GEMPART(NT)P/L

EL29511 Mount Mary North

ANNUAL TECHNICAL REPORT 4
(U,REE,Cu,Pb,Zn,Au,Ag,Ni,Cr,Co,PGE)
(Sn,W,Mo,Ta,Li)

ILLOGWA CREEK SF53-15
QUARTZ 5951

AW MACKIE
January 2017

COPYRIGHT STATEMENT (Regulation 126 Mineral Titles Act)
This document and contents are the copyright of GEMPART(NT)P/L. Document written by A. Mackie for submission to NTDME as per tenement reporting requirement as per Division 2 Regulation 86 Mineral Titles Act. Any information in report originating from historical sources is listed in ‘References’. GEMPART(NT)P/L authorise Department to copy/distribute report and data contained therein at the appropriate time.
1. SUMMARY

EL29511 Mt Mary North comprising 4 sub blocks (12.6sqkm) is located 150km north east of Alice Springs straddling the sheared regional unconformable contact between Palaeoproterozoic Aileron Province Ambulbinya Igneous Complex Bruna Gneiss (1750Ma) and onlapping /overlying Neoproterozoic Irindina Province metasediments/volcanics, Irindina Gneiss (810Ma) assigned to Harts Range Metamorphic Complex the upper amphibolite-granulite facie high grade metamorphic equivalent of Neoproterozoic-Cambrian sedimentary successions to north(Georgina Basin) and south(Amadeus Basin). The southern two blocks of licence area are dominated by three major north north west trending, uraniferous pegmatitoids (intruded waning stages of ASO, 330Ma) requiring further investigation. The largest of which closely parallels/ follows unconformity for 3km, up to 600m wide for about half its length before eventually pinching out and is also highly anomalous in niobium, thorium and rare earth elements. More importantly there lithium mineralisation potential has never been tested requiring further investigation.

A fourth year program of regional pegmatite delineation through detailed analysis /interpretation of acquired large scale Google Earth images was undertaken identifying over 1000 potentially mineralised pegmatites very few of which have been analysed and/or prospected for (1) lithium and (2) ambygonite-spodumene-lepidolite mineralisation. Historic mica mining within these pegmatites attest to significant widths/volumes of pegmatitic material whose mineralogy and zoning is characteristic of LCT(lithium-cesium-tantalum) bearing pegmatites of which to date none have been assessed or sampled for lithium content consequently exploration expenditure is set at $18000.00 for forthcoming licence year.
<table>
<thead>
<tr>
<th>CONTENTS</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.SUMMARY</td>
<td>2</td>
</tr>
<tr>
<td>2.INTRODUCTION</td>
<td>5</td>
</tr>
<tr>
<td>3.LOCATION ACCESS</td>
<td>5</td>
</tr>
<tr>
<td>4.TENURE</td>
<td>5</td>
</tr>
<tr>
<td>5.PREVIOUS EXPLORATION</td>
<td>5</td>
</tr>
<tr>
<td>6.GEOLOGY</td>
<td>12</td>
</tr>
<tr>
<td>7.EXPLORATION PROGRAM</td>
<td>13</td>
</tr>
<tr>
<td>8.EXPENDITURE</td>
<td>13</td>
</tr>
<tr>
<td>9.CONCLUSIONS AND RECOMMENDITIONS</td>
<td>14</td>
</tr>
<tr>
<td>10.REFERENCES</td>
<td>14</td>
</tr>
</tbody>
</table>

FIGURES

1.EL29511 Location Cadastre                   | 4    |
3.EL29511 Geology(GA 100k)                    | 11   |
4.EL29511 Historic Pegmatite Field Location   | 15   |
4a.EL29511 Interpret Pegmatites over Google Earth Image | 15   |
4b.EL29511 Interpret Pegmatites over U Th K Composite Image | 16   |
4c.EL29511 Interpret Pegmatites over Radiometric Total Count Image | 16   |
4d.EL29511 29481 equivalent U>4ppm Contour Plan | 17   |
4e.EL29511 29481 Uranium,Lead Rock sample location Plan ppm | 18   |
4f.EL29511 29481 Copper .Gold Rock sample location Plan | 19   |
5a EL29511 29481 SRTM Image 2016                | 20   |
5b EL29511 29481 Landsat Bands 7/5/2 Image 2016 | 21   |
5c.EL29511 29481 TMI Analytic Signal/DTM       | 22   |
5d EL29511 29481 equivalent Uranium/DTM Image  | 23   |
5e EL29511 29481 Regional Gravity Contour Image | 24   |
5f EL29511 29481 Regional TMI RTP 01 02 Images  | 25   |
Figure 1. Location Cadastre Plan
2. INTRODUCTION

