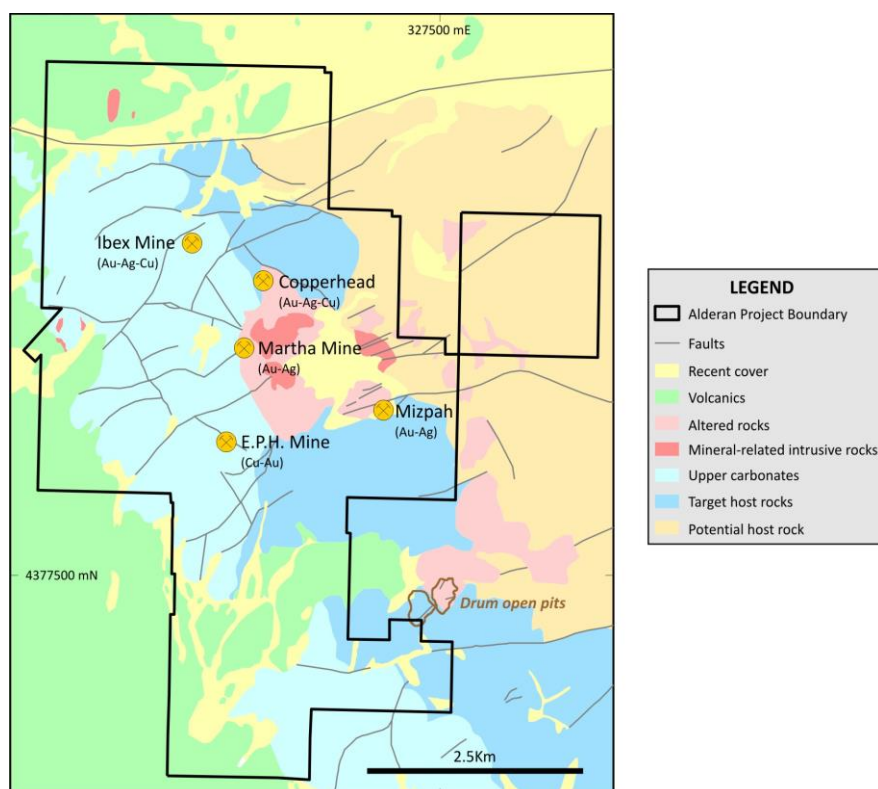


## Alderan Finalises Planning to Drill Test Detroit Copper-Gold Targets

### HIGHLIGHTS

- Alderan has finalised site selection for a 10 hole (~3,000m) drilling programme at Detroit copper-gold project, Utah, USA.
- Drill holes will test seven copper and gold targets including:
  - The Basin Complex porphyry (Cu-Au-Mo) – high amplitude magnetic and chargeability anomalies.
  - The Copperhead, Southern, Northern Extension and Mizpah distal disseminated gold prospects (Au-Cu) – high amplitude chargeability anomalies, target stratigraphy, high-grade gold & copper in rocks.
  - The historical Martha mine and southern Skarn targets (Cu-Au) – high amplitude chargeability, target stratigraphy, high-grade gold in rocks.
- Permitting is on track for Alderan to commence drilling in early September, 2021.

Alderan Resources Limited (ASX:AL8) (**Alderan** or the **Company**) is pleased to announce drill target selection for a 10 hole (3,000m) diamond drilling programme at its Detroit Project, located in the Drum Mountains region of western Utah, USA with drilling set to commence in September 2021.



**Figure 1:** Detroit project geology showing location of old mines

Alderan's exploration to date has highlighted Detroit's potential to host porphyry copper-gold-molybdenum plus distal disseminated, skarn and structure related gold deposits. Permitting of drill sites is on track with the drilling programme expected to commence in early September.

Alderan has a consolidated exploration area at Detroit of 24.7km<sup>2</sup> through a series of option agreements with tenement owners<sup>1</sup>. This provides the Company with the opportunity to conduct the first ever modern exploration over the entire mining district.

