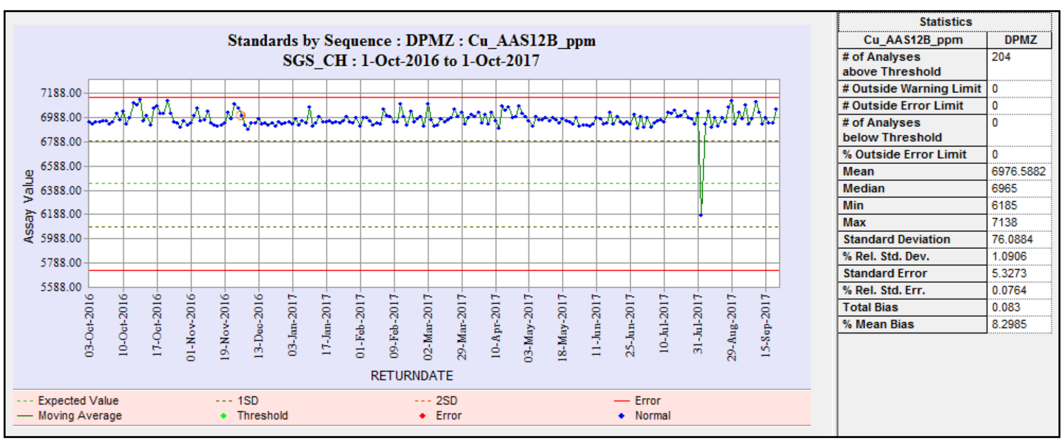


Figure 15. Standards by Sequence: DPMZ – (Cu_AAS12B_ppm) - shows over reporting.

All DPMC standards performed well for sulphur. Silver standards showed acceptable accuracy and precision for all CRMs except DPMY - this may be due to their only being 11 standard assays above the threshold value and the silver reporting in increments of 1.5 g/t. Arsenic standard assays show over reporting but are within 2SD of the expected value. These standards will continue to be monitored closely going forward.

Table 22 below lists the mean biases for the DPMC standards analysed at SGS Bor, Serbia with biases over five percent (absolute value) highlighted in orange.

Table 22. Table showing Mean biases for DPMC standards, assayed by Laboratory of SGS Bor, Serbia (Bias > 5% shown in orange).

Std Code	No. of Samples	Ag		As		Au		Cu		S		Comments
		Exp Value	Mean Bias	Exp Value	Mean Bias	Exp Value	Mean Bias	Exp Value	Mean Bias	Exp Value	Mean Bias	
GBMS304-1	32	1.4	8%	0.0168	-1%	3.06	0%	3156	1%	1.33	-2%	
GBMS304-4	28	3.4	1%	0.0535	0%	5.67	2%	9786	-1%	6.27	1%	
GBMS304-6	12	6.1	3%	0.266	1%	4.58	0%	4241	1%	2.01	0%	
GBMS911-1	65	11.9	-16%	0.0337	5%	1.04	1%	10034	1%	1.4	-1%	Failure Ag, As
GBMS911-2	48	12.4	-19%	0.0062	5%	2.88	0%	1417	0%	1.3	0%	Failure Ag, As
GBMS911-3	62	1.7	1%	0.0013	7%	1.33	-1%	7652	-3%	0.99	-1%	Failure As
GBMS911-4	7	17.9	-1%	0.0036	4%	6.78	0%	900	1%	0.79	0%	
DPMO	6	2.6	4%	0.0741	-1%	1.65	-2%	2888	-2%	7.56	4%	
DPMR	4	5.79	-10%	0.1775	5%	2.64	-3%	6922	-7%	11.27	2%	Failure Ag, As, Cu - small amount

DPMC standards assayed by SGS Bor, showed acceptable accuracy and precision for gold and sulphur. One standard failed for copper, but the number of samples was very small. Five silver and arsenic standards performed well, and the other four standards failed which could be due to the assay methods used at the site laboratory differing from those used during the Geostats Round Robin. The results were discussed with the laboratory manager and will be monitored over the next reporting period.

Laboratory Internal CRMs

CRMs are inserted into the sample stream by SGS Chelopech and SGS Bor and include various standards and a blank (BLANK_SGS_CHE which is used to check the purity of the reagents). A total of 7,377 laboratory CRMs have been included by SGS Chelopech in this review period. A total of 615 standards and a blank were inserted into the sample stream by SGS Bor, Serbia.

Most laboratory standards showed acceptable accuracy and precision with the only failures being attributed to the expected values being close to the detection limit which is not deemed a material issue.

Duplicate Samples

During the current MRE period, 1,045 field duplicate and 9,276 laboratory duplicate samples were analysed for Ag, As, Au, Cu and S both by SGS Chelopech, Bulgaria and SGS Bor, Serbia. The duplicate sample types are:

- FD - field duplicate,
- LD - laboratory (crusher) duplicate,
- LR - laboratory replicate,

- LS - laboratory split.

Assay precision levels were reasonable; no significant bias was observed, and the data are considered precise and accurate. Gold and copper duplicate results are presented in Table 23. DPMC Gold Duplicates (method Au_FAA25_ppm) submitted with Original Assays, assayed by SGS Chelopech Laboratory., Table 24 and Table 25. DPMC Gold Duplicates (method Au_FAA505_ppm) submitted with Original Assays, assayed by SGS Bor Laboratory. respectively.

Table 23. DPMC Gold Duplicates (method Au_FAA25_ppm) submitted with Original Assays, assayed by SGS Chelopech Laboratory.

		Number	Min	Max	Mean	Median	Range	Variance	Coeff. of Var.	Std. Dev.	Bias%	Corr. Coeff.
Au_FD	Original	900	0.08	29.86	1.22	0.46	29.78	6.271	2.0526	2.5042	-1.16%	0.9924
	Check		0.04	31.52	1.2059	0.47	31.48	6.0854	2.0457	2.4669		
Au_LD	Original	1249	0.02	155	0.9979	0.875	13.82	32.657	2.8742	5.7146	1.64%	0.9957
	Check		0.06	196.8	2.021	0.89	196.74	48.9562	3.4621	6.9969		
Au_LR	Original	2671	0.08	69.48	1.9641	0.86	69.4	14.5055	1.9391	3.8086	0.07%	0.9986
	Check		0.06	71.18	1.9655	0.86	71.12	14.8909	1.9633	3.8589		
Au_LS	Original	1008	0.07	37.38	1.3934	0.49	37.31	9.1417	2.1699	3.0235	0.23%	0.9993
	Check		0.08	36.18	1.3966	0.5	36.1	9.1047	2.1606	3.0174		

Table 24. DPMC Copper Duplicates (method Cu_AAS12B_ppm) submitted with Original Assays, assayed by SGS Chelopech Laboratory.

		Number	Min	Max	Mean	Median	Range	Variance	Coeff. of Var.	Std. Dev.	Bias%	Corr. Coeff.
Cu_FD	Original	1038	0.0005	6.91	0.1617	0.0233	6.9095	0.2189	2.8944	0.4679	0.36%	0.9983
	Check		0.0003	6.85	0.1622	0.0233	6.8497	0.2206	2.8947	0.4696		
Cu_LD	Original	1360	0.0005	5.8	0.318	0.0517	5.7995	0.3534	1.8691	0.5944	-0.32%	0.9995
	Check		0.0004	5.82	0.317	0.0521	5.8196	0.3525	1.8728	0.5937		
Cu_LR	Original	3008	0.0003	8.84	0.3295	0.0484	8.8397	0.448	2.0316	0.6694	-0.83%	0.999
	Check		0.0003	7.8396	0.3267	0.0477	7.8393	0.4245	1.9939	0.6515		
Cu_LS	Original	1130	0.0002	7.19	0.1725	0.0234	7.1898	0.2324	2.7942	0.4821	-1.18	0.9989
	Check		0.0002	6.772	0.1705	0.0233	6.7718	0.2123	2.7022	0.4608		

Table 25. DPMC Gold Duplicates (method Au_FAA505_ppm) submitted with Original Assays, assayed by SGS Bor Laboratory.

		Number	Min	Max	Mean	Median	Range	Variance	Coeff. of Var.	Std. Dev.	Bias%	Corr. Coeff.
Au_LD	Original	348	0.01	1.1	0.2241	0.14	1.09	0.0676	1.1608	0.2601	3.74%	0.9952
	Check		0.08	1.08	0.2324	0.13	1	0.0619	1.0701	0.2487		
Au_LR	Original	266	0.09	0.79	0.2322	0.175	0.7	0.0287	0.7296	0.1694	0.54%	0.9949
	Check		0.09	0.78	0.2334	0.18	0.69	0.0289	0.728	0.1699		
Au_LS	Original	186	0.09	1.36	0.29	0.16	1.27	0.1254	1.2209	0.3541	0.63	0.9553
	Check		0.1	1.41	0.2918	0.15	1.31	0.1355	1.2614	0.3681		

<u>Internal QA/QC (Preparation Lab Duplicate Analysis)</u>

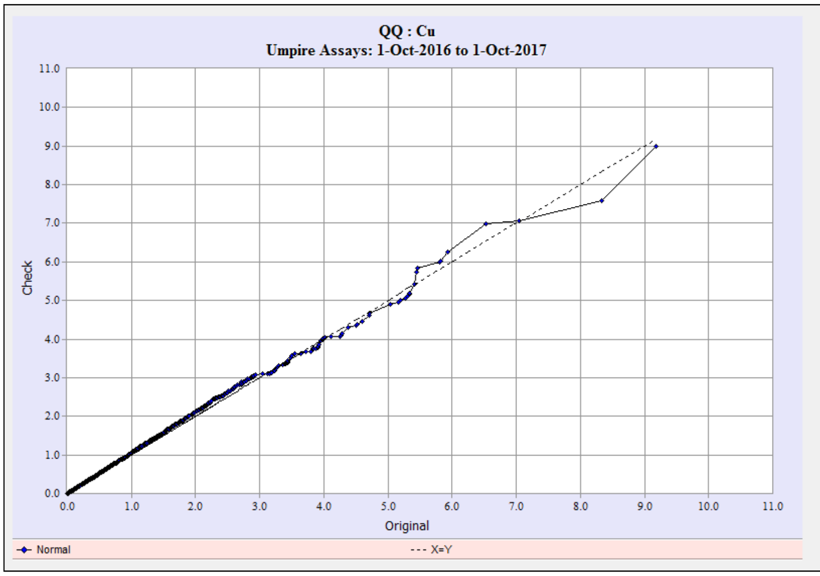
During the period of the current MRE 863 pulp samples were analysed in SGS Chelopech and 175 in SGS Bor for a total of 16,317. Drill core pulps were analysed for seven elements (Au, Cu, Ag, S, As, Pb and Zn) and face samples were assayed for five elements (Au, Cu, Ag, S and As). Assay precision levels were reasonable, no significant bias was observed, and the data are considered precise and accurate.

<u>External QA/QC (Umpire Analyses)</u>

During the period 1st October 2016 to 30th September 2017 2,184 drill core and face samples from SGS Chelopech and 53 samples from SGS Bor were sent to ALS Rosia Montana for Au and Cu umpire analysis.

- <u>SGS Chelopech- ALS, Rosia Montana</u>

Copper results for laboratory external pulp duplicates (umpires) had acceptable precision and good repeatability with no significant overall bias – approximately 3.8% (Figure 16).

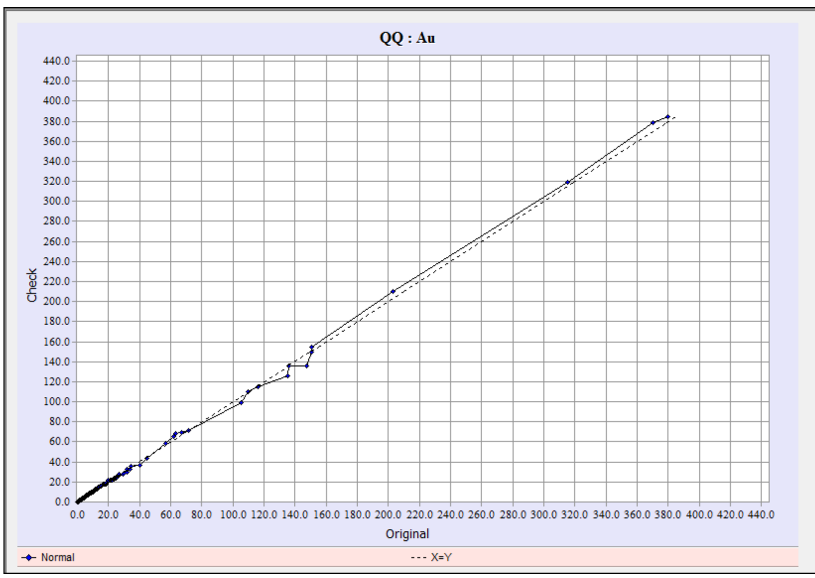


Statistics		
Cu	Original	Check
# of Analyses above Threshold	1743	
# of Analyses below Threshold	412	
# Outside Warning Limit	0	
# Outside Error Limit	0	
Mean	0.7365	0.7644
Median	0.3728	0.388
Min	0.0011	0.01
Max	9.18	8.994
Range	9.1789	8.984
Variance	0.9772	1.0033
Coeff. of Var.	1.3422	1.3104
Pop. Std. Dev.	0.9885	1.0016
q1 (25%)	0.0951	0.099
q3 (75%)	0.986	1.034
Bias	0.0378	
Corr. Coeff.	0.9983	
RMA Error on Y Intercept	0.0016	
RMA Error on Slope	0.0014	
RMA Error	0.087	
Mean AMPRD	5.5572	
% of Population with AMPRD > 5%	48.078	
% of Population with AMPRD > 10%	10.2697	
% of Population with AMPRD > 15%	1.6638	
% of Population with AMPRD > 20%	0.2295	

Figure 16. Umpire Assays - SGS Chelopech - by QQ for Cu show acceptable performance.

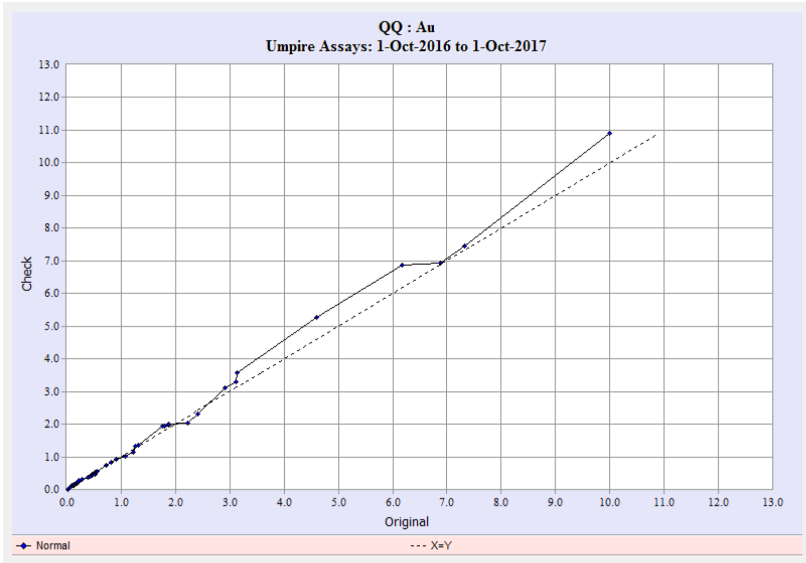
Results for gold umpire duplicates show good repeatability with an overall bias of 3% (Figure 18) observed between SGS Chelopech and ALS Rosia Montana which is at the upper range of an acceptable between laboratory bias.

The bias of 5% (Figure 18) to the external samples observed between SGS Bor and ALS Rosia Montana is higher than would usually be accepted, however as the population is relatively small no definitive conclusions can be made at present.



Statistics		
Au	Original	Check
# of Analyses above Threshold	2261	
# of Analyses below Threshold	352	
# Outside Warning Limit	0	
# Outside Error Limit	0	
Mean	4.0063	4.127
Median	1.47	1.52
Min	0.04	0.1
Max	379.7	385
Range	379.66	384.9
Variance	269.9565	275.0658
Coeff. of Var.	4.1011	4.0187
Pop. Std. Dev.	16.4304	16.5851
q1 (25%)	0.6	0.6
q3 (75%)	3.4	3.57
Bias	0.0301	
Corr. Coeff.	0.9993	
RMA Error on Y Intercept	0.0135	
RMA Error on Slope	0.0008	
RMA Error	0.8968	
Mean AMPRD	6.9071	
% of Population with AMPRD > 5%	56.8775	
% of Population with AMPRD > 10%	25.2543	
% of Population with AMPRD > 15%	7.6073	
% of Population with AMPRD > 20%	1.1942	

Figure 17. Umpire Assays for Drill hole and Face Samples - SGS Chelopech - by QQ for Au show acceptable performance, bias - approximately 3 %.



Statistics		
Au	Original	Check
# of Analyses above Threshold	42	
# of Analyses below Threshold	6	
# Outside Warning Limit	0	
# Outside Error Limit	0	
Mean	1.7114	1.7912
Median	0.77	0.785
Min	0.1	0.11
Max	10	10.9
Range	9.9	10.79
Variance	4.871	5.5993
Coeff. of Var.	1.2896	1.3211
Pop. Std. Dev.	2.207	2.3663
q1 (25%)	0.27	0.31
q3 (75%)	2.22	2.02
Bias	0.0466	
Corr. Coeff.	0.9967	
RMA Error on Y Intercept	0.035	
RMA Error on Slope	0.0132	
RMA Error	0.2781	
Mean AMPRD	8.4219	
% of Population with AMPRD > 5%	66.6667	
% of Population with AMPRD > 10%	26.1905	
% of Population with AMPRD > 15%	14.2857	
% of Population with AMPRD > 20%	11.9048	

Figure 18. Umpire Assays - SGS Bor - for Au show bias - approximately 5 %.

The umpire laboratory, ALS Romania, has been ISO/IEC 17025:2005 (CAN-P-4E) certified since March 2012.

11.3.4 QA/QC Conclusions and Recommendations

Issues were noted with some of the QA/QC results which will require ongoing monitoring, but overall no fatal flaws were apparent. This indicates that the QA/QC procedures implemented at Chelopech are adequate to assess the repeatability, accuracy and precision of the assay results obtained and that the assay results should accurately reflect the grade of the samples. Results of the QA/QC review are summarised below:

- Gold
  - Blank standards have one failures but overall acceptable results.
  - Most of the DPMC site specific standards exhibited an acceptable accuracy and precision, apart from DPMU.
  - Repeatability of pair assay results was good with low calculated precision errors.
- Copper
  - Blank standards have some failures but overall acceptable results. Failures are generally low level compared to economic concentrations of copper.
  - DPMC site specific standards have good precision and report within two standard deviations of the expected value but do exhibit bias. DPMZ over reports by 8% and DPMW by 5%, which could be due to the digestion and analysis methods used being different to those used to obtain the certified

value for the CRMs and at this stage is not considered material. These standards will be monitored going forward.

  - Duplicates have good repeatability with no significant bias with a slight increase from the last reporting period to 4%.

- Silver
  - Blanks have no issues
  - DPMC site specific standards mostly have acceptable accuracy excepting DPMY which over reports by 19% (only 14 analyses are above threshold). These results are exaggerated by the assay precision (results are returned in increments of 1.5 g/t) and many of the standards having expected values close to the detection limit.
  - Duplicates have good repeatability with no significant bias.
- Sulphur
  - Blanks have some failures but overall have acceptable results.
  - DPMC site specific standards mostly show acceptable accuracy.
  - Duplicates have good repeatability with no significant bias.
- Arsenic
  - Blanks have no issues;
  - DPMC site specific standards mostly have acceptable accuracy (apart from DPMY which over reports by 9% but is within 2 SD of the expected value). This is an ongoing issue which has been brought to the laboratory's attention and ongoing vigilance is required
  - Duplicates have good repeatability with no significant bias.

The following is recommended:

- Standard DPMY requires ongoing monitoring with respect to its accuracy for silver and arsenic.
- Standard DPMU requires monitoring for gold
- Standard DPMW and DPMZ requires monitoring for copper.

11.4 Security and Storage

All core transported from the drill rigs to the core shed and all samples carried to the preparation facility are securely transported by DPMC staff in steel boxes. Upon completion of the core logging a SSF (sample submission form) is prepared for each batch containing a list of samples, standards and field duplicates which is documented in the Sample Journal on the server. Each SSF has a unique number and is prepared in duplicate – one signed copy for the laboratory and one for the DPMC archive. Underground face samples are transported in plastic bags from the mine to the preparation facility. The sample preparation facility and laboratory are located within the confines of the of the DPMC compound, which access to is secured by a locked gate and 24-hour CCTV.

Samples collected from underground development, underground drilling and surface drilling operations are transported to the site-based geology core shed, where the samples are geologically logged and are prepared for chemical analysis. The sampling procedures are appropriate and adequate security exists on the site to minimise any risk of contamination or inappropriate mixing of samples. Sample tagging and a laboratory bar code system is in use to digitally track sample progress through to final chemical analysis.

All pulp duplicates are returned from the lab in plastic vials and are stored in a facility with constant temperature and humidity. Mineralized coarse reject samples are returned in the same fabric bags and are stored in core storage near the site. The remaining half core is neatly stored in conventional pallet racking in the core storage facility.

12. Data Verification

The Qualified Person has reviewed the data and believes the data verification procedures undertaken on the data collected from DPMC adequately support the geological interpretations and support analytical and database quality, and therefore support the use of the data in Mineral Resource Estimation.

12.1 Database Controls

DPMC implemented an acQuire GIMS (Geological Informational Management System) in 2004, for managing all of the drill hole and face sampling data.

All data, such as collar, survey, geological, geotechnical, structural, assay, etc. is imported daily into acQuire from the server or via email. After validation, data is one-way synchronized with GEMS for mineral resource estimation purposes. The acQuire GIMS was also used to generate monthly, quarterly and yearly QA/QC reports.

Data used to support Mineral Resource and Mineral Reserve estimates have been subjected to validation, using inbuilt acQuire GIMS triggers that automatically check data for a range of data entry errors. Verification checks on surveys, collar coordinates, lithology, and assay data have also been conducted.

Data undergoes further validation by CSA Global through a series of Datamine loading macros which flag missing data, unmatched records, etc.

12.2 Collar Data

There are 3,740 holes in the collar table of the database, used in this MRE. There are no duplicate holes or co-ordinates. In the geological database, acQuire nomenclature and naming convention of drill holes does not allow identical naming of the drill holes.

The face samples are digitized in GEMS using survey pick-ups of the mine headings. The face samples with their unique names and coordinates are exported from GEMS to acQuire. Data validation done in acQuire considers only unique names and coordinates.

12.3 Survey data

12.3.1 Collar Survey

Co-ordinates are captured at various stages using different methodologies which are ranked accordingly and those with the highest (best) ranking are captured in the "Best" field in the database. These co-ordinates were used in the mineral resource estimation.

Highest to lowest ranked methods are as follows:

DGPS->Total station->Digitizing->Transformation->Planning

Collar information was received via e-mail from the Survey Department in pre-specified templates and imported into the acQuire database. Validations included checking for overlapping intervals or surveys beyond drillhole depths, duplicate entries, survey intervals past the specified maximum depth in the collar table, abnormal dips and azimuths.

There were no issues identified with the data in the collar table.

12.3.2 Downhole Survey

The Drilling Department is responsible for setting out the collar positions, directions, and inclination/declination of both surface and underground drill holes, and for surveying the actual position, direction and inclination/declination upon completion. The down hole survey measurements are taken every 30 m by the drillers on shift. The first measurement is taken as near as possible to the collar, usually at 12 m or 15 m depth. Data is documented and submitted after the end of every drill shift.

If deviations from the proposed parameters are not within the permissible range, the drill hole is stopped.

The final measurements are validated and are entered in the drillhole database. Data are checked for overlapping intervals, surveys beyond drillhole depths, duplicate entries, survey intervals past the specified maximum depth in the collar table and/or any abnormal dips and azimuths.

There were no issues identified with the downhole survey records.

12.4 Geological Data

There are 296,317 lithological records in the lithology table for 3,624 holes and 116 holes have no lithological records. The geotechnical holes and those with technical issues were not logged. Also, there are some completed drillholes in the end of the September and they still have not logged. Geological information is described using a system of codes. In the database there are 106 unique field names with 1,350 unique codes.

Geotechnical and structural data validations undertaken included: checking for core recoveries greater than 100% or less than 0%, RQDs greater than 100% or less than 0%, overlapping intervals, missing collar data, negative widths and/or results past the specified maximum depth in the collar table.

12.5 Samples Summary

Unique sample numbers have been used and no issues with interval integrity such as overlapping intervals, from depths greater than to depths, and intervals greater than the specified maximum hole depth have been noted.

There are 426,359 drill hole samples and 34,002 face samples in the database of which 312 holes do not have samples. Some of the drill hole and face samples do not have associated assay values and their numbers are shown in Table 26 below. 838 drill hole and 8,720 face samples do not have associated assay values.

Table 26. Number of samples with no associated Assay values.

	Au	Ag	Cu	As	S
Drill hole samples	1,663	2,437	1,751	52,790	14,700
Face samples	582	617	1	8,710	290

** There are 51 Drill hole samples with sample type DDH_NS (not sampled)*

12.6 Core Recovery

An analysis of core recoveries was undertaken using 243,659 samples in 2013. In the current Mineral Resource Estimate, the analysis was repeated using a total of 310,666 samples, however the findings of the previous analysis are considered current and relevant to the current study.

The authors of this Technical Report do not disclaim any responsibility for the findings of the previous study and consider the previous conclusions both current, and valid.

All available data were used – Pre-DPMC and DPMC, surface and underground drill holes. The average drill hole recovery is 99.7 % and the various phases of drill data show no issues with regards to recoveries. No relationship was evident between core recoveries and the copper assay data, or the gold assay data, as illustrated in Figure 19 and Figure 20 respectively.

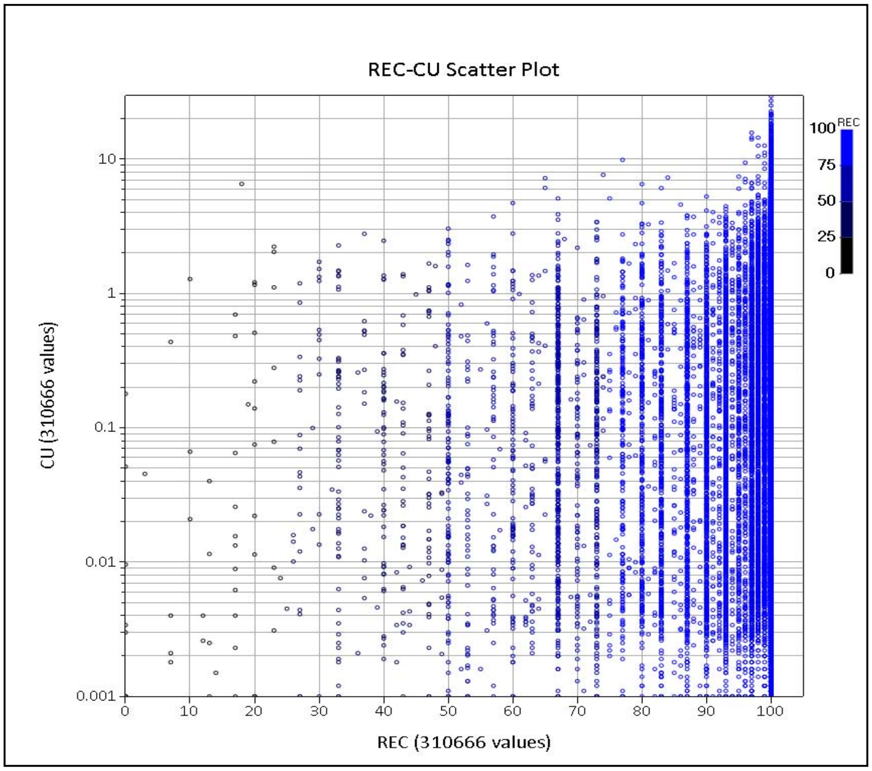


Figure 19. Drilling - Cu Grade (%) vs Recovery.

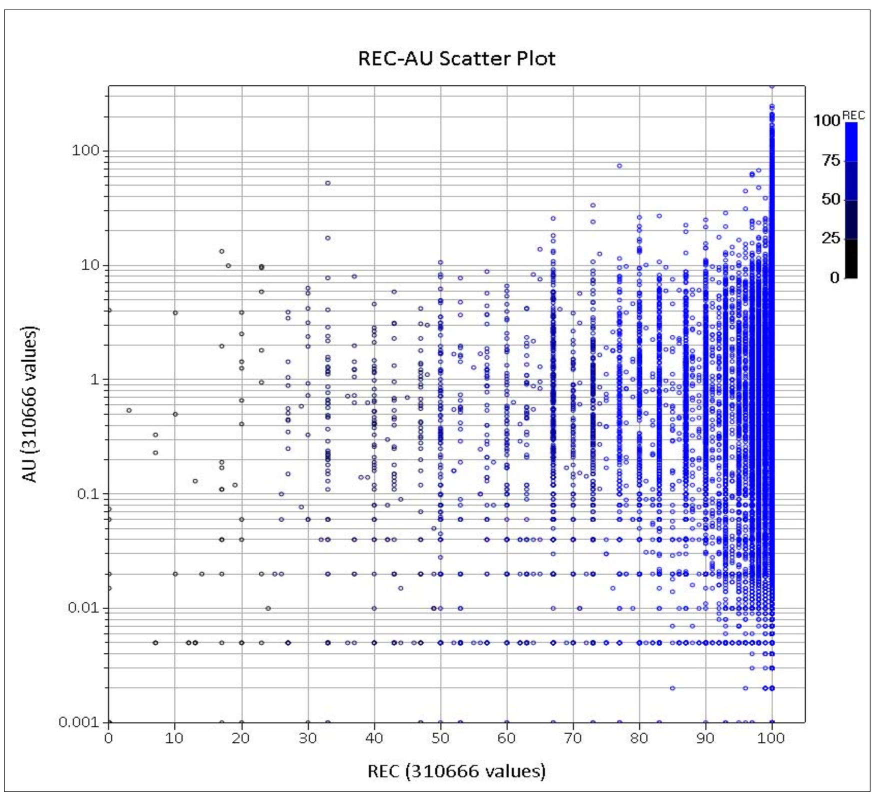


Figure 20. Drilling - Au Grade vs Recovery.