EL29511 Mt Mary North is one of three Titles purchased from Imperial Granite and Minerals P/L December 2012. It is also the most northerly of a contiguous group of three Titles straddling the regional unconformity (for 25km) between Palaeoproterozoic Ambulbinya Igneous Complex granitic gneisses and Neoproterozoic – Palaeozoic Harts Range Metamorphic Complex metasediments / volcanics, located over north eastern boundary of Entia Dome deemed highly prospective for Alligator Rivers-style uranium +/- gold mineralisation.

3. LOCATION AND ACCESS Figure 1.

Access from Alice Springs is north via Stuart Highway for 70km then east for 190km along Plenty Highway until Indiana turnoff is reached. The licence area commences about 15km south of turnoff. The southwesterly turnoff to Holsteins Barite-Th-U-REE prospect is about 12km south of Plenty Highway, off Indiana road continuing on for another 3km to the foot of Mt Mary (in all 6km from Indiana road turnoff).

4. TENURE

EL29511 Mt Mary North was offered for grant to Imperial Granite and Minerals P/L 10th December 2012 however rent was paid and Title subsequently transferred to Gempart (NT) P/L for 6 years. A waiver of reduction was applied for on second anniversary of licence.

5. PREVIOUS EXPLORATION

1960s

Capricornia P/L investigated Holsteins chalcedonic-barite vein-hosted REE prospect (AP2042) located about one km northeast of licence area in 1968. Thirteen rockchip samples were collected and assayed for REOs averaging; cerium 0.56%, lanthanum 0.27%, Praseodymium 0.024%, Yttrium 0.0233%, Neodymium 0.358%. The prospect is located 3200m from Indiana road within rocky foothills at base of main range. Seven lodes were examined. The two eastern lodes ie nearest Indiana road comprise barite + black unidentified mineral – allanite? The lodes appear to crop out at the intersection of two structural trends namely NNE and NW/NNW forming an assymetric ring-type distribution 500m across, individual lodes are 6-75m long, 1-4m wide (CR68/066).

1980s

Geopeko applied for EL3013 in 1982 located southeast of Mt Mary and south of Hammer Hill Ni-Cu prospect. They were primarily seeking Molyhil skarn-type scheelite/molybdenite mineralisation hosted within HRMC Irindina Gneiss calcilicate and marble. No on-ground exploration was undertaken (CR82/382).

CRAE were granted EL2494 in 1981 which butts up to the southern two sub blocks on eastern boundary of EL29481 (also overlaps the north east sub block of EL29851). 30 drainage samples were collected sieved to -80 and -40# fractions respectively then assayed for Pb, Zn, Cu, Ni, Co, Cr, Mo, As, Ag, Mn (AAS) and Sn, W, U (XRF). Four drainage samples were collected from east to south east flowing Epsom Creek (located within two south eastern sub blocks of EL29481) namely 821538 (U, 18ppm), 821537 (Cu, 18, Pb 20, W 15, U 12 ppm), 821536 and 821535. Seived to
minus 80# sample 969124 and gravel sample 823764 were collected 500m downstream from sample sites 821537 and 821538. Interestingly a pan concentrate from the above site assayed 647 ppm tungsten requiring further investigation. Sample 821534 was collected from a creek draining southeast corner 29481 and northern boundary area of adjoining 29851 assaying Cu18, Pb26, Zn35 ppm. It was repeated by minus 80# sample 969127 assaying U 45 ppm and Th 452 ppm (also requiring further investigation). The veracity of above anomalous Epsom Creek drainage geochemistry is somewhat enhanced by documented presence of east south east trending Torbernite Structural corridor a known potential source of Fe-U-Cu mineralisation located further upstream (CR82/052).