Prior to consolidation, Alderan completed a seven hole drilling program in and around the Mizpah prospect with hole locations guided by tenement holdings<sup>2,3,4,5</sup>. Post consolidation, Alderan has compiled past exploration data, completed stream sediment, rock and soil

<sup>1</sup> Alderan ASX Announcement dated 11 February 2021.

<sup>2</sup> Alderan ASX Announcement dated 15 October 2020

<sup>3</sup> Alderan ASX Announcement dated 19 November 2020.

<sup>4</sup> Alderan ASX Announcement dated 22 February 2021.

<sup>5</sup> Alderan ASX Announcement dated 30 September 2020.

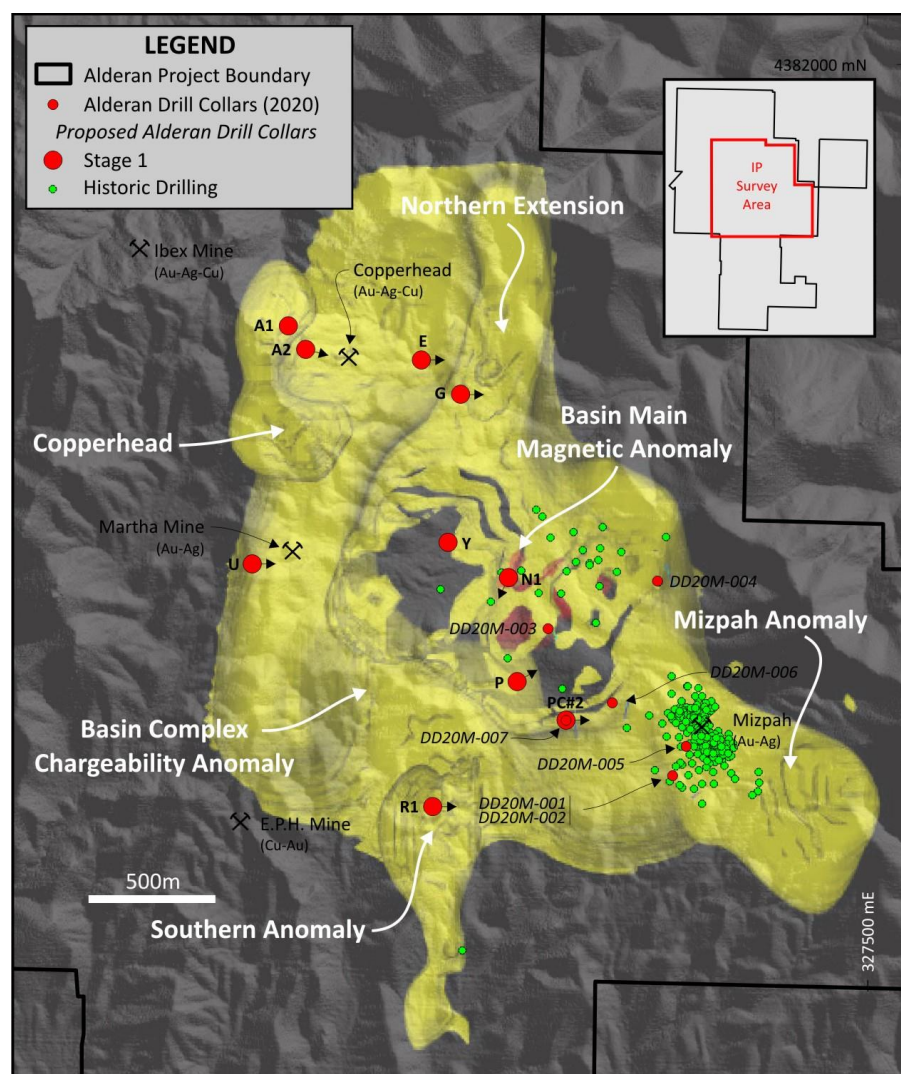
sampling plus conducted ground magnetics and induced polarization (IP) geophysical surveys<sup>6,7,8</sup>. The results highlight potential for significant copper and gold mineralisation.

