



GOLD FIELDS

Agnew Gold Mining Company Pty Ltd
(ABN 39 098 385)

**ANGEW STRATEGIC STRATIGRAPHIC DRILLING PROJECT
DMP EIS CO-FUNDED DRILLHOLE**

**EMSD1161
FINAL REPORT**

M36/314

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LANDSAT		
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SP/AP/EP		
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Drill Sample	EMSD1161assays	.txt
Soil Sample		
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Whole Rock		
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Drilling Collar	EMSD1161collar	.txt
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1 SUMMARY

Agnew Gold Mining Company (AGMC) were awarded co-funding through the Exploration Incentive Scheme (Round 8, 2014) with plans for a hole to test the plunge extent of the Waroonga complex at a depth of 1900m. EMSD1161 was completed in August 2014 to a depth of 1783.1m and returned 1698m of solid core. The nature of a 1700m long drill hole meant that 82.6m of navigational drilling was required at three separate intervals in order to ensure the target envelope was reached. This unfortunately means that those 82.6m of core do not exist.

The contact of the Scotty Creek Sediments and Edmunds Sandstone was reached at a depth of 1713m, at which point there are laminated quartz veins with visible gold. This structure is one of the targets in the drill hole, the others being at the Genesis-New Holland target depth of approximately 900m where there were two separate intersections of visible gold in quartz veins at 834.9 and 921m. The contact with the ultramafic sequence which is found below the Edmunds Sandstone was reached at 1736m and this marked the end of the drillhole. Beyond this point are ultramafics which are not known to carry any significant ore-bearing structures.

All veined and altered sections were sampled for further analysis.

Significant intercepts were received from multiple target zones, including the Waroonga “feeder” structure at 1713m and the projected Genesis 500 series at 921m. Grades include 1.76m @ 11.13 g/t and 7.56 g/t respectively.

2 INTRODUCTION

This report represents the initial work undertaken on the Agnew Strategic Stratigraphic Drilling Project by Agnew Gold Mining Company as a subsidiary of Gold Fields International.

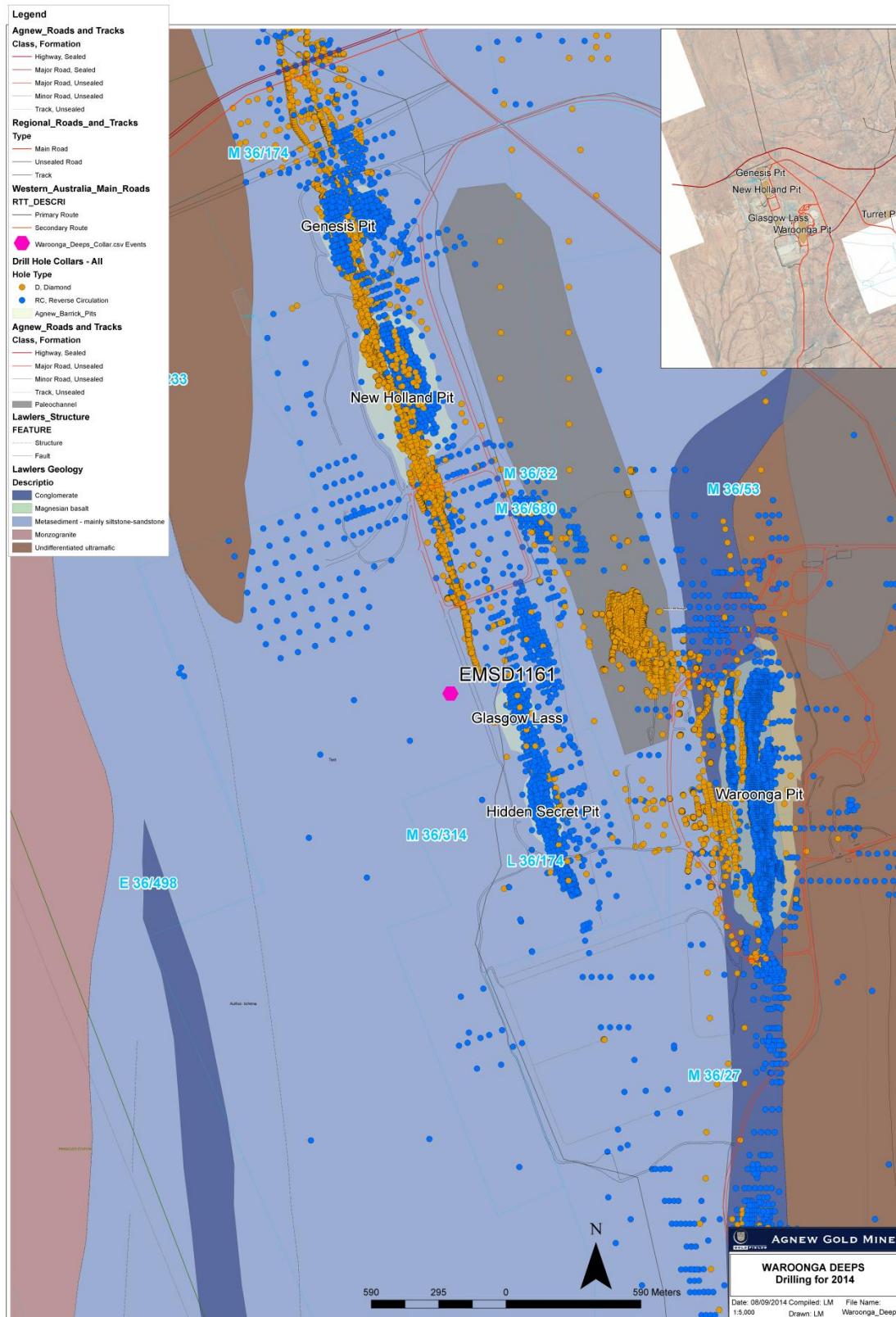


Figure 1: Location of Agnew Strategic Stratigraphic Drill hole – EMSD1161.

