



EXPLORATION LICENCE  
23514

ABNER PROJECT  
FINAL TECHNICAL REPORT

FOR THE PERIOD  
3 MARCH 2003 TO 2 MARCH 2011

BY

A. Raza

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## TENEMENT REPORT INDEX

<b>TENEMENT HOLDER:</b>	LEGEND INTERNATIONAL HOLDINGS INC.
<b>TENEMENT MANAGER:</b>	LEGEND INTERNATIONAL HOLDINGS INC.
<b>PROJECT:</b>	ABNER PROJECT
<b>COMBINED REPORTING GROUP:</b>	G140/09
<b>TENEMENT:</b>	EXPLORATION LICENSE 23514
<b>FINAL REPORT PERIOD:</b>	3 MARCH 2003 TO 2 MARCH 2011
<b>DUE DATE:</b>	3 JUNE 2011
<b>AUTHOR:</b>	<b>A. RAZA</b>
<b>STATE:</b>	NORTHERN TERRITORY
<b>LATITUDE:</b>	16°48'S - 16°51'S
<b>LONGITUDE:</b>	136°47'E - 136°51'E
<b>MGA (EASTING):</b>	583471ME - 590579ME
<b>MGA (NORTHING):</b>	8136845MN - 8142400MN
<b>1:250,000 SHEETS:</b>	SE53-03 BAUHINIA DOWNS
<b>1:100,000 SHEET:</b>	6064 MALLAPUNYAH
<b>COMMODITY:</b>	DIAMONDS
<b>KEYWORDS:</b>	DIAMONDS, KIMBERLITE, ABNER PLATEAU, MCARTHUR BASIN, HMA SAMPLING, MMI SAMPLING, INDICATOR MINERALS, GEOPHYSICS, PHOTOGEOLOGY

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## SUMMARY OF EXPLORATION ACTIVITIES

This final report describes the exploration activities conducted on the EL 23514 from its grant on 3rd of March, 2003 to expiry on 2nd of March, 2011 (Figure 1). The EL 23514 was granted to the Axis Consultants Ltd (Axis). Axis authorised Astro Diamond Mines (Astro) to manage exploration work. Astro placed it in its Calvert Hill Project and carried out initial phase of exploration in three stages. The entire exploration program was planned and implemented on project basis.

During the first stage, Astro acquired all relevant geological information comprising historical exploration data and publically available government geophysical and geochemical data. During the second stage, information received was thoroughly evaluated to generate targets and structuring of exploration program. During the third stage, identified targets were geophysically mapped by airborne EM and ground gravity surveys. The aim of exploration was to explore for commercial source of diamonds.

In 2006, Legend International Holdings Inc. (Legend) was appointed to manage Abner Project. In the following year (2007), Legend became its owner and operator and continued with the planned exploration work until the surrender on 2<sup>nd</sup> March 2011. During Legend's ownership, tenements remained part of the Abner Project. Legend conducted geophysical surveys, heavy mineral analysis (HMA) sampling, rock chip and soil geochemical analysis programs and drilling targeting kimberlites. During exploration three consultants, a geophysicist, a photogeologist and a mineralogist, were engaged to provide professional input to the company's acquired exploration data.