12.7 Umpire Sampling

There are 21,815 umpire samples (both drill hole and face samples) in the database.

The reliability of the assay data from the primary laboratories is further assessed by comparison of the original assay results with umpire assays completed by two independent laboratories. More than five percent of samples are selected from the general assay stream to form the umpire sample suite, designed to cover the broad range of geology grade.

One “blind” certified standard is inserted every 20th sample (alternating low grade and high-grade standards are used). One “blind” blank pulp is inserted every 50th sample.

12.8 Assay Verification and Data Capture

All incoming assay results are emailed as digital files from the lab to the database geologist. Prior to entry into the database each submission is screened using acQuire’s pre-download QC report, which checks the performance of:

- Standards: referenced against ± 2SD (standard deviations)
- Duplicates and lab splits: referenced against mean paired relative difference (MPRD) < ± 20 %.

All results received from the lab are maintained by the database geologist who documents the pass or fail of each lab submission.

If a check sample needs querying (i.e. duplicate, standard, split, or repeat assays show failed or spurious results), the lab is contacted to perform ten repeat assays either side of the anomalous check assay for standards and five repeat assays for blanks, and requested to include a lab standard within the run of repeats. The request for the re-assay is documented via email. Assuming the repeat assays show no evidence of bias the original results are accepted, such that the submission is entered into the acQuire database including the additional lab repeats. If the repeat assays do show bias, then the complete submission must be re-assayed.

In addition, the complete lab submission must be re-assayed if any of the scenarios listed below are identified:

- If a batch shows even one failed standard
- If face samples / diamond core crusher duplicates display a consistent poor correlation (allowing for occasional spikes).
- If the company standards show a consistent positive or negative bias greater than ±2SD of the expected assigned values.

The above criteria apply to values greater than ten times the detection limit for precious metals; ten times the detection limit may also be applied to base metals, but this depends on the possible cut-off grades grade relative to the spectrum of analysis, or stage and type of exploration (e.g. soils versus resource drill data).

In the event of any of the above scenarios occurring, the lab is contacted in writing or emailed and requested to reply with a formal explanation as to the failure of the batch (in the correspondence with the lab, values of company standards are not revealed, only referenced as being anomalous).

Using acQuire the "failed" results are entered into the database, and priority coded to reflect their lower confidence status. The subsequent re-assayed and accepted submission is priority coded to reflect usage as the primary assay record for daily use and resource estimation. However, as it is important to ensure the re-assay work includes the re-assaying of all check samples (field duplicates, crusher duplicates, lab splits, and lab repeats), a fresh batch of company standards is also sent to the laboratory. In addition, results of the re-assay and any comments of the QC analyses are recorded in acQuire and accepted results are priority coded.

To track the progress of each assay, the database geologist maintains a log sheet of each assay submission including the pass/fail/query outcome and follow-up action plan (if applicable).

12.9 Bulk Density

Bulk density measurements have been routinely completed since the start of 2003 at the (ISO9002 rated) Eurotest facility in Sofia using the industry standard wax coating water immersion method. Prior to 2003, the bulk density was assigned based on a formula that used sulphide and copper assays. The collection of bulk density data has recently been incorporated into DPMC's standard procedures which are applied to all diamond drilling, ore and development drives and stopes.

Bulk density measurements are collected as fist sized grab samples from underground, or 10 cm billets every 3 m along the length of the drill hole, including both ore and waste. These measurements have been assigned to a location or to a bulk density table in the drillhole database.

In 2009, onsite density analysis was introduced and made a part of the SGS managed onsite laboratory. The determination of bulk density for rock or core samples is by paraffin wax and water immersion.

A total of 98,851 (94,448 core samples and 4,403 face samples) density measurements have been collected from a range of grades, rock types, and locations within the modelled silica envelopes.

The density data is sufficiently distributed throughout the resource with representative samples present in each mining block (see Figure 21) to allow for its estimation by Ordinary Kriging to represent variations based on grade and lithology. Average estimated density values tabulated by mineralisation block are presented in Table 28.

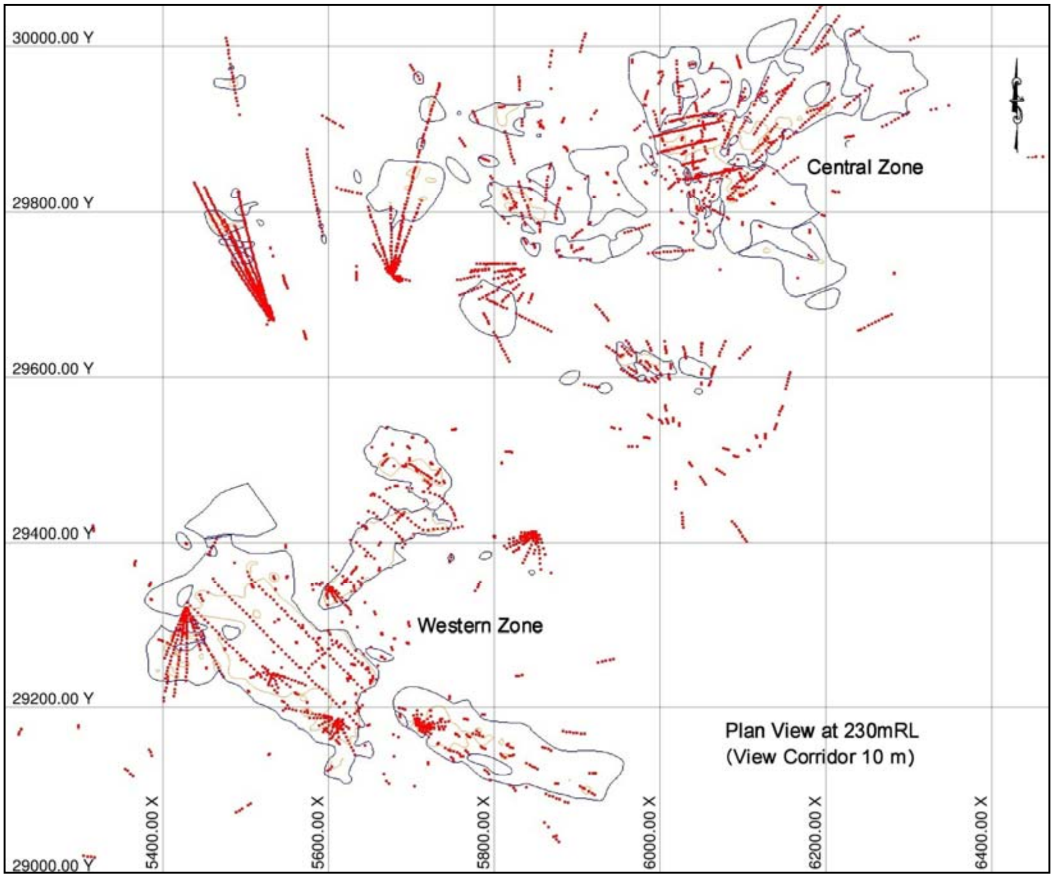


Figure 21. Density Data (DPMC, 2014).

For blocks lacking density data a third-order polynomial regression was applied based on sulphur grades:

$$Bulk\ Density\ (HG) = -\ 0.00001125*(S\%)^3 + 0.00079678*(S\%)^2+0.02254154*(S\%) + 2.538$$

$$Bulk\ Density\ (SE) = -\ 0.00011068*(S\%)^3 + 0.00479701*(S\%)^2+0.\ 02283858*(S\%) + 2.730$$

This polynomial regression was validated in 2013, by comparing samples with the physically measured bulk density against density estimated from sulphur assay values, see Figure 22 for the Stockwork (“HG”) and Figure 23 for the Siliceous Envelope (“SE”) which show the comparison of density distributions as probability plots and histograms. The plots show a common mean grade and similar data distributions verifying the application of the regression equation. This regression is still considered current and remains in use.

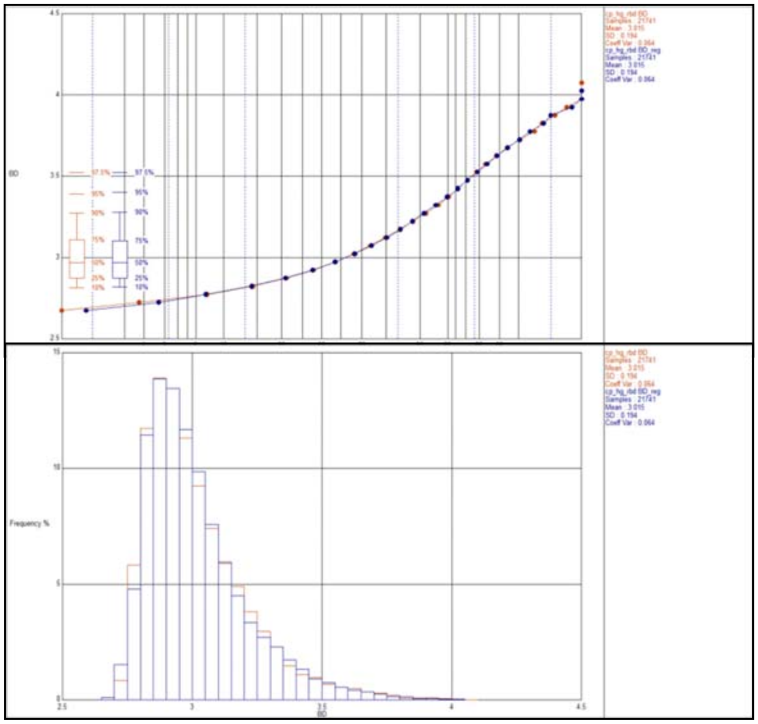


Figure 22. PPlot and Histogram comparing polynomial estimated vs actual density for Stockwork (HG) Domain (DPMC)

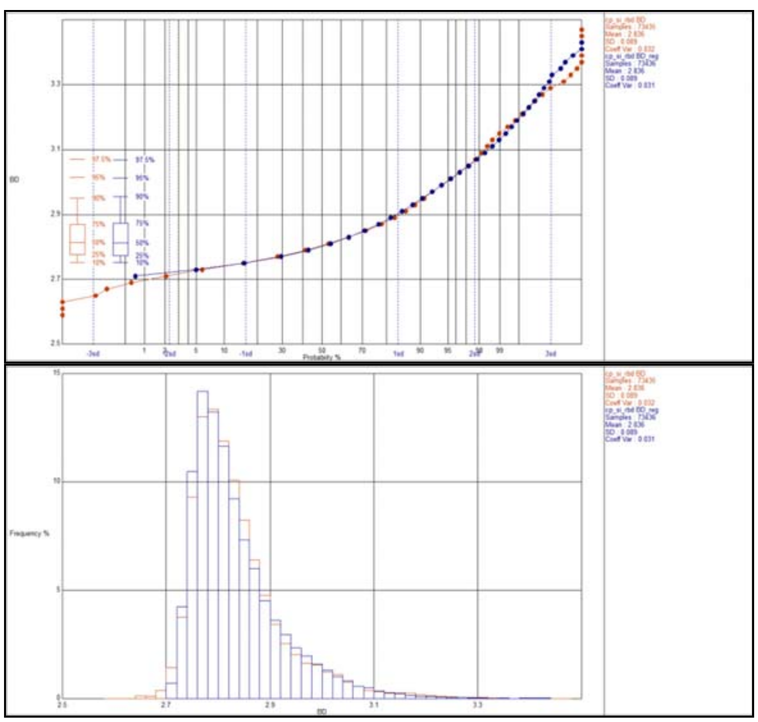


Figure 23. PPlot and Histogram comparing polynomial estimated vs actual density for Siliceous (SE) Domain (DPMC)

12.10 Comparison of Data Types

The Chelopech database contains surface diamond drill holes, underground diamond drill holes and underground face samples. In a 2007 study, a series of investigations were completed to test the appropriateness of combining the datasets for grade estimation. This review work was reassessed in 2013 by Chelopech staff and no significant bias was observed. The results of these tests remain current and relevant and are included below. The authors of this Technical Report do not disclaim any responsibility for this information, as presented here. The data is considered of an appropriate standard for the use in the estimation of resources.

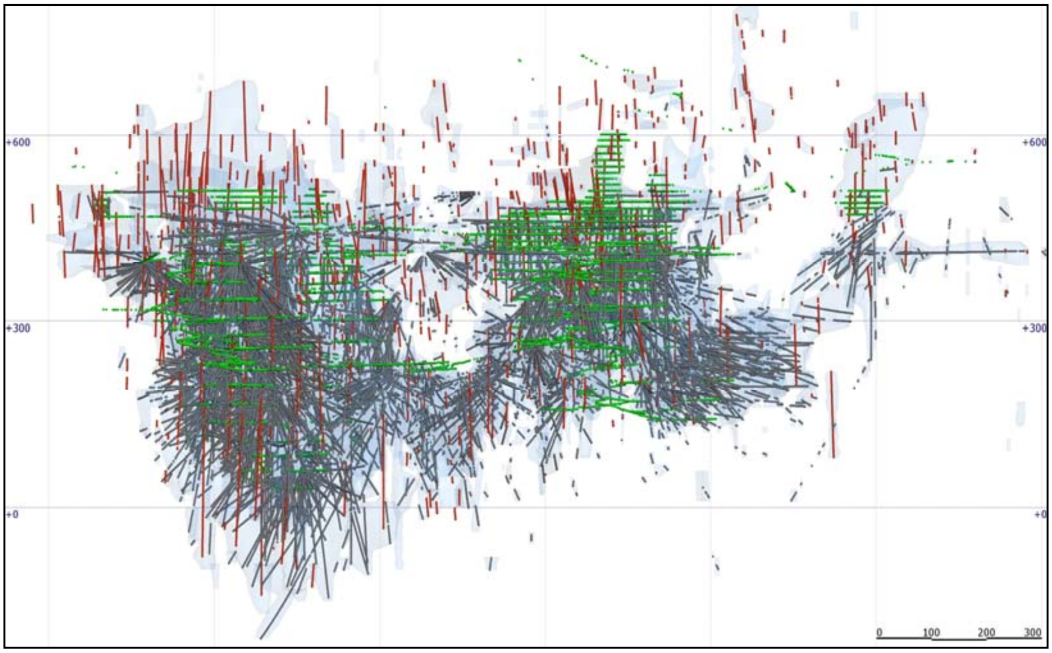


Figure 24. 3D view of Chelopech Deposit, representing the distribution of different data types. (Face samples in green, surface diamond drill holes in red and underground diamond drill holes in grey presented in boundary of Silica envelope in blue) (DPMC, 2017).

The tests undertaken included:

1. Compilation and review of descriptive statistics by data type and owner/company.
2. Compilation and review of comparative declustered statistics.
3. Compilation and review of scatter plots and comparative declustered statistics for the data types located in close proximity to each other.

Note that this study only analysed 3 m drill hole composites, and all composites are located within the silica envelopes. Face samples were collected using a grid and area approach.

Underground drilling consistently has a higher mean grade than surface drilling for all elements, and face sampling has a higher mean grade than all the drilling. This has been interpreted as being due to the location of the data. Surface drill holes intersected all parts of the silica alteration, both low and high grade. Underground drill holes tend to be focussed around the higher-grade regions of the silica alteration and therefore are higher in grade than the surface drill holes. Face sampling is almost exclusively located within the high-grade region of the orebody and, therefore, has a higher mean grade than the drill holes.

Most surface diamond drill holes were completed by the state run SGE. Face samples have been collected by the state run CCPC, Navan and Dundee. Summary statistics for the face samples grouped by company are not very meaningful as each company sampled different regions (CSA Global, 2014).

13. Mineral Processing and Metallurgical Testing

13.1 Introduction

In the years of operation since acquisition by DPM in 2004, the original crushing, grinding and flotation circuits were utilized and progressively upgraded to process up to approximately 1 Mtpa of ore. The saleable product continues to be a copper concentrate, containing on average 16.5% copper, and between 25 to 30 g/t gold and 5 to 6% Arsenic. The concentrate is loaded into railway wagons, and dispatched to the Port of Burgas, located on Bulgaria's Black Sea coast. From there it is transported by ship to various smelters (Peru, the Philippines and Canada until 2010), Xiangguang Copper Co. ("XGC") in China and to the Dundee Precious Tsumeb smelter, via Walvis Bay, in Namibia since 2011.

Operations upgrades commenced in 2009, with the installation of the first hydraulic mine back-fill plant, subsequently upgraded to the current paste plant in 2010. Process plant upgrades continued through 2010 in preparation for the increased tonnages from the upgrade of the mine. A new grinding circuit replaced the original secondary and tertiary crushing circuits, together with the installation of a new rougher/scavenger flotation bank. The existing flotation cells were converted into an expanded 3 stage cleaner circuit, with the upgraded circuit commencing operations in February 2011. Flotation tailings continue either being dewatered to produce "paste" for backfilling the mined out stopes underground, or deposited in the upgraded TMF facility as required.

Further upgrades were completed in 2012 with replacement second and third cleaner stages in the copper circuit, and a complete new pyrite recovery circuit, and concentrate conveying and rail loadout handling system both completed in 2014.

13.2 Mineral Processing Testwork

13.2.1 Pre-Expansion Summary (Minproc Engineers, 2006)

Comminution - a comprehensive test program was undertaken to fully characterise the Chelopech ore types to design an expanded Comminution circuit. Parameters including the competence, hardness and variability of the three main ore types in current production (Blocks 19, 150 and 151), and drill core samples representing future ore from these blocks in 0 to 5, and 6 – 10-year time horizons. Specific tests included: Bond Crushing, Rod Mill and Ball Mill Work Index determinations, Unconfined Compressive Strength (UCS) measurements, JKTech (JK) dropweight tests, and Sag Power Index (SPI) measurements.

Flotation - testwork completed on the same samples included batch testing to establish performance variability and four bulk flotation campaigns. The products obtained from these runs were used to provide large scale samples for subsequent pilot scale campaigns for alternative process flowsheets.

Several samples representing material from various areas of the three main ore types were tested and illustrated variable copper and gold recoveries. In general, copper recoveries of approximately 80% and gold recoveries in the range of 40 to 50% were reported for most ore types. Block 151 samples consistently exhibited poorer gold recoveries, and additional samples of each block were submitted for a more detailed study, investigating the effect of grind size, flotation reagents and conditions. The results indicated that improved copper and gold recoveries for Blocks 19 and 150, compared with those for Block 151 should be expected under existing conditions. Assessment of the results of the overall test program were made and incorporated at plant scale where practicable.

13.2.2 Gravity Gold Recovery

Scoping level testwork was undertaken on samples representing the 3 main ore types to evaluate the potential for gravity gold recovery from the proposed milling circuit. Whilst gold recoveries to a laboratory centrifugal concentrator ranged between 17 and 31%, the portion associated with free gold, defined by mercury amalgamation and compared to gold contained in the relatively high specific gravity sulphides, was relatively low at less than 6%, and further work in this direction was discontinued.

13.2.3 Flowsheet Development

The test programs completed in 2005 concluded that the then current process flowsheets were optimum for the treatment of the Chelopech ore types, and that no fundamental changes could be recommended. The results produced were used to design a revised comminution circuit which was integrated into the operation in early 2011. In the meantime, the previous years of continuous operation confirmed the ranges of flotation parameters predicted from the testwork phase. The variations in performance produced from each block are clearly understood in relation to actual performance.

The current operation produces a copper concentrate with associated gold and silver, with historical recoveries for copper, gold and silver averaging 85%, 55% and 42%, respectively. Since 2014, the circuit also produces a gold containing pyrite concentrate from the stream that would have previously been rejected to flotation tailings.

13.2.4 Pyrite Recovery Summary

Pyrite was produced in the original Chelopech concentrator, on the industrial scale between 1995 and 1997, where up to a total of 60,000 tonnes of pyrite produced. The flowsheet utilised slurry pH modification to depress pyrite flotation from the copper minerals, followed by acidification to allow the pyrite to float from the copper tailings. A scoping level desktop study was completed in 2011 to assess possible flotation approaches for the recovery of a separate pyrite concentrate in the expanded concentrator, and confirmed by a more detailed study conducted in 2012, (Macromet, 2013). The work was supplemented by:

- A comprehensive laboratory test program completed on components of the ore blocks representing current and future ore sources – namely Blocks 19, 150 and 151, with additional samples from Blocks 16, 103 145, 147 and 149. In addition, three target Sulphur ranges were prepared for the bulk composite, while a total of 13 variability samples were selected to represent the current life of mine block composition. The work was completed in 2012 (AMDEL, 2013).

  Potential recovery options, combined with investigating selective collectors, various pH modification combinations and variability testing were tested. In general, the results confirmed the findings from the 2005 program for the copper recovery circuit, while each flowsheet examined produced similar performance in the pyrite circuit.

- Based on consideration of all options, the existing copper circuit flowsheet, where pyrite is rejected into the cleaner circuit tailing by raising the slurry pH to >12.0 with lime, was confirmed as the optimum process from which the subsequent pyrite separation flowsheet was to be designed. In this case, reduced requirements for pH modification compared to the alternative flowsheets, and simpler collector requirements were the main cost considerations, combined with the relative reduction in process risk as the flowsheet is well proven. This formed the basis for the Preliminary Economic Assessment ("PEA") (DPM, 2012), and which confirmed the potential to recover a pyrite concentrate from the mill feed, as a separate concentrate product and in addition to the copper concentrate already produced.

- Recovery of pyrite in the plant – The new pyrite circuit was fully operational by the end of Q1, 2014 and pyrite production has been steadily increasing each year and in 2017 about 250,000 tonnes of pyrite were produced, transported to the port and sold under existing contracts.

- Past laboratory test programs and studies (AMDEL & Macromet, 2013) had demonstrated that the majority (>90%) of the pyrite in the feed will be recoverable to the bulk sulphide (Rougher/Scavenger) concentrate, and from there will be distributed into both the copper, and the new pyrite concentrate.

- Routine laboratory testwork carried out at Chelopech, on monthly feed composites simulating the production of pyrite from the bulk sulphide rougher/scavenger concentrate, after copper minerals separation.

- Considering the above facts and the pyrite circuit capacity of 400,000 tonnes of pyrite per annum, the potential exists to produce a greater amount of pyrite, providing there is a market for it.

13.2.5 Geometallurgical & Flowsheet Optimization Testwork

A geomet and flowsheet optimization flotation testwork program at XPS (Sudbury) was concluded in 2017. The geomet testwork considered the metallurgical variability of the eight identified domains at Chelopech – 151 Block Upper, Middle & Lower; 150 Block Upper & Lower; 103 Block East & West; 19 Block. The findings of the geomet testwork were inconclusive on quantifying the variability in pyrite quality between the domains. Other information gathered was nonetheless useful and further enhanced the understanding of the geo-metallurgical properties and variability between the domains.

The flowsheet optimization flotation testwork indicated promising results on potential alternative flowsheets which will need to be further investigated and confirmed through laboratory testwork at site. This work will be incorporated in the initiatives that form part of the 'Process Plant Optimization Program'.

14. Mineral Resource Estimates

14.1 Mineral Resource Estimate Data

The drill and face sample databases were validated prior to use in the estimation of resources. The datasets were loaded into AcQuire following DPM QA/QC procedures. The data was imported into GEMS using SQL. The following checks and validations were undertaken:

- Drill hole depths were validated against downhole sample, assay and lithology files
- Duplicate collar ID's were confirmed absent
- Any overlapping sampling intervals were resolved
- Intervals with sample type "NS" were excluded, for various reasons: e.g. geotechnical drill holes, historical drill holes and lost drilling
- Assays with undefined values, i.e. below limit of detection limit (LOR), were set to half LOD
- Assays that have failed QA/QC criteria were removed
- Drill hole survey data were validated for extreme deviations
- Lithology and alteration codes were validated against their respective libraries

Data provided for the MRE was supplied at a date cut-off of the 30th September 2017. In summary the database consisted of a total of:

- 3,740 diamond drill holes for a total of 893,687.6 m
- 33,996 face samples
- 94,448 drill hole density samples
- 4,403 face sample density values

Data is grouped into two main areas, known as the Western and Central Zone, with each Zone separated into mining blocks (Figure 25). In summary:

- The Western zone is comprised of mining blocks: 5, 25, 103, 144, 145, 147, 149, 149 South, 150, 151, 152 and 153.
- The Central zone is comprised of mining blocks: 8, 10, 16, 17, 18 and 19 mining blocks

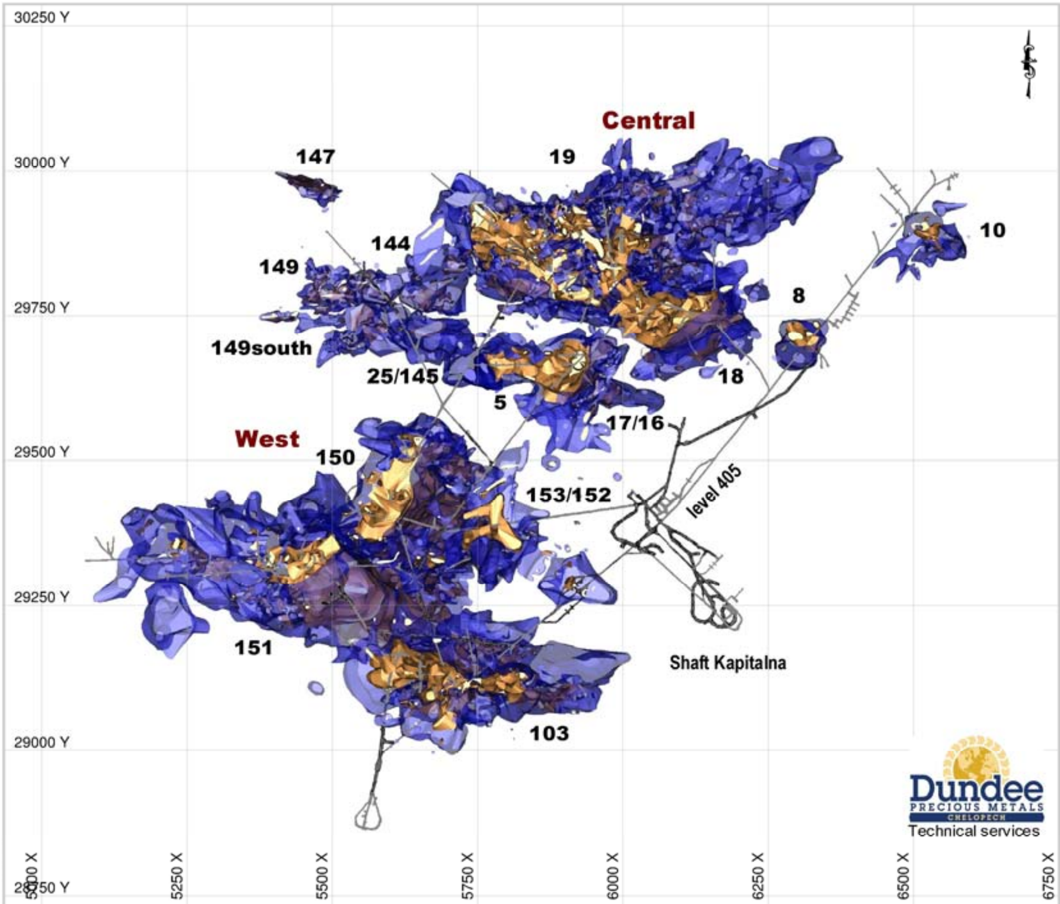


Figure 25. Plan view with projections of the mineralised Blocks (Silica envelope in blue and stockwork envelope in orange) (DPMC, 2017).

14.2 Bulk Density

Ordinary Kriging was used to estimate density values into each model block. Refer to Section 12.9 for a full description on in-situ dry bulk density data used and Table 27 provides the search parameters. Where inadequate density data was available, a density value was estimated using the relationship between sulphur grade and density (Section 12.9). Average density values by mineralisation block are presented in Table 28. In total approximately 15% of Silica Envelope material and 10% of High Grade (Figure 26).

Table 27. Search Parameters for Bulk Density Estimate.

