



28/10/2021

## QUARTERLY ACTIVITY REPORT FOR THE PERIOD ENDED 30 SEPTEMBER 2021

### HIGHLIGHTS

The Phase 2 drilling is now completed at Mt Flora and all results returned. Assays received from significant intersections from the new RC resource and exploration extension holes at Mt Flora during the quarter include:

- 2 m at 5.49 % Cu, 60.15 g/t Ag and 0.17 Au from 206 m in MFRC089,
  - 9 m at 1.28 % Cu, 22.07 g/t Ag and 0.02 Au from 259 m in MFRC089,
  - 3 m at 1.4 % Cu, 16.03 g/t Ag and 0.14 Au from 159 m in MFRC090,
  - 11 m at 0.4 % Cu, 4.82 g/t Ag and 0.02 Au from 22 m in MFRC091,
  - 8 m at 1.01 % Cu, 11.9 g/t Ag and 0.02 Au from 18 m in MFRC093,
  - 4 m at 1.17 % Cu, 25.45 g/t Ag and 0.05 Au from 48 m in MFRC094,
  - 4 m at 1.3 % Cu, 19.25 g/t Ag and 0.09 Au from 58 m in MFRC099,
  - 25 m at 0.6 % Cu, 7.49 g/t Ag and 0.04 Au from 219 m in MFRC106,
  - 13 m at 0.55 % Cu, 7.19 g/t Ag and 0.04 Au from 248 m in MFRC106 and
  - 15 m at 1.31 % Cu, 7.11 g/t Ag and 0.11 Au from 228 m in MFRC109.
- There are 62 new intersections of potentially economic copper, silver and gold mineralisation from the new drilling that are not included in the current Inferred resource estimate.
  - Four new exploration RC holes drilled 300 m to the north of the resource area at Mt Flora intersected massive sulphide mineralisation up to 11 m wide with visible chalcopyrite from a vertical depth of 20m to 200m. This important discovery extends the potential strike of mineralisation at Mt Flora by 300m.
  - Copper, silver and gold mineralisation were intersected from the near surface to a depth of 240 m and are expected to add to the recently announced Inferred resource of 16 Mt at an average grade of 0.5% Cu and 6.9 ppm, Ag, reported at a 0.2% Cu cut-off grade as classified and reported in accordance with the JORC Code (2012), which equates to 78,000 tonnes of copper and 3.6 million ounces of silver.
  - The copper, silver and gold mineralised area has increased to a strike of 950 m, a width of 900 m and to a vertical depth of 300 m, which is 30% larger than the area that was used to estimate the recent Inferred resource reported on 29 June.
  - Powerful new targeting techniques and new pXRF copper soil data confirm the potential for new discoveries of copper, silver, and gold bed rock mineralisation along the eastern contact of the Bundarra pluton, which has had no historic mining or exploration activity to date.

## HIGHLIGHTS

- The sampling programme for the pXRF soil geochemistry and geophysics conductivity data analysis have been accelerated with the aim of identifying all highly prospective areas from across the whole pluton. These locations will then be drill tested and prioritised by end Q4 2021 for resource development starting Q1 2022
- About 54% of the prospective area within and around the Bundarra pluton remains to be soil sampled and it is anticipated additional prospective areas will be identified for evaluation and prioritisation during Q4 2021.
- The new targeting technique is a very powerful tool for mapping and prioritising the next areas for resource development around the Bundarra pluton, particularly as the data required is quick and cheap to acquire across the entire prospective area.
- A total of 15,002 soil samples have now been collected to the end of the Quarter over the target area around the Bundarra pluton. The area with pXRF soil data now covers 74 km<sup>2</sup>, which is 46% of the prospective area of the Bundarra Pluton and surrounding contact metamorphic halo.
- The exploration results are another significant step forward in developing a large-scale successful mining operation at Bundarra and is providing more confidence in the project hosting additional resources of copper, silver and gold at Mt Flora as well as at the five regional target areas.
- Six zones of epithermal gold mineralisation were intersected in the first exploration diamond drill hole completed by the Company at Prairie Creek from the surface to 150m down hole.
- The intersections include:
  - 2.30 m at 4.68 g/t Au from 7.00 m in PCDD001,
  - 20.40 m at 1.86 g/t Au from 11.40 m in PCDD001 and
  - 5.35 m at 2.95 g/t Au from 38.10 m in PCDD001.
- The association of mercury and silver with the epithermal gold mineralisation suggests the hole has intersected the top of an epithermal low sulphidation gold system with exploration potential for deeper higher grade gold mineralisation associated with feeder veins to the breccia style gold intersected.

### Next Quarter Work Programme

- Complete follow up geological targeting drilling at Quorn, Absolon, Isens and Rogers to allow planning of first phase resource drilling at the prospect that has the best chance of adding to the Mt Flora resource.
- Continue regional scale pXRF soil sampling to cover the remaining unsampled areas of the Bundarra Pluton by the end of the year to help with further prioritisation of added resource development targets.
- Accelerate and extend collection of electrical geophysical data over the entire Bundarra Pluton to help with further prioritisation of added resource development targets.

- Start exploration diamond drilling to collect geological data to confirm targets mapped to date and help prioritise resource development work.
- Start scout RC drilling to determine the highest priority target for resource development drilling.
- Start development RC drilling to determine the highest priority target for resource development drilling,
- Provide all exploration diamond drilling assay results from the Prairie Creek gold project by the end of October.
- Evaluate the results of the exploration drilling at the Prairie Creek gold target and plan next steps.

This announcement has been authorised for release by the Board.



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## Corporate

An internal development strategy review for the Bundarra project was completed during the Quarter. The purpose of the review was to ensure an optimal exploration and resource development strategy that is reflective of the evolving positive exploration results, in particular:

- A recent successful capital raise.
- Improvements to the Bundarra pluton specific exploration techniques that are rapid, cost effective and successful. Soil Geochemistry and electrical conductivity as well as major advances in other targeting techniques as examples.
- Large, and increasing number of high priority exploration targets within the Bundarra project.
- Extensive and detailed Bundarra specific geological models, understanding and exploration targeting techniques from the pluton-scale exploration to date.

The above circumstances provide the opportunity to take an accelerated approach to the ongoing broader, pluton scale exploration program, and generate optionality whereby:

- The soil sampling program has been broadened and accelerated to cover the whole of the Bundarra project, including the Waitara and Duania tenements. (Q3 and Q4, 2021).
- Newly available inversion modelling technology that can potentially provide a new pluton-wide analysis of previously flown aerial VTEM survey data. This is a new technique which is rapid and cost effective, to be utilised to reliably identify anomalous prospective areas. (Q3 and Q4, 2021).
- Development targets will be generated using the new profile targeting techniques from across the whole of the Bundarra pluton. These targets will be prioritised using 3D machine learning mineral potential modelling techniques, with the drill targets to be tested by scout exploration diamond and RC drilling (Q4, 2021).
- Resource drilling programs will be undertaken once the best targets have been identified and prioritised (Q1 2022).

Related party payments paid during the quarter comprised Non-Executive Director's fees, salary for the Managing Director, fixed monthly consulting fee paid to the Company Secretary, and consulting fees paid to Kenex Pty Ltd (Kenex) for geological and database management services. Dr. Greg Partington, the Company's Operations Manager is a director of Kenex. A full explanation of the services provided by Kenex and the contractual relationship was outlined in the Company's prospectus.

The total funds held by the Company in cash and equivalents at the end of the September 2021 Quarter is \$10.191m, placing the company in a very strong position to carry out its planned and committed exploration and work programs.

The announcement made during the quarter can be found at [www.duke-exploration.com.au](http://www.duke-exploration.com.au).

Listing Rule 5.4.4 requires the Company to set out a comparison of funds allocated in the use of funds schedule in the Company's September 2020 prospectus compared to what has actually been spent and an explanation of any material variance. The Company provides the following table in satisfaction of this listing rule requirement:

	Prospectus Year 1	Actuals to 30 September 21
<b>Bundarra</b>		
Mapping and Targeting	\$96,350	\$366,767
Drilling	\$3,094,311	\$4,841,256
Geophysics	\$766,040	\$1,158,740
Resource Estimation	\$107,000	\$23,875
Access/other	\$84,800	\$314,255
<b>Total</b>	<b>\$4,148,501</b>	<b>\$6,704,893</b>
<b>Prairie Creek</b>		
Mapping and Targeting	\$5,000	\$352
Geochemical Sampling		\$52,570
Drilling	\$252,105	\$215,728
Geophysics	\$66,250	\$43,981
Resource Estimation		
Equipment/Other	\$50,500	\$23
<b>Total</b>	<b>\$373,855</b>	<b>\$312,654</b>
<b>Red Hill</b>		
Mapping and Targeting	\$7,000	
Geochemical Sampling		
Drilling	\$295,560	
Equipment/Other	\$35,000	\$21,767
<b>Total</b>	<b>\$337,560</b>	<b>\$21,767</b>
Exploration & Corporate Management	\$705,680	\$1,442,159
<b>Grand Total</b>	<b>\$5,565,596</b>	<b>\$8,481,473</b>

The Company advises the only material variances to the budget is increased exploration management. This is due to the better than expected results at Mt Flora which has resulted in the Company expanding the exploration team to allow regional exploration and resource drilling to be done concurrently. The Prairie Creek drilling has now been completed.

## Operations

### Bundarra Project, (Duke 100%)

The Bundarra Project comprises the Bundarra EPM 26499, Duania EPM 27474 and Waitara EPM 27609. The tenements are located approximately 130 km southwest of Mackay and 50 km east of Moranbah in central Queensland (Figure 1). The Bundarra tenement covers 207 km<sup>2</sup> over the Bundarra Pluton, the Duania tenement covers 83 km<sup>2</sup> over the interpreted down plunge extent of the Bundarra Pluton to the southwest and the Waitara tenement covers 19 km<sup>2</sup> over a geologically related intrusion to Bundarra (Waitara granite), 20 km to the northeast, on a trend of buried intrusions that have been mapped in 3D (Figure 1).

