

ROSEBERY LITHOLOGY_VMS LOG

Hole ID: 402R-D2



Project: ROS

Rosebery

Prospect: NRL

North Lake Rosebery

Northing: 5377808.0 mN

Dip: -82.00

Easting: 379927.0 mE

MAG_Azim: 241.00

RL: 450.5 mRL

Total Depth: 1444.0 m

CoordSys: MGA55 (GDA94)

DrillCompany: BLY

Strat	Colour	Lithology	Genetic Text	Litho Facies	Texture	Alt	Min	Summary	Sample_ID	Pb pct	Zn pct	Cu pct	Ag ppm	Au ppm	Fe pct
0															
10															
20															
30															
40															
50															

▲ Andesite	■ Disseminated Sulphides	▨ Interbedded siltstone/shale	■ Not logged	■ Schist	■ Undifferentiated Volcanic
▲ Andesite Flow	■ Dolomite	▨ Interbedded VSS/VSL/VSM &	▲ Pyroclastic Breccia	■ See comments for full descrip	■ Undifferentiated Volcaniclastic
▲ Basalt	■ Fault Zone	▨ Intermediate flow	■ Quartz	■ Semi-massive Sulphides	■ Vein Carbonate
▲ Breccia - Undifferentiated	■ Feldspathic (ash) tuff	▨ Intermediate Volcaniclastic	■ Quartz Carbonate Vein	■ Shale	■ Vein quartz
▲ Calcarenite	■ Feldspathic porphyry	▨ Lapilli Tuff	■ Quartz Feldspar Porphyry	■ Siltstone	■ Volcanic Breccia
▲ Chert	■ Felsic Flow	▨ Limestone	■ Quartz Porphyry	■ Slate	■ Volcanic Conglomerate
▲ Clay	■ Felsic tuff	▨ Lithic Tuff	■ Quartzite	■ Tuff Siltstone	■ Volcanic Sandstone
▲ Crystal Tuff	■ Felsic Volcaniclastic	▨ Mafic Dyke	■ Rhyodacite	■ Undifferentiated Black Shale	■ Volcanic Siltstone
▲ Dacite	■ Greywacke	▨ Mafic Volcaniclastic	■ Rhyolite	■ Undifferentiated Felsic Volcanic	
▲ Dacite Breccia	■ Hyaloclastite Breccia	▨ Massive sulphide	■ Rhyolite Breccia	■ Undifferentiated Fluvio-glacial Sediment	
▲ Dacite Flow	■ Interbedded sandstone/shale	▨ Mudstone	■ Rhyolite Tuff	■ Undifferentiated Mafic Intrusive	
▲ Dacite Lapilli Tuff	■ Interbedded sandstone/siltsto	▨ No Core Present	■ Sandstone	■ Undifferentiated Tuff	

Mineralisation	
■ Background	
■ Elevated	
■ Anomalous	
■ Strongly Anomalous	
■ Sub-Grade	
■ Low-Grade	
■ High-Grade	

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60															
70															
80															
90															
100															

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▲ Andesite Flow	■ Dolomite	▨ Interbedded VSS/VSL/VSM &	▲ Pyroclastic Breccia	■ See comments for full descrip	■ Undifferentiated Volcaniclastic
▲ Basalt	■ Fault Zone	▨ Intermediate flow	■ Quartz	■ Semi-massive Sulphides	■ Vein Carbonate
▲ Breccia - Undifferentiated	■ Feldspathic (ash) tuff	▨ Intermediate Volcaniclastic	■ Quartz Carbonate Vein	■ Shale	■ Vein quartz
▲ Calcarenite	■ Feldspathic porphyry	▨ Lapilli Tuff	■ Quartz Feldspar Porphyry	■ Siltstone	■ Volcanic Breccia
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▲ Clay	■ Felsic tuff	▨ Lithic Tuff	■ Quartzite	■ Tuff Siltstone	■ Volcanic Sandstone
▲ Crystal Tuff	■ Felsic Volcaniclastic	▨ Mafic Dyke	■ Rhodacite	■ Undifferentiated Black Shale	■ Volcanic Siltstone
▲ Dacite	■ Greywacke	▨ Mafic Volcaniclastic	■ Rhyolite	■ Undifferentiated Felsic Volcanic	
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MBV	GRY	NL						Mt Black Volcanics - not logged :)							

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250	MBV	GRY	NL					Mt Black Volcanics - not logged :)							
260															
270															
280															
290															
300															

<ul style="list-style-type: none"> ▲ Andesite ▲ Andesite Flow ▼ Basalt ▲ Breccia - Undifferentiated ▲ Calcarenite ■ Chert ■ Clay ▲ Crystal Tuff ○ Dacite ■ Dacite Breccia ▲ Dacite Flow ▲ Dacite Lapilli Tuff 	<ul style="list-style-type: none"> ■ Disseminated Sulphides ○ Dolomite ○ Fault Zone ▲ Feldspathic (ash) tuff ▲ Feldspathic porphyry ▲ Felsic Flow ▲ Felsic tuff ▲ Felsic Volcaniclastic ○ Greywacke ○ Hyaloclastite Breccia ○ Interbedded sandstone/shale ○ Interbedded sandstone/siltsto 	<ul style="list-style-type: none"> ■ Interbedded siltstone/shale ■ Interbedded VSS/VSL/VSM & ■ Intermediate flow ■ Intermediate Volcaniclastic ▲ Lapilli Tuff ■ Limestone ■ Lithic Tuff ■ Mafic Dyke ■ Mafic Volcaniclastic ■ Massive sulphide ■ Mudstone ■ No Core Present 	<ul style="list-style-type: none"> ■ Not logged ▲ Pyroclastic Breccia ■ Quartz ■ Quartz Carbonate Vein ▲ Quartz Feldspar Porphyry ▲ Quartz Porphyry ■ Quartzite ■ Rhodacite ■ Rhyolite ▲ Rhyolite Breccia ■ Rhyolite Tuff ■ Sandstone 	<ul style="list-style-type: none"> ■ Schist ■ See comments for full descrip ■ Semi-massive Sulphides ■ Shale ○ Slate ■ Tuff Siltstone ■ Undifferentiated Black Shale ■ Rhyolite ■ Undifferentiated Felsic Volcanic ■ Undifferentiated Fluvioglacial Sediment ■ Undifferentiated Mafic Intrusive ■ Undifferentiated Tuff 	<ul style="list-style-type: none"> ■ Undifferentiated Volcanic ■ Undifferentiated Volcaniclastic ■ Vein Carbonate ■ Vein quartz ■ Volcanic Breccia ■ Volcanic Conglomerate ○ Volcanic Sandstone ○ Volcanic Siltstone 	<p>Mineralisation</p> <ul style="list-style-type: none"> ■ Background ■ Elevated ■ Anomalous ■ Strongly Anomalous ■ Sub-Grade ■ Low-Grade ■ High-Grade
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350	MBV	GRY	NL					Mt Black Volcanics - not logged :)							
360															
370															
380															
390															
400															

<ul style="list-style-type: none"> ▲ Andesite ▲ Andesite Flow ▼ Basalt ▲ Breccia - Undifferentiated ▲ Calcarenite ■ Chert ■ Clay ▲ Crystal Tuff ○ Dacite ■ Dacite Breccia ▲ Dacite Flow ▲ Dacite Lapilli Tuff 	<ul style="list-style-type: none"> ■ Disseminated Sulphides ○ Dolomite ○ Fault Zone ▲ Feldspathic (ash) tuff ▲ Feldspathic porphyry ▲ Felsic Flow ▲ Felsic tuff ▲ Felsic Volcaniclastic ○ Greywacke ○ Hyaloclastite Breccia ○ Interbedded sandstone/shale ○ Interbedded sandstone/siltsto 	<ul style="list-style-type: none"> ■ Interbedded siltstone/shale ■ Interbedded VSS/VSL/VSM & ■ Intermediate flow ■ Intermediate Volcaniclastic ▲ Lapilli Tuff ■ Limestone ■ Lithic Tuff ■ Mafic Dyke ■ Mafic Volcaniclastic ■ Massive sulphide ■ Mudstone ■ No Core Present 	<ul style="list-style-type: none"> ■ Not logged ▲ Pyroclastic Breccia ■ Quartz ▲ Quartz Carbonate Vein ▲ Quartz Feldspar Porphyry ▲ Quartz Porphyry ▲ Quartzite ▲ Rhodacite ▲ Rhyolite ▲ Rhyolite Breccia ▲ Rhyolite Tuff ■ Sandstone 	<ul style="list-style-type: none"> ■ Schist ■ See comments for full descrip ■ Semi-massive Sulphides ■ Shale ○ Slate ■ Tuff Siltstone ■ Undifferentiated Black Shale ■ Rhyolite ■ Undifferentiated Felsic Volcanic ■ Undifferentiated Fluvioglacial Sediment ■ Undifferentiated Mafic Intrusive ■ Undifferentiated Tuff 	<ul style="list-style-type: none"> ■ Undifferentiated Volcanic ■ Undifferentiated Volcaniclastic ■ Vein Carbonate ■ Vein quartz ■ Volcanic Breccia ■ Volcanic Conglomerate ○ Volcanic Sandstone ○ Volcanic Siltstone 	<p>Mineralisation</p> <ul style="list-style-type: none"> ■ Background ■ Elevated ■ Anomalous ■ Strongly Anomalous ■ Sub-Grade ■ Low-Grade ■ High-Grade
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400	MBV	GRY	NL					Mt Black Volcanics - not logged :)							
410															
420															
430															
440															
450															

