

# **Annual Technical Exploration Report – Year 3**

## **Exploration Licence EL31684**

From 11<sup>th</sup> September 2020 to 10<sup>th</sup> September 2021  
Northern Territory, Australia

***Holder: Scriven Exploration***

***Operator: Scriven Exploration***

***Reporting Period: From 11<sup>th</sup> September 2020 to 10<sup>th</sup> September 2021***

***Sheet Reference: Wallhallow 1:250,000 (SE53-07)***

***Commodity: Diamond deposits***

***Due Date: 10<sup>th</sup> November 2021***

Date: 10<sup>th</sup> November 2021

Report No: 21-004

Copy To: Dept. of Resources - NT

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## **SUMMARY**

*This Annual Report outlines exploration activities undertaken by the Operator on Exploration Licence EL31684 from 11<sup>th</sup> September 2020 to 10<sup>th</sup> September 2021. This period represents Year three of the License.*

*The Exploration Licence is situated on the Wallhallow (SE5307) 1:250,000 mapsheet, and Lancewood (6163) 1:100,000 topographic mapsheet in the McArthur Region of the Northern Territory. The licence is located approximately 125 kilometres south of the township of Borroloola and is accessed via existing sealed and gravel roads.*

*The planned exploration program for year 3 was not able to be undertaken due to the travel restriction that were put in place due to covid and which made it impractical to access the project area. It is planned to implement this program comprising EM34 surveys and surface loam sampling in year 4 of the tenement.*

*Expenditure for the reporting period is \$9,600 with the covenant being \$14,000.*

## 1.0 INTRODUCTION

This annual report outlines exploration activities undertaken by the Operator on Exploration Licence EL31684 between 11<sup>th</sup> September 2020 and 10<sup>th</sup> September 2021. This period represents Year three for the Licence.

The Operator is primarily targeting diamond deposits associated with kimberlite pipes.

## 2.0 COPYRIGHT

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## 3.0 LOCATION AND ACCESS

Exploration Licence EL31684 is situated on the Wallhallow (SE5307) 1:250,000 mapsheet, and Lancewood (6163) 1:100,000 topographic mapsheet in the McArthur Region of the Northern Territory. It is located approximately 125 kilometres south of the township of Borroloola and is accessed via existing sealed and gravel roads. A tenement location map is provided as Figure 1.

## 4.0 LICENCE DETAILS

Details of the Project Tenement is outlined in Table 1 below.

**Table 1: Tenement Schedule and Expenditure Details**

Name	Covenant	Effective Date	Grant Date	Expiry Date	Grant Blocks	Current Blocks	Holder	%
EL31684	\$14,000	11/09/18	11/09/19	10/09/23	7	7	Scriven Exploration	100