The Mt Flora prospect is a high priority target for development in the Bundarra Project area (see [www.duke-exploration.com.au](http://www.duke-exploration.com.au) for project details) and is where initial exploration and resource drilling is being focussed and an Inferred resource of 16 Mt at an average grade of 0.5% Cu and 6.9 ppm, Ag, recently reported at a 0.2% Cu cut-off grade as classified and reported in accordance with the JORC Code (2012), which equates to 78,000 tonnes of copper and 3.6 million ounces of silver (Table 1). There are currently five other target areas with similar development potential on the Bundarra project as defined by historical mining, geology and geophysics.

*Table 1. Mount Flora Mineral Resource Summary*

		Tonnes (Mt)	Cu%	Ag g/t	Cu tonnes	Ag ounces
Inferred	Oxide	1	0.3	4.2	2,000	87,000
	Sulphide	15	0.5	7.0	76,000	3,500,000
	Total	16	0.5	6.9	78,000	3,600,000

Notes:

- Reported at a 0.2% Cu-equivalent cut-off grade (Cu & Ag)
- The Mineral Resource is classified in accordance with JORC, 2012 edition.
- The effective date of the Mineral Resource estimate is 25 June 2021.
- The Mineral Resource is contained within EMP 26499.
- Estimates are rounded to reflect the level of confidence in these resources at the present time. All resources have been rounded to the nearest million tonnes.
- The Mineral Resource is reported as a global resource

Regional exploration is being carried out concurrently with the resource development work at Mt Flora, with pluton-scale electrical geophysical and pXRF geochemical soil surveys are being carried out around the contact of the Bundarra intrusion, and exploration has drilling started in the Southwest of the pluton around the historic Quorn and Absolon prospects testing the resource development potential of the new targets being generated by the regional exploration (Figure 1).



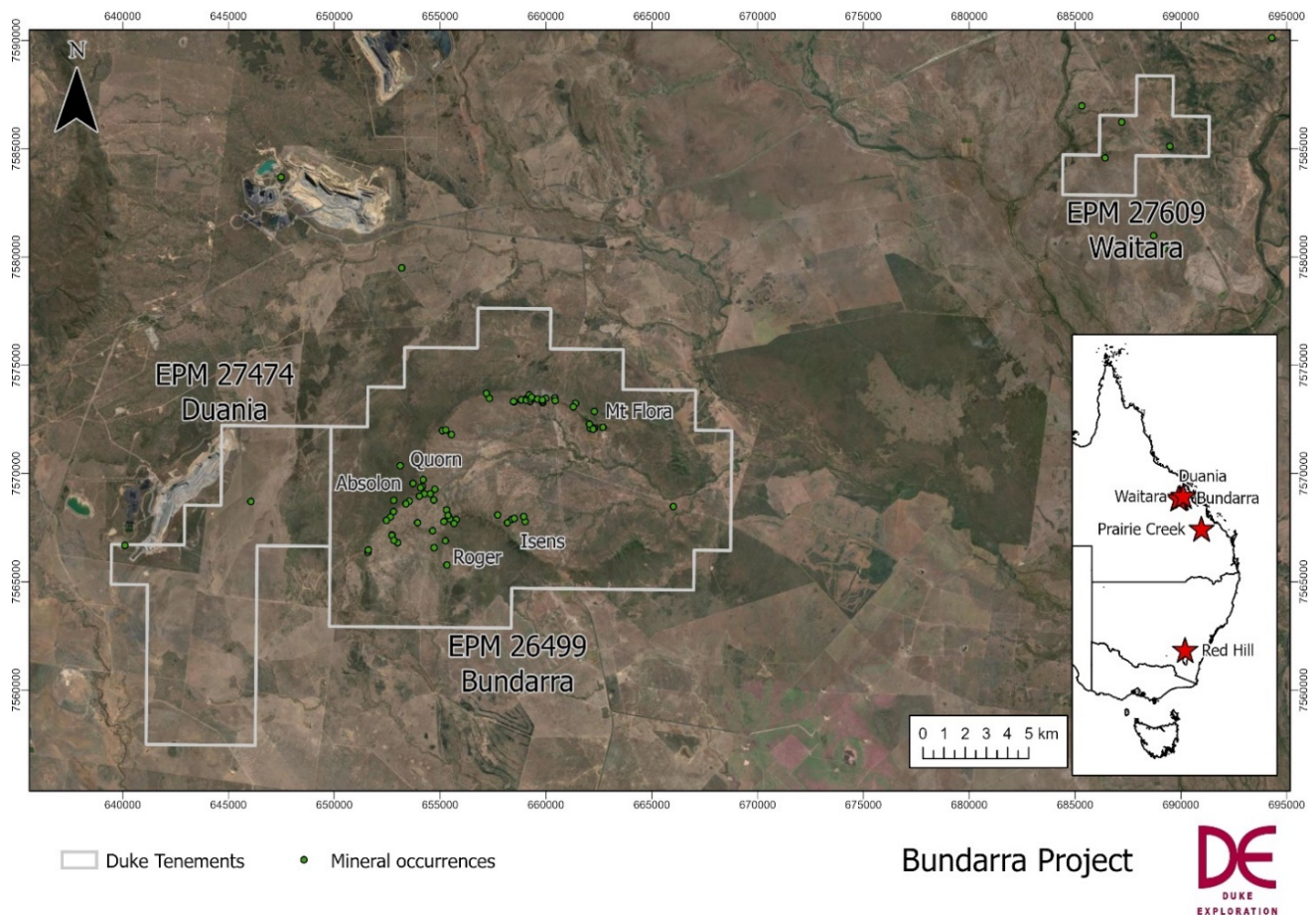


Figure 1. Location of Bundarra Project (EPM 26499, EPM 27474, and EMP 27609) compared to historic prospects and main target areas.

### Mt Flora and Quarry Lode Resource and Exploration Extension Drilling Results

Drilling at Mt Flora and the Quarry Lode was completed during the Quarter and all assays returned (Table 2 and Table 3). The drilling at Mt Flora is spaced 60m down dip and along strike of the known mineralisation that was mined historically and intersected in the historic drilling (Table 2 and Figure 2). All drill holes are planned to drill west at between 70-50° to intersect the mineralised lodes dipping 40° to the east, with the main aims of the extension drilling at Mt Flora are to:

- Drill enough pattern holes to update the inferred resource estimate over the mineralised strike at Mt Flora.
- Continue to test the strike and downhole extent of the Mt Flora mineralisation to the north.
- Test the geophysical survey anomalies in the granodiorite to the south and east.
- Drill the interpreted geological contact between the hornfels argillite and granodiorite to test for continuations of mineralised veins into the granodiorite.
- Prioritise any geophysical anomalies that warrant follow up exploration and infill drilling.

The new assay results during the quarter from the extension drilling at Mt Flora come from the last 22 holes (7,659m) of the planned Phase 2 drilling (Table 2 and Figure 2). A total of 109 RC holes have been drilled for 20,101 m since drilling started at Mt Flora, with all assays now returned. There are fifteen lines of holes on a 60 m by 60 m drill spacing completed with the mineralised area increasing to a strike of 950 m, a width of 900 m and to a vertical depth of 300 m, which is 30% larger than the area that was used to estimate the recent Inferred resource reported on 29 June (Figure 2).

The results for all the new holes assayed have been entered into the drill databases and a quality control review completed. All check samples, blanks and sample weights have been reviewed as part of an ongoing quality control process and returned results within accepted expected statistical ranges, which confirms the validity of the assay results. There are 62 new intersections of copper, silver and gold mineralisation above a 0.2% Cu cut off from the 22 new RC holes at Mt Flora that are not included in the current resource estimate, which brings the total number of intersections to date to 439 intersections (Table 3). Mineralisation continues to be predictable and consistent in width, copper grade and orientation between drill holes both down dip and now along strike. Better intersections from the new drilling include (Table 3):

- 2 m at 5.49 % Cu, 60.15 g/t Ag and 0.17 Au from 206 m in MFRC089,
- 2 m at 0.91 % Cu, 19.55 g/t Ag and 0.02 Au from 220 m in MFRC089,
- 9 m at 1.28 % Cu, 22.07 g/t Ag and 0.02 Au from 259 m in MFRC089,
- 3 m at 1.4 % Cu, 16.03 g/t Ag and 0.14 Au from 159 m in MFRC090,
- 3 m at 0.78 % Cu, 22.1 g/t Ag and 0.04 Au from 211 m in MFRC090,
- 6 m at 0.24 % Cu, 0.31 g/t Ag and 0.01 Au from 12 m in MFRC091,
- 11 m at 0.4 % Cu, 4.82 g/t Ag and 0.02 Au from 22 m in MFRC091,
- 8 m at 1.01 % Cu, 11.9 g/t Ag and 0.02 Au from 18 m in MFRC093,
- 4 m at 1.17 % Cu, 25.45 g/t Ag and 0.05 Au from 48 m in MFRC094,
- 8 m at 0.34 % Cu, 6.61 g/t Ag and 0.02 Au from 230 m in MFRC096,
- 4 m at 1.3 % Cu, 19.25 g/t Ag and 0.09 Au from 58 m in MFRC099,
- 3 m at 0.77 % Cu, 21.93 g/t Ag and 0.01 Au from 74 m in MFRC106,
- 25 m at 0.6 % Cu, 7.49 g/t Ag and 0.04 Au from 219 m in MFRC106,
- 13 m at 0.55 % Cu, 7.19 g/t Ag and 0.04 Au from 248 m in MFRC106,
- 4 m at 0.71 % Cu, 8.43 g/t Ag and 0.05 Au from 266 m in MFRC106,
- 15 m at 0.29 % Cu, 2.78 g/t Ag and 0.03 Au from 169 m in MFRC108 and
- 15 m at 1.31 % Cu, 7.11 g/t Ag and 0.11 Au from 228 m in MFRC109.