3 PROJECT AIMS

Up until recently it has not been possible to investigate the properties of the Glasgow Lass trend and Waroonga complexes at depth due to tenement constraints, however it is now possible to holistically carry out this work. Recent interpretation suggested that the two orebody complexes, which are constrained by similar structural framework, could be linked by a fertile “feeder” structure at depth. The main aim of the co-funded EMSD1161 hole was to intersect this feeder structure as well as previously untested plunge extents of the GNH 500 series including the potential linking section of the Main and Kim lodes at Waroonga. EMSD1161 was located such that it may also traverse the southerly extents of the Genesis-New Holland systems as well as provide a parent hole for future explorative testing.

4 SUMMARY OF WORK UNDERTAKEN TO DATE.

EMSD1161, a 1783.1m conventional diamond drill hole was completed in August 2014. The unconsolidated surface material was rock rolled to 2.5m, PQ core was then collected to a depth of 51.2m with relatively little core loss (1.7m), HQ to 446.9m then finally the hole was completed at 1783.1m with NQ core. 82.6m of core loss from navigational drilling occurred between the depths 1019 and 1312m. This method of drilling was necessary in order to ensure the specific target location was reached.

The majority of the lithologies intersected in this hole are sedimentary in origin with most of the sedimentary units being interbedded fine to medium grained sandstones. Younging indicators and bedding orientations have been identified and used to determine the westerly younging of units within the sequence. The depositional environments of the various sedimentary units have been interpreted from grainsizes and sedimentary features to provide an indication of the development of the basin stratigraphy over the period of sedimentation. Edmunds sandstone and the Waroonga altered mafic/ultramafic conglomerates were intersected at the base of the Scotty Creek Sediment package.

Gold assays were returned for the selected samples with significant intercepts occurring at multiple target points down hole. Visible gold identified in quartz veins at 834.9m returned grades of 63.5 g/t however this appears to be an outlier vein. At 921m a 10cm wide quartz vein with visible gold and no alteration graded at 65 g/t – this is at the projected 500 series intersection. The main Waroonga Complex “feeder” target at 1713m contained laminated quartz veins with visible free gold and returned an intersection of 1.76m @ 11.13 g/t.



Figure 2: Core photo of the Edmunds Sandstone Contact with visible gold in quartz veins

Veining recorded in the hole varied from east and west dipping conjugate brittle vein sets in the New Holland-Genesis portion of the hole, to laminated or brecciated quartz-carbonate structures in the Edmunds Sandstone.

Variable silica, sulphide and actinolite alterations were also recorded throughout the drill hole. Both silica and arsenopyrite alteration has been noted as associated with the New Holland-Genesis mineralised system. Pyrite was also noted as present in the numerous quartz veins throughout the hole.

Very broken ground and core loss at 1733.5m may suggest the presence of a large fault structure.

All veined and altered sections were sampled for further analysis.