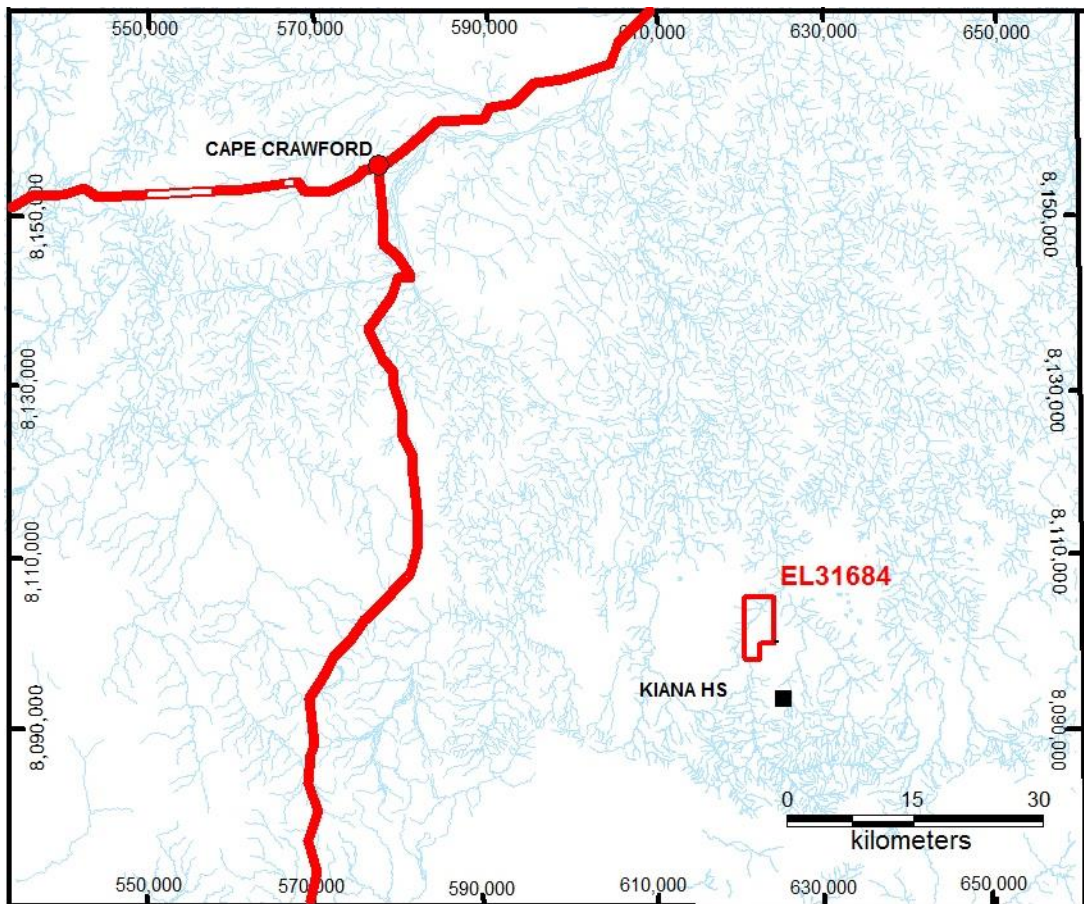


Figure 1. Tenement Location

## 5.0 ABORIGINAL CLEARANCES

For the purpose of planning future ground disturbing activities, the location of registered Heritage and Sacred Sites including Restricted Work Areas was obtained from the Aboriginal Areas Protection Authority in Darwin (AAPA) for the entire tenement area. No additional on ground Heritage clearances have been undertaken by the Operator.

## 6.0 PHYSIOGRAPHY

### 6.1 Geomorphology and Climate

The region has a humid monsoonal climate with a dry season between April and October and a hot, wet season extending from November to March. The “wet” season is characterised by high relative humidity, high temperatures and most of the mean annual rainfall of 804mm. The “dry” season is characterised by lower humidity and lower temperatures.

EL31684 lies within and at the southern margins of the *Gulf Fall* physiographic division. The *Gulf Fall* contains north flowing drainages. A marginal scarp forms a drainage divide

that separates the *Gulf Fall* from the *Barkly-Birdum Tableland* to the south where drainage flows southward. In this area the *Gulf Fall* division contains two sub-divisions namely the *Top Springs Erosion Surface* and the *Bukalara Plateau*.

The *Top Springs Erosion Surface* is generally flat at elevations of approximately 240 metres and contains outcrop of Top Springs Limestone, isolated outcrops of Cretaceous sediments, and Quaternary sediments on flat-lying areas and in drainages. The southern part of the sub-division becomes undulating and slopes up to the scarp of the *Barkly-Birdum Tableland*.

The *Top Springs Erosion Surface* descends gently and merges with the *Bukalara Plateau* to the north. The plateau occurs approximately 10 metres below the *Top Springs Erosion Surface*. It is dissected by the Glyde River, Lancewood Creek and their tributaries, which has exposed the Bukalara Sandstone.

The *Barkly-Birdum Tableland* occurs on the southern side of the drainage divide at an elevation of approximately 350 metres. It contains flat-lying Cretaceous sediments with an often well-developed laterite profile. Black soil plains occur where the ferruginous zone of the laterite profile has been eroded. The tableland represents the original Tertiary land surface.

## **6.2 Geology**

The oldest rock unit that crops out in the licence is the Paleozoic Top Springs Limestone. Although not mapped on the NTGS 1:250,000 Geological Mapsheet, basalt has been reported in outcrop and intersected in drill holes between overlying Cretaceous (Mesozoic) clays and underlying siltstones of possibly Tawallah Group (Proterozoic age). Mesozoic sediments are exposed in the scarp in the south of the licence and as outliers in the north where they lie unconformable on the Top Springs Limestone. The limestone is covered by a thin veneer of residual sand probably derived from the eroding Cretaceous sediments to the south. More recent sands and gravels of Cainozoic age have deposited within active drainages and at the base of the scarp.

## **7.0 PREVIOUS EXPLORATION**

Previous exploration for diamond deposits has been conducted within the Kiana Project area initially by CRA Exploration Limited and followed by Ashton mining Ltd and later by North Australian Diamonds/Merlin Diamonds. The following report subsections summarise the previous diamond exploration over the property since 1990.

