

REPORT NI 43-101
TECHNICAL REPORT ON THE
MINERAL RESOURCES OF THE
SANGDONG MOLYBDENUM STOCKWORK PROJECT, SOUTH KOREA

Prepared for

Almonty Industries Inc.

by

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1 SUMMARY

1.1 Overview

This report was prepared to provide a Technical Report compliant with the provisions of National Instrument 43-101 - Standards of Disclosure for Mineral Projects, ("NI 43-101"), and presents a summary of a Resource Estimation for the Sangdong Molybdenum (SDM) project, as of the end of May 2022.

The SDM deposit is considered as a potential underground operation, and is located in the Gangwon Region of South Korea. The principal potential products being considered is molybdenum.

This report was prepared by Adam Wheeler, an independent mining consultant, at the request of Almonty. Assistance and technical detail were supplied by the technical personnel of the Sangdong Mining Corp. Adam Wheeler last visited the Sangdong site on June 13th- 16th, 2017. The Mineral Resources presented in this report are based on, and fairly represent, the information and supporting documentation prepared by Adam Wheeler.

Previous underground mining at Sangdong, for tungsten operations, took place at various times since the original discovery in 1916. The last main operation was from 1952 to closure in 1992. Following completion of a feasibility study in June 2015, for restarting tungsten mining operations, the mine is being further developed and the mill is being constructed. This document describes the resource potential of a molybdenum stock orebody, which sits directly the central part of the main tungsten resource zones.

1.2 Ownership

Almonty acquired a 100% ownership interest in Woulfe Mining Corp ("WMC") in stages, with the acquisition completed on September 10, 2015 by way of a Plan of Arrangement. WMC, through its wholly owned subsidiary, Almonty Korea Tungsten (AKT) owns a 100% interest in the Sangdong mine.

1.3 Geology

The Jangsan quartzite underlies the main tungsten skarn deposit of the Sangdong mine. This formation contains most of the Sangdong Molybdenum Stockwork (SMS), a zone of quartz veins hosting predominantly molybdenum mineralisation (Kuehnbaum, 2006 and Le, 2001).

The mineralisation appears to be hydrothermal in nature and with two stages of mineral deposition; the first molybdenum-poor scheelite mineralisation was related to skarn alteration, which was followed by quartz-scheelite-molybdenite-bismuthinite vein emplacement.

It is currently considered that the deep molybdenum mineralisation is likely to comprise a system of sheeted or stockwork veins.

1.4 Database and Mineral Resource Estimation

The drillhole database stems from underground drilling, and some surface drilling, completed prior to 1992 by the Korea Tungsten Mining Company Ltd. ("KTMC"), as well by Oriental Minerals OTL during 2006-2008. The KTMC drilling covers 14,300m over 27 holes. The OTL drilling which intersected the area of molybdenum mineralisation, covers 4,000m over 6 holes. The sample database is in the form of an Excel spreadsheets.

The majority of the holes are vertical with an average lateral spacing of approximately 100m. Once within the overall extents of the molybdenum zone, most of the holes exhibit marked alternating nature of high and low grade assays, consistent with an overall stockwork interpretation. The nature and dip of the higher grade intersections is not clear. The upper 25% of the overall MoS₂ mineralisation continues is hosted in slates. The lower 75% of the overall MoS₂ mineralisation is hosted in quartzite.

An updated mineral resource estimation was completed by the Qualified Person. This estimation employed a three-dimensional block modelling approach, using Datamine software. The block model was set up with a 25m x 25m x 5m parent cell size. Grade estimation was done using ordinary kriging (OK) for the waste/mineralisation fractions, as well as low and high MoS₂ grade portions. These estimated values were combined to give overall MoS₂ grades for each parent block.

All of these modelled resources were classified with an Inferred category, reflecting the spacing and quality of available data, as well as the geological understanding of the deposit.

1.5 Mineral Resource Estimate

The evaluation work was carried out and prepared in compliance with Canadian National Instrument 43-101, and the mineral resources in this estimate were calculated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council May, 2014.

The current resource estimation is shown in Table 1-1, for a cut-off of 0.19%MoS₂. This cut-off level was derived from a molybdenum price of 14.25\$/lb Mo. The resource model uses a maximum lateral extrapolation of 100m.

**Table 1-1. Sangdong – Mineral Resources
As of 31st May, 2022**

Host Rock Type	Tonnes	MoS ₂
	Mt	%
Slate	4.34	0.28
Quartzite	17.14	0.26
Total	21.48	0.26
. Block Size 25m x25m x 5m		
. Cut-off 0.19% MoS ₂		
. All resources categorised as Inferred		

2 INTRODUCTION

This Technical report was prepared in compliance with the provisions of National Instrument 43-101 - Standards of Disclosure for Mineral Projects, ("NI 43-101"), and comprises a Resource estimate for the Sangdong Molybdenum project, as of the end of May 2022.

This report was prepared by Adam Wheeler, at the request of Mr. N. Alves, of Almonty Industries. Assistance and technical detail were supplied by the technical personnel of the Sangdong Mining Corp. Adam Wheeler last visited the Sangdong site on June 13th- 16th, 2017.

2.1 Terms of Reference

The resource estimation work was commissioned by Almonty Industries, and completed by Adam Wheeler, an independent mining consultant.

Adam Wheeler was retained by Almonty to provide an independent Technical Report on the Mineral Resources for the Sangdong Molybdenum project, and is considered current as of the end of May 2022. This Technical Report has been prepared to be compliant with the provisions of National Instrument 43-101 - Standards of Disclosure for Mineral Projects ("NI 43-101").

The Qualified Person responsible for the preparation of this report is Adam Wheeler (C. Eng, Eur.Ing), an independent mining consultant. In addition to site visits, Adam Wheeler carried out a study of all relevant parts of the available literature and documented results concerning the project and held discussions with technical personnel of Sangdong, who have been doing project development work at Sangdong since 2012.

The purpose of the current report is to provide an independent Technical Report for the resources of the Sangdong Molybdenum project, in conformance with the standards required by NI 43-101 and Form 43-101F1. The estimate of mineral resources contained in this report conforms to the CIM Mineral Resource and Mineral Reserve definitions (May 2014) referred to in NI 43-101.

2.2 Sources of Information

In conducting this study, Adam Wheeler has relied on reports and information connected with the Sangdong project. The information on which this report is based includes the references shown in Section 27.

Adam Wheeler has made all reasonable enquiries to establish the completeness and authenticity of the information provided, and a final draft of this report was provided to Almonty, along with a written request to identify any material errors or omissions prior to finalisation.

2.3 Units and Currency

All measurement units used in this report are metric, and currency is expressed in US Dollars unless stated otherwise. Costs derived from Republic of Korea Won were converted at a rate of \$US 1 = Won 1180.

3 RELIANCE ON OTHER PROJECTS

Adam Wheeler has reviewed and analysed data provided by Almonty and has drawn his own conclusions therefrom. Adam Wheeler has not performed any independent exploration work, drilled any holes or carried out any sampling and assaying.

While exercising all reasonable diligence in checking and confirmation, Adam Wheeler has relied upon the data presented by Almonty, and previous reports on the property in formulating his opinions.

Title to the mineral lands for the Sangdong property has not been confirmed by Adam Wheeler and Adam Wheeler offers no opinion as to the validity of the exploration or mineral title claimed.

4 PROPERTY DESCRIPTION AND LOCATION

The deposit is located at Sangdong in the south-eastern Korean Peninsula, about 170km east south east of the capital city of Seoul, 20km southwest of Taebaek and 55km south east of Wonju, in Yongweol County of Kangwon-Do Province (37°08'N Latitude and 128°50'E Longitude) as shown in Figure 4-1 and Figure 4-2. The main adit is at the head of a short, south-flowing tributary of the Oktong-ch'on (river). The Property comprises 12 Mining Rights with an aggregate area of 3,173ha, held in the name of AKT. The licence areas are shown in Figure 4-3 and details of the licences in Table 4-1.

The existing mining permits cover all the active mining areas discussed in this report. Mining permits are subject to mining-right usage fees (a fixed annual charge), mineral resource compensation fees, and applicable mineral resource taxes.

The mining permits give the right to carry out full mining and mineral processing operations in conjunction with safety and environmental certificates. Approval for installation of mining facilities (Sangdong Portal, Woulfe Portal, Taeback Portal and Baekun Portal) have been issued by East Mine Registration Office of the Ministry of Trade, Industry & Energy. Environmental certificates (Temporary Forest Land Use) have been issued by the Department of Environmental Forest of Yeongwol County. There are no known or recognized environmental issues that might preclude or inhibit a mining operation in this area.

Surface rights for mining purposes are not included in the permits but AKT have leased some of land use for mining and processing plant activities by effecting payment of a purchase fee based on the appraised value of the land. The rest of the necessary lands for mining, waste disposal and processing plant activities (processing plant, offices and accommodations etc.) were guaranteed by Yeongwol County, through written official documentation. A summary of the lease areas is shown in Figure 4-4.

Except for relatively small areas in the south in the main river valley and a few small areas of vegetable farms, the Sangdong property is on government land. On government (i.e. non-private) land, an environmental security bond must be lodged. On private land, access must be negotiated with the individual landowner(s). In the case of mining, there is no formal mediated process for land disturbance, and the purchase or lease of the surface rights would have to be negotiated with the landowner(s).

Environmental certificates have been issued by the Department of Environmental Forest of Yeongwol County and there are no known or recognized environmental issues that might preclude or inhibit a mining operation in this area. Some major land purchases may be required in the future for mine infrastructure purposes (processing plant, waste disposal and offices).

Figure 4-1. Sangdong Project Location Map

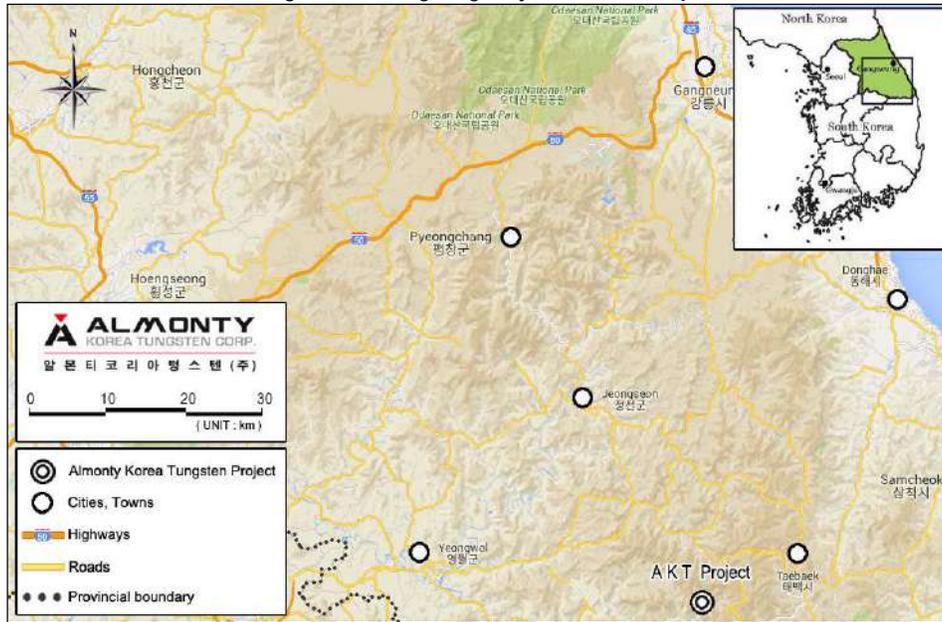


Figure 4-2. Sangdong Mine Area Showing Sangdong East and West Deposits and Infrastructure

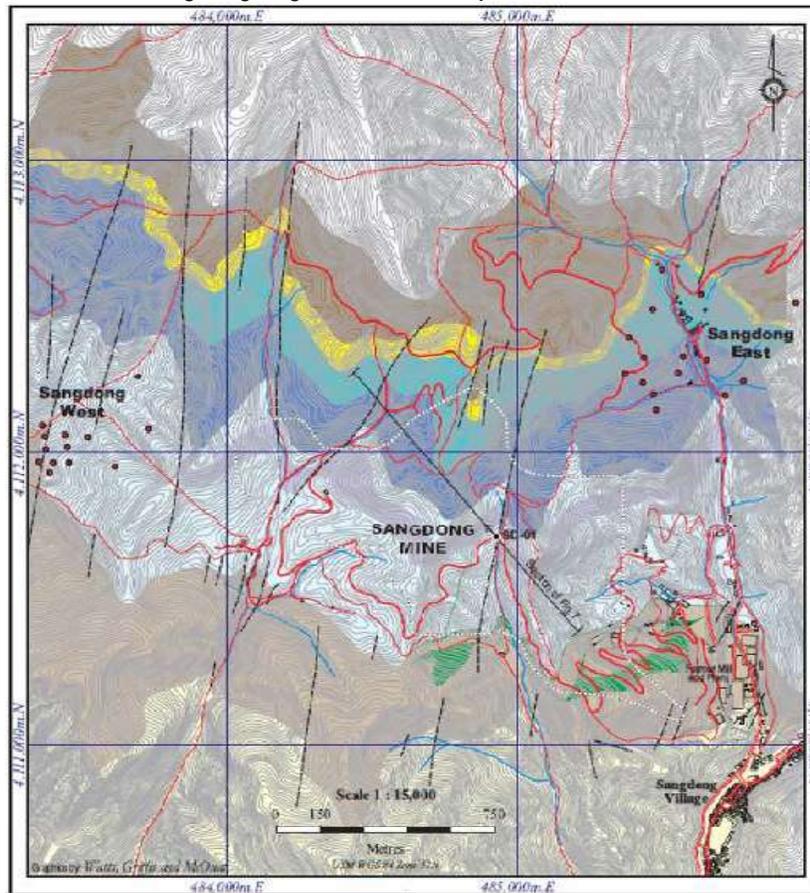


Figure 4-3. Sangdong Project: Mineral Rights Areas

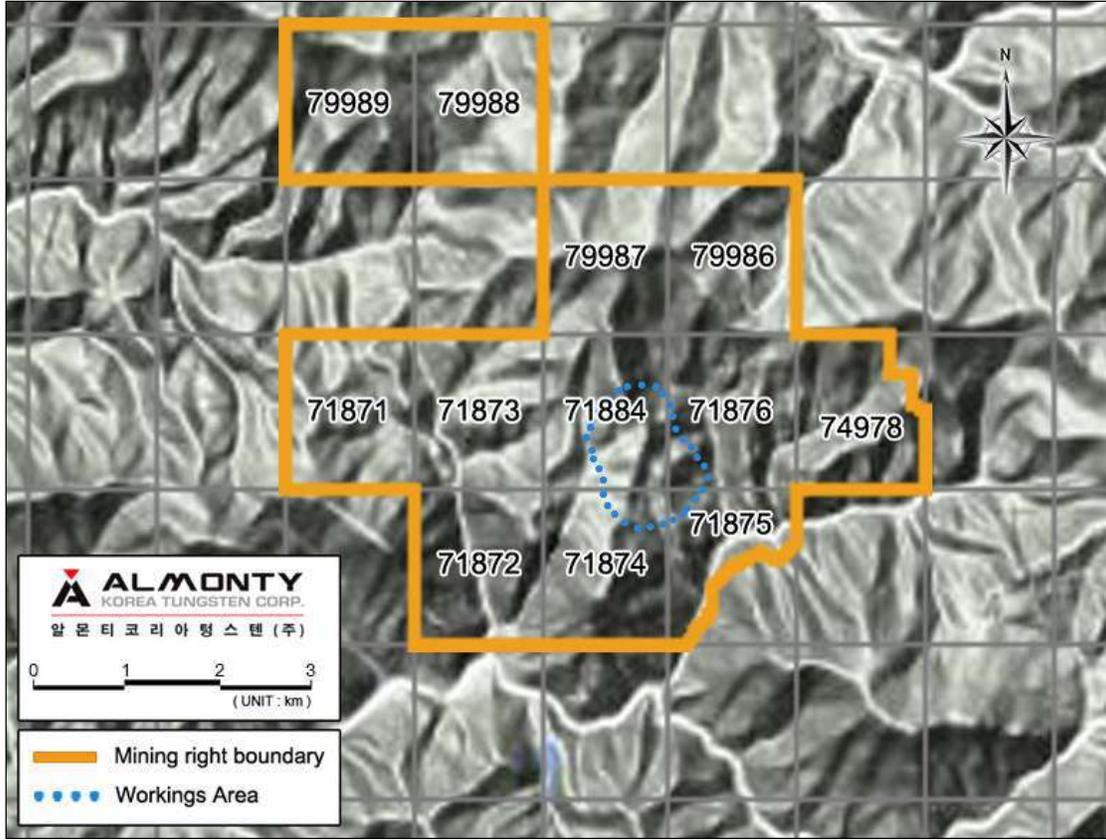


Figure 4-4. Lease Areas

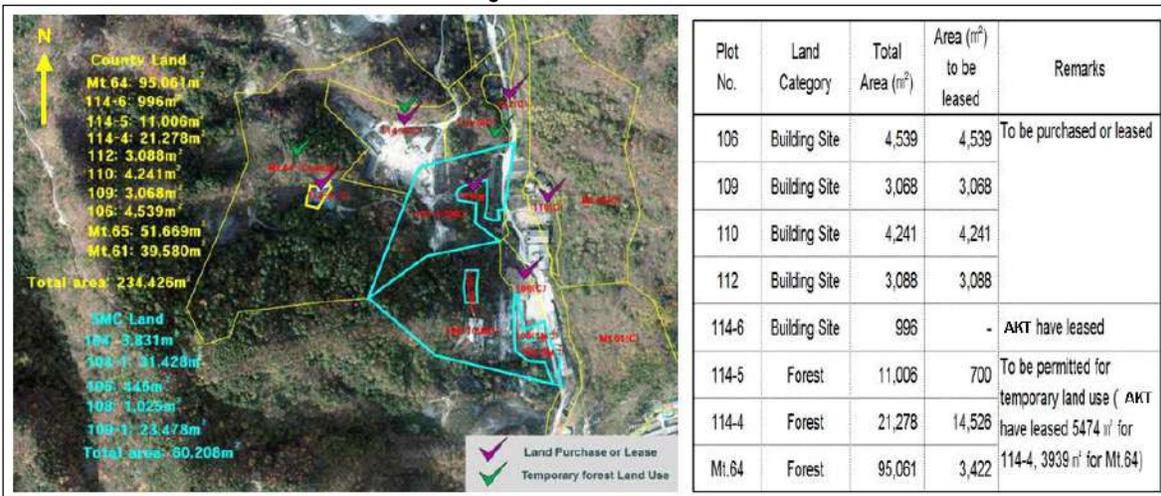


Table 4-1. Sangdong Project – Licence Details

Sector	District	Block No.	Registration No.	Area (ha)	Mineral	Registration Date	Location Latitude / Longitude
Sangdong	Seobyeok	121	71871	274	Au, Ag, Cu, Pb, Zn, W, Mo, Bi, Si	01-Jun-01	37° 09' ~ 37° 10' 128° 47' 10" ~ 128° 48' 10"
	Seobyeok	112	71872	274	Au, Ag, Cu, Pb, Zn, W, Mo, Bi, Si	01-Jun-01	37° 08' ~ 37° 09' 128° 48' 10" ~ 128° 49' 10"
	Seobyeok	111	71873	274	Au, Ag, Cu, Pb, Zn, W, Mo, Bi, Si	01-Jun-01	37° 09' ~ 37° 10' 128° 48' 10" ~ 128° 49' 10"
	Seobyeok	102	71874	274	Au, Ag, Cu, Pb, Zn, W, Mo, Bi, Si	01-Jun-01	37° 08' ~ 37° 09' 128° 49' 10" ~ 128° 50' 10"
	Seobyeok	92	71875	185	Au, Ag, Cu, Pb, Zn, W, Mo, Bi, Si	01-Jun-01	37° 08' ~ 37° 09' 128° 50' 10" ~ 128° 51' 10"
Sangdong 2	Seobyeok	91	71876	274	Au, Ag, Cu, Pb, Zn, W, Mo, Bi	02-Jun-01	37° 09' ~ 37° 10' 128° 50' 10" ~ 128° 51' 10"
	Seobyeok	101	71884	274	Au, Ag, Cu, Pb, Zn, W, Mo, Bi	08-Jun-01	37° 09' ~ 37° 10' 128° 49' 10" ~ 128° 50' 10"
Sangdong 6	Seobyeok	81	74978	248	Au, Ag, Cu, Pb, Zn, W, Mo	30-Sep-05	37° 08' ~ 37° 09' 129° 51' 10" ~ 129° 52' 10"
Sangdong 7	Homyeong	100	79986	274	Au, Ag, Cu, Pb, Zn, W, Mo	22-Nov-11	37° 11' ~ 37° 12' 128° 48' 10" ~ 128° 49' 10"
	Homyeong	110	79987	274	Au, Ag, Cu, Pb, Zn, W, Mo	22-Nov-11	37° 11' ~ 37° 12' 128° 47' 10" ~ 128° 48' 10"
	Homyeong	119	79988	274	Au, Ag, Cu, Pb, Zn, W, Mo	22-Nov-11	37° 10' ~ 37° 11' 128° 50' 10" ~ 128° 51' 10"
	Homyeong	129	79989	273	Au, Ag, Cu, Pb, Zn, W, Mo	22-Nov-11	37° 10' ~ 37° 11' 128° 49' 10" ~ 128° 50' 10"

Source: WMC 2014

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES AND INFRASTRUCTURE

The Sangdong area is in the central portion of the most rugged part of the Taebaek-san in one of the deep valleys running north-south on the southern slopes of Baegun Mountain (Baegun-san 1,428m amsl). The highest outcrop of the Sangdong orebodies is about 800m amsl. The dominant trend of the valleys in the Sangdong mine area is north-south. Despite the terrain, access is well developed countrywide and a paved road passes within several hundred metres of the old mill site and forestry roads traverse the Property. Vegetation in the Taebaek district is dominated by dwarf pines. Thick dense undergrowth, consisting of scrubby thorny vegetation develops in June after the first heavy rains, making access very difficult off walking tracks.