Alderan Managing Director Scott Caithness said:

*"It is an exciting time for Alderan with drilling at Detroit about to commence. The drill programme will provide initial tests of seven copper and gold targets. We will drill the Basin Main and chargeability stem in the Basin Complex for copper plus the Southern, Northern Extension, Copperhead and Mizpah prospects for gold. All of these have high order chargeability geophysical anomalies. A copper-gold skarn target with the highest chargeability on the project and the historical Martha Mine will also be drilled."*

*"Our objective is to intersect grades and widths of mineralisation which could lead to the delineation of a mineable deposit with further exploration."*

## Drilling Programme Overview



Alderan's Detroit tenement covers the Basin Complex where surface exploration has identified multiple targets with potential for copper and gold deposits. The planned programme is expected to comprise 10 holes for approximately 3,000m of drilling with seven separate targets to be tested.

Alderan has contracted Major Drilling, one of the world's leading drilling companies, to complete the programme. Government approval of the drill sites is expected in the next week with drilling expected to commence in the second week of September.

The programme aims to intersect copper and gold grades over widths that suggest further exploration could result in an economic deposit. The targets are associated with magnetic and chargeability IP anomalies, favourable host rocks, known copper and gold mineralisation and potentially mineralised structures. Figure 2 shows the location of the drill sites and Table 1 provides a summary of the location, hole orientation and target rationale for the holes.

**Figure 2:** Basin Complex 3D inversion model chargeability anomaly (20-30 millisecond shell; yellow) overlying the Basin Main magnetic anomaly (>0.03 SI units cutoff; red) showing the location of Stage 1 planned holes. Historical drilling was focused on the Mizpah oxide gold deposit (1980s) and the near surface Basin Porphyry oxide copper deposit to the north-northeast (1960s).

<sup>6</sup>Alderan ASX Announcement dated 8 March 2021.

<sup>7</sup>Alderan ASX Announcement dated 11 May 2021.

<sup>8</sup>Alderan ASX Announcement dated 9 June 2021.