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450	MBV	GRY	NL					Mt Black Volcanics - not logged :)							
460															
470															
480															
490															
500															

<ul style="list-style-type: none"> Andesite Andesite Flow Basalt Breccia - Undifferentiated Calcarenite Chert Clay Crystal Tuff Dacite Dacite Breccia Dacite Flow Dacite Lapilli Tuff 	<ul style="list-style-type: none"> Disseminated Sulphides Dolomite Fault Zone Feldspathic (ash) tuff Feldspathic porphyry Felsic Flow Felsic tuff Felsic Volcaniclastic Greywacke Hyaloclastite Breccia Interbedded sandstone/shale Interbedded sandstone/siltsto 	<ul style="list-style-type: none"> Interbedded siltstone/shale Interbedded VSS/VSL/VSM & Intermediate flow Intermediate Volcaniclastic Lapilli Tuff Limestone Lithic Tuff Mafic Dyke Mafic Volcaniclastic Massive sulphide Mudstone No Core Present 	<ul style="list-style-type: none"> Not logged Pyroclastic Breccia Quartz Quartz Carbonate Vein Quartz Feldspar Porphyry Quartz Porphyry Quartzite Rhodacite Rhyolite Rhyolite Breccia Rhyolite Tuff Sandstone 	<ul style="list-style-type: none"> Schist See comments for full descrip Semi-massive Sulphides Shale Siltstone Slate Tuff Siltstone Undifferentiated Black Shale Rhyolite Undifferentiated Felsic Volcanic Undifferentiated Fluvio-glacial Sediment Undifferentiated Mafic Intrusive Undifferentiated Tuff 	<ul style="list-style-type: none"> Undifferentiated Volcanic Undifferentiated Volcaniclastic Vein Carbonate Vein quartz Volcanic Breccia Volcanic Conglomerate Volcanic Sandstone Volcanic Siltstone 	<p>Mineralisation</p> <ul style="list-style-type: none"> Background Elevated Anomalous Strongly Anomalous Sub-Grade Low-Grade High-Grade
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Easting: 379927.0 mE **MAG_Azim:** 241.00
RL: 450.5 mRL **Total Depth:** 1444.0 m
CoordSys: MGA55 (GDA94) **DrillCompany:** BLY

Strat	Colour	Lithology	Genetic Text	Litho Facies	Texture	Alt	Min	Summary	Sample_ID	Pb pct	Zn pct	Cu pct	Ag ppm	Au ppm	Fe pct
550	MBV	GRY	NL					Mt Black Volcanics - not logged :)							
560															
570															
580															
590															
600															

<ul style="list-style-type: none"> ▲ Andesite ▲ Andesite Flow ▼ Basalt ▲ Breccia - Undifferentiated ▲ Calcarenite ▲ Chert ▲ Clay ▲ Crystal Tuff ▲ Dacite ▲ Dacite Breccia ▲ Dacite Flow ▲ Dacite Lapilli Tuff 	<ul style="list-style-type: none"> ■ Disseminated Sulphides ■ Dolomite ■ Fault Zone ■ Feldspathic (ash) tuff ■ Feldspathic porphyry ■ Felsic Flow ■ Felsic tuff ■ Felsic Volcaniclastic ○ Greywacke ○ Hyaloclastite Breccia ○ Interbedded sandstone/shale ○ Interbedded sandstone/siltsto 	<ul style="list-style-type: none"> ■ Interbedded siltstone/shale ■ Interbedded VSS/VSL/VSM & ■ Intermediate flow ■ Intermediate Volcaniclastic ■ Lapilli Tuff ■ Limestone ■ Lithic Tuff ■ Mafic Dyke ■ Mafic Volcaniclastic ■ Massive sulphide ■ Mudstone ■ No Core Present 	<ul style="list-style-type: none"> ■ Not logged ▲ Pyroclastic Breccia ■ Quartz ■ Quartz Carbonate Vein ■ Quartz Feldspar Porphyry ■ Quartz Porphyry ■ Quartzite ■ Rhodacite ■ Rhyolite ■ Rhyolite Breccia ■ Rhyolite Tuff ■ Sandstone 	<ul style="list-style-type: none"> ■ Schist ■ See comments for full descrip ■ Semi-massive Sulphides ■ Shale ■ Slate ■ Tuff Siltstone ■ Undifferentiated Black Shale ■ Rhyolite ■ Undifferentiated Felsic Volcanic ■ Undifferentiated Fluvioglacial Sediment ■ Undifferentiated Mafic Intrusive ■ Undifferentiated Tuff 	<ul style="list-style-type: none"> ■ Undifferentiated Volcanic ■ Undifferentiated Volcaniclastic ■ Vein Carbonate ■ Vein quartz ■ Volcanic Breccia ■ Volcanic Conglomerate ○ Volcanic Sandstone ○ Volcanic Siltstone 	<p>Mineralisation</p> <ul style="list-style-type: none"> ■ Background ■ Elevated ■ Anomalous ■ Strongly Anomalous ■ Sub-Grade ■ Low-Grade ■ High-Grade
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ROSEBERY LITHOLOGY_VMS LOG

Hole ID: 402R-D2



Project: ROS

Rosebery

Prospect: NRL

North Lake Rosebery

Northing: 5377808.0 mN **Dip:** -82.00
Easting: 379927.0 mE **MAG_Azim:** 241.00
RL: 450.5 mRL **Total Depth:** 1444.0 m
CoordSys: MGA55 (GDA94) **DrillCompany:** BLY

Strat	Colour	Lithology	Genetic Text	Litho Facies	Texture	Alt	Min	Summary	Sample_ID	Pb pct	Zn pct	Cu pct	Ag ppm	Au ppm	Fe pct
600	MBV	GRY	NL					Mt Black Volcanics - not logged :)							
610															
620															
630															
640															
650															

<ul style="list-style-type: none"> ▲ Andesite ▲ Andesite Flow ▼ Basalt ▲ Breccia - Undifferentiated ▲ Calcarenite ▲ Chert ■ Clay ▲ Crystal Tuff ○ Dacite ■ Dacite Breccia ▲ Dacite Flow ▲ Dacite Lapilli Tuff 	<ul style="list-style-type: none"> ■ Disseminated Sulphides ○ Dolomite ○ Fault Zone ▲ Feldspathic (ash) tuff ▲ Feldspathic porphyry ▲ Felsic Flow ▲ Felsic tuff ▲ Felsic Volcaniclastic ○ Greywacke ○ Hyaloclastite Breccia ○ Interbedded sandstone/shale ○ Interbedded sandstone/siltsto 	<ul style="list-style-type: none"> ■ Interbedded siltstone/shale ■ Interbedded VSS/VSL/VSM & ■ Intermediate flow ■ Intermediate Volcaniclastic ▲ Lapilli Tuff ■ Limestone ▲ Lithic Tuff ■ Mafic Dyke ■ Mafic Volcaniclastic ■ Massive sulphide ■ Mudstone ■ No Core Present 	<ul style="list-style-type: none"> ■ Not logged ▲ Pyroclastic Breccia ■ Quartz ▲ Quartz Carbonate Vein ▲ Quartz Feldspar Porphyry ▲ Quartz Porphyry ▲ Quartzite ▲ Rhodacite ▲ Rhyolite ▲ Rhyolite Breccia ▲ Rhyolite Tuff ■ Sandstone 	<ul style="list-style-type: none"> ■ Schist ■ See comments for full descrip ■ Semi-massive Sulphides ■ Shale ○ Slate ■ Tuff Siltstone ■ Undifferentiated Black Shale ■ Rhyolite ■ Undifferentiated Felsic Volcanic ■ Undifferentiated Fluvioglacial Sediment ■ Undifferentiated Mafic Intrusive ■ Undifferentiated Tuff 	<ul style="list-style-type: none"> ■ Undifferentiated Volcanic ■ Undifferentiated Volcaniclastic ■ Vein Carbonate ■ Vein quartz ■ Volcanic Breccia ■ Volcanic Conglomerate ○ Volcanic Sandstone ○ Volcanic Siltstone 	<p>Mineralisation</p> <ul style="list-style-type: none"> ■ Background ■ Elevated ■ Anomalous ■ Strongly Anomalous ■ Sub-Grade ■ Low-Grade ■ High-Grade
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ROSEBERY LITHOLOGY_VMS LOG