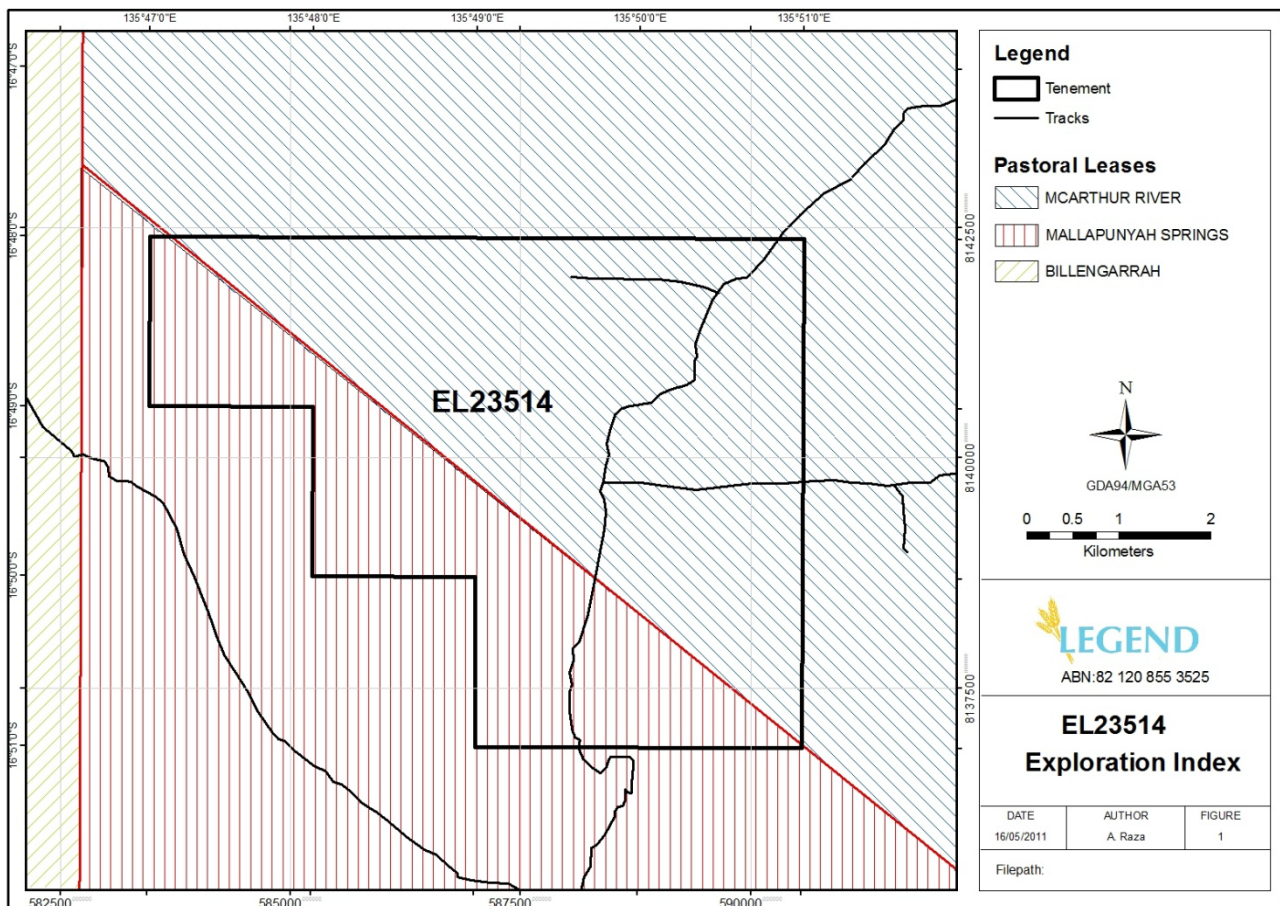


Figure 1: Exploration Index

## TENEMENT STATUS

The EL23514 is a part of the package of tenements comprising the Abner Project and was granted to the Axis Consultants Ltd on 3<sup>rd</sup> of March 2003, covering 9 sub-blocks (Figure 1). It was transferred to the Legend International Holdings, Inc on the 7 of June 2007 as a part of Dealing 92369. Legend held and managed the tenement prior to its expiry on 2<sup>nd</sup> March 2011. The tenement underwent four reduction deferrals at the third, fourth, fifth and sixth anniversaries. An application of renewal was lodged on 10 December 2008 and was approved on the 2<sup>nd</sup> February 2009. On 23 December 2010, an SEL application (SEL28528) has been submitted over this tenement which is currently under consideration with the Department.