Block	Bulk Density g/cm³			
	# of Samples	SE	# of Samples	HG
103	3349	2.810	2505	2.950
150	1245	2.820	1712	3.050
151	8537	2.830	6339	3.030
152	402	2.870	195	3.046
149	789	2.811	339	3.163
149South	832	2.755	255	2.854
147	119	2.760	90	2.846
145	705	2.786	67	2.829
144	482	2.797	112	2.908
19	9113	2.770	6730	2.870
18	530	2.767	232	2.872
16	299	2.799	178	3.034
17	185	2.780	74	2.840
10	355	2.750	76	2.810
153	902	2.740	71	2.860

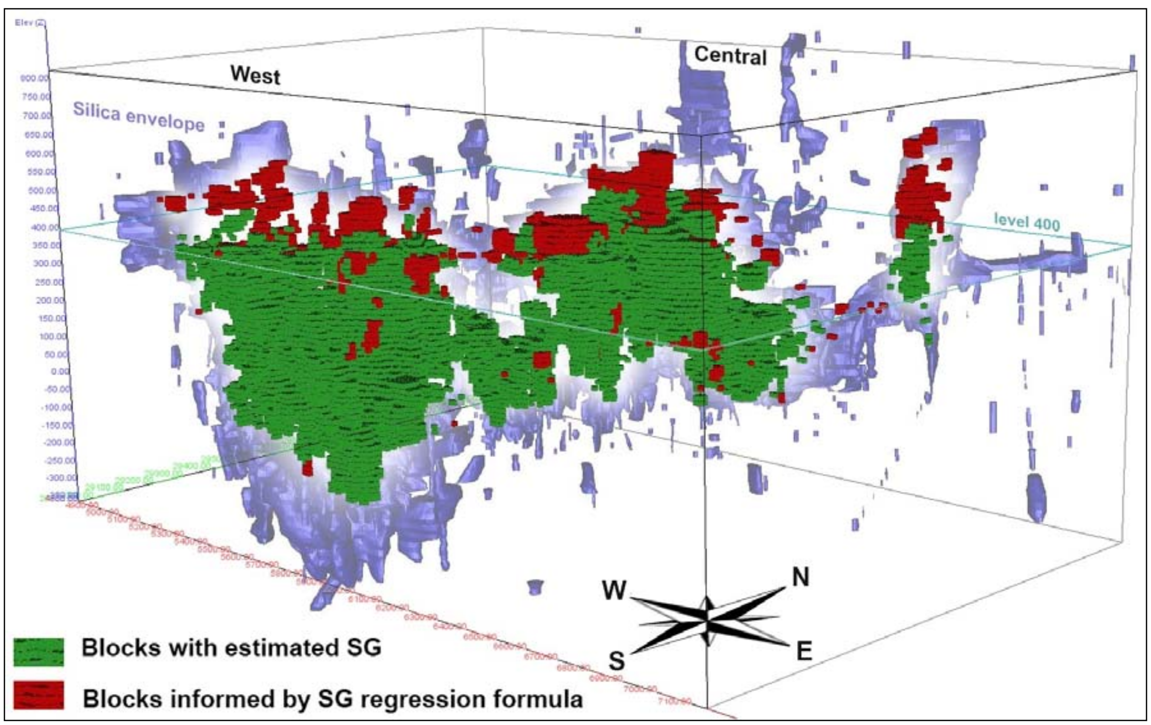


Figure 26. 3D view of Chelopech Deposit, representing the distribution of blocks with estimated SG and blocks with applied regression formula in stockwork domains (DPMC, 2017).

Table 28. Average density values by blocks in Silica Envelope and High-Grade Domains.

Block	Bulk Density g/cm³			
	# of Samples	SE	# of Samples	HG
103	3349	2.810	2505	2.950
150	1245	2.820	1712	3.050
151	8537	2.830	6339	3.030
152	402	2.870	195	3.046
149	789	2.811	339	3.163
149South	832	2.755	255	2.854
147	119	2.760	90	2.846
145	705	2.786	67	2.829
144	482	2.797	112	2.908
19	9113	2.770	6730	2.870
18	530	2.767	232	2.872
16	299	2.799	178	3.034
17	185	2.780	74	2.840
10	355	2.750	76	2.810
153	902	2.740	71	2.860

Table 29. Search parameters for the estimation of bulk density.

Domain	Search Pass	Search Distance			Min Nb Data	Max Nb Data	Max samples per hole
		Major	Semi	Minor			
All	1	30	20	10	5	30	10
	2	60	40	20	5	30	10
	3	90	60	30	5	15	15

14.3 Geological Interpretation and Modelling

14.3.1 Summary

Field observations supported by statistical analysis show that the distribution of copper, gold and silver mineralisation at Chelopech is primarily determined by alteration style and textural assemblages.

Mineralization domains are classified on these geological criteria for which there are two types:

- **Silica Envelopes**: lower-grade silica-overprinted haloes
- **Stockwork Envelopes**: internal units of stockwork material which typically host higher grade copper, gold and silver mineralisation

Silica Envelopes ("SE") are modelled on logged hydrothermal alteration assemblages, typically represented by silica overprinting. Internal waste volumes exist which are interpreted (wireframed) and excluded from grade estimation.

Stockwork Envelopes ("HG") are modelled using a combination of alteration and groups of textural assemblages. These textural groupings differ between mine blocks and are listed in Section 7.5 and

Table 13. The high grade Stockwork Envelopes are characterised with massive sulphides, well developed stockwork textures and high-grade Cu and Au grades, generally >3 g/t gold equivalent (see Table 41. Block Model Attributes., for gold equivalent calculation).

The stockwork material is typically located along the S and SE portions of silica envelopes which together generally plunge towards the S and SE.

Typical cross section examples of Silica and Stockwork envelopes are illustrated in Figure 27 and Figure 28.

Interpretation of the 3D wireframes was completed by Chelopech geological mine staff using GEMS software. Strings were generated in plan view at 10m elevations and linked together to form solid wireframe volumes.

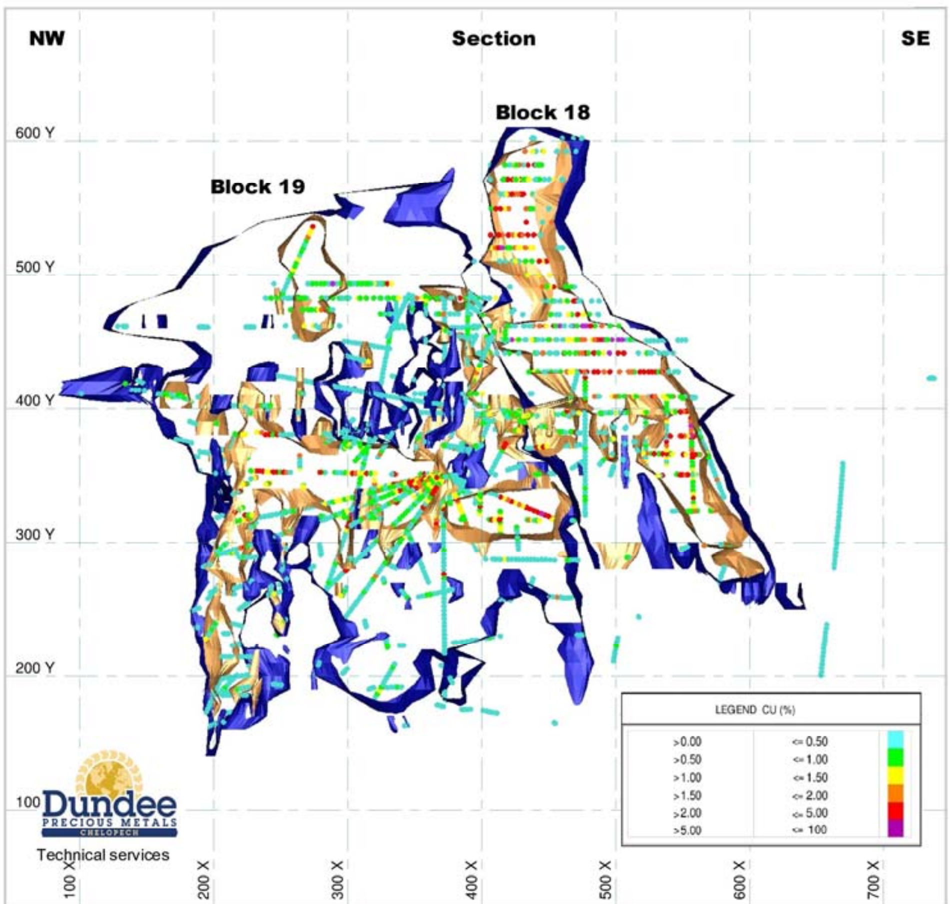


Figure 27. Vertical section (looking NE) showing drill hole grades, silica envelope (blue) and stockwork envelope (gold), mining blocks 18 & 19. (DPMC, 2017).

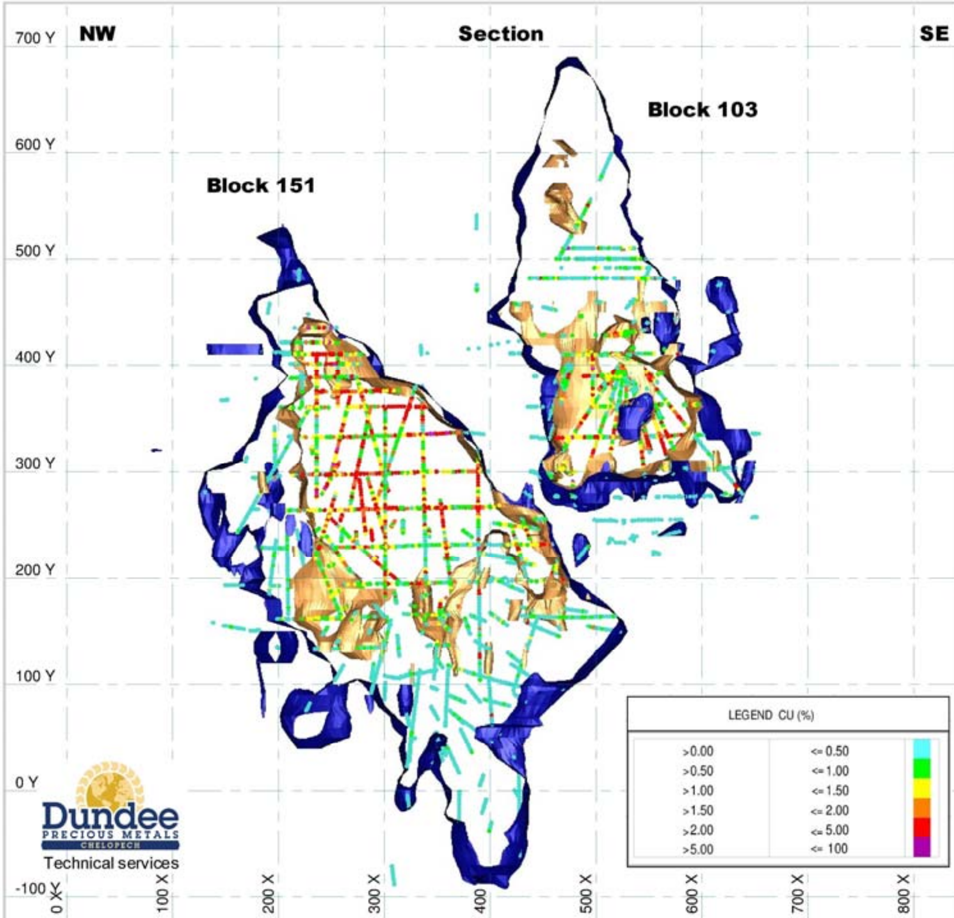


Figure 28. Vertical section (looking NE) showing drill hole grades, silica envelope (blue) and stockwork envelope (gold), mining blocks 151 and 103. (DPMC, 2017)

14.3.2 Surface Topography

A 3D digital terrain model (DTM) for Chelopech has been constructed using digitised 5 m contours from a commercially available map which has been supplemented by recent surface survey data. The DTM is reasonably accurate and provides a detailed representation of the ridges, valleys and topographical breaks at Chelopech. The detailed accuracy of the topographic model is immaterial as it is not used in the estimate of resources, since mineralisation occurs well below the surface at the 400 m RL level.

14.3.3 Underground Development and Stoping

The mine survey department constructs 3D solids of all the underground development and stoping. These solids have been extensively validated and represent material mined up to 31st December 2017. Some overlap occurs between the digital solids to ensure that all development volumes are accounted for.

14.4 Mineral Resource Modelling

14.4.1 Compositing

A detailed statistical review of the impact of different composite lengths was undertaken for the 2013 MRE update (CSA Global, 2014); the findings of this review (Table 30) are still considered current and relevant and are included here. Based on this review and more recent work, no bias was observed when compositing to 1.5, 3 and 6 m lengths. Based on this review; the most appropriate composite length was considered 3 m (which also matches the average face sample panel length). The impact of including residuals was also investigated and no significant bias was observed. Q-Q plots of 3 metres composites with residuals versus composites without residuals are illustrated in Figure 29 and Figure 30.

Compositing was not completed on the face sample database. Development face samples are taken as horizontal panel chips of each development drive advance. Each round is an average of 3 m in length over an area of approximately 20cm x 20 cm.

For grade estimation the drill hole database and the face sample database were combined to form a single sample database. All domain statistics, variography and estimation of resources were completed using the combined dataset.

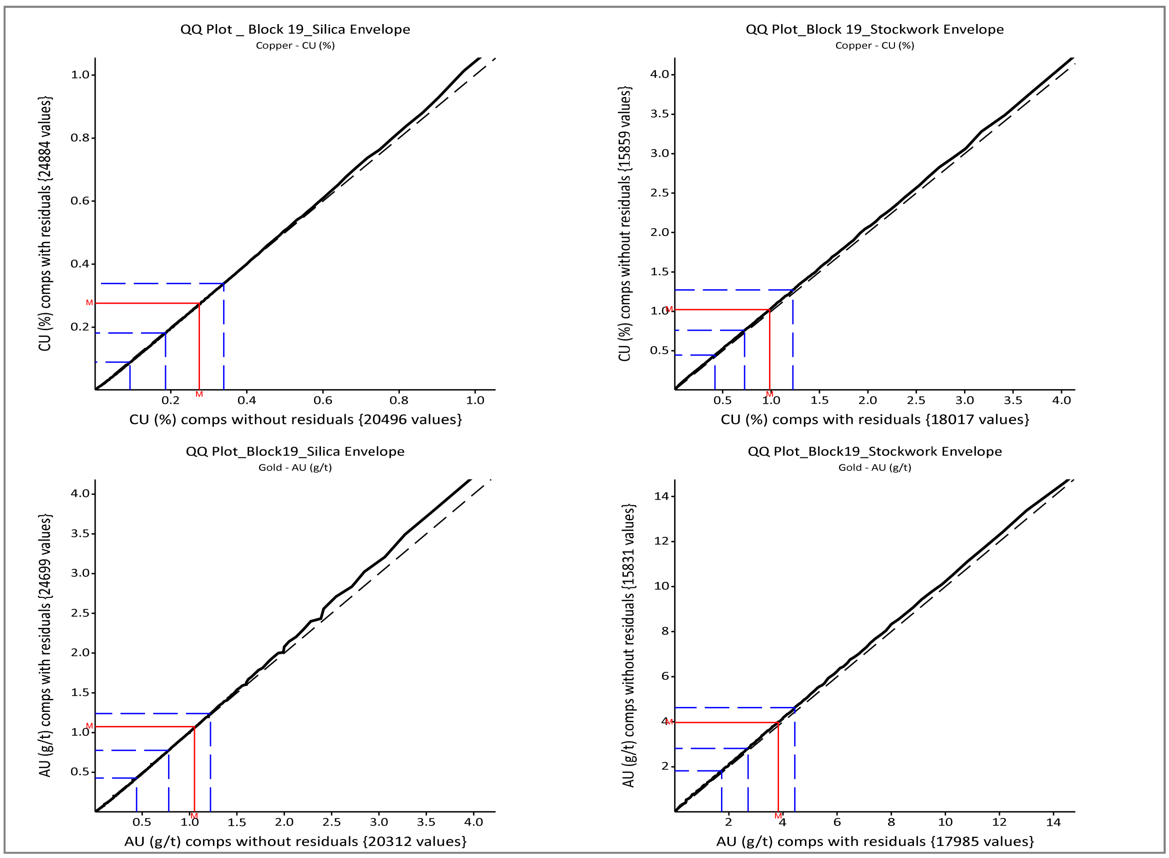


Figure 29. Q-Q plots of composites with residuals versus composites without residuals for Block 19 (DPMC, 2017).

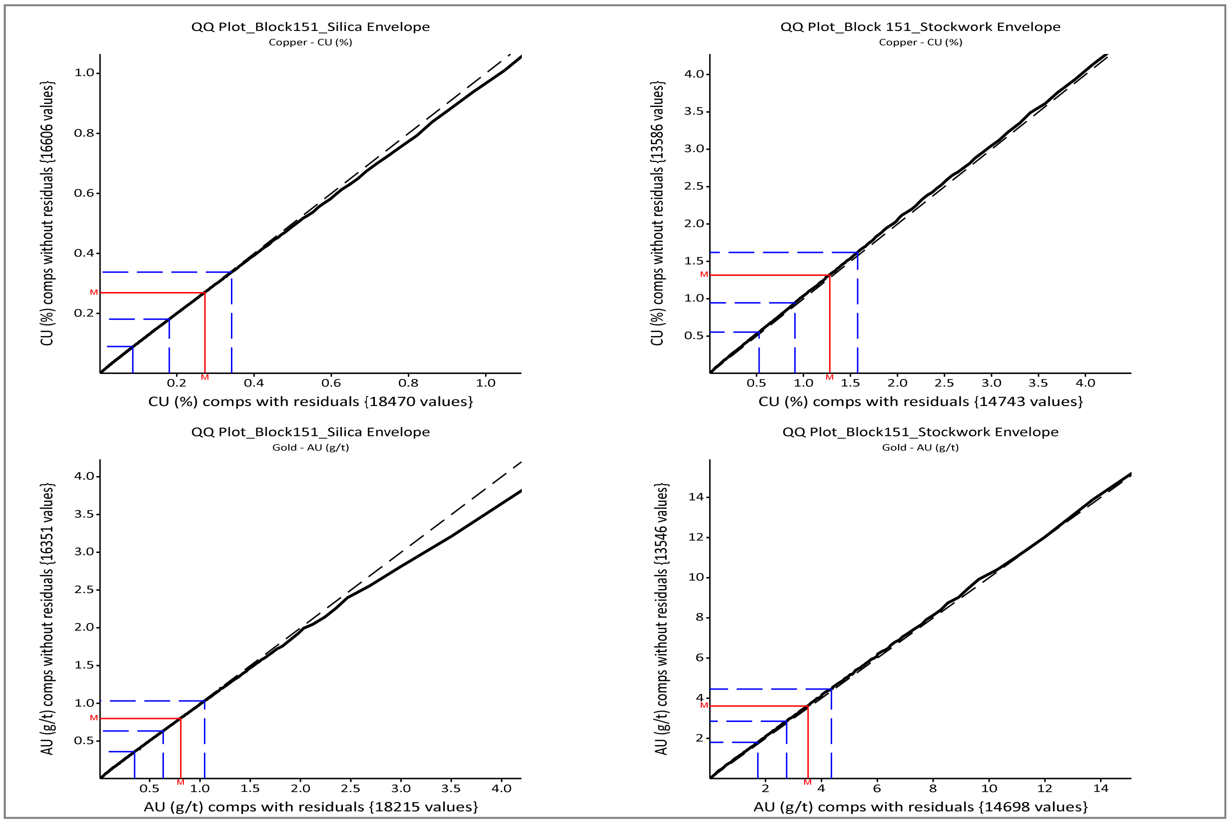


Figure 30. Q-Q plots of composites with residuals versus composites without residuals for Block 151 (DPMC, 2017).

14.4.2 Univariate Domain Descriptive Statistics

Descriptive statistics, histograms and probability plots were compiled for the copper, gold, silver, sulphur and arsenic composite data, grouped by the modelled silica envelopes, stockwork envelopes and mining blocks (Table 31, Table 32 and Figure 31). These were used to assess the grade distributions within each domain and to determine a suitable method for interpolating grades and to select appropriate top-cuts.

Most of the assay data in the high-grade domains show moderate to low coefficients of variation, with sulphur showing the lowest of all the elements. Gold summary statistics show moderate to high coefficients of variation.

Statistical analysis of composites flagged within the low-grade regions of each block was also completed with all low-grade blocks showing similar low copper grades and moderate to high coefficients of variation.

Table 30. Summary Statistics for drill hole composite data, as of October 2013

Domain	Comp Length	Sample	# of Samples	Cu (%)	Au (g/t)	Ag (g/t)
High Grade Envelope	**1.5m**	1.5m	48662	1.24	4.00	8.70
		Residual	672	1.34	3.58	9.02
		Total	49334	1.24	4.00	8.71
	3.0m	3.0m	23749	1.26	4.03	8.75
		Residual	1569	0.89	2.91	7.47
		Total	25318	1.24	4.00	8.71
	6.0m	6.0m	11203	1.27	4.07	8.83
		Residual	2128	0.93	3.17	7.41
		Total	13331	1.24	4.00	8.71
	Total		87983	1.24	4.00	8.71
	RAW Mean (not composited)		49746	1.24	4.08	8.82
Silica Envelope	**1.5m**	1.5m	78072	0.30	1.00	3.63
		Residual	1923	0.35	1.15	4.15
		Total	79995	0.30	1.00	3.64
	3.0m	3.0m	37805	0.30	0.99	3.63
		Residual	3555	0.33	1.15	3.80
		Total	41360	0.30	1.00	3.64
	6.0m	6.0m	17571	0.30	0.97	3.63
		Residual	4538	0.33	1.22	3.69
		Total	22109	0.30	1.00	3.64
	Total		143464	0.30	1.00	3.64
	RAW Mean (not composited)		79898	0.30	1.01	3.67
Grand Total	Total		231447	0.66	2.15	5.58
	RAW Mean (not composited)		129644	0.66	2.18	5.64

Table 31. Summary Sample Statistics for the major Stockwork domains.

Copper (%)				
Block	**103**	**150**	**151**	**19**
Count	5803	7335	14619	17803
Minimum	0.01	0.01	0.01	0.01
Maximum	19.06	20.10	28.91	15.27
Mean	1.17	1.87	1.28	0.98
Standard Deviation	1.150	1.810	1.390	0.940
Variance	1.330	3.270	1.930	0.890
Coefficient of Variation	0.990	0.960	1.080	0.960
Gold (g/t)				
Block	**103**	**150**	**151**	**19**
Count	5802	7330	14617	17802
Minimum	0.01	0.01	0.01	0.01
Maximum	91.11	67.10	131.40	197.23
Mean	2.92	4.62	3.50	3.82
Standard Deviation	3.460	5.000	3.570	4.990
Variance	11.970	24.970	12.710	24.900
Coefficient of Variation	1.190	1.080	1.020	1.300
Silver (g/t)				
Block	**103**	**150**	**151**	**19**
Count	5803	7336	14619	17803
Minimum	0.01	0.01	0.01	0.01
Maximum	61.60	502.09	832.75	468.80
Mean	4.42	12.25	13.440	8.75
Standard Deviation	4.14	16.320	19.320	11.860
Variance	17.160	266.270	369.880	140.590
Coefficient of Variation	0.940	1.330	1.430	1.350
Sulphur (%)				
Block	**103**	**150**	**151**	**19**
Count	5802	7298	14619	17803
Minimum	0.01	0.17	0.01	0.01
Maximum	47.03	49.61	52.40	46.01
Mean	13.93	17.52	17.40	11.55
Standard Deviation	5.210	7.140	7.180	4.34
Variance	28.120	50.990	51.570	18.880
Coefficient of Variation	0.370	0.410	0.410	0.380

Arsenic (%)				
Block	**103**	**150**	**151**	**19**
Count	5803	7336	14617	17803
Minimum	0.01	0.01	0.01	0.01
Maximum	6.27	5.84	8.30	5.20
Mean	0.33	0.44	0.370	0.24
Standard Deviation	0.360	0.540	0.400	0.280
Variance	0.130	0.290	0.160	0.080
Coefficient of Variation	1.100	1.240	1.090	1.150

Table 32. Summary Sample Statistics for the major siliceous domains.

Copper (%)				
Block	**103**	**150**	**151**	**19**
Count	9070	4667	18521	24926
Minimum	0.01	0.01	0.01	0.01
Maximum	19.62	10.71	18.35	20.15
Mean	0.31	0.37	0.28	0.28
Standard Deviation	0.530	0.590	0.420	0.400
Variance	0.280	0.350	0.180	0.160
Coefficient of Variation	1.720	1.620	1.520	1.430
Gold (g/t)				
Block	**103**	**150**	**151**	**19**
Count	9046	4659	18911	24983
Minimum	0.01	0.01	0.01	0.01
Maximum	106.29	57.53	23.48	79.20
Mean	0.78	0.92	0.79	1.070
Standard Deviation	1.580	1.670	0.820	1.740
Variance	2.490	2.780	0.680	3.030
Coefficient of Variation	2.030	1.800	1.040	1.630
Silver (g/t)				
Block	**103**	**150**	**151**	**19**
Count	9105	4672	18916	24985
Minimum	0.01	0.01	0.01	0.01
Maximum	274.99	249.20	209.60	213.90
Mean	2.39	4.01	3.86	4.33
Standard Deviation	5.770	7.610	6.990	6.300
Variance	33.260	57.860	48.880	39.750

Coefficient of Variation	2.410	1.900	1.810	1.460
Sulphur (%)				
Block	**103**	**150**	**151**	**19**
Count	9100	4663	18915	24.982
Minimum	0.01	0.72	0.01	0.01
Maximum	40.73	44.51	48.33	42.16
Mean	9.28	9.30	10.13	7.95
Standard Deviation	3.910	4.520	4.100	2.650
Variance	15.30	20.430	16.800	7.020
Coefficient of Variation	0.420	0.490	0.400	0.330
Arsenic (%)				
Block	**103**	**150**	**151**	**19**
Count	9081	4657	18861	24966
Minimum	0.01	0.01	0.01	0.01
Maximum	2.69	2.23	3.37	3.08
Mean	0.06	0.08	0.08	0.06
Standard Deviation	0.100	0.140	0.120	0.090
Variance	0.010	0.020	0.010	0.010
Coefficient of Variation	1.65	1.890	1.530	1.560

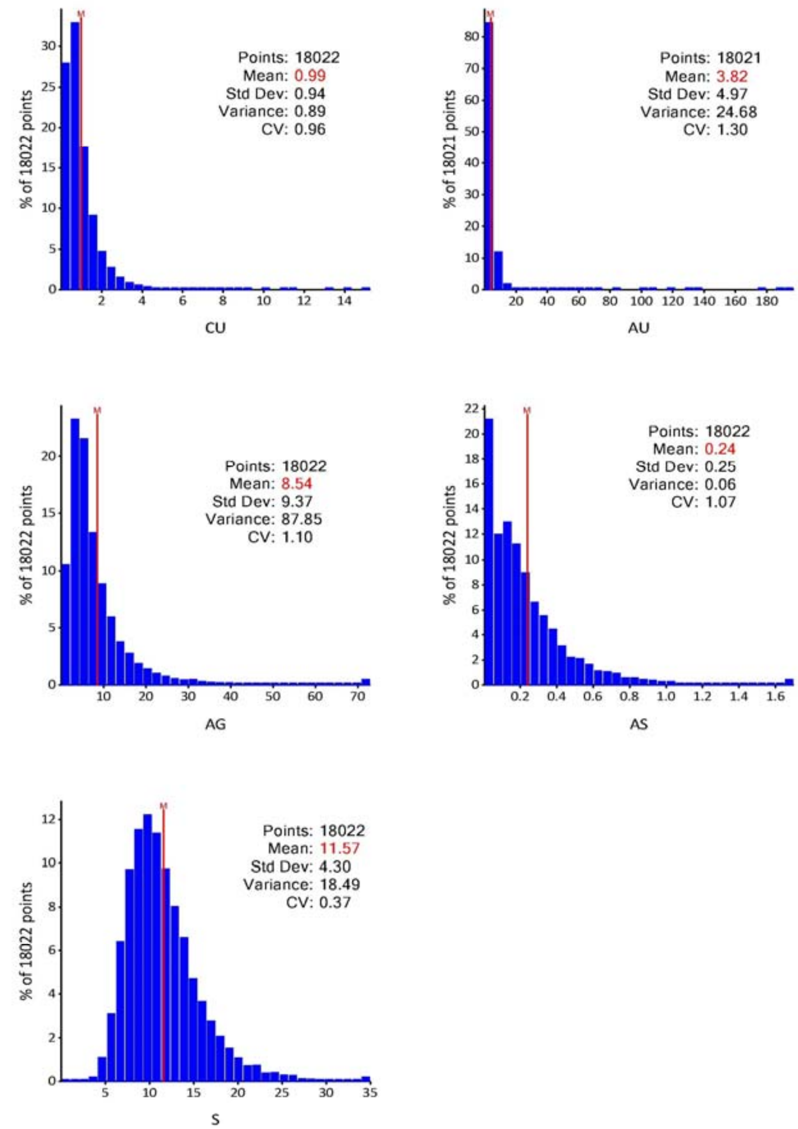


Figure 31. Examples of Histograms for the 5 estimated variables for Stockwork domain Block 19 (DPMC, 2017).