Hole ID: 402R-D2



Project: ROS

Rosebery

Prospect: NRL

North Lake Rosebery

Northing: 5377808.0 mN

Dip: -82.00

Easting: 379927.0 mE

MAG_Azim: 241.00

RL: 450.5 mRL

Total Depth: 1444.0 m

CoordSys: MGA55 (GDA94)

DrillCompany: BLY

Strat	Colour	Lithology	Genetic Text	Litho Facies	Texture	Alt	Min	Summary	Sample_ID	Pb pct	Zn pct	Cu pct	Ag ppm	Au ppm	Fe pct
650	MBV	GRY	NL					Mt Black Volcanics - not logged :)							
660															
670															
680															
690															
700															

<ul style="list-style-type: none"> ▲ Andesite ▲ Andesite Flow ▼ Basalt ▲ Breccia - Undifferentiated ▲ Calcarenite ▲ Chert ▲ Clay ▲ Crystal Tuff ▲ Dacite ▲ Dacite Breccia ▲ Dacite Flow ▲ Dacite Lapilli Tuff 	<ul style="list-style-type: none"> ■ Disseminated Sulphides ○ Dolomite ○ Fault Zone ▲ Feldspathic (ash) tuff ▲ Feldspathic porphyry ▲ Felsic Flow ▲ Felsic tuff ▲ Felsic Volcaniclastic ○ Greywacke ○ Hyaloclastite Breccia ○ Interbedded sandstone/shale ○ Interbedded sandstone/siltsto 	<ul style="list-style-type: none"> ■ Interbedded siltstone/shale ■ Interbedded VSS/VSL/VSM & ■ Intermediate flow ■ Intermediate Volcaniclastic ▲ Lapilli Tuff ■ Limestone ▲ Lithic Tuff ▲ Mafic Dyke ■ Mafic Volcaniclastic ■ Massive sulphide ■ Mudstone ■ No Core Present 	<ul style="list-style-type: none"> ■ Not logged ▲ Pyroclastic Breccia ▲ Quartz ▲ Quartz Carbonate Vein ▲ Quartz Feldspar Porphyry ▲ Quartz Porphyry ▲ Quartzite ▲ Rhodacite ▲ Rhyolite ▲ Rhyolite Breccia ▲ Rhyolite Tuff ▲ Sandstone 	<ul style="list-style-type: none"> ■ Schist ■ See comments for full descrip ■ Semi-massive Sulphides ■ Shale ○ Slate ■ Tuff Siltstone ■ Undifferentiated Black Shale ■ Rhyolite ■ Undifferentiated Felsic Volcanic ■ Undifferentiated Fluvioglacial Sediment ■ Undifferentiated Mafic Intrusive ■ Undifferentiated Tuff 	<ul style="list-style-type: none"> ■ Undifferentiated Volcanic ■ Undifferentiated Volcaniclastic ■ Vein Carbonate ■ Vein quartz ■ Volcanic Breccia ■ Volcanic Conglomerate ○ Volcanic Sandstone ○ Volcanic Siltstone 	<p>Mineralisation</p> <ul style="list-style-type: none"> ■ Background ■ Elevated ■ Anomalous ■ Strongly Anomalous ■ Sub-Grade ■ Low-Grade ■ High-Grade
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ROSEBERY LITHOLOGY_VMS LOG

Hole ID: 402R-D2



Project: ROS

Rosebery

Prospect: NRL

North Lake Rosebery

Northing: 5377808.0 mN

Dip: -82.00

Easting: 379927.0 mE

MAG_Azim: 241.00

RL: 450.5 mRL

Total Depth: 1444.0 m

CoordSys: MGA55 (GDA94)

DrillCompany: BLY

Strat	Colour	Lithology	Genetic Text	Litho Facies	Texture	Alt	Min	Summary	Sample_ID	Pb pct	Zn pct	Cu pct	Ag ppm	Au ppm	Fe pct
700	MBV	GRY	NL					Mt Black Volcanics - not logged :)							
710															
720															
730															
740															
750															

<ul style="list-style-type: none"> ▲ Andesite ▲ Andesite Flow ▼ Basalt ▲ Breccia - Undifferentiated ▲ Calcarenite ▲ Chert ▲ Clay ▲ Crystal Tuff ▲ Dacite ▲ Dacite Breccia ▲ Dacite Flow ▲ Dacite Lapilli Tuff 	<ul style="list-style-type: none"> ■ Disseminated Sulphides ■ Dolomite ■ Fault Zone ■ Feldspathic (ash) tuff ■ Feldspathic porphyry ■ Felsic Flow ■ Felsic tuff ■ Felsic Volcaniclastic ○ Greywacke ○ Hyaloclastite Breccia ○ Interbedded sandstone/shale ○ Interbedded sandstone/siltsto 	<ul style="list-style-type: none"> ■ Interbedded siltstone/shale ■ Interbedded VSS/VSL/VSM & ■ Intermediate flow ■ Intermediate Volcaniclastic ■ Lapilli Tuff ■ Limestone ■ Lithic Tuff ■ Mafic Dyke ■ Mafic Volcaniclastic ■ Massive sulphide ■ Mudstone ■ No Core Present 	<ul style="list-style-type: none"> ■ Not logged ▲ Pyroclastic Breccia ■ Quartz ■ Quartz Carbonate Vein ■ Quartz Feldspar Porphyry ■ Quartz Porphyry ■ Quartzite ■ Rhodacite ■ Rhyolite ■ Rhyolite Breccia ■ Rhyolite Tuff ■ Sandstone 	<ul style="list-style-type: none"> ■ Schist ■ See comments for full descrip ■ Semi-massive Sulphides ■ Shale ■ Slate ■ Tuff Siltstone ■ Undifferentiated Black Shale ■ Rhyolite ■ Undifferentiated Felsic Volcanic ■ Undifferentiated Fluvio-glacial Sediment ■ Undifferentiated Mafic Intrusive ■ Undifferentiated Tuff 	<ul style="list-style-type: none"> ■ Undifferentiated Volcanic ■ Undifferentiated Volcaniclastic ■ Vein Carbonate ■ Vein quartz ■ Volcanic Breccia ■ Volcanic Conglomerate ○ Volcanic Sandstone ○ Volcanic Siltstone 	<p>Mineralisation</p> <ul style="list-style-type: none"> ■ Background ■ Elevated ■ Anomalous ■ Strongly Anomalous ■ Sub-Grade ■ Low-Grade ■ High-Grade
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ROSEBERY LITHOLOGY_VMS LOG

Hole ID: 402R-D2



Project: ROS

Rosebery

Prospect: NRL

North Lake Rosebery

Northing: 5377808.0 mN
Easting: 379927.0 mE
RL: 450.5 mRL
CoordSys: MGA55 (GDA94)

Dip: -82.00
MAG_Azim: 241.00
Total Depth: 1444.0 m
DrillCompany: BLY

Strat	Colour	Lithology	Genetic Text	Litho Facies	Texture	Alt	Min	Summary	Sample_ID	Pb pct	Zn pct	Cu pct	Ag ppm	Au ppm	Fe pct
750	MBV	GRY	NL					Mt Black Volcanics - not logged :)							
760															
770															
780															
790															
800															