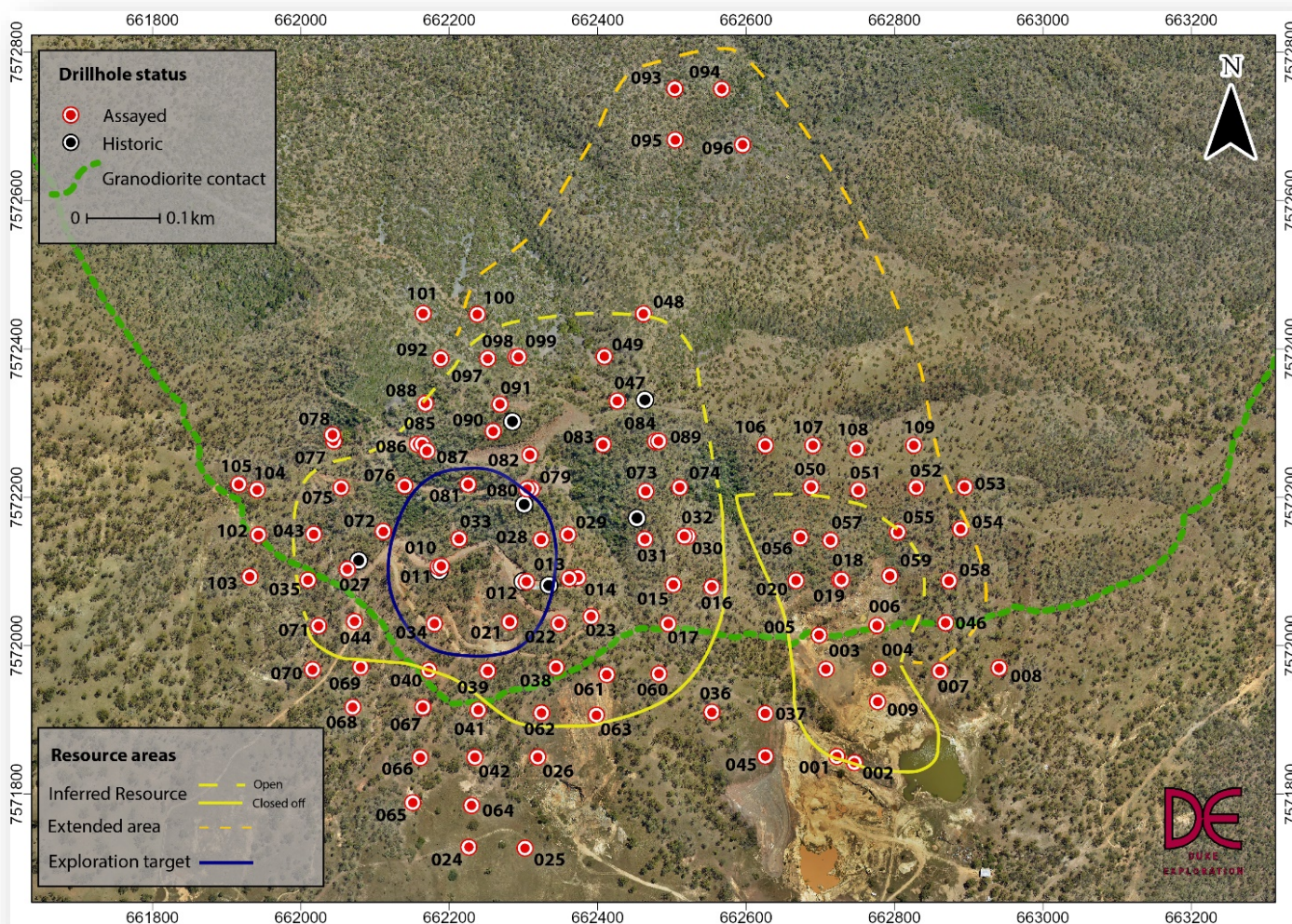


Figure 2. Mt Flora drill location plan for all the holes completed at the Quarry Anomaly and Mt Flora relative to the Exploration Target area, Inferred Resource area, extended mineralised area, granodiorite contact and location of historic drill holes (all hole numbers have a MFRC prefix)

The four extension RC holes (MFRC093 – MFRC096) drilled to test a coincident pXRF copper soil and EM conductivity anomaly 300 m north of the Mt Flora resource area intersected copper, silver and gold mineralisation from the surface to a 200m vertical depth, including 8 m at 1.01 % Cu, 11.9 g/t Ag and 0.02 Au from 18 m in MFRC093 and 4 m at 1.17 % Cu, 25.45 g/t Ag and 0.05 Au from 48 m in MFRC094 (Table 3 and Figure 2). The mineralisation appears to have a similar dip to the Mt Flora and Quarry Lode mineralisation, but it is unclear if the mineralisation is related to either vein system or is a new vein system. Importantly, contrary to early interpretations that the mineralisation was potentially deepening to the north down the plunge of the granodiorite contact, the mineralisation reaches the surface and is open down dip to the east and along strike to the north (Table 3 and Figure 2). The northern most line drilled to test the Quarry Lode on 7572270mN, including MFRC106 – MFRC109, also intersected copper, silver and gold mineralisation, continuing the Quarry Lode to the north, which also remains open to the east down dip and along strike to the north (Figure 2 and Figure 3). Some of the best intersections from the Phase 1 and Phase 2 drilling to date come from this line, including: 25 m at 0.6 % Cu, 7.49 g/t Ag and 0.04 Au from 219 m in MFRC106 and 15 m at 1.31 % Cu, 7.11 g/t Ag and 0.11 Au from 228 m in MFRC109.

Both these discoveries are very important as they not only extend the potential strike of mineralisation at Mt Flora and at the Quarry Lode, but also confirm that pXRF copper soil and geophysical conductivity anomaly

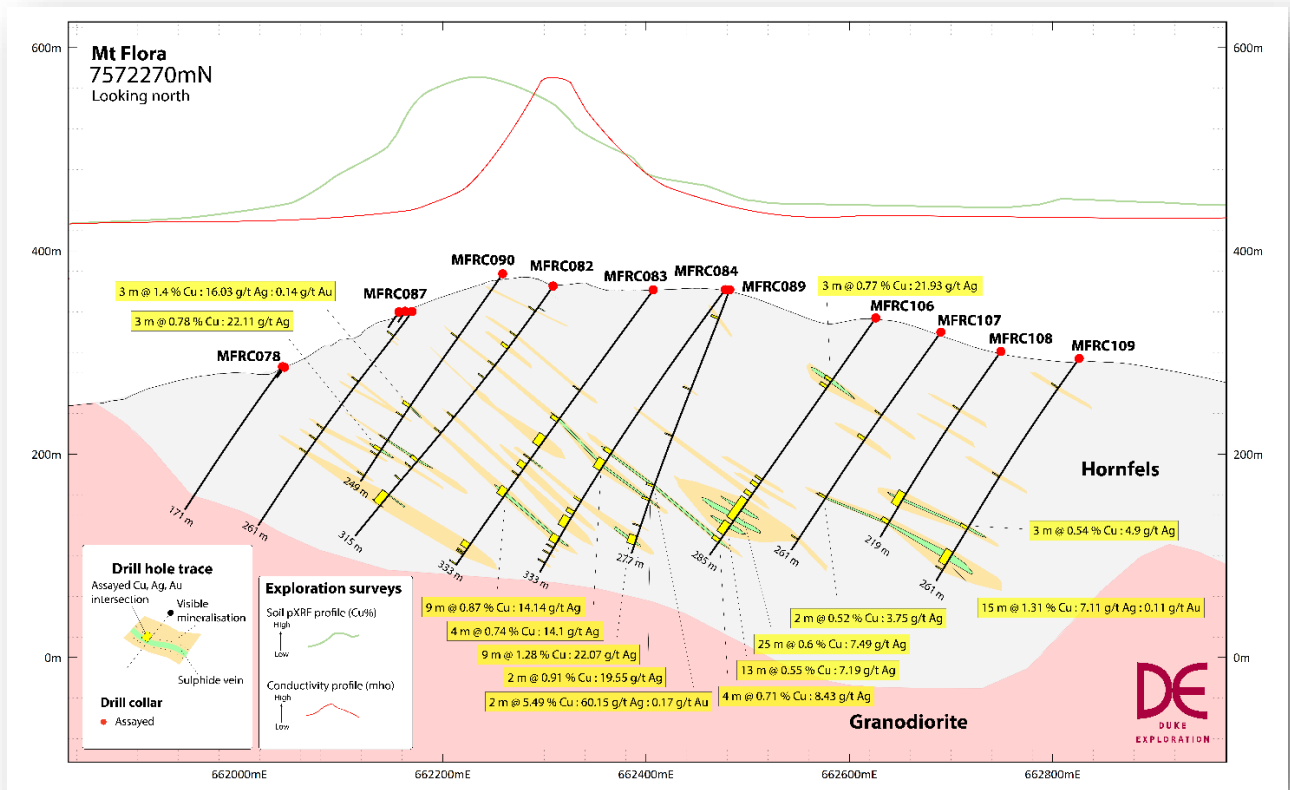


Figure 3. Section 7572270mN of the most northern line of resource drilling of the Quarry Lode relative to pXRF soil and electrical geophysical anomalies.

Prospect	Hole	Line	Easting	Northing	RL	Depth	Az	Dip	Status
Mt Flora	MFRC088	7572330	662,168	7,572,326	350	243	267	-52	Unmineralised
Mt Flora	MFRC089	7572270	662,482	7,572,276	362	277	275	-69	Mineralised
Mt Flora	MFRC090	7572270	662,259	7,572,289	378	249	259	-56	Mineralised
Mt Flora	MFRC091	7572330	662,268	7,572,325	380	249	273	-54	Mineralised
Mt Flora	MFRC092	7572390	662,189	7,572,387	368	249	271	-55	Unmineralised
Mt Flora	MFRC093	7,572,750	662,504	7,572,750	282	159	269	-53	Mineralised
Mt Flora	MFRC094	7,572,750	662,567	7,572,750	278	149	271	-55	Mineralised
Mt Flora	MFRC095	7,572,675	662,504	7,572,681	295	201	270	-54	Mineralised
Mt Flora	MFRC096	7,572,675	662,595	7,572,675	291	249	268	-55	Mineralised
Mt Flora	MFRC097	7572390	662,252	7,572,387	369	249	270	-55	Mineralised
Mt Flora	MFRC098	7572390	662,290	7,572,389	357	13	271	-55	Abandoned
Mt Flora	MFRC099	7572390	662,293	7,572,389	357	249	272	-67	Mineralised
Mt Flora	MFRC100	7572450	662,238	7,572,447	351	248	275	-55	Unmineralised
Mt Flora	MFRC101	7572450	662,165	7,572,448	358	219	274	-54	Unmineralised
Mt Flora	MFRC102	7572150	661,943	7,572,149	253	79	270	-54	Mineralised



Prospect	Hole	Line	Easting	Northing	RL	Depth	Az	Dip	Status
Mt Flora	MFRC103	7572090	661,931	7,572,093	240	55	274	-55	Unmineralised
Mt Flora	MFRC104	7572210	661,941	7,572,210	251	19	271	-55	Abandoned
Mt Flora	MFRC105	7572210	661,916	7,572,218	256	85	256	-75	Mineralised
Quarry lode	MFRC106	7,572,270	662,626	7,572,270	334	285	271	-55	Mineralised
Quarry lode	MFRC107	7,572,270	662,690	7,572,270	320	261	272	-55	Mineralised
Quarry lode	MFRC108	7,572,270	662,749	7,572,265	301	219	273	-55	Mineralised
Quarry lode	MFRC109	7,572,270	662,826	7,572,270	294	261	267	-55	Mineralised

Table 2. Drill collar details of RC holes with new assays drilled at the Quarry Lode and Mt Flora (MGA94 Zone 55).