### **7.1 CRA Exploration 1983-1987**

CRA Exploration undertook reconnaissance stream sampling on the Wallhallow map sheet in 1983. Within and near the project tenements 4 samples reported positive for chromite with the best result being 2 chromite grains. In addition, a further 4 samples

reported singular microdiamonds. In most instances there was no follow-up of the chromite positive samples, with the follow-up sampling being focused on the diamond positive samples. Because of these positive results the sampling program was followed-up with an aeromagnetic survey, resulting in the selection of 15 targets of which 3 were drill tested. No kimberlite was discovered. None of the selected anomalies are located within the current project tenement. A small Input survey was also flown aimed at identifying non-magnetic kimberlites. This survey covered the north eastern portion of the current project tenement. The exploration undertaken by CRAE failed to identify the high numbers of indicator minerals within the current project tenement and their exploration program was abandoned in 1987.

## **7.2 Poseidon 1991**

Poseidon explored the area in 1991 collecting a total 52 stream and loam samples, mostly located near the NW boundary of the current project tenement. Poseidon also flew an aeromagnetic survey with lines orientated N-S and at 200m line spacing. This survey covered the western portion of the current project tenement. Ten anomalies were followed-up by surface sampling. No indicator minerals reported to any of the samples that were collected, and the exploration was abandoned in 1992.

## **7.3 BHPM 1992-1995**

BHP explored the project tenements and surrounding areas in the early 1990's for base metals and in 1995 Ashton Mining joint ventured into the licences, namely EL7201 and EL7816. BHPM ceased their exploration in 1995 although the tenements remained active because of the Joint Venture with Ashton Mining Ltd and later Rio Tinto Exploration.

## **7.4 Ashton Mining Ltd 1992 – 2002**

Ashton Mining Ltd continuously explored the region including the project area in the period 1992 through to 2002 and which was achieved largely by way of a Joint Venture with the tenement holder BHPM. Details of their exploration are outlined below.

In 1992, Ashton Mining Ltd undertook a small stream sampling program to follow-up positive results reported by CRAE. These positive results are located peripheral to a sandy plateau and were a possible analogy to the Merlin plateau that is host to the Merlin Kimberlite Field. A total 12 samples were collected but no indicator minerals or microdiamonds reported to any of the samples. None of these samples were from within the current project tenement.

Further reconnaissance sampling was completed in 1994 with 55 samples collected. The program was aimed at testing drainages which were peripheral to poorly drained plateaus. Only 2 of these samples are from within the current project tenement. One of these samples (WAL791) reported 6 chromite grains. This sample was follow-up to positive CRAE sample 1082166 which had reported a single chromite grain.

In 1995 follow-up of positive sample WAL791 was completed with 13 stream samples collected. The repeat sample taken close to the WAL791 sample site reported 9 chromite grains. Three other samples reported chromite and/or a microdiamond. All of these samples are located within the current project tenement.

A reconnaissance loam sampling program was completed in 1995 with 36 samples collected, including one sample within the current project tenements. The samples were taken in two areas being to the west and east of the current project tenement. Only one sample reported a positive result with 1 microdiamond.

A second round of reconnaissance and follow-up sampling in the Kiana area was completed in 1995, with a total 53 stream samples collected. Twenty-four of these samples were taken in the Kiana area to follow-up previously reported positive samples within the project tenement. Three samples reported positive results from the reconnaissance samples.

In 1996 a loam sample grid was completed in the Kiana area with 53 samples collected from within the current project tenement. The loam grid was centered 1600m NW of Kiana Homestead and was aimed at testing the area beyond the headwaters of the SW trending drainage that has reported a strong lead of indicator minerals. A total 14 of these samples reported positive for chromite.

Also, in 1996 a 50 tonne bulk sample was collected downstream of the indicator and microdiamond anomaly, and processed through a Heavy Media Separation plant, before being sent to Ashton's Perth laboratory for further sorting and observation. This sample reported one macrodiamond.

Again in 1996, three types of geophysical surveys were implemented. An airborne (EM) survey was undertaken by Geoterrex over the chromite anomaly area, and was done in conjunction with BHP Minerals, as part of a larger survey. Interpretation of the GEOTEM data located seven targets within the historic tenement EL 7201. Two ground EM-34 surveys were completed; one undertaken over the probable source area for indicator minerals and the other to ground truth airborne GEOTEM anomalies for evaluation.