## Drill Targets

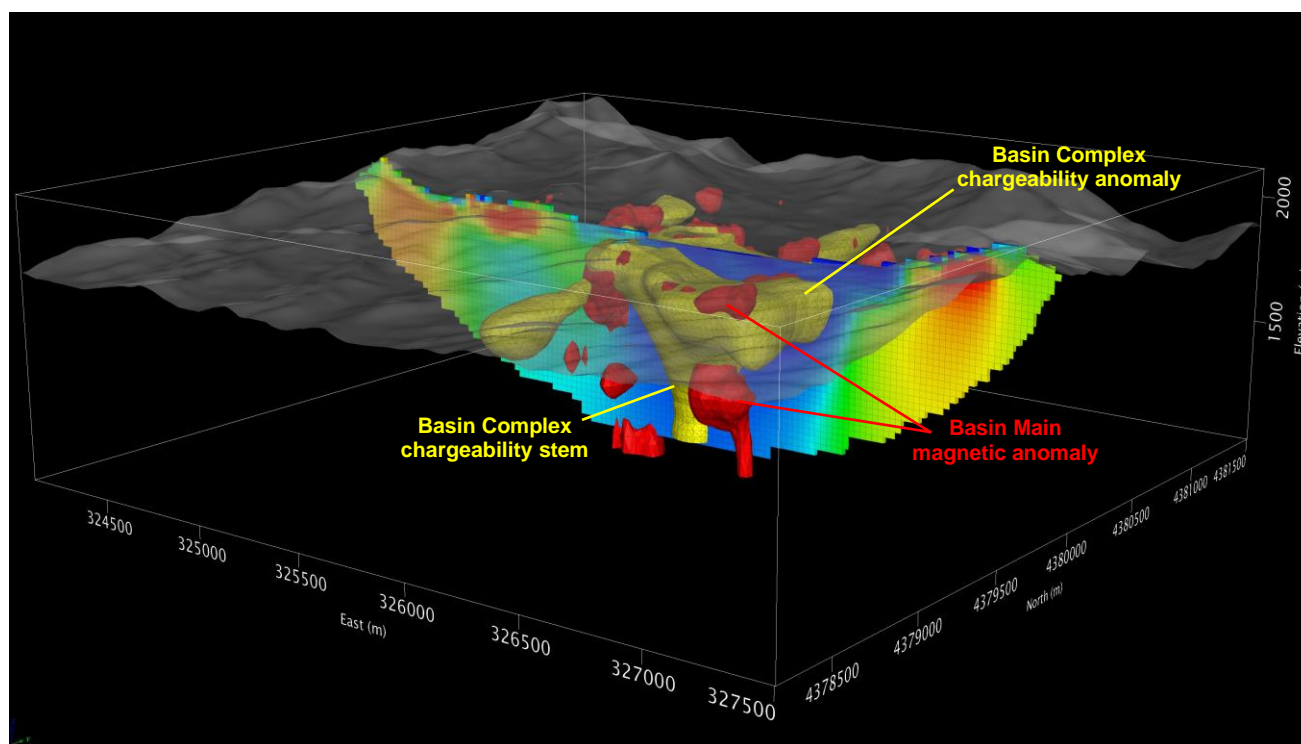
### **Basin Complex – Porphyry Cu-Au-Mo**

Drilling will test two porphyry copper-gold-molybdenum targets in the Basin Complex (Figure 3):

- 1) Basin Main magnetic anomaly and,
- 2) the stem of high chargeability associated with the large Basin Complex chargeability response.

The Basin Main magnetic anomaly is interpreted to be the copper mineralised potassic core of the 'classic' porphyry magnetic response over the Basin Complex. 3-D inversion modelling ( $>0.03$  SI units) indicates that it is a 500m x 300m high order magnetic anomaly which extends from near surface to a depth of over 500m and represents a rock mass (specific gravity  $2.7\text{g/m}^3$ ) of approximately 200 million tonnes. It is located in the centre of the 1.6km diameter Basin Complex and immediately to the west of the historically drilled (1960s) Basin Porphyry oxide copper deposit. Petrographic examination of core from Alderan's hole DD20M-006 drilled towards the anomaly confirmed that the rocks are potassic altered porphyry containing copper +/- molybdenum mineralisation<sup>9</sup>.

IP geophysical surveying by Alderan has identified a prominent 2km x 2km chargeability anomaly ( $>20$  milliseconds cutoff) over the Basin Complex. This anomaly is interpreted to be caused by sulphides which may contain copper and gold mineralisation associated with the intrusive complex. 3-D inversion modelling indicates that the chargeability anomaly is mushroom shaped as it covers a large area near surface and has a cylindrical stem which extends to a depth of over 500m. The stem lies below the highest chargeability anomaly on the prospect and potentially represents a sulphide rich feeder zone.



**Figure 3:** Cross section through the Basin Complex chargeability and magnetics 3D inversion models (chargeability - yellow isosurface @  $>40$  milliseconds; magnetics - red isosurface @  $>0.03$  SI units). Holes will be drilled into the Basin Main magnetic anomaly and the stem of the Basin Complex chargeability anomaly. View looking northwest.