<ul style="list-style-type: none"> Andesite Andesite Flow Basalt Breccia - Undifferentiated Calcarenite Chert Clay Crystal Tuff Dacite Dacite Breccia Dacite Flow Dacite Lapilli Tuff 	<ul style="list-style-type: none"> Disseminated Sulphides Dolomite Fault Zone Feldspathic (ash) tuff Feldspathic porphyry Felsic Flow Felsic tuff Felsic Volcaniclastic Greywacke Hyaloclastite Breccia Interbedded sandstone/shale Interbedded sandstone/siltstone 	<ul style="list-style-type: none"> Interbedded siltstone/shale Interbedded VSS/VSL/VSM & Intermediate flow Intermediate Volcaniclastic Lapilli Tuff Limestone Lithic Tuff Mafic Dyke Mafic Volcaniclastic Massive sulphide Mudstone No Core Present 	<ul style="list-style-type: none"> Not logged Pyroclastic Breccia Quartz Quartz Carbonate Vein Quartz Feldspar Porphyry Quartz Porphyry Quartzite Rhodacite Rhyolite Rhyolite Breccia Rhyolite Tuff Sandstone 	<ul style="list-style-type: none"> Schist See comments for full description Semi-massive Sulphides Shale Siltstone Slate Tuff Siltstone Undifferentiated Black Shale Rhyolite Undifferentiated Felsic Volcanic Undifferentiated Fluvio-glacial Sediment Undifferentiated Mafic Intrusive Undifferentiated Tuff 	<ul style="list-style-type: none"> Undifferentiated Volcanic Undifferentiated Volcaniclastic Vein Carbonate Vein quartz Volcanic Breccia Volcanic Conglomerate Volcanic Sandstone Volcanic Siltstone 	<p>Mineralisation</p> <ul style="list-style-type: none"> Background Elevated Anomalous Strongly Anomalous Sub-Grade Low-Grade High-Grade
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ROSEBERY LITHOLOGY_VMS LOG

Hole ID: 402R-D2



Project: ROS

Rosebery

Prospect: NRL

North Lake Rosebery

Northing: 5377808.0 mN
Easting: 379927.0 mE
RL: 450.5 mRL
CoordSys: MGA55 (GDA94)

Dip: -82.00
MAG_Azim: 241.00
Total Depth: 1444.0 m
DrillCompany: BLY

Strat	Colour	Lithology	Genetic Text	Litho Facies	Texture	Alt	Min	Summary	Sample_ID	Pb pct	Zn pct	Cu pct	Ag ppm	Au ppm	Fe pct
800	MBV	GRY	NL					Mt Black Volcanics - not logged :)							
810															
820															
830															
840															
850															

<ul style="list-style-type: none"> ▲ Andesite ▲ Andesite Flow ▼ Basalt ▲ Breccia - Undifferentiated ▲ Calcarenite ▲ Chert ▲ Clay ▲ Crystal Tuff ▲ Dacite ▲ Dacite Breccia ▲ Dacite Flow ▲ Dacite Lapilli Tuff 	<ul style="list-style-type: none"> ■ Disseminated Sulphides ○ Dolomite ○ Fault Zone ▲ Feldspathic (ash) tuff ▲ Feldspathic porphyry ▲ Felsic Flow ▲ Felsic tuff ▲ Felsic Volcaniclastic ○ Greywacke ○ Hyaloclastite Breccia ○ Interbedded sandstone/shale ○ Interbedded sandstone/siltsto 	<ul style="list-style-type: none"> ■ Interbedded siltstone/shale ■ Interbedded VSS/VSL/VSM & ■ Intermediate flow ■ Intermediate Volcaniclastic ▲ Lapilli Tuff ■ Limestone ▲ Lithic Tuff ■ Mafic Dyke ■ Mafic Volcaniclastic ■ Massive sulphide ■ Mudstone ■ No Core Present 	<ul style="list-style-type: none"> ■ Not logged ▲ Pyroclastic Breccia ▲ Quartz ▲ Quartz Carbonate Vein ▲ Quartz Feldspar Porphyry ▲ Quartz Porphyry ▲ Quartzite ▲ Rhodacite ▲ Rhyolite ▲ Rhyolite Breccia ▲ Rhyolite Tuff ▲ Sandstone 	<ul style="list-style-type: none"> ■ Schist ■ See comments for full descrip ■ Semi-massive Sulphides ■ Shale ○ Slate ■ Tuff Siltstone ■ Undifferentiated Black Shale ■ Rhyolite ■ Undifferentiated Felsic Volcanic ■ Undifferentiated Fluvioglacial Sediment ■ Undifferentiated Mafic Intrusive ■ Undifferentiated Tuff 	<ul style="list-style-type: none"> ■ Undifferentiated Volcanic ■ Undifferentiated Volcaniclastic ■ Vein Carbonate ■ Vein quartz ■ Volcanic Breccia ■ Volcanic Conglomerate ○ Volcanic Sandstone ○ Volcanic Siltstone 	<p>Mineralisation</p> <ul style="list-style-type: none"> ■ Background ■ Elevated ■ Anomalous ■ Strongly Anomalous ■ Sub-Grade ■ Low-Grade ■ High-Grade
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ROSEBERY LITHOLOGY_VMS LOG

Hole ID: 402R-D2



Project: ROS

Rosebery

Prospect: NRL

North Lake Rosebery

Northing: 5377808.0 mN **Dip:** -82.00
Easting: 379927.0 mE **MAG_Azim:** 241.00
RL: 450.5 mRL **Total Depth:** 1444.0 m
CoordSys: MGA55 (GDA94) **DrillCompany:** BLY

Strat	Colour	Lithology	Genetic Text	Litho Facies	Texture	Alt	Min	Summary	Sample_ID	Pb pct	Zn pct	Cu pct	Ag ppm	Au ppm	Fe pct
850	MBV	GRY	NL					Mt Black Volcanics - not logged :)							
860															
870															
880															
890															

<ul style="list-style-type: none"> ▲ Andesite ▲ Andesite Flow ▼ Basalt ▲ Breccia - Undifferentiated ▲ Calcarenite ▲ Chert ▲ Clay ▲ Crystal Tuff ▲ Dacite ▲ Dacite Breccia ▲ Dacite Flow ▲ Dacite Lapilli Tuff 	<ul style="list-style-type: none"> ■ Disseminated Sulphides ■ Dolomite ■ Fault Zone ■ Feldspathic (ash) tuff ■ Feldspathic porphyry ■ Felsic Flow ■ Felsic tuff ■ Felsic Volcaniclastic ○ Greywacke ○ Hyaloclastite Breccia ○ Interbedded sandstone/shale ○ Interbedded sandstone/siltsto 	<ul style="list-style-type: none"> ■ Interbedded siltstone/shale ■ Interbedded VSS/VSL/VSM & ■ Intermediate flow ■ Intermediate Volcaniclastic ■ Lapilli Tuff ■ Limestone ■ Lithic Tuff ■ Mafic Dyke ■ Mafic Volcaniclastic ■ Massive sulphide ■ Mudstone ■ No Core Present 	<ul style="list-style-type: none"> ■ Not logged ▲ Pyroclastic Breccia ■ Quartz ■ Quartz Carbonate Vein ■ Quartz Feldspar Porphyry ■ Quartz Porphyry ■ Quartzite ■ Rhodacite ■ Rhyolite ■ Rhyolite Breccia ■ Rhyolite Tuff ■ Sandstone 	<ul style="list-style-type: none"> ■ Schist ■ See comments for full descrip ■ Semi-massive Sulphides ■ Shale ■ Slate ■ Tuff Siltstone ■ Undifferentiated Black Shale ■ Rhyolite ■ Undifferentiated Felsic Volcanic ■ Undifferentiated Fluvio-glacial Sediment ■ Undifferentiated Mafic Intrusive ■ Undifferentiated Tuff 	<ul style="list-style-type: none"> ■ Undifferentiated Volcanic ■ Undifferentiated Volcaniclastic ■ Vein Carbonate ■ Vein quartz ■ Volcanic Breccia ■ Volcanic Conglomerate ○ Volcanic Sandstone ○ Volcanic Siltstone 	<p>Mineralisation</p> <ul style="list-style-type: none"> ■ Background ■ Elevated ■ Anomalous ■ Strongly Anomalous ■ Sub-Grade ■ Low-Grade ■ High-Grade
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ROSEBERY LITHOLOGY_VMS LOG

Hole ID: 402R-D2



Project: ROS

Rosebery

Prospect: NRL

North Lake Rosebery

Northing: 5377808.0 mN

Dip: -82.00

Easting: 379927.0 mE

MAG_Azim: 241.00

RL: 450.5 mRL

Total Depth: 1444.0 m

CoordSys: MGA55 (GDA94)

DrillCompany: BLY

Strat	Colour	Lithology	Genetic Text	Litho Facies	Texture	Alt	Min	Summary	Sample_ID	Pb pct	Zn pct	Cu pct	Ag ppm	Au ppm	Fe pct
900	MBV	GRY	NL					Mt Black Volcanics - not logged :)							
910															
920															
930															
940															
950															