14.4.3 Multivariate Domain Descriptive Statistics

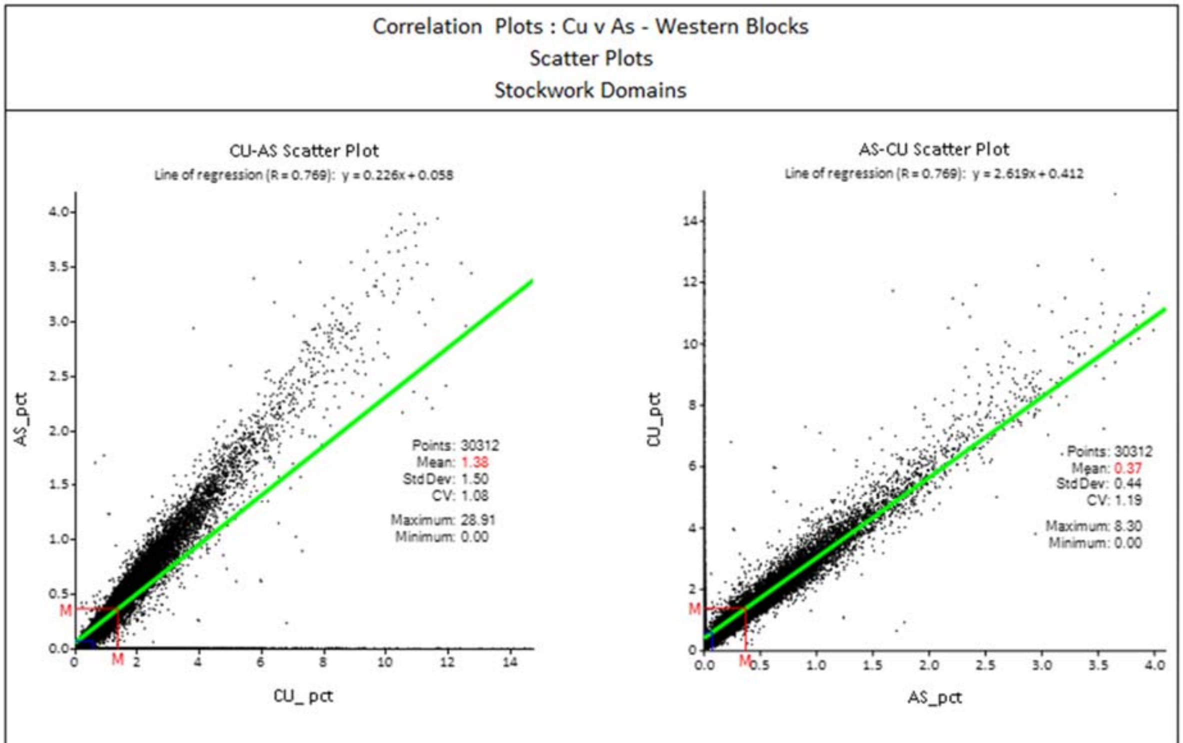
A multivariate analysis of the relationship between Cu, Au, As and S was completed in 2012 to test correlation between all elements. The findings of this review are still considered current and relevant and are included here.

Moderate correlation was noted between copper and gold while strong correlation exists between copper and arsenic and only in high-grade domains. Significant differences in the levels of correlation are noted between the different domains. Gold is understood to have undergone a separate and more pervasive phase of mineral emplacement relative to copper.

The linear correlation coefficients (Pearson correlation coefficients) for copper-arsenic are generally 0.70. An example of a correlation matrix for Stockwork Domain 103 is presented in Table 33 and correlation plots for Cu vs As are illustrated in
Figure **32** and Figure 33.

Table 33. Stockwork Domain 103. Correlation Matrix displaying Pearson Correlation Coefficients.

	Copper	Gold	Silver	Sulphur
Gold	0.32			
Silver	0.40	0.28		
Sulphur	0.34	0.28	0.39	
Arsenic	0.84	0.31	0.34	0.30

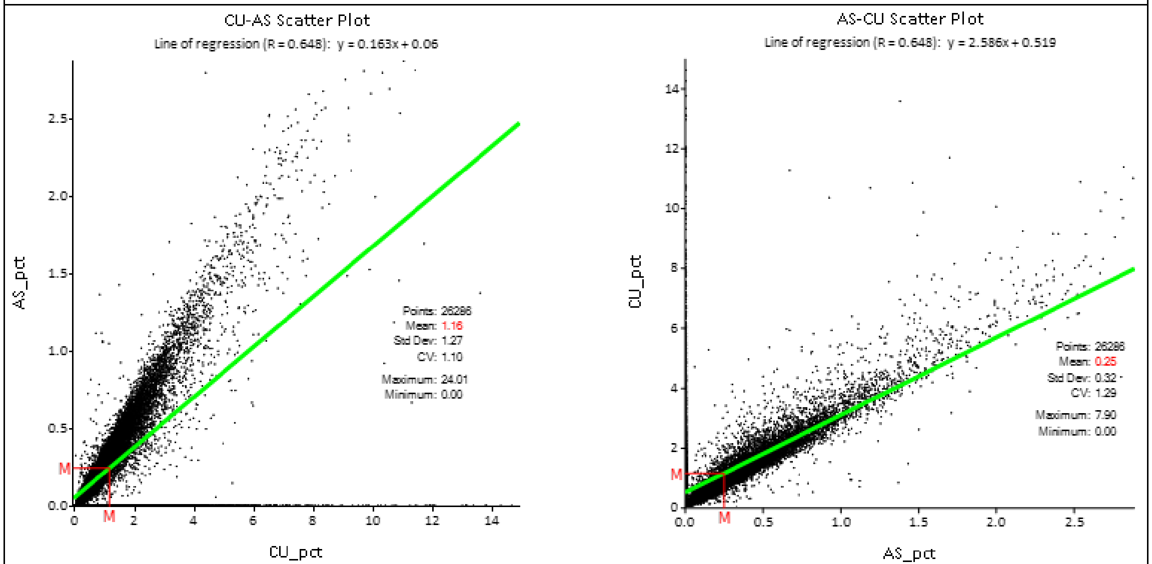


Correlations :

	CU	AU	AG	AS	S
CU	1.00				
AU	0.39	1.00			
AG	0.36	0.23	1.00		
AS	0.77	0.38	0.25	1.00	
S	0.40	0.36	0.47	0.31	1.00

Figure 32. Cu-As correlation plots for Stockwork Western domains (DPMC, 2017).

Correlation Plots : Cu v As - Central Blocks
Scatter Plots
Stockwork Domains



Correlations :

	CU	AU	AG	AS	S
CU	1.00				
AU	0.52	1.00			
AG	0.39	0.37	1.00		
AS	0.65	0.36	0.23	1.00	
S	0.49	0.46	0.42	0.37	1.00

Figure 33. Cu-As correlation plots for Stockwork Central domains (DPMC, 2017).

14.4.4 Application of Top-Cuts

Cu and Au grades distributions for the various estimation domains are characterised by being positively skewed with moderate to high coefficients of variation, indicating that high-grade values may contribute significantly to local mean grades. No top cut was required for sulphur due to an absence of outliers in the population.

Appropriate Cu and Au top-cuts were obtained by reviewing probability plots and the impact of applied cuts to the mean grades and standard deviation. Top-cuts were chosen where there was a pronounced inflection of the distribution or an increase in the variance of the data.

A summary of the more significant high-grade top-cuts as applied to individual domains is presented in Table 34.

Table 34. Top-cuts used for Cu, Au, Ag and As for the largest domains of Resource model.

Block	Element	Sub-Domain	Number Data	Mean	Upper Cut	Cut Mean	Number Data Cut	% Change in Mean
103	Cu	HG	5,803	1.17	5.6	1.14	45	3
		SE	9,070	0.31	2.6	0.30	41	3
103	Au	HG	5,802	2.92	16	2.81	48	4
		SE	9,046	0.78	6	0.74	45	5
103	Ag	HG	5,803	4.42	40	4.42	5	0
		SE	9,105	2.39	17	2.19	69	8
103	As	HG	5,803	0.33	2	0.32	28	3
		SE	9,081	0.06	0.4	0.06	103	0
150	Cu	HG	7,335	1.87	13	1.87	16	0
		SE	4,667	0.37	4	0.36	22	3
150	Au	HG	7,330	4.62	31	4.55	42	2
		SE	4,659	0.92	8	0.88	21	4
150	Ag	HG	7,336	12.25	75	11.84	66	3
		SE	4,672	4.01	40	3.83	21	4
150	As	HG	7,336	0.44	4	0.43	10	2
		SE	4,657	0.08	1	0.07	22	13
151	Cu	HG	14,619	1.28	5.6	1.24	187	3
		SE	18,521	0.28	2	0.27	108	4
151	Au	HG	14,617	3.50	14	3.39	143	3
		SE	18,911	0.79	4	0.77	151	3
151	Ag	HG	14,619	13.44	99	13.10	81	3
		SE	18,916	3.86	25	3.57	199	8
151	As	HG	14,617	0.37	2	0.36	112	3
		SE	18,861	0.08	0.6	0.07	113	13
19	Cu	HG	17,803	0.98	7	0.98	50	0
		SE	24,926	0.28	3	0.27	57	4
19	Au	HG	17,802	3.82	30	3.74	63	2
		SE	24,983	1.07	10	1.03	92	4
19	Ag	HG	17,803	8.75	73	8.54	94	1
		SE	24,985	4.33	40	4.22	110	1
19	As	HG	17,803	0.24	1.7	0.24	80	0
		SE	24,966	0.06	0.6	0.06	104	0

14.4.5 Impact of Data Clustering

Visual inspection of the face sampling, underground resource drilling and surface drilling datasets shows clear clustering of data, biased towards higher grade regions of the mineral deposit. This is due to a high-density of face sampling within the high-grade portions of the resource currently targeted for mining. Declustering was completed to review its effect prior to resource estimation.

Cell declustering was completed with weights determined as 1/n, with "n" representing the number of data in each cell. The mean grades of the naive (cut) composites and the declustered (cut) composites have been compared (Table 35). As expected, the declustered mean grades tend to be lower than the un-declustered mean grades.

Table 35. Comparison of Raw and Declustered Mean Grades by Domains.

Block	Sub-domain	Declustered Cell Dimensions	Mean	Cut Mean	Decl. Cut Mean	Difference
Copper %						
103	HG	25 x 25 x 20	1.17	1.14	1.12	-4%
	SE	25 x 25 x 20	0.31	0.3	0.27	-13%
150	HG	25 x 25 x 20	1.87	1.87	1.67	-11%
	SE	25 x 25 x 20	0.37	0.36	0.4	8%
151	HG	30 x 30 x 25	1.28	1.24	1.13	-12%
	SE	30 x 30 x 25	0.28	0.27	0.24	-14%
19	HG	20 x 20 x 20	0.98	0.98	0.94	-4%
	SE	20 x 20 x 20	0.28	0.27	0.26	-7%
Gold (g/t)						
103	HG	25 x 25 x 20	2.92	2.81	2.67	-9%
	SE	25 x 25 x 20	0.78	0.74	0.71	-9%
150	HG	25 x 25 x 20	4.62	4.55	4.21	-9%
	SE	25 x 25 x 20	0.92	0.88	0.99	8%
151	HG	30 x 30 x 25	3.5	3.39	3.03	-13%
	SE	30 x 30 x 25	0.79	0.77	0.71	-10%
19	HG	20 x 20 x 20	3.82	3.74	3.49	-9%
	SE	20 x 20 x 20	1.07	1.03	0.95	-11%
Silver (g/t)						
103	HG	25 x 25 x 20	4.42	4.42	4.44	0%
	SE	25 x 25 x 20	2.39	2.19	2.19	-8%
150	HG	25 x 25 x 20	12.25	11.84	11.8	-4%
	SE	25 x 25 x 20	4.01	3.83	3.83	-4%
151	HG	30 x 30 x 25	13.44	13.1	11.68	-13%
	SE	30 x 30 x 25	3.86	3.57	3.56	-8%
19	HG	20 x 20 x 20	8.75	8.54	8.54	-2%
	SE	20 x 20 x 20	4.33	4.22	4.21	-3%

14.4.6 Variography Study

Summary

A detailed review of the Cu, Au, Ag, As and S variography was undertaken in Supervisor in preparation for grade estimation. This was undertaken on the 3 m, uncut, assay dataset (with drill hole data composited to 3 m) within individual silica envelope ("SE") domains which encapsulate the stockwork ("HG") domains.

The variography was used to describe the spatial correlation (co-variance) between data points within mineralisation domains for a nominated separation distance (lag). All data points within the zone are compared at nominated lag distances with the average squared difference of the two sample points obtained. The averaged squared difference of the data point's gamma (Y-axis) for each lag distance (X-axis) is plotted. This calculated graph is called an experimental semi-variogram, hereby referred to as the variogram.

Fitted to the variogram is a mathematical model which, when used in the Ordinary Kriging algorithm, will recreate the observed spatial continuity described in the variogram.

Modelling

A standard approach was used model the variograms for each envelope. The steps taken are summarised below:

- Variograms were generated to determine the major, semi-major and minor axes of continuity which are perpendicular to each other.
- The variogram in the downhole direction is modelled to determine the nugget to determine the close-spaced variability.
- The major, semi-major and minor axes of continuity are modelled using two or occasionally three spherical structures.

In summary:

- The modelled orientations were consistent with the geological understanding of the mineralisation.
- A low nugget effect and a dominant first structure were the key features of the models.
- The variogram model parameters for the major stockwork domains are presented in Table 36 to Table 39.

Table 36. Variogram parameters – Block 150 Stockwork domain.

Element	C0	C1	Rotation			Range			C2	Range		
			Z Rot.	Y Rot.	Z Rot.	Major	Semi	Minor		Major	Semi	Minor
Copper	0.22	0.46	140	-70	10	22	19	17	0.32	109	68	31
Gold	0.25	0.45	140	-70	10	38	23	19	0.31	117	74	38
Silver	0.25	0.46	140	-70	10	44	28	18	0.29	118	83	43
Sulphur	0.11	0.50	140	-70	10	39	24	20	0.39	118	76	37
Arsenic	0.24	0.45	140	-70	10	26	24	16	0.31	103	57	29

Table 37. Variogram parameters – Block 103 Stockwork domain.

Element	C0	C1	Rotation			Range			C2	Range		
			Z Rot.	Y Rot.	Z Rot.	Major	Semi	Minor		Major	Semi	Minor
Copper	0.27	0.43	-110	-80	-30	25	19	15	0.30	66	51	24
Gold	0.23	0.46	-110	-80	-30	19	13	8	0.31	58	43	20
Silver	0.21	0.45	-110	-80	-30	18	13	7	0.35	56	43	24
Sulphur	0.22	0.33	-110	-80	-30	18	13	6	0.45	50	38	21
Arsenic	0.23	0.45	-110	-80	-30	28	19	7	0.32	59	40	18

Table 38. Variogram parameters – Block 19 Stockwork domain.

Element	C0	C1	Rotation			Range			C2	Range		
			Z Rot.	Y Rot.	Z Rot.	Major	Semi	Minor		Major	Semi	Minor
Copper	0.25	0.49	60	60	-50	24	15	12	0.26	78	47	32
Gold	0.42	0.43	60	60	-50	22	19	14	0.15	74	48	27
Silver	0.30	0.50	60	60	-50	31	25	18	0.21	88	57	43
Sulphur	0.23	0.42	60	60	-50	24	19	14	0.35	75	46	38
Arsenic	0.18	0.58	60	60	-50	24	20	15	0.24	73	53	40

Table 39. Variogram parameters – Block 151 Stockwork domain.

Element	C0	C1	Rotation			Range			C2	Range		
			Z Rot.	Y Rot.	Z Rot.	Major	Semi	Minor		Major	Semi	Minor
Copper	0.26	0.55	50	70	-20	22	19	14	0.19	88	64	44
Gold	0.32	0.51	50	70	-20	26	22	18	0.17	80	58	47
Silver	0.23	0.50	50	70	-20	28	24	19	0.27	80	64	51
Sulphur	0.12	0.52	50	70	-20	29	22	14	0.36	81	58	37
Arsenic	0.24	0.53	50	70	-20	21	15	12	0.23	80	56	44

14.5 Block Modelling

14.5.1 Block Model Extents and Block Size

Prior to estimation a volume block model was constructed using the Geovia mine planning software package ("GEMS"). Kriging Neighbourhood Analysis (KNA) was performed to determine optimal block sizes. Figure 34 highlights a test block area where KNA was completed to determine an optimum block size.

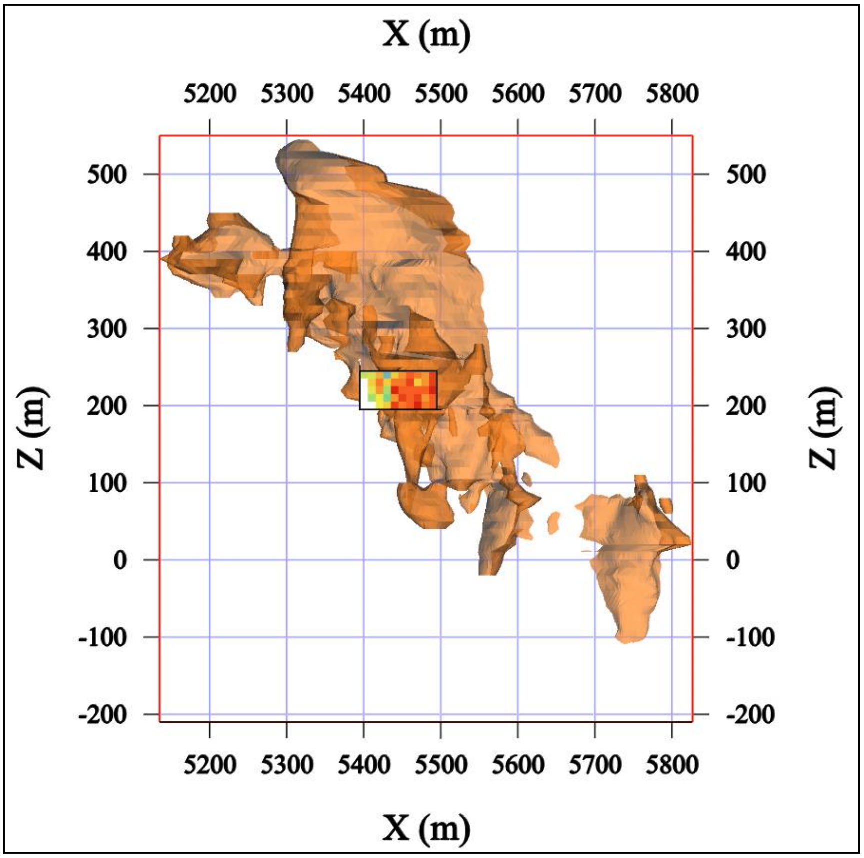


Figure 34. QKNA in 151 Block (DPMC).

Figure 35 shows the results of the block size QKNA analysis where block sizes ranging from 5 x 5 x 5 m to 20 x 20 x 20 m were tested. The following statistics were reported during the review:

- The slope of the regression of the 'true' block grade and the 'estimated' block grade;
- The weight of the mean – which reflects local variability;
- The distribution of the Kriging weights, including the proportion of the negative weights;
- Kriging efficiency.

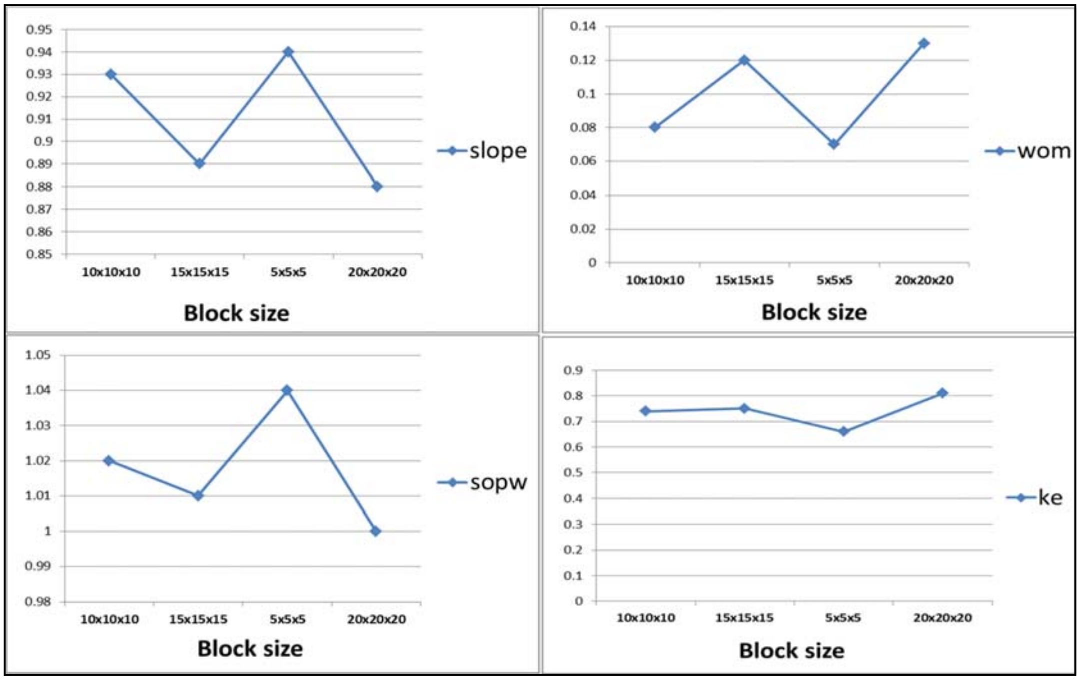


Figure 35 QKNA results for block size (DPMC).

The block size of 5 mE x 5 mN x 5 mZ was found to achieve the good results in terms of the chosen criteria, however a parent cell block dimension of 10 mE x 10 mN x 10 mZ was chosen as a compromise between drilling and face sampling data spacing and the spatial requirements of mine planning for underground development and production.

14.5.2 Block Model Attributes

The volume block model was coded by stockwork and siliceous domain using the geological and structural wireframes. Final block volumes were validated against the wireframe volumes.

The dimensions and extents of the block model and are summarised in Table 40. Figure 36 shows the outline of the complete block model for the Chelopech MRE area.

Table 40. Coordinate and dimensions for the volume block model.

	Min (m)	Max (m)	Extent (m)	Block size
Easting	4,770	7,160	2,390	10
Northing	28,900	30,550	1,650	10
Elevation	-370	830	1,200	10

A list of block model attributes is presented in Table 41.

Table 41. Block Model Attributes.

Attribute	Description
Rock Type	Mineralization Block number suffix with 1 for HG and 2 for SE
Density	Estimated In situ dry bulk density
Percent	Percent of block containing HG or SE volume
CU	Estimated copper value in percent
AU	Estimated gold value in ppm
AG	Estimate silver value in ppm
AS	Estimated arsenic value in percent
S	Estimated sulphur value in percent
AUEQ	AuEq=2.06*Cu% +Au g/t
BV	Block variance
PROFIT3_T	Profit per tonne and cut-off grade parameter
KE	Kriging efficiency
KV	Kriging variance
MEANDIST	Mean distance of samples used
MEANVAL	Mean value of samples used
NNEGATW	Number of Kriging negative weights
NUMHOLES	Number of drill holes used
NUMPOINT	Number of sample points used
SLOPE	Kriging slope of regression between estimated and true grades
SPASS	Estimation search pass - 1 = first search pass; 2=second search pass; 3=third search

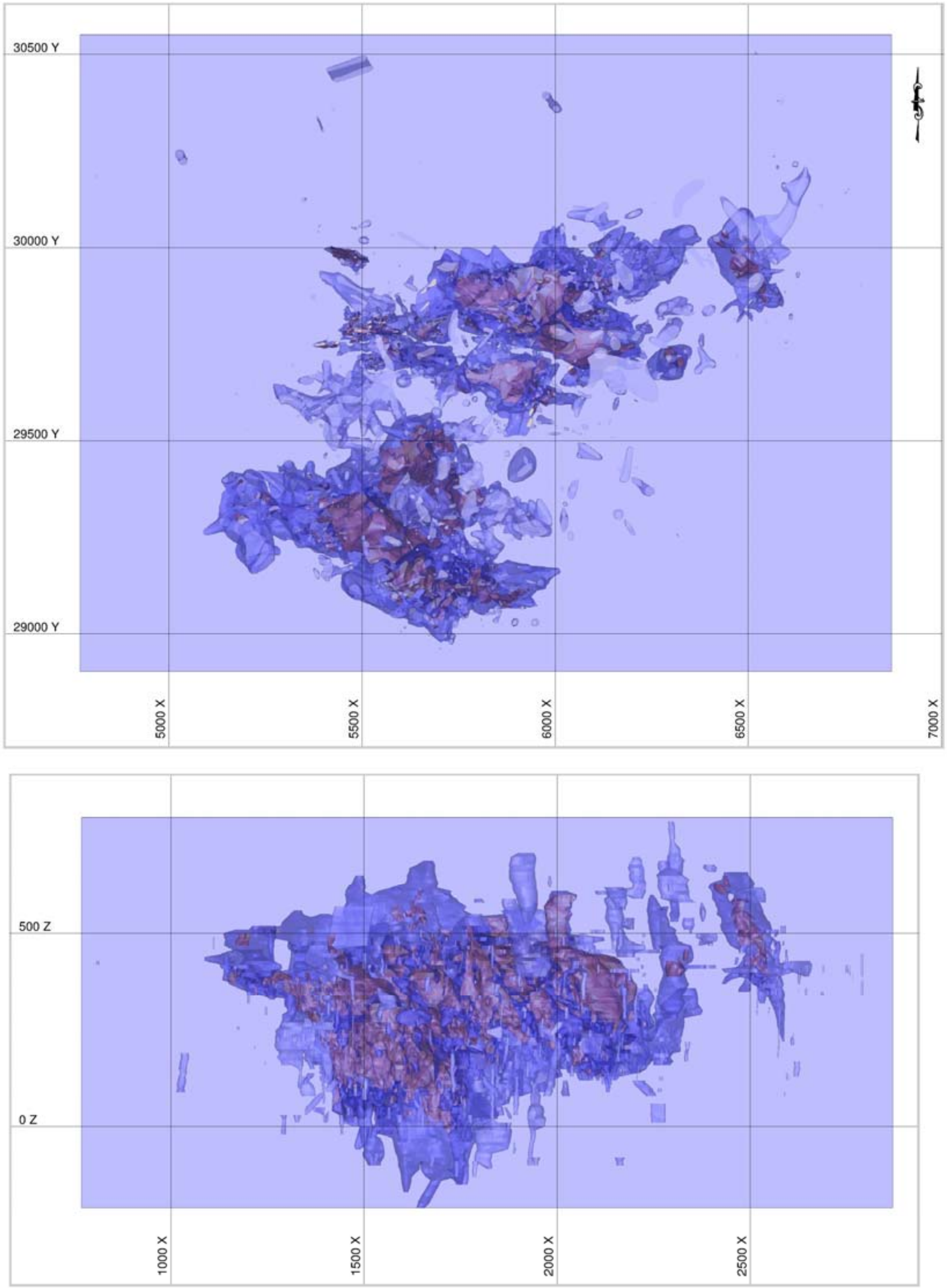


Figure 36. Plan view (top) and Vertical Section, looking north (bottom) of block model extents for Chelopech MRE area. Shaded blue area shows outline of the model area and the data extents used for this MRE (DPMC, 2016).

14.6 Grade Estimation

Estimation of the copper, gold, silver, arsenic and sulphur grades was completed using OK, using the GEMS implementation of the GSLIB Ordinary Kriging algorithm.

14.6.1 Summary

Ordinary Kriging is described as the best linear unbiased estimator (BLUE), which applies the modelled variogram to produce a minimum error-variance estimate. This is based on a linear weighting of the sample data within a defined sample search neighbourhood. The algorithm requires the sum of the weights applied to the sample data to equal one, thus allowing the mean grade to vary as the search neighbourhood is moved to each new location but using a constant covariance model (the variogram) to determine the sample weights.

Discretisation allows for the kriging of grades into blocks using point to block covariance values, to produce a block estimate. The discretisation matrix reproduces the theoretical global block variance based on the variogram model. This is achieved by increasing the number of discretisation points and changing their configuration until the block variance stabilises.

Estimation variance, which represents the minimised error variance on which the kriging weights are based, is a measure of the deviation of the estimated block variance from the theoretical block variance. The estimation variance depends on the block size, spatial configuration of the sample data used and the variogram model, but not the actual sample data values.

14.6.2 Estimation Parameters

Optimum sample search parameters were determined through a process of Kriging Neighbourhood Analysis ("KNA") completed to investigate Kriging efficiency and slope of regression. In addition to this results from the variography review and known data spacing support the selection of search parameters chosen. The sample search parameters used are presented in Table 42.

Kriging was estimated into parent blocks, discretised into 3 m x 3 m x 3 m (X, Y, Z) parts.

During estimation Kriging and search statistics were copied to the estimated blocks to assist with validation and classification of the estimate. These parameters included:

- Number of samples informing a block's estimate
- Average distance of samples informing a block's estimate
- The estimation pass each block was estimated in
- The Kriging variance.

Table 42. OK Sample search parameters.