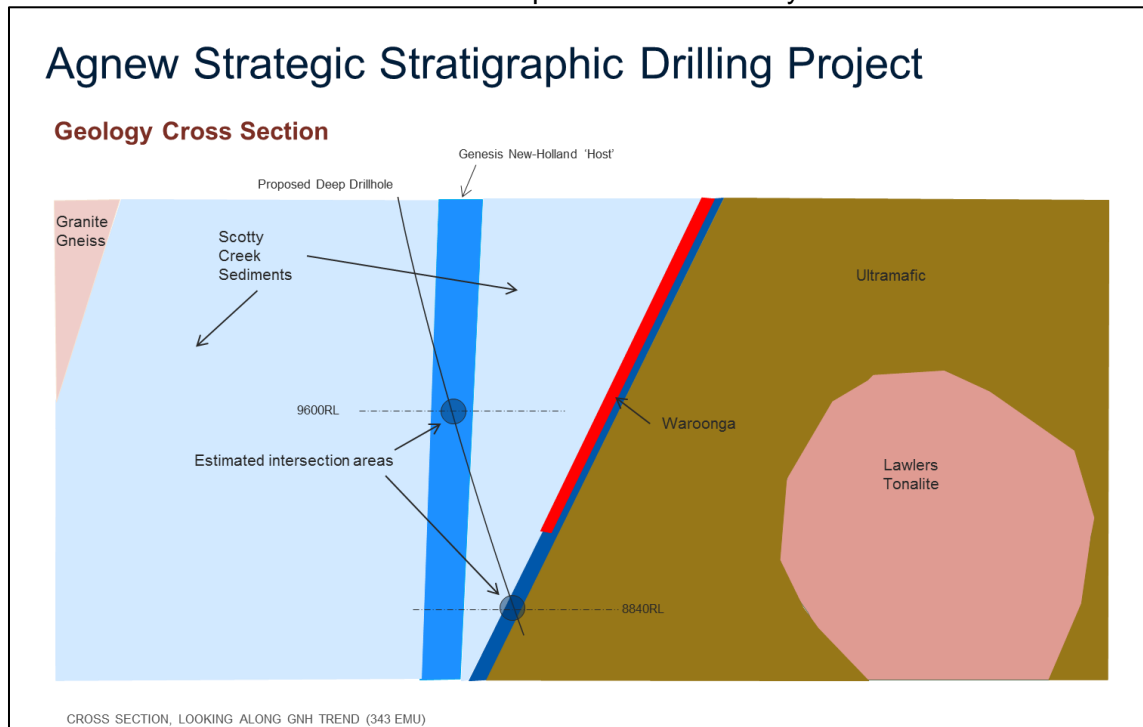


Figure 3: Schematic geology cross section

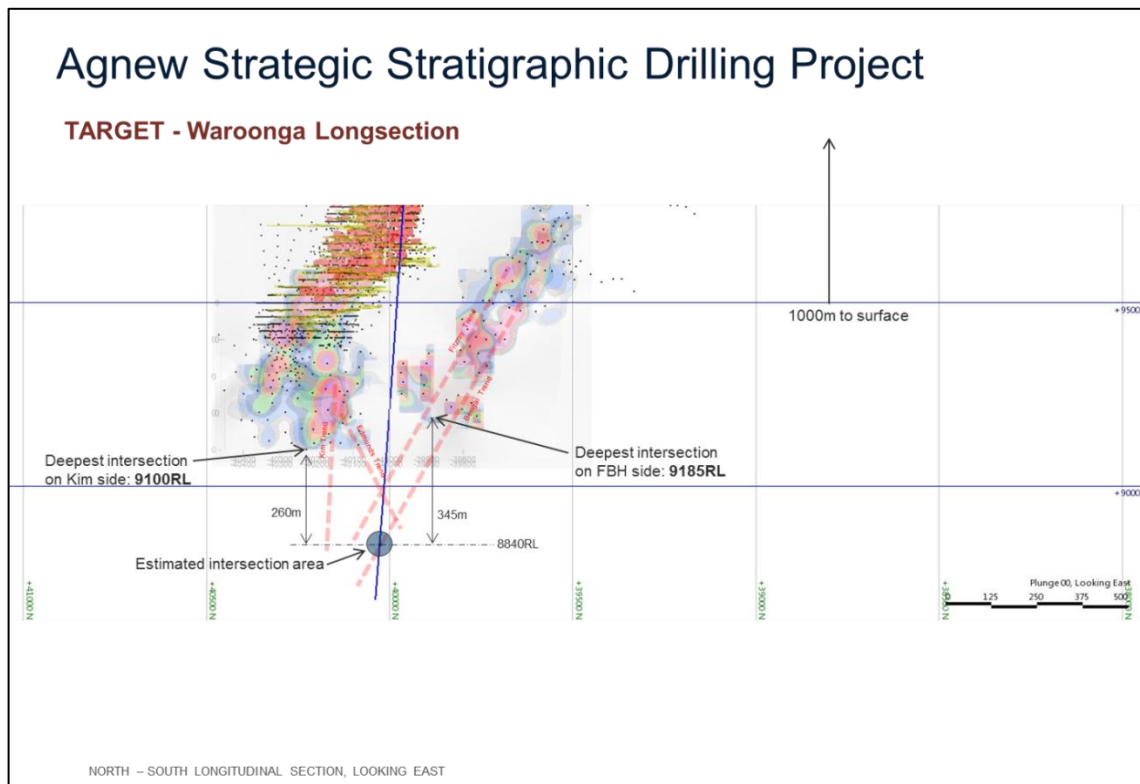


Figure 4: Long section showing interpreted extents of the Waroonga Complex at depth compared to position of EMSD1161

5 COMPLETED WORK

5.1 Assaying

All gold assays for the selectively sampled intervals were dispatched for analysis to ALS Global Geochemistry facilities in Kalgoorlie. There they were prepared as per normal samples for gold analysis via fire assay protocol. This involves crushing the half core sample to 70% passing -6mm, (splitting the sample if >3kg) if < 3kg pulverising the whole sample to 90% passing -75 micron, then a Fire Assay fusion of a 50g charge using a lead flux with silver collector, and finally a nitric acid/hydrochloric acid digest is used before the solution is read via Atomic Absorption Spectroscopy.

A pulp sub-sample from each of these samples was retained for further analysis including multi-element wet chemistry, portable XRF, and potentially spectral analysis with PIMA or ASD.

Visible gold was identified at multiple locations down the hole, in the main target zones. At 834.9m it was seen in a massive 0.5m wide quartz vein with an arsenopyrite and quartz stringer halo. The vein graded 63.5 g/t however the surrounding weak halo did not grade significantly. Vein sets around this area are of an Easterly orientation within the medium-fine grained sediments with the occasional thin (10cm) coarser layer, above the projected 500 series target zone.

At 921m the free gold was observed in a 10cm wide massive quartz vein dipping to the West, in medium to coarse grained sandstone. There is no significant alteration either

within the quartz vein or as a halo. This is at the projection of the 500 series to the south. The 1m interval which includes 90cm of “waste” returned assays of 65 g/t with the interval above grading 17 g/t, most likely due to a thin laminated quartz/carbonate structure.

A small intercept at 677m downhole with an interval of 1m @ 3.76 g/t was encountered at the projected Genesis 200 series intersection. The structure just above the graded interval is a weakly brecciated 0.5m wide quartz vein, with weak arsenopyrite/silica alteration.

At the Waroonga Complex “feeder structure” target depth, visible free gold was observed at 1713m in small quartz veins within fine to medium grained Scotty Creek sediments, with the gold occurring along the vein laminations (1.76m @ 11.13 g/t). This is followed by a zone of weakly brecciated quartz veins containing no apparent gold and marks the contact between Scotty Creek Sediments and Edmunds Sandstone.