5.1 Accessibility

The Sangdong Project is located 175km east-southeast of Seoul, in Yongweol County of Kangwon-Do Province on the eastern side of South Korea. The project is well served by Expressways and Highways from Seoul, allowing a 3.5 hour road journey. Taebaek (population of over 50,000) is located 25km to the east of Sangdong by paved road and is an established coal mining town with most modern facilities. Sangdong, a small rural village with a population of approximately 600, is situated 2km to the south of the mine. The national rail network system services the region. The train journey takes 4.5hrs to Taebaek from Seoul Station. The closest railhead is situated at Yemi 5km north of Sangdong.

5.2 Climate

The Project experiences seasonal climatic conditions and at Yeongwol can be described as cloudy with a distinct hot wet season followed by a cold dry season during the winter. Daily temperatures average 27°C and rise to a maximum of approximately 30°C. Daily thunderstorms are common in August and the occasional “typhoon” may occur in coastal areas. During September to October, the climate becomes cooler, with daily temperatures reaching 20°C. The winter “dry” season lasts from October to March, with snow falling from December to February. Freezing temperatures occur during this time, occasionally reaching as low as -30°C. Mild temperatures in the spring produce slush and muddy conditions on unsealed roads from March to April. On average there are 129 freezing days each year, 112 days of rainfall and 106 frost days. Of these days, on average, each year there are 105 overcast days, 92 clear days, 29 foggy days, 26 snow days and 19 thunderstorm days.

5.3 Local Resources

The former Sangdong Mine was a major employer in the area, but ceased operations in 1992. It is therefore unlikely that a skilled mining workforce adequate for a new mining operation still exists in the immediate area. Workers with the required skills and provided training would be available locally and from elsewhere within Korea.

Potential sources of surface run-off water supply for future mining and milling operations exist in local streams and rivers. There are also reasonable sources of groundwater contained in the limestones overlying the tungsten skarn.

Sites adequate for the disposal of waste rock exist within the Property in the immediate area west of the former mine. There are extensive deposits of limestone available on the Sangdong Project area for use as neutralising/buffer media for acid generating materials as well as aggregate. The Pungchon Limestone overlies the tungsten skarn of the Myobong Slate. It would provide useful coarse rock aggregate for use in a “french drain” type arrangement at the base of waste dump facilities.

There is no local logging industry within the property. The forest is administered by the Youngwol Forest Service. There is only minor agricultural land within the Property and it is understood that local residents are allowed by the government to grow crops, mostly cabbage, in forest clearings where there is road access.

5.4 Infrastructure

A power line passes within several kilometres of the Property and two high tension power lines cross over the Property Mining Rights boundary, servicing Sangdong village and the Kangwon High Golf and Ski Resorts, situated to the north of the Sangdong Project. 20MVA of electrical supply capacity will be provided for the Sangdong Project mining and milling operation, and the Uljin nuclear power station facility is situated nearby on the coast and would be capable of providing a reliable, long-term and low cost energy supply for the mine.

The rail network is used for passenger service but also the transport of bulk cargoes, including cement, limestone and aggregates, mineral concentrates, sulphuric acid tankers, refrigerated goods and fuel cells. Sangdong is situated 5km south of the Yemi railhead

Uljin is the closest port facility for the Sangdong Project, situated 50km east of Sangdong on the east coast whilst Donghae, an additional port facility is situated 56 km northeast of Sangdong. Donghae is a port mainly used for the export of cement clinker.

6 PROJECT HISTORY

The mine produced tungsten concentrates from 1939 to 1992. A summary of the project history is shown in Table 6-1. All of the previous mining activity was focussed on the production of tungsten.

Table 6-1. Summary of Project History

Dates	Company	Notes
1916-1939	Various	Mining at two locations
1939-1949	Sorim Resources	Main Sangdong deposit discovered 1939-40. Mined 1946-49, under US military government office
1949-1951	Korean Tungsten Mining Company	Mining by government agency
1952-1992	KTMC	Mining up to 600Ktpa. Mine developed on 20 levels, from 240-755 masl. Room and pillar mining on HW, Mina, F2 and F3. APT plant produced in 1972. Tungsten concentrate produced throughout. Bismuth concentrate produced from 1961-1987.
2001	See Woo Mining Co. Ltd	Mr Jae Youl Sim acquired 23 Mining Rights over the Sangdong deposit.
2006	Oriental Minerals Inc	Agreement for Oriental to earn up to 100% interest in 23 Mining Rights.
2010	Woulfe Mining Corp.	Name change in the holding company
2011	Woulfe Mining Corp.	Project area reduced to 12 Mining Rights, and Woulfe gains 100% interest.
2015	Almonty Industries	Acquired by Almonty Industries
2016	Almonty Industries	Offtake agreement with GTP (Global Tungsten & Powders)
		Completion of demolition for KTMC's old building and structures that existed in the planned mine plant site.
2018	Almonty Industries	Execution a binding Memorandum of Understanding with the Korea Institute of Geoscience and Mineral Resources (KIGAM) for technological cooperation in the areas of efficient extraction of tungsten and valued by-products through scheelite floatation.
		Start of the gallery development from Alfonse D Adit.
2019	Almonty Industries	Start of operation of the pilot plant.
2020	Almonty Industries	Execution of Memorandum of Understanding with Provincial and County Governments for Collaboration and Supports for Sangdong Mine Development Project.
		Start of the gallery development from Monty B Adit.
		Loan agreement with KFW-IPEX Bank GmbH.

7 GEOLOGICAL SETTING AND MINERALISATION

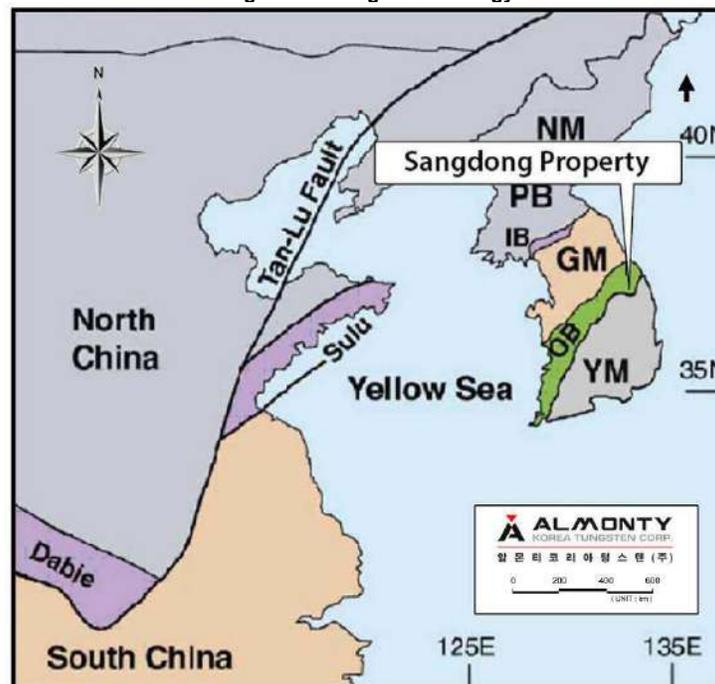
7.1 Regional Geology

The Korean Peninsula is situated on the eastern margin of the North China– Korea Platform, a craton composed of three blocks of Archean age, the Nangrim- Pyeongnam Block and the Gyeonggi and Yeongnam Massifs that are separated by the northeast-trending Imjingang and Okcheon mobile belts of Phanerozoic age. The Property is located within the Okcheon Belt.

The Okcheon Belt is a fold-and-thrust belt sandwiched between the Gyeonggi Massif (GM) to the northwest and the Yeongnam Massif (YM) to the southeast. The Belt has been divided into the southern Okcheon and northern Taebaeksan Basin or Zone as shown in Fig 5-1.

The Okcheon Zone, in which the Property is located, is composed of low to medium-grade metasedimentary and metavolcanic rocks of Cambrian to Ordovician age. The Taebaeksan Zone contains weakly-metamorphosed shallow-marine Paleozoic sedimentary rocks and marginal-marine to non-marine Early Mesozoic, sedimentary rocks that contain economically important coal measures. These rocks rest unconformably upon Precambrian gneiss and metasedimentary rocks of the Yulli Group of the Yeongnam massif.

Figure 7-1. Regional Geology



Note: Crustal Blocks and massifs of the Korean Peninsula and adjacent northeast Asia: Nangrim massif (NM); Pyeongnam basin (PB); Imjingang Belt (IB); Gyeonggi massif (GM); Okcheon Belt (OB); Yeongnam massif (YM).

7.2 Property Geology

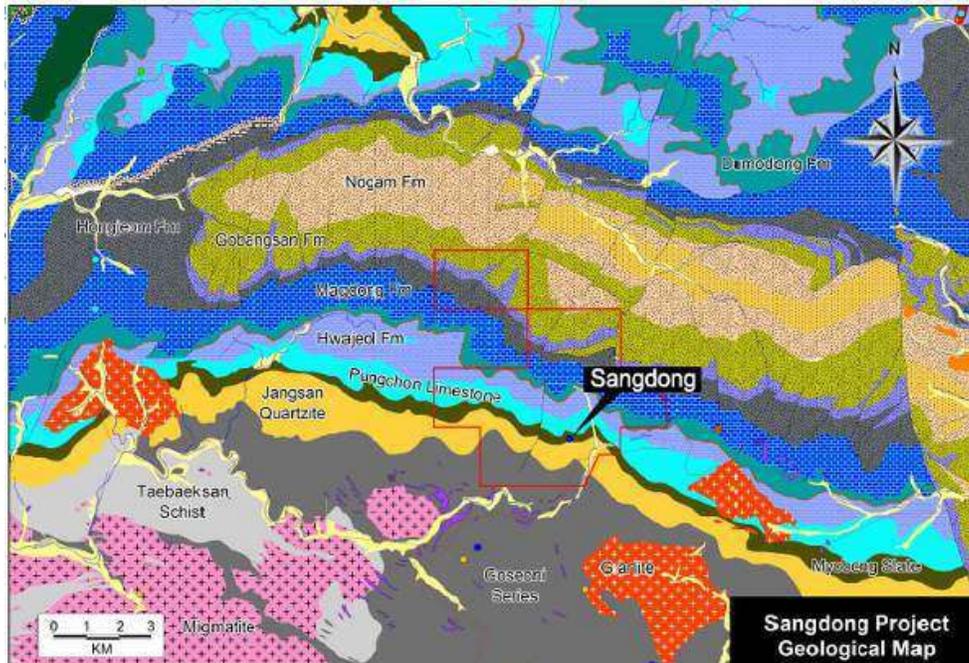
The Okcheon Zone, in which the Property is located, is composed of low to medium-grade metasedimentary and metavolcanic rocks of Cambrian to Ordovician age. The Taebaeksan Zone contains weakly-metamorphosed shallow-marine Paleozoic sedimentary rocks and marginal-marine to non-marine Early Mesozoic, sedimentary rocks that contain economically important coal measures. These rocks rest unconformably upon Precambrian gneiss and metasedimentary rocks of the Yulli Group of the Yeongnam massif.

In the Sangdong area, the Cambro-Ordovician metasedimentary strata belong to the Joseon System that is divided into the lower Yangdeok and overlying Great Limestone Series. These are situated on the south limb of a syncline that plunges gently to the southeast; strata strike at approximately 110° and dip to the north-northeast at 20° to 30° (Figure 7.2). The Yangdeok Series is composed of two formations, the basal Jangsan and overlying Myobong. The Great Limestone Series is subdivided into six formations, from oldest to youngest, the Pungcheon, Sesong, Hwajeol, Dongjeom, Dumudongl and Makdong Formations. The stratigraphy of the Sangdong area is given in Table 7-1 and the local geology is summarised in Figure 7-3.

Table 7-1. Stratigraphy of the Sangdong Project Area

Geologic Era	Period	System	Formation	Thickness	Remarks	
Mesozoic	Cretaceous		Imog Granite		94 M. A.	
			Eopyong Granodiorite		107 M. A.	
			Sangdong Granite		85 M. A.	
	Jurassic					
	Triassic		Nogam Sandstone	1,000±		
Paleozoic	Permian	Pyungan	Kobansan Sandstone	500±		
			Sadong Sandstone	200±	Interbedded coal	
	Hongjeom Shale		300±			
	Ordovician	Chosun	Great Limestone Series	Makdon Limestone	300±	
				Dumudong Limestone	200±	
				Dongjeom Quartzite	30±	
	Cambrian		Yangduk Series	Hwajeol Limestone	200±	
				Seson Shale	80±	
				Pungchon Limestone	300±	
Myobong Slate		150±		Mineralized W, Mo, Bi		
			Jangsan Quartzite	250	Mineralized Mo	
Pre-Cambrian		Taebaeksan	Schist			
			Naeduk Granite			
			Nonggeori Granite			

Figure 7-2. Sangdong Project Area – Geological Map



(The area outlined in red represents the original 23 Mineral Rights areas)

7.2.1 Intrusions

Plutonism occurred primarily during the Jurassic and Cretaceous Periods and most intrusions are biotite granite in composition.

Several granitoid intrusions occur around the Sangdong mine, which include:

- Pre-Cambrian Nonggeori Granite (4km to the south)
- Pre-Cambrian Naeduk Granite (5km to the south)
- Cretaceous Imok Granite (94Ma, 12km to the west) intruded Pre-Cambrian schist and gneiss.
- Cretaceous Eopyung Granodiorite (107Ma, 4km to the east) intruded Cambro-Ordovician Chosun System.
- Sangdong Granite (85Ma) bearing scheelite, molybdenite, and bismuthinite lies approximately 700m directly below the main tungsten orebodies of the Sangdong Mine. Age determinations of metapelites beneath the footwall of the Main Horizon of the tungsten orebodies gave Potassium-Argon (K-Ar) ages of 81.2 and 84.0 Ma, consistent with the age of the underlying Sangdong Granite, and implying that this intrusive was responsible for the alteration and mineralisation. (Le, 2001)

7.2.2 Structure

The area is cut by steeply north dipping reverse and normal faults which have resulted in offsets of the mineralised horizons by as much as 50-100m.

A plan of the local geology is shown in Figure 7-3 and a schematic section of the deposit shown in Figure 7-4.

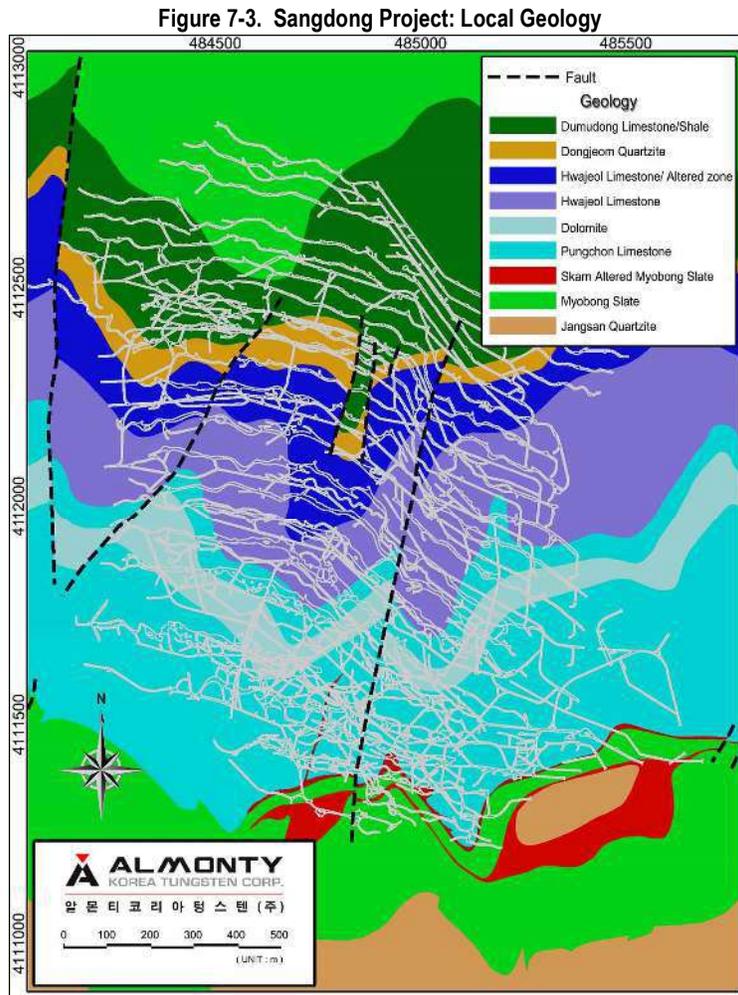
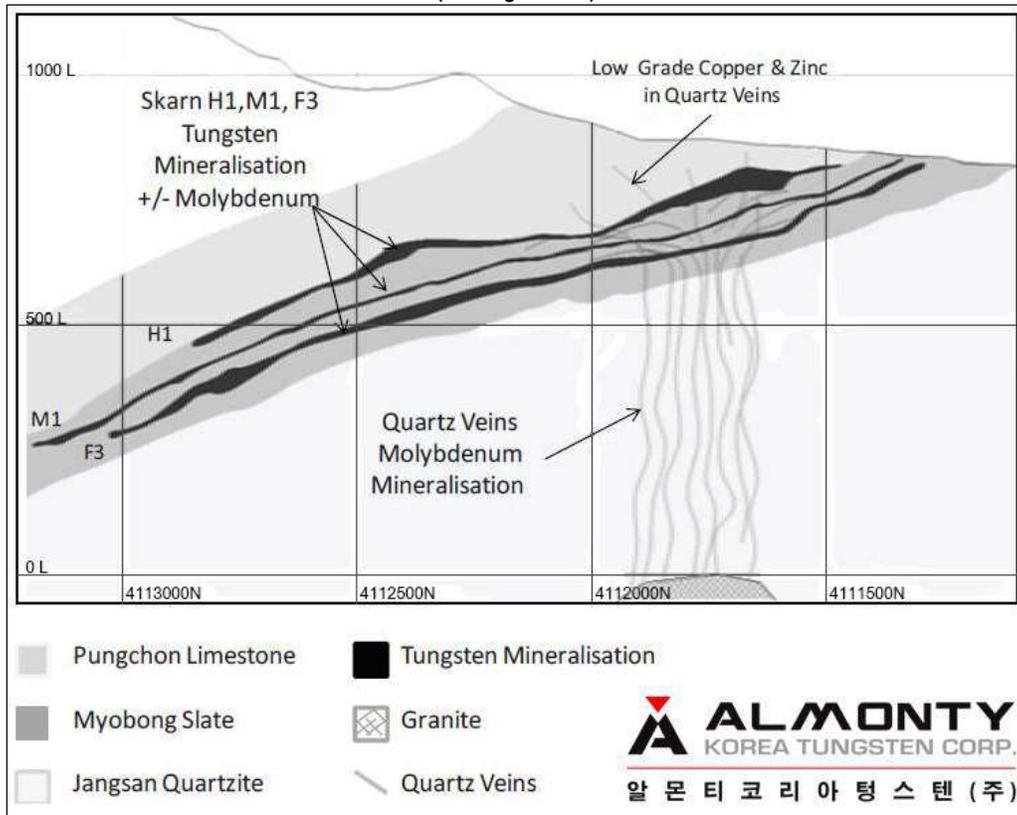


Figure 7-4. Schematic Section of the Sangdong Deposit
 (looking at 245°)


7.3 Mineralisation

7.3.1.1 Tungsten Skarns

The tungsten mineralisation of the Sangdong deposit is contained in several tabular, bedding-conformable skarns in the Myobong Shale; these skarns have been interpreted as comprising carbonate-bearing horizons that were altered and mineralised by fluids ascending from the underlying Sangdong Granite. From uppermost to lowermost, these horizons are termed the Hangingwall, Main, and Footwall horizons. Calc-silicate layers from 0.50 – 1.0m in thickness have developed on the upper and lower contacts of the Main and Footwall horizons.

The Hangingwall horizon is located near the upper contact of the Myobong shale and varies in thickness from approximately 5m to 30m because of the irregular boundary of the shale with the overlying Pungchon Limestone. This zone has a strike length of about 600m and a down-dip extent of about 800m. Above the most highly-altered portion of the Main horizon, the Hangingwall horizon is not tabular, but extends steeply and irregularly into the overlying limestone. The base of the Hangingwall horizon is approximately 14m above the upper contact of the Main horizon.

The Main horizon dips between 15° and 30°, with a dip direction of approximately 25°. The strike length is in excess of 1,300m and thickness varies from 5.0 – 6.0m. Alteration (skarnification) within the Main horizon forms three concentric, roughly circular zones.