UOC applied for EL3466 in 1982 undertaking heavy mineral drainage sampling of Epsom and Huckitta Creeks delineating two areas of widespread low grade scheelite mineralisation (1) southwest of Brumby Bore and (2) west of Mirror Finish Dam (81 heavy mineral concentrates). Generally scheelite occurs as fine grains within, 20mm wide, green calcsilicate band – bearing quartzite assigned to Brady Gneiss of HRMC. North west of Mirror Finish Dam within most eastern sub block of EL29851 is a NNW-trending zone of cropping out pegmatite about 1-1.5 km wide possibly continuing as far north as south east corner of EL29481? Extremely coarse scheelite nodules (50 mm across) were found over a 400 sq metre area of pegmatite. Two samples were collected from above zone namely S10 and S11 the latter assaying 3.11% tungsten. Strongly yellow flurorescence indicates a high molybdenum content. The very high grain count obtained from HMC 8358 and 8369 collected from nearby drainages is also explained by pegmatite- hosted scheelite mineralisation (CR83/242).

1993

The Japanese Government utility PNC Exploration lodged multiple applications over Entia Dome in 1992. They postulated Harts Range Metamorphic Complex metasediments formed a Kombolgie – like cover over older Palaeoproterozoic Ambulbinya Igneous Complex basement of Entia Dome an analogous regional setting to the Alligator Rivers Unconformity – type uranium deposits located within PCO rocks of Top End.

Regional AMAG/Radiometric data sets were non-existent over RIDDOCH/QUARTZ map sheets (apart from 1956 1 mile l.s. survey data) hence PNC commissioned KEVRON to fly a 10300 line km, 200m l.s. (60-240 degrees flight lines, Altitude 60m) AMAG/Radiometric geophysical survey over project area in March 1993. The above survey only covered southern part of QUARTZ (including lower one third of EL29851) thereby omitting most of the highly prospective northern half (including most of Entia Dome).

Initially airborne data analogue charts provided by contractor were visually scanned for uranium ‘highs’ followed by preparation of corrected/filtered 1:25k scale stacked spectrometric profiles (9 map areas) of the 4 radiometric channels. Ensuring anomalies were defined by comparing elevated uranium channel readings against estimated local background / noise levels and peak shape along each flight line.
Anomalies were assigned a broad priority ranking of 1, 2 or 3 where Priority 1 comprises distinct U peak greater than 3xbg(background).792 airborne(AB) uranium channel anomalies were delineated by stacked profile visual evaluation. 338 were initially ground checked + another 22 during follow up.

GEOTERREX were contracted to fly 5000 line km of AMAG Radiometrics (200m l.s.,0-180/60-240,Altitude 80m) over three areas of Entia Dome including EL29511, 29481 and northern two thirds of EL29851 during December 1993. Initial analysis of geophysical survey data ie scanning analog charts delineated 128 Priority uranium channel anomalies rated GA 1 - 3 according to peak height shape and Thorium contribution. Secondly the gridded data set was statistically reworked to separate uranium dominant values from the rest of the data set thus creating a Uz score , which if greater than 5 defined an anomalous area ? 76 Uz –score anomalies were delineated. Coincident Uz-score/analog anomalies were coded GAZ, awarded the highest ranking generally proving to be the most significant in the field. Thirdly corrected data stacked profiles were visually scanned over light table comparing uranium and thorium traces . Ensuing anomalies were notated and rated GC1 – 3 according to peak height , shape and overall radiometric noise. GC2 and GC3 anomalies were regarded as being of very low potential. In total 265 anomalies were ranked.

The GEOTERREX geophysical survey delineated 12 radiometric anomalies within EL29511 the most significant of which are 14LG14 (SNAF) and 14LG01,07,10 and 20(KELLY). SNAF is located (significant anomaly occurring in caves) just below the peak of the northern-most hill of Mt Mary-Mt Long range ie a white, biotite-garnet bearing pegmatitic granitoid sill intrudes dark grey banded Irindina Gneiss.The conformable contact zone of 5-10m thick pegmatoid bodies grading into granite + biotite-altered amphibolitic wall rock and rafts of amphibolite within pegmatite show consistently high radiometric backgrounds of 300-500cps with hotspots ranging from 1000- 10000 cps EDA . Grab samples from biotite contaminated pegmatoid (main hotspot) namely HRO 2132,2133 and 2134 assayed U 2600,U 50,U 340ppm respectively.