## LOCATION AND ACCESS

EL23514 lies ~85km SW of Borroloola and ~40km west of Merlin Diamond Mine. The project area can be accessed from Cape Crawford located along the sealed Carpentaria Highway. Dirt roads and station tracks service the project area away from the main highway (Figure 2).

Established aviation facilities at Borroloola and McArthur River Mine offer an alternative means to approach the project. Land use in the region is predominantly pastoral leasehold for cattle grazing.

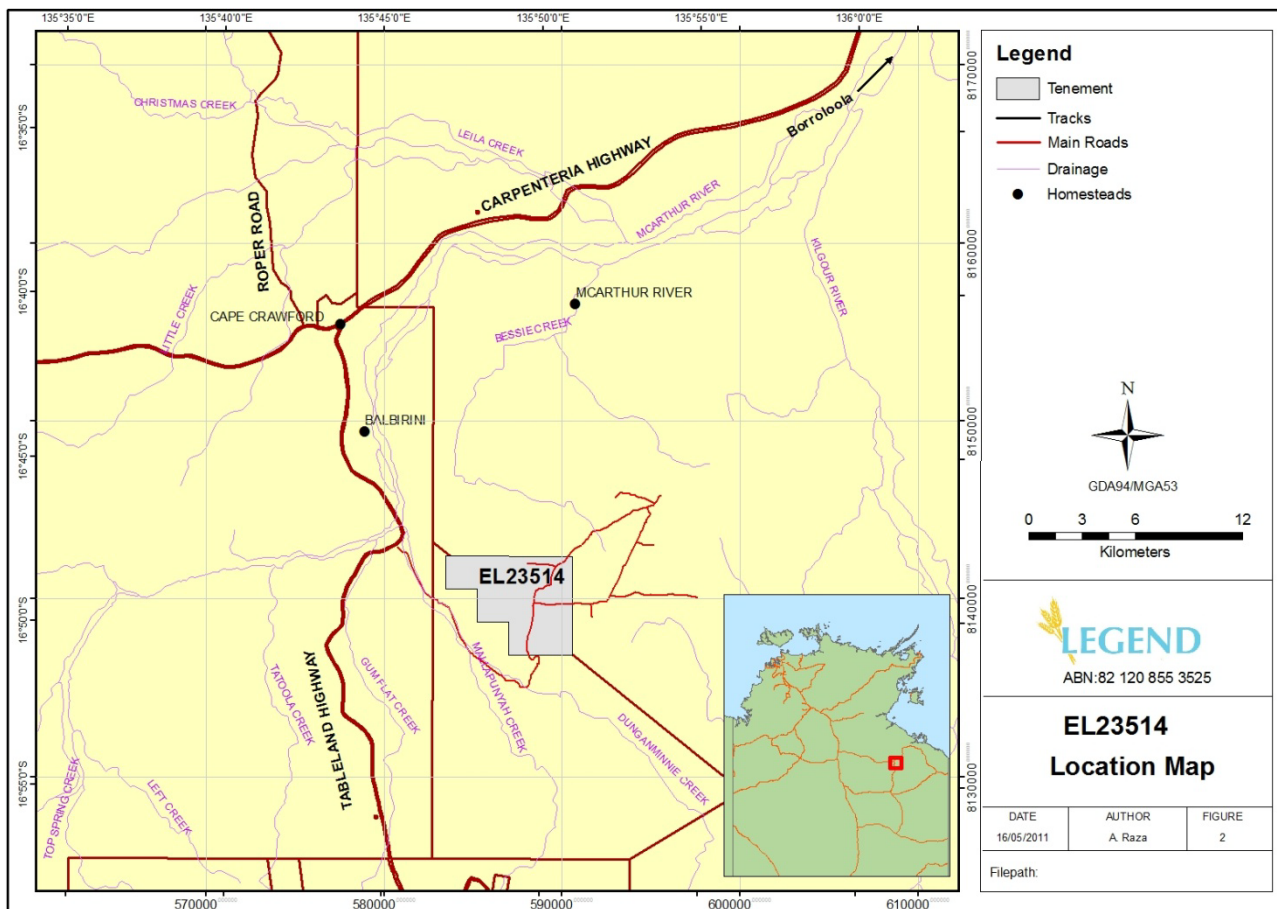


Figure 2: Location Map

## GEOLOGY

### Regional Geology

All of the economic diamond deposits and other significantly diamondiferous occurrences in Australia occur on the North Australian Craton ("NAC"). The NAC underlies the Kimberley region of northern WA, the northern two thirds of the NT and the northwestern part of Queensland. It is also host to many significant base metal, gold and uranium deposits. The NAC was formed at about 1850Ma during the Barramundi Orogeny by the amalgamation of Archaean and early Proterozoic rocks which now form the basement rocks to the younger sequence. Proterozoic (1820-1600Ma) platform cover sediments, Palaeozoic volcanics and sediments, and Mesozoic sediments cover these basement rocks.

The McArthur Basin is one such platform cover which developed above the NAC between 1800-1500Ma. Its sedimentary package consists of unmetamorphosed and less intensely deformed rocks of carbonate, siliciclastic and interbedded volcanics deposited in a shallow intracratonic basin. This sedimentary sequence has been divided into four groups, the Tawallah, McArthur, Nathan and Roper Groups that are separated by regional unconformities (Figure 3)

Remnants of the Cambrian Bukalara Sandstone and the Cretaceous sediments of the Dunmarra Basin overlie the McArthur Basin. There is a widespread distribution of Cainozoic sandy soil, laterite and alluvium cover.