The Footwall horizons comprise multiple layers: Footwall Zone 1 (F1) normally occurs 1m below the Main horizon and is approximately 2m thick; Footwall Zones 2 and 3 (F2, F3) are situated approximately 35 to 40m below the Main horizon and have an average thickness of 2.6m, going up to a maximum of 9m. Further Footwall Zones have been identified beyond F3 and are collectively referred to as F4.

The Sangdong deposit contains scheelite, minor wolframite, molybdenite, bismuthinite and native bismuth. Molybdenum also occurs in substitution with scheelite and historically about 30% of the molybdenum produced at Sangdong was scheelite-related. Gold and silver occur in association with bismuthinite and native bismuth and were recovered from the bismuth concentrate. Tellurides, arsenopyrite, pyrite, chalcopyrite and sphalerite also occur.

Mineralisation is largely associated with quartz veins within the three main horizons, with the exception of the central portion of the Hangingwall horizon. Quartz veins are most abundant within a central, quartz-rich portion of the deposit, parallel to and discordant with the calc-silicate layering. Veining ranges from one to ten centimetres in width and is best developed in the lower portions of the mineralised horizons. The abundance of

scheelite within the mined portion of the Main horizon is concentrically zoned, increasing with alteration intensity, depending on temperature. Scheelite abundance in the Hangingwall horizon is more variable and less clearly concentrated in zones. Molybdenum and bismuth are concentrically zoned in a similar pattern to tungsten in the Main horizon.

Lee (2001) states that the mineralisation is hydrothermal in nature and that there were two stages of mineral deposition; the first molybdenum-poor scheelite mineralisation was related to skarn alteration, which was followed by quartz-scheelite-molybdenite-bismuthinite vein emplacement.

7.3.1.2 Molybdenum

Immediately underlying the tungsten skarn footwall mineralised zone, lies the Jangsan quartzite which is the lowermost formation and comprises of milky-grey, milky-white and light-yellow quartzite and is about 250m thick. This formation contains the Sangdong Molybdenum Stockwork (SMS), a zone of quartz veins hosting predominantly molybdenum mineralisation (Kuehnbaum, 2006 and Le, 2001)

According to Lee (1983) two historical drill holes drilled from level 3 in the tungsten zone discovered molybdenum at depth in fine quartz veinlets in fractured Jangsan quartzite and in disseminated partly recrystallised quartz. The veins extended down into the Pre-Cambrian schists, but the holes failed to intersect the Sangdong granite beneath. Very few sulphides are associated with the molybdenum and no tungsten was detected with this mineralisation.

Moon (1983) postulates that a possible circulation path for the original ore fluids from a buried granite may be represented by the scheelite bearing veins that are concentrated in the footwall slates and the moly-bearing quartzite veinlets (containing no scheelite at all) which are confined within the Jangsan quartzite directly below the Central Zone of the M1 tungsten orebody, as shown in Figure 7-4.

8 DEPOSIT TYPE

Due to the paucity of information about the molybdenum-mineralised system beneath the Sangdong underground workings, it is difficult to characterise a model for this mineralisation. However, important molybdenum mineralisation falls into two classes: porphyry-type and granite-related molybdenum-tungsten-tin systems. There is some overlap between the two.

The tungsten mineralisation of the Sangdong Deposit is contained within a series of tabular skarn horizons within the Myobong Slate. Calcium carbonate horizons within the slate have undergone metasomatic replacement to mineralised skarn by hydrothermal fluids. The source of these fluids is thought to be the underlying Sangdong Granite. Potassium-Argon (K-Ar) age determination of metapelites within the Myobong Formation are consistent with the age of the granite below.

Swarms of quartz veins have ascended upward through the Jangsan Quartzite into the Myobong Formation where they can be seen to follow the bedding planes and also cross cut the formation (Moon, 1984). There is a correlation between the presence of quartz veins and the grade of mineralisation.

Although hydrothermal alteration (skarn formation) is widespread in the Sangdong area from Sangdong West to Sangdong East and beyond, there is no evidence of a pervasive porphyry-style alteration system. Country rock above the Sangdong granite is hornfelsed, but not pervasively altered.

Vein- and greisen-type hydrothermal molybdenum-tungsten or tin-tungsten mineralisation is connected with shallow-seated, highly differentiated, relatively K-rich granites (Cerny and others, 2005). Regional zoning of tin, tungsten and molybdenum may be apparent. Where greisen is absent, mineralisation may be within a sheeted or stockwork system contained within the apical portion of a granite body, or in overlying country rocks. Veins may vary from sub-horizontal to vertical, and replacement (skarn) bodies may be present in the wallrocks. Fluorine is an important constituent, and bismuth minerals may also be present.

There is no recorded alteration system (i.e. greisen) at Sangdong, and therefore the deep molybdenum mineralisation is likely to comprise a system of sheeted or stockwork veins.

9 EXPLORATION

Mineral Resource definition drilling is the only form of exploration that has been completed by WMC on the Sangdong Property since becoming operators in 2006, and there is no record of exploration other than drilling by previous operators. An aeromagnetic map of the area was reproduced in a scoping report in 2007, but the origin is unknown.

Since the drilling completed in 2008, there has been no further exploration activities directed at the SDM resources.

A review of underground drilling undertaken from 1980 – 1986 was completed in 2008 by Kennex Knowledge Systems (KKS). This review covered 21 holes for 12,340m in the SDM Stockwork, and identified Mo, Cu, Zn, Bi, W within a quartzite veinlet, stockwork or network type structure. A rudimentary molybdenum wireframe and inferred resource was produced from which they inferred that additional drillholes on some sections could

dramatically increase the tonnage and understanding of the geometry of the mineralised zone. They also suggested that the deep molybdenum zone may continue to the northeast towards Sangdong East, where significant MoS₂ was intersected in historic surface exploration hole 83-3. The zone may also continue to the northwest where it also remains open and to the north where MoS₂ has been intersected in SD-30. It is apparent from the sections that zones of higher grade (above 500ppm MoS₂) do occur, but insufficient drilling has been carried out to properly assess the grade distribution. The U-shaped geometry of the mineralised zone in plan and section was also noted.

10 DRILLING

A summary of the drilling campaigns associated with the SDM project is shown below in Table 10-1.

Table 10-1. SDM Drilling Campaign Summary

Dates	Holes	Length m	Company	Notes
1980-1987	27	14,288	KTMC	Mostly underground from mine, to investigate Mo mineralisation in quartzite underlying main skarn zones
2006-2008	6	4,079	Oriental Minerals	Surface drilling programme

Figure 10-1 shows a drillhole plan and Figure 10-2 shows a 3D view of this drilling.

The Oriental Minerals (OTL) campaign covered 94 surface drillholes. The 6 holes referenced above are those that intersected that main MoS₂ mineralised zone.

Limited information is available on sampling and logging procedures from the KTMC campaign.

Drill core is not available from either of these campaigns.

In the current resource estimation work, global average density values have been assigned, as 2.63 t/m³ in quartzite and 2.7 t/m³ in slate. These values are based on historical density measurements.

Figure 10-1. Drillhole Plan Plot

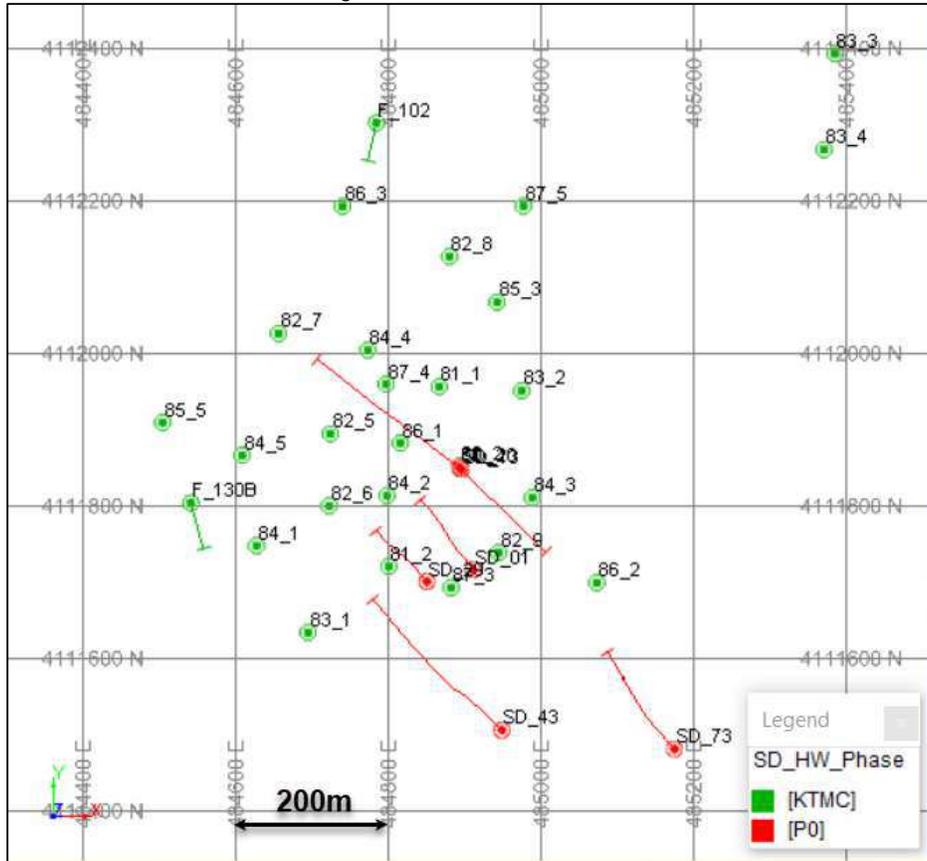
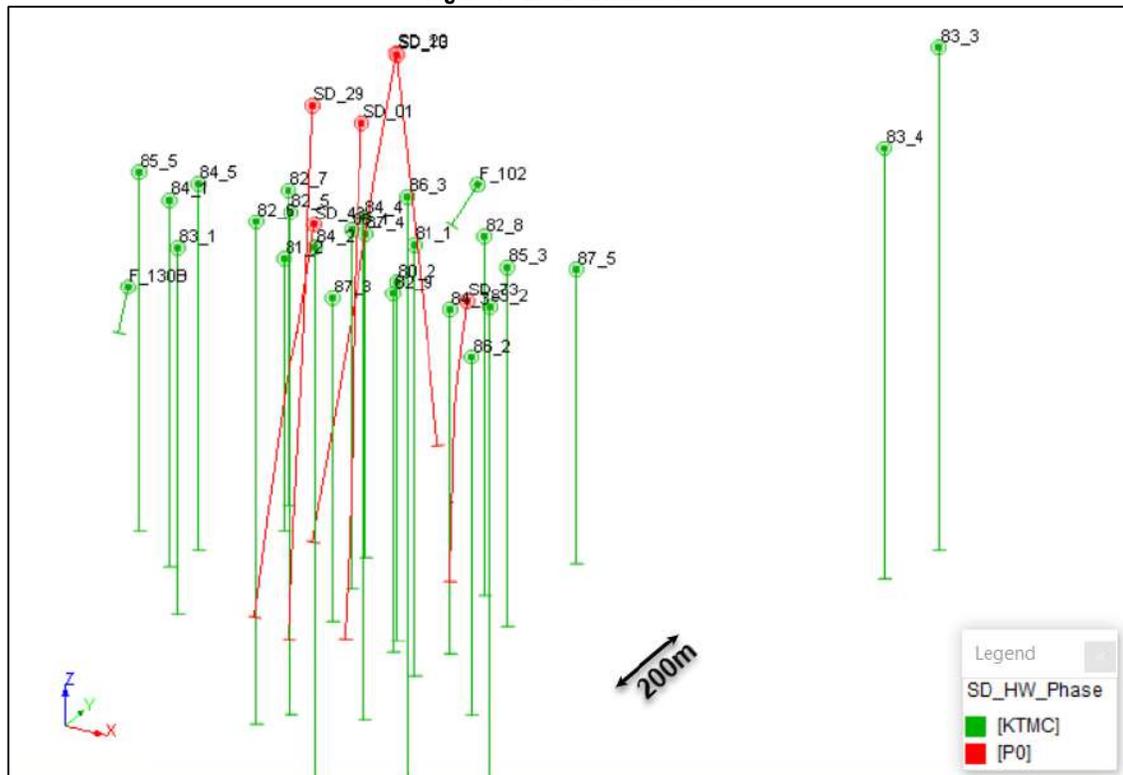


Figure 10-2. 3D Drillhole Plot



10.1 Kennex Knowledge Systems Limited (KKS) - 2008

In March 2008, the company Kennex Knowledge Systems Limited (KKS) were subcontracted by a Tetra Tech Company (Wardrop) to complete a review of underground drilling undertaken from 1980 – 1986, which included 27 drilled into the Sangdong Molybdenum Stockwork (SMS), as summarised in Table 10-1. This drilling helped identify Mo, Cu, Zn, Bi, W mineralisation within a quartzite veinlet, stock-work or network type structure. A rudimentary molybdenum wireframe and inferred resource was produced from which they noted that additional drillholes on some sections could dramatically increase the tonnage and understanding of the geometry of the mineralised zone.

KKS also suggested that the deep molybdenum zone may continue to the northeast towards Sangdong East, where significant MoS₂ was intersected in historic surface exploration hole 83-3. The zone may also continue to the northwest where it also remains open and to the north where MoS₂ has been intersected in SD-30. It is apparent from the sections that zones of higher grade (above 500ppm MoS₂) do occur, but insufficient drilling has been carried out to properly assess the grade distribution. They also inferred that the nature of the mineralisation being stockwork, MoS₂ in quartz veins, will necessitate a closer drill pattern to adequately define these higher grade areas. Such an exercise may only be practically possible from the underground workings. Access to the workings still needs to be properly assessed. The “U” shaped geometry of the mineralised zone in plan and section was noted.

No core is available from this drilling.

10.2 Wardrop 2010

Wardrop (2010) reported that Woulfe (WMC) conducted a drill programme on the Sangdong property between November 2006 and July 2008. 90 HQ/NQ surface core holes were completed, with an aggregate length of 22,800m. The holes were largely drilled within and below the area of the former underground Sangdong tungsten deposit. Of these holes, 6 holes intersected the MoS₂ mineralised structure, as summarised in Table 10-1. Analysis for WO₃, MoS₂, Bismuth and others was completed. These analyses combined with those from the historical underground drill holes were used in their resource estimation work.

These holes have all been drilled in the south-eastern portion of the deposit, with the majority of the holes have been drilled on a bearing of 135°, parallel or nearly so, to geological strike. About 30% have been drilled on the opposite bearing of 315°; most have been drilled at a dip of 70°, several have been drilled vertically or at a dip of about 80°. The holes have been designed to test all three principal tungsten horizons of mineralisation, and with several accidental exceptions, all have penetrated well into the Changsan Quartzite that underlies the host Myobong Formation.

Subsequently, Wardrop provided a Scoping Study to Woulfe Mining Corporation (WMC) on the Sandong Project, which included a preliminary estimate of the SMS zone. The Jangsan Stockwork Zone takes the form of quartz veins of variable widths, probably developed in response to the underlying granite. At the time of this estimate, data regarded the dominant orientation of the stockwork veins was limited to that shown on idealised cross sections available from Woulfe.

Example sections and core photos from drillholes SD_13, SD_20 and SD_29 are shown in Figure 10-3 to Figure 10-6. These clearly shows the nature of the quartz intersections in both the slate and quartzite, as well as examples of molybdenite.

Drillcore from this campaign is not available.

Figure 10-3. Reference Diagram for Example Core Photos

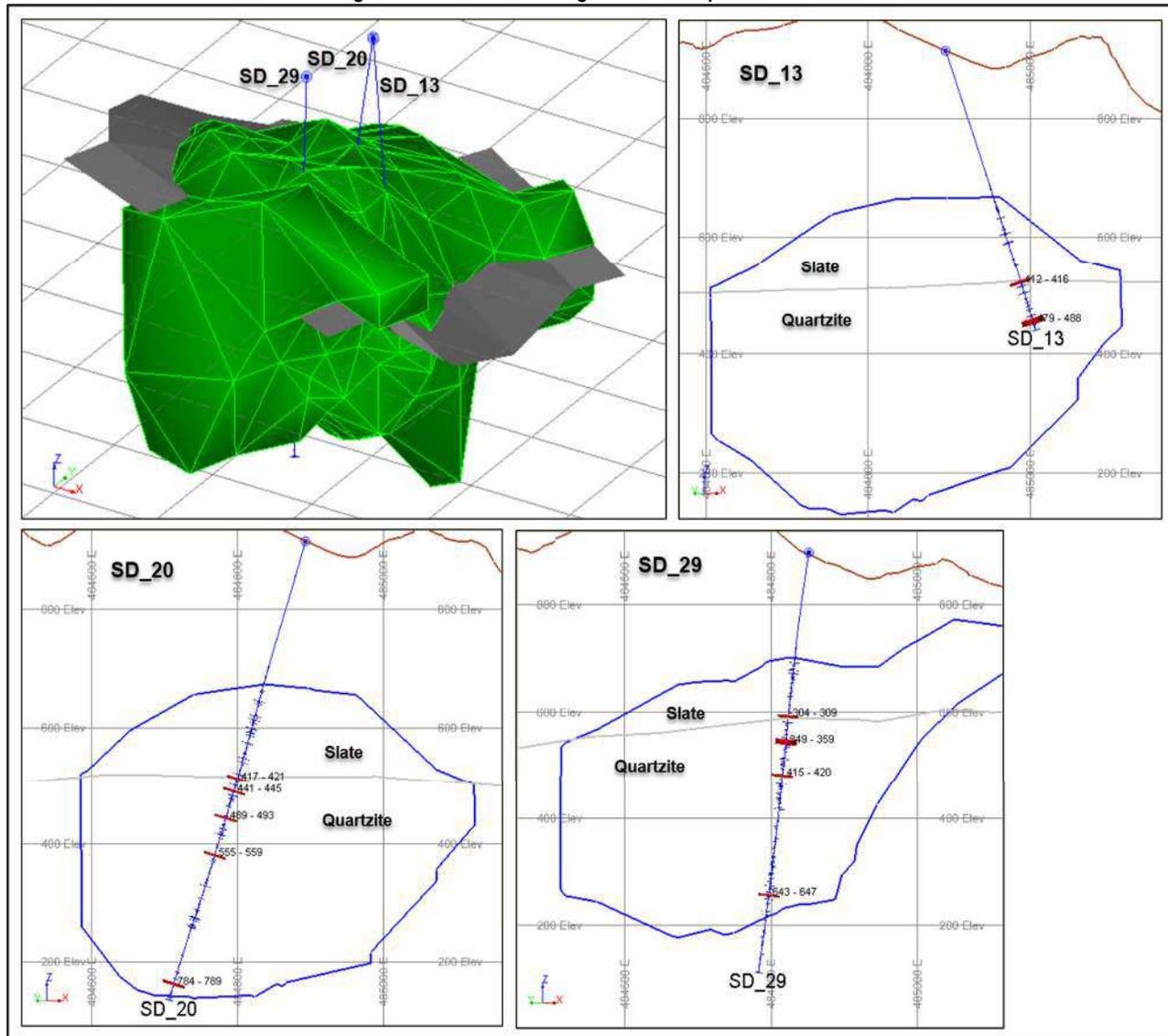


Figure 10-4. Example Core Photos - Hole SD_13

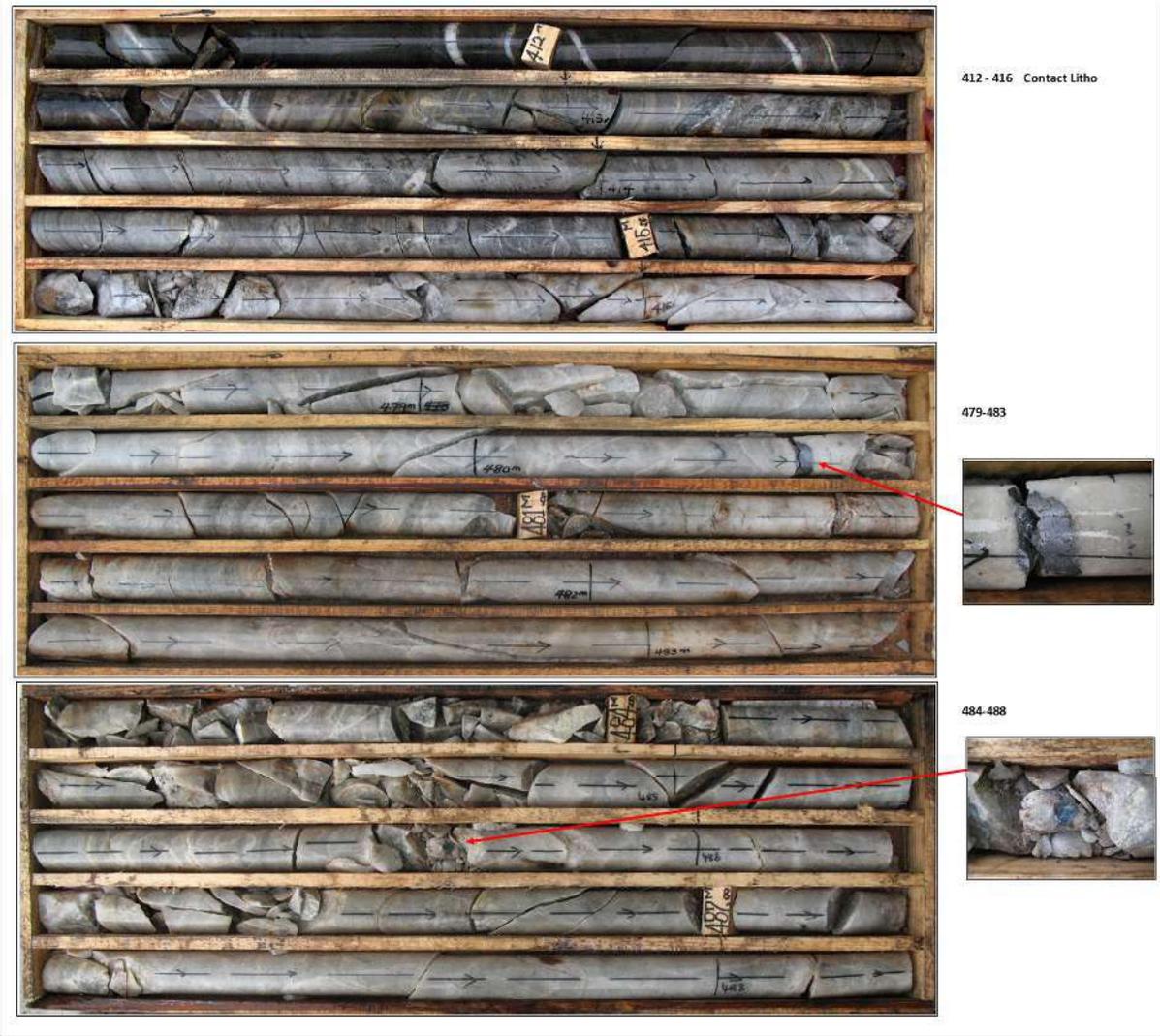


Figure 10-5. Example Core Photos - Hole SD_20



Figure 10-6. Example Core Photos - Hole SD_29



11 SAMPLE PREPARATION, ANALYSES AND SECURITY

The descriptions in this section are taken from the Wardrop 2010 scoping study, relating to the 2006-2008 drilling campaign.