The KELLY group of anomalies are located around Mt Long occurring on margin of large concordant mass of granitoid mapped by GA as HR pegmatite? Interestingly the 3km x 500m wide granite mass is wedged between Irindina/Brady Gneiss (810-500Ma)to the east and Entia Gneiss(1770Ma) to the west. The main anomalous zone is centred over AB anomalies 14LG07(+2000cps) and 20(5000cps) + three anomalies 1km north namely 14LG01(650cps),04 and 10(950cps), correlating with cropping out variably textured felsic granitoid /pegmatite. The main anomalies 14LG01 and 20 correlate with garnet bearing pegmatoid ie feldspar pegmatite + coarse grain granitic material bordering biotite altered amphibolitic wall rock. Two radiometric anomalies ie 200-500cps occur over a 30 x 5m area with hotspots ranging from 500-10000cps.Two KELLY grab samples showed secondary uranium mineralisation namely autunite coating uraninite (HRO2029)+ an unknown tetragonal mineral and associated U-Y –REE mineralisation(HRO2081) +accessory ilmenite-magnetite-uranothorite. Several anomalies north of Mt Mary were Thorium-based within granitoid/pegmatite(150-320cps). Petrology by Jiri Just describes HRO2079 as a biotitic granite-granodiorite containing yellow crystals pseudomorphs of Ca-U phosphate (autunite) after unknown long prismatic tetragonal mineral. Dull black mineral is uraninite with ilmenite, shiny black mineral is magnetite. Greenish black grains present are mixture uraninite/ilmenite/silicates.HRO2081 collected from GEOTERREX AB Anomaly 14LG01 is muscovite granite-granodiorite containing grains U-Y-Nb mineral also a Ca-REE mineral.
The anomaly cluster delineated by AB Radiometric anomalies 14LG03 through to 14LG25 are located on or near a prominent NW-trending ridge of cropping out indurated, silicified, kaolinised, limonitised altered wallrock adjacent to sills of pegmatoid. The ridge shows consistently high radioactive bg of 75-150cps with regular hotspots ranging from 250-400cps. Three spot highs of 2000 cps associated with secondary U-flecks on foliation surfaces adjacent to limonite.

Veining were also located ie torbernite/autunite occur as disseminations along foliation planes in kaolinised rock. The anomalous ridge has strike length of at least two kilometres ie distance between AB anomalies 14LG14 and 14LG15. Torbernite prospect comprises kaolinised-silicified-limonitised brecciated pegmatoid / sheared granite returning significant uranium values ranging from14-1580ppm(HRO1407-12,1458,2092-93). Three samples collected from brecciated pegmatite are Thorium – dominant ie 80-610ppmTh compared 14-100 ppmU while samples of limonitic, kaolinised Brady Gneiss are uranium-dominant ie again flecks secondary uranium mineralisation on foliation surfaces. Interestingly elevated values (>0.2%) for Ti-Ba-P-Mn and Zr were also recorded. Air photo interpretation suggests Torbernite ridge is a steeply east dipping (>75 degrees) fault zone transgressing local gneissic sequence at low angle.

SnaF prospect is located both stratigraphically and topographically below the Torbernite trend perhaps representing a distal phase of same mineralising event?

The Torbernite prospect indurated shear zone forms a prominent ridge on or near an unconformable contact between 1770Ma Entia Gneiss and overlying 810Ma Iridina Gneiss in north east Entia Dome area. PNC erected a 200m x 450m grid mapping the prospect (1:1000 scale). They also completed GMAG and Ground radiometric surveys. 10 rockchip grab samples were collected. As noted previously surface radiometric anomalism is confined to a narrow ridge of(1) brittle deformed megacrystic pegmatite comprising 340 degree trending sub-vertical breccia zones of silicallimone cemented fragments (2) ductilely deformed (mylonitic) felsic/amphibolitic gneissic sequence trending 310 degrees dipping 35-60degrees NE overprinted by a quartz-kaolinite - limonite alteration assemblage. Pegmatite forms semi-concordant layers within or voluminous enclosing slabs around gneissic remnants. Radiometric anomalism occurs over pegmatite, breccia zones and adjacent wallrock ie 24 hotspots located ranging from 200-6500 cps EDA. Radiometric anomalism is controlled by linear zones of tectonised pegmatite/breccia veining and adjacent altered gneissic wallrock. Silicallimone cemented breccia veins 300mm wide up to 10m long delineate a prominent NNW-trending zone of tectonism about 20m wide cross-cutting pegmatite and layered gneiss geochemically anomalous in; U 100-240 ppm, Mo 55-95 ppm, Cu 150-250 ppm, Pb 160-240 ppm, Ba 390-2450 ppm, Mn 250-9600 ppm. The highest uranium values were from samples of altered gneissic wallrock ie 290-2300 ppm U.