Hole_ID	From_Depth	InterceptDescription
EMSD1161	677	1m @ 3.76 g/t
EMSD1161	834.87	0.47m @ 63.50 g/t
EMSD1161	914.52	0.30m @ 7.56 g/t
EMSD1161	920.54	0.85m @ 33.81 g/t
EMSD1161	1378.75	0.30m @ 30.80 g/t
EMSD1161	1712	1.76m @ 11.13 g/t

Table 1: Significant Intersections in EMSD1161

5.2 Lithological Logging

Detailed logging was completed on site by Agnew Exploration Geologists.

Most of the lithologies intersected in this hole were sedimentary in origin with the majority of the sedimentary units being fine to medium grained sandstones from the Scotty Creek Sedimentary package, then a brief appearance of the Edmunds Sandstone (Figure 2). The contact of the Ultramafic Conglomerate unit (SKcU2) was reached at 1736m and continued for 20m where the contact of the weakly magnetic ultramafic unit was intercepted. The width of the Ultramafic Conglomerate is considerably thinner than originally modelled, hence the drill hole being halted before the 1900m projected end of hole depth.

Initial interpretation (Figure 5) identified four prominent coarser grained (arenite) sandstones (5mm+ avg grain size) intervals within the hole. This differs from the original New Holland interpretation significantly as based on this new data there are now double the coarse grained units. We are able to extrapolate the units deeper due to this added information as well, whereas previously there was no concrete proof (although was suspected) that they continued to depth. These coarse grained sediments are bounded by fine to medium grained (graywacke) sediments (1-4mm avg. grain size). Sedimentary features such as basal scours and upper gradational contacts indicate a westerly younging direction.

The Edmunds Sandstone is a polymictic mafic conglomerate with rounded felsic to ultramafic clasts of varying size in a mafic groundmass. At this location they are mainly

within the 2-4cm range. The contact between the two sedimentary packages marks the primary host for the lodes of the Waroonga Complex.

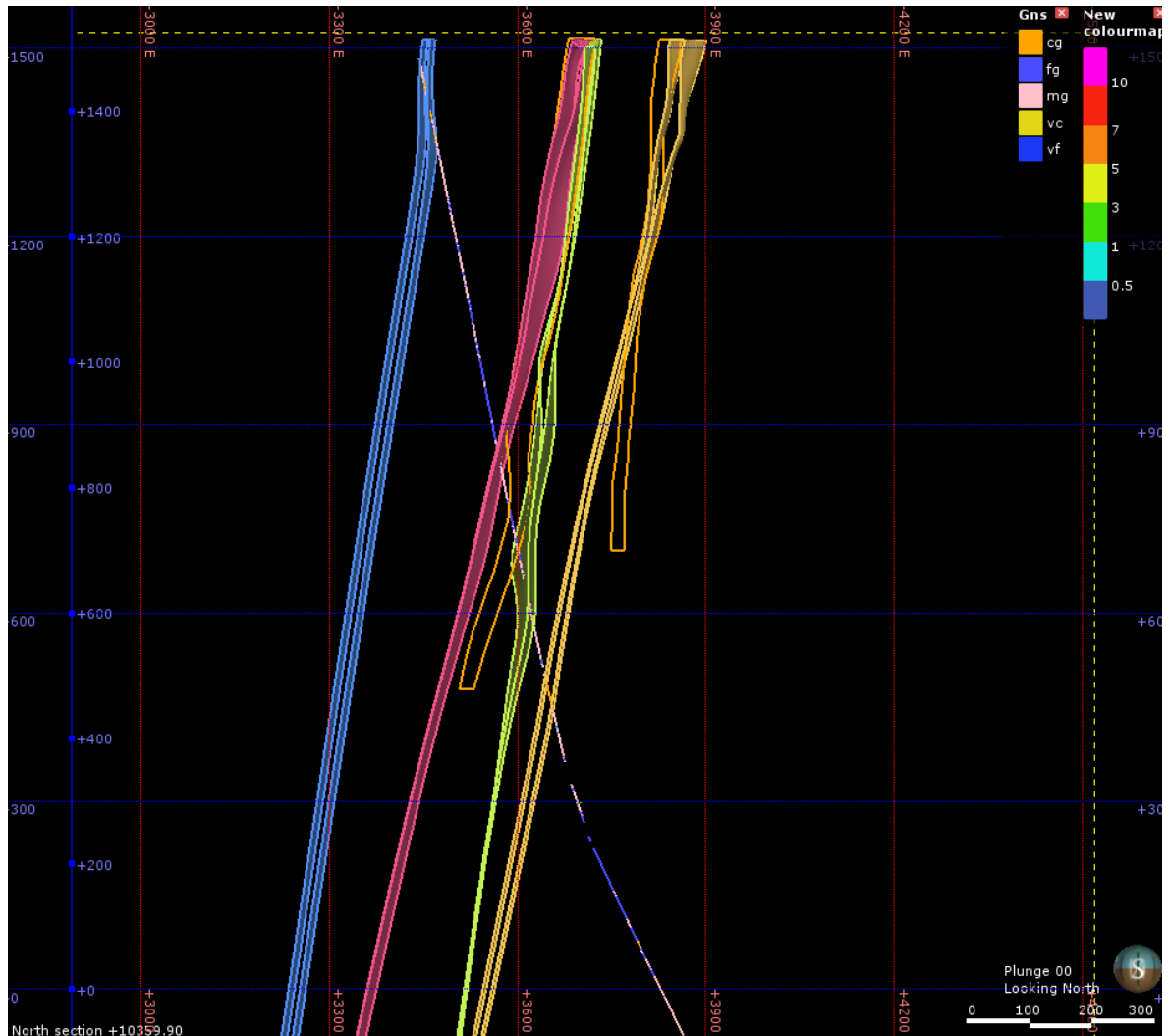


Figure 5: Cross section looking north showing interpreted coarse grained units (blue, red, green, yellow).