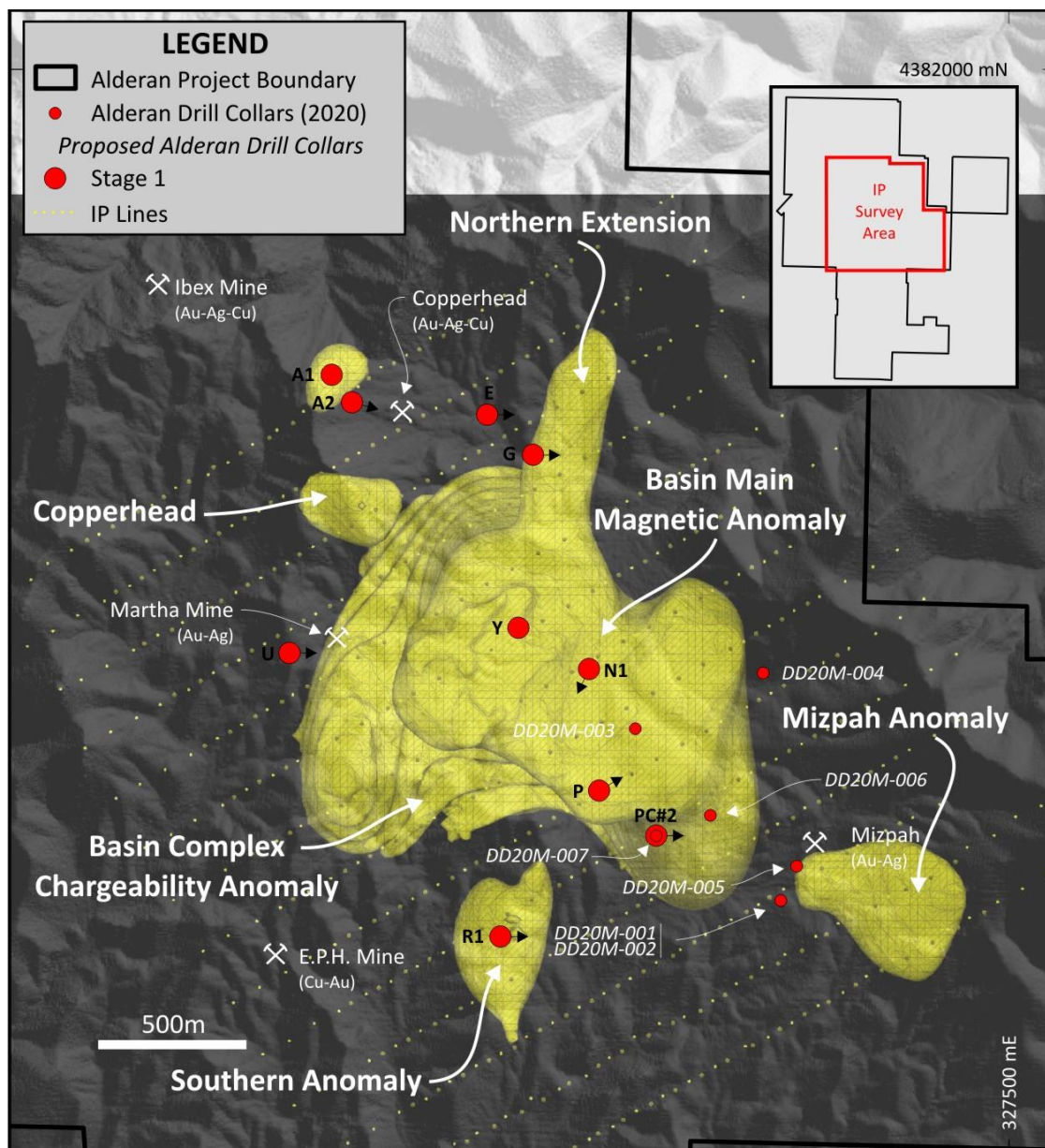
### **Southern, Copperhead, Northern Extension and Mizpah Prospects – Distal Disseminated Au-Cu**

The Southern, Copperhead, Northern Extension and Mizpah gold and copper prospects all lie on the margins of the Basin Complex (Figures 2 and 4). They have significant chargeability geophysical anomalies (3D

<sup>9</sup> Alderan ASX Announcement dated 21 July 2021.



inversion modelling at >20 and >30 millisecond cutoffs) and associated high-grade gold and copper in rock samples. Historical and Alderan drilling provides further support for the potential of Mizpah. Each of these prospects has the potential to be a gold and/or copper deposit.