The major tectonic elements of the basin include the north-trending Batten Fault Zone and its northern equivalent the Walker Fault Zone separated by the east-trending Urapunga Fault Zone. The close association of base metal deposits and major structures in the McArthur Basin suggests that these fault zones provided an important control on mineralization.

The McArthur Basin hosts world class lead-zinc-silver and copper deposits and several occurrences of smaller uranium and base metal deposits. A number of varying economic and sub-economic diamond-bearing kimberlite pipes of varying size have been discovered in the basin. They are part of sporadically occurring post-Cambrian volcanic activity on the NAC.

The Merlin region tenements are centered on the eastern side of the Batten Trough, which comprises Mesoproterozoic rocks of the McArthur Group. These are unconformably overlain in the south east by the Lower Cambrian age Bukalara Sandstone and small outliers of Cretaceous sediments.

### Local Geology

The EL23514 is located along the western boundary of the Abner Range Plateau. The Abner Range is a part of Batten Trough and lies to its southwest. Generally, the older Tawallah and McArthur Groups sequences dominate the stratigraphy of the Batten Trough; however, the surface geology of the Abner Range comprises rocks of the younger Nathan and Roper Groups (Figure 3).

Pockets of Cambrian Bukalara Sandstone and Cretaceous sediments occur at the top of the Abner Plateau overlying unconformably the Middle Proterozoic McArthur Basin sequence. Bedrock units are commonly covered by laterite, laterite soil, and Quaternary deposits (Figure 3). Basement rocks are folded with bedding dipping on average 20-30 degree.

The Abner Plateau is known to host a kimberlite pipes and is key target area during the current phase of exploration. Due to the proximity to the other known kimberlite and base metals deposits and having all



relevant geological features that control their occurrence, the project area is classified as highly prospective and holds excellent potential for another major discovery.