Previous New Holland interpretation shown in orange.

5.3 Lithogeochemistry

A total of 400 pulp samples were analysed in January 2015 using the pXRF at Reflex Malaga. Current findings are as follows:

Three distinct zones of the Scotty Creek Sediments (SCS) have been identified based on the mafic elemental plots (Ni/Cr vs Si). The upper units have a more felsic origin whilst the deeper units down to the contact of the Edmunds appear to have a more mafic source (Figure 6). Similarities in the felsic elemental characteristics have been identified between the upper units and the Mt White Sandstone to the East (Figure 8), suggesting the same source of the sediments being the Lawlers Tonalitic Dome. The red dots in Figure 6 highlight areas of the SCS where there is an elevated level of Silica. This could be related to alteration as you can see in Figure 7 that they correspond with projected target planes of the Genesis 200 and 500 Series.

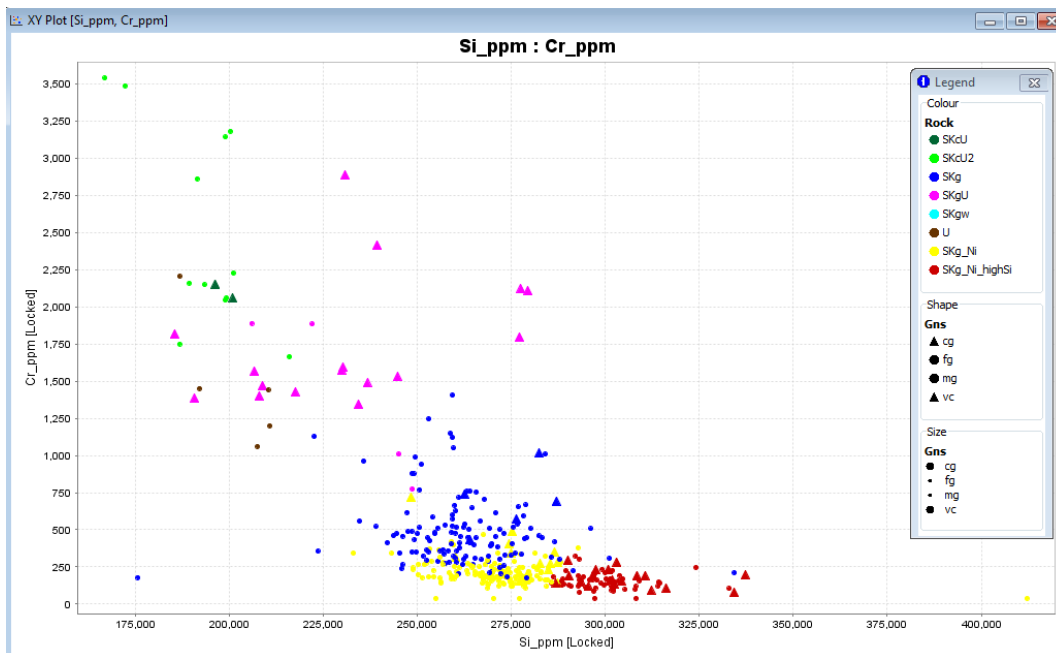
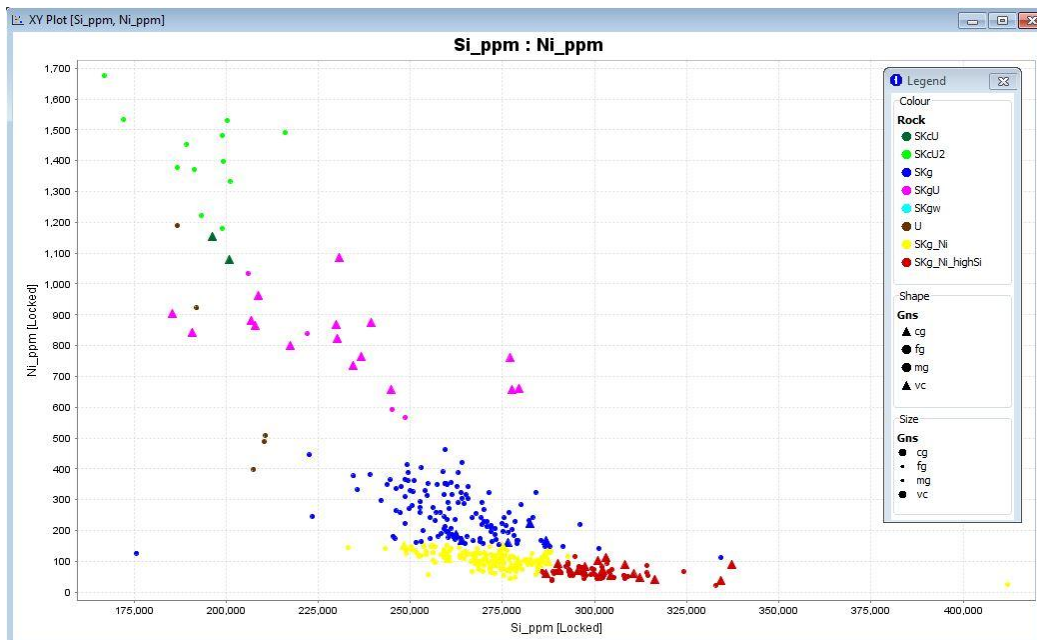


Figure 6: loGas plots of Silica vs Nickel and Si/Cr pXRF data. Blue, yellow and red dots represent three distinct SCS units.