Hole	Prospect	Easting	Northing	RL	From	To	Width	Cu %	Ag g/t	Au g/t
MFRC089	Mt Flora	662,472	7,572,276	334	29	31	2	0.35	5.15	0.03
MFRC089	Mt Flora	662,444	7,572,275	263	105	106	1	0.35	13.20	0.02
MFRC089	Mt Flora	662,426	7,572,274	218	154	155	1	0.39	5.90	0.01
MFRC089	Mt Flora	662,408	7,572,275	168	206	208	2	5.49	60.15	0.17
MFRC089	Mt Flora	662,404	7,572,275	155	220	222	2	0.91	19.55	0.02
MFRC089	Mt Flora	662,395	7,572,276	129	248	249	1	0.42	7.10	0.01
MFRC089	Mt Flora	662,390	7,572,277	115	259	268	9	1.28	22.07	0.02
MFRC090	Mt Flora	662,215	7,572,280	315	77	78	1	0.56	19.40	0.02
MFRC090	Mt Flora	662,168	7,572,270	247	159	162	3	1.40	16.03	0.14
MFRC090	Mt Flora	662,161	7,572,269	237	172	173	1	0.24	10.20	0.08
MFRC090	Mt Flora	662,146	7,572,266	214	200	201	1	0.73	21.80	0.04
MFRC090	Mt Flora	662,139	7,572,265	204	211	214	3	0.78	22.10	0.04
MFRC090	Mt Flora	662,136	7,572,265	199	218	219	1	0.55	4.40	0.06
MFRC090	Mt Flora	662,123	7,572,263	179	242	243	1	0.23	6.70	0.01
MFRC091	Mt Flora	662,260	7,572,326	368	12	18	6	0.24	0.31	0.01
MFRC091	Mt Flora	662,252	7,572,326	358	22	33	11	0.40	4.82	0.02
MFRC091	Mt Flora	662,235	7,572,326	335	56	57	1	0.25	6.40	0.01
MFRC091	Mt Flora	662,229	7,572,327	326	65	68	3	0.27	6.60	0.01
MFRC091	Mt Flora	662,191	7,572,327	274	131	132	1	0.32	5.30	0.01
MFRC091	Mt Flora	662,139	7,572,333	202	220	222	2	0.48	10.70	0.01
MFRC093	Mt Flora	662,491	7,572,750	265	18	26	8	1.01	11.90	0.02
MFRC094	Mt Flora	662,538	7,572,749	237	48	52	4	1.17	25.45	0.05
MFRC094	Mt Flora	662,514	7,572,749	206	89	90	1	0.56	11.10	0.05
MFRC094	Mt Flora	662,481	7,572,748	163	143	144	1	0.49	19.90	0.04
MFRC095	Mt Flora	662,496	7,572,681	283	14	15	1	0.32	2.50	0.01
MFRC095	Mt Flora	662,491	7,572,681	277	20	25	5	0.40	2.81	0.01
MFRC095	Mt Flora	662,456	7,572,678	231	80	81	1	0.22	10.20	0.08
MFRC096	Mt Flora	662,540	7,572,670	214	93	96	3	0.25	7.53	0.01
MFRC096	Mt Flora	662,506	7,572,665	169	151	152	1	0.70	16.10	0.01
MFRC096	Mt Flora	662,479	7,572,662	134	196	197	1	0.49	12.70	0.01
MFRC096	Mt Flora	662,456	7,572,659	104	230	238	8	0.34	6.61	0.02
MFRC097	Mt Flora	662,227	7,572,387	334	43	44	1	0.65	18.70	0.01
MFRC097	Mt Flora	662,193	7,572,387	286	101	102	1	0.20	3.40	0.02
MFRC099	Mt Flora	662,272	7,572,390	308	53	54	1	0.84	13.20	0.05
MFRC099	Mt Flora	662,270	7,572,391	302	58	62	4	1.30	19.25	0.09
MFRC099	Mt Flora	662,254	7,572,393	264	101	102	1	0.23	6.20	0.02

Hole	Prospect	Easting	Northing	RL	From	To	Width	Cu %	Ag g/t	Au g/t
MFRC099	Mt Flora	662,249	7,572,394	253	113	114	1	0.21	2.50	0.01
MFRC099	Mt Flora	662,245	7,572,395	243	123	124	1	0.24	7.00	0.01
MFRC099	Mt Flora	662,203	7,572,407	144	232	233	1	0.35	3.40	0.07
MFRC102	Mt Flora	661,930	7,572,149	235	22	23	1	0.38	4.90	0.14
MFRC105	Mt Flora	661,904	7,572,216	207	50	51	1	0.43	5.20	0.06
MFRC105	Mt Flora	661,898	7,572,215	184	73	75	2	0.32	3.30	0.05
MFRC106	Mt Flora	662,583	7,572,270	272	74	77	3	0.77	21.93	0.01
MFRC106	Mt Flora	662,578	7,572,270	266	82	85	3	0.23	7.70	0.01
MFRC106	Mt Flora	662,514	7,572,270	174	194	196	2	0.31	3.55	0.06
MFRC106	Mt Flora	662,510	7,572,270	169	200	204	4	0.34	3.50	0.03
MFRC106	Mt Flora	662,504	7,572,270	160	211	215	4	0.21	2.70	0.01
MFRC106	Mt Flora	662,493	7,572,270	144	219	244	25	0.60	7.49	0.04
MFRC106	Mt Flora	662,480	7,572,270	126	248	261	13	0.55	7.19	0.04
MFRC106	Mt Flora	662,472	7,572,270	114	266	270	4	0.71	8.43	0.05
MFRC107	Mt Flora	662,632	7,572,274	238	100	101	1	0.22	5.90	0.01
MFRC107	Mt Flora	662,615	7,572,276	214	128	131	3	0.46	5.07	0.04
MFRC107	Mt Flora	662,577	7,572,282	157	198	200	2	0.52	3.75	0.06
MFRC107	Mt Flora	662,549	7,572,286	116	248	249	1	0.25	2.30	0.03
MFRC108	Mt Flora	662,709	7,572,268	243	70	71	1	0.20	5.00	0.02
MFRC108	Mt Flora	662,652	7,572,279	154	169	184	15	0.29	2.78	0.03
MFRC108	Mt Flora	662,639	7,572,282	133	200	204	4	0.44	3.78	0.03
MFRC109	Mt Flora	662,805	7,572,269	265	35	36	1	0.22	5.50	0.01
MFRC109	Mt Flora	662,748	7,572,275	178	140	141	1	0.21	7.90	0.03
MFRC109	Mt Flora	662,716	7,572,280	127	199	202	3	0.54	4.90	0.04
MFRC109	Mt Flora	662,698	7,572,284	97	228	243	15	1.31	7.11	0.11
MFRC109	Mt Flora	662,692	7,572,285	86	248	249	1	0.21	2.10	0.02

*Table 3. Drill intersections from the Mt Flora and Quarry Lode Resource RC drilling, using a 0.2% Cu cut off, with a minimum width of 1 metre and including 3 metres of internal waste (MGA94 Zone 55).*

### Mt Flora and Quarry Lode Metallurgy

Two diamond drill holes were completed during the quarter that were planned to provide sufficient samples of ore grade mineralisation to complete definitive metallurgical testing on samples from the Mt Flora and Quarry Lode resource areas. The drilling was completed over 14 days with 247 m completed from the two diamond holes. DFD004 intersected the main high grade mineralised lodes at Mt Flora from the near surface to a depth of 170 m and will provide samples assess the metallurgical variability with depth and copper grade. DFD005 intersected the mineralisation in the Quarry Lode to confirm that the metallurgical recoveries are like the metallurgical recoveries from the ore at Mt Flora. The aims of the drilling are:

- Collect sufficient material for metallurgical testing from representative areas of Mt Flora and the Quarry lode.
- Drill down dip of mineralisation to maximise intercepted mineralised zones/lodes for sample recovery.
- Test the Mt Flora geological model of mineralised lodes dipping to the east at 50°.

Logging, processing and assaying the core using a pXRF analyser the core is underway and when completed the mineralised core will be selected using the pXRF copper data and sent to the Arnofio laboratory in Perth to start the metallurgical test work, which will comprise comminution tests, sighter float tests, Jameson simulation tests and definitive Locked Cycle floatation test work on a master composite representative of the likely copper, silver and gold ore grades. This work will also provide samples of the potential concentrate from the ore at Mt Flora that will be used for future marketing and discussions with smelters and metal traders.

### Updated Bundarra Pluton Exploration Targeting

Exploration targeting methodologies to find new orebodies, around and within, the Bundarra pluton have been improved during the Quarter to take account of the results from the resource development work at Mt Flora, particularly the new mineralisation found to the north of Mt Flora announced on 25 August, and the new discoveries that continue to be made around the Bundarra Pluton announced on 13 July. The pluton scale gradient array IP conductivity data and pXRF copper soil data collected over Mt Flora Mine area were used to develop a profile targeting system that maps the potential surface location and deeper geometry of the copper, silver and gold massive sulphide veins at Mt Flora, with the aim of using this system to map similar targets around the Bundarra Pluton where pXRF soil and gradient array IP data have been acquired (Figure 4).