11.1 Sample Preparation

Sample preparation from core to pulps for analysis was completed on-site. Core was sawn in half, half placed in a plastic sample bag and half replaced in the core box for archival storage. Sample tags were placed in the core box and in the sample bag and the sample number was written on the sample bag as well. Standards were placed into the sample stream at this point in the sampling process, in accordance with a sample list that had been drawn up by the geologist responsible for logging the hole.

Core samples were dried, split, crushed and pulverized on-site by WMC personnel in a preparation lab that was purchased as a modular unit. Equipment was cleaned by brushing and the use of compressed air between each sample.

An approximately 50g split portion of the pulverized sample was sent to Perth, Australia, for analysis. Blanks are inserted one in every twenty samples to ensure there is no contamination (see Section 11.4).

11.2 Analyses

From 2006 to 2008 samples were analysed at an external laboratory in Brisbane by inductively coupled plasma mass spectrometry (ICP- MS) for 41 elements and for ore grade quantities of specific elements by *aqua regia* or four-acid digestion followed by ICP analysis. All quantities are reported in parts per million (ppm).

11.3 Sample Security and Chain of Custody

The sample preparation facility comprised a fenced area beside the WMC accommodation facility. A split portion of the pulp from each sample and coarse rejects were retained in a locked facility at the project site. The pulps are placed in brown paper envelopes and sent by courier to Perth.

11.4 Quality Assurance/Quality Control

The QA/QC protocol included the insertion of the following control samples in the assay batches, as summarised below:

- Pulp duplicates (one in 50, or 2%), consisting of second splits of the pulverized samples that are submitted to the primary laboratory for analysis in the same batches as the original samples, but with different numbers.
- Certified reference materials (CRMs, three in 50, or 6%).
- Coarse blanks (one in 50, or 2%) and fine blanks (one in 50, or 2%), consisting of coarse (approximately 1" diameter) and pulverized material, respectively, whose blank character was demonstrated by laboratory analysis. Initially ground glass was used as blank for Phases #1 to #4 drilling, but was subsequently changed to coarse crystalline feldspar for Phase #5 drilling.
- Check samples (two in 50, or 4%), collected from pulps that were previously assayed at the primary laboratory, were resubmitted to another laboratory in Perth Australia for external control. The check sample batch included an appropriate proportion of control samples (pulp duplicates, CRMs and fine blanks).

Wardrop considered the results from these QA/QC analyses acceptable. However, it must be remembered that they relate to the 2006-2008 campaign only.

The Qualified Person considers that the sample preparation, security, analytical procedures and supporting QA/QC results, relating to the 2006-2008 drilling campaign, were collected in line with industry good practice.

12 DATA VERIFICATION

Data verification procedures were applied by at the Sangdong Project since 2006.

The Qualified Person last visited the Sangdong site in June 2017, and discussed with site geologists all aspects of sample collection, preparation and storage, as well as visiting the core storage and sample preparation areas. The sample database was also reviewed and during the resource estimation update, many aspects of the drillhole data were checked by communication with the Sangdong geologists. The Qualified Person, after also checking the Phase 7 (2016 drilling) results, considers these new results to be demonstrating that similar levels of accuracy were achieved with previous historical campaigns, which therefore supports the use of historical drilling data in Mineral Resource Estimation.

In the Qualified Person's opinion, the geological data stemming from drilling data after 2006 were collected in line with good industry practice, allowing the results to be reported, in compliance with Canadian National Instrument 43-101.

It is not known what quality control procedures were applied to data derived prior to 2006.

13 MINERAL PROCESSING AND METALLURGICAL TESTING

As already described, the main orebody being described in this report is a stockwork of molybdenite veins and veinlets, inside the Jangsan quartzite formation and, in less extension, in the overlying schist and slates, directly below the central zone of the tungsten orebody of Sangdong Mine. In terms of the general classification of molybdenum orebodies, it is a primary molybdenum deposit. The average resource grade is 0.26% MoS₂. Molybdenite is normally accompanied by lesser amounts of other sulfides, like chalcopyrite, pyrite, arsenopyrite, pyrrotite, sphalerite, galena, and bismuthinite.

Test work must be completed to determine how this potential ore material can be processed, to achieve the desired levels of recovery and concentrate quality. However, historical operations like Climax, Endako, Urad, Henderson, British Columbia Molybdenum, all point to the same basic flowsheet. After crushing, the ore is ground to a relatively coarse size, say 35 mesh, and a rougher flotation concentrate is produced. Cleaner concentration is accomplished in one or more regrinding stages (normally, no more than 3) and in several stages of reflation (typically, 4 or 5, but, sometimes, more). Common flotation regimes include a kerosene-type oil as the main collector, a wetting agent like Syntex, a frother like pine oil or other, lime as pH modifier, sodium silicate as a dispersant if the ore contains an appreciable amount of clay slime, sodium cyanide for pyrite and chalcopyrite depression, and Nokes reagent for galena depression.

Having not done any metallurgical tests or a detailed characterization of the ore, a projection of the recovery and concentrate grade needed for the preliminary economic assessment of the orebody is only possible on the basis of benchmarking. In Table 13-1, data has been collated for the metallurgical performance of some of the main historical plants processing primary molybdenum ores. If we consider the average grade of the resources of Sangdong Mo orebody and a final concentrate grade of 90% MoS₂, the ratio of concentration will be 346 to 1. This ratio is comparable to the ratio of concentration of most of the plants indicated in Table 13-1, which is a positive aspect. Excluding Endako, because of its much higher ratio of concentration, a recovery ranging from 84.38% to 88.5% would appear likely, if the best practices used by the historical industrial leaders are applicable and adopted.

Table 13-1. Metallurgical data of Example Historical plants, With Primary Mo ores

Plant	Feed grade	Rougher concentrate grade	Final concentrate grade	Tailings grade	Rougher circuit recovery	Cleaner circuit recovery	Overall recovery	Ratio of concentration
Climax	0.30%	5-6%	90%	0.035%	89%	98.5%	86%	350 to 1
Endako	0.15%		90.6%	0.028%	83%	98.7%	(82%)	700 to 1
Urad	0.357%	7.37%	93.65%	(0.056%)	(86.56%)	97.48%	84.38%	332 to 1
British Columbia Molybdenum	0.20% to 0.25%		88.0% to 92.0%	0.02% to 0.025%			88.5% to 91.5%	400 to 1 to 475 to 1

Notes :

- Grades given in MoS₂
- Data collected in SME Mineral Processing Handbook, Weiss (editor-in-chief), Section 16, SME, New York, 1985

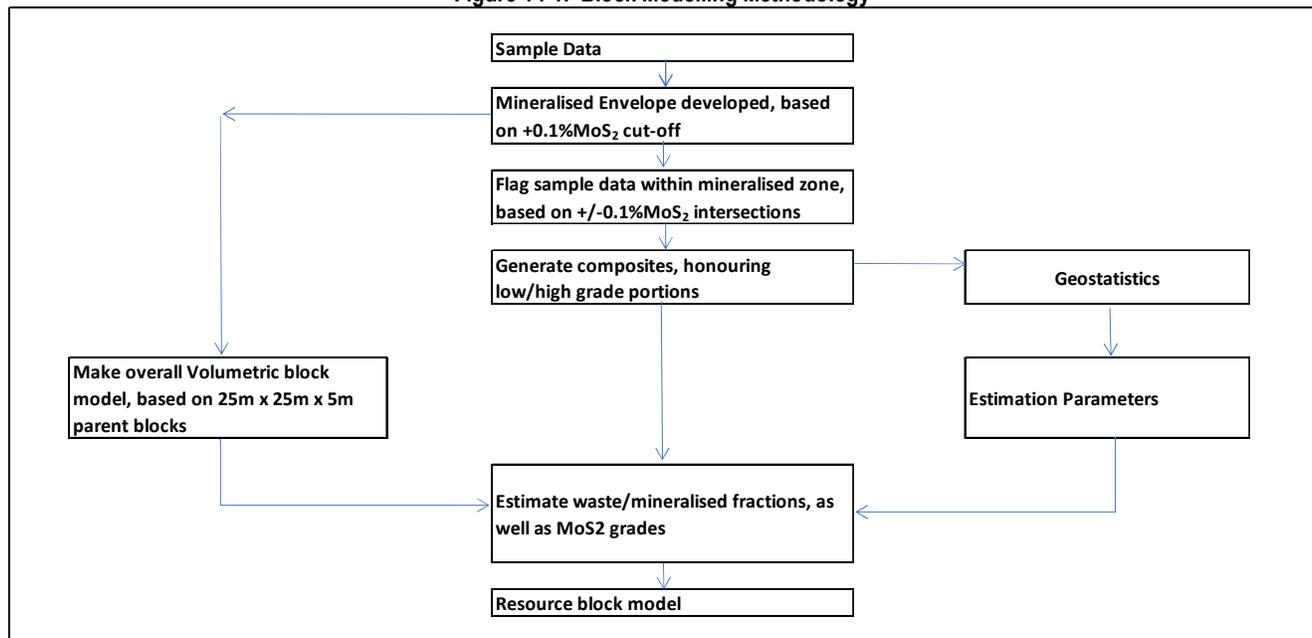
14 MINERAL RESOURCE ESTIMATES

14.1 General Methodology

A mineral resource estimation was completed by the Qualified Person. This estimation employed a three-dimensional block modelling approach, using Datamine software. An overall mineralised envelope was defined, based broadly on drillhole data which includes most of the intersections with +0.1%MoS₂ assays. About 20% of this wireframe lies in the overlying slate material. The nature of the mineralisation, based on the available data, often describes an alternating waste/mineralisation sequence. Drillhole composites of approximately 1m in length were generated, and flagged as ore/waste according to a 0.1%MoS₂ cut-off. This created two sets of MoS₂ composites, representing low and high grade portions.

A block model was set up, using a 25m x 25m x 5m parent cell size. Grade estimation was done based on the waste/mineralisation fractions, as well as MoS₂ grades. These estimated values were combined to give overall MoS₂ grades for each parent block. This general methodology is described in the flowsheet in Figure 14-1.

Figure 14-1. Block Modelling Methodology



14.2 Sample Database

A summary of the drillhole database is shown in Table 14-1. Plans and 3D views of these sample data are shown in Figure 14-2, colour-coded by MoS₂ grade.

The average lateral spacing of the drillhole is approximately 100m. Unfortunately, most of the KTMC data does not contain any lithology data. Another striking feature of the data is the alternating nature of high/low assays downhole. An example of this is shown for hole 87_4 in Table 2-2.

Drillhole recoveries were not consistently good in the 2006-2008 campaign. However, over 75% of the holes having a recovery of over 90%. It is not considered that there is any evidence of sample bias or any relationship between sample recovery and grade.

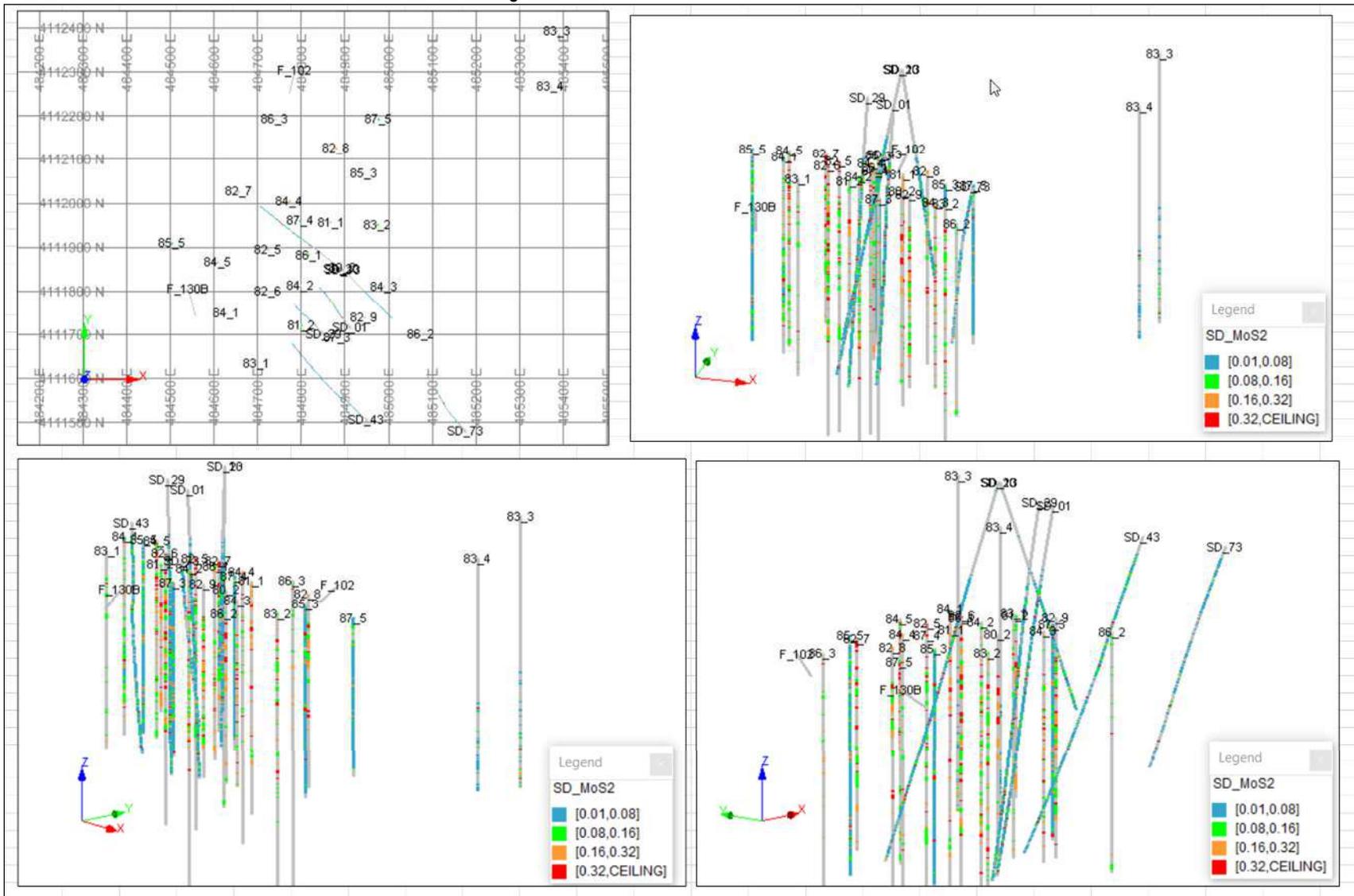
Table 14-1. Summary of Sample Database

Phase	Holes	Length <i>m</i>	Length/ Hole	Samples
			<i>m</i>	
KTMC	27	14,288	529	796
OTL	6	4,079	680	2,694
Total	33	18,366	557	3,490

Table 14-2. Example MoS₂ Assays for Hole 87_4

BHID	FROM	TO	LENGTH	MOS2	MoS ₂ Key		
87_4	0	4.5	4.5	0.03			
87_4	4.5	8	3.5	0.12	0.01	0.10	
87_4	8	12.6	4.6	0.00	0.10	0.15	
87_4	12.6	16.6	4	0.23	0.15	0.20	
87_4	16.6	19.1	2.5	0.14	0.20	0.30	
87_4	19.1	23.6	4.5	0.01	0.30	+	
87_4	23.6	26.1	2.5	0.23			
87_4	26.1	47.6	21.5	0.02			
87_4	47.6	54.6	7	0.02			
87_4	54.6	57.1	2.5	0.21			
87_4	57.1	72.6	15.5	0.06			
87_4	72.6	78.6	6	0.10			
87_4	78.6	134.1	55.5	0.02			
87_4	134.1	145.6	11.5	0.09			
87_4	145.6	155.1	9.5	0.01			
87_4	155.1	161.1	6	0.12			
87_4	161.1	166.6	5.5	0.04			
87_4	166.6	171.6	5	0.11			
87_4	171.6	193.6	22	0.04			
87_4	193.6	198.1	4.5	0.06			
87_4	198.1	201.6	3.5	0.18			
87_4	201.6	224.6	23	0.02			
87_4	224.6	229.6	5	0.10			
87_4	229.6	233.6	4	0.03			
87_4	233.6	238.6	5	0.11			
87_4	238.6	253.6	15	0.03			
87_4	253.6	257.6	4	0.08			
87_4	257.6	315.6	58	0.02			
87_4	315.6	317.6	2	0.13			
87_4	317.6	414.6	97	0.02			
87_4	414.6	416.6	2	0.19			
87_4	416.6	420.6	4	0.05			
87_4	420.6	450	29.4	0.00			

Figure 14-2. Plan and 3D Views of Drillhole Data



14.3 Interpretation

In previous evaluation work, a mineralised envelope had been defined which terminated upwards at the top of the quartzite. However, it is clear that the MoS₂ mineralisation continues up into the overlying slates. This can be seen in the example section in Figure 14-3. The upper part of the overall MoS₂ mineralisation overlaps with the tungsten-bearing beds and underground mine workings. The current interpretation has been based on capturing the majority of the +0.1%MoS₂ assays.

A lateral maximum distance of extrapolation of 100m has been used. A plan and 3D views of the interpreted mineralisation are shown in Figure 14-4. The overall extent of the mineralisation is approximately 800m x 800m x 500m, as summarised in Table 14-3.