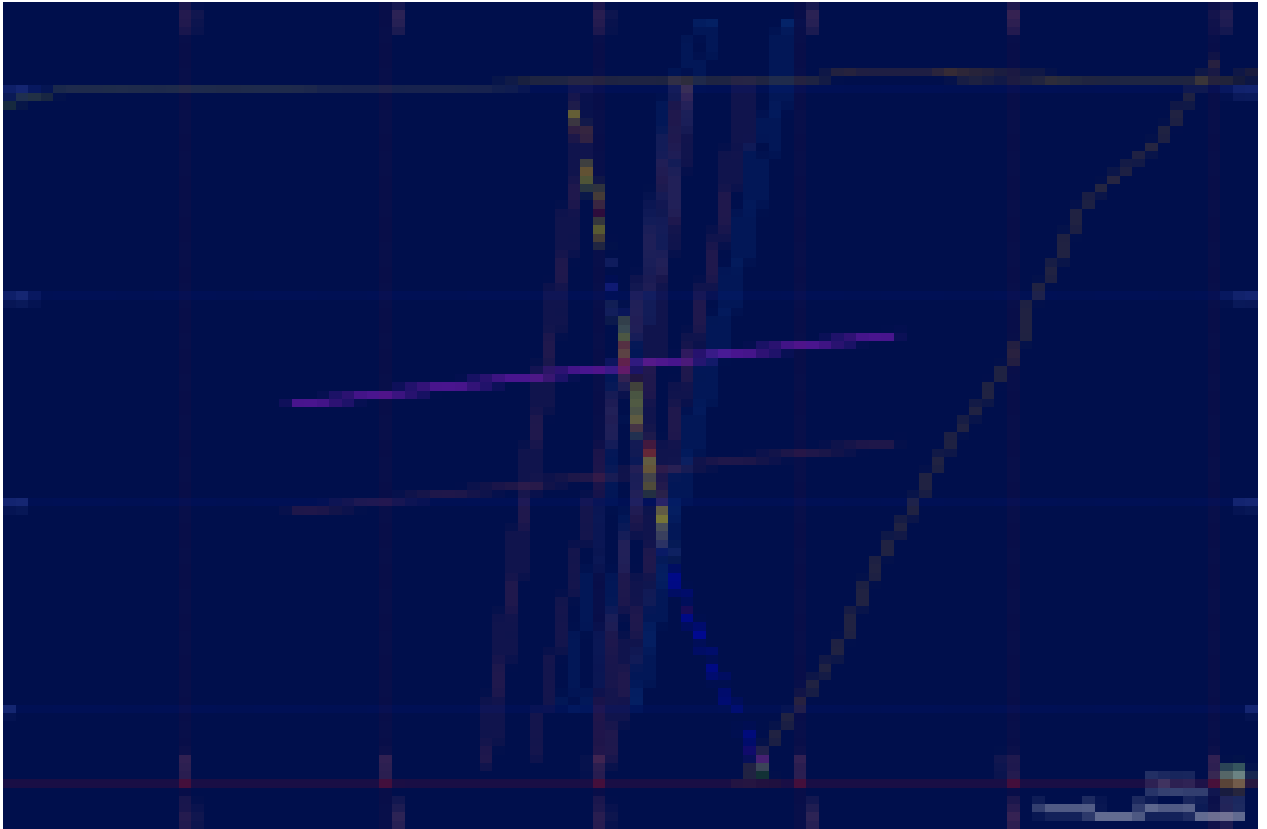


Figure 7: Section looking North showing the three zones in EMSD1161. The yellow representing the upper felsic sourced sediments. Horizontal planes are projections of 200/500 Series respectively. Interpreted coarse grained SCS units in blue and orange (different interpretations). Contact of Edmunds shown in thick orange.