**Figure 4:** Basin Complex chargeability anomaly (>30 millisecond cutoff) showing the location of the Southern, Copperhead, Northern Extension, Mizpah and Martha Mine prospects. As shown in Figure 2 above, when the chargeability cutoff is lowered to >20 milliseconds, the individual prospect anomalies merge into the Basin Complex anomaly.

**Southern** is an 80 millisecond chargeability anomaly which is approximately 1km long north-south, reaches a maximum east-west thickness of around 300m and narrows from surface to a depth of over 400m before merging with the larger Basin Complex anomaly. It aligns along a possible north-south structure which is also interpreted to trend through the Northern Extension. Alderan and historical rock samples collected in the area of the anomaly grade up to 7.6g/t gold and 1.1% copper.

**Copperhead** is an historical gold-copper mine associated with mineralised jasperoids along the northwest-southeast trending Copperhead Fault. Alderan exploration has identified magnetic and chargeability anomalies plus associated high grade surface rock samples assaying up to 3.2% copper and 9.1g/t gold.

The chargeability anomaly is approximately 1km long and dumbbell shaped with maximum east-west dimension of 500m at its southern end. Modelling indicates a depth extent of approximately 300m.

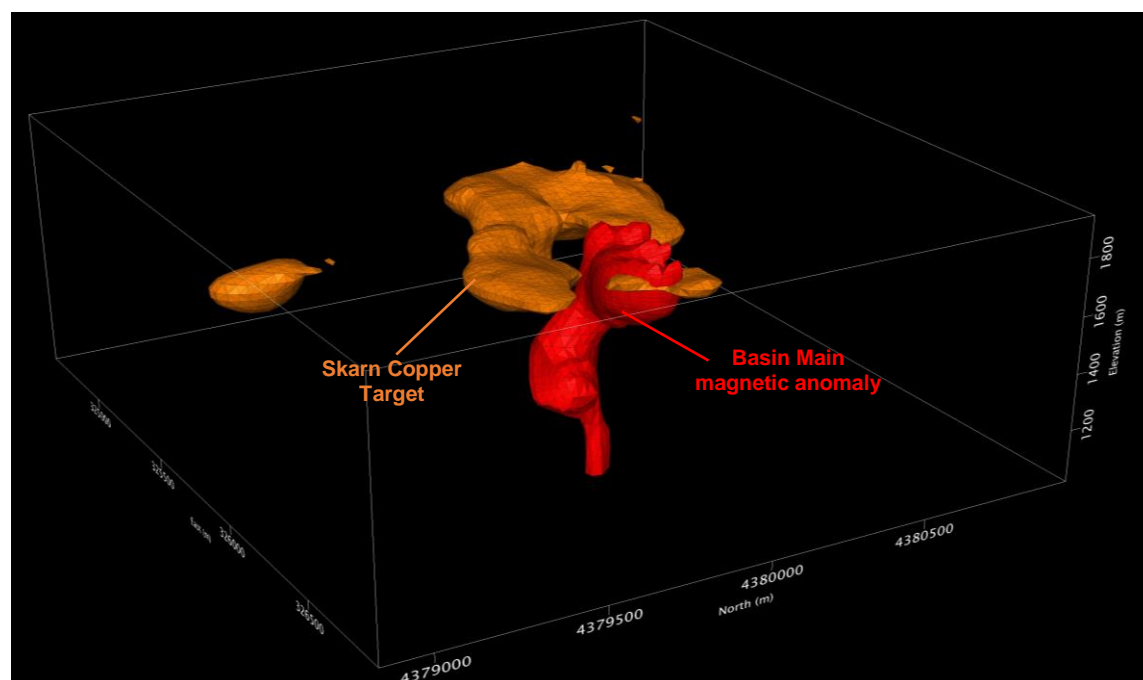
The **Northern Extension** chargeability anomaly aligns along an interpreted north-south structure within favourable stratigraphy that hosts the Mizpah and Drum gold deposits 2km and 4km respectively to the south. The chargeability anomaly is approximately 900m long and 300m wide and extends to a depth of around 400m before merging into the Basin Complex chargeability anomaly.