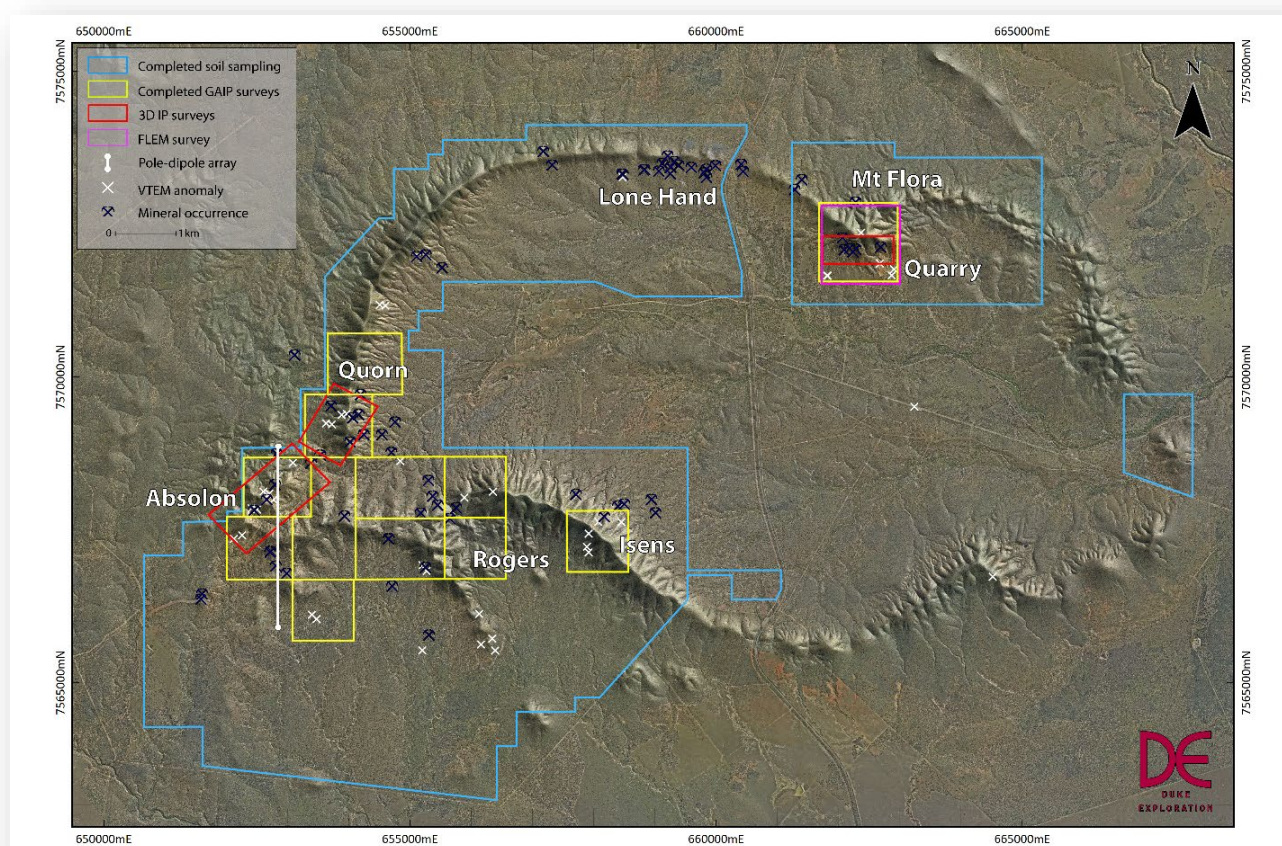
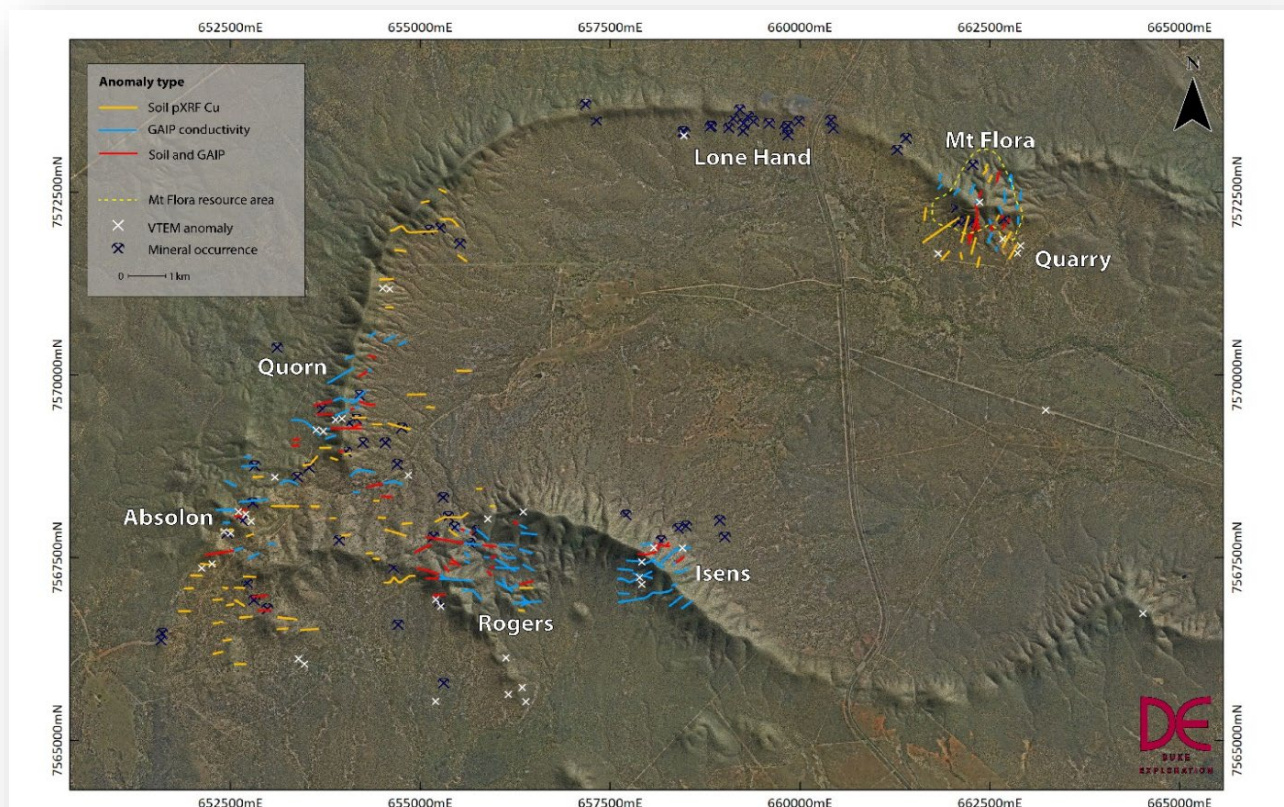


Figure 4. Location map of Bundarra regional survey areas and IP line in relation to main Duke targets and VTEM anomalies.



Copper and conductivity anomalies over the known copper, silver and gold mineralisation at Mt Flora were mapped using the geometric relationship between the peak values for conductivity and copper compared to the local background copper and conductivity values (e.g., Figure 3). The asymmetry of the profile curves from the peak values allows the interpretation of the geometry of underlying bedrock mineralisation, particularly potential dip direction. The pXRF copper soil profiles map the location of copper at the surface and is influenced by the direction and steepness of the topography, whereas the conductivity profiles map where fresh massive sulphides first occur at around 20 m depth. Consequently, the asymmetry of the profiles and the geometric relationship between the profiles can be used to interpret the dip direction and subsequently the strike of underlying massive sulphide veins, which at Mt Flora is north northeast strike and dip to the east (Figure 3 and Figure 5). When the points for the coincident conductivity and copper soil values are plotted, they provide a measure of continuity along strike and hence the potential scale of the bed rock massive sulphide vein system. The targets with the longest continuity will be the best targets for resource development.

The targets that were mapped using this technique were spatially compared with the location and geometry of the massive sulphide veins that host the Inferred resource at Mt Flora. The profile targeting technique accurately mapped the location of the veins down dip and along strike, including the extensions to the mineralisation to the north at Mt Flora (compare Figure 2 and Figure 5). The coincident profile points not only map the known mineralisation in the Inferred resource area but also confirms the continuity of mineralisation to the new mineralisation discovered 300 m to the north from the resource area (Figure 5).



The profile targeting technique was then used to map all the areas with gradient array IP and pXRF soil copper geochemistry, including Quorn, Absolon, Rogers and Isens (Figure 5). This analysis, while preliminary until data are collected over the 160 km<sup>2</sup> prospective region around the Bundarra pluton, provided new insights to the geometry and prospectivity of the southwestern part of the Bundarra pluton (Figure 5). The total length of the pXRF soil and conductivity anomaly trends that have been mapped using the profile targeting technique is 36.7 km, with 5.1 km of these trends within the current Mt Flora resource area (Figure 5). There is a combined length of 6.6 km of coincident conductivity and pXRF copper soil trends in the southwest of the Bundarra pluton that have not been tested by drilling, which are interpreted to have the potential to host similar copper, silver and gold massive sulphide veins as Mt Flora (Figure 5). These are like the 0.6 km long trend at Mt Flora, which cover the current Inferred resource area (Figure 5). This again emphasises the scale of the mineralised system in and around the Bundarra pluton and the high probability of discovering new resource development areas like Mt Flora, which is itself expected to grow as the new mineralisation to the north is pattern drilled. About 54% of the prospective area within and around the Bundarra pluton remains to be sampled, which provides confidence that additional resource development targets will be found in the unsampled areas of the Bundarra Pluton.

An important conclusion from the preliminary targeting analysis is that the copper, silver and gold veins targeted by exploration drilling at Quorn and Absolon are interpreted to have an east-west strike, which is parallel to most of the historic and current drilling as announced on 13 of August. Detailed field mapping at Quorn has confirmed the east-west trend to the mineralisation at Quorn in historic workings, which means most of the drilling to date is not optimally orientated to test the extent and importantly continuity of mineralisation at Quorn or Absolon. Future drilling at Quorn and Absolon will be adjusted to take account of the new interpreted vein geometries.