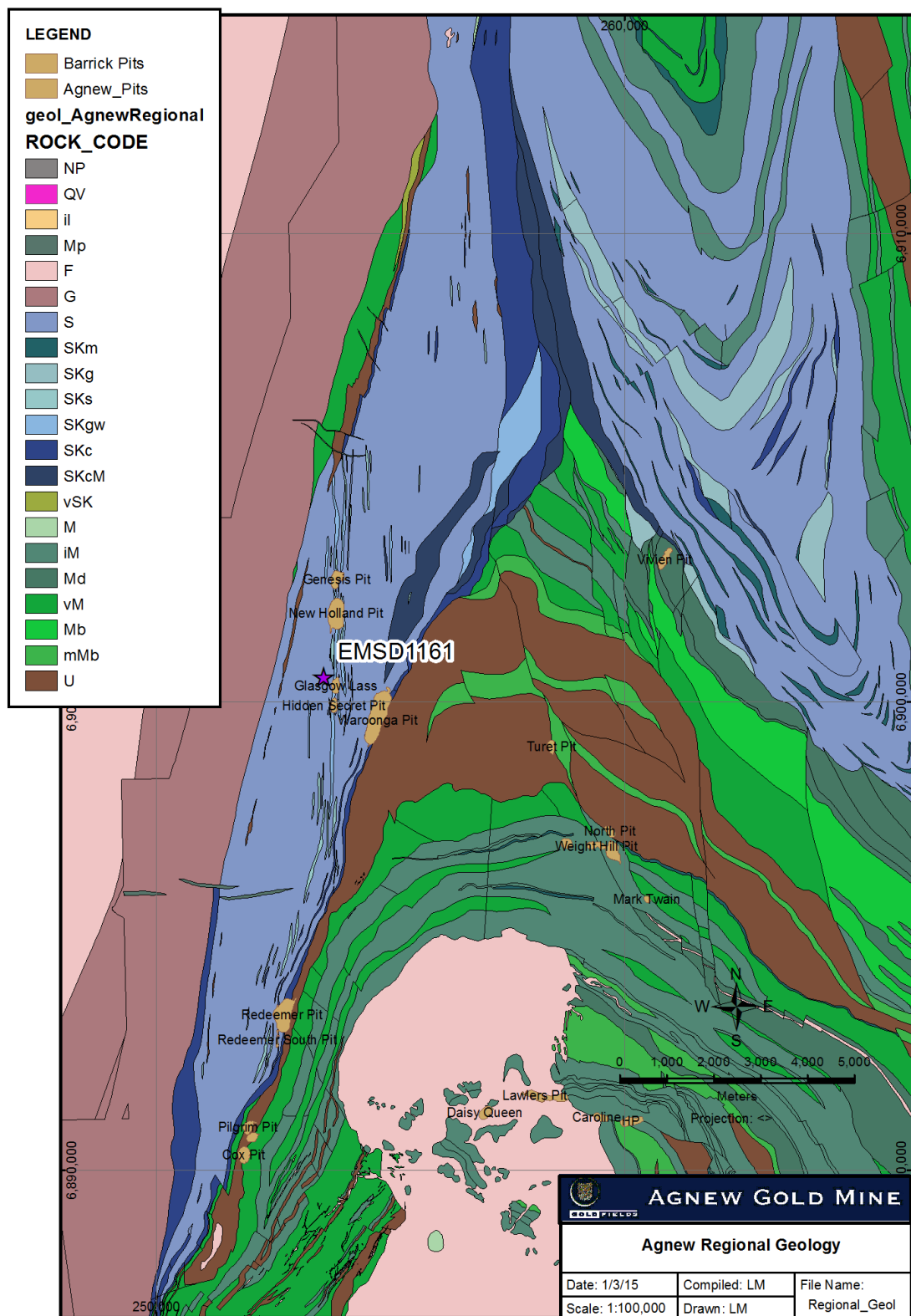


Figure 8: Map of regional geology for the Agnew area.

Mt White sandstone shown as blue in top right hand corner. Lawlers Tonalite Dome is the lower centre pink.

The next step will be to look at the relationship between gold and the elements.

5.4 Structural Investigations

Due to other commitments, the structural analysis initially intended for this project by Nico Thebaud has not occurred.

6 EXPENDITURE

Total Expenditure on the drilling phase of the Agnew Strategic Stratigraphic Drilling Project was \$558,198.30. Agnew Gold Mining company will be requesting payment of \$37,800 plus GST due as the 2nd tranche of the agreed EIS grant (80% of the total grant value based on total drill cost) which is due upon completion of the final report. Invoices from DDH1 drill company and AGMC attached in Appendix III.

The cost of drilling this hole was higher than the original estimate of \$390,000. This is due to the fact that the original plan did not account for the need of almost 83 metres of navigational drilling, and this is a vastly more expensive method of drilling compared to conventional diamond drilling, but was necessary under the circumstances.

Appendix I - AGMC Geological Legend

Agnew Gold Operation has adopted a geological legend which describes rocks in terms of their lithology, structure, alteration and veining. Tables have been generated which give provide valid codes for documenting each of these principal areas. A list of the description fields and the relevant codes is provided below.

ROCK

X	Unknown
aR	Amphibolite
aSy	Channel Clays-alluvial
fR	Hornfels
Fg	Granite
Fge	Granodiorite
Fgi	Tonalite
Fd	Dacite
Fr	Rhyolite
Id	Diorite
iF	Intrusive Felsic
il	Intermediate Intrusive
iM	Intrusive Mafic
Im	Monzonite
kU	Komatiite Ultramafic
LI	Chert
M	Unclassified Mafic
Mb	Basalt
Md	Dolerite
Mg	Gabbro
mMb	High MGO Basalt
N	Ironstone
NC	Cover rock clay
NG	Cover rock gravel
NS	Cover rock sand
NX	Cover rock colluvium
pF	Felsic Porphyry
R^g	Gneiss
R^s	Schist
S	Unclassified Sediment
SKc	Conglomerate Sediment
SKw	Matrix-support, wacke sediment
SKg	Sandstone
SKm	Fine grained Sediment (Siltstone)
SKs	Mudstone or Shale
SK^x	Breccia
tMb	Tholeiitic Basalt
U	Unclassified Ultramafic
U^cm	Ultramafic Cumulate
Uad	Adcumulate Dunite
Umop	Mesocumulate Olivine Peridotite
Up	Peridotite
Utp	Orthocumulate Peridotite
U^j	Pyroxenite
vF	Felsic Volcanic
vSK	Volcanogenic sediment
vSKs	Volcanogenic sediment-shale
vSKm	Volcanogenic sediment-siltstone
vSKg	Volcanogenic sediment-sandstone
vSKc	Volcanogenic sediment-conglomerate
vM	Volcanic Mafic
vS^h	Black Shale
wSq	Aeolian sands