Figure 14-3. Example Interpretation – Section 5

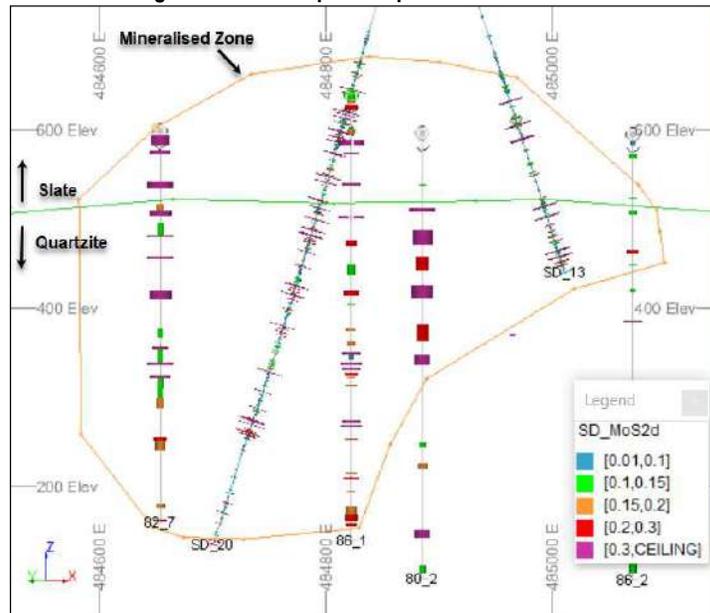


Figure 14-4. Plan and 3D View of Mineralised Zone

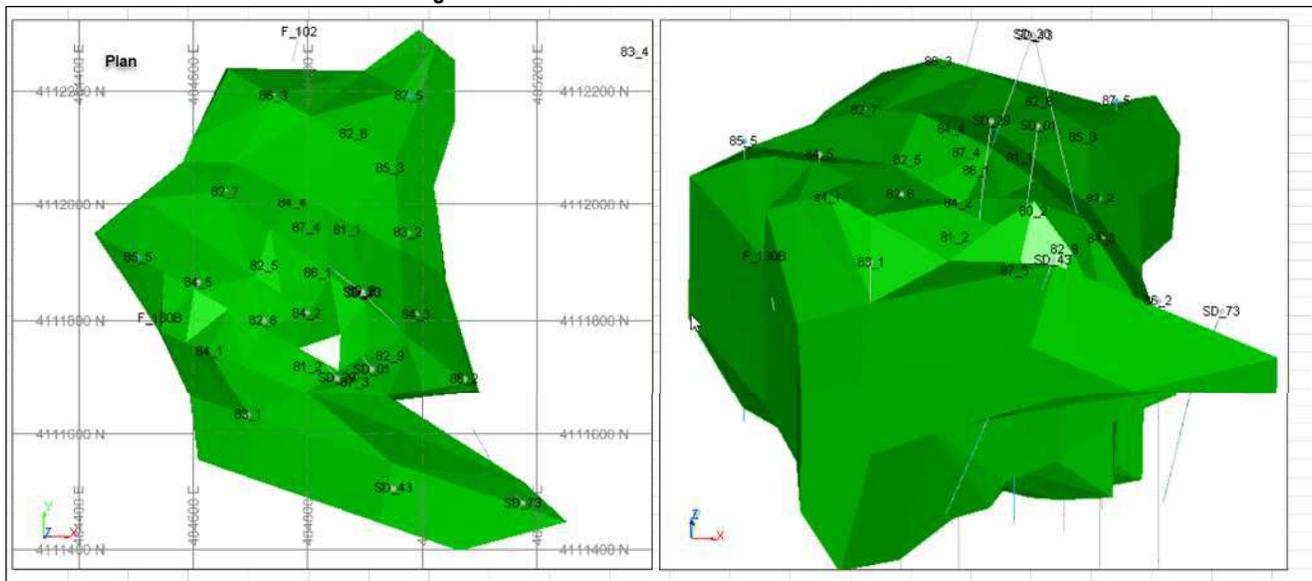


Table 14-3. Overall Mineralisation Dimensions

Horizontal Extent <i>m x m</i>	Vertical Limits		Depth	
	Minimum Base Elevation <i>m RL</i>	Maximum Elevation <i>m RL</i>	Max Depth <i>m</i>	Minimum Depth <i>m</i>
	800 x 800	40	785	930

Notes

- . Orebody approximately vertical

14.4 Drillhole Data Processing

A summary of the samples captured within the interpreted mineralised zones is shown in Figure 14-4. A log-probability plot of the MoS₂ grades, split by host rock, is shown in Figure 14-5. This shows very similar grade distributions in both host rock types. It is also clear that there is a big group of very low (or unsampled, assumed zero) grades as well. A low/high grade cut-off level of 0.1% MoS₂ was applied to split the sample groups, during compositing.

A histogram of sample lengths is shown in Figure 14-6. This shows the majority of the samples have a 1m sample length. A coefficient of variation analysis plot of MoS₂ grades is shown in Figure 14-7. This clearly shows marked outlier grades above a grade of 1% MoS₂.

As preparation for resource estimation, the samples were converted into 1m composites. The steps and controls used in compositing include:

- A top-cut level of 1% MoS₂ was applied, prior to compositing.
- A 1m composite length.
- The composites were split into two groups, a low grade (OWCODE=0) group for <0.1% MoS₂, and a high grade (OWCODE=1) group for >=0.1% MoS₂ grades.
- Two further grade fields were set up for these low/high grade fractions, Mo_Lo and Mo_Hi.

A log-probability plot of the composite MoS₂ grades is shown in Figure 14-8.

Table 14-4. Summary of Holes Intersecting Mineralisation

Host Rock	Holes	Length <i>m</i>	Length/ Hole <i>m</i>	Samples
Slate	28	2,395	86	714
Quartzite	30	8,813	294	1,917

Figure 14-5. Log-Probability of Selected Samples By Host Rock Type

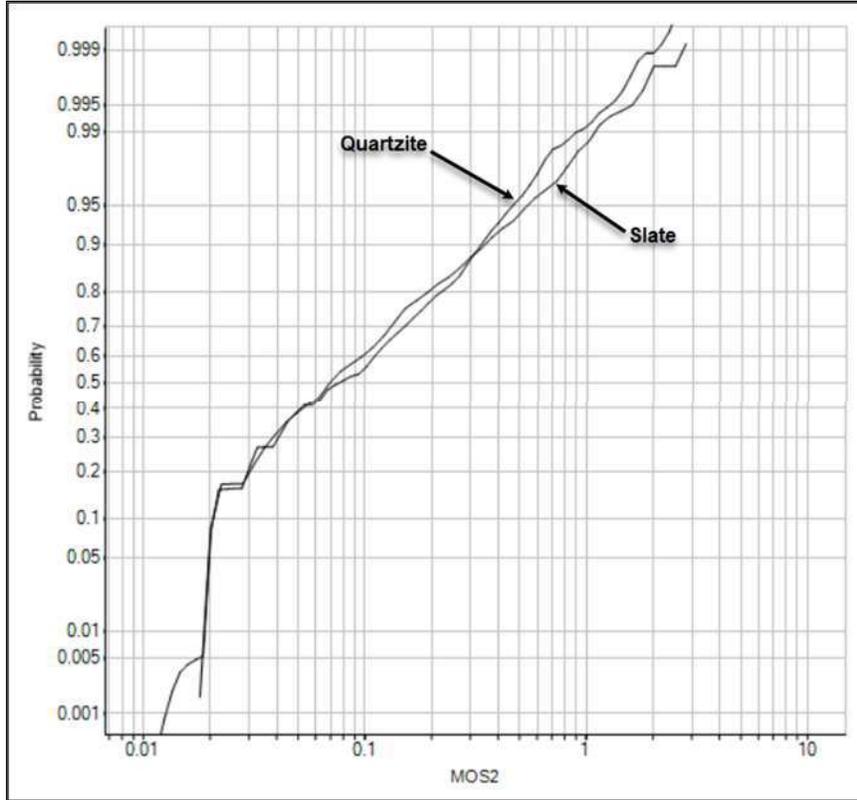


Figure 14-6. Histogram of Sample Lengths

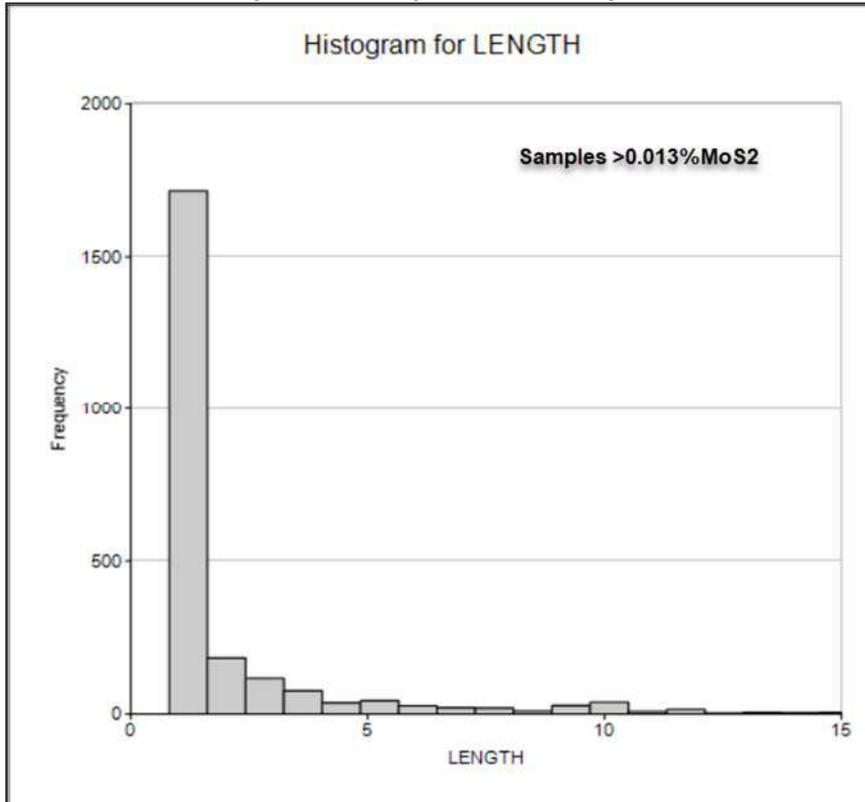


Figure 14-7. Coefficient of Variation Analysis Plot

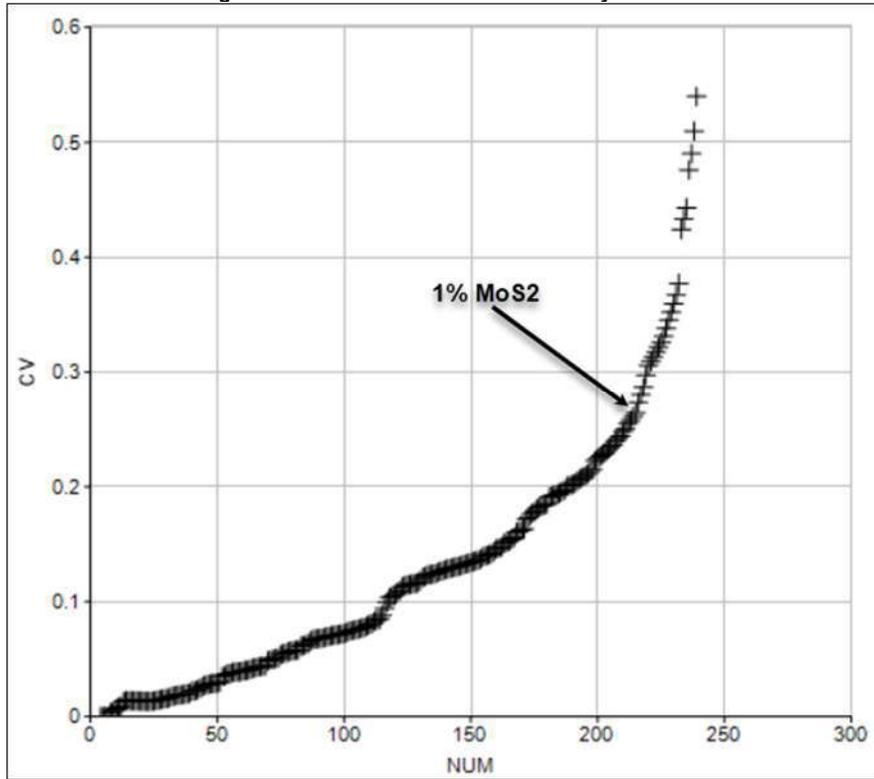
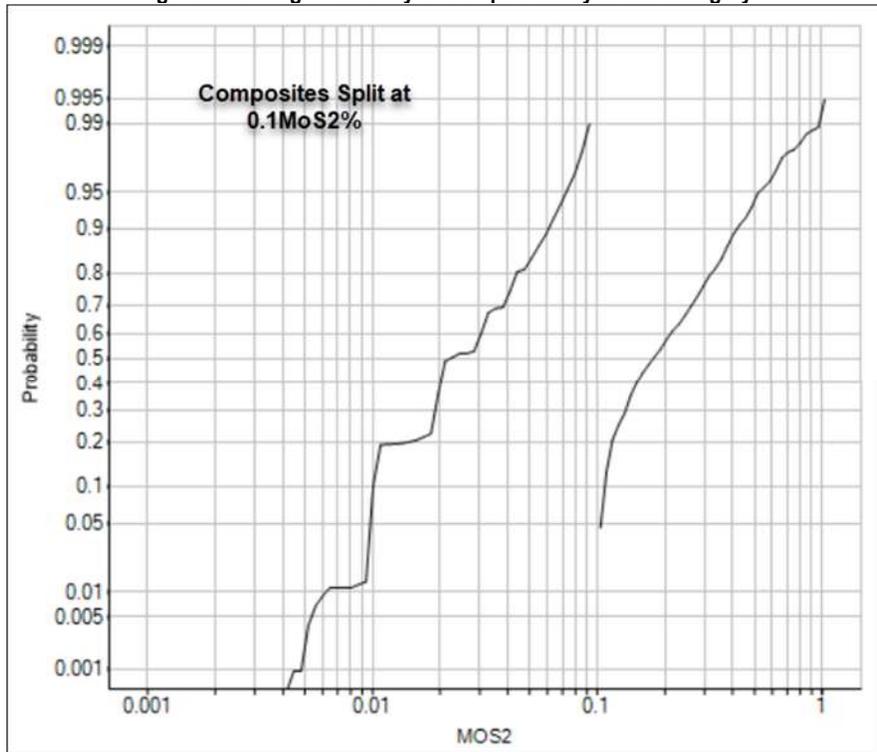


Figure 14-8. Log-Probability of Composites By Grade Category



14.5 Geostatistics

A statistical summary of the 1m composites is shown in Table 14-5.

Table 14-5. Statistical Summary of 1m Composites

Host Rock	OWCODE	NUMBER	MINIMUM	MAXIMUM	MEAN	MEDIAN	PCTL10	PCTL90	VARIANCE	STANDDEV	COVARTN%
Slate	0	677	0	0.09	0.01	0	0.00	0.04	0.0004	0.0192	180
Quartzite	1	479	0.1	1	0.27	0.21	0.11	0.49	0.0398	0.1995	73
Slate	0	2,264	0	0.096	0.01	0	0.00	0.04	0.0004	0.0190	167
Quartzite	1	2,652	0.1	1	0.22	0.18	0.11	0.40	0.0208	0.1441	64
Slate	All	1,156	0	1	0.06	0	0.00	0.21	0.0192	0.1385	220
Quartzite	All	4,916	0	1	0.08	0.02	0.00	0.24	0.0161	0.1268	168

Experimental and model variograms were generated from these data for the OWCODE values (proportion of mineralisation), as well as the low and high MoS₂ grades, as shown in Figure 14-9. The main observations from this variography work include:

- A lateral range of influence of approximately 100m, and a vertical range of 10-15m, consistent with broadly flattish-dipping sets of veins.
- There does not appear to be a mark anisotropy in the horizontal plane, but this analysis is very limited due to the wide drillhole spacing.
- The general model variograms produced support the use of ordinary kriging (OK) for grade estimation.

14.6 Volumetric Modelling

An orthogonal block model prototype was set up, using a parent block size of 25m x 25m x 5m. This prototype is summarised in Table 14-6. Based on the wireframe models of the overall mineralised zone, as well as the top of the quartzite, were used to generate a volumetric block model, with sub-cells down to a resolution of 5m.

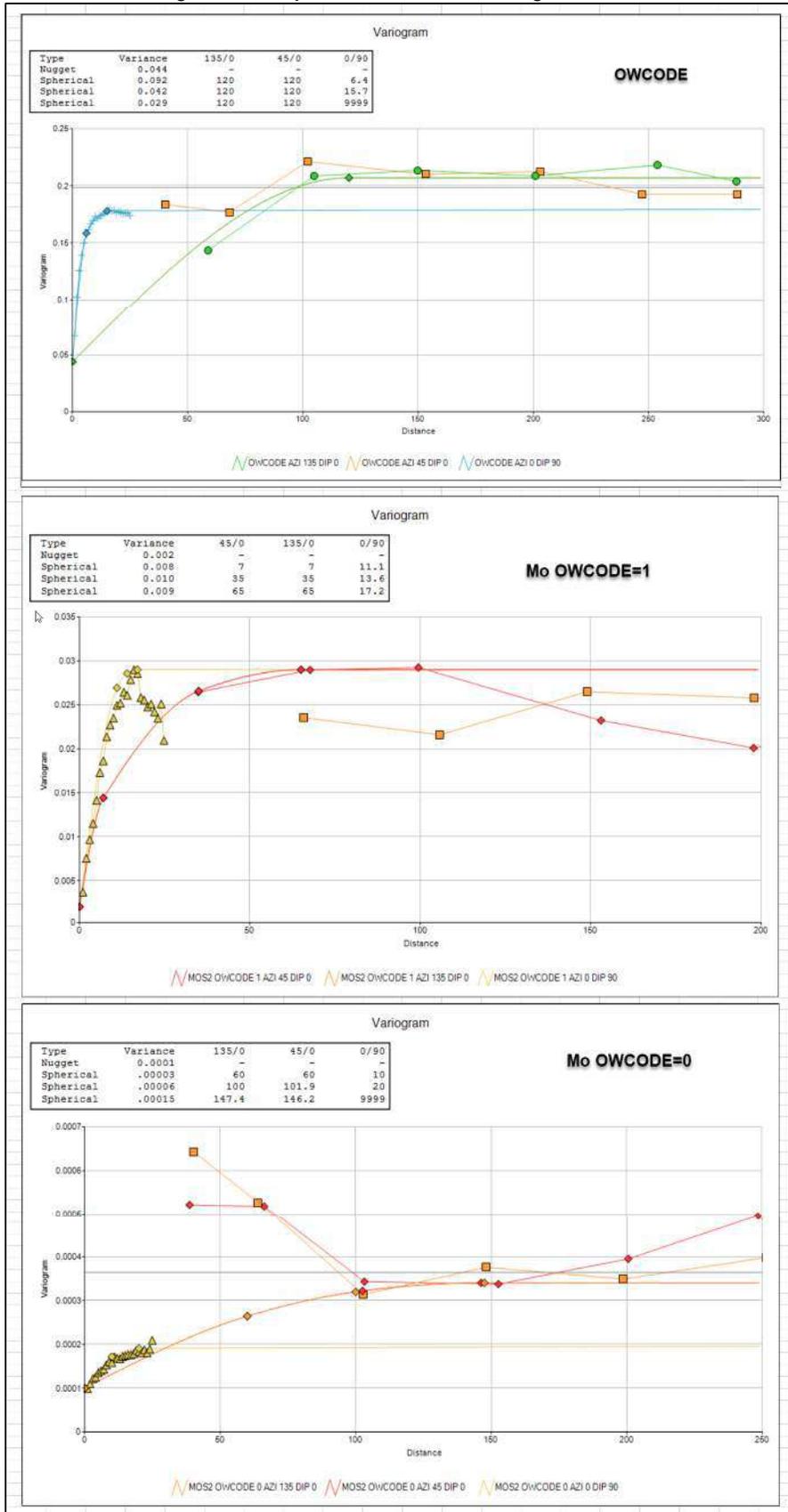
Table 14-6. Block Model Prototype

	Minimum	Maximum	Extent	Size	Number
X	484,250	485,300	1,050	25	42
Y	4,111,300	4,112,450	1,150	25	46
Z	20	850	830	5	166

There are limited density measurements available, so host rock density values used previously were assigned:

Quartzite 2.63 t/m³
Slate 2.7 t/m³

Figure 14-9. Experimental and Model Variograms – WO₃



14.7 Grade Estimation

The main MoS₂ grade was estimated by using the following procedure:

1. Estimate OWCODE, giving decimalised values between 0-1, indicating the proportion of +0.1% MoS₂ material within each block.
2. Estimate Mo_Hi, which will be the average grade of the plus 0.1% MoS₂ material within each block.
3. Estimate Mo_Lo, which will be the average grade of the minus 0.1% MoS₂ material within each block.

The overall average MoS₂ grade was then determined as follows

$$\text{MoS}_2(\text{block}) = (\text{OWCODE} \times \text{Mo_Hi}) + ((1-\text{OWCODE}) \times \text{Mo_Lo})$$

The grade estimation parameters used are summarised below in Table 14-7. These apply an effective maximum extrapolation distance of 100m. The quartzite-slate boundary was not used to split the use of composites above or below the boundary i.e. not a hard boundary.

Table 14-7. Grade Estimation Parameters

Search Volume	Distances (m):			Minimum Composites	Maximum Composites	Max. Comps Per Drillhole	Minimum No. of Drillholes
	X	Y	Z				
1	50	50	10	8	28	7	2
2	100	100	20	8	28	7	2
3	100	100	20	1	12	7	1
Notes							
	. Block size for estimation 2m x 10m x 10m						
	. Initial OWCODE ore/waste split estimated based on 0.1% MoS ₂ cut-off						
	. Primary estimation of OWCODE, Mo_Hi and Mo_Lo by OK						
	. MoS ₂ grades also estimated using ID(^2) and NN, for validation purposes						

A plan of the all drillholes used in estimation is shown in Figure 14-10, which is also a section line reference. Example sections on lines 5 and 11 are shown in Figure 14-11 and Figure 14-12 respectively. These section shows MoS₂ grades from the drillhole composites, as well those estimated into the resource block model. Similar sections for all section lines are shown in Appendix C.