The new targeting technique is a very powerful tool for mapping and prioritising the next areas for resource development around the Bundarra pluton, particularly as the data required can be quickly and cheaply acquired across the entire prospective area. Consequently, exploration and development work plans and budgets for the next two years to June 2023 have been updated. The focus in the next two years will remain on identifying and developing undiscovered resources at the Bundarra and Prairie Creek project areas to grow the Company organically. Exploration will continue to prioritise near surface bed rock mineralisation, with pluton scale data acquisition to be prioritised for acquisition before new development drilling commences outside of the Mt Flora resource area. The aim will be to ensure the next development exploration is carried out on the best target. This work will be completed while development work continues at Mt Flora including metallurgical studies. Pluton scale exploration will continue to increase the number of new prioritised exploration targets at Bundarra based on geophysical and prospectivity studies that will lead to an increased resource base to allow the project to continue to grow organically into the future.

A new electrical geophysical inversion technique is being used to reprocess the 2011 Bundarra VTEM data to produce 3D models of conductivity and chargeability with a similar resolution to the gradient array IP data used in the profile targeting work. Preliminary inversion models have been reviewed in comparison with known geology and the various detailed ground geophysical surveys. The inversion models appear to map similar features as the detailed ground surveys and have good comparisons with the 3D IP surveys. Importantly the comparison with the ground GAIP data is good, which provides confidence the VTEM data can be used as a replacement for the GAIP data, so speeding up the mapping of the prospective region around the Bundarra Pluton, prioritising the next targets for resource development drilling and consequently reducing costs.

## Bundarra Project pXRF Soil Sampling

Regional pXRF soil sampling was accelerated during the Quarter based on the success of the new targeting techniques at mapping the geometry and continuity of bed rock copper, silver and gold mineralisation at Mt Flora. A total of 9,494 soil samples were collected during the Quarter, with 15,002 soil samples collected across the entire Bundarra Pluton since the soil sampling work started. The area with pXRF soil data now covers 74 km<sup>2</sup>, which is 46% of the prospective area of the Bundarra Pluton and surrounding contact metamorphic halo (Figure 4). The soil sampling is planned to extend the anomalous areas identified on the boundaries of previously surveyed areas and to extend the sample coverage to cover the entire prospective area within and around the Bundarra Pluton. Three soil sample collection teams are now operating, with the aim of completing sampling over the entire prospective area of the Bundarra Pluton by November, depending on weather and land access.

The soil samples were analysed using a Vanta m-series pXRF that provided multi-element geochemistry, including pathfinder element useful for mapping porphyry mineralisation like silver, molybdenum and zinc. The soil samples were collected from 20 cm below the surface in C Horizon soils with the samples sieved to 60 micron and compressed using a 4 cm by 4 cm small plumbing cap for analysis. The pXRF beam was set to 10 seconds for a total of 30 second analysis, with 39 elements analysed for each sample.

Copper is the main element used to map potential near surface copper bearing massive sulphide veins like those in the Mt Flora resource area. Copper data from the pXRF soil survey have been mapped using a 140 ppm Cu cut off that maps the mineralised veins at Mt Flora, the Quarry Lode and Quorn (Figure 6). Anomalous copper in soil continues to be mapped to the north of Quorn related to historic workings and VTEM plate anomalies (Figure 6). The copper soil anomaly at Lone Hand is similar in scale and tenor to the soil anomalies at Mt Flora, which confirms the resource development potential for this part of the Bundarra pluton. The most important new anomalous area is along the eastern contact of the Bundarra Pluton to the southeast of Mt Flora (Figure 6). This is a new discovery with no evidence of historic activity, which confirms that the eastern contact of the Bundarra pluton is also prospective for new discoveries of copper, silver and gold mineralisation like Mt Flora, further increasing the scale of the opportunity at the Bundarra project



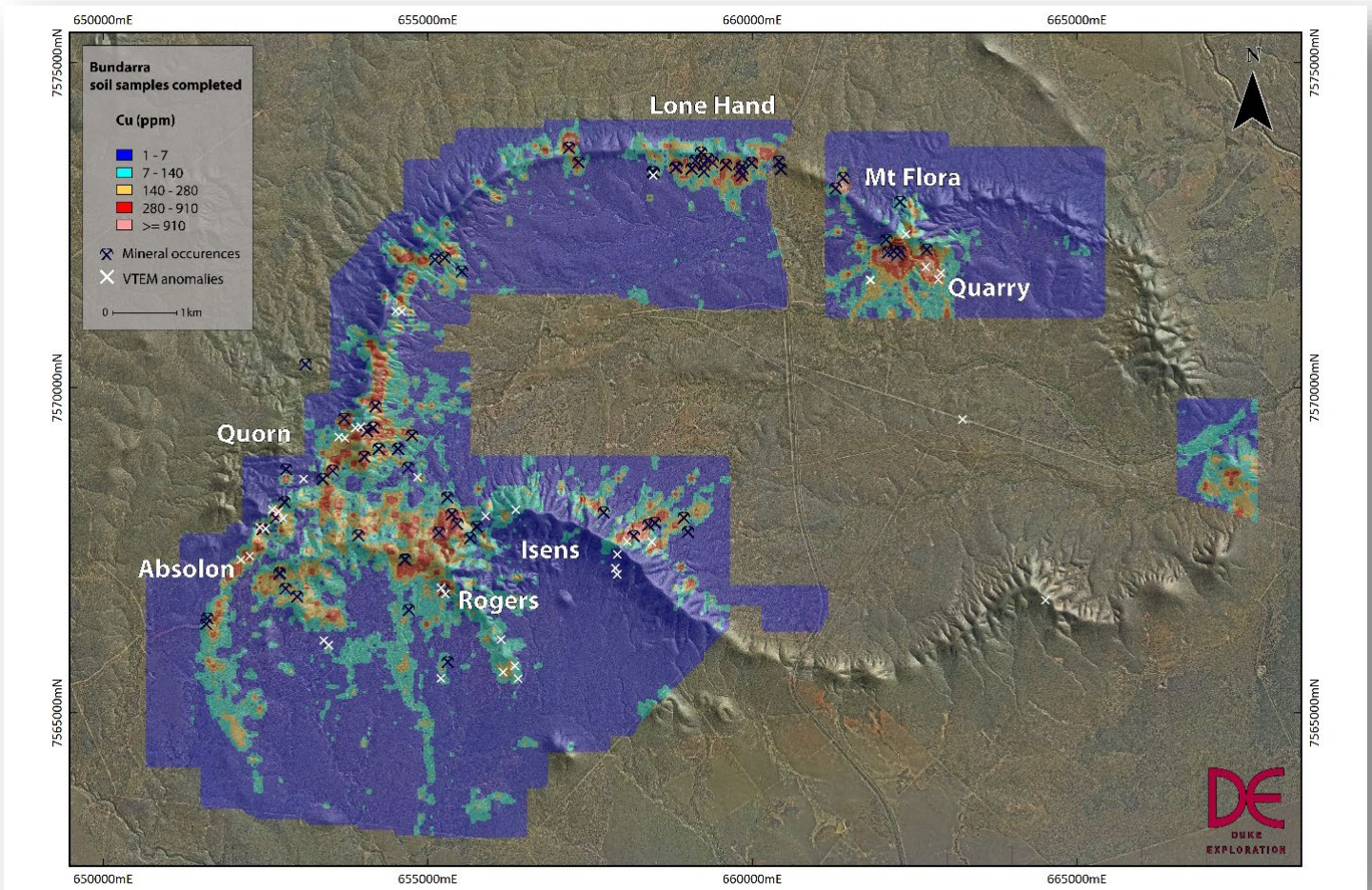


Figure 6. Grid map of pXRF copper soil values from the data collected to 9 September over the Bundarra Pluton compared to VTEM targets and historic mines and prospects.

## Prairie Creek Project, (Duke 90%)

The Prairie Creek Project is located 120 km southwest of Gladstone and 25 km southwest of Biloela, central Queensland, in EPM 26852 (Figure 7). This part of Central Queensland is prospective for epithermal gold mineralisation like the Cracow epithermal gold deposit 80 km to the south.

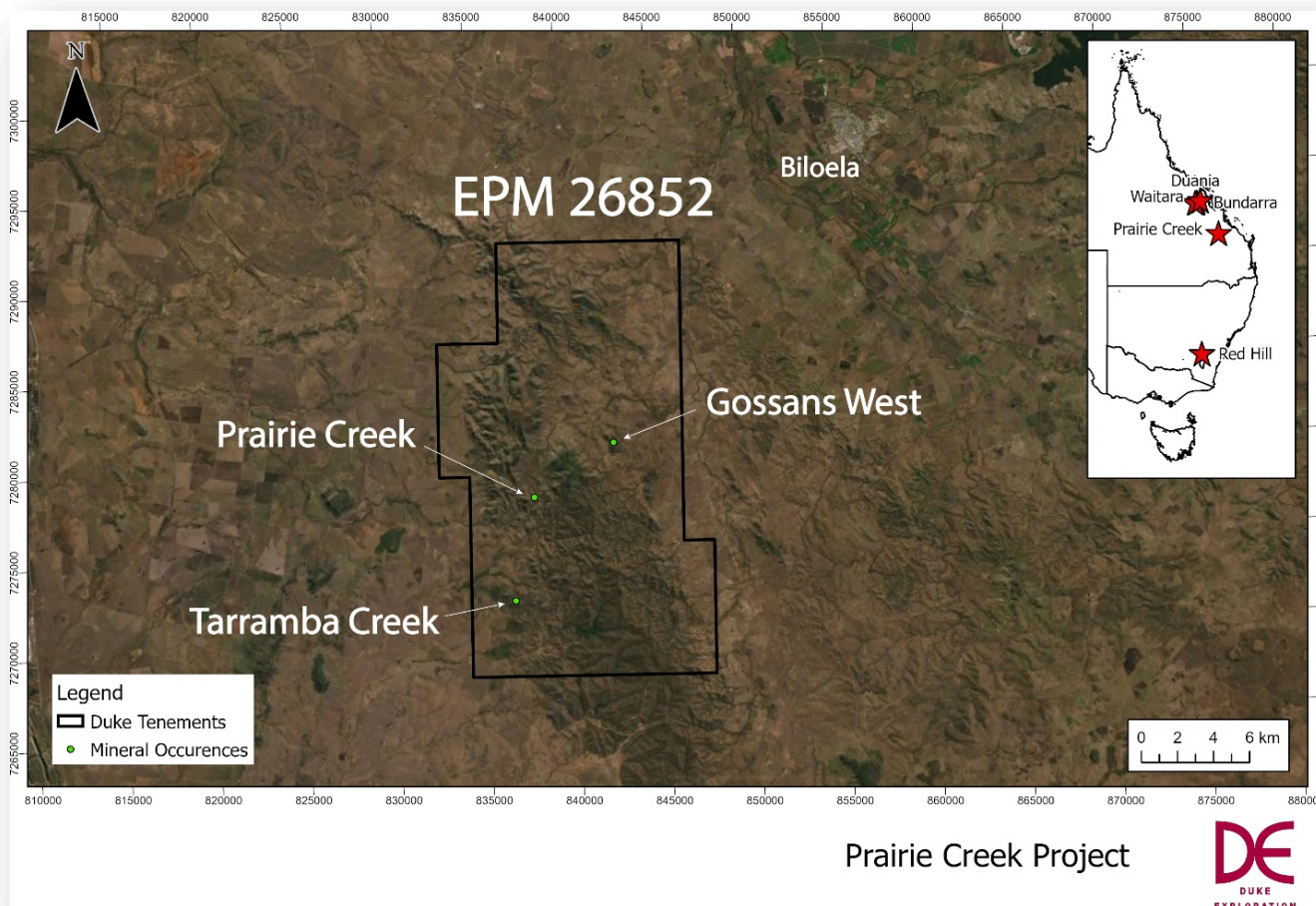


Figure 7. Location of Prairie Creek project (EPM 26852)