Andesite	Disseminated Sulphides	Interbedded siltstone/shale	Not logged	Schist	Undifferentiated Volcanic
Andesite Flow	Dolomite	Interbedded VSS/VSL/VSM &	Pyroclastic Breccia	See comments for full descrip	Undifferentiated Volcaniclastic
Basalt	Fault Zone	Intermediate flow	Quartz	Semi-massive Sulphides	Vein Carbonate
Breccia - Undifferentiated	Feldspathic (ash) tuff	Intermediate Volcaniclastic	Quartz Carbonate Vein	Shale	Vein quartz
Calcarenite	Feldspathic porphyry	Lapilli Tuff	Quartz Feldspar Porphyry	Siltstone	Volcanic Breccia
Chert	Felsic Flow	Limestone	Quartz Porphyry	Slate	Volcanic Conglomerate
Clay	Felsic tuff	Lithic Tuff	Quartzite	Tuff Siltstone	Volcanic Sandstone
Crystal Tuff	Felsic Volcaniclastic	Mafic Dyke	Rhyodacite	Undifferentiated Black Shale	Volcanic Siltstone
Dacite	Greywacke	Mafic Volcaniclastic	Rhyolite	Undifferentiated Felsic Volcanic	
Dacite Breccia	Hyaloclastite Breccia	Massive sulphide	Rhyolite Breccia	Undifferentiated Fluvio-glacial Sediment	
Dacite Flow	Interbedded sandstone/shale	Mudstone	Rhyolite Tuff	Undifferentiated Mafic Intrusive	
Dacite Lapilli Tuff	Interbedded sandstone/siltsto	No Core Present	Sandstone	Undifferentiated Tuff	

Mineralisation	
	Background
	Elevated
	Anomalous
	Strongly Anomalous
	Sub-Grade
	Low-Grade
	High-Grade

ROSEBERY LITHOLOGY_VMS LOG

Hole ID: 402R-D2



Project: ROS

Rosebery

Prospect: NRL

North Lake Rosebery

Northing: 5377808.0 mN
Easting: 379927.0 mE
RL: 450.5 mRL
CoordSys: MGA55 (GDA94)

Dip: -82.00
MAG_Azim: 241.00
Total Depth: 1444.0 m
DrillCompany: BLY

Strat	Colour	Lithology	Genetic Text	Litho Facies	Texture	Alt	Min	Summary	Sample_ID	Pb pct	Zn pct	Cu pct	Ag ppm	Au ppm	Fe pct
950	MBV	GRY	NL					Mt Black Volcanics - not logged :)							
960															
970															
980									D1395761	0.0	0.0	0.1	0.23		2.6
990									D1395762	0.0	0.0	0.0	-0.01		1.8
1000															

<ul style="list-style-type: none"> Andesite Andesite Flow Basalt Breccia - Undifferentiated Calcarenite Chert Clay Crystal Tuff Dacite Dacite Breccia Dacite Flow Dacite Lapilli Tuff 	<ul style="list-style-type: none"> Disseminated Sulphides Dolomite Fault Zone Feldspathic (ash) tuff Feldspathic porphyry Felsic Flow Felsic tuff Felsic Volcaniclastic Greywacke Hyaloclastite Breccia Interbedded sandstone/shale Interbedded sandstone/siltsto 	<ul style="list-style-type: none"> Interbedded siltstone/shale Interbedded VSS/VSL/VSM & Intermediate flow Intermediate Volcaniclastic Lapilli Tuff Limestone Lithic Tuff Mafic Dyke Mafic Volcaniclastic Massive sulphide Mudstone No Core Present 	<ul style="list-style-type: none"> Not logged Pyroclastic Breccia Quartz Quartz Carbonate Vein Quartz Feldspar Porphyry Quartz Porphyry Quartzite Rhyodacite Rhyolite Rhyolite Breccia Rhyolite Tuff Sandstone 	<ul style="list-style-type: none"> Schist See comments for full descrip Semi-massive Sulphides Shale Siltstone Slate Tuff Siltstone Undifferentiated Black Shale Rhyolite Undifferentiated Felsic Volcanic Undifferentiated Fluvio-glacial Sediment Undifferentiated Mafic Intrusive Undifferentiated Tuff 	<ul style="list-style-type: none"> Undifferentiated Volcanic Undifferentiated Volcaniclastic Vein Carbonate Vein quartz Volcanic Breccia Volcanic Conglomerate Volcanic Sandstone Volcanic Siltstone 	Mineralisation <ul style="list-style-type: none"> Background Elevated Anomalous Strongly Anomalous Sub-Grade Low-Grade High-Grade
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ROSEBERY LITHOLOGY_VMS LOG

Hole ID: 402R-D2



Project: ROS

Rosebery

Prospect: NRL

North Lake Rosebery

Northing: 5377808.0 mN
Easting: 379927.0 mE
RL: 450.5 mRL
CoordSys: MGA55 (GDA94)

Dip: -82.00
MAG_Azim: 241.00
Total Depth: 1444.0 m
DrillCompany: BLY

Strat	Colour	Lithology	Genetic Text	Litho Facies	Texture	Alt	Min	Summary	Sample_ID	Pb pct	Zn pct	Cu pct	Ag ppm	Au ppm	Fe pct
MBV	GRY	NL						Mt Black Volcanics - not logged :)	D1395763	0.0	0.0	0.0	-0.01		1.9
									D1395764	0.0	0.0	0.0	-0.01		0.9
									D1395765	0.0	0.0	0.0	0.01		2.0
									D1395766	0.0	0.0	0.0	0.01		3.2
									D1395767	0.0	0.0	0.0	-0.01		2.5

Mt Black Fault. Has a strong foliation or fabric through it, however, fully competent core although there is certainly an increase in Cb-Se alteration here. There are 1-2 fragments or lithics of Qz rich HW "caught-up" within the foliated fabrics.

Lithology Legend										Mineralisation		
▲ Andesite	■ Disseminated Sulphides	▨ Interbedded siltstone/shale	▲ Not logged	■ Schist	■ Undifferentiated Volcanic	Mineralisation Background Elevated Anomalous Strongly Anomalous Sub-Grade Low-Grade High-Grade	▲ Andesite Flow	■ Dolomite	▨ Interbedded VSS/VSL/VSM & Intermediate flow	▲ Pyroclastic Breccia	■ See comments for full description	■ Undifferentiated Volcaniclastic
▲ Basalt	■ Fault Zone	▨ Intermediate Volcaniclastic	▲ Quartz	■ Semi-massive Sulphides	■ Vein Carbonate							
▲ Breccia - Undifferentiated	■ Feldspathic (ash) tuff	▨ Lapilli Tuff	▲ Quartz Carbonate Vein	■ Shale	■ Vein quartz							
▲ Calcarenite	■ Feldspathic porphyry	▨ Limestone	▲ Quartz Feldspar Porphyry	■ Siltstone	■ Volcanic Breccia							
▲ Chert	■ Felsic Flow	▨ Quartzite	▲ Quartz Porphyry	■ Slate	■ Volcanic Conglomerate							
▲ Clay	■ Felsic tuff	▨ Lithic Tuff	▲ Quartzite	■ Tuff Siltstone	■ Volcanic Sandstone							
▲ Crystal Tuff	■ Felsic Volcaniclastic	▨ Mafic Dyke	▲ Rhyodacite	■ Undifferentiated Black Shale	■ Volcanic Siltstone							
▲ Dacite	■ Greywacke	▨ Mafic Volcaniclastic	▲ Rhyolite	■ Undifferentiated Felsic Volcanic	■ Undifferentiated Fluvio-glacial Sediment							
▲ Dacite Breccia	■ Hyaloclastite Breccia	▨ Massive sulphide	▲ Rhyolite Breccia	■ Undifferentiated Mafic Intrusive	■ Undifferentiated Tuff							
▲ Dacite Flow	■ Interbedded sandstone/shale	▨ Mudstone	▲ Rhyolite Tuff									
▲ Dacite Lapilli Tuff	■ Interbedded sandstone/siltstone	▨ No Core Present	▲ Sandstone									

ROSEBERY LITHOLOGY_VMS LOG

Hole ID: 402R-D2



Project: ROS

Rosebery

Prospect: NRL

North Lake Rosebery

Northing: 5377808.0 mN
Easting: 379927.0 mE
RL: 450.5 mRL
CoordSys: MGA55 (GDA94)