MINERAL

a	amphibole
ac	actinolite
ah	hornblende
at	tremolite
b	carbonate
bc	calcite
bm	magnesite
bd	dolomite
c	chlorite
e	epidote
f	felspar
fal	albite
fk	K feldspar
fp	plagioclase
g	garnet
ga	almandine garnet
hg	goethite
hl	limonite
jss	scheelite
lau	gold
mb	biotite
ms	sericite
mu	muscovite
o	olivine
p	pyroxene
pca	clinopyroxene (augite)
q	quartz
r	serpentine
ra	antigorite
s	sulphide
sa	arsenopyrite
scp	chalcopryite
sg	galena
sm	molybdenite
so	pyrrhotite
spy	pyrite
t	talc
ug	gypsum
xo	oxide
xm	magnetite
xl	leucoxene
xh	haematite
y	clay mineral
ykk	kaolinite
ys	smectite group

TEXTURE

bd	brecciated_texture
be	bedding_or_bedded
bk	blocky_texture
bw	boxwork_texture
ce	cellular_texture
cr	crackle_texture
cu	clast_supported
cz	cataclastic_texture
ea	earthy_texture
ff	flow_foliated_texture
fi	fan_imbrication_texture
fn	foliated_texture
fr	fragmental_texture
gf	granofelsic_texture
gn	gneissic_texture
hd	heavy_mineral_banding
id	interdigitated_texture
im	imbricate_texture
jb	jointed_blocky
jc	jointed_columnar
jd	jointed_texture
jg	jigsaw_texture
ji	jointed_prismatic
jn	jointed_concentric
jp	jointed_platy
jr	jointed_radial
jt	jointed_tortoise-shell
ka	chaotic_texture
kd	clustered_texture
ld	layered_texture
lt	laminated_texture
ly	loam_texture
md	mottled_texture
mi	micaceous_texture
mn	comminuted_texture
mp	mineral_spotted_texture
ms	massive_or_massive_texture
mu	matrix_supported_texture
mz	mosaic_texture
nd	nodular_texture
nw	non-welded_texture
pa	patchy
ph	phyllonitic_texture
pi	pisolitic_texture
pl	phyllitic_texture
pr	porous_texture
px	plasmic_texture
rm	random_texture
rx	recrystallised_texture
sc	schistose_texture
sg	spongy_texture
sl	slumping
so	sooty_texture
sr	saccharoidal_texture
uf	uniform_texture
vh	vermiform
wd	welded_texture
wn	welded_non
yb	blastomylonite_texture

STRUCTURE

FO	Foliation
VN	Vein
BD	Bedding
FA	Fault
FD	Fold
JN	Joint
SH	shear
SZ	shear zone
sSH	strong shear
mSH	moderate shear
wSH	weak shear
bFZ	brittle fault zone
bxFZ	hydraulic breccia
kFZ	cataclasite

WEATHERING

W	Unclassified
dWb	Calcrete
dWf	Ferruginous Duricrust
dWfe	Lateritic duricrust-transported
dWfl	Lateritic duricrust-insitu
dWs	Silcrete
eWa	Sand dominant
eWaf	Sand dominant-ferruginous
eWao	Sand dominant-mottled
eWas	Sand dominant-siliceous
eWy	Clay dominant
eWyf	Clay dominant-ferruginous
eWyo	Clay dominant-mottled
eWys	Clay dominant-siliceous
gW	Gossan
iWw	Wiluna Hardpan
sWp	Saprolite
sWpf	Saprolite-ferruginous
sWpo	Saprolite-mottled
sWps	Saprolite-siliceous
sWr	Saprock (<25% weathered)
sWrf	Saprock (<25% weathered)-ferruginous
sWro	Saprock (<25% weathered)-mottled
sWrs	Saprock (<25% weathered)-siliceous
sWy	Clay saprolite
sWyf	Clay saprolite-ferruginous
sWyo	Clay saprolite-mottled
sWys	Clay saprolite-siliceous

COLOUR

bk	black
bl	blue
br	brown
clr	clear
cos	colourless
cr	cream
dbr	dark brown
dgn	dark green
go	gold
gn	green
gy	grey
kh	khaki
lbr	light brown
lgn	light green
ol	olive
or	orange
pi	pink
pu	purple
rd	red
si	silver
tn	tan
wh	white
ye	yellow

STRATIGRAPHY

CMT	Tholeiitic Basalt (Crusader)
CVK	Sediment Interflow (Crusader)
FI	Felsic Intrusion
SCS	Scotty Creek Sandstone
SG	Scotty Creek Cong./CG San.
SG2	Zone2 Conglomerate
SG3	Zone3 Conglomerate
SGM	Mafic Conglomerate
SGU	Ultramafic Conglomerate
SGU1	Ultramafic Conglomerate 1
SGU2	Ultramafic Conglomerate 2
SGU3	Ultramafic Conglomerate 3
UC	Ultramafic Cumulate
UK	Komatiitic Ultramafic

VEINING

vn	vein
vw	vein_anastomosing
vg	vein_regular
vi	vein_irregular
vl	vein_ladder
vm	vein_micro
vx	vein_extension
vs	vein_shear
vt	vein_stockwork
vy	vein_stylolite
vb	vein_crack-seal
vo	vein_mosaic
ve	vein_netvk

INTENSITY

tr	trace
wk	weak
mo	moderate
st	strong
in	intense
a	totally

GRAIN SIZE

cg	coarse grained (5-30mm)
fg	fine grained (0.05-1mm)
mg	medium grained (1-5mm)
pg	pegmatic texture (>1-2cm)
vc	very coarse grained (>30mm)
vf	very fine grained (<0.05mm)

BEDDING

be	bedding
cy	convolute_bedding
db	draped_bedding
ib	irregular_bedding
pb	parallel_bedding

Appendix II – Digital Drill Data

EMSD1161collars.csv
EMSD1161survey.csv
EMSD1161lithology.csv

Note: All the above files are located separately to the main report file.