The Prairie Creek gold prospect is the highest priority target within the project area (Figure 7 and Figure 8; see [www.duke-exploration.com.au](http://www.duke-exploration.com.au) for project details). The prospect is highly anomalous in gold, as mapped by stream sediment and rock chip sampling and is defined by a NE trending elevated gold geochemical soil anomaly (0.5 – 5.0 g/t Au), extending over a strike length of 1.6 km and with a width of 200 m. The project is interpreted to be a gold rich epithermal system containing gold and silver associated with quartz-epidote-chlorite veining. Historic drilling has been carried out on the southern end of the soil anomaly, but the extent and continuity beyond this outcrop has not been tested. Significant intersections in historic drilling, include 52m @ 2.11g/t Au, including 10m @ 3.2g/t Au and 6m @ 6.55g/t Au.



The diamond drill rig mobilised to site and started drilling on Saturday 31 July 2021. The programme comprised three diamond holes for 350 m that were planned to:

- Confirm the historic drill hole results and location of the historic holes.
- Document the geology, particularly structural trends and potential continuity of mineralisation.
- Collect petrophysical and geochemical downhole survey data to better understand the style and genesis of the gold mineralisation.
- Measure orientations of structures that hosts gold mineralisation in 3D downhole.
- Log the local geology and use the geology, geochemistry and petrophysical data from the drilling to mapping the 3D geology.
- Better understand the potential controls on mineralisation and potential for resource development.

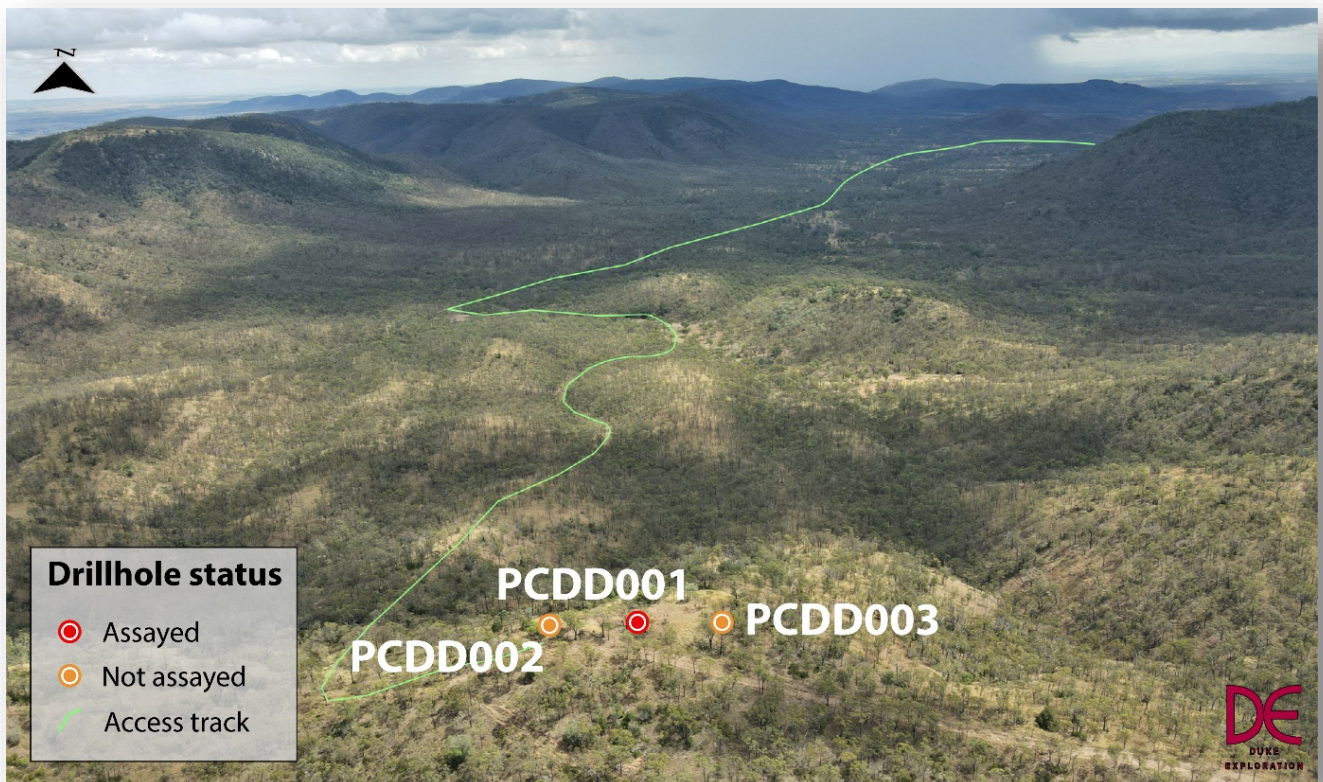


Figure 8. Location of new exploration diamond drill holes relative to access and topography

A total of over 363.3 m were drilled over 30 days, averaging 12.3 m per day, which includes breakdowns and weather delays compared to the drill plan of 350 m. A total of 405 samples were sent to the laboratory in Townsville, with 160 assay results returned to date from the first hole, PCDD001 (Table 3 and Table 4 and Figure 8 and Figure 9). Better intersections from the first hole from the new drilling include (Table 4 and Figure 3):

- 4.0 m at 0.66 g/t Au from 0.0 m in PCDD001,
- 2.3 m at 4.68 g/t Au from 7.0 m in PCDD001,
- 20.4 m at 1.86 g/t Au from 11.4 m in PCDD001 and
- 5.4 m at 2.95 g/t Au from 38.1 m in PCDD001.

Prospect	Hole	Easting	Northing	RL	Depth	Az	Dip	Status
Prairie Creek	PCDD001	230209	7279379	483	155.5	93.0	-59.4	Mineralised
Prairie Creek	PCDD002	230159	7279383	476	122.1	99.7	-60.3	Assays pending
Prairie Creek	PCDD003	230245	7279381	479	85.7	92.3	-59.8	Assays pending

*Table 3. Prairie Creek new exploration diamond drill collar details*

The first hole intersected andesitic tuff, volcanoclastics and acid tuff from the Torsdale volcanics that are intruded by younger porphyry dykes and a syenite intrusive at around 100m depth (Figure 9). Epithermal colloform quartz is spatially associated with the gold mineralisation (Figure 10 and Figure 11), mainly hosted by the volcanic rocks but also occur in the underlying syenite (Figure 9). Six zones of gold mineralisation were intersected from the surface to a down hole depth of 151.2 m, with all rock types mineralised (Figure 9). The wider zones of gold mineralisation from the surface to 50 m down hole are associated with brecciated volcanoclastic and tuffaceous lithologies. The breccias are cemented by epithermal quartz with classic epithermal colloform textures (Figure 10 and Figure 11). The gold mineralisation is associated with anomalous silver and mercury, which along with the breccia and epithermal colloform textures suggest this part of the Prairie Creek gold anomaly is at the top of an epithermal system, with potential for vein hosted gold mineralisation like the Cracow epithermal gold deposit deeper in the system.

Hole	Prospect	Easting	Northing	RL	From	To	Width	Au g/t
PCDD001	Prairie Creek	230,210	7,279,379	481	0.0	4.0	4.0	0.66
PCDD001	Prairie Creek	230,213	7,279,379	476	7.0	9.3	2.3	4.68
PCDD001	Prairie Creek	230,220	7,279,378	464	11.4	31.8	20.4	1.86
PCDD001	Prairie Creek	230,230	7,279,378	448	38.1	43.5	5.4	2.95
PCDD001	Prairie Creek	230,241	7,279,377	430	61.6	62.6	1.0	0.81
PCDD001	Prairie Creek	230,289	7,279,373	354	151.2	152.2	1.0	0.93

*Table 4. Drill intersections from the Prairie Creek gold prospect, using a 0.5 g/t Au cut off, with a minimum width of 1 metre and including 2 metres of internal waste (MGA94 Zone 55)*