**Mizpah** has 197 historical (1980s) holes drilled to an average depth of 28m to delineate a near surface oxide gold deposit<sup>10</sup>. Alderan's review of the historical work suggests that the deposit is open along strike to the northwest, southeast and down dip to the southwest. It also highlighted that 40 of the historical holes stopped in assays of +0.5g/t gold and of these, 20 holes ended in assays of +1.0g/t gold with a maximum final assay of 9.1g/t. The historical holes were not deep enough to test the 1,000m x 500m chargeability anomaly that extends to the southeast of the deposit and merges into the Basin Complex chargeability anomaly to the northwest. Two Alderan holes drilled in 2020 within the historical deposit verified the mineralisation however a third hole drilled approximately 300m to the northeast intersected 83m grading 0.41g/t Au which included 6m @ 1.98g/t Au<sup>11</sup>. This hole and the chargeability anomaly suggests that the mineralisation could be much more extensive than past work indicates.

### **Martha Mine and Skarn Cu-Au**

The **Martha mine** is an historical gold-copper-silver mine on the western margin of the Basin Complex chargeability anomaly. It sits in favourable Wheeler Shale host rocks within a structurally complex zone at the intersection of east-west and northeast-southwest trending faults. Historical and Alderan rock samples collected from the mine area grade up to 12.9g/t Au.

The **Skarn** copper target sits at the southern margin of mapped intrusive within the Basin Complex. It is an 80 millisecond chargeability anomaly interpreted to sit at the contact between favourable Lower Cambrian Pioche and overlying Tatow sedimentary units (Figure 5). Historical rock chip samples from the area are anomalous and Alderan rock sampling on the drainage divide approximately 250m to the south assayed up to 1.7% copper. The drainage to the south of this divide is highly anomalous in copper.



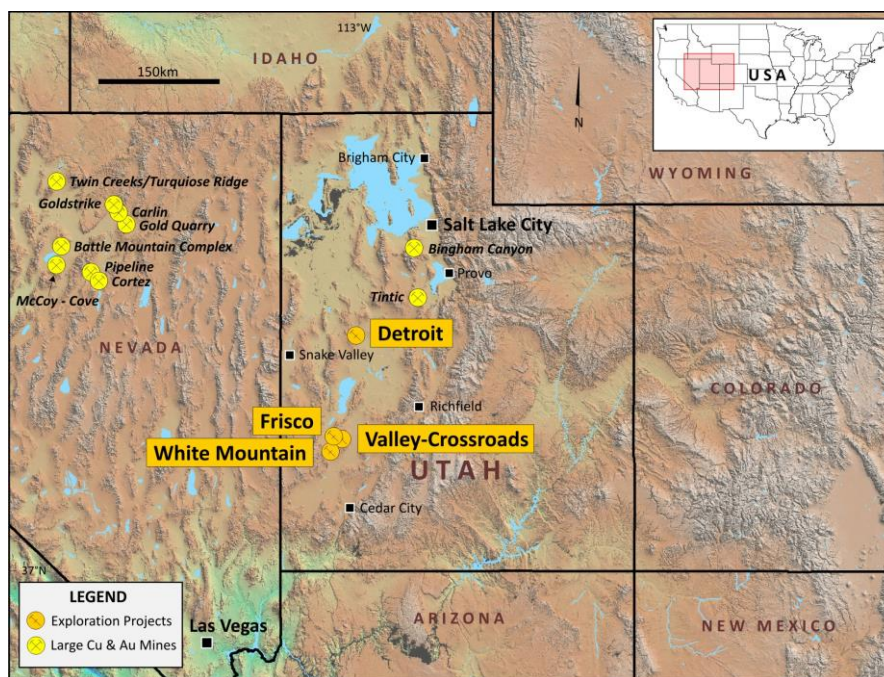
**Figure 5:** 3D inversion model showing the relationship between the Basin Main magnetic anomaly and the highest chargeability (>60 millisecond cutoff) within the Basin Complex chargeability anomaly. The Skarn copper target is in the zone of highest chargeability. View looking northwest.