Dip: -82.00
MAG_Azim: 241.00
Total Depth: 1444.0 m
DrillCompany: BLY

Strat	Colour	Lithology	Genetic Text	Litho Facies	Texture	Alt	Min	Summary	Sample_ID	Pb pct	Zn pct	Cu pct	Ag ppm	Au ppm	Fe pct
BS	BLK-GRN	SSH		bed	sil	cb	py	Black shale with common <1-4mm planar and erratic shaped Cb veins +/- trace py. Occasional pumice floats throughout the interval along with occasional interbeds of coarser/ashy material. NOT the typical black shale horizon.	D1395773	0.0	0.2	0.0	0.23		3.4
									D1395774	0.1	0.3	0.0	1.73		5.1
HW	GRY	VSS		mso	qfp	se	si	Grey, moderately Se altered and silicified, moderately sorted and matrix supported Qz-Fd xtal bearing volcanoclastic sandstone. Qz-Fd ratio difficult to tell given crystals are typically <1m, however, most likely Qz dominant. Generally moderately to well sorted, however, there are rare coarser 3-5mm siltstone or siliceous clasts. This unit conformably follows the above shale unit, and is part of the same overall unit.	D1395775	0.0	0.1	0.0	0.12		2.7
									D1395776	0.0	0.0	0.0	0.15		3.3
									D1395777	0.0	0.0	0.0	0.10		2.6

<ul style="list-style-type: none"> ▲ Andesite ▲ Andesite Flow ▲ Basalt ▲ Breccia - Undifferentiated ▲ Calcarenite ▲ Chert ▲ Clay ▲ Crystal Tuff ▲ Dacite ▲ Dacite Breccia ▲ Dacite Flow ▲ Dacite Lapilli Tuff 	<ul style="list-style-type: none"> ■ Disseminated Sulphides ■ Dolomite ■ Fault Zone ■ Feldspathic (ash) tuff ■ Feldspathic porphyry ■ Felsic Flow ■ Felsic tuff ■ Felsic Volcanoclastic ■ Greywacke ■ Hyaloclastite Breccia ■ Interbedded sandstone/shale ■ Interbedded sandstone/siltstone 	<ul style="list-style-type: none"> ■ Interbedded siltstone/shale ■ Interbedded VSS/VSL/VSM & Intermediate flow ■ Intermediate Volcanoclastic ■ Lapilli Tuff ■ Limestone ■ Lithic Tuff ■ Mafic Dyke ■ Mafic Volcanoclastic ■ Massive sulphide ■ Mudstone ■ No Core Present 	<ul style="list-style-type: none"> ■ Not logged ■ Pyroclastic Breccia ■ Quartz ■ Quartz Carbonate Vein ■ Quartz Feldspar Porphyry ■ Quartz Porphyry ■ Quartzite ■ Rhyodacite ■ Rhyolite ■ Rhyolite Breccia ■ Rhyolite Tuff ■ Sandstone 	<ul style="list-style-type: none"> ■ Schist ■ See comments for full description ■ Semi-massive Sulphides ■ Shale ■ Siltstone ■ Slate ■ Tuff Siltstone ■ Undifferentiated Black Shale ■ Undifferentiated Felsic Volcanic ■ Undifferentiated Fluvio-glacial Sediment ■ Undifferentiated Mafic Intrusive ■ Undifferentiated Tuff 	<ul style="list-style-type: none"> ■ Undifferentiated Volcanic ■ Undifferentiated Volcanoclastic ■ Vein Carbonate ■ Vein quartz ■ Volcanic Breccia ■ Volcanic Conglomerate ■ Volcanic Sandstone ■ Volcanic Siltstone 	<p>Mineralisation</p> <ul style="list-style-type: none"> ■ Background ■ Elevated ■ Anomalous ■ Strongly Anomalous ■ Sub-Grade ■ Low-Grade ■ High-Grade
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ROSEBERY LITHOLOGY_VMS LOG

Hole ID: 402R-D2



Project: ROS

Rosebery

Prospect: NRL

North Lake Rosebery

Northing: 5377808.0 mN

Dip: -82.00

Easting: 379927.0 mE

MAG_Azim: 241.00

RL: 450.5 mRL

Total Depth: 1444.0 m

CoordSys: MGA55 (GDA94)

DrillCompany: BLY

Strat	Colour	Lithology	Genetic Text	Litho Facies	Texture	Alt	Min	Summary	Sample_ID	Pb pct	Zn pct	Cu pct	Ag ppm	Au ppm	Fe pct
1150	HW	GRY	VSS		mso	qfp	se si	Grey, moderately Se altered and silicified, moderately sorted and matrix supported Qz-Fd xtal bearing volcanoclastic sandstone. Qz-Fd ratio difficult to tell given crystals are typically <1m, however, most likely Qz dominant. Generally moderately to well sorted, however, there are rare coarser 3-5mm siltstone or siliceous clasts. This unit conformably follows the above shale unit, and is part of the same overall unit.	D1395778	0.0	0.1	0.0	0.13		3.5
1160	HW	GRY	VBX		brc	pol qph	se si	Fine shale/siltstone which quickly grades into a Qz crystal rich polymict volcanoclastic breccia. Clasts are composed of common 1-3mm sub-angular Qz xtals which become "fatter" as you move downhole, occasional fiamme, rare amygdaloidal clasts (well I found just 1), siltstone clasts and towards the base common siliceous/maybe felsic 1-5cm angular clasts.	D1395779	0.0	0.0	0.0	0.07		1.6
1170									D1395780	0.0	0.0	0.0	0.05		2.4
1180									D1395781	0.0	0.0	0.0	0.10		2.6
1190	HW	GRY	VSS		brc	san qph	se si	Fine grained siltstone which coarsens downhole into a Qz crystal rich coarse grained volcanoclastic sandstone. The upper contact is partially disrupted due to overlying mass flow and the siltstone unit contains 1-2 probable pumice floats, albeit more subtle than other units. The coarser part of this unit contains common 1-3mm sub-angular Qz crystals.	D1395782	0.0	0.0	0.0	0.03		2.1
1200	HW	GRY	VSS		mso	san qph	se si	Moderate to well sorted, matrix supported Qz crystal rich volcanoclastic sandstone. Interval contains common 0.5-1mm sub-angular Qz xtals. Upper contact is ambiguous - and the depth simply marks where the lithology appears to fine up again compared to the above (coarser) unit.							

<ul style="list-style-type: none"> ▲ Andesite ▲ Andesite Flow ▲ Basalt ▲ Breccia - Undifferentiated ▲ Calcarenite ▲ Chert ▲ Clay ▲ Crystal Tuff ▲ Dacite ▲ Dacite Breccia ▲ Dacite Flow ▲ Dacite Lapilli Tuff 	<ul style="list-style-type: none"> ■ Disseminated Sulphides ■ Dolomite ■ Fault Zone ■ Feldspathic (ash) tuff ■ Feldspathic porphyry ■ Felsic Flow ■ Felsic Tuff ■ Felsic Volcanoclastic ■ Greywacke ■ Hyaloclastite Breccia ■ Interbedded sandstone/shale ■ Interbedded sandstone/siltsto 	<ul style="list-style-type: none"> ■ Interbedded siltstone/shale ■ Interbedded VSS/VSL/VSM & ■ Intermediate flow ■ Intermediate Volcanoclastic ■ Lapilli Tuff ■ Limestone ■ Lithic Tuff ■ Mafic Dyke ■ Mafic Volcanoclastic ■ Massive sulphide ■ Mudstone ■ No Core Present 	<ul style="list-style-type: none"> ■ Not logged ■ Pyroclastic Breccia ■ Quartz ■ Quartz Carbonate Vein ■ Quartz Feldspar Porphyry ■ Quartz Porphyry ■ Quartzite ■ Rhodacite ■ Rhyolite ■ Rhyolite Breccia ■ Rhyolite Tuff ■ Sandstone 	<ul style="list-style-type: none"> ■ Schist ■ See comments for full descrip ■ Semi-massive Sulphides ■ Shale ■ Siltstone ■ Slate ■ Tuff Siltstone ■ Undifferentiated Black Shale ■ Undifferentiated Felsic Volcanic ■ Undifferentiated Fluvio-glacial Sediment ■ Undifferentiated Mafic Intrusive ■ Undifferentiated Tuff 	<ul style="list-style-type: none"> ■ Undifferentiated Volcanic ■ Undifferentiated Volcanoclastic ■ Vein Carbonate ■ Vein quartz ■ Volcanic Breccia ■ Volcanic Conglomerate ■ Volcanic Sandstone ■ Volcanic Siltstone 	<p>Mineralisation</p> <ul style="list-style-type: none"> ■ Background ■ Elevated ■ Anomalous ■ Strongly Anomalous ■ Sub-Grade ■ Low-Grade ■ High-Grade
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ROSEBERY LITHOLOGY_VMS LOG

Hole ID: 402R-D2



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Rosebery

Prospect: NRL

North Lake Rosebery

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Total Depth: 1444.0 m

CoordSys: MGA55 (GDA94)