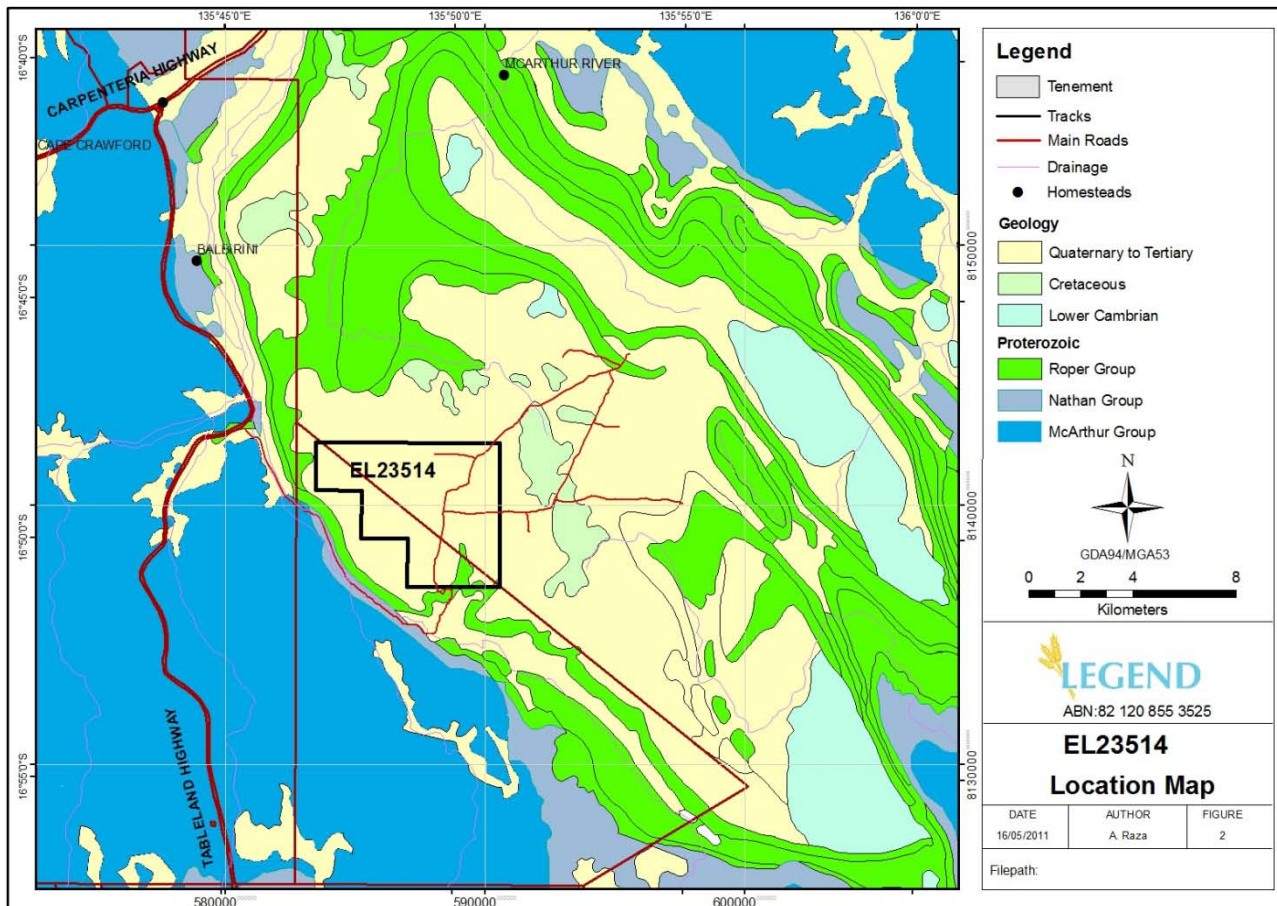


Figure 3: Regional Geology

## EXPLORATION

### Previous Exploration

Historically, extensive diamond exploration work has been conducted over the Abner Range and surrounding areas of EL23514 (Figure 4). Major contributors in the region are CRAE and Ashton and more recently Gravity Diamonds. Each has carried out several phases of HMA and soil/loam sampling, geophysical surveys and drilling.

These sampling programs identified widespread distribution of microdiamonds and indicator minerals, mainly chromite grains. In most cases, the source of the anomalous indicator mineral grains remained unknown. Gravity Diamonds, however, discovered the Abner Pipe, ABN21, in 2004 using a combination of geochemical investigations, Falcon Gravity and ground gravity surveys of the earlier identified anomaly by Ashton.