Drill testing of five GEOTEM, one EM-34 and one EM-34/magnetic anomaly was completed with eight holes drilled for 181 metres. Drill spoil samples were collected from each hole and submitted to Ashton's Perth laboratory for analysis. In addition, two drill spoil samples were submitted to Analabs for geochemical analysis, however results were not anomalous. All heavy mineral spoil samples were negative for indicator minerals.

In 1997 a total 133 loam samples and 2 stream samples were collected from within the current project tenement. Seventy-three of the loam samples and one of the stream samples reported positive for chromite. The loam samples were collected on a 100m x 100m grid which was centered 1400m north of Kiana Homestead.



In 1998 further loam sampling and stream sampling was completed in the Kiana area. A total 151 loam samples were collected with 142 samples being located within the current project tenement and with 85 samples reporting positive for chromite. The stream samples taken within the current project tenement totaled 21 of which 14 reported positive for chromite.

Extensions to the EM-34 and ground magnetic surveys were undertaken, with two EM and two magnetic targets selected for follow-up. These targets, along with the geochemical anomalies delineated from the soil sampling, and the limestone blocks located east of the eastern indicator-bearing drainage, were drill tested. Twelve holes were drilled for 322 metres.

The EM-34 anomalies were attributed to black soil development within the drainage, while the magnetic anomalies were associated with basalt. Eleven drill spoil samples were collected for routine heavy mineral analysis and geochemical analysis. Drilling of the main geochemical anomaly failed to identify kimberlite, with each hole intersecting limestone. Drilling of the remaining targets was not undertaken, due to rig availability; however, it was believed that the four remaining targets would probably yield a similar limestone sequence.

### **7.5 Rio Tinto Exploration 2001-2002**

Rio Tinto Exploration assumed management of the historic project tenements EL7201 and EL7816 in 2001 following the takeover of Ashton Mining by Rio Tinto Ltd. The tenements were replaced by SEL22767. No on ground exploration was undertaken during this period.

### **7.6 Gravity Capital 2004-2006**

Gravity Capital entered into a JV with Rio Tinto Ltd to explore SEL22767 for diamonds and completed a detailed airborne gravity and magnetic survey in 2004. The Lancewood survey interpretation identified thirty-five (35) anomalies that were considered to be possibly the result of kimberlites; one (1) Rank One, twelve (12) Rank Two and twenty-two (22) Rank Three anomalies. The anomalies ranged in amplitude from -21 to -80 Eö and in half wavelength (along line) from 170 to 385 m (an approximation of source width). All the anomalies are located within the current project tenement.

During year 2 of tenure, 16 of the Falcon™ anomalies were field inspected and sampled where appropriate. A total of 3 loams and 18 soil samples were collected. Additionally, 6 RC holes for a total of 222 metres were drilled to test 5 of the Falcon™ anomalies. No kimberlite material was intersected. The presence of cretaceous sediments infilling karsts formed in the Cambrian Top Springs Limestone was suspected as being responsible for several Falcon™ anomalies; however, the cause of some of the gravity anomalies drilled remained unexplained.

During Year 3 of the licence, a comprehensive review of the diamond exploration data

pertaining to the license was undertaken. New technology (Falcon) had been applied by DMA to explain unresolved indicator mineral occurrences within the tenement, with the majority of targets generated subsequently drilled. Results from this work were disappointing and further work programs were not recommended. A decision was made to hand the tenement back to Rio Tinto. Rio Tinto Exploration subsequently relinquished the tenement in 2007.

### **7.7 NADL/Merlin Diamonds 2007 - 2015**

North Australian Diamonds Ltd (NADL) acquired tenement EL25676 in 2007. This tenement covered a similar area to the previous tenement SEL22767 which had been relinquished by Rio Tinto Limited following the withdrawal of Gravity Capital from their JV.

Work completed during the 2007 - 2008 reporting period included a desktop review of available geological and geophysical datasets. A total of two loam samples and thirty-one soil geochemical samples were collected over a historic loam sample site that recovered five macrodiamonds.

Work completed during the 2009-2010 reporting period was as follows:

#### **a) Drilling**

Three RC programs were completed to test EM 34-3 targets and soil geochemical targets for kimberlite. The first program comprised 66 drill holes for 2,508 metres. Down-hole geochemical samples were taken from selected horizons in 54 drill holes. 279 Samples of drill spoil for geochemical analysis were taken as down-hole composites, grouping units of similar lithology. The second program comprised 66 drill holes for 2,508 metres with down-hole mineral samples taken from selected horizons in 44 drill holes. A total 113 drill spoil samples collected as down-hole composites were analysed for indicator minerals. Results from the first program were negative whilst results from the second program reported 8 positive and 105 negative assays.