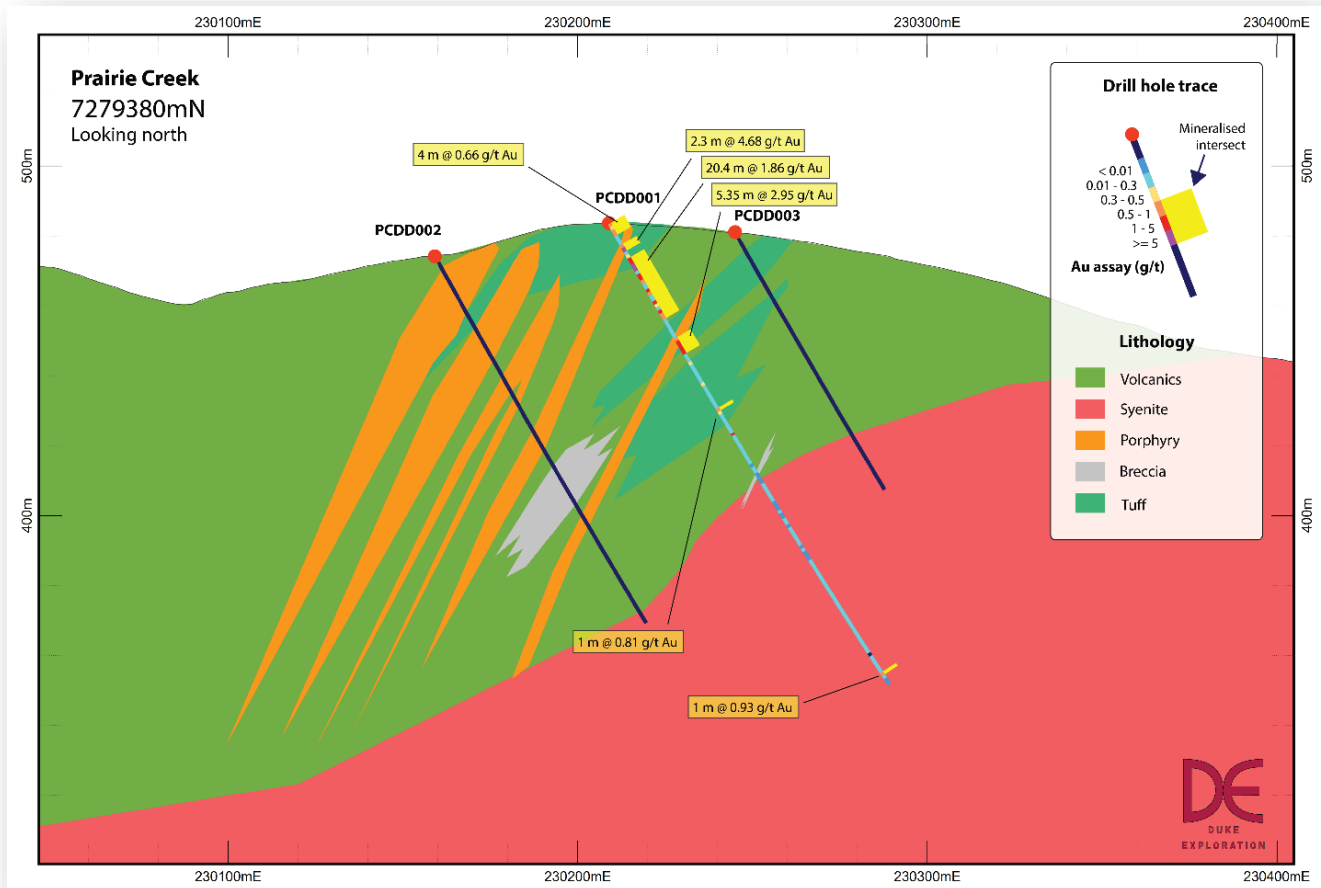


Figure 9. Gold assay results in PCDD001 on section 7279380mN in relation to interpreted geology

The continuity of the gold mineralisation in 3D with respect to the historic drill results will be better understood once the assay results have been returned from PCDD002 and PCDD003. A more in-depth review and interpretation of the significance of the new gold results will be provided when all the assay results have been returned and integrated with the detailed geological logging, multi-element geochemistry and downhole petrophysical drill data.





Figure 10. Volcanoclastic breccia cemented by colloform epithermal quartz that hosts the gold in PCDD001

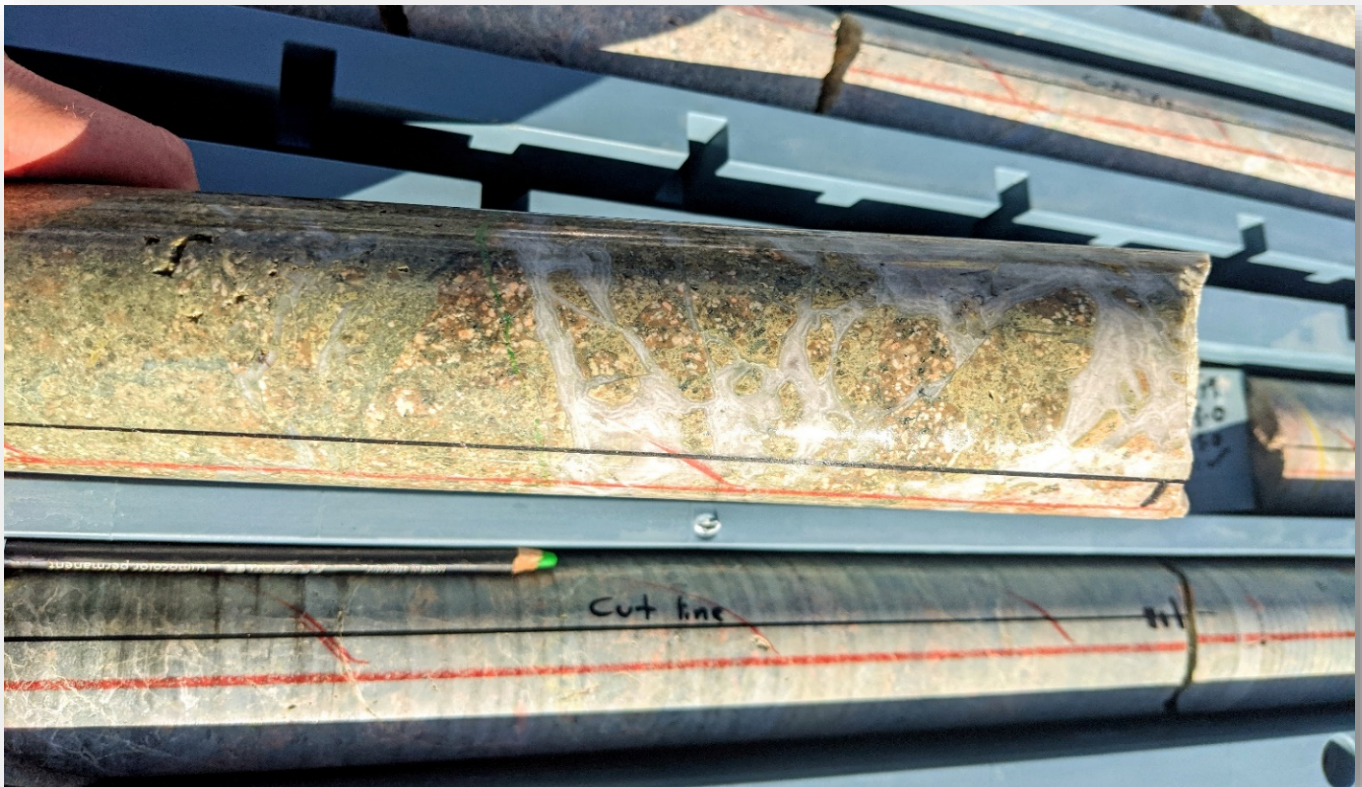


Figure 11. Close up of the colloform epithermal quartz that hosts the gold in PCDD001.

### Red Hill, (Duke 100%)

The Red Hill Project is located approximately 70 km north north-west of Canberra, north and east of Yass in New South Wales in EL 8568. EL 8568 covers an area of approximately 180 km<sup>2</sup> within the prospective Lachlan Fold Belt, with Cu, Pb, Zn, Au, and Ag mineralisation in the project area associated with an interpreted porphyry mineral system. The Lachlan Fold Belt hosts several porphyry Cu-Au deposits such as Cadia, Cowal, and Northparkes and the recently discovered Boda porphyry system, providing the target style and scale for exploration at Red Hill.

The Red Hill Project was identified using mineral prospectivity analysis for porphyry copper-gold style of mineralisation over the entire Lachlan Fold Belt (see [www.duke-exploration.com.au](http://www.duke-exploration.com.au) for project details). Importantly, several circular and sub-circular magnetic anomalies have been mapped that are spatially associated with the mineralisation discovered to date. These have signatures which may represent buried porphyry intrusions and could be the source of the metals mined in historic local workings.

There was no work during the Quarter.

### Emmerson JV tenements NSW (Duke 10%)

Duke has an interest in four exploration licences within the Lachlan Fold Belt (LFB) of New South Wales operated by Lachlan Resources Pty Ltd, a wholly owned subsidiary of ASX listed Emmerson Resources (ASX:ERM). The four tenements that form the joint venture are Wellington (EL 8463 – 390 km<sup>2</sup>); Fifield (EL8464 – 66 km<sup>2</sup>); Temora (EL 8652 – 178 km<sup>2</sup>); and Kiola (EL8590 – 203 km<sup>2</sup>). This joint venture provides Duke with exposure to porphyry Cu-Au potential over a larger area of the highly mineralised Lachlan Fold Belt, as well as management of these assets by the highly credentialed Emmerson Resources management and exploration team (see [www.duke-exploration.com.au](http://www.duke-exploration.com.au) for project details).

Emmerson continues to explore the JV tenements with no significant results reported during the quarter.

### Competent person statement

The information in the ASX announcement is based on information compiled by Dr Gregor Partington, who is a Member of The Australasian Institute of Mining and Metallurgy and a Member of the Australian Institute of Geoscientists. Dr Gregor Partington has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' (the JORC Code).

Dr Gregor Partington is engaged by Duke Exploration as Operations Manager and consents to the inclusion of the information in the ASX announcement in the form and context in which it appears.



**Schedule of Mining Tenements and Beneficial Interests  
Held as at the end of the March 2021 Quarter**

Project / Location	Country	Tenement	Percentage held / earning
Bundarra – Central Queensland	Australia	EPM 26499, EPM 27474, EPM 27609	100%
Prairie Creek – Central Queensland	Australia	EPM 26852	91%
Red Hill – NSW	Australia	EL 8568	100%
Emmerson JV – NSW	Australia	EL 8463, EL 8652	5%
		EL8590, EL8464	10%

**Schedule of Mining Tenements and Beneficial Interests  
Acquired during the March 2021 Quarter**

Project / Location	Country	Tenement	Date Acquired
N/A			

**Schedule of Mining Tenements and Beneficial Interests  
Disposed of during the March 2021 Quarter**

Project / Location	Country	Tenement	Withdrawal Date
NA			