S.E.M. studies of HRO1408 identified U-Ca phosphate while XRD of nearby HRO6865 sample identified green surface coating as meta-uranocircite.

The Torbernite shear zone continues beyond prospect grid for over 7 km. Five other uranium anomalies occur within/adjacent to the shear zone. The linear array of AB radiometric anomalies is broadly coincident with the topographically high Torbernite ridge. Numerous radiometric anomalies ranging from 200-7000cps were measured while mapping Torbernite. Significantly 300cps anomalies
returned assays of 300ppmU indicating erratic radiometric disequilibrium. Ground spectrometric data clearly defines highly elevated NW-SE uranium channel trend across Torbernite grid.

Similarly, elevated thorium channel contours are configured in a series of ENE-WSW trends coincident with cropping out conformable pegmatite/adjacent altered wall rock lithological layering. HRO1408 collected from GEOTERREX AB Anomaly 14LG25 (= Torbernite) is described by Jiri Just Petrology; kaolinsised brecciated granitoid. The yellow mineral is uranium-calcium phosphate, probably autunite.

Holsteins prospect comprises swarming late-stage-gossanous radioactive chaledonic/barite breccia veins cutting Brady Gneiss located about one km north east of EL29511. Rockchips/grab sampling of old prospecting pits by PNC indicated following geochemistry; Fe-Ba-REEs-Th/minor U-S.

Rockchips HRO1406, HRO1453-57 ranged from 50-230ppmU,0.03-3.3%Th,0.1-10%REEs,0.2-5%P and 1-24%Ba. Numerous additional veins/massive breccias comprising barite-carbonate-hematite hosting Th-U-REE mineralisation were discovered prospecting, all of which were highly elevated in Thorium and REEs ie 0.07-3.9%Th,0.3-3%P,3-17%Fe,0.5-15%Ba,0.05-7%La,0.07-12%Ce,12-540ppm U and 40-600ppm Y. Jiri Just Petrology showed abundant barite-monazite-xenotite mineralogy in HRO2167-2172 while HRO2168 was mainly monazitic ie Th>>U. PNC speculated the alkaline breccia veins at Holsteins may have been deposited by late-stage mineralising fluids driven –off during intrusion of nearby Mt Long pegmatoid (also Ba/Th enriched)?

Barite-limonite-epidote(allanite)-REE mineralised veins were also located at GEOTERREX AB Anomalies 14GC56/14NL01(=Jersey) 2km northwest of Holsteins ie HRO2096 0.7%Ba,HRO2147-2149 and HRO2373 370-1480ppm Th,13-440ppm U,35-4100 Y,1-5% REEs. Jersey is a complexly veined area of Brady Gneiss punctuated by numerous crosscutting pegmatites epidotised in places with brown radioactive veins trending ENE-SSW. Jiri Just Petrology HRO2148 identified allanite(Th>>U)/cerianite sourced AB anomalies.

500m north east of Holsteins two more quartz-chalcedony-limonite veins were sampled namely HRO1451-1452 for similar results except for one assay showing U>Th ie 270/170ppm.

1995

PNC contracted WGC to fly an AMAG/Radiometric survey over 4 separate areas of Entia Dome in December 1994 including EL8675(omitted from GEOTERREX survey March 1993). 2600 line km were flown, Altitude 80m,200m l.s.orientated 0-180 degrees? It is possible flight line orientation may have been NW-SE(315-135)as north east survey boundary tracks diagonally across three sub blocks of EL29511@315-135 degrees, excluding north eastern third of licence area? Hence, ELs 29511 and 29481 licence areas were flown twice @200m.l.s. within 12 months either(1) both surveys were N-S flight line orientated or(2) N-S and NW-SE flight line orientations?