DrillCompany: BLY

Strat	Colour	Lithology	Genetic Text	Litho Facies	Texture	Alt	Min	Summary	Sample_ID	Pb pct	Zn pct	Cu pct	Ag ppm	Au ppm	Fe pct
HW	GRY	VSS		mso	san qph	se si		Moderate to well sorted, matrix supported Qz crystal rich volcanoclastic sandstone. Interval contains common 0.5-1mm sub-angular Qz xtals. Upper contact is ambiguous - and the depth simply marks where the lithology appears to fine up again compared to the above (coarser) unit.	D1395783	0.0	0.0	0.0	0.77		1.6
									D1395784	0.0	0.0	0.0	0.41		1.8
									D1395785	0.0	0.0	0.0	0.05		2.1
HW	BUF-GRY	VBX		brc	pol qfp	ch se		Polymict volcanoclastic breccia with clasts composed of occasional Qz-Fd phyrlic rhyolitic clasts up to 5cm, rafts of shale up to 15cm, 1-3cm siltstone lithics and "fat" Qz crystals up to 8mm. Some of the shale may be conformable but just disrupted. The upper contact is again ambiguous - the depth marks where it appears to be coarsening up - but also there is an alteration change here. Also some hydraulic fracturing throughout the interval.	D1395786	0.0	0.1	0.0	0.06		2.2
									D1395787	0.0	0.0	0.0	0.08		1.9
HW	BUF-GRY	VBX		brc	fia pol	se cb si		Polymict volcanoclastic breccia. The interval starts with a fine siltstone unit, albeit deformed, and bearing 2-3 pumice floats. The unit then slowly grades into a polymict volcanoclastic - which is quite unique from the other breccia units within this hole. Clast composition is dominated by abundant Fd>Qz crystals, elongate rafts of black shale and common thin elongate bands of Se altered fiamme. Occasional less un-deformed clasts of more siliceous rock are also present. More confident about the position of this upper contact.							

Lithology Legend										Mineralisation		
▲ Andesite	■ Disseminated Sulphides	▨ Interbedded siltstone/shale	■ Not logged	■ Schist	■ Undifferentiated Volcanic	■ Background	■ Elevated	■ Anomalous	■ Strongly Anomalous	■ Sub-Grade	■ Low-Grade	■ High-Grade
▲ Andesite Flow	■ Dolomite	▨ Interbedded VSS/VSL/VSM &	▲ Pyroclastic Breccia	■ See comments for full descrip	■ Undifferentiated Volcanoclastic	■ Basalt	■ Quartz	■ Semi-massive Sulphides	■ Vein Carbonate	■ Vein quartz	■ Volcanic Breccia	■ Volcanic Conglomerate
▲ Breccia - Undifferentiated	■ Fault Zone	▨ Intermediate flow	■ Quartz Carbonate Vein	■ Shale	■ Vein quartz	■ Calcarenite	■ Quartz Feldspar Porphyry	■ Siltstone	■ Volcanic Sandstone	■ Volcanic Siltstone	■ Slate	■ Volcanic Sandstone
■ Chert	■ Feldspathic (ash) tuff	▨ Intermediate Volcanoclastic	■ Quartz Porphyry	■ Tuff Siltstone	■ Undifferentiated Black Shale	■ Clay	■ Limestone	■ Rhyolite	■ Undifferentiated Felsic Volcanic	■ Undifferentiated Fluvio-glacial Sediment	■ Rhyolite Breccia	■ Undifferentiated Mafic Intrusive
■ Crystal Tuff	■ Felsic Flow	▨ Lapilli Tuff	■ Quartzite	■ Rhyodacite	■ Rhyolite	■ Dacite	■ Lithic Tuff	■ Rhyolite Tuff	■ Sandstone	■ Sandstone	■ Sandstone	■ Sandstone
■ Dacite Breccia	■ Felsic tuff	▨ Mafic Dyke	■ Rhyolite Breccia	■ Rhyolite Breccia	■ Rhyolite Breccia	■ Dacite Flow	■ Felsic Volcanoclastic	■ Rhyolite Breccia	■ Rhyolite Breccia	■ Rhyolite Breccia	■ Rhyolite Breccia	■ Rhyolite Breccia
■ Dacite Lapilli Tuff	■ Hyaloclastite Breccia	▨ Mafic Volcanoclastic	■ Rhyolite Breccia	■ Rhyolite Breccia	■ Rhyolite Breccia	■ Dacite Lapilli Tuff	■ Hyaloclastite Breccia	■ Hyaloclastite Breccia	■ Hyaloclastite Breccia	■ Hyaloclastite Breccia	■ Hyaloclastite Breccia	■ Hyaloclastite Breccia
	■ Interbedded sandstone/shale	▨ Massive sulphide	■ Rhyolite Breccia	■ Rhyolite Breccia	■ Rhyolite Breccia		■ Interbedded sandstone/shale	■ Interbedded sandstone/shale	■ Interbedded sandstone/shale	■ Interbedded sandstone/shale	■ Interbedded sandstone/shale	■ Interbedded sandstone/shale
	■ Mudstone	▨ No Core Present	■ Rhyolite Tuff	■ Rhyolite Tuff	■ Rhyolite Tuff		■ Mudstone	■ Mudstone	■ Mudstone	■ Mudstone	■ Mudstone	■ Mudstone
			■ Sandstone	■ Sandstone	■ Sandstone							

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Rosebery

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North Lake Rosebery

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Strat	Colour	Lithology	Genetic Text	Litho Facies	Texture	Alt	Min	Summary	Sample_ID	Pb pct	Zn pct	Cu pct	Ag ppm	Au ppm	Fe pct
HW	BUF-GRY	VBX		brc	fia pol	se cb si		Polymict volcaniclastic breccia. The interval starts with a fine siltstone unit, albeit deformed, and bearing 2-3 pumice floats. The unit then slowly grades into a polymict volcaniclastic - which is quite unique from the other breccia units within this hole. Clast composition is dominated by abundant Fd>Qz crystals, elongate rafts of black shale and common thin elongate bands of Se altered fiamme. Occasional less un-deformed clasts of more siliceous rock are also present. More confident about the position of this upper contact.	D1395788	0.0	0.0	0.0	0.16		0.9
BS	BLK	SSH		bed	sil	cb	py	Typical black shales. Abundant 1-3mm Cb-Py veining. Sharp but conformable upper contact at 85 to 90 degrees to CA.	D1395789	0.0	0.0	0.0	0.62		3.2
									D1395790	0.0	0.0	0.0	0.26		3.8
									D1395791	0.0	0.0	0.0	0.45		4.2
HOTS	GRY	VSL		bed	pum sil	se cb si	py sp	Fine to medium grained volcaniclastic siltstone with 1-3cm interbeds or "inter-fingers" of what appears to be pumiceous.							
HOTS	GRY	VSS		mso	qph san	se cb	py	This unit conformable grades uphole continuing on from the above black shale.	D1395792	0.0	0.0	0.0	0.15		2.5
								Qz xtal rich coarse grained and moderate to well sorted volcaniclastic sandstone. Matrix supported 1-3mm angular to sub-rounded Qz rich sandstone (Are these Fd xtals not Qz??). Matrix is pervasively Se altered - causing it to "wrap" around the Qz crystals creating a wispy texture. Upper contact is sharp but conformable. Barren Z lens position.	D1394512	0.0	0.2	0.0	1.00	-0.01	2.8
									D1394513	0.0	0.3	0.0	3.00	-0.01	2.9
									D1394514	0.0	0.3	0.0	5.00	-0.01	2.3
									D1394515	0.0	0.3	0.0	7.00	0.03	1.8
									D1394516	0.0	0.2	0.0	3.00	-0.01	1.2
									D1394517	0.0	0.2	0.0	1.00	-0.01	1.5