<sup>10</sup> Alderan ASX announcement dated 24 August 2021.

<sup>11</sup> Alderan ASX announcement dated 22 February 2021.

## Detroit Project

The Detroit Project is one of four projects held by Alderan (Figure 6) in the state of Utah, USA. It lies within the Detroit Mining District, approximately 175km southwest of Salt Lake City, and contains numerous historical copper, gold and manganese mines. The district has been explored for copper and gold in the past by major mining companies such as Anaconda Copper, Kennecott, Newmont, BHP and Freeport-McMoRan but no one company was able to build a significant contiguous land position to enable district-wide modern exploration. The United States Geological Survey (**USGS**) has also explored the area, sampling extensive mineralised jasperoids.



**Figure 6:** Alderan Resources project locations in western Utah.

**ENDS**

This announcement was authorised for release by the Board of Alderan Resources Limited.

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**Competent Persons Statement**

The information in this announcement that relates to historical exploration results were reported by the Company in accordance with listing rule 5.7 on 30 September 2020, 15 October 2020, 19 November 2020, 22 February 2021, 8 March 2021, 11 May 2021, 9 June 2021, 21 July 2021 and 24 August 2021. The Company confirms it is not aware of any new information or data that materially affects the information included in the previous announcements.

**Table 1: Detroit Planned Drill Holes**

Prospect	Site	Easting	Northing	Collar Elevation (mRL)	Hole Depth (m)	Azimuth	Inclination	Comments
Southern Anomaly	R - 1	325,790	4,379,065	1868	330	090°	-70°	80 millisecond chargeability anomaly at favourable stratigraphic contact between Cambrian shale and limestone and across west dipping fault
Basin Complex Porphyry	N - 1	326,090	4,379,972	1855	500	205°	-80°	Magnetic anomaly interpreted to be potassic altered core of Basin Complex porphyry
	Y	325,852	4,380,114	1870	450	-	-90°	Stem of chargeability anomaly in the Basin Complex.
Copperhead	A-1	325,221	4,380,966	1989	185	-	-90°	Copperhead chargeability anomaly
	A - 2	325,289	4,380,873	1962	425	105°	-75°	Zone between Copperhead fault and favourable Cambrian shale and limestone stratigraphy.
Northern Extension	G	325,900	4,380,700	1864	250	090°	-60°	Chargeability anomaly near Copperhead fault zone at contact between favourable Lower Cambrian Pioche and overlying Tatow units.
	E	325,743	4,380,834	1878	175	090°	-65°	Down-dip extension of Site F; chargeability anomaly near Copperhead fault zone at contact between favourable Lower Cambrian Pioche and overlying Tatow units.
Skarn	P	326,125	4,379,560	1867	235	060°	-70°	80 millisecond chargeability anomaly on margin of skarn at the contact between favourable Lower Cambrian Pioche and overlying Tatow units.
Martha Mine	U	325,077	4,380,026	1945	230	090°	-65°	Favourable Cambrian Wheeler stratigraphy in a structural zone below old mine.
Mizpah	PC#2	326,320	4,379,409	1881	220	090°	-60°	Down dip offset test for extension of gold mineralisation in DD20M-006.