#### **b) Geochem Sampling**

Additional geochemical sampling was undertaken to follow-up results from the geochemical sample line taken in 2008. Three lines of samples were taken comprising 47 samples in total.

#### **c) Ground Gravity Survey**

Ground gravity surveys were completed in four areas and comprising a total 5.32 line kilometers.

From 20011 through to 2015 NADL's exploration was largely focused outside of the current project tenement as a view had been formed that the source of the diamonds and indicator minerals must be distal from the observed indicator mineral occurrence. This view was mainly based on the lack of success in finding kimberlite despite the intensive

exploration efforts by several different exploration teams.

## 8.0 Scriven Exploration

### 8.1 Scriven Exploration 2018 – 2019 (Year 1)

Exploration activities during this reporting period comprised 1 detailed EM34 survey.

#### a) EM34 Survey

The detailed EM34 survey (Figures 2 and 3) was done where indicator minerals had reported to historic loam samples. The survey comprised 5.916line km for 162 recordings. The survey lines were orientated east-west with readings taken at 20m intervals using a 40m cable for the larger survey. Two short lines orientated NS were completed in an area of slightly anomalous readings. No significant conductor anomalies were identified by the survey due to anomalous readings not being repeated in Lines 17, 18 and 19. Line profiles are reported in the year 1 annual report.