Domain	Search Pass	Search Distance			Min Nb Data	Max Nb Data	Max samples per hole
		Major	Semi	Minor			
All geology domains, except 103,149,147,145.	1	30	15	10	12	24	4
	2	60	30	20	8	24	4
	3	120	60	40	4	24	4
103	1	40	20	15	12	24	4
	2	80	40	30	8	24	4
	3	160	80	60	4	24	4
149 SE	1	30	25	10	12	24	4
	2	60	50	20	8	24	4
	3	120	100	40	4	24	4
149 HG	1	30	25	10	10	20	4
	2	60	50	20	6	20	4
	3	120	100	40	2	20	4
147	1	40	40	15	12	24	4
	2	80	80	30	8	24	4
	3	160	160	60	4	24	4
145	1	40	40	15	12	24	4
	2	80	80	30	8	24	4
	3	160	160	60	4	24	4
SG	1	30	20	10	5	30	10
	2	60	40	20	5	30	10
	3	90	60	30	5	15	15

14.7 Block Model Validation

The estimate was validated by comparing input composites versus output grades. This was completed:

- At a local scale by comparing (on section) sample grades against neighbouring block grades (see Figure 37 and Figure 38);
- At a semi-local scale; by generating Swath Plots at Bench, Easting and Northing increments. Swath Plots compare total model tonnes versus total composite meters and average model grades versus average composite grades, at even increments (swaths) across the resource (Figure 39 and Figure 40);
- At a global scale; by comparing mean grades of the estimated model against the declustered and top-cut assay input data, and;
- By reviewing mining reconciliation data (detailed in Section 16.7) in key production areas to compare modelled versus mined grades and tonnes. The reconciliation work completed by DPM shows a good correlation between mill production, Mineral Reserves and Mineral Resources.

Table 43 presents the MRE (before dilution) compared mine production estimates. As expected the MRE tonnes are slightly lower with higher grades than the production data.

Table 43. MRE compared to 2017 production.

31th December 2017	Resource model 31th December 2017						Actual Mined					
Blocks	Tonnage	Cu %	Au g/t	Ag g/t	As %	S %	Tonnage	Cu %	Au g/t	Ag g/t	As %	S %
Block 19	736759	0.74	3.64	5.80	0.20	11.94	767742	0.72	3.76	5.92	0.19	11.60
Block 103	392768	0.78	3.19	3.39	0.23	12.64	450646	0.74	3.44	3.96	0.23	12.30
Block 150	246917	1.72	6.52	10.73	0.52	17.12	253986	1.64	6.54	10.93	0.45	16.43
Block 151	735295	1.09	3.07	10.73	0.36	16.36	760425	0.96	2.98	10.11	0.30	15.14
Total:	2111740	0.98	3.69	7.64	0.30	14.22	2232799	0.91	3.75	7.52	0.27	13.50
% Resource model Dec 17 Tonnes							-6%					
% Resource model Dec 17 Cu								8%				
% Resource model Dec 17 Au									-1%			
% Resource model Dec 17 Ag										2%		
% Resource model Dec 17 As											11%	
% Resource model Dec 17 S												5%

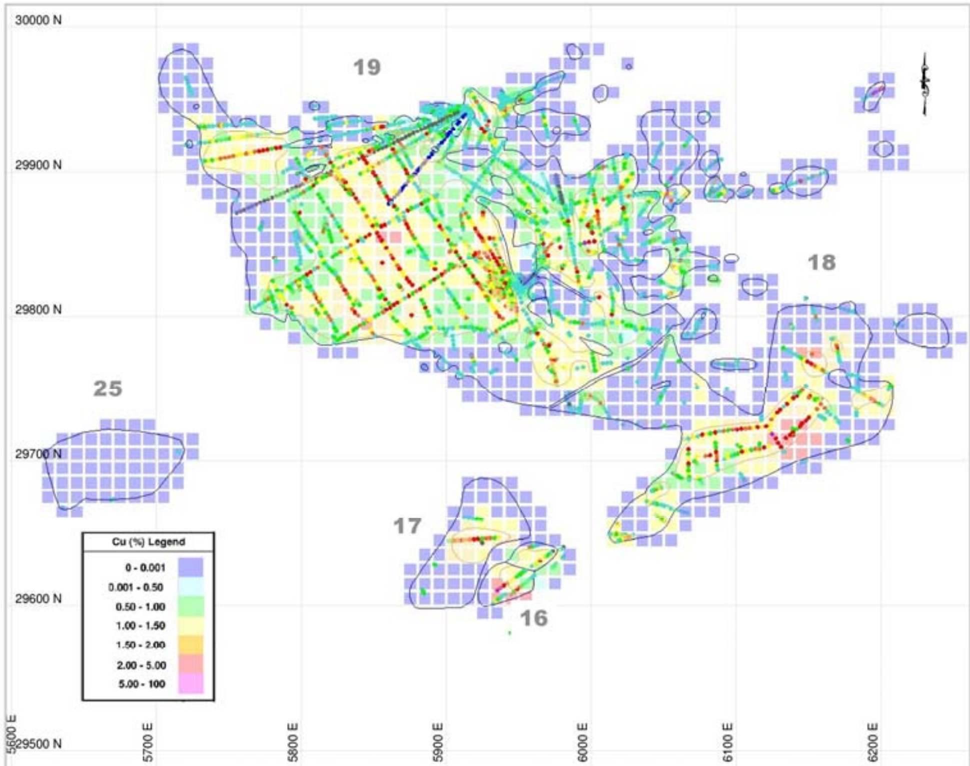


Figure 37. Central Area, plan view at 350mRL, comparing assay versus block Cu grades (DPMC).

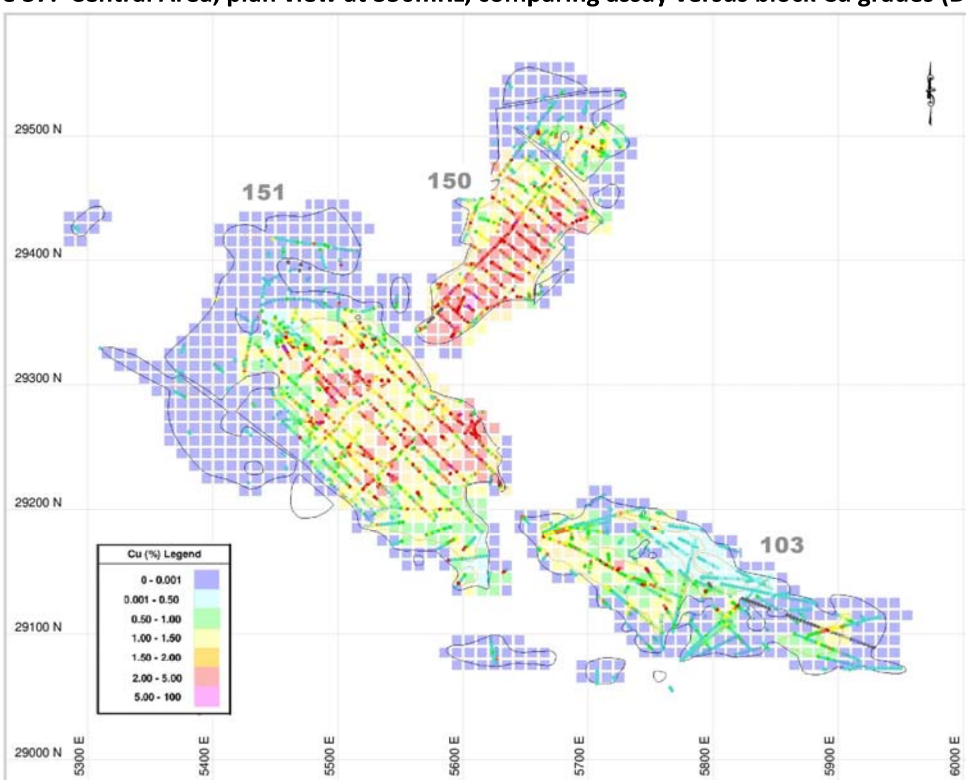


Figure 38. Western Area, plan view at 260mRL, comparing assay versus block Cu grades (DPMC).

Figure 39. Bench, Easting and Northing Swath Plots - Central area (DPMC, 2017).

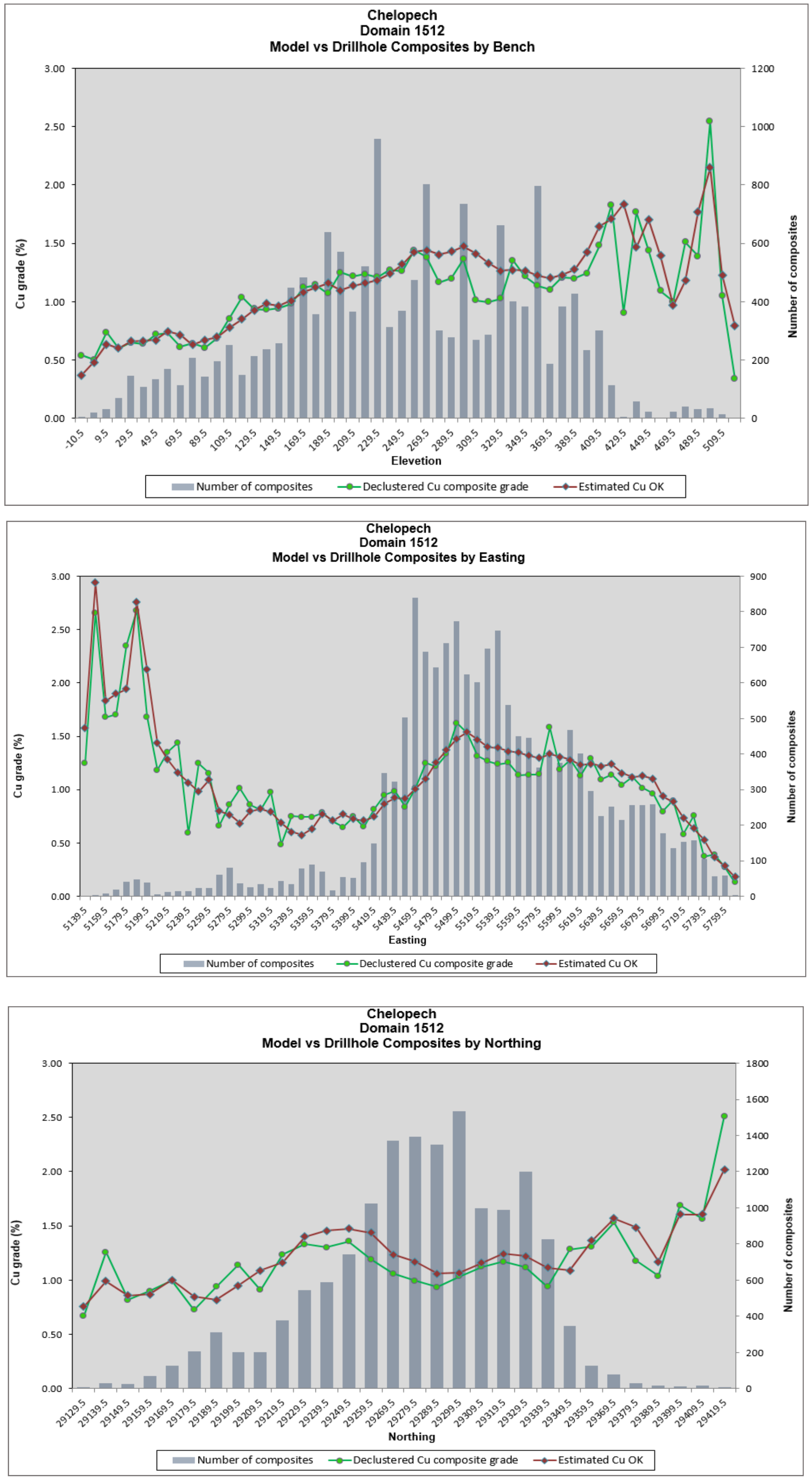


Figure 40. Bench, Easting and Northing Swath Plots - Western area (DPMC, 2017).

14.8 Mineral Resource Reporting

14.8.1 Resource Classification

Classification of the MRE was completed based on the guidelines presented by Canadian Institute for Mining (CIM), adopted for Technical reports which adhere to the regulations defined in NI 43-101. Classification of the Mineral Resource Estimate was based on the following criteria:

1. Geological knowledge and reliability of interpretation
2. QA/QC and database verification
3. Sample support and drill density
4. Grade continuity and variography
5. Ordinary Kriging statistics
6. Validation of the estimation of in-situ grades for copper, gold, silver, arsenic and sulphur
7. Validation of the tonnage factors derived from estimation of the in-situ dry bulk density.

Interpolation classification of the MRE was based on interpreted volumes which enclose those areas of the MRE that honour the following criteria:

<u>Measured Mineral Resources</u>

- Blocks estimated within the 1st estimation search pass
- A Kriged slope of regression of >= 0.85
- For Block 19 Central area only, an additional requirement of Kriging efficiency of >=75% was used.

<u>Indicated Mineral Resources</u>

- Blocks estimated within the 1st or 2nd estimation search pass
- A Kriged slope of regression of >= 0.70.
- Regions with good geological understanding and a drill spacing of <40m, which roughly equates to the range of continuity describing 70% of the sample variance.

<u>Inferred Mineral Resources</u>

- Blocks estimated within the 3rd estimation search pass
- Slope of regression < 0.70%
- Extensions of known mineralisation which have reasonable sample support to infer grade and geological continuity but require additional drilling or sampling to verify that inferred continuity.

Figure 41 and Figure 42 present views of the classified MRE.

The classification codes assigned to the block model were:

- Measured Mineral Resources: RESCLASS = 1
- Indicated Mineral Resources: RESCLASS = 2
- Inferred Mineral Resources: RESCLASS = 3

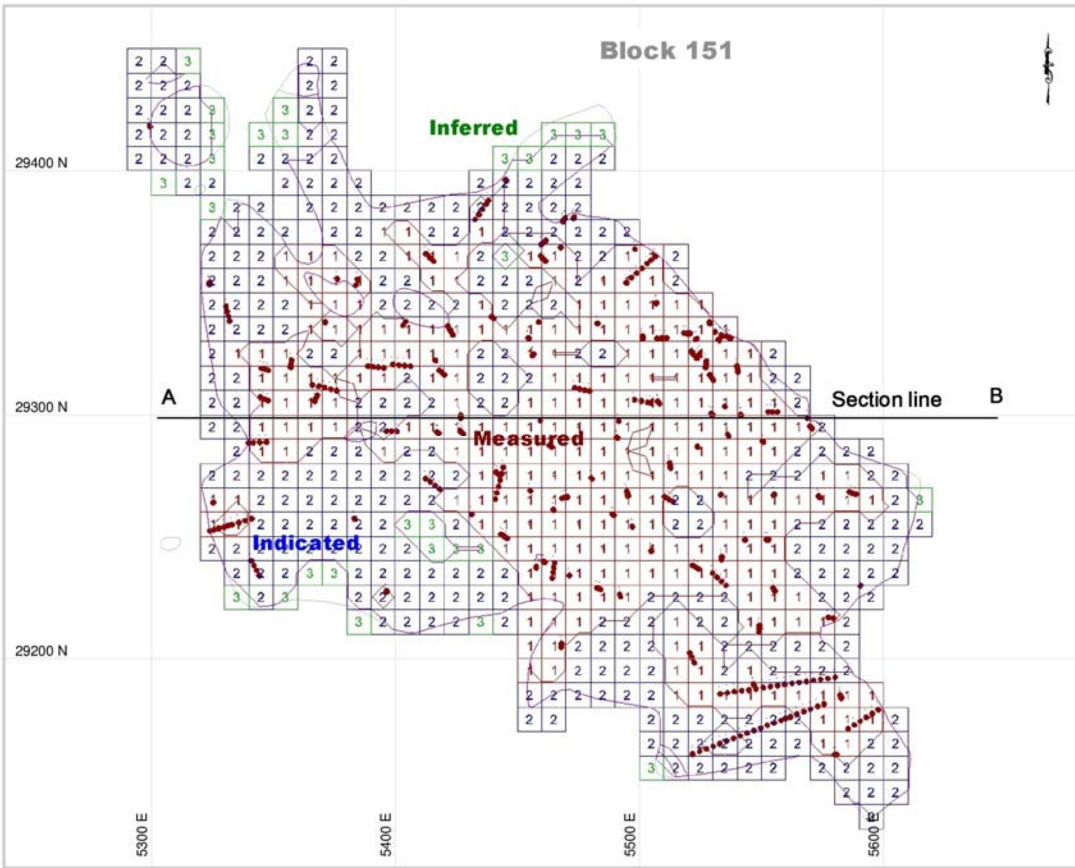


Figure 41. Plan view of classified model for Block 151, at level 310 labelled by RESCLASS with supporting samples coloured in dark red (DPMC, 2017).

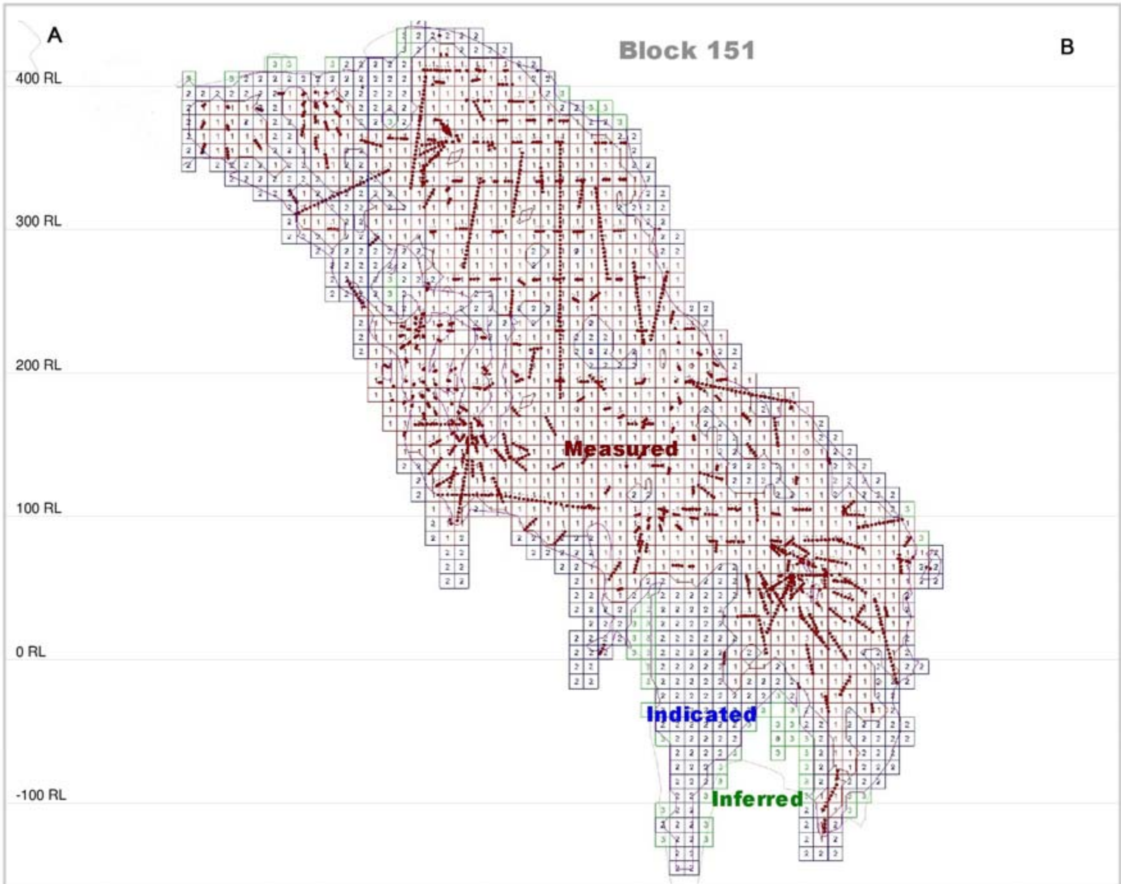


Figure 42. Vertical Section view of classified model for Block 151, labelled by RESCLASS, looking north with supporting samples coloured in dark red (DPMC, 2017). The section line can be found in the previous figure.

14.8.2 Resource Tabulation

The Mineral Resource Estimate presented in Table 44 has been depleted by all mining and development works, as at 31st December 2017. The MRE is reported using a gold equivalent ("AuEq") cut-off grade and a NSR calculation based on current operating costs and metal revenue, in support of "reasonable chances of eventual economic extraction". The details of the AuEq and NSR calculation are presented below. A gold equivalent (AuEq) grade is used at Chelopech to generate a single value based on both the gold and copper grades within the resources. This is calculated as:

$$AuEq = Au(g/t) + 2.06*Cu(\%)$$

The above AuEq formula has incorporated the following criteria:

- Designed production rate of 2.2 Mtpa and associated estimated costs
- Assumed metals recoveries
- Long term metal prices of:
  - Gold: USD 1,250/oz

- o Copper: USD 2.75/lb
- o Silver: USD 23/oz

Recovery calculations are variable based on individual grade domains and factor in recoveries incorporated via the Pyrite Concentrator circuit. Plant recoveries are presented in Table 49 and the profit calculation based on an NSR algorithm is included in Table 47.

The final profit classification incorporates revenue factors for each recoverable metal type and Royalties. From this the final net Operating Profit is determined by incorporating OPEX. The Mineral Resource remaining after subtraction of Mineral Reserves has been reported at a cut-off grade of 3.0 g/t AuEq and at a Net Operating Profit of > USD 0 per tonne, using the Net Profit calculation outlined above.

The process used for excluding Mineral Reserves is as follows:

- The 24-month stope design wireframes are displayed, alongside the geology wireframes, mined out areas, 2017 and 2018 development, and classification wireframes.
- Strings are manually digitised around stopes. Small areas that exist proximal to planned stopes in the Mineral Reserve model are assumed as being technically unrecoverable during mining and are included within the string boundary.
- A wireframe (24 month buffer solid) is created outside the stope design. This solid in conjunction with the Mineral Reserve design solids, is used to report Mineral Resources exclusive of Mineral Reserves. Approximately 2.36Mt of material is situated in this buffer zone.

Material above the 600 mRL level is not reported, due to uncertainty over the ability to mine this area (adjacent to the historic pillar). The Mineral Resource Estimate of Measured and Indicated Mineral Resources are reported, exclusive of those Mineral Resources modified to produce the Mineral Reserves.

Table 44. Mineral Resource Estimate - Chelopech Copper Gold Project - as at 31st, December 2017.

Dundee Precious Metals - Chelopech. Chelopech Mineral Resource Estimate as at 31st December, 2017									
Resource Category	MTonnes	Grades					Metal Content		
		Au (g/t)	Ag (g/t)	Cu (%)	S (%)	As (%)	Au (Moz)	Ag (Moz)	Cu (MLbs)
Measured	8.6	3.41	9.64	1.15	13.53	0.32	0.943	2.664	217
Indicated	4.3	3.33	9.74	1.00	12.69	0.26	0.457	1.335	94
Total M+I	12.9	3.39	9.67	1.10	13.25	0.30	1.400	3.999	311
Inferred	1.4	2.66	8.11	0.93	10.65	0.11	0.121	0.370	29

MRE is reported using a gold equivalent cut-off of 3 g/t and an operating net profit cut-off of >USD0
Tonnages are rounded to the nearest 1,000 tonnes to reflect this as an estimate
Metal content is rounded to the nearest 100 tonnes or 100 ozs to reflect this as an estimate
Gold equivalent (AuEQ) = [Au + Cu*2.06] based on a Cu price of $2.75/lb and Au price of $1250/oz
The Mineral Resource is reported exclusive of Mineral Reserves.

Additionally, the Mineral Resource Estimate (exclusive of Mineral Reserves) is set out in Table 45 in a grade-tonnage tabulation. The reporting cut-off is highlighted in bold.

Table 45. Grade Tonnage Tabulation - Chelopech Copper Gold Project - as at 31st December 2017, reported for a range of gold equivalent grade cut offs.

Dundee Precious Metals Chelopech Copper/Gold Project Mineral Resource Estimate as at 31st December 2017* Reported at a >USD 0 Profit cut off at a variety of cut-offs								
Resource Category	**Cut-off (AuEq)**	**MTonnes**	**AuEq (g/t)**	**Au (g/t)**	**Ag (g/t)**	**Cu (%)**	**S (%)**	**As (%)**
Measured Resource	2	10.9	5.09	3.03	8.70	1.00	12.64	0.28
	3	**8.6**	**5.78**	**3.41**	**9.64**	**1.15**	**13.53**	**0.32**
	4	6.2	6.68	3.95	10.66	1.32	14.14	0.37
	5	4.1	7.76	4.61	11.87	1.53	14.98	0.43
	6	2.8	8.87	5.28	13.09	1.74	15.92	0.49
Indicated Resource	2	8.1	4.04	2.54	7.88	0.73	10.95	0.19
	3	**4.3**	**5.39**	**3.33**	**9.74**	**1.00**	**12.69**	**0.26**
	4	2.7	6.57	4.06	10.87	1.22	13.71	0.32
	5	1.8	7.62	4.76	11.66	1.39	14.33	0.37
	6	1.2	8.69	5.45	12.06	1.57	14.94	0.41
Measured + Indicated Resource	2	19.0	4.64	2.82	8.35	0.88	11.92	0.24
	3	**12.9**	**5.65**	**3.39**	**9.67**	**1.10**	**13.25**	**0.30**
	4	8.8	6.65	3.99	10.72	1.29	14.01	0.36
	5	5.9	7.72	4.65	11.81	1.49	14.79	0.41
	6	4.0	8.81	5.33	12.78	1.69	15.62	0.46
Inferred Resource	2	3.0	3.51	2.14	6.77	0.66	9.89	0.09
	3	**1.4**	**4.58**	**2.66**	**8.11**	**0.93**	**10.65**	**0.11**
	4	0.6	5.99	3.37	9.09	1.28	10.88	0.13
	5	0.3	7.38	4.05	10.05	1.62	11.35	0.13
	6	0.2	8.10	4.37	9.74	1.81	11.57	0.13

*The Mineral Resource is reported exclusive of Mineral Reserves.

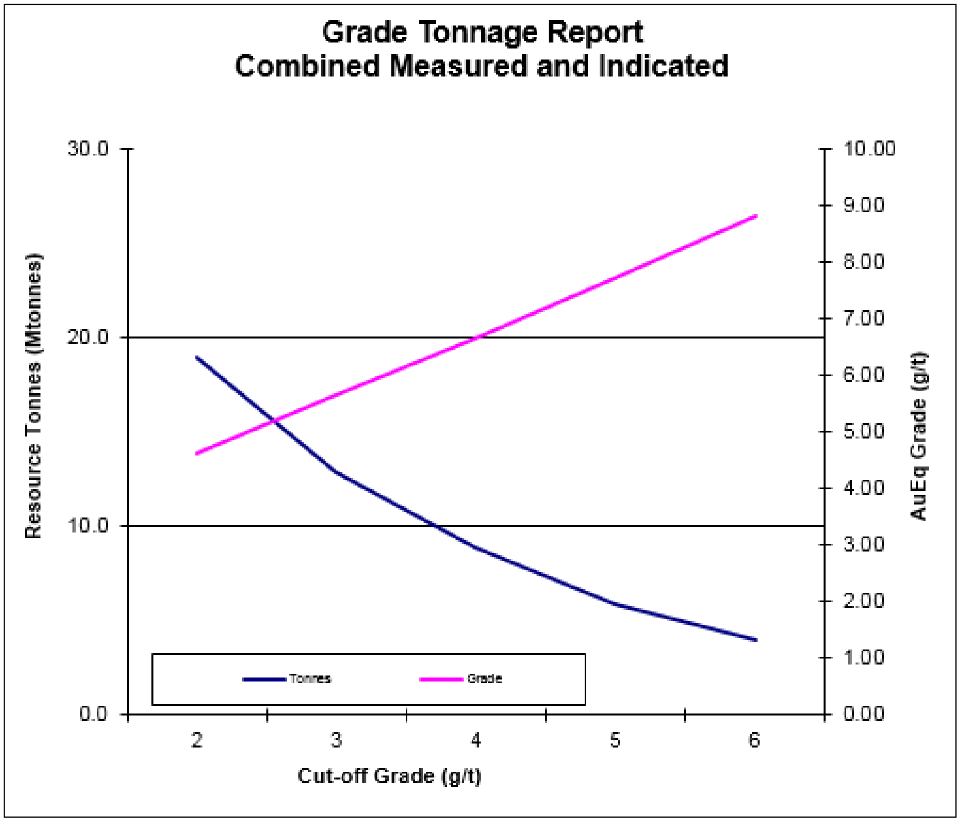


Figure 43. Grade Tonnage Report for Measured and Indicated Mineral Resources, with Net Operating Profit >USD 0 per tonne reported at AuEq cut-off grades.

Comparison of the 2017 MRE with the previously reported 2016 MRE, after depletion of Mineral Reserves, is presented in Table 46. The updated MRE shows an increase of 1.87% in the Measured and Indicated Mineral Resources primarily due to positive results from operational resource development drilling during the period 01 January 2017 to 31 December 2017.

Table 46. Comparison between previous MRE (Dec, 2016) and current MRE (Dec, 2017).

Comparison of MRE as at 31st December, 2017 with MRE as at 31st December, 2016 Mineral Resources exclude all blocks already classified as Mineral Reserves									
Resource Category	2017 MTonnes	2016 MTonnes	Grades				% Difference		
			2017 Cu (%)	2016 Cu (%)	2017 Au (g/t)	2016 Au (g/t)	Tonnes % diff	Cu % diff	Au % diff
Total M+I	12.9	12.6	1.10	1.08	3.39	3.45	1.87%	1.58%	-1.75%
Inferred	1.4	1.8	0.93	0.96	2.66	2.44	-19.20%	-2.98%	8.88%

MRE’s are reported using a gold equivalent cut-off of 3 g/t and an operating net profit cut-off of >USD0
Tonnages are rounded to 1,000 tonnes and Metal to 100 tonnes or 100 oz as this is an estimate
Metal content is rounded to the nearest 100 tonnes or 100 ozs to reflect this as an estimate
Gold equivalent (AuEq) = [Au + Cu*2.06] based on a Cu price of $2.75/lb and Au price of $1250/oz
The Mineral Resource is reported exclusive of Mineral Reserves

It is the QP’s opinion that the Chelopech MRE has a low risk of being affected by factors such as geological understanding, data management, estimation methodology or classification strategy. The deposit geology is well understood, has been appropriately modelled in 3D and has adequate sampling data to support the grade and tonnage estimates. Recent reconciliation with production has verified the quality of the MRE.

