In September 2014, Kronos Gold LLC ("Kronos") completed a 4-day field exploration program on its EL28169 tenure in the Northern Territory. Before the program commenced, BM Geological Services ("BMGS") conducted a desktop review of geological and geophysical data to highlight areas of interest for field investigation. From the total magnetic intensity data available on the NTGS government database, BMGS identified a number of structures on or near EL28169 including two large-scale faults (see Figure 1).

Besides the structures on the tenure, the main areas targeted during the exploration program included outcropping granite domes, dolerite dykes, two grey spots identified from Google Earth satellite imagery, and an historical railway ballast mine. See Figure 2.
Figure 2 – Areas of interest on EL28169.

A significant portion of the tenure had outcropping rock units, which were mostly found in the western and northern sections of the tenure. Outcropping rocks mainly consisted of granites and gneisses, as well as dolerite dykes. See Figure 3.
Figure 3 – 250K scale geology on EL28169.

The granite domes could be quite large and were prominent features in the landscape. See Figure 4.
The dolerite dykes were easily identified in the field as they formed laterally extensive topographic highs. See Figure 5.

The size of the dykes varied but they were generally around 5m high by 20m wide, and could be up to several hundreds of metres long (see Figure 6).
The historic open pit mine on EL28169 was located on a large dolerite dyke (see Figure 7), and it is believed that the rocks removed from the mine were crushed and used as ballast for railway construction.

Figure 6 – Close-up of a dolerite dyke (looking south-west). (Photo taken at location: 336,805 mE, 7,143,136 mN – 53J).

Figure 7 – Historic open-pit railway ballast mine (looking north). (Photo taken at location: 338,954 mE, 7,140,873 mN – 53J).
Figure 8 – Close-up of the historic mine (looking north). (Photo taken at location: 338,915 mE, 7,141,135 mN – 53J).

As shown in Figure 8, the rocks change in size and colour from the surface to the base of the historic mine.
Areas between the outcropping units were mostly flat sandy plains with sparse trees and bushes. See Figure 9.

![Photo of a flat sandy plain typically found on EL28169 (looking south). (Photo taken at location: 336,769 mE, 7,143,294 mN – 53J).](image)

Figure 9 – Photo of a flat sandy plain typically found on EL28169 (looking south). (Photo taken at location: 336,769 mE, 7,143,294 mN – 53J).

The aim of the exploration program was to understand the geology of the tenure and identify areas of potential mineralisation for the next stage of exploration. Geological and geochemical data were collected in the field for rock identification and indicator element assessment.

The exploration was conducted by two teams; each team comprised of a field geologist from BMGS and a field assistant from Kronos, as well as a portable XRF analyser. The two teams were under the direction and supervision of a senior geologist from BMGS. Due to the large size of the tenure and minimal access tracks for vehicles, teams were transported to their areas of investigation by helicopter. The individual areas covered by each team are shown in Figure 10.
Figure 10 – Overview of field areas investigated during the exploration program.

All of the XRF readings were taken on rocks, and no readings were conducted on soils. Geological observations were recorded at all sites and integrated into an XRF database. Rock chip samples were collected from areas of geological interest and tested at a commercial laboratory for a suite of multiple elements, including gold, platinum and palladium.
Figure 11 – Day 1 XRF locations on Google Earth imagery.
Figure 12 – Day 2 XRF locations on Google Earth imagery.
Figure 13 – Day 3 XRF locations on Google Earth imagery.
Figure 14 – Day 4 XRF locations on Google Earth imagery.
Anomalies

Day 1 South

Figure 15 – Sample KRCH528; found at 310,148mE, 7,126,562mN – 53J; XRF analysis returned above average crustal abundance for manganese (30,662ppm).
Figure 16 – Sample KRCH455; found at 333,454mE, 7,146,607mN – 53J; XRF analysis returned above average crustal abundance for antimony (20ppm).
Figure 17 – Sample KRCH458; found at 334,029mE, 7,146,297mN – 53J; XRF analysis returned above average crustal abundance for chromium (1,860ppm).
Day 2 South

Figure 18 – Sample KRCH540; found at 314,251mE, 7,126,063mN – 53J; XRF analysis returned above average crustal abundance for molybdenum (30.1ppm).

Figure 19 – Sample KRCH547; found at 316,924mE, 7,125,439mN – 53J; XRF analysis returned above average crustal abundance for tin (68ppm).
Day 2 North

Figure 20 – Sample KRCH470; found at 339,171mE, 7,141,340mN – 53J; XRF analysis returned above average crustal abundance for sulphur (21,591ppm).
Figure 21 – Sample KRCH579; found at 328,979mE, 7,136,016mN – 53J; XRF analysis returned above average crustal abundance for gold (8ppm) and iodine (1,911ppm).

Figure 22 – Sample KRCH592; found at 334,707mE, 7,133,869mN – 53J; XRF analysis returned above average crustal abundance for copper (611ppm).