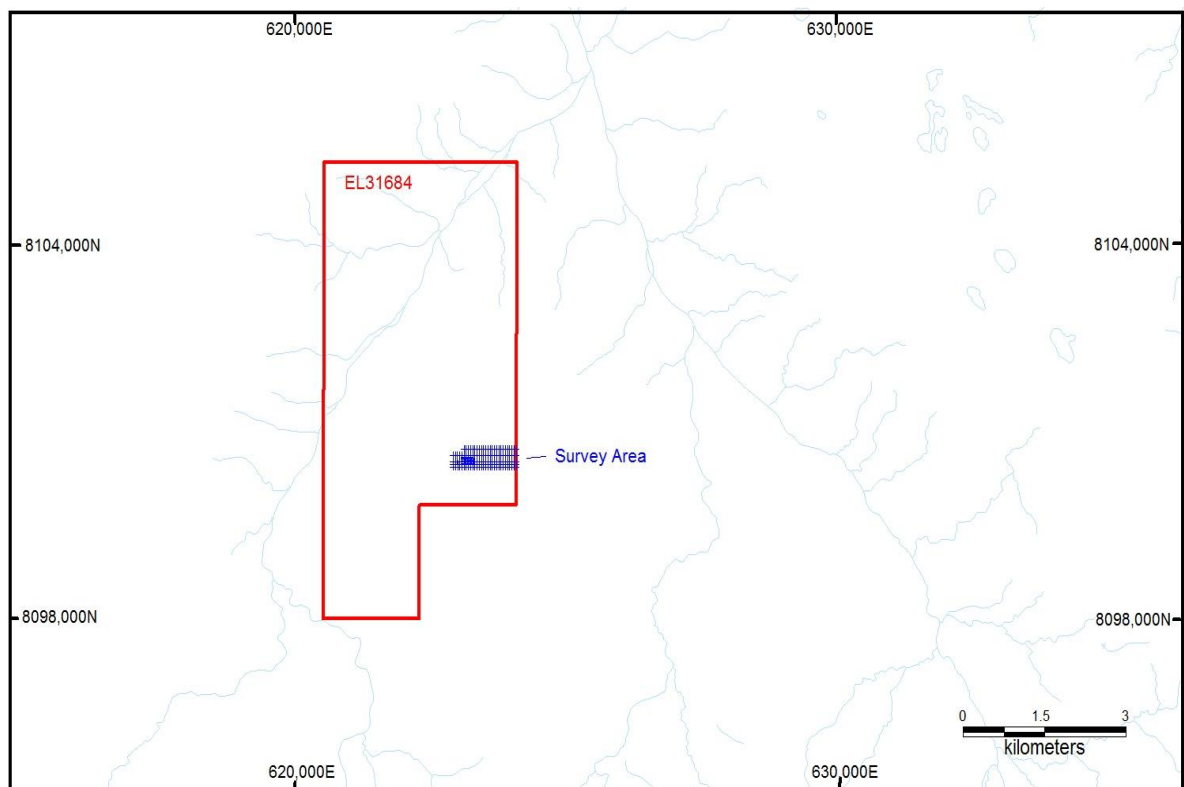


Figure 2. Location of Survey Area

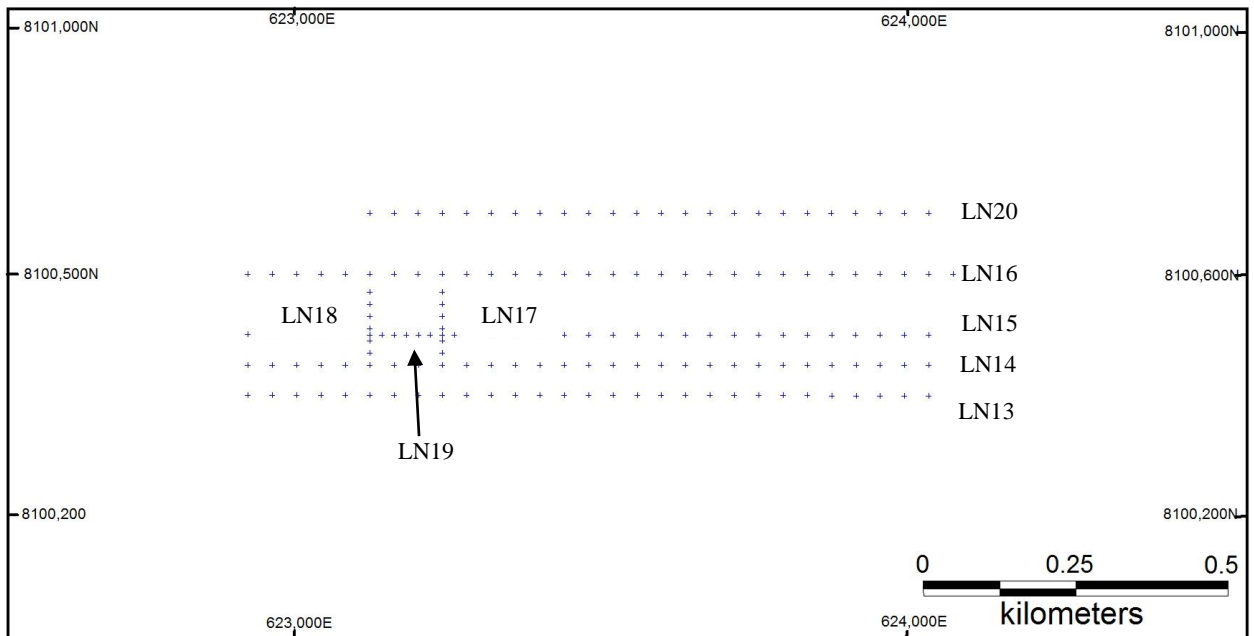


Figure 3. Location of EM34 Survey Line

### 8.2 Scriven Exploration 2019 – 2020 (Year 2)

Due to the access restrictions related to covid no on ground activities were able to be undertaken on the tenement during this reporting period.

### 8.3 Scriven Exploration 2020 – 2021 (Year 3)

The forward program for year 3 was to broaden the EM34 survey and to undertake additional loam sampling aimed at identifying prospective areas within the tenement. Due to access restrictions, intermittent border closures and quarantine requirements implemented to restrict the spread of the covid virus no on ground activities were able to be undertaken on the tenement during the reporting period. Work was restricted to the review of past results and planning of future work activities.

## 9.0 CONCLUSIONS

Historic exploration work in proximity to Kiana Homestead has identified a significant surface chromite anomaly with associated microdiamond occurrences reported in some parts. Despite the application of a range of ground and airborne geophysical techniques and with follow-up drill testing of generated targets no kimberlite has been identified. The year one work program was focused on identifying potential kimberlite targets based on detailed close spaced EM34 geophysical surveys. No significant conductor anomalies were identified by the survey. The planned year 3 program was to focus on extending the em34 survey coverage and surface loam sampling, aimed at identifying prospective areas within the tenement. It is now planned to implement the deferred year three exploration program during the forthcoming year 4 term.

## 10.0 EXPENDITURE STATEMENT

The exploration expenditure attributed to the Tenements during the current reporting period was a total of \$9,600.

## 11.0 PROPOSED PROGRAM

A proposed program of exploration for Year 4 for the Tenements is included below,

Administration and Reporting

Loam Sampling over generated targets – 10 samples

Ground Geophysical Surveys – 15 line km

Total Proposed Expenditure                      \$14,000

## 12.0 REFERENCES

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