CSA Global does not believe that the estimate of Mineral Resources may be materially affected by metallurgical, environmental, permitting, legal, title, taxation, socio-economic, marketing or political issues.

15. Mineral Reserve Estimates

15.1 History and Study Methodology

At the time of the acquisition of the mine by DPM, annual ore production output for the previous 4 years was in the order of 522 ktpa, with 640 kt achieved in 2003. The current production target of the operation is 2.2 Mtpa, the achievement of which is enabled by the upgraded ore handling facilities and infrastructure, whilst at the same time, introducing a new stoping method. This implementation plan was completed in the third quarter of 2012.

Long-hole open stoping (LHOS) was successfully implemented in 2005, and by December 2008, the mine output had increased to the equivalent of 1 Mtpa, which was the pre-upgrade design capacity of the Kapitalna shaft. This nominal rate continued through to 2010, with an increase to ~1.3 Mtpa in 2011, followed by ~1.8 Mtpa in 2012 and by ~2 Mtpa in 2013, on completion of the new underground crusher-conveyor system.

15.2 Net Smelter Return Model

There are numerous benefits of an NSR model compared to a single metal cut-off grade approach, such as:

1. Polymetallic ore can be converted into a profitability variable expressed in terms of USD/t.
2. Investigation of the potential viability of selected Mineral Reserves blocks can be quickly assessed.
3. The profitability of planned stopes can be assessed.
4. The effect of commodity price fluctuations can be quickly applied to the Mineral Reserves model.

On completion of a preliminary Hill of Value (HOV) optimisation study by Coffey Mining in June 2010 (Coffey 2010[2]), Coffey Mining demonstrated that the use of an NSR economic model to determine the economic mining footprint for Chelopech was robust and valid.

The break-even grade of the 151 block is significantly higher than that of other mining blocks. This implied that the use of a single mine cut-off grade was not the economic optimum. The overall weighted average break-even grade for the 2010 diluted resource model using a gold equivalent formula of Au+2.5xCu was approximately 3 g/t AuEq.

The outcome of the HOV evaluation analysis also indicated that the maximum mine value for the base case production target of 2 Mtpa occurs when a USD 25/t cut-off grade is applied, with noticeable changes to mine value occurring when the cut-off grade is less than USD 15/t.

Applying a range (USD 0 to 30/t) of unit profitability cut-off grades (based on NSR) showed that the mine was reasonably NPV insensitive to the selected range. However, the mine's life is significantly impacted by changes to the unit profitability cut-off grade. The extent of the impact is approximately two years of mine life per USD 5/t change in cut-off.

Based on the results presented by Coffey Mining in its 23 June 2010 report, a fair and reasonable cut-off grade for each production rate scenario that balances economic risk with mine life is USD 10/t. Therefore, for purposes of the Chelopech Mineral Reserves estimate, a USD 10/t above breakeven has been used as the cut-off grade.

15.3 Metallurgical Recovery Algorithms

To create an NSR model, additional attributes were added to the GEMS Mineral Resources model. These fields are presented in Table 47.

Metallurgical recovery algorithms have been developed for the new blocks (i.e. 145, 147 and 149), as well as additional test work conducted on existing formulae, to test their robustness and validity outside the current ROM grades. Table 49 presents the metallurgical recovery algorithms used to define the profit per tonne.

These metallurgical recovery algorithms currently have limitations, so for Mineral Resources and Mineral Reserves estimations, minimum and maximum metallurgical recovery limits were used to stop improbable recoveries being used to determine the economic model revenue. The limits employed are presented in Table 46.

Also, if the Mineral Resource classification (RESCLASS) equals 3, then copper, gold and silver metallurgical recoveries are set to zero. A Mineral Resource classification of 3 represents Inferred Mineral Resource.

Table 47. NSR Fields.

DPM Chelopech - NSR Fields		
Field (units)	**Formula**	**Description**
TONNES (t)	$X_{INC}*Y_{INC}*Z_{INC}$*DEN_VOID	Tonnes of an area – length x breadth x height x density
Copper concentrate		
CUREC (%)	See Table 49. Metallurgical Recovery Algorithms.	Copper recovery using mill defined recovery algorithm
AUREC (%)	See Table 49. Metallurgical Recovery Algorithms.	Gold recovery using mill defined recovery algorithm
AGREC (%)	See Table 49. Metallurgical Recovery Algorithms.	Silver recovery using mill defined recovery algorithm
CU_MET_R (lb)	CUREC/100*TONNES*CU/100*2204.6226	The amount of copper recovered, in pounds
AU_MET_R (tr.oz)	AUREC/100*TONNES*AU/31.1035	The amount of gold recovered, in troy ounces
AG_MET_R (tr.oz)	AGREC/100*TONNES*AG/31.1035	The amount of silver recovered, in troy ounces
PAYABLE (USD)	0.94*CU_MET_R*2.75+0.93*AU_MET_R*1250+0.92*AG_MET_R*23.0	Payable content from metal recovered
CU_C_DMT (t)	CU_MET_R/2204.6226/0.165	Copper recovered in dry metric tonnes
TCRC (USD)	CU_MET_R*0.16*0.94+AU_MET_R*5*0.93+AG_MET_R*0.5*0.92+CU_C_DMT*770	Treatment charges and recovery charges
ROYALTY (USD)	(CU/100*TONNES/2204.6226*2.75+AU*TONNES/31.1035*1250+AG*TONNES/31.1035*23.0)*0.015	The operation royalty charge has been calculated using the base formula of 1.5% of the in-situ metal (Cu, Au & Ag) value.
SUSTAINING_CAP	4.0	Sustaining capital added based on longterm financial model
OPEX (USD)	TONNES*(30.95+ SUSTAINING_CAP)+ ROYALTY	Operating Expenditure
PROFIT (USD)	PAYABLE -TCRC-OPEX	Profit
PROFIT_T (USD)	PROFIT/TONNES	Profit per tonne
NSR (USD)	(1-TCRC/ PAYABLE)*100	Net Smelter Return
Pyrite Concentrate		
PC_CUREC (%)	92.4-CUREC	Copper recovery in Pyrite concentrate
PC_AUREC (%)	88.53-AUREC	Gold recovery in Pyrite concentrate
PC_AGREC (%)	80.61-AGREC	Silver recovery in Pyrite concentrate
PC_CU_MET_R (lb)	PC_CUREC/100*TONNES*CU/100*2204.6226	The amount of copper recovered, in pounds
PC_AU_MET_R (tr.oz)	PC_AUREC/100*TONNES*AU/31.1035	The amount of gold recovered, in troy ounces

DPM Chelopech - NSR Fields		
Field (units)	**Formula**	**Description**
PC_AG_MET_R (tr.oz)	PC_AGREC/100*TONNES*AG/31.1035	The amount of silver recovered, in troy ounces
PC_PAYABLE (USD)	0.55*PC_AU_MET_R*1250	Payable made from metal recovered
PC_AU_C_DMT (t)	PC_AU_MET_R/31.1035/6.5	Gold recovered in dry metric tonnes
PC_AU_C_WMT (t)	PC_AU_C_DMT*1.07	Gold recovered in wet metric tonnes
PC_TCRC (USD)	PC_AU_MET_R*8*0.55+PC_AU_C_DMT*82	Treatment charges and recovery charges
PC3_OPEX (USD)	TONNES*0.62	Operating Expenditure
PC3_PROFIT (USD)	PC_PAYABLE - PC_TCRC-PC3_OPEX	Profit
PC3_PROFIT_T (USD)	PC3_PROFIT/TONNES	Profit per tonne
NSR2 (USD)	(1-PC_TCRC/ PC_PAYABLE)*100	Net Smelter Return
Total		
TOT_CUREC (%)	CUREC + PC_CUREC	Total copper recovery
TOT_AUREC (%)	AUREC + PC_AUREC	Total gold recovery
TOT_AGREC (%)	AGREC + PC_AGREC	Total silver recovery
TOT_CU_MET_R (lb)	CU_MET_R + PC_CU_MET_R	The amount of copper recovered, in pounds
TOT_AU_MET_R (tr.oz)	AU_MET_R + PC_AU_MET_R	The amount of gold recovered, in troy ounces
TOT_AG_MET_R (tr.oz)	AG_MET_R + PC_AG_MET_R	The amount of silver recovered, in troy ounces
TOT_PAYABLE (USD)	PAYABLE + PC_PAYABLE	Payable made from metal recovered
TOT_TCRC (USD)	TCRC + PC_TCRC	Treatment charges and recovery charges
TOT_OPEX (USD)	OPEX + PC3_OPEX	Operating Expenditure
PROFIT3 (USD)	PROFIT + PC3_PROFIT	Profit
PROFIT3_T (USD)	PROFIT_T + PC3_PROFIT_T	Profit per tonne and cut-off grade parameter
NSR3 (USD)	NSR1 + NSR2	Net Smelter Return

Table 48. Metallurgical Recovery Limits to Copper Concentrates.

Description	Lower	Upper
Copper	10%	90%
Gold	10%	77%
Silver	10%	68%

Table 49. Metallurgical Recovery Algorithms.

Metal	Mining Block	Algorithm
CUREC	151	101.9503+0.1326*Cu (%)-0.186*Ag (g/t)-1.3782*S (%)/Cu (%)
AUREC	151	81.9153+3.4898*Au (g/t)-1.607*Ag (g/t)-2.387*S (%)/Cu (%)
AGREC	151	0.2848+0.2875*Ag (g/t)-0.7849*S (%)/Cu (%) +0.8512*AuRec (%)
CUREC	149	89.7180+2.5653*Cu (%)-0.1358*Ag (g/t)-0.8118*S (%)/Cu (%)
AUREC	149	46.9474+10.5140*Cu (%)-0.1621*Au (g/t)-0.4472*S (%)/Cu (%)
AGREC	149	10.2896+2.9976*Cu (%)-0.6293*Ag (g/t) +0.9671*AuRec (%).
CUREC	147	99.0303+0,1326*Cu-0.186*Ag)-1.3782*(S/Cu)
AUREC	147	81.9153+3.4898*Au (g/t)-1.607*Ag (g/t)-2.387*S (%)/Cu (%)
AGREC	147	0.2848+0.2875*Ag (g/t)-0.7849*S (%)/Cu (%) +0.8512*AuRec (%)
CUREC	145	102.7903+0.1326*Cu-0.186*Ag)-1.3782*(S/Cu)
AUREC	145	71.6367+24.1769*Cu-0.2818*Ag-3.012*S
AGREC	145	0.2848+0.2875*Ag (g/t)-0.7849*S (%)/Cu (%) +0.8512*AuRec (%)
CUREC	All Other	102.7951-0.5282*Cu (%) -0.1506*Ag (g/t) - 1.4436*S (%)/Cu (%)
AUREC	All Other	76.656+3.236*Au (%)-1.687*Ag (g/t) - 1.8059* S (%)/Cu (%)
AGREC	All Other	17.05+ 0.0159*Ag (g/t) - 1.1686*S (%)/Cu (%) +0.6927*AuRec (%)

15.4 Development of Iso-shells

Once profit per tonne was estimated for each block within the Mineral Resources block model, iso-shells were developed automatically at a cut-off of > USD 0/t and ≥ USD 10/t using GEMS software, for the Mineral Resources and Reserves, respectively.

GEMS triangulates an iso-shell around all blocks that exceeds the input value. The iso-shells produced were then used as a guide to create wireframes and solids, which were then visually checked against the geology and grade models for consistency. The wireframes and solids were then validated for tonnes and grade estimation purposes.

On completion of the validation process, solids were then handed over to the Mine Planning engineer.

15.5 Design of Development and Stopes

Based on the ≥ USD 10/t iso-shell and ≥ 3 g/t AuEq stopes, level and capital development were designed and scheduled out. Secondary stopes and ore remnants were designed based on the most up-to-date survey data available, for the depleted stopes abutting them. In most cases, these were three-dimensional laser surveys of the mined-out stopes. However, if not available, stope designs were used.

Stoping is divided vertically in each block into multiple horizons, varying from 60 to 90 m in height, so that multiple stopes can be mined in each block simultaneously. Each stope is designed at a nominal 30 m height and 20 m width. The design length can usually vary between 20 to 60 m, depending on geology, and whether it is a primary or a secondary stope.

During mining, the length may change based on actual conditions. Sequencing for each horizon is focused on a bottom-up, inside-out approach to minimise stress on the secondary stopes and pillars, and to push the stress onto the abutments.

15.6 Mineral Reserves

Based on the methodologies described above, Mineral Reserves are presented in Table 50.

Table 50. Mineral Reserves Summary as at 31st December 2017.

Chelopech Ore Reserves as at 31st December, 2017										
Classification		Ktonnes	Grades					Metal Content		
			Au (g/t)	Ag (g/t)	Cu (%)	S (%)	As (%)	Au (Koz)	Ag (Koz)	Cu (MLbs)
PROVEN	Stopes	10,457	2.86	7.19	0.93	12.82	0.28	961	2,418	215
	Broken Stocks	21	2.62	4.39	0.75	11.17	0.27	2	3	0
	Stockpiles	22	3.90	7.90	1.01	13.62	0.27	3	5	0
PROBABLE	Stopes	7,517	3.36	6.14	0.85	12.20	0.26	811	1,484	141
	Ore Development	755	4.53	7.84	1.14	14.41	0.35	110	190	19
TOTAL PROVEN *		10,499	2.86	7.19	0.93	12.82	0.28	965	2,426	216
TOTAL PROBABLE		8,272	3.46	6.30	0.88	12.40	0.26	921	1,674	160
TOTAL *		18,771	3.13	6.79	0.91	12.63	0.28	1,886	4,101	376

*Including Broken Stocks & Stockpiles.

Mineral Reserves are based on long term metals prices of USD 1,250/oz Au, USD 23/oz Ag and USD 2.75/lb Cu
Tonnage figures have been rounded to the nearest 10,000t to reflect this as an estimate.

The Probable Mineral Reserve classification has been determined to be those designed stopes that lie further than 15 m (½ stope height) away from any level, with crosscut development completely through the ore. That is, ore classified as Proven Mineral Reserve is within 15 m of existing development, or stopes, where sampling takes place on a regular basis and classified as Measured Mineral Resources.

Net changes in tonnes and contained metals from the 2016 to the 2017 Mineral Reserves estimate show reductions of 1.0 Mt in tonnage, 109,000 ounces of gold and 22 million pounds of copper. Corresponding percentage reduction are respectively 5% in tonnes, 5% in metal content for gold, and 6% in metal content for copper. The decrease can be attributed to 2017 mining depletion, which has been partially offset by addition of new stope and redesign of existing stopes. New designs contributed about 0.7 Mt to the Mineral Reserves, mainly from Blocks 153, 17, 10 and 8.

The Mineral Reserves estimate is robust. Chelopech is an established mine and it is anticipated that there will be no major changes in legislation which will affect the materiality of the current Mineral Reserves estimate. Considering that Bulgaria is part of the EU, the main likely changes are if the current legislations are not EU compliant.

The Mineral Reserves at Chelopech have been estimated by including several technical, economic and other factors. A change to any of the inputs would therefore have some effect on the overall results. Concerning mining and metallurgical factors, it is CSA Global's belief that sufficient work has been done by DPM to ensure that these are not likely to have any significant or material effect on Mineral Reserves.

CSA Global does not believe that the estimate of Mineral Resources may be materially affected by metallurgical, environmental, permitting, legal, title, taxation, socio-economic, marketing or political issues. However, CSA Global relies on information (as presented in Section 3) of this Technical Report about legal and environmental considerations.

16. Mining Methods

16.1 Mining Operations

Production from underground is attained via Sublevel Longhole Open Stoping. The various ore bodies are developed at nominal 30 m vertical intervals and accessed by major declines in both, the Western and Central areas. Stopes are designed to be 20 m wide between the levels. The length of the stope depends on the geotechnical conditions, but can range between 20 and 60 m. The new trend of stope design is to keep a 20-30m length and 60m height, where geological and geotechnical conditions are suitable. This allows for improvement in ore handling and dust suppression during ore mucking because of shorter remote loading.

Ore is delivered via ore passes, or via trucks, to the ROM bin above the crusher. The crusher feeds up to 400 tph to a system of eight conveyors, to transport the ore to the surface stockpile.

Once mined via an “end-slice” methodology, stopes are backfilled with “paste fill” produced from the mill tailings, to which cement is added and which is gravity fed underground via a system of borehole and pipes to the stopes being filled.

Multiple horizons are designed in each ore body so that multiple stopes can be in production at any one time. Simulations have shown that at least six stopes shall need to be producing ore to maintain ore production of 2.2 Mtpa, with up to 22 stopes being drilled, “mucked” and filled at any one time.

16.2 Mining Schedule

The mining development and production schedule was developed using GEMS and MineMax software. As well as the focus on the sequencing previously mentioned, the scheduling strategy aims to maintain a blend from the blocks approximating the proportion in the Mineral Reserves, so that multiple mining areas can be maintained for as long as possible, to minimise congestion and maximise production.

The LOM production schedule summary is presented in Table 51.

16.3 Mining Equipment Selection

The operations at Chelopech are a typical medium to large scale mechanised operation using large sized equipment.

The proposed primary equipment selected is similar to those currently in use at the mine, as presented in Table 52.

Table 51. LOM Production Schedule (2018).

CHELOPECH LIFE OF MINE PLAN											
Reserves 2017	**Unit**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**Total**
ORE RESERVES	kt	2,200 Ktonnes per year each year								1,167	18,771
Cu	%	0.93	0.94	0.99	0.97	0.89	0.96	0.88	0.80	0.77	0.91
Au	g/t	3.40	3.24	3.33	3.13	3.28	3.09	3.11	2.82	2.51	3.13
Ag	g/t	6.38	7.04	7.01	7.59	5.68	6.19	6.33	6.13	10.55	6.79
As	%	0.29	0.29	0.31	0.30	0.27	0.29	0.27	0.24	0.21	0.28
S	%	12.67	13.56	13.58	12.67	12.23	12.74	12.81	11.61	11.12	12.63
Sum Jumbo Waste & Ore Dev Meters	km	6.0	6.5	6.5	6.0	6.0	4.5	1.2	0.9	0.0	37.6
Sum Waste Vert Dev Meters	m	223	98	148	91	69	31	0	0	0	660
LH Drill Meters	km	270	285	284	284	284	284	284	284	132	2390
PF Volume	'000m^3	548	557	546	514	530	582	657	665	188	4786
WF Volume	'000m^3	99	117	106	112	104	79	19	11	0	647
Total BF Volume	'000m^3	647	674	678	677	678	679	676	676	188	5573

Table 52. Primary Mobile Equipment

TYPE	MODEL	NUMBERS	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Σ
Loader	Toro 0010	Fleet	6	6	6	6	6	6	6	6	6	5	
		Purchase Requirement	2	2		1	1	2	2				10
Truck	Toro 50 Plus	Fleet	7	7	7	7	7	7	7	7	6	6	
		Purchase Requirement	1		2	2		2	1				8
Development Drills	Axera 7-260 Cabine	Fleet	4	3	3	3	3	3	3	3	3	2	
		Purchase Requirement	1	1									2
Production Drills	Solo DL420-15C	Fleet	4	4	4	4	4	4	4	3	3	3	
		Purchase Requirement		1	1		1						3
Service Machine	Caterpillar 930H	Fleet	7	7	7	7	7	7	6	6	5	4	
		Purchase Requirement		1	2	2		1					6
Grader	12H	Fleet	3	3	3	3	3	3	3	3	3	3	
		Purchase Requirement		2						1			3
Aggregate Truck (Shotcrete)	Utimec 1500 Transmixer	Fleet	2	2	2	2	2	2	2	2	2	1	
		Purchase Requirement	1					2					3
Shotcrete Machine	Sika PM 407	Fleet	2	2	2	2	2	2	2	2	2	1	
		Purchase Requirement	1			1		1					3
Water Truck	-	Fleet	2	2	2	2	2	2	2	2	2	2	
		Purchase Requirement		1	1								2
UG Jeeps 100%	-	Fleet	25	25	25	25	25	20	20	15	10	10	
		Purchase Requirement	2	5	5	3	5	7	6	5	3	5	46
UG Jeeps 50%	-	Fleet	26	26	26	26	26	21	21	13	10	10	
		Purchase Requirement	1	3	3	2	3	4	3	3	2	2	26
SURFACE Jeeps	-	Fleet	8	8	8	8	8	8	8	8	5	5	
		Purchase Requirement		1	1	1	2	2	2	2	1	1	13
UG Trucks (Man)	-	Fleet	1	1	1	1	1	1	3	1	1	1	
		Purchase Requirement											0
Mobile Rock Breaker		Fleet	1	1	1	1	1	1	1	1	1	1	
		Purchase Requirement				1							1

16.4 Mine ventilation

The ventilation system has been upgraded by installation of four 110kW fans working in parallel at Zapad shaft on 405 level. This shaft is a 3.5 m diameter, currently bare concrete lined shaft, stripped after its decommissioning as ore hoisting shaft. The new fan battery was commissioned in the second quarter of 2014 to increase ventilation capacity and to improve overall efficiency for future requirements.

16.5 Backfill

A paste backfill plant has been built on surface, commissioned in 2010, to facilitate maximum use of the available tailings for backfill placement underground in the mine. This will meet future backfill requirements and has replaced the existing hydraulic backfill plant. The facility is built adjacent to the existing hydraulic backfill plant and makes use of existing binder silos and backfill reticulation holes.

The paste backfill plant consists of a high rate thickener, vacuum filter, mixer and binder addition system. A complete underground borehole and piping paste reticulation system has been installed with the plant, having a capacity of producing 230 tph of paste backfill.

Target design strengths for the paste for stope filling range between 260 and 450 kPa after 56 days. The required strength is dependent on the location of the fill in the stope. Studies conducted during 2010 showed that this should be attainable with cement contents ranging between 3.5 and 5%. Optimisation of the process will continue to be an ongoing process.

Dry waste material from waste developments is used to backfill stopes where pastefill is not required.

16.6 Crown pillar extraction

The crown pillar at 330 m level, 150 block has been drilled and blasted in section (stopes), and as each section is extracted the void replaced with cemented paste fill. The old caved area at the pillar contact on 350 level has been bolted and grouted by cemented injection.

From 2014 up to the end of 2017, DPMC has successfully demonstrated the safe and efficient recovery of approximately 323,000 tonnes of ore from the block 150 crown pillar. It is intended to use the same mining approach as demonstrated with the 150 crown pillar to be able to extract material from other pillars near historical cave zones previously restricted from mining.

16.7 Reconciliation

Reconciliation, defining the performance of the mine and mill compared to the Mineral Reserves commenced in detail in 2009. In 2017, the results show that the mine is producing an average of 6% more tonnes at 8% lower copper and 1% higher gold grades after mining dilution and ore losses, compared to the Mineral Reserves block model for the same period.

Reconciliation at Chelopech is consistent with good industry standards (+/-10%) for this style of mineralisation.

16.8 Dilution and Ore Loss

Dilution and losses due to mining activities were applied to the tonnes of each Block, as per the mining method designed to mine them. Values are based on the history-to-date for those blocks mined and methods used. For the Cut and fill* mining method for the 144, 145, 147, 149 and 149-South Blocks, estimates have been made based on the methodology and the geotechnical conditions. Mining block dilution and ore loss assumptions are presented in Table 53.

Table 53. Dilution and Ore Loss Assumptions.

Mining Method	Mining Block	Losses	Dilution
LHS&BF	**150**	6.82%	5.65%
LHS&BF	**151**	5.37%	7.73%
LHS&BF	**19E**	6.71%	6.06%
LHS&BF	**19W**	7.79%	4.95%
LHS&BF*	**103**	2.30%	8.63%
LHS&BF-CP	**150**	6.68%	10.02%
SLC	**151,19,103**	20.0%	29.0%
CUT&F**	**149,147,145,144, 149-South**	3.0%	12.0%

Definitions: LHS&BF – Long Holes Stoping and Back Fill; SLC – Sublevel Caving; CUT&F – Cut and Fill.

** Average % per LHS&BF.*

***Cut and fill is the primary mining method. Thorough geotechnical analysis of Block 149 and nearby orebodies is ongoing to define the final design parameters.*

16.9 Underground crusher conveyor system

A materials handling system for the mine has been designed by DPMC and constructed to replace the previous ore handling system.

The previous system of train haulage and shaft hoisting has been entirely replaced by a 2 Mtpa underground crushing and conveying system, that takes ore from an ore pass system underground reporting to the 195 level and crushes, transports by conveyors and discharges the ore onto a 6,000 t live capacity reclaim stockpile on surface.

This ore handling system incorporates a primary crusher (a 1070 x 1500 mm jaw crusher) between the 195 level and the 165 level underground, which discharges into a 400 t crushed ore bin. The crusher is fed from a ROM bin sitting under a grizzly with openings of 800 x 800 mm.

Ore is fed to the grizzly via three sources:

1. A 4 m diameter x 135 m long ore pass for 151 and 150 Block material above the 260 level;

2. A 7 m diameter x 30 m long ore bin for the 144, 145, 147, 149, and 103 Blocks, 150 and 151 Blocks between the 225 and 260 levels; and the Central Area 16, 18 and 19 Blocks; and,

3. A truck tip directly on the grizzly for ore in 151 and 150 Blocks, on and below the 195 level.

A plate feeder draws material from the 400 t crushed ore bin and loads a picking belt (CV1) for removal of tramp metal using a self-cleaning magnet. Material is then conveyed via six more haulage conveyors (CV2-CV7) to the surface. The surface conveyor (C1105) transfers this material to the surface reclaim stockpile, where it is reclaimed and conveyed to the SAG mill to provide uninterrupted feed to the process plant.

The total length of the six underground conveyors is 3.9 km. Total lateral development required was 4.5 km. The design capacity of the system is 400 tph. As a result of this underground crusher installation, the existing surface crusher installation is reduced to one crusher, to handle oversize and to maintain minimum production in case of emergency.

The new conveyor system was commissioned in 2012 and at the time of the visit was fully operational at capacity.

17. Recovery Methods

17.1 Recoverability

The basis of the comminution and flotation circuit design for the expansion (undertaken in 2005) included a significant base case evaluation of available samples from the main ore blocks, together with consideration of all of the operating results since the circuit was put into commercial production. The originally crushing and grinding circuits were fairly standard original designs, with some upgrades of secondary and tertiary crushing units occurring in the early 2000s. The flotation process flow sheet continued to be a bulk sulphide primary circuit, with a three stages of Cleaning operating at a high pH (>12.0) to reject sufficient of the liberated pyrite minerals. This produces the best compromise of copper concentrate grade (16 – 17% Cu), balanced by the arsenic content (5 – 6% As) in the concentrate. These are the concentrate grades that have been consistently sold from the operation since 2000, as shown in the tables that follow.

The original test program concluded that the current process flow sheets were optimum for the treatment of the Chelopech ore types, and that no fundamental changes could be recommended. The results produced were used as the basis of the expansion design for the comminution and flotation circuits, (developed in 2005 – Minproc Engineers, 2006) to be able to process the upgraded Mine production of 2 Mtpa, with the commensurate increase annual concentrate production capacity.

17.2 Plant Production Performance

Table 54 shows the progressive ramp-up in ore production, feed grades and metal recoveries since 2006, whilst Table 55 and Table 56 show the corresponding concentrate and contained metals. Implementation of the main concentrator process expansion commenced in 2010 and was completed in phases with the final construction of the mine upgrade in early 2013.

Table 54. Ore Processed, head grades, and metal recovery to copper concentrate at Chelopech Operations.

Year	Ore Processed, kt	%Cu	Au, g/t	Ag, g/t	% S	Cu, % Recovery	Au, % Recovery	Ag, % Recovery
2006	953	1.4	4.0	10.5	14.9	85.4	58.0	41.0
2007	913	1.3	3.9	7.7	13.3	87.1	65.2	49.2
2008	901	1.2	4.0	7.5	12.3	86.0	61.2	47.5
2009	981	1.4	4.3	7.9	13.9	87.2	64.6	47.6
2010	1,001	1.5	3.9	8.7	16.1	85.5	54.5	41.5
2011	1,354	1.5	3.9	8.1	14.8	84.5	56.0	42.9
2012	1,820	1.3	3.7	9.3	14.9	82.3	55.5	35.7
2013	2,032	1.2	3.5	7.7	13.5	81.4	48.4	34.9
2014	2,076	1.18	3.72	9.14	14.89	82.3	50.1	38.7
2015	2,052	1.10	3.70	10.69	14.62	80.1	47.0	34.3
2016	2,212	0.98	3.43	8.95	14.14	80.5	48.5	35.8
2017	2,219	0.91	3.74	7.52	13.51	80.6	52.9	38.6
2018 (Budget)	2,200	0.93	3.40	6.27	12.70	82.1	53.5	40.5

Table 55. Copper Concentrate and Contained Metal Produced.

Year	Concentrate Produced, kt	Cu, Contained, kt	Au, Contained kOz	Ag, Contained kOz
2006	70	12	71	132
2007	65	11	75	111
2008	55	9	71	103
2009	72	12	88	118
2010	75	12	66	113
2011	103	17	94	152
2012	119	19	121	217
2013	127	21	132	219
2014	126	20	124	236
2015	113	18	115	242
2016	107	17	118	228
2017	101	16	141	207
2018 (Budget)	102	16.8	129	180

Table 56. Pyrite Concentrate and Contained Metal Produced.