Initially, analysis of AB data comprised visual scanning of 1:25k analog charts provided by contractor. 40 Priority Uranium anomalies were delineated/rated according to peak height, peak slope and thorium contribution ranked WA1-5.
AB uranium channel anomalies were delineated by visual evaluation of stacked profile spectrometric data (5 x 1:25k sheets, of which 213 were ground checked. These anomalies were ranked WC1-4 or WX1 again based on peak height, peak shape, thorium influence and overall radiometric noise signature. WC2,3,4 Anomalies were deemed of low potential and subsequently disregarded.

60 WGC AB Radiometric anomalies were ground checked in Mt Long area including 12 within EL29511 licence area namely from north to south;

22ML12(500cps),22ML15(150cps),22ML22(500cps)
22ML06-FT3(500cps),22ML07(500cps),22ML16-PX4(cps150),22ML17(150cps),22ML13(500cps)
22ML37(150),22ML26-HU2(1000cps=Kelly),22ML05-PU2(1200cps=Kelly),22ML21-GU2(500cps)
22ML18-BX2(500cps),22ML30-PX3(500cps).

AB anomalies associated with ridge-forming shear zone passing through/ hosting Torbernite prospect were deemed highly significant ie 22IS06 located 4km northwest of Torbenite where altered ferruginous felsic gneiss assayed 340ppm U (HRO5542), 22ML10 one km northwest of Torbernite (HRO5550, 700ppmU from limonitic vein) while south east 3.8km (within EL29511) a ferruginous vein sampled from AB anomaly 22ML26 assayed 380ppm U (HRO5538). Interestingly a highly radioactive massive pegmatite (22ML21) crops out 2km east south east of 22ML26.

PNC concluded ((after mapping/prospecting Torbernite, locating numerous showings of secondary uranium mineralisation over strike length of 450m within clay altered, sheared, brecciated rock) that the prospect represented a substantial drill target (CRs94/325, 95/298, 96/285, 96/286).

Hale Energy P/L a subsidiary of Thor Mining PLC (THR) acquired EL24734 in 2005 covering the same area as what is currently ELs29511 and 29481. Prospecting northeast of Mt Mary discovered a uraniferous meandering gully called Indiana prospect where ‘hot’ granite forms a sheared contact with HRMC biotite gneiss + pegmatite veining. The contact zone was mapped and three composite rockchip samples were collected in 2006 namely HR23 532703E 7452531N 1500cps, HR24 532488E 7452386N 2500cps and HR25 532194E 7452330N 2500cps, 107.5ppmU. Another 10 composite rockchip samples were collected over Indiana during 2007 (MM001-010, best result of 781.3ppmU.

Two composite rockchip samples were also collected from Snaf prospect (biotite-garnet pegmatite/well banded gneiss contact zone 300-500cps (CR06/197,CRO7/048).
Figure 3 ATR 4
6. GEOLOGY Figure 3.

A contiguous Gempart (NT) P/L Tenement block including most northerly EL29511 straddles 25km of cropping out Entia Dome Palaeoproterozoic Ambulbinya Igneous Complex sheared unconformable contact with overlying Neoproterozoic – Cambrian Harts Range Metamorphic Complex, Irindina Province biotite- garnet/quartzofeldspathic gneiss.