Figure 14-10. Drillhole Plan

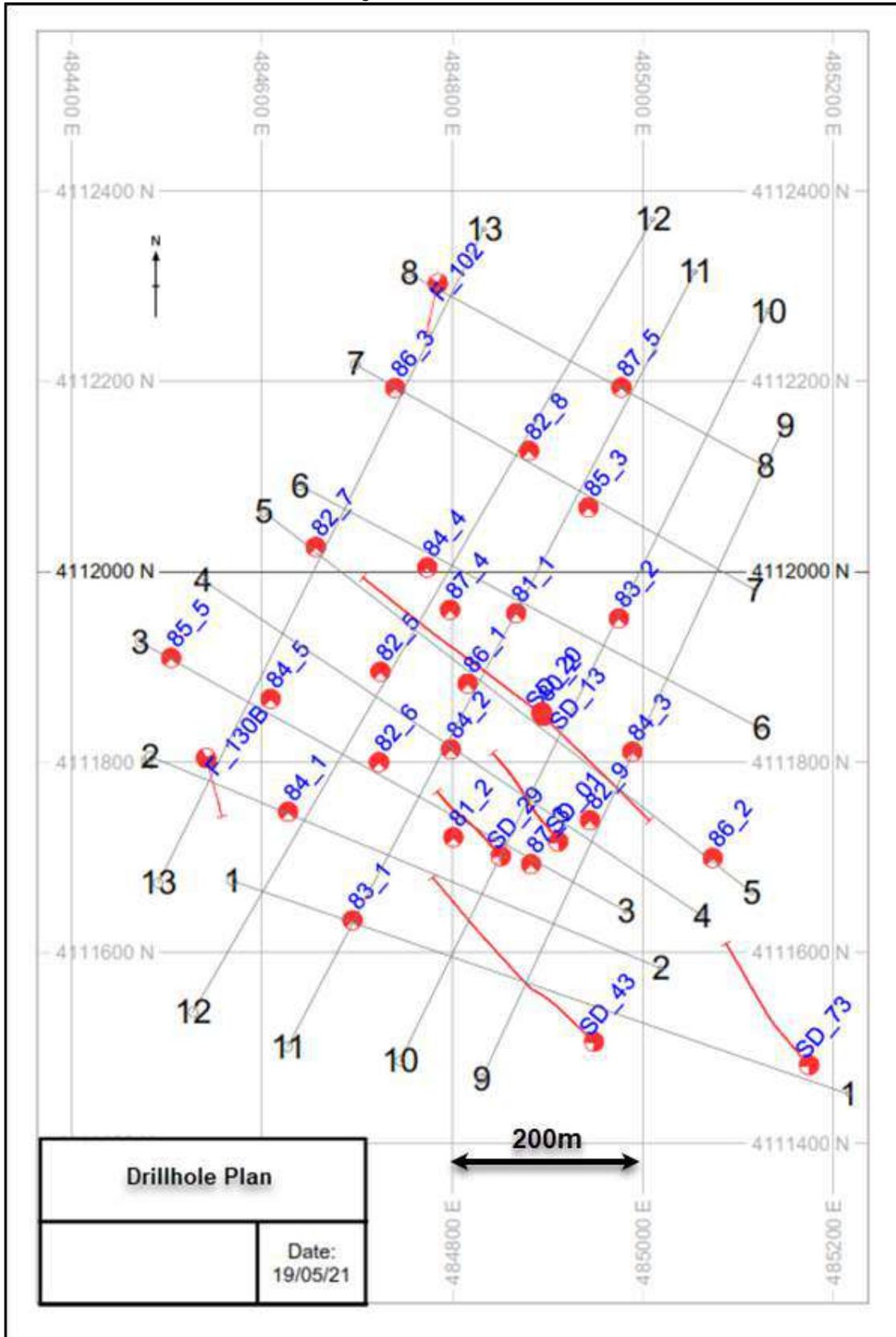


Figure 14-11. Drillhole and Block Model Section – Line 5

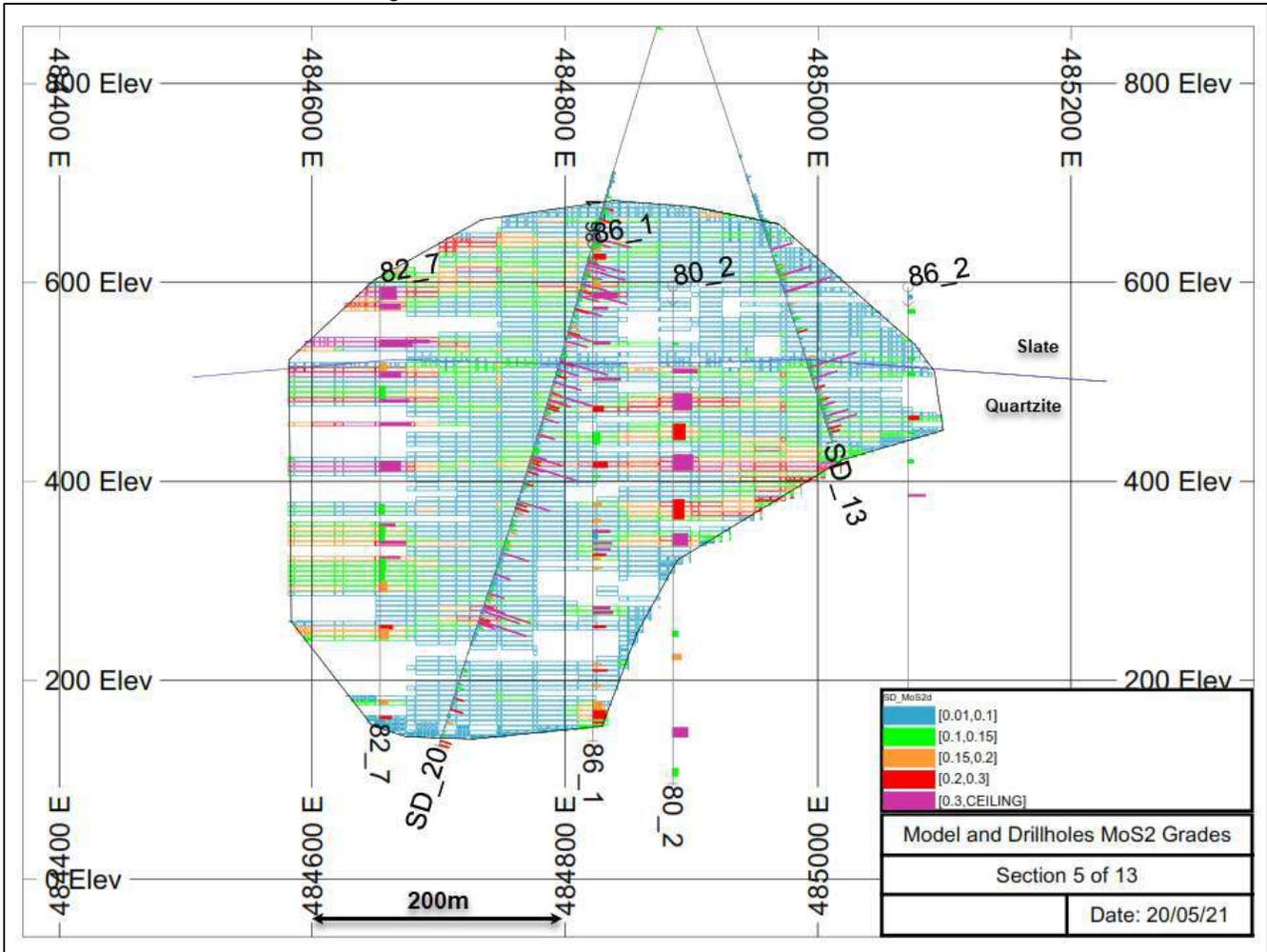
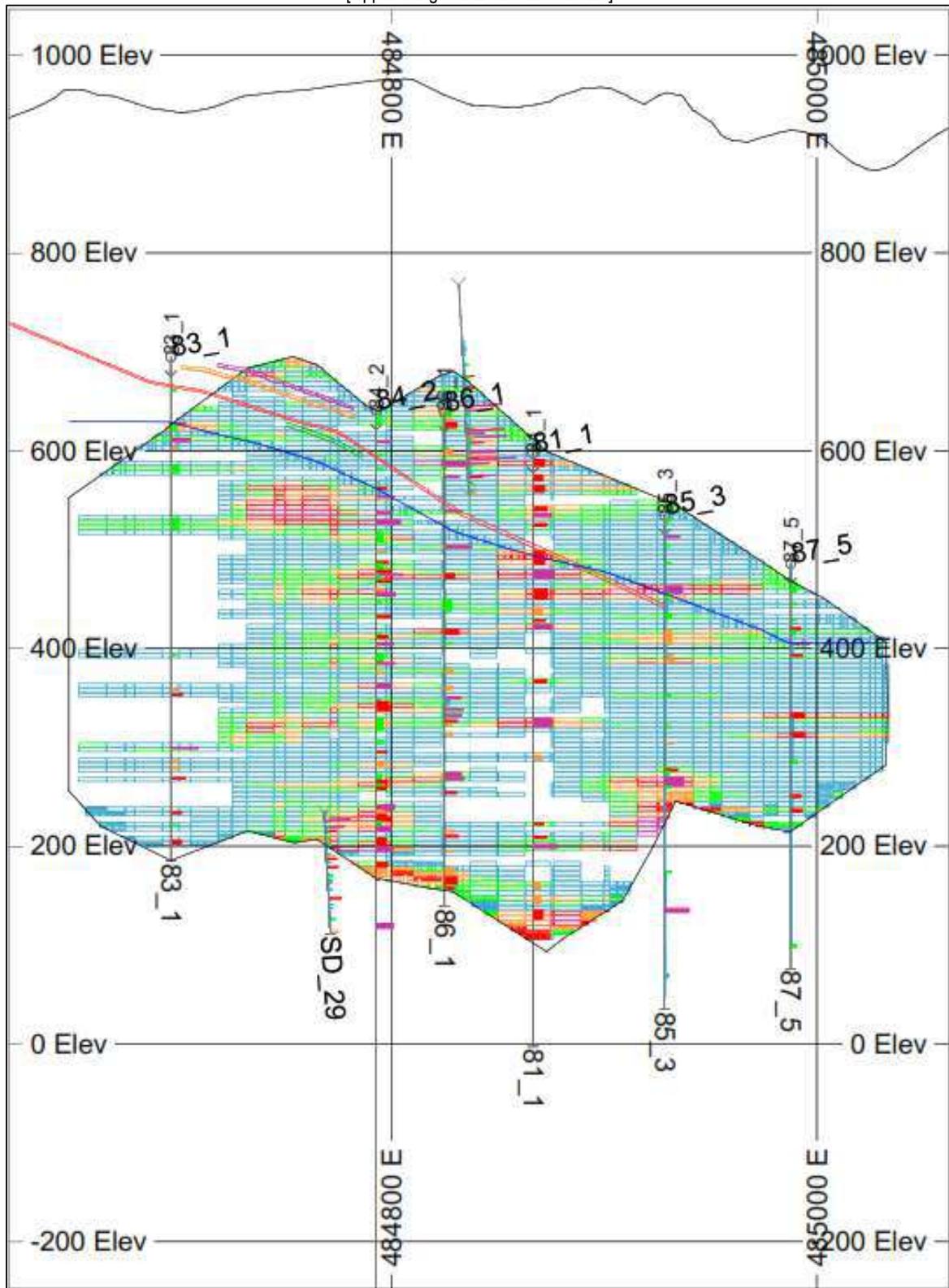


Figure 14-12. Drillhole and Block Model Section – Line 11
[Upper Tungsten Zones also shown]



14.8 Mineral Resource Classification

All of these modelled resources were classified with an Inferred category, reflecting the spacing and quality of available data, as well as the geological understanding of the deposit.

14.9 Model Validation

Model validation steps included:

- Model and drillhole sections;
- Global average grade comparisons;
- Local average grade comparisons and
- Comparison with Historical Evaluations.

A series of approximately W-E and S-N sections are shown in Appendix C. These show the strong lateral continuity current assumed through the estimation parameters.

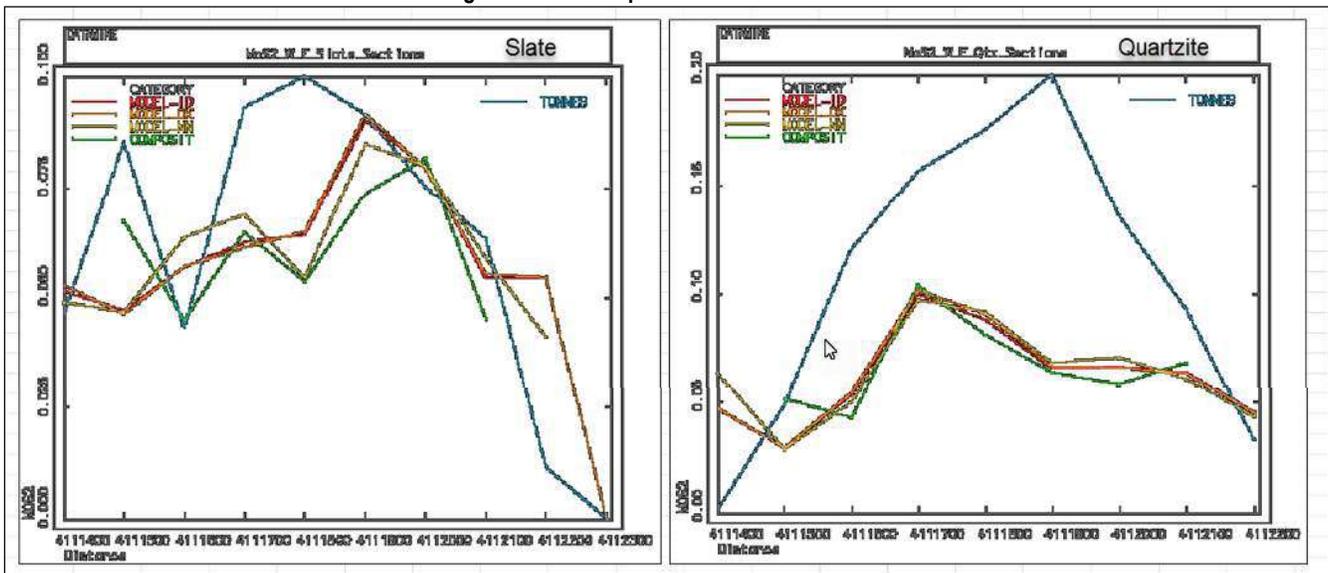
A summary of global average grade comparisons is shown in Table 14-8. The composite and model grades compare fairly well.

Table 14-8. Global Average MoS₂ Grades' Comparison

Host Rock	Composites	Model Average Grades		
		OK	ID	NN
Slate	0.063	0.070	0.070	0.069
Quartzite	0.075	0.074	0.073	0.074
Notes	. No cut-off applied			

A series of W-E grade swath plots were produced, which are essentially grade profiles which compare the average composite and model grades on a series of 100m wide slices which progress through the model from south to north. These are shown in Figure 14-13, with separate charts for the slate and quartzite host rock types. These show an acceptable comparison, particularly for the quartzite.

Figure 14-13. Comparative MoS₂ Swath Plots



A comparison of the current model with previous historical evaluations is shown below.

Table 14-9. Comparison with Historical Evaluations

Evaluation	MoS₂ Cut- Off Grade	Tonnes Mt	MoS₂ %	MoS₂ Contained Kt
86 Overall	0.10	79.46	0.118	93.8
86 Vein Area	0.20	17.00	0.396	67.3
Kenex 2008	0.15	21.00	0.228	47.9
Wardrop 2010	0.16	7.10	0.180	12.8
Current Evaluation	0.15	34.18	0.212	72.5
Notes	. All evaluations restricted to Quartzite only			

Comments related to these figures include:

- The 1986 evaluation was focussed on individual veins and vein combinations.
- It appears that the Kenex estimation were done directly from the drillhole data, without any specific steps related to the alternating vein nature of the deposit.
- Very few estimation details were given in the Wardrop 2010 report.
- The current evaluation is focussed on the average grades of 25m x 25m x 5m blocks. Quite different results would be obtained with modelling of envelopes around individual veins or groups of veins.

14.10 Mineral Resource Reporting

All of the modelled resources presented in this study as having an Inferred resource category. This a reflection of features which include:

- Many holes without QA/QC and/or lithology data.
- Wide drillhole spacing.
- Lack of density measurements.

An overall breakdown of the current resources, at a cut-off of 0.19% MoS₂ is shown in Table 14-10. This cut-off comes from the calculations shown in Table 14-11. The mining and mill operating costs have been estimated from the current Sangdong parameters. The other figures have been referenced from other molybdenum operations. Mined areas within the slates have been removed.

Table 14-10. Breakdown of Current Resources

	Host Rock Type						
	Slate		Quartzite		Total		
Search	Tonnes	MoS ₂	Tonnes	MoS ₂	Tonnes	MoS ₂	MoS ₂ Contained
Volume	Mt	%	Mt	%	Mt	%	Kt
2 Holes within 50m x 50m x 10m	0.15	0.23	1.29	0.24	1.44	0.23	3.4
2 Holes within 100m x 100m 20m	1.78	0.25	10.64	0.24	12.41	0.24	30.1
1 Hole within 100m x 100m 20m	2.41	0.30	5.21	0.29	7.63	0.29	22.3
TOTAL	4.34	0.28	17.14	0.26	21.48	0.26	55.8
Notes							
	. Cut-off 0.19% MoS ₂						
	. Block Size 25m x25m x 5m						
	. Mined areas removed in slates						

Table 14-11. MoS₂ Cut-Off Calculation

			Sangdong
			SDM
Price	Mo Metal Price	\$/lb Mo	14.25
		\$/kg Mo	31.42
		\$/t Mo	31,416
Costs	Mining Cost	\$/t ore	20.00
	Milling Cost	\$/t ore	10.95
	Roaster Cost	\$/t ore	0.42
	Lab Cost	\$/t ore	0.07
	G&A Cost	\$/t ore	0.64
	Shipping Cost	\$/t ore	0.02
	Total with Mining Cost	\$/t ore	32.10
	Mill	Mill Recovery	
Leach/Roaster Recovery			99.2%
Overall Recovery			88.1%
Cut-Offs	Mo COG	Mo%	0.12%
	MoS ₂ COG	MoS ₂ %	0.19%

A grade-tonnage table of the overall (slate and quartzite) model contents is shown in Table 14-12. A grade-tonnage table of the quartzite-only model contents is shown in Table 14-13.

Table 14-12. Grade-Tonnage Table – Slate and Quartzite

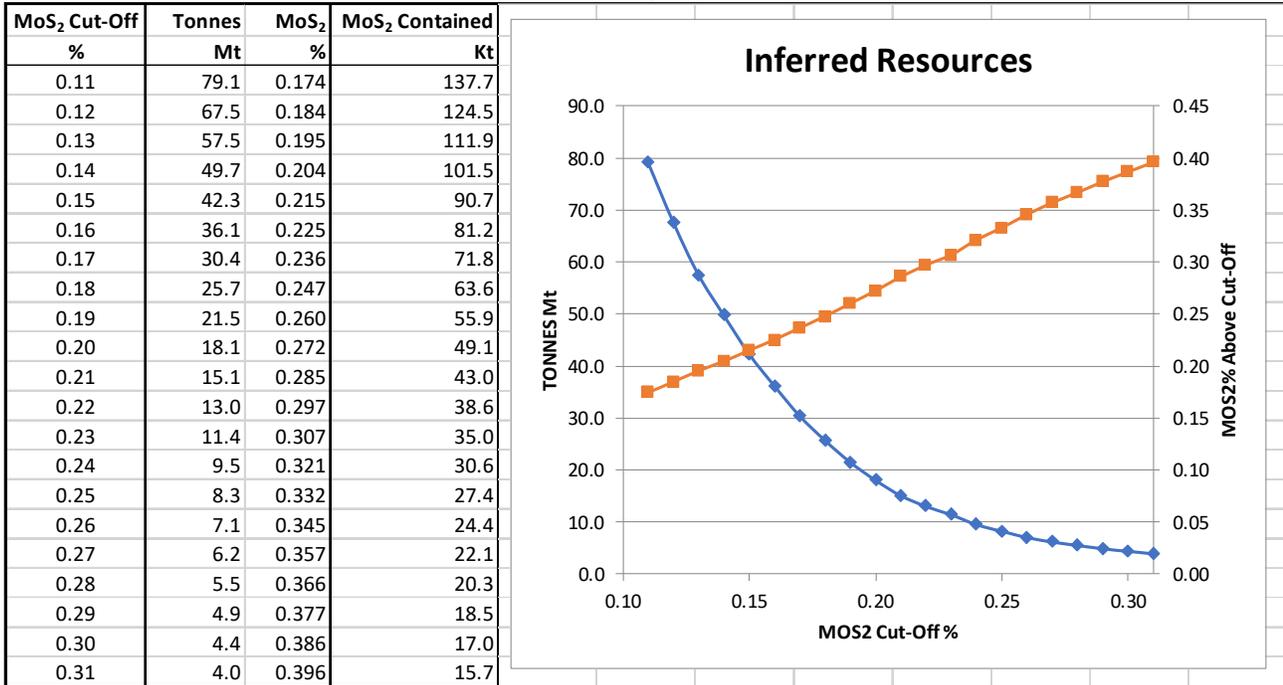
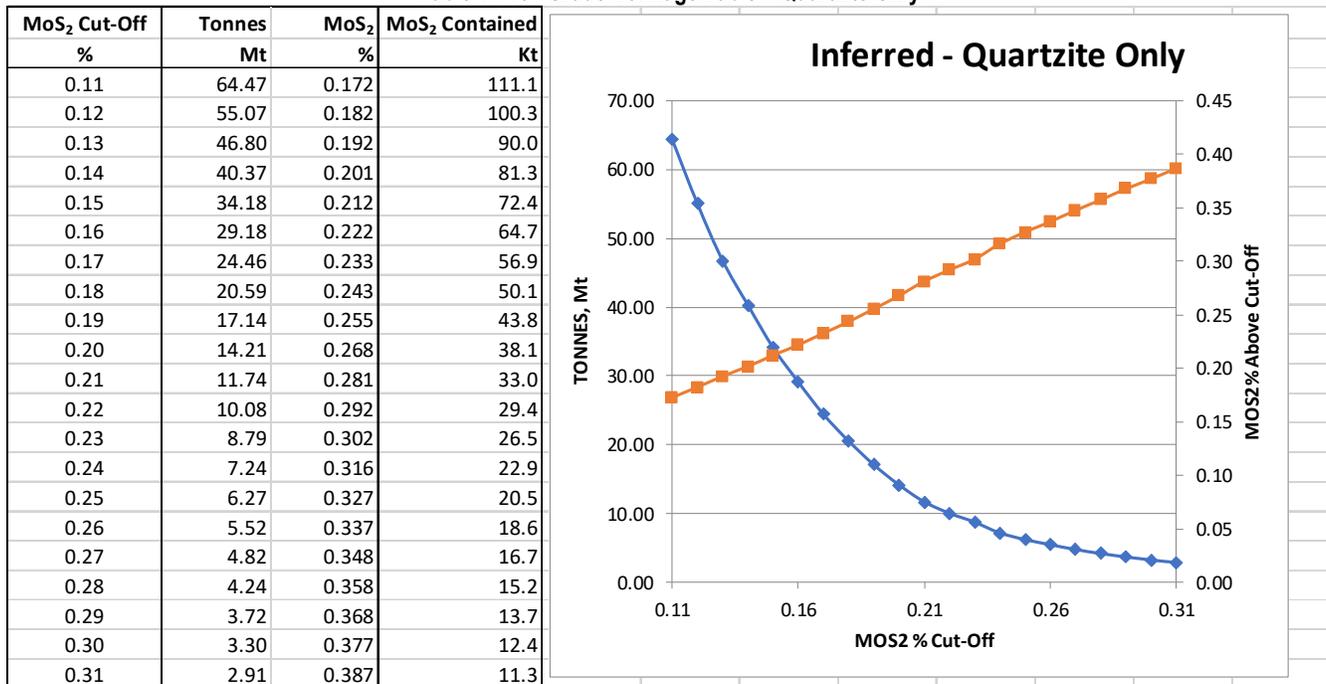


Table 14-13. Grade-Tonnage Table – Quartzite Only



15 REFERENCES

- Moon K J. "The Genesis of the Sangdong Tungsten Deposit, the Republic of Korea", Unpubl. Ph.D. thesis, Univ. Tasmania, 1983.
- Kenex Knowledge Systems Ltd (KKS). "Preliminary Block Model for the Sangdong Deep Molybdenum Zone.", March 2008.
- Wardrop. "Sangdong Project Scoping Study", April 2010.
- Adam Wheeler. "NI43-101 - Technical Report on the Mineral Resources and Reserves of The Sangdong Project, South Korea", December 2015.