Year	Concentrate Produced, kt	Au, Contained kOz	Ag, Contained kOz	Cu, Contained, t
2013	15	3,074	8,749	55
2014	163	36,465	103,224	601
2015	239	54,772	182,207	950
2016	215	47,237	143,148	1,564
2017	249	56,448	139,977	1,765
2018 (Budget)	235	52,079	111,335	1,537

17.3 Future Production Performance

The current operation produces a copper concentrate with associated gold and silver, with copper, gold and silver recoveries averaging 85, 55 and 42% respectively, between 2004 and 2011. Since 2012, as the plant throughput has increased, the head grades have steadily decreased, with resulting decreases in recovery to concentrate (81.5, 50.3, and 35.9% respectively). For the remainder of the mine life, the operation will be treating declining metal head grades, which at the current LOM mine production rate (~ 2.2Mtpa) will result in declining copper concentrate production. The pyrite recovery circuit has enabled the overall site production of gold to increase (~70% in 2016).

The extensive performance database generated over the years has been used to develop the recovery models used for production predictions. These are described in full Section 15 and have been applied to the current LOM mine plan block model (Table 51).

Table 57 summarizes the expected metal distribution over the current life of mine (2018-2026) schedule into the copper and pyrite concentrates.

Table 57. Predicted Metal Distributions to Copper and Pyrite Concentrates, 2018-2026.

Life of Mine 2018- 26	%Wt	Cu , %	Au , %	Ag , %
Cu Conc.	5.0	81.7	51.6	39.0
Pyrite Conc.	11.0	6.6	18.6	21.2
Tails	84.0	11.7	29.8	39.8
Total	100	100	100	100

18. Project Infrastructure

18.1 Mine Upgrade

Section 16.1 describes the Mine infrastructure upgrades.

18.2 Concentrator Upgrades – to 2012

18.2.1 Summary

The basis for the mine and plant expansion, was to install the capacity to mine and process 2 Mtpa of ore from the underground mine. It was important to integrate the existing equipment where possible, to both minimise capital expenditure and interferences with existing operations during installation. In the concentrator, this required bypassing of the existing secondary/tertiary crushing section completely, combined with the installation of a new grinding and primary flotation equipment to handle the increased material flows.

The upgraded circuit equipment primarily included:

- A crushed ore stockpile being fed from the underground primary crushing and conveying system. Apron feeders will transfer the ore onto the original crushing circuit feed conveyor

- Two conveyors to transfer primary crushed ore from the existing transfer conveyor to the SAG mill feed chute.

- A single stage SAG mill, 8.24 m diameter and 4.73 m effective grinding length, powered by a 5.8 MW motor, including ball charging, liner handling and associated equipment.

- The mill product classification circuit, comprising mill discharge hopper, cyclone feed pumps and cyclone cluster.

- Four, 100 m^3 capacity tank cells for the upgraded rougher and scavenger duties.

- Utilisation of existing flotation circuit as the upgraded 3 stage cleaning circuit.

- New concentrate and flotation tailings thickeners for water recovery and recycling at the plant site.

- The thickened tailings are further processed in the “Paste” plant, completed in September 2010, prior to be placed underground as back-fill material.

- A vertical plate and frame pressure filter and ancillary equipment for concentrate dewatering, and filter-cake handling.

18.2.2 Comminution

The first phase of the upgrade was completed using the original primary crushing circuit, which comprised of three parallel streams, each comprising an apron feeder, a jaw crusher and a short discharge belt. The final phase of implementation was completed in December 2012, when the underground crushing and conveying part of the project connected through to the new coarse ore stockpile and feeding system.

Crushed product from the primary crushers, which has a typical P_{80} of 100 mm, is ground using a single-stage closed grinding circuit with cyclone classification. This comprises a single stage SAG mill, 8.53 m diameter x 4.72 m long, with a rated capacity of 5,800 kW. Cyclone underflow is returned to the SAG mill and the overflow gravitates to the flotation circuit passing via an "in-stream" analysing system, which monitors the density and the assay composition of the stream, and a particle size analyser.

18.2.3 Flotation

The flotation process continues as before in the new rougher/scavenger circuit comprising of four 100 m^3 tank cells, where a bulk sulphide concentrate, containing the copper minerals and most of the pyrite, is collected and forwarded to the cleaner circuit.

The combined concentrate flows via a conditioner tank to the previous rougher/scavenger cells, rearranged to form the new first cleaner circuit, by using lime for pyrite depression. These comprise of two banks of four, 4-cell Denver-500 cells, and the circuit tails (Cleaner tails) being combined with the rougher/scavenger tailings to form the final tailings stream. The first cleaner concentrate reports to the second and third cleaners, while the cleaner tailing reports back to the first cleaner feed.

Reagents currently used are PAX (potassium amyl xanthate) for collection, Oreprep F549 for frother, and slaked lime for pH control. Final concentrate is gravity fed to the dewatering section, while the final tailings are transported by gravity to the current water recovery thickener located at the plant site.

18.2.4 Concentrate Handling

The copper concentrates report to the filter section for thickening and filtration. A 12 m high-rate thickener is used to thicken the final copper concentrate, which is then dewatered typically to a moisture content of less than 8%, using a vertical plate pressure filter. The filtered cake is stored and transported periodically by rail to Burgas, for onward shipment to the Smelter located in Namibia.

18.2.5 Paste Backfill

The Paste Backfill plant is located to the north of the plant, alongside the mine portal. The dewatered tailings are either pumped to the paste plant feed tank, and from there into the plant as required for placement underground, or, delivered by gravity to the flotation tailings management facility (TMF), located three kilometres to the south of the plant site.

The backfill section further dewaters the thickened tailings by filtering in one (of two) vacuum disc filters. This produces a paste, which is then combined with cement at the appropriate percent solids and transported underground via gravity to the reticulation system for delivery to the mined out stopes. System control is fully automatic, however, operations are monitored via a control room, where the performance of the plant and paste product quality is controlled, and the required communication and coordination with the southern site and underground personnel are maintained.

18.2.6 Process Control

The main process streams – feed, concentrate and tailings – are controlled by the operators from the Company QC section, who perform the sampling and sample preparation. 24-hour bulk samples are collected and assayed for the purposes of the metallurgical balance of products and metals. The assays are performed by the onsite independent assay laboratory, which is part of the SGS-certified multi-national group of laboratories.

QC operators also take 2-hour stream samples for operational purposes, mill feed samples for moisture and granulometric determinations, concentrate stock samples for moisture determinations, 24-hour bulk samples from the Backfill Plant products for granulometric determinations, as well as another metallurgical test work, as required.

The process plant is provided with an Amdel in-stream analyser system, which monitors the density and the composition of the main process streams. The system operates in real time and provides feedback on the stream Cu, Fe, S, and As grades, density and percentage of solids.

18.3 Concentrator Upgrades – post 2012

18.3.1 Cleaner Circuit (completed July 2012)

In mid-2013, the existing second and third copper circuit cleaner banks cells were replaced with new units. Each stage comprises of 2 stages of 'staged flotation reactors' (SFRs) in series for each. Selection of these units followed the extensive plant trials through 2012 testing a production sized unit as the first stage of the second cleaner (Woodgrove Technologies, 2012).

18.3.2 Pyrite Recovery Circuit (completed March 2014)

Prompted by the success of the cleaner circuit upgrade, the new pyrite circuit included the SFR design as the flotation units. The remainder of the circuit includes a concentrate thickener, filter, and concentrate storage area located on the west side of the current concentrator building. The complete circuit was commissioned and in full production by the end of Q2 2014.

18.3.3 Concentrate Handling Facility (completed Q3, 2014)

This material handling system conveys both of the copper and pyrite concentrates produced from their respective storage areas, across the site to a 'rail loadout' system. From here, the two concentrates are transported to a holding warehouse in the port of Burgas, from where it is loaded into bulk cargo carriers for transport to the final destination.

18.4 Tailings Management

18.4.1 Flotation Tailings Management Facility

The existing flotation TMF is located 3km south of the plant site. Since the start of operations, and prior to 2011, the existing embankment was progressively raised using low permeability fill and structural fill on an as required basis, using an upstream raise construction method. The method of deposition (when not being deposited underground as back fill for stopes) is by sub-aerial methods, using a combination of banks of spigots at regular intervals on the main embankment.

In 2010, a project to design the final TMF facility to the ultimate capacity commenced and is continuing (SWECO Energoproekt, 2011 and 2015). In parallel to this, the main TMF wall was strengthened by "buttressing", which was completed in 2011, as part of DPM's original commitments (made prior to 2003). The main dam wall has now been raised to its current elevation of 621m, using a central line construction method and the upgraded facility now has the expanded capacity to store an additional 2.2Mm3 (3.71 million additional dry metric tonnes) of capacity.

In addition, in 2012 the embankments on the northern side of the facility were raised, and an embankment constructed on the western side of the facility. Each of these was completed to the current elevation which will enable to the facility to store the expected tailings to be deposited until Q1, 2019. An ongoing project is in place to complete the TMF to its ultimate levels of 630m, which will enable the facility to store the final 6 years of tailings which will be until the end of the LOM. All needed land plots were acquired by DPMC in November 2017. The Detailed Design Permit (DDP) approval from the District Governor will be completed in March 2018 and the construction permit shall be issued by July 2018.

18.4.2 Tailings Management Design Parameters

The design of the existing tailings management facility to the current 620m level, was based on backfilling the worked out underground stopes with flotation tailings. While the original voids were filled, tails were deposited underground for ~60% of the time, with the remainder being transported to the TMF. For the future, the design of the extended TMF is based on 40% of the total tailings production being sent underground. The final volume capacity for the future facility from between the 620m and 630m levels is predicted to be a further 21.6Mt.

18.4.3 Site Water Management

The operation is currently permitted to discharge water from the flotation TMF to a certain limit each year. These discharges have been reducing over the last five years, as the tonnes of ore processed have increased and more TMF water is recycled in the process.

The water balance model has been run for a wide range of conditions over a number of years. The modelling indicates that under average conditions, with the use of all mine water, all of the tailings facilities can be operated with a “negative” water balance, maintaining pond volumes close to the minimum levels.

Under 1 in 100-year wet conditions, pond volumes increase significantly. However, water can be drawn down over the following few years and no uncontrolled spillway discharges are forecast.

18.4.4 Stability Assessment

The stability of the Flotation embankments was assessed under static and seismic loading conditions, using limit state equilibrium methods. The seismic assessment included operating and maximum credible earthquake (MCE) loads. The possibility of liquefaction was also assessed.

Generally accepted minimum factors of safety of 1.5 for static conditions, and 1.1-1.25 operational basis earthquake (OBE) and 0.8-1.0 maximum credible earthquake (MCE) for pseudo-static seismic conditions were adopted for the design of the embankment.

Liquefaction Potential Assessment

The possibility of embankment failure due to liquefaction was assessed based on the intensity of the MCE event, standard penetration testing results of the in situ tailings mass and physical properties of the tailings, as determined by laboratory testing.

Based on the assessment, it was determined that the entire tailings mass adjacent to the main embankment has a medium to high potential for liquefaction, subject to the water table level, i.e. only the areas below the water table are likely to liquefy during the MCE event. The assessment indicated that an OBE is not expected to trigger liquefaction of the entire tailings mass.

Embankment Stability

The stability assessment indicated that the main embankment has an adequate factor of safety for static conditions in its current state. In the event of the magnitude of an OBE, the embankment continues to meet the required factors of safety.

The analysis indicates that the embankment geometry adopted provides adequate factors of safety for the range of events analysed. Further assessment of worst case scenarios, where an MCE seismic event occurs when a high phreatic surface is present in the facility (e.g. if the drainage systems were to fail) and the tailings mass fully liquefies, also indicates acceptable factors of safety can be maintained.

Embankments were modelled with the rehabilitated downstream batter slope of 1V:3H, constructed to the final Flotation tailings elevation. Both embankments satisfied all conditions and as such, the final rehabilitation slope of 1V:3H was adopted for design of the final stage.

The ultimate design case for placing a "buttress" has been incorporated, and construction commenced in early 2010. This was completed in 2011, combined with the increase in the wall elevation to the ultimate height of 621 m.

19. Market Studies and Contracts

19.1 Markets

DPMC sells all its copper concentrates on a trilateral agreement with Louis Dreyfus Commodities Metals Suisse S.A. (LDC) and Dundee Precious Metals Tsumeb (Pty) Ltd. (formerly Namibia Custom Smelters (PTY) Limited) (DPMT), for off-take of all concentrate production until the end of 2020. Per the agreements, LDC purchases the concentrate from DPMC and toll treats it at DPMT.

Chelopech treatment charges at DPMT are calculated on a cost plus basis and assumes that current capacity at Tsumeb of 240,000 tonnes per annum will be optimised to 265,000 tonnes per annum. DPMC sells its Pyrite concentrate to Xiangguang Copper Co. (XGC) and Transamine, with whom it has an off-take agreement for the 200,000-250,000 tonnes produced annually. A portion of Chelopech copper concentrate is also sold to XGC.

19.2 Contracts

The terms of smelting, refining, transportation, handling, sales, hedging, forward sales, contractor arrangements, rates or charges, are within market parameters for the type of As-containing complex concentrates that DPMC produces. The company does not use mining or concentrating contractors as the mining and mineral processing activities are self-performed.

20. Environmental Studies, Permitting and Community Impact

20.1 Legal and Permitting

20.1.1 Company Information

The mining concession for operating the complete Chelopech Mine, Processing, and associated infrastructure is owned by DPMC, a subsidiary of DPM.

20.1.2 Business Legislation

The Constitution of the Republic of Bulgaria from July 1991 proclaims and establishes guarantee mechanisms for the main principles of the market economy as the inviolability of the private property, free business initiative, equal conditions for performing economic activities, for all individuals and legal persons.

The Bulgarian Commerce Act governs the legal organisational forms of corporate business entities, and the rules applicable to each form, in respect of incorporation procedures and documents, capital and shares, shareholders, management bodies, resolutions, administration, mergers, liquidation and insolvency. Investors are free to choose the legal form of presence in Bulgaria among all types of commercial companies and partnerships envisaged by Bulgarian legislation, as well as to register as sole traders (natural persons). Limited liability company (OOD) and joint-stock company (AD) are the most often chosen types of commercial companies. Regardless of the selected legal-organisational form, the investor must announce both, the initial formation and subsequent changes, with the Commercial Register at the Registry Agency of Bulgaria.

20.1.3 Mining Legislation

The Subsurface Resources Act regulate the conditions and the procedures for prospecting, exploration and mining of underground Mineral Resources located on the territory of the Republic of Bulgaria, the continental shelf and the exclusive economic zone in the Black Sea.

The Subsurface Resources Act came into force in March 1999 and has been amended several times since its promulgation, with the last amendment in December 2017, in force from January 2018. This act established the objects over which mining concessions may be granted and setting forth the conditions and the procedure for granting concessions.

20.1.4 Taxation

The taxation of corporate income and profits is governed by the Corporate Income Tax Act (CITA). In connection with the accession of Bulgaria to the European Union on 1 January 2007, a new CITA was adopted to meet the necessity of harmonisation of Bulgarian taxation legislation with the requirements of the European directives concerning direct taxation. Under

CITA, all resident companies and partnerships, as well as permanent establishments of non-residents, are liable to corporate income tax of 10%. Certain types of income originating from Bulgaria and payable to foreign entities, or individuals, are subject to a Withholding Tax amounting from 5 to 10%.

CITA establishes rules for defining the taxable income, for applying corporate income tax exemption, for loss carry-over, thin capitalization, and withholding tax.

According to Value Added Tax Act most of goods and services are subject to a 20% Value Added Tax (VAT) rate. Any person, legal or physical, resident or non-resident, who has a taxable turnover of at least BGN 50,000 during the preceding twelve months, is obliged to register for VAT purposes. Only VAT registered persons may charge VAT on taxable supplies and recover input VAT charged to them.

20.1.5 Customs Duties

Customs duties are payable on the importation of goods and products to Bulgaria. Following Bulgaria's accession to the EU and gaining full member status on 1 January 2007, a number of changes and specific developments occurred in the foreign trade and customs regime, in regard to exports and imports of goods. More specifically, the new developments concerned the direct application of Community acquis, which regulates the common procedures, tariff and non-tariff measures (prohibitions and restrictions) on exports and imports of goods "to" and "from" non-member states and uniform customs control instruments.

The Single Market of the EU was built in the course of three decades in compliance with the founding documents. As a full EU member, Bulgaria became also an equal participant in the Single Market of the EU. Likewise, domestic legislation in the respective areas was brought into conformity with the legislation of the Community – the acquis communautaire. Bulgaria is also a member of the World Trade Organization.

The Bulgarian customs legislation is harmonised with the European one. The imports of products are subject to customs duties at rates determined in the Customs Tariff approved by the Government. At its accession to the EU, Bulgaria eliminated the customs duties in its trade with the other European Union Member States and started applying the Common Customs Tariff of the EU in its trade with non-member states.

The Common Customs Tariff requires levying of the same duties on products, imported from third countries. It is used by the EU as an instrument for regulation of international trade. The EU keeps adapting the Common Customs Tariff to the results of negotiations for tariff reduction within the framework of the General Agreement on Tariffs and Trade, recently applied by the World Trade Organization.

Bulgaria has preferential tariff agreements (free trade agreements) with the European Union (EU), European Free Trade Associated (EFTA) and Central European Free Trade Associated (CEFTA), Turkey, Israel, Macedonia, Albania, Serbia and Montenegro, which may result in certain tariff rates being reduced or eliminated. The preferential tariff rates apply to products originating from the respective party to the agreement and are subject to submission of an evidence of origin.

20.1.6 Relief or Deferral of Customs Duties

Generally, the customs duties and import VAT are payable at the time of the importation. However, there are some customs procedures and arrangements under which products could be imported into Bulgaria without need of immediate payment of customs duties. Such procedures include:

- Inward Processing: an approval can be obtained from the customs authorities, subject to certain conditions, that goods be imported into Bulgaria without payment of customs duties for the purposes of their processing and subsequent re-exportation.

- Warehousing Procedures: an approval from the customs authorities could be obtained such as goods are imported free of customs duties and stored in warehouses in Bulgaria, until needed for the purposes of the business. If the goods are subsequently re-exported, no customs duties are payable. If the goods are placed on the Bulgarian market, all custom duties are due, but the payment of such can be deferred until the goods are withdrawn from the warehouse.

- Temporary Imports: in some cases, assets can be imported into Bulgaria without immediate payment of customs duties, for the purposes of them being used in Bulgaria and subsequently re-exported. Certain professional equipment could be temporarily imported without payment of customs duties. Upon importation of such equipment, the due custom duties are deposited with the State as a guarantee. If the goods are subsequently re-exported, a certain percent of the custom duties is due (3% per month of warehousing). If the goods are placed on the Bulgarian market, all custom duties are due plus interest, but the payment of such can be deferred until the goods are withdrawn from the warehouse. Other assets could be temporarily imported with a partial relief from customs duties.

20.1.7 Social Security/Health Insurance Contributions

The main legal instruments in the field of social security and health insurance regimes are the Social Security Code and the Health Act. Legislation requires that all employees are covered by the social security system. The system includes coverage for a group of social risks, which are general illness, work accidents, occupational diseases, maternity, disability, unemployment and retirement. Every employee, who was employed for more than 5 working days, or 40 working hours, during a calendar month, have to be secured against all social risks, for the period of employment.

The social security/health insurance contributions are based on the employee gross monthly remuneration. However, the legislation provides for a minimum and a maximum limit of the amount, used as a base for calculating the social security/health insurance contributions. The minimum amount depends on two factors a) the code of economic activity under company’s registration and b) group of professions divided by organizational levels in which the particular position falls in. The maximum amount valid for all economic activities and professions is BGN 2,600 for 2017. For 2018 this rate has been retained.

20.2 Foreign Investment

20.2.1 National Treatment

The Investment Promotion Act (IPA) provide for national treatment to foreign investors, which means that foreign investors are entitled to perform commercial activities in the country under the same provisions applicable to Bulgarian investors, except where otherwise is provided by law. In particular, this principle covers the whole range of economic and legal forms of activities for accomplishing entrepreneurial businesses. The national treatment of foreign investors allows for the possibility of foreign investors to participate in the process of privatisation and acquisition of shares, debentures, treasury bonds and other kinds of securities.

20.2.2 Most Favoured Nation Status

Bulgaria is signatory to a number of bilateral treaties on promotion and mutual protection of foreign investment which provide, further to the national treatment regime, for the most favoured nation status of the investment made by entities and individuals, from one of the contracting countries on the territory of the other contracting country.

20.2.3 Priority of International Treaties

According to Bulgarian Constitution any international treaty, which has been ratified according to a procedure established by the Constitution, which has been promulgated, and which has entered into force for the Republic of Bulgaria, shall be part of the domestic law of the land. Any such treaty shall take precedence over any conflicting standards of domestic legislation. This guiding principle finds expression in the treaties for protection of foreign investments, and especially, in the agreements for the elimination of double taxation regulations.

The international treaties on mutual protection of foreign investment always include an extended concept of a foreign direct investment, and the application of this concept has priority over the Bulgarian legislation. National treatment applies to foreign investors, which means that foreign persons are entitled to invest in Bulgaria under the terms and conditions provided to Bulgarian investors, except as otherwise is provided by law.

20.2.4 Guarantees Against Adverse Changes of the Legislation

The IPA stipulates in Article 23 that foreign investment made prior to legislative revisions imposing statutory restrictions solely on foreign investments shall be governed by the legal provisions which were effective at the moment of implementation of the said investment.

The Subsurface Resources Act provides in Article 63 for protection of investments, in prospecting and/or exploration and concession activities, against changes in the legislation which result in the restriction of rights to, or material damages for, the holder of prospecting and exploration permits or mining concessions. In cases where such changes have been adopted, the permit or concession holder upon request thereby the terms and conditions of the concluded contract shall be amended so as to restore his rights and interests in conformity with the initially concluded contract.

20.2.5 Institutional Framework

In accordance with the latest amendments of the IPA, the Bulgarian Foreign Investment Agency, established in 1995, was transformed into an agency under the supervision of the Ministry of Economy, and renamed as the Invest Bulgaria Agency. Currently, the basic function of the Agency is to support the Minister of the Economy in the implementation of the State policy for encouragement of investments.

The key function of the Agency is to assist companies in the investment process. It provides to prospective investors updated information about site identification and selection, support with the application for investment incentives, contacts with suppliers and prospective business partners, liaison with central and local government, branch chambers and NGOs.

20.2.6 Investment Incentives under the IPA and Commerce Act

Foreign Investors are entitled to incorporate Bulgarian companies, to invest in Bulgarian companies, to acquire and to own Bulgarian companies and assets, and to freely transfer that ownership and other contractual rights. No restrictions are imposed on foreign ownership and participation in Bulgarian companies. Foreign entity may own 100% of a Bulgarian registered company. There are no restrictions on the amount of capital that can be invested in a Bulgarian company.

Earnings and profits may be repatriated after payment of liabilities due to the State, and capital can be repatriated upon cessation of the investment, or upon winding-up the business. All enterprises with foreign investments must take the form of business entities pursuant to the Bulgarian Commercial Act.

Foreign legal entities may register branches, if they have been registered abroad and are entitled to carry out business activities. Under the national law, a branch is a part of the main company but with a different seat. No authorised capital is needed for its opening.

Foreign persons may also set up representative offices registered at the Bulgarian Chamber of Commerce and Industry. The representative office, however, may not carry out commercial activities.

A joint venture is a company formed jointly by a Bulgarian and a foreign partner. The size of the foreign participation is not limited. Joint ventures must take the form of any of the business organisations stipulated in the Commerce Act.

20.3 Land Ownership

Prior to 1990, most land in Bulgaria was state-owned, either as community property or as property of state-owned entities. Individuals owned only limited farmland and residential land. Since 1991, the ownership and use of land has been regulated by the Constitution, the Property Act, the Ownership and Use of Agricultural Land Act, the Municipal Property Act, the State Property Act, and the Investment Promotion Act. According to Bulgarian legislation the right to own property is guaranteed and protected by the law. Property is private and public, and the Private property is inviolable. Full ownership over the land is considered the most suitable to assure undisturbed operation for the life of the mine. Where needed limited real rights in a real estate had been acquired by DPMC such as right of use, right of construction, right of passage through another's lot and especially the right to lay branches from physical-infrastructure public networks and facilities through other persons' lots. The State Property Act and the Municipal Property Act provide for two kinds of state and municipal property, private and public, and establish different mechanisms for the management of the land based on its type. In 2011 a new Forestry Act was promulgated Defining special requirements related to change of designation and the acquisition procedure for forestry land. Rights and transactions affecting real estate are recorded in the Registry agency, by reference to the names of the owner and to parcels of land

Under the Subsurface Resources Act the holder of licence for exploration and the owner of the land may sign a contract for establishment of proprietary rights on the land in favour of the holder of the licence for the purpose of use of the land for the term of the licence, where the terms and conditions and procedure and compensation for use of the land are specified. Where no agreement is reached, the holder of licence for exploration may refer the matter to be solved by the Minister of Energy, who may, depending on the nature of the works, their duration and impact on the bowels of the earth and the environment, submit a request through the Governor of the region by location of the land, to the Minister of Finance or the Minister of Regional Development and Public Works for compulsory appropriation of the private properties or part thereof in view of the needs of the exploration, pursuant to Chapter Three of the State Property Act, and after equivalent compensation in advance.

Details of the expropriation procedure are provided for in the State Property Act. The expropriation procedure requires an approved detailed development plan. Compensation must be paid in advance of title being taken of the owner. The compensation mechanism and the amount are defined by the district governor after approval by the State.

20.4 Social Impacts

Mining is an industry traditionally associated with economic prosperity, contradictory social impacts and environmental footprint. The challenge every mining company faces today is to operate and progress in such fashion, so as to respond to current market demands, at the same time providing for actual improvement of the life of society close to which it operates, and investing in the preservation and recovery of nature. Earning the company's Social License to operate is a long process that depends on pursuit of responsibility in corporate behaviour and actions.

DPMC provides clear benefits to its stakeholders – shareholders, employees, contractors, local communities, Bulgarian people and the government. Among some of the measurable impacts are:

- Employment rate - DPMC's operations ensure high employment rate in the region. This includes not only staff employed directly by the company (989), but also contractors' employees and induced business employees;

- Consumption effect - DPMC employees receive almost 3 times higher salaries compared to the country average which enhances the consumption effect and provides a favourable environment for local business development, which otherwise would not be present;

- Strategic community investments - DPMC's strategic community investments, nearly 1 million dollars per year, are focused on local education (mainly on maintaining DPMC's own school in Chelopech), sports, culture, smaller scale infrastructure as well as the University of Mining and Geology in Sofia. Community investments provide new opportunities for the local youth in the long-term;

- Value to national government - this includes royalties, duties, VAT, excise taxes, individual income taxes, corporate tax, social security, health insurances and other taxes paid directly by the Company and its employees;

- Value to local government - royalties and tax payments specifically to the local government fund the investment programs of municipalities of Chelopech and Chavdar. Additionally, they serve as co-financing for EU-funded projects;

- Socio-economic effects - calculated as a multiplied socio-economic effect of investments in the local communities of Chelopech, Chavdar and Zlatitsa. This takes into account direct and indirect investments, in the categories of education, health, infrastructure, sports & culture and others;

- Other impacts include improved levels of safety awareness in the local community. Additionally, DPMC has initiated environmental and public infrastructure rehabilitation in close proximity to the mine site.

20.5 Permitting

Tailing management facilities are operated based on an approved Mine Waste Management Plan ("MWMP"). Operators of class A mine waste management facilities require a permit, which is issued based on the approved MWMP. As an operator of a class A facility, DPMC has an approved MWMP, last updated in November 2013 and a permit, issued in June 2015.

In May 2017, the Regional Inspectorate of Environment and Water – Sofia, issued a positive Decision for the investment proposal "TMF Chelopech 630 level upgrade". All of the required land for the upgrading of the TMF have been purchased by DPMC in 2017. The permitting process under Spatial Development Act has commenced and will continue through to mid-2018 when the construction permit is expected to be issued.

According to the Bulgarian and EU requirements the Company is required to meet the water quality standards of discharge of domestic waste water. In November 2016 the Company obtained the required construction permit and built a Waste Water Treatment Plant ("WWTP") for domestic water. The WWTP is part of the Company's commitment made under an Environmental and Social Agreement between DPMC and EBRD.

There are day-to-day operating activities require a number of specific permits, which the Company maintains on an ongoing basis. These can be grouped in three categories: water use and discharge, blasting activities, and general waste treatment. All permits required in order to maintain the continuity of the business have been obtained and are up to date as at the time of reporting.

20.6 TMF Site monitoring

The Chelopech TMF operation is based on a TMF Control and Monitoring Plan (CMP) and an Emergency Risk Assessment, which are also part of the overall Mine Waste Management Plan (MWMP). The Plan and the Assessment provide the technical details of each TMF component plus guidelines for TMF control and monitoring.