Ambulbinya Igneous Complex tonalitic /granitic gneisses (Entia Dome basement 1770Ma) are assigned to South East Arunta Region, Aileron Province ensialic mobile belt covering 200,000 sqkm of central Australia a major component of North Australian Craton enveloping on three sides (north, west and south) fault-bounded 1000Ma – 460Ma SE Arunta Region, Irindina Province HRMC, a thick metasedimentary succession including subordinate igneous component of metabasalt (Riddoch Amphibolite), mafic/ultramafic intrusives (Hammer Hill serpentinite) granite and pegmatite cropping out extensively in Harts Range commencing eastward from Mt Riddoch, for 80km to Plenty Highway – Indiana turnoff. Until 2000 Irindina Province metasediments were deemed Palaeoproterozoic however recent detrital zircon geochronology determined protoliths of these high grade metamorphic rocks were deposited during Neoproterozoic – Cambrian era, thus now deemed high grade time equivalents of (1) Georgina Basin (2) Amadeus Basin sedimentary basin successions located north and south respectively. Peak metamorphism, upper amphibolite to granulite facies occurred during 460Ma Larapinta Event closely followed by 450Ma-300Ma ASO, the waning stages of which saw pegmatite swells characteristic of Harts Range intruded (330Ma) many of which were mined for mica mid last century.

The southern two sub blocks of EL29511 (located within northeast Entia Dome area) are dominated by three sub-parallel highly uraniferous pegmatoids trending northwest separated by sheared /schistose, biotite-garnet gneiss (pChi). The westerly pegmatoid stopes out Bruna Gneiss (pChA) along unconformity for 1.5km swelling to maximum width of over 600m before pinching out abruptly conversely, towards south south east pegmatoid tails-out to 150-200m width for about another kilometre.

PNCs believed all uraniferous pegmatites were restricted to those intruding 1770Ma Entia Gneiss (pChe) and/or Palaeoproterozoic granites namely Pg, Pgh, Pgi. Pegmatites are megacrystic, K-feldspar rich either concordant ie as occurs within EL29511 licence area or cross-cutting, accessory minerals include beryl-tourmaline-apatite-monazite –high thorium allanite and oxides of Y-Nb-REEs-U-Ta-Ti.

PNCs ‘torbernite trend’ of linear highly elevated uranium(thorium)channel readings closely correlates with (1) westerly pegmatoid and (2) northwest trending unconformity surface forming part of the north eastern margin of postulated AMAG-interpreted regional zone of intense tectonism ie ‘Torbernite Corridor’ which generally trends NW-SE steepening when passing through the southern two sub blocks of EL29511 creating a ‘dog leg’ effect (dilational jog) infilled by voluminous pegmatoid +late-stage uranium-silica-kaolinite-Fe alteration/mineralising fluids.’ Torbernite trend’ comprises the following cps U hotspots/secondary uranium mineral showings commencing from northwest trending towards southeast traversing southwest sub block of29511 licence area ; 22ML10 = Torbernite NW,

14LG25 = Torbernite gridded prospect, 14LG14 = Snaf, 22ML26, 22ML05 = Kelly Nth, 22ML21 = Mt Mary.
THRs Indiana prospect comprises north to northwest – striking narrow veins/stringers of concordant uraniferous pegmatoid exposed over several hundred metres of altered Brady Gneiss (pChb1) within a deeply incised stream channel of an easterly flowing ephemeral creek effectively ‘connecting’ two discrete massive- cropping out, swellings of pegmatoid. The north-northeast licence area is also overlain by Brady Gneiss (pChb2,500-460Ma) garnet-biotite-muscovite schist, calcisilicate rock including characteristically present clinzoisite-hornblende-clinopyroxene-scapolite-quartzfeldspar assemblages. The Holstein prospect alkaline vein swarm (Ba-Th/<U-Fe-REEs) located about one kilometre northeast of licence area is also intruding pChb2. Interestingly Holsteins is only about 1.5km north east of Indiana perhaps representing late- stage distal mineralising fluids sourced/driven-off by ascending, nearby uraniferous pegmatoid intrusions? There are several large masses (200-800m long x 200-300m wide) of pegmatoid within northern part of licence area intruding pChb2 none of which appear to be uraniferous. The Brady Gneiss 1 /Ireindina Gneiss contact is sheared punctuated by quartz veining in several places over one kilometre long whereas Brady Gneiss 1/Brady Gneiss 2 contact appears conformable with little evidence of shearing.

7.EXPLORATION PROGRAM  Figures 4,4a,4b,4c,4d,4f,5a,5b,5d,5e,5f,5g,5h,5i.

A fourth year program of acquisition, analysis, interpretation of large scale Google Earth Images delineating potentially lithium bearing pegmatite – hosted mineralisation was undertaken in conjunction with enhanced SRTM,Landsat Composite,TFI and Uranium imaging.