16 QUALIFIED PERSONS CERTIFICATES

Certificate Of Author

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Cambrose Farm, Redruth, Cornwall, TR16 4HT, England.
Tel/Fax: (44) 1209-899042; E-mail: adamwheeler@btinternet.com

As the author of this report on the Sangdong Project, I, A. Wheeler do hereby certify that:-

1. I am an independent mining consultant, based at, Cambrose Farm, Redruth, Cornwall, TR16 4HT, England.
2. I hold the following academic qualifications:-

B.Sc. (Mining)	Camborne School of Mines	1981
M.Sc. (Mining Engineering)	Queen's University (Canada)	1982
3. I am a registered Chartered Engineer (C. Eng and Eur. Ing) with the Engineering Council (UK). Reg. no. 371572.
4. I am a professional fellow (FIMMM) in good standing of the Institute of Materials, Minerals and Mining.
5. I have worked as a mining engineer in the minerals industry for over 40 years. I have experience with a wide variety of mineral deposits and reserve estimation techniques.
6. I have read NI 43-101 and the technical report, which is the subject of this certificate, has been prepared in compliance with NI 43-101. By reason of my education, experience and professional registration, I fulfil the requirements of a "qualified person" as defined by NI 43-101. My work experience includes 5 years at an underground gold mine, 7 years as a mining engineer in the development and application of mining and geological software, and 28 years as an independent mining consultant, involved with evaluation and planning projects for both open pit and underground mines.
7. I am responsible for the preparation of the technical report titled "Technical Report on The Sangdong Molybdenum Stockwork Project" and dated May 31st, 2022. I last visited the Sangdong site on June 13th- 16th, 2017.
8. As of the date hereof, to the best of the my knowledge, information and belief, the technical report, which is the subject of this certificate, contains all scientific and technical information that is required to be disclosed to make such technical report not misleading.
9. I am independent of Almonty Industries Inc., pursuant to section 1.5 of the Instrument.
10. I have read the National Instrument and Form 43-101F1 (the "Form") and the Technical Report has been prepared in compliance with the Instrument and the Form.
11. I consent to the filing of the report with any Canadian stock exchange or securities regulatory authority, and any publication by them of the report.

Dated this 12th of August, 2022



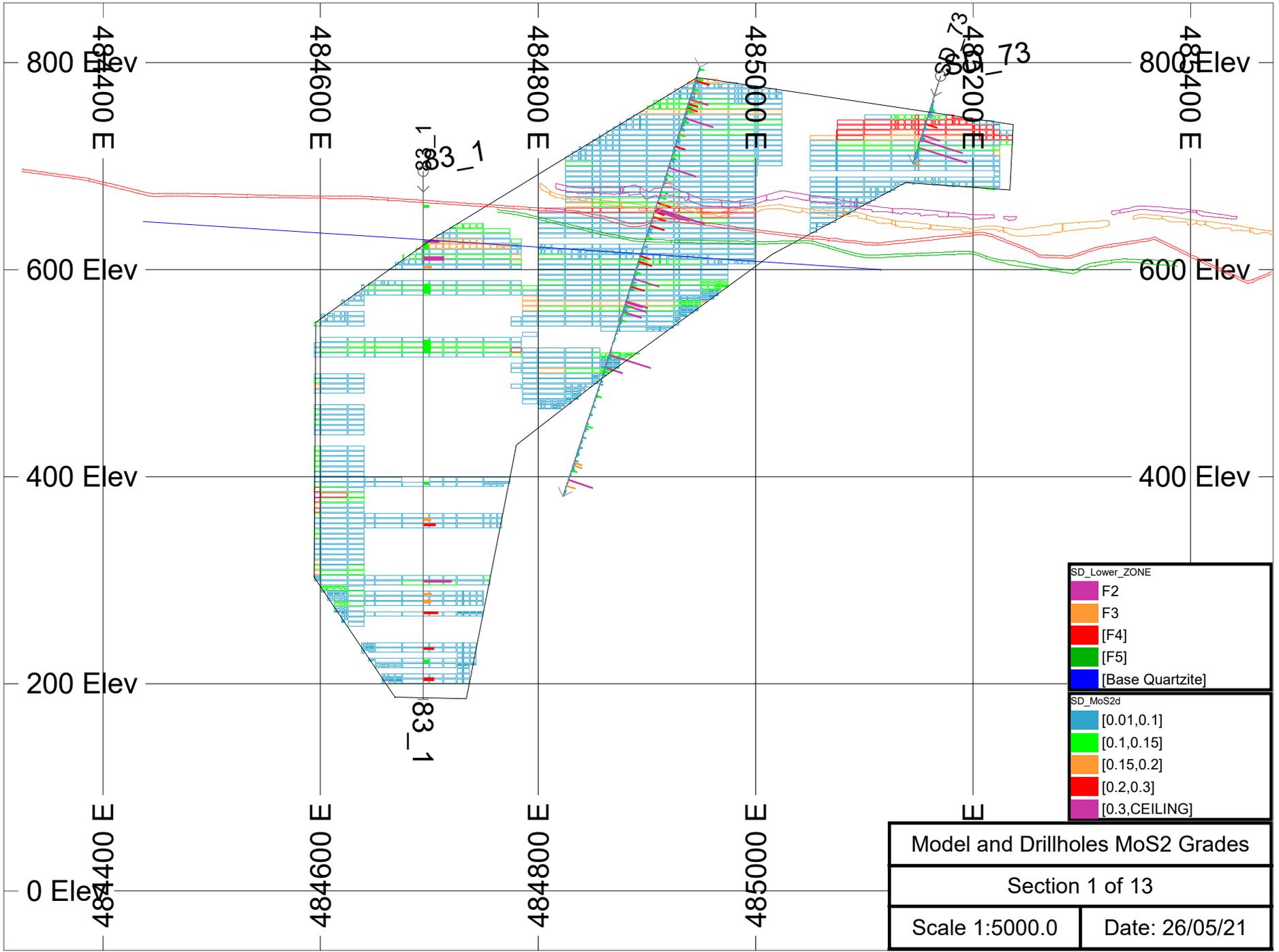
_____ A. Wheeler, C.Eng.

Appendix A: Glossary of Terms

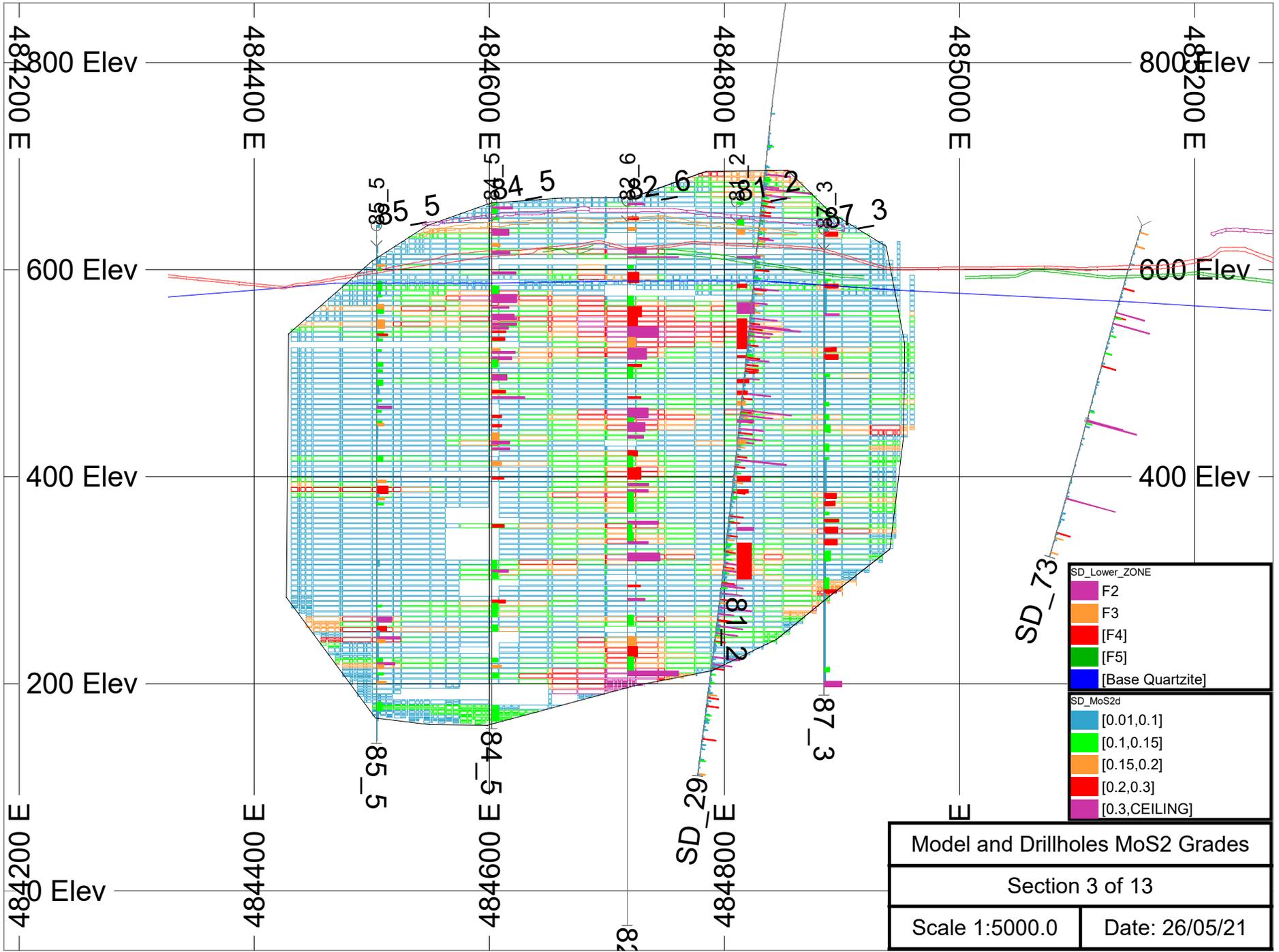
UNITS OF MEASURE AND ABBREVIATIONS

AKT	Almonty Korea Tungsten
amsl	Above mean sea level
DMT	dry metric tonne
ha	hectares
ISO	International Organization for Standardisation
KTMC	Korea Tungsten Mining Company Ltd.
km	Kilometers
kt	Tonnes x 1,000
ktpa	Kilo-tonnes per annum
m	meters
M	million
m ³	cubic meter
m/h	meters per hour
MIP	Mechanised Inclined Panel mining
Mo	Molybdenum
MRE	Mineral Resource Estimation
Mt	Tonnes x 1,000,000
mtu	metric tonne unit. 1 mtu = 10kg = 0.01t. Normally used to refer to 10kg of WO ₃ concentrate at a grade of 100% WO ₃ .
NI	National Instrument (43-101)
NSR	Net smelter return
ppb	Parts per billion
ppm	Parts per million
QA/QC	Quality assurance/ quality control
SMC	Sangdong Mining Co.
SMS	Sangdong Molybdenum Stockwork
t	Tonne (1,000 kg)
tpa	Tonnes per annum/year
3D	Three-dimensional
US\$	US dollars
UTM	Universal Transverse Mercator
WMC	Woulfe Mining Corporation
XRF	X-ray fluorescence

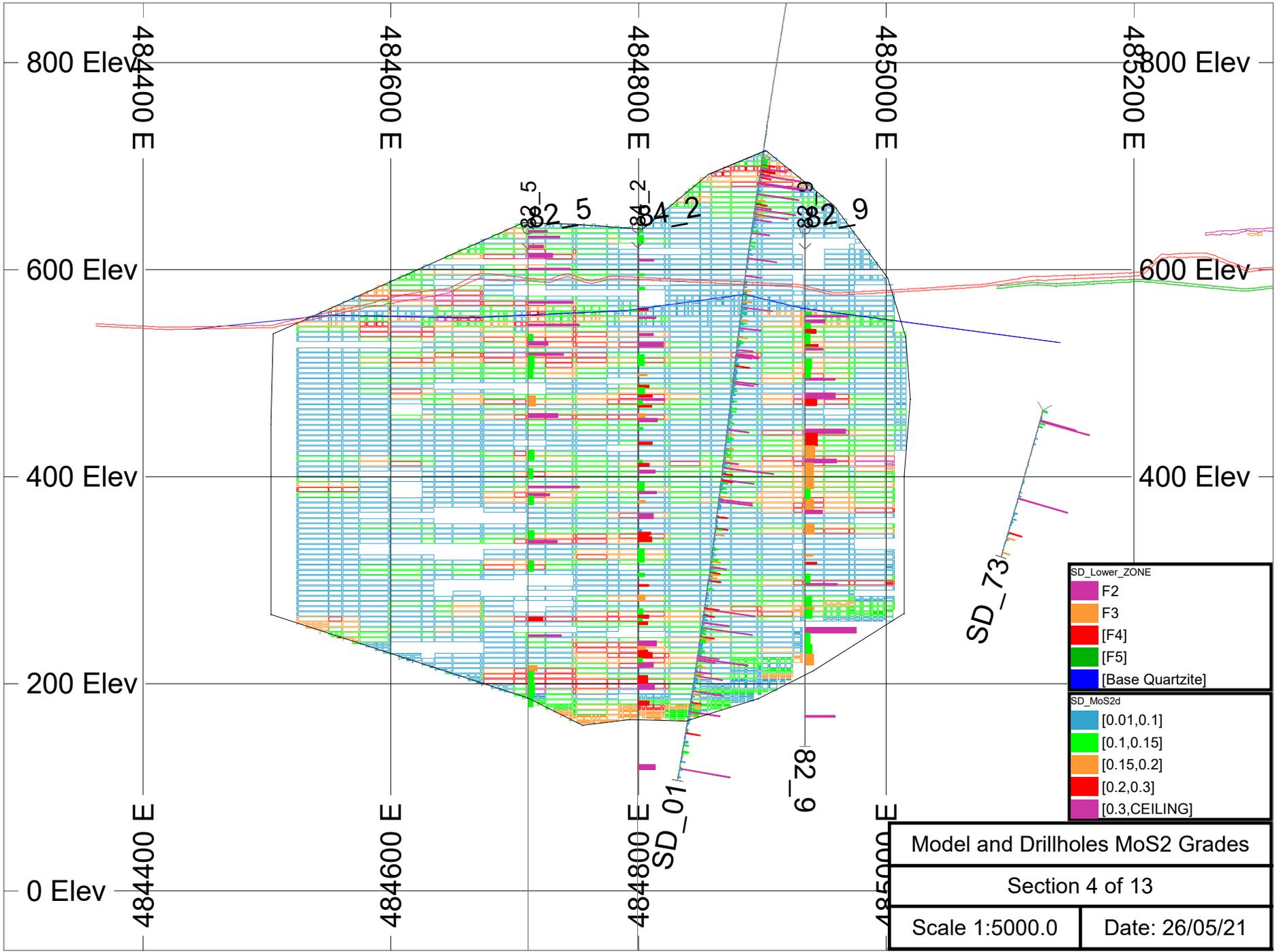
Appendix B: Block Model Cross-Sections



Model and Drillholes MoS ₂ Grades	
Section 1 of 13	
Scale 1:5000.0	Date: 26/05/21