<ul style="list-style-type: none"> ▲ Andesite ▲ Andesite Flow ▲ Basalt ▲ Breccia - Undifferentiated ▲ Calcarenite ▲ Chert ▲ Clay ▲ Crystal Tuff ▲ Dacite ▲ Dacite Breccia ▲ Dacite Flow ▲ Dacite Lapilli Tuff 	<ul style="list-style-type: none"> ■ Disseminated Sulphides ■ Dolomite ■ Fault Zone ■ Feldspathic (ash) tuff ■ Feldspathic porphyry ■ Felsic Flow ■ Felsic tuff ■ Felsic Volcaniclastic ■ Greywacke ■ Hyaloclastite Breccia ■ Interbedded sandstone/shale ■ Interbedded siltstone/siltstone 	<ul style="list-style-type: none"> ■ Interbedded siltstone/shale ■ Interbedded VSS/VSL/VSM & ■ Intermediate flow ■ Intermediate Volcaniclastic ■ Lapilli Tuff ■ Limestone ■ Lithic Tuff ■ Mafic Dyke ■ Mafic Volcaniclastic ■ Massive sulphide ■ Mudstone ■ No Core Present 	<ul style="list-style-type: none"> ■ Not logged ■ Pyroclastic Breccia ■ Quartz ■ Quartz Carbonate Vein ■ Quartz Feldspar Porphyry ■ Quartz Porphyry ■ Quartzite ■ Rhodacite ■ Rhyolite ■ Rhyolite Breccia ■ Rhyolite Tuff ■ Sandstone 	<ul style="list-style-type: none"> ■ Schist ■ See comments for full description ■ Semi-massive Sulphides ■ Shale ■ Vein quartz ■ Siltstone ■ Slate ■ Tuff Siltstone ■ Undifferentiated Black Shale ■ Undifferentiated Felsic Volcanic ■ Undifferentiated Fluvio-glacial Sediment ■ Undifferentiated Mafic Intrusive ■ Undifferentiated Tuff 	<ul style="list-style-type: none"> ■ Undifferentiated Volcanic ■ Undifferentiated Volcaniclastic ■ Vein Carbonate ■ Vein quartz ■ Volcanic Breccia ■ Volcanic Conglomerate ■ Volcanic Sandstone ■ Volcanic Siltstone 	<p>Mineralisation</p> <ul style="list-style-type: none"> ■ Background ■ Elevated ■ Anomalous ■ Strongly Anomalous ■ Sub-Grade ■ Low-Grade ■ High-Grade
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ROSEBERY LITHOLOGY_VMS LOG

Hole ID: 402R-D2



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Elev	Strat	Colour	Lithology	Genetic Text	Litho Facies		Texture	Alt	Min	Summary	Sample_ID	Pb pct	Zn pct	Cu pct	Ag ppm	Au ppm	Fe pct
					bed	sil											
1350	FW	GRY	VSL		bed	sil	se qt			Bedded and fine grained volcanoclastic siltstone. Disrupted in parts due to Qz veining. Upper contact transitional. Likely just a finer unit within the footwall breccias.	D1395798	0.0	0.0	0.0	0.45		1.9
	BS	BLK	SSH		bed	sil	cb	py sp		Thinly bedded black shale with common 0.5-2mm Cb-Py-Po +/- Sp veinlets. Typical black shale "no. 2". Sharp but conformable upper contact at 85 degrees to LCA.							
	BS	BLK	FTZ		bed		cb	py		Only a minor fault due to BS of the same unit occurring on the lower side, however, the shale is strongly deformed with common tight to chevron folding. Minor pug and core is moderately broken but no core loss.							
	BS	BLK	SSH		bed		cb	py									
	HOTS	GRY	VSL		bed	sil	se qt										
1360											D1395799	0.0	0.0	0.0	0.23		2.2
	BS	BLK-GRY	SSH		bed	sil	cb	py		Black shale - as for above fault, however, becoming more silty and less the veined. Therefore grading uphole.							
	HOTS	GRY	VSL		bed	sil	se ch			Thinly bedded and fine grained volcanoclastic siltstone. Another host looking unit. Upper contact is marked by a pumice raft (?) or maybe an 4cm ashy interval, however, it is a conformable contact. Occasional thin <1mm veinlets with Py.							
										Another black shale interval - less veining then above described shales however. Very similar sequence here as to that described from 1355.7 - 1360.7m however, it is difficult to see how this could be a faulted repeat or a large raft - the upper contact is sharp but conformable and the lower contact is transitional and graded.							
1370											D1395801	0.0	0.0	0.0	0.03		1.5
	TZ	GRY-GRN	VSS		brc	fph san	se ch			Fine grained siltstone - host like unit. Increase in Se alteration here - giving the rock a slightly foliated appearance. Only trace disseminated Py. Some more ashy intervals with 1-2mm Fd xtals. Upper contact is transitional but marked by 2 pumice floats.							
										Fd crystal rich coarse grained volcanoclastic sandstone. Increased Se alteration creating wispy textures - similar to those described in the previous "TZ" interval further uphole.							
1380											D1395802	0.0	0.0	0.0	0.03		1.9
	FW	GRY	VSS		brc	fia fph	se cb si			Feldspar crystal rich and fiamme bearing volcanoclastic sandstone to breccia. Abundant white, angular to sub-angular 1-3mm Fd xtals which are matrix supported. Common dark bands of fiamme rich range from <1mm to larger 30-50mm rafts which have "inter-fingering" relationships with the surrounding matrix.							
1390											D1395803	0.0	0.0	0.0	0.04		1.9

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FW	GRY	VSS		brc	fia fph	se cb si		Feldspar crystal rich and fiamme bearing volcanoclastic sandstone to breccia. Abundant white, angular to sub-angular 1-3mm Fd xtals which are matrix supported. Common dark bands of fiamme rich range from <1mm to larger 30-50mm rafts which have "inter-fingering" relationships with the surrounding matrix.	D1395804	0.0	0.0	0.0	0.07		1.8
									D1395805	0.0	0.0	0.0	0.03		1.5
F HW	GRY-BRN GRY-BLK	FTZ VBX		ftz brc		se cb py cb se		Rosebery Fault. The main zone of movement occurs at 1412.5-1412.65m where there is a large amount of fault gouge and pug. Significant core loss. Pervasively Cb-Se altered, strongly deformed breccia. Very messed up zone due to proximity to fault. Interval appears to have folding as well as intense Cb alteration destroying texture. Appears to be a shale unit, or at least a breccia containing shale clasts.							
HW	GRY	VBX		brc	qph san	se cb cb		Qz crystal rich polymict coarse grained sandstone to breccia. Common sub-rounded to rounded Qz crystals with occasional 2-5mm sub-angular shale lithics. Pervasive Se alteration throughout matrix. Occasional sericite pumice rafts(?).	D1395806	0.0	0.0	0.0	0.13		1.6
HW	GRY-BLK	SSH		bed	qph	se cb	py	Interesting sequence. This interval 4-5 individual graded epiclastics. Each unit has a thinly bedded top composed of shale to fine siltstone, with bedding typically 40-45 degrees to LCA. The shales then rapidly coarsen downhole into pervasively Se altered and matrix supported Qz crystals rich sandstone. The Qz crystals are typically <0.5mm to 1mm and rounded to sub-rounded in shape. Even more interesting are the last 2-3 "flows" which contain large rounded to sub-rounded Qz crystals up to 3cm! This coarser unit are arguably more developed units of the above units. These larger Qz crystals are generally milky-white coloured as opposed to the smaller crystals which are more translucent. There are also rare 5-10mm shale lithics present. Does this package of rocks below the Rosebery Fault sit below the 411R-D1 mineralisation but above the "footwall" rhyolitic pumice breccia unit?	D1395807	0.0	0.0	0.0	0.12		3.5
									D1395808	0.0	0.0	0.0	0.59		6.1

Mineralisation											
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▲ Basalt	■ Fault Zone	▨ Intermediate flow	■ Quartz	■ Semi-massive Sulphides	■ Vein Carbonate						
▲ Breccia - Undifferentiated	■ Feldspathic (ash) tuff	▨ Intermediate Volcanoclastic	■ Quartz Carbonate Vein	■ Shale	■ Vein quartz						
▲ Calcarenite	■ Feldspathic porphyry	▨ Lapilli Tuff	■ Quartz Feldspar Porphyry	■ Siltstone	■ Volcanic Breccia						
▲ Chert	■ Felsic Flow	▨ Lithic Tuff	■ Quartz Porphyry	■ Slate	■ Volcanic Conglomerate						
■ Clay	■ Felsic tuff	▨ Mafic Dyke	■ Quartzite	■ Tuff Siltstone	■ Volcanic Sandstone						
■ Crystal Tuff	■ Felsic Volcanoclastic	▨ Mafic Volcanoclastic	■ Rhyodacite	■ Undifferentiated Black Shale	■ Volcanic Siltstone						
■ Dacite	■ Greywacke	▨ Massive sulphide	■ Rhyolite	■ Undifferentiated Felsic Volcanic	■ Undifferentiated Fluvio-glacial Sediment						
■ Dacite Breccia	■ Hyaloclastite Breccia	▨ Mudstone	■ Rhyolite Breccia	■ Undifferentiated Mafic Intrusive	■ Undifferentiated Tuff						
■ Dacite Flow	■ Interbedded sandstone/shale	▨ No Core Present	■ Rhyolite Tuff								
■ Dacite Lapilli Tuff	■ Interbedded sandstone/siltsto		■ Sandstone								