Following section describes exploration work on yearly basis conducted initially by Astro (2003 to 2006) and subsequently by Legend (2006 to 2011) on EL23514. It is important to note that most of exploration work was planned and executed on project basis.

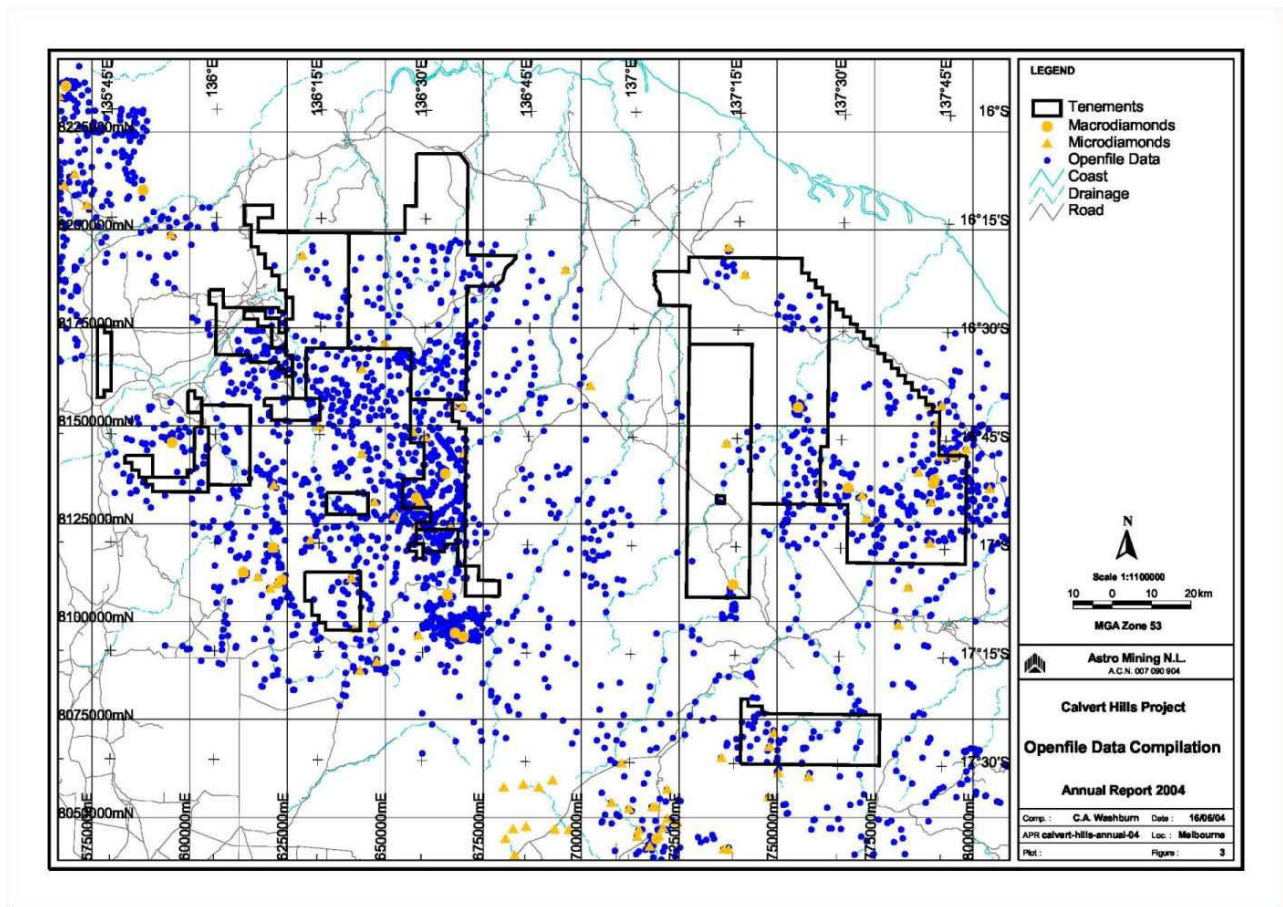


Figure 4: Historical diamond exploration sampling data in Calvert Hills Project area.