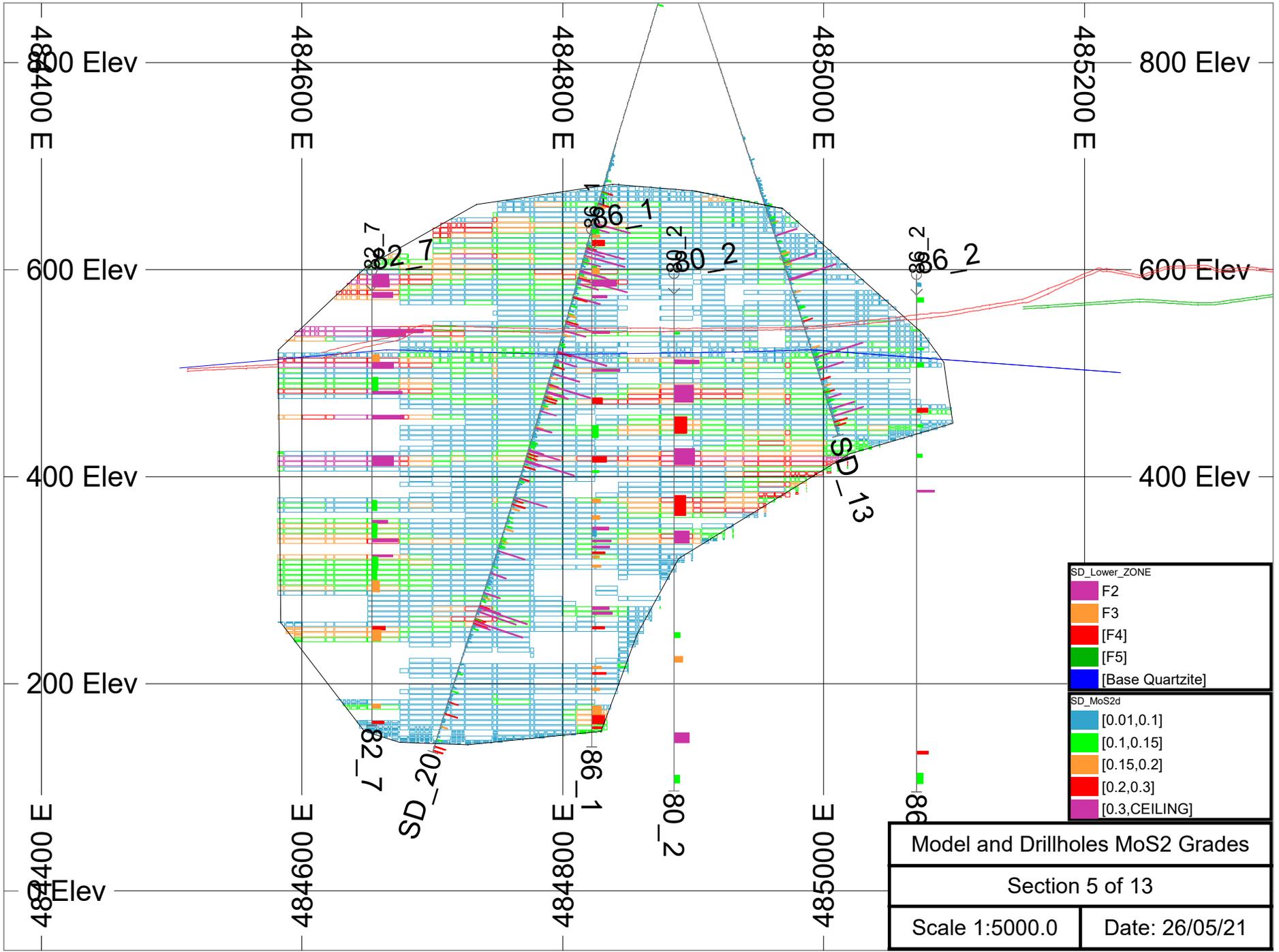
Model and Drillholes MoS2 Grades	
Section 3 of 13	
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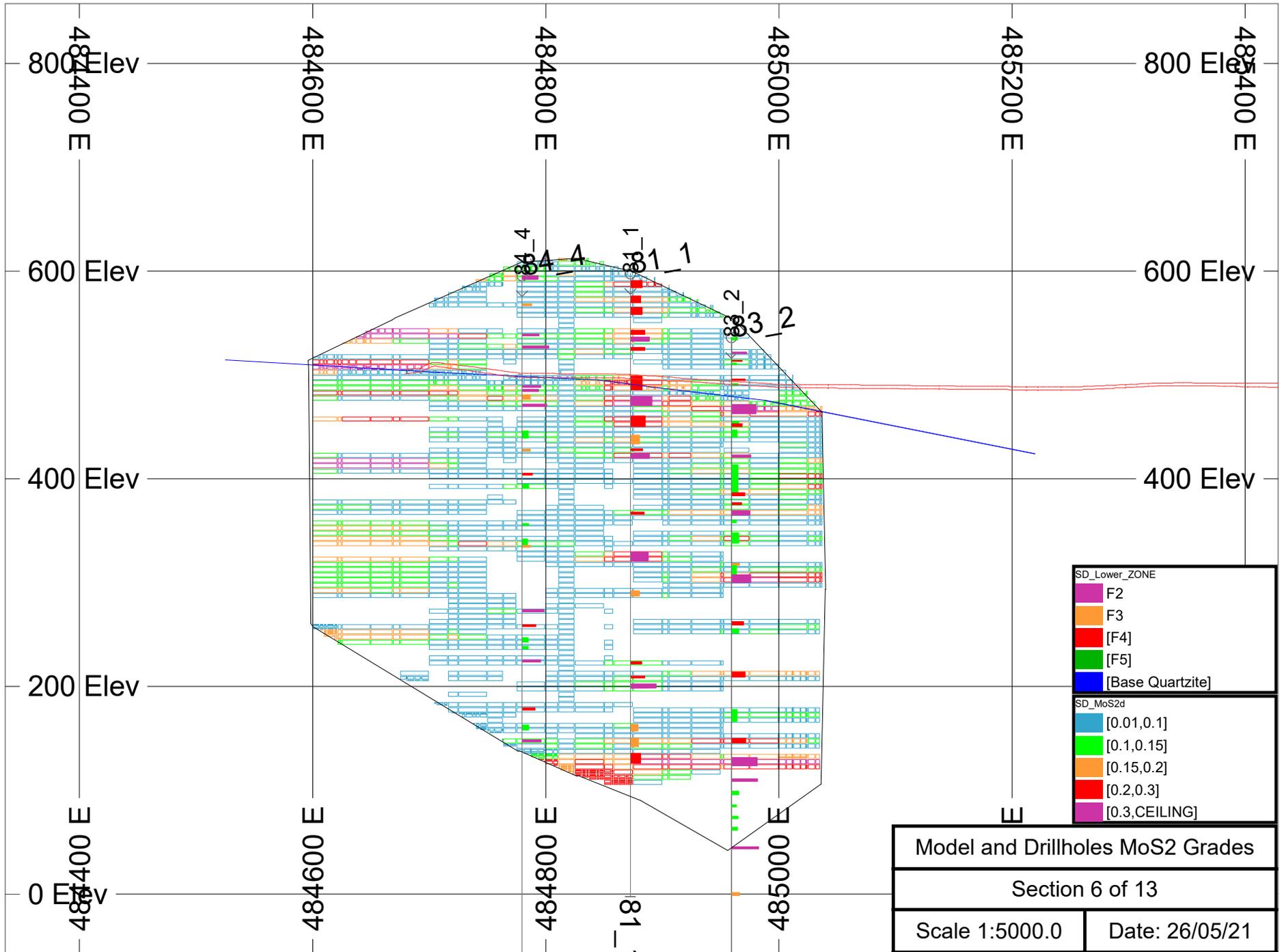


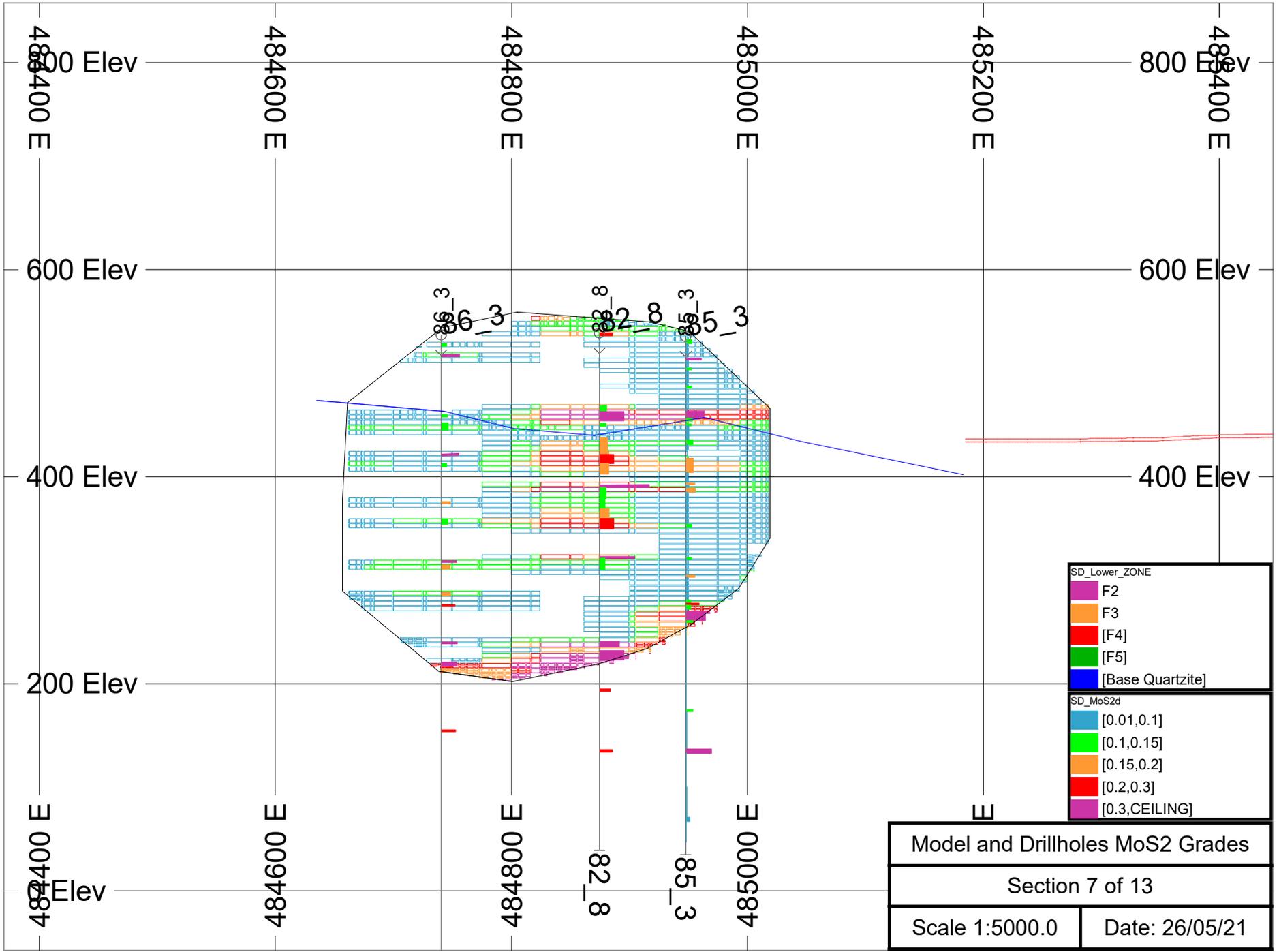
Model and Drillholes MoS2 Grades

Section 4 of 13

Scale 1:5000.0 Date: 26/05/21







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800 Elev

484600 E

484800 E

485000 E

485200 E

485400 E
800 Elev

600 Elev

600 Elev

400 Elev

400 Elev

200 Elev

484000 E
800 Elev

484600 E

484800 E

82_8

85_3

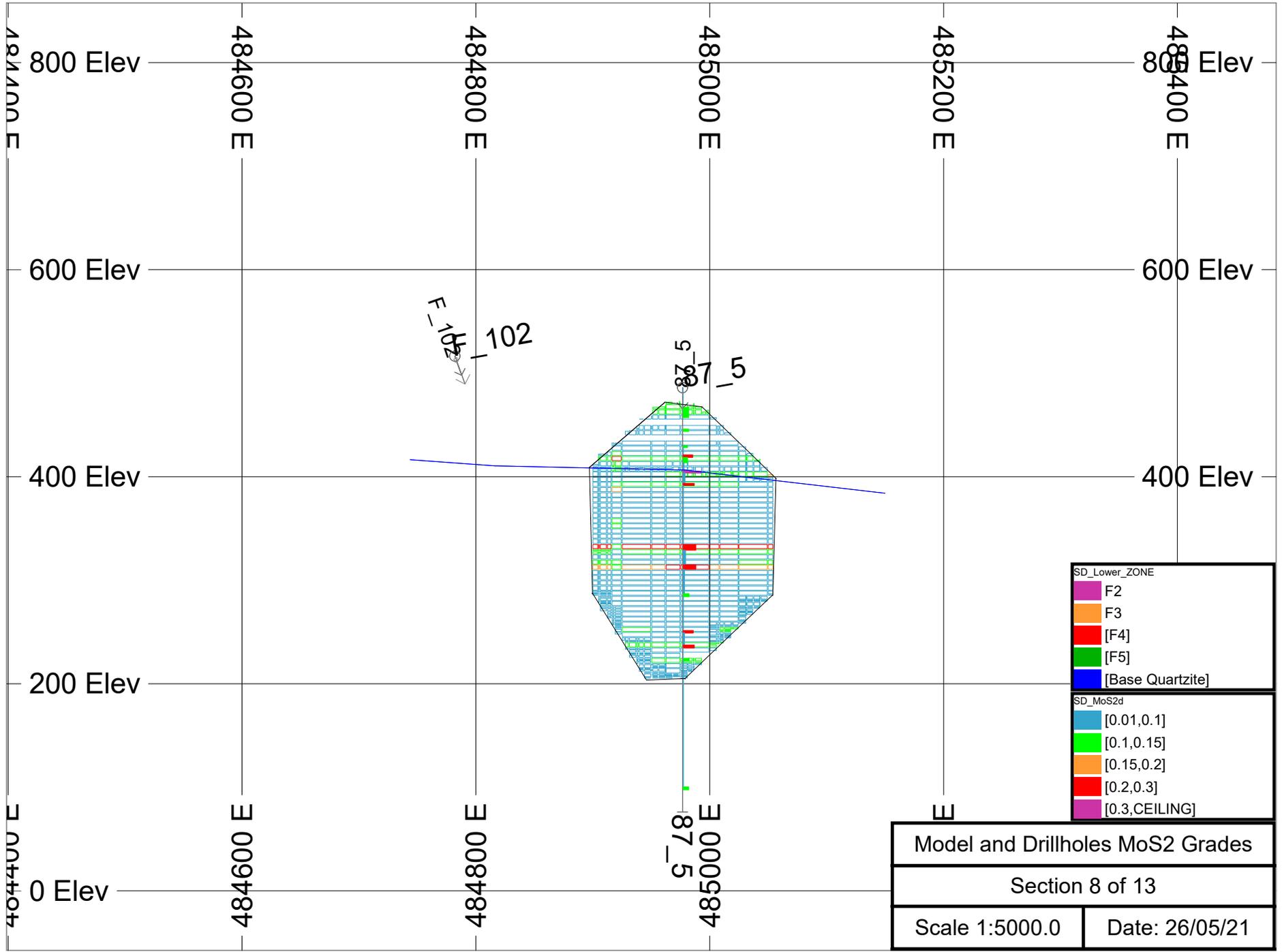
485000 E

U

Section 7 of 13

Scale 1:5000.0

Date: 26/05/21



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[Color]	[F4]
[Color]	[F5]
[Color]	[Base Quartzite]

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[Color]	[0.1,0.15]
[Color]	[0.15,0.2]
[Color]	[0.2,0.3]
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E 000587_5

E 000587_5

E 000587_5

E 000587_5

E 000587_5

E 000587_5

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400 Elev

200 Elev

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484800 E

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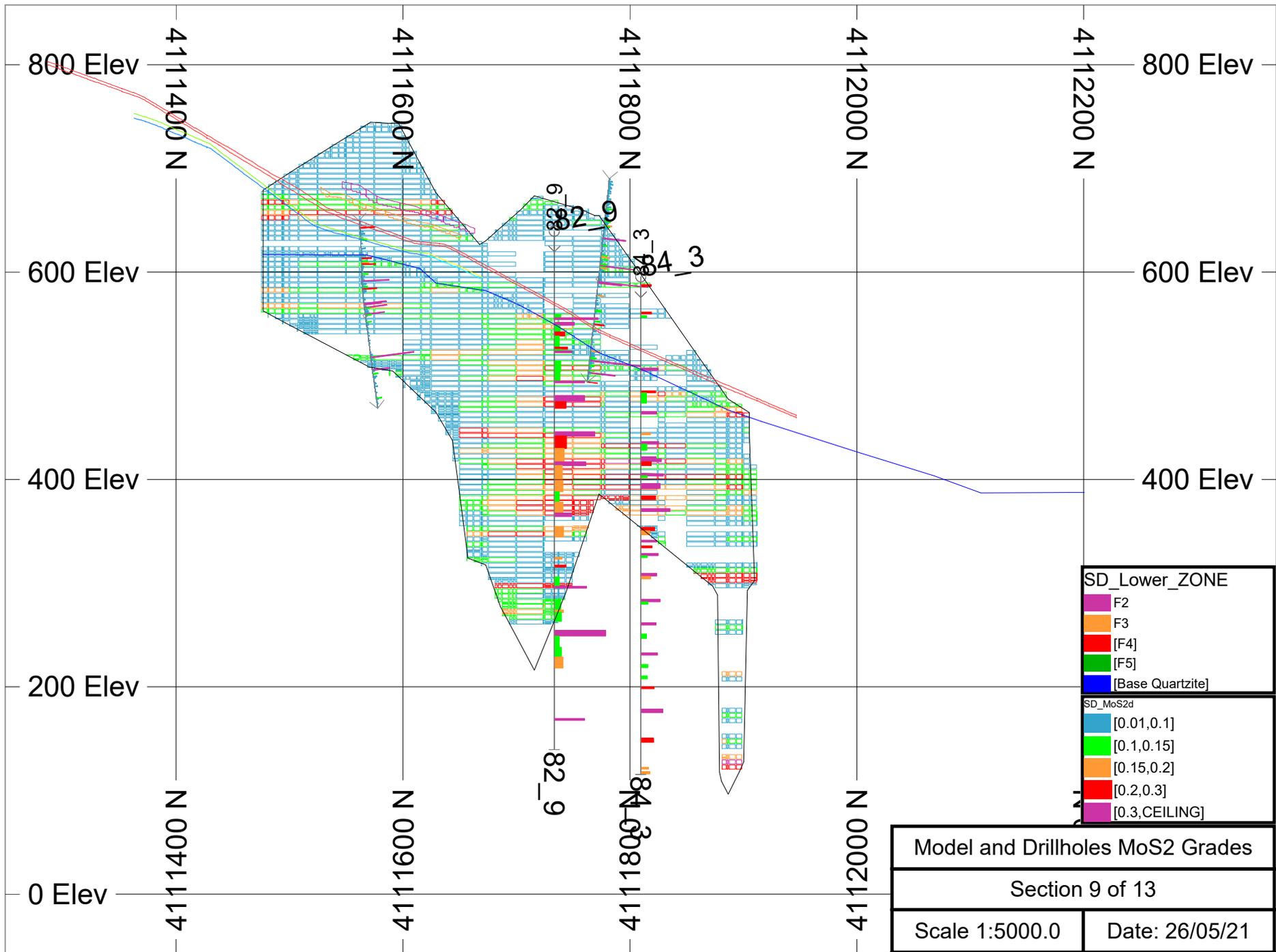
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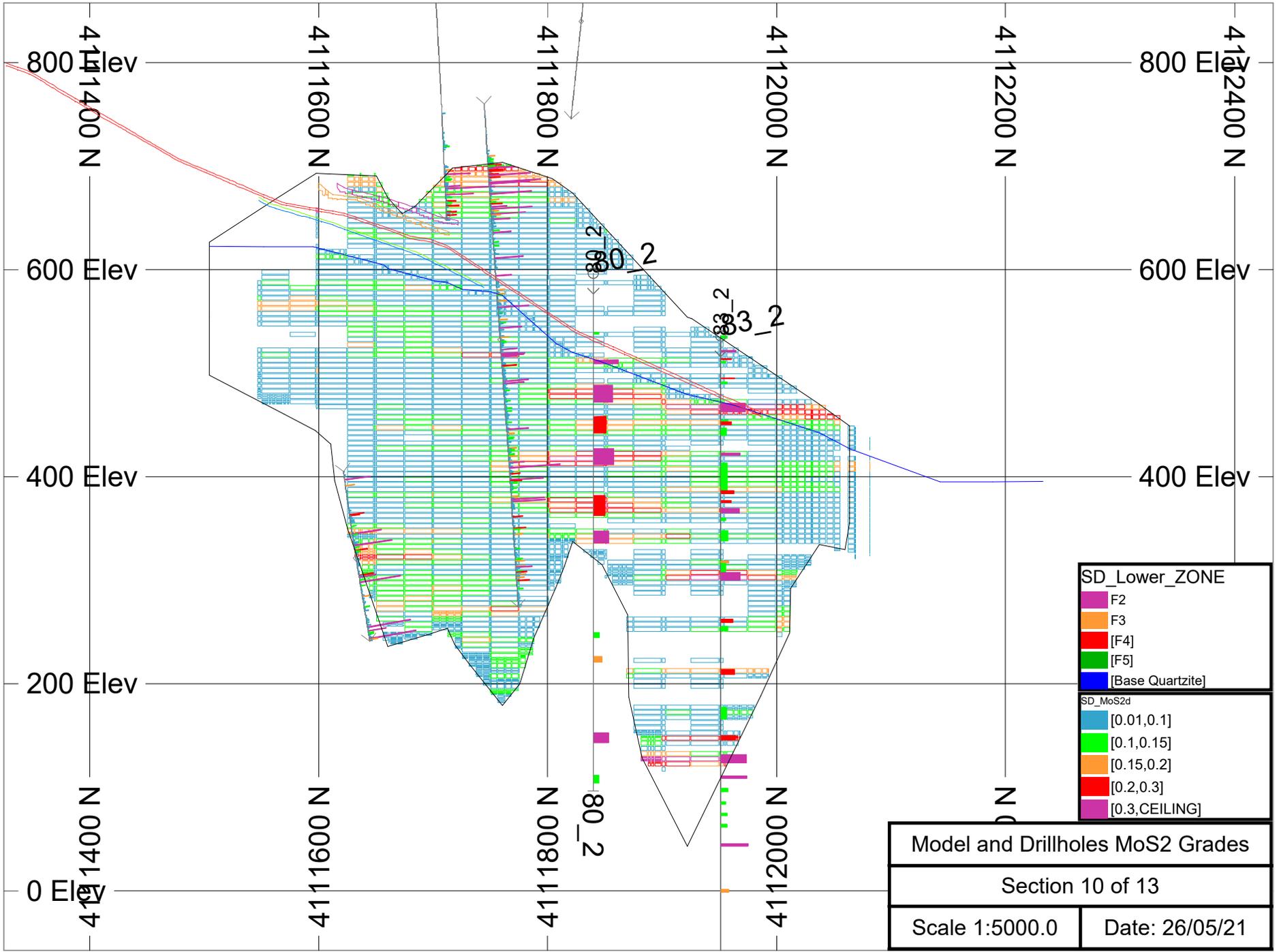
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0 Elev 4111400 N 4111600 N 4111800 N 4112000 N 4112200 N

82_9 84_3 84_3

82_9 84_3 84_3



SD_Lower_ZONE	
[F2]	Magenta
[F3]	Orange
[F4]	Red
[F5]	Green
[Base Quartzite]	Blue

SD_MoS2d	
[0.01,0.1]	Light Blue
[0.1,0.15]	Bright Green
[0.15,0.2]	Orange
[0.2,0.3]	Red
[0.3,CEILING]	Magenta

Model and Drillholes MoS2 Grades	
Section 10 of 13	
Scale 1:5000.0	Date: 26/05/21