Internal operating instructions for each set of TMF facilities are in place and have been developed on the basis of the CMP. The TMF operation includes: mine waste distribution, size and location of the supernatant pond and the condition of all facilities within the TMF system. The TMF monitoring is performed according to the CMP, based on detailed instructions for each TMF component, including:

- Routine daily monitoring - by visual observation and records;
- Compliance monitoring - by regular measurements and data reviews against the set of criteria included in the CMP;
- Environmental monitoring - by identifying the qualitative parameters of surface water, ground water and the disposed tailings.

All observations and measurements are documented, interpreted and analyzed. The reviews of all data collected as part of the TMF monitoring process (including data of all facilities under the TMF system) are conducted at several levels and with different frequency.

- Operational analysis conducted by the company's engineering team;
- Regulatory compliance reviews conducted by the designer to monitor the TMF compliance against the CMP, Bulgarian and EU regulatory requirements;
- Best practice reviews to monitor the TMF against best international practices, conducted by an independent consultant (Auditor), which is a reputable international company;
- Two seasonal committee reviews (spring and fall) in compliance with the Bulgarian legislation, which produce compliance assessment based on reports and other documents by: government regulators, local municipalities, universities, government experts, designers and consultants.

20.7 Closure Plan and Rehabilitation

Chelopech is to provide a financial guarantee for environmental and rehabilitation costs for the Chelopech mine and facilities. In March 2010, pursuant to its agreement between the Bulgarian government and DPM, Chelopech submitted for approval to the Ministry of Economics, Energy and Tourism (MoEET), now Ministry of Energy, and the Ministry of Environment and Water (MoEW), for the closure and rehabilitation plan covering the estimated closure and rehabilitation costs for the Chelopech mine. The plan was approved by the MoEET on 15 April 2010 and by the MoEW on 21 May 2010. In December 2015 competent authorities approved updated Closure and Rehabilitation Plan with revised value.

Chelopech was the first mining company in Bulgaria to submit a closure and rehabilitation plan in compliance with the new EU legal regulations on providing financial guarantees for closure and rehabilitation of mine sites. The total value of the closure and rehabilitation of mine site in 2010 was estimated at 20,730,687 Euro. Revised value in 2015 was estimated at 13,949,832 Euro. In the fourth quarter of 2010, the Company completed the financial assurance obligation for the Chelopech mine, by submitting to the MoEET a surety bond for closure and rehabilitation (in the form of insurance policy) underwritten by a leading European insurance group, covering the estimated cost of closure and rehabilitation of the mine, the industrial site and the TMF. Since 2012 insurance policy was replaced by bank guarantee with last update from November 2017.

According to the current closure plan, the monitoring of the closed TMF will continue over a period of five (5) years. DPMC has a plan for annual TMF Control, prepared in compliance with the Bulgarian legislation, which utilises the existing monitoring system on the site in order to ensure the long-term stability of the TMF and mitigate its impact on the environment.

The main objective of the monitoring process is to collect reliable information about the condition of the TMF and its impact on the environmental media during the post-closure period. Once the TMF seepage quality meets the discharge standard requirements for the respective category of receiving water, the seepage return system (pipeline and pumps) will be decommissioned.

21. Capital and Operating Costs

21.1 Capital

The Expansion project for the Chelopech Mine was completed in 2012 at an overall capital cost of USD 171.2 M. The project enabled the company to achieve an ore processing rate of 2 Mtpa. Through optimization and increasing operational efficiencies, the company has achieved a throughput rate of 2.2 Mtpa in 2016 and 2017, and expects to maintain this rate from 2018 onward. Table 58. Capital Costs 2018-2026.presents special projects capital, sustaining capital associated with ongoing operations for the life of the mine, as well as estimated closure costs.

Table 58. Capital Costs 2018-2026.

Item	Unit	Life of Mine
Sustaining /Replacement Capital (2018 – 2026)	USD M	89.0
Other Project Capital	USD M	5.9
Closure Costs	USD M	18.0
Life of Mine Capital Expenditure	USD M	112.9

21.2 Operating Costs

The average estimated annual site operating cost for the life of the mine is USD 37.77 per tonne treated, as presented in Table 59. **Operating Costs - Copper Concentrate.** and Table 60. Operating Costs - Pyrite Concentrate.

Table 59. Operating Costs - Copper Concentrate.

Item	Unit	2018 – 2026
Mine	USD/t ore	14.33
Concentrator	USD/t ore	9.81
Services	USD/t ore	3.81
General & Administration	USD/t ore	6.45
Royalty	USD/t ore	2.82
Total On Site Cash costs / tonne ore treated (1)	USD/t ore	37.22
Off Site Cash Costs / tonne ore treated (2)	USD/t ore	38.37
Total Cash Costs / oz Au Equivalent (3)	USD/oz AuEq	854
On Site Cash Costs /oz Au (1),(4)	USD/oz	422
On Site Cash Costs / lb Cu (1), (4)	USD/lb	0.93
Cash Costs / oz Au sold, net of by-product credits (1),(5)	USD/oz	642

(1) Refer to the "Non-GAAP Financial Measures" section of the Company's Management's Discussion and Analysis ('MD&A") for the three and twelve months ended December 31, 2017 for more information regarding reconciliations of these Non-GAAP measures.

(2) Off-site cash costs include treatment and refining charges of payable metals, penalties and freight costs.

(3) Total cash costs include on-site and off-site costs. Au equivalent ounces include gold ounces as well as copper pounds and silver ounces produced and converted to a gold equivalent based on the ratio of the forecast prices for each commodities.

(4) Gold and copper are accounted for as co-products. Total on-site cash costs are net of by-product silver sales revenues.

(5) Cash costs / oz Au sold, net of by-product credits, represent cost of sales, less depreciation, amortization and other non-cash expenses, plus treatment charges, penalties, transportation and other selling costs related to the sale of copper concentrate, less by-product copper and silver revenues, divided by the payable gold in copper concentrate sold.

Table 60. Operating Costs - Pyrite Concentrate

Item	Unit	2018 – 2026
On Site Cash Costs / tonne ore treated (1)	USD/t ore	0.54
Off Site Cash Cost / tonne ore treated (2)	USD/t ore	9.48
On Site Cash Costs / oz Au (3)	USD/oz	29
Cash Costs / oz Au sold (4)	USD/oz	829
Cash Costs - Copper and Pyrite Concentrates		
Cash Costs /oz Au, net of by-product credits, including payable gold in copper and pyrite concentrates and related costs (5)	USD/oz	670

(1) On-site operating cash costs include processing costs.

(2) Off-site cash costs include treatment and refining charges of payable metals, penalties and freight costs.

(3) On-site cash costs divided by gold ounces contained in pyrite concentrate produced.

(4) Cash costs / oz Au sold represent processing costs and treatment charges, penalties, transportation and other selling costs related to the sale of pyrite concentrate divided by the payable gold in pyrite concentrate sold.

(5) Cash costs / oz Au sold, net of by-product credits, represent cost of sales, less depreciation, amortization and other non-cash expenses, plus treatment charges, penalties, transportation and other selling costs related to the sale of copper and pyrite concentrates, less by-product copper and silver revenues, divided by the payable gold in copper and pyrite concentrates sold. Refer to the "Non-GAAP Financial Measures" section of the MD&A for the three and twelve months ended December 31, 2017 for more information regarding reconciliation of this Non-GAAP measure.

22. Economic Analysis

22.1 Introduction

This section describes the economics from the mine under the conditions applicable for its development and operation, and analyses its sensitivity to changes in key parameters.

The analysis has been conducted on a site basis only and, consequently, does not include corporate overheads or head office costs.

Mining and processing data and capital and operating costs are drawn from other parts of the Technical Report and combined with the site's fiscal regime in an economic model that calculates normal measures of economic return, such as NPV, and reports key production statistics for the mine.

22.2 Economic Analysis

22.2.1 Production

Financial analysis for the mine is based on extraction and treatment of underground ore, at a rate of 2.2 Mtpa, to produce flotation copper and pyrite concentrates, which will be sold to a specialty smelter owned by DPM in Namibia for most of the copper concentrate, and to 3rd parties for the pyrite concentrate.

22.2.2 Assumptions

In calculating the life of mine returns, the following fundamental assumptions were made:

1. Metal prices of USD 1,250/oz gold, USD 2.75/lb copper and USD 23.00/oz silver will be maintained throughout the life of the mine.
2. Metal price and currency hedging is excluded.
3. The life of the mine is approximately nine years, with the financial analysis being run through until 2026. The mine will treat ore at the nominal rate of 2.2 Mtpa.

22.2.3 Currency, Exchange Rates and Escalation

The analysis has been conducted in USD rather than BGN, since it is the standard currency for evaluation of mineral projects in Eastern Europe.

Base Exchange rates used for the evaluation of the project are:

- USD 1.25/EUR
- BGN 1.95583/EUR (BGN is fixed against EUR)
- BGN 1.56/USD

Effects of significant changes, favourable and unfavourable, in EUR against USD are assessed in the sensitivity analysis.

The analysis has been conducted without escalation of capital or operating costs or metal prices.

22.2.4 Reporting of Results

The relevant LOM assumptions and results are presented in Table 61. **Throughput, Life of Mine & Metal Price.** toTable 65. **Cash flows (2018 – 2026).**below.

Table 61. Throughput, Life of Mine & Metal Price.

Item		Unit	Life of Mine
Mine/Concentrator	2018 - 2026 (average)	Mtpa ore	2.2
LOM		Years	8.5
Metal Prices	Gold	USD/oz	1,250
	Copper	USD/lb	2.75
	Silver	USD/oz	23.00

Table 62. LOM Economics.

Item		Unit	Life of Mine
After Tax	NPV at a discount rate of 5.0%	USD M	424

Table 63. Production 2018-2026.

Item		Unit	Life of Mine
Total Quantity Ore Mined/Milled		Mt	18.8
Average Grades	Gold	g/t	3.13
	Copper	%	0.91
	Silver	g/t	6.79
Metallurgical Recoveries			
Copper Concentrate	Gold	%	51.55
	Copper	%	81.66
	Silver	%	39.01
Pyrite Concentrate	Gold	%	18.61
	Copper	%	6.62
	Silver	%	21.16
LOM 2018 – 2026			
Total Production	Gold (in copper and pyrite concentrate)	Oz	1,329,393
	Copper (in copper concentrate)	T	139,842
	Silver (in copper concentrate)	Oz	1,598,700
	Gold Equivalent	Oz	2,014,149

Table 64. Revenue & Operating Surplus 2018 – 2026.

Item		Unit	Life of Mine
Revenue	Total	USD M	1,374
EBITDA	Total	USD M	661

Table 65. Cash flows (2018 – 2026).

Item	Unit	Life of Mine
Total Pre-tax Cash flow	USD M	529
Corporate Taxation	USD M	24
Total After Tax Cash flow	USD M	505

22.2.5 Sensitivity Analysis

The economic analysis with cash flow forecasts on an annual basis has used only Proven and Probable Mineral Reserves, and sensitivity analyses with variants in metal prices, grade, capital and operating costs.

The Sensitivity analysis on the updated 2018 site parameters has been conducted to assess the effects of changes in key parameters upon NPV, after taxation in this case, and the results are presented in Table 66. **LOM Sensitivity Analysis – After Tax.**.

Table 66. LOM Sensitivity Analysis – After Tax.

Gold Price	Price (USD/oz)	NPV at 0% ($ M)	NPV at 5% ($ M)	NPV at 7.5% ($ M)
-20%	1,000	289	247	230
-10%	1,125	397	335	311
0%	1,250	505	424	392
10%	1,375	613	513	473
20%	1,500	720	601	554
Copper Price	**Price (USD/lb)**	**NPV at 0% ($ M)**	**NPV at 5% ($ M)**	**NPV at 7.5% ($ M)**
-20%	2.20	380	322	299
-10%	2.48	444	374	346
0%	2.75	505	424	392
10%	3.03	568	476	439
20%	3.30	629	526	485
Site Cash Costs Copper Concentrate	**USD/per tonne of ore processed**	**NPV at 0% ($ M)**	**NPV at 5% ($ M)**	**NPV at 7.5% ($ M)**
-20%	29.78	630	525	484
-10%	33.50	568	475	438
0%	37.22	505	424	392
10%	40.94	442	374	346
20%	44.66	380	323	300
Off-site costs Copper Concentrate	**USD/per tonne of ore processed**	**NPV at 0% ($ M)**	**NPV at 5% ($ M)**	**NPV at 7.5% ($ M)**
-20%	36.63	659	550	507
-10%	41.21	582	487	449
0%	45.79	505	424	392
10%	50.37	428	361	334
20%	54.95	351	298	277
Off-site costs Pyrite Concentrate	**USD/per tonne of ore processed**	**NPV at 0% ($ M)**	**NPV at 5% ($ M)**	**NPV at 7.5% ($ M)**
-20%	14.54	566	476	439
-10%	16.35	535	450	416
0%	18.17	505	424	392
10%	19.99	474	398	368
20%	21.81	443	372	344
Exchange rate	**USD/EUR**	**NPV at 0% ($ M)**	**NPV at 5% ($ M)**	**NPV at 7.5% ($ M)**
-20%	1.00	611	510	470
-10%	1.13	556	466	430
0%	1.25	505	424	392
10%	1.38	450	379	351
20%	1.50	399	338	313

23. Adjacent Properties

There are no other mining operations/projects in the immediate vicinity of the Chelopech mine. The Assarel/Medet and Elatsite mines are approximately 15 and 5 km from Chelopech, respectively, but are based on porphyry-copper deposits, which have no practical relevance to the Chelopech epithermal Cu-Au sulphide mineral deposit.

24. Other Relevant Data and Information

24.1 Pyrite Treatment Project

The original PEA for the Pyrite Project (Dundee 2012), confirmed the potential of recovering the pyrite as a secondary concentrate from the existing mill process tailings, followed by a new process flow sheet for the treatment of this pyrite onsite. The first phase of the project – the recovery of pyrite as a separate concentrate has been completed, as described in section 18.3.

The second stage of the Pyrite Project is the construction of a pressure oxidation process facility ("Pyrite Treatment"), originally contemplated to be installed on site for the recovery of gold within the pyrite. Based on the results of the work conducted in 2013 to confirm the feasibility of the Pyrite Treatment facility, the Company concluded that the estimated return from the Pyrite Treatment component of the Pyrite project was not sufficiently robust based on estimated capital costs and current market conditions. It is, therefore, the Company's intention to defer moving forward with the Pyrite Treatment project until market conditions improve, or a more optimal capital plan can be developed.

24.2 Process Plant Improvement Plan

The Process Plant continuous improvement program that commenced in 2016 will continue into 2018. The program, comprising of various initiatives, projects and test work programs, aims to improve copper and gold recoveries to the concentrates in the present environment of variable and decreasing ore grades. Increasing the understanding and proactively reacting to the geo-metallurgical performance of the various ore domains is an integral part of the program.

Any improvements resulting from these initiatives will appear in the annually revised 'plant recovery models' – a statistic regressions of the plant performance measures. The 'models' are used for annual and short term production forecasts as well as checking the accuracy and consistency of the block model recoveries.

25. Interpretation and Conclusions

The following interpretations and conclusions are set out in relation to the work completed in 2017;

25.1 Geology and sampling procedures

During site visits undertaken by annually by CSA Global from 2013 to 2016 inclusive, meetings were held with DPM staff and the SGS laboratory manager. Data and procedures were reviewed in the mine office, underground operations, core yard, processing plant and SGS laboratory. Conclusions based on these site visits include:

- Procedures used during logging, splitting and sampling of drill material are appropriate, with the core farm and digital data collection methods well managed.
- Underground face sampling and mapping procedures are a high standard and completed by well trained and competent geological staff.
- The onsite acQuire database is robust and of appropriate standard however the historical data (which is no longer a significant part of the overall database) is not readily verifiable.
- SGS Assay laboratory in Chelopech is well run, has excellent housekeeping with good procedures and security controls in place. An audit was completed in September 2015 by David Muir, CSA Global Senior Database Geologist.

25.2 Underground face sampling data

In 2013 a review of face sampling data was undertaken (CSA Global, 2014). The results of this review remain current and relevant. Based on this review as well as observations made onsite made by CSA Global staff, it is believed that all face sampling data are of sufficient quality and should be considered suitable for use in resource estimation. Care needs to be taken that the nominal 3m length of face samples is maintained to ensure drill samples (composited to 3m) are of equal weight. Appropriate use of declustering to avoid bias in areas of close spaced sampling is completed. A possible high-grade bias may exist when sampling the higher grade zones, most likely due to the competency contrast between massive sulphide ore and lower grade siliceous material, resulting in unintentional weighting of samples with high grade sulphide material.

25.3 Geological model

CSA Global believes that the current understanding of geology and mineralisation controls is good, and that the current model adequately predicts the in-situ grades and tonnes realised during underground development and mine production. Implementation of procedure to create short term planning model, incorporating updated grade control geology mapping, sampling and drilling data has been completed. This model is provided to mine planning department on a quarterly basis and is delivering improvements in short term planning plus facilitating ongoing improvements to the process of completing the annual MRE update.

Areas requiring improvement over the next 12 months are related to software interfaces between production reporting and in-situ grades, handling of 3-D geology mapping and survey of development and production void volumes.

25.4 Assay QA/QC

The results for blanks, standards, field duplicates, lab duplicates, lab repeats and lab splits for gold, copper, silver, arsenic and sulphur samples for assays undertaken since the previous MRE have been reviewed. A summary of conclusions relevant to the DPMC sampling since 2015 are:

- The QA/QC procedures implemented at Chelopech are adequate to assess the repeatability, accuracy and precision of the assay results obtained.
- Overall no fatal flaws were apparent, but issues were noted with some of the CRM results which, where unresolved, will require ongoing monitoring.
    - Silver CRM failures – DPMC site specific standards show some failures but these results are exaggerated by the assay precision (results are returned in increments of 1.5 g/t) and many of the standards having expected values close to the detection limit (threshold). As silver is a minor element this issue is not considered material to the MRE.
    - Copper CRM bias – Most probably due to the digestion method used at the site laboratory not being the same as used in the Geostats round robin when assigning an expected value.
- Duplicates show good repeatability with no significant bias, apart from some of the gold and copper external check samples (umpires) which over report by approximately 3% and 4% respectively. It must be noted that SGS Chelopech under reports with respect to the umpire assaying so the resource would not be overstated but is more likely to be slightly understated.
- Performance of blanks was acceptable with less than 5% of results “failing” and none strongly anomalous. For Cu there are some anomalous blank results likely due to the blanks being non-certified and containing anomalous amounts of copper, but these are low grade when compared to economic concentrations are and are not deemed material.

25.5 Database validation

DPMC capture data daily into the acQuire GIMS (Geological Informational Management System), ensuring that the data is validated using constraints and triggers. Verification checks are also conducted on surveys, collar coordinates, lithology, and assay data.

Data undergoes further validation by CSA Global through a series of Datamine loading macros. The Qualified Person has reviewed the reports and believes the data verification procedures undertaken on the data collected from DPMC adequately support the geological interpretations and the analytical and database quality, and therefore support the use of the data in mineral resource and mineral reserve estimation.

25.6 Bulk Density

In 2013 a review of bulk density data was undertaken (CSA Global, 2014). The results of this review remain current and relevant. CSA Global concludes that the in-situ dry bulk density data are collected using appropriate sampling methods and analysis procedures. The methods used to estimate density to determine the mineral resource tonnage, through a combination of Ordinary Kriging in areas of detailed sampling, and by application of the relationship between sulphur grade and density where insufficient samples are available, are suitable for this style of deposit and mineralisation.

25.7 Mineral Resource Estimation

Copper, gold and silver mineralisation has been modelled for high grade stockwork "Blocks" which are enclosed within a lower grade siliceous alteration envelope. The mineralisation Blocks are generally discrete units and have been modelled as hard boundaries i.e. only samples within each volume are used to estimate grade and tonnes for the volume.

Drillhole samples were composited to 3 m down hole after a statistical review demonstrated 3 m was an appropriate composite length and does not produce any significant grade bias. This length matches the nominal underground face sampling width of 3m allowing drill hole and face sampling data to be combined for grade estimation.

Assay data in the high-grade stockwork domains show moderate to low coefficients of variation, with sulphur showing the lowest of all the elements. Gold statistics show moderate to high coefficients of variation. Statistical analysis of composites within the low-grade siliceous Blocks show similar but lower grade distributions with and moderate to high coefficients of variation.

Moderate correlation was noted between copper and gold while strong correlation exists between copper and arsenic in high-grade domains. Significant differences in the levels of correlation are noted between the different domains. Gold has undergone a separate and more pervasive phase of mineral emplacement relative to copper.

Copper and gold grades distributions for the various estimation domains are characterised by being positively weighted with moderate to high coefficients of variation, indicating that high-grade values may contribute significantly to local mean grades. Appropriate Cu and Au top-cuts were obtained by reviewing probability plots and the impact of applied cuts to the mean grades and standard deviation. No sulphur data was top-cut due to the low number of outliers in each population.

Face sampling, underground resource drilling and surface drilling datasets shows clear clustering of data, biased towards higher grade regions of the mineral deposit. This is due to a high-density of face sampling within the high-grade portions of the resource currently targeted for mining. Declustering was completed to remove this effect prior to resource estimation.

Variograms were modelled for all mineralisation blocks. The modelled orientations were consistent with the geological understanding of the mineralisation. A low nugget effect and a dominant first structure were the key features of the models.

Grade was estimated into a 10m x 10m x 10m volume block model using Ordinary Kriging for Cu, Au, Ag, As and S. Optimum sample search parameters were determine through a process of Kriging Neighbourhood Analysis ("KNA") completed to investigate Kriging efficiency and slope of regression. In addition to this results from the variography review and known data spacing support the selection of search parameters chosen.

Swath plots were reviewed to assess semi-local scale reliability of blocks relative to input data along bench, easting and northing slices. Mean grades of inputs and outputs were compared. Histograms and probability of inputs and outputs were compared to assess level of smoothing. Visual validation of cross sections showed that blocks reflect the grade tenor of input data.

The MRE for the Chelopech Deposit has been classified as Measured, Indicated and Inferred Mineral Resources following the guidelines specified by the CIM and adopted for technical reports complying with NI 43-101.

25.8 Process Plant

Operations in the upgraded Chelopech Process facility have been significantly expanded and modernized over the last 5 years. New processes have been introduced, new equipment installed, and a significant learning curve has been accomplished as the operation has doubled in capacity since 2011.

25.9 Mine Operations

Operations at the Chelopech mine have been updated significantly since DPM assumed ownership of the operation in 2005. The mining method has been changed, a completely new underground ore handling system has been constructed and a new mine access has been completed. The mine is now a mature steady-state operation with a high level of management control, up-to-date equipment and a workforce that can operate the systems adequately. The quality of the ore reserves mean that a high level of mine planning can be instituted and complied with.

It is CSA Global's belief that operations will continue at current levels, given the continued level of management. Mining equipment is expected to be replaced and updated on a regular basis to ensure mechanical availabilities commensurate with global norms.

25.10 Qualitative Risk Assessment

The table below summarises the areas of uncertainty and risk associated with the project, and has been prepared from reviews completed by CSA Global, and informed by the conclusions summarised above, and recommendations discussed in Section 26.

Table 67. Project specific risks.

Project Risk Area	Summary	Outcome	Mitigation
Geology and data management	No significant Risks		
Resource Estimation	No significant Risks		
Mining: Future crown pillar reclamation	There are several crown pillars remaining in historical mining areas that contain Mineral Resource volumes that may, in whole or part be economically extractable.	Pillar extraction in old mining areas carries a degree of geotechnical and operational risk. Geotechnical conditions in the pillars may cause difficult operational conditions, leading to premature cessation of operations.	Recent experience (2014-2016) gained in the recovery of 235,000 tonnes of 150 block crown pillar has enabled a set of safe operating practises to be established. Additional works are required to fully assess the degree to which material proximal to other historic mining areas can be extracted.
Mining: Secondary stope filling	Filling of secondary stopes, is essential to ensure an orderly stoping sequence	Delayed filling will affect the mining sequence and impact on the mining schedule	Ensure the filling sequence is not delayed, or interrupted
Pyrite Treatment Project	Confirmation of recovery predictions and capital and operating costs.	Implementation could add up to an additional 70,000 to 80,000 oz production at a cash cost of < $800/oz.	Project will only be reinstated once the long-term Gold price is considered stable

26. Recommendations

26.1 Assay QA/QC

A quality assurance and quality control program has been implemented by Dundee Precious Metals to provide confidence that sample assay results are reliable, accurate and precise. No fatal flaws were observed, and the following is recommended:

- The bias in the external check gold assay results which was also observed in the external copper results between SGS Chelopech and ALS Rosia Montana is still a concern and requires ongoing monitoring.

- DPMC site specific standards show good precision and report within two standard deviations of the expected value, but exhibit bias (particularly with respect to copper values). It is recommended that the results of these are reviewed over the last three years to determine whether the results are consistent or whether drift has occurred. If the results are consistent, then the expected values should be adjusted accordingly. Note that as Geostats has certified these standards, they should be notified of the bias.

26.2 Geology and Mineral Resources

- Additional drilling of zones above 450 level in proximity to historical cave zones is warranted and as such is part of the long-term exploration strategy at Chelopech Mine. Measured and Indicated Mineral Resources in this area were not considered in current Mineral Reserves. Resource drilling activity will continue in 2018 and geotechnical assessment to better understand risk in cave zones before consideration for conversion to Mineral Reserves in due course.

- In conjunction with exploration drilling; grade control drilling to delineate the ore body boundaries will continue to improve the location of the ore boundaries and reduce the risk ore dilution and loss.

- Continue to review and monitor the 'representivity' of face samples for use in ongoing MRE work.

- Continue with structural data mapping and development of the structural model, to determine the paragenesis, pre-, syn- and post-mineralisation structures. Review the potential impact or application this structural data as an enhancement to the MRE modelling process.

- Use structural model to assist exploration drill targeting.

- Investigate the possibility of the use of lithogeochemical vectoring to generate exploration targets in where geophysics has not identified anything.

- When reporting Mineral Resources exclusive of Mineral Reserves, formulate an objective, repeatable process to create the wireframes that bound the areas around Mineral Reserves that are sterilised.

26.3 Mining and Processing

- Continue attention to the planning detail that has been successful at demonstrating continuous improvement at Chelopech.

- Continue current design and operating procedures to mitigate risks in extracting Block 19 and 103 Crown Pillars.

- Maintain the use of modern technology in equipment sourcing and utilisation.

- The positive attitude of the Chelopech personnel and their interest in continually improving should continue to be encouraged.

- Ensure designed operational practices are adhered to at all times.

26.4 2018 Operational Resource Development Drilling

In 2017, an underground resource development diamond drilling program of 41,706 metres was completed.

The key area explored was Zone 153 - a new high-grade zone discovered in Q4 of 2016 as part of the on-going 'Upper Levels' resource development drilling program. The focus of recent drilling has been on defining the shape and volume of the mineralised zone, improving confidence in the geological model and to add additional Mineral Resources in this area.

Metallurgical testwork on the Zone 153 material was undertaken in Q3 of 2017. The test work has shown it to be highly amenable to the current processing flow sheet.

Elsewhere, resource development drilling concentrated on the north-west part of deposit, in particular Target 148, with the aim of converting Inferred Mineral Resources to higher confidence Mineral Resource categories.

Further to this, the areas down plunge of Block 17, Block 18, Block 19, Block 103 and Block 150 were also tested during the year.

Currently DPMC's operational resource development drilling strategy for 2017 combines resource definition drilling designed to a 30 x 30 m drilling grid with infill grade control holes. Wider spaced resource definition drilling is employed to define Indicated Mineral Resources. Whilst operational infill drilling on a 15 m x 15 m drilling grid is designed to upgrade Indicated Mineral Resources to the Measured Mineral Resource category, to allow detailed production design and scheduling works.

The Mineral Resource development strategy for Chelopech has been planned for 2018, focusing on drilling of Zone 153, currently converted in Block 153, the upper levels of Block 150, 25, 5 in western area and northwest sections of the deposit. Other areas of focus include

Target 148 and the surrounding areas, which have demonstrated high potential to host new mineralised zones.

In light of the positive results from extensional drilling from position G421-405-DDC, on level 405, the program will continue during 2018. Drilling will aim to expand the current mineralisation contours in upper levels of Block 150, Block 25 and Block 5 and convert Mineral Resources into Mineral Reserves.

Drilling towards Target 148 will continue in 2018. Additional drilling will determine the continuity of mineralization with the goal of converting this discovery into higher confidence Mineral Resource categories and ultimately Mineral Reserves.

Additionally, there are plans to test the following targets in 2018:

26.4.1 Extensional Drilling

- Extensional drilling in the areas close to Block 8 targeting the discovery of new and expansion of known ore bodies. Historic drilling results in combination with structural and geology models indicate un-tested mineralisation may be present in this area.

- Extensional drilling on a new target locality, called “700”. The target area coincides with NW – SE structural trend which has been assessed as having high potential for hosting new mineralization. Based on historical mapping of silica envelope on the upper levels of southeast mining area and several historical holes which returned ore-grade mineralization, a 3D model of the target was generated and will be used for drill testing.

- Extensional drilling in a new target area termed “North”, located in the northeast section of Chelopech deposit close to the boundary of Block 19 between 140 mRL and 160 mRL.

26.4.2 Grade Control Drilling

- Grade control drilling in Block 151 between levels 390 mRL and 330 mRL to expand the known orebody and convert Mineral Resources into Mineral Reserves;

For 2018, in total 44,000 m of Operational Resource Development drilling has been planned to cover the targets mentioned above. DPMC intends to spend $1,900,000 USD for Operational Resource Development drilling during 2018.

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