8. EXPENDITURE

1. Preparation, analysis, interpretation of various scale Google Earth images for potentially Lithium-bearing (spodumene-ambylgonite-lepidolite) pegmatites..........................................................$9000.00

2. Statistical analysis of acquired 200m l.s. geophysical survey radiometric digital data applied

Over licence area .

Latest Landsat data acquired /imaged to delineate cropping out potentially lithium bearing Pegmatites.

SRTM regional elevation data acquired to enhance existing model.........................................................$5000.00

3. Review results /Reporting..........................................................$3000.00

4. Administration.........................................................................................$2500.00

TOTAL.................................................................................................................$19500.00
9. CONCLUSIONS and RECOMMENDATIONS

Detailed analysis /interpretation of Google Earth Imagery has delineated over 1000 potentially lithium-bearing mineralised pegmatites requiring ground evaluation and rockchip sampling. Enhanced AMAG and Uranium channel imaging has identified a 12km long zone of hematitic alteration over regional unconformity associated with highly elevated uranium channel readings also requiring further investigation. Expenditure is set at $18000.00.

10. REFERENCES


Turley, S., Geopeko, EL3013 ATR. NTGS CR82/382(unpublished)

Anon., UOC, EL3466 ATR. NTGS CR83/242(unpublished)

Harvey, B.E., CRAE P/L, EL2494 Huckitta Creek ATR. NTGS CR83/252 (unpublished)

Drake-Brockman, J., PNC. EL8220, 8901 et al. ATR. NTGS CR94/325(unpublished)

Drake-Brockman, J., PNC. EL82220, 8901 et al. ATR. NTGS CR95/298(unpublished)

Drake-Brockman, J., PNC. EL8220, 8901 et al. ATR. NTGS CR96/285(unpublished)

Drake-Brockman, J., PNC. EL8220, 8901 et al. ATR. NTGS CR96/286(unpublished)

Till, S., Hale Energy P/L. EL24734 ATR. NTGS CR06/197(unpublished)

Till, S., Hale Energy P/L. EL24734 ATR. NTGS, CR07/048(unpublished)
EL29511 ATR 4 - Interpreted Pegmatites over Google Earth Image
EL29511 ATR 4 - Interpreted Pegmatites over Radiometric Total Count Composite Image

Figure 4b

EL29511 ATR 4 - Interpreted Pegmatites over Radiometric TC Image

Figure 4c
EL29511 29481 ATR 4 - equivalent Uranium > 4ppm Contour Plan.
Figure 4d
Figure 4e

EL29511 29481 ATR 4 - Uranium rock sampling ppm

- eU>4 ppm contour

EL29511 29481 - Lead rock sampling location ppm

NT Legend
- Gempart EL29511 and 29481

Whole Rock - Rock Chip
- >500 ppm U
- 300-500 ppm U
- 100-300 ppm U
- 0-100 ppm U

NT Legend
- Gempart EL29511 and 29481

Whole Rock - Rock Chip
- >15000 ppm Pb
- 5000-15000 ppm Pb
- 1000-5000 ppm Pb
- 0-1000 ppm Pb
EL29511 29481 ATR 4 - Cu Rock sampling location

NT Legend
- Gempart
- EL29511 and 29481

Whole Rock Rock Chip
- >15000 ppm Cu
- 5000-15000 ppm Cu
- 1000-5000 ppm Cu
- 0-1000 ppm Cu

-- eU>4ppm contour

EL29511 29481 ATR 4 - Au Rock sampling location

NT Legend
- Gempart
- EL29511 and 29481

Whole Rock Rock Chip
- >2 g/t Au
- 0.5-2 g/t Au
- 0.1-0.5 g/t Au
- 0-0.1 g/t Au

-- eU>4ppm contour

Figure 4f
5a SRTM Image
5b Landsat Bands 7/5/2 Image
5c  TMI Analytic Signal/DTM
5d Uranium/DTM
EL29511 29481 ATR 4-Regional Gravity Contour Image

showing eU>4ppm contour relative Regional Unconformity

Figure 5e
Figure 5h
Figure 5i

EL29511 29481 ATR 4- SUMMARY PLAN ie MOs, Anomalous Rxchs, Structure