## Astro Diamond Mines Ltd

During 2003-2006, exploration license 23514 was part of the Calvert Hills Project. The Calvert Hills Project comprises four sub-projects Abner, Foelsche, Glyde and Selby. EL 23514 was a member of Abner. The outline of the Calvert Hills Project is given in Figure 5.

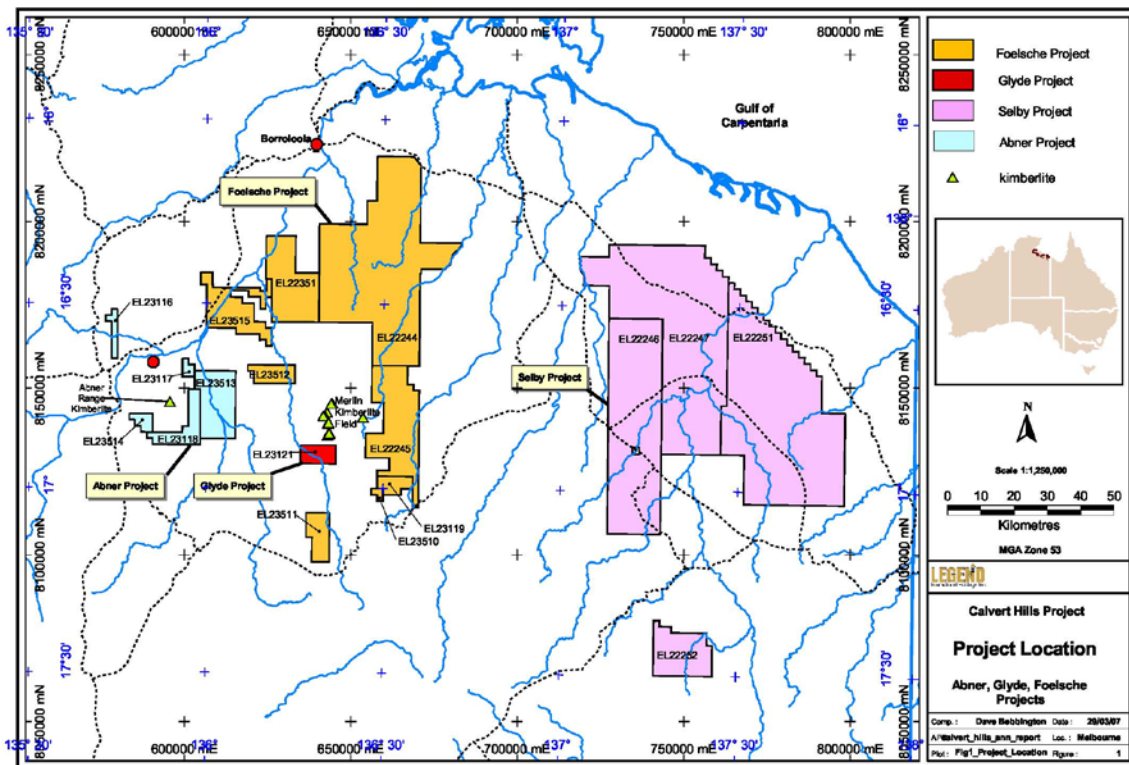


Figure 5: Location of sub-projects in the Calvert Hills Project.

## 2003-2004

During the first year of term, a comprehensive review of historic diamond exploration sampling and geophysical data from the entire Calvert Hills Project area was conducted. Past surface sampling in the region had identified microdiamonds and indicator minerals. Review process concluded that the EL 23514 has significant potential for discovery of kimberlite, a source rock for dispersed microdiamonds and indicator minerals.

The information for review process was derived from the available exploration data comprising 'open file reports' of past exploration activity, NTGS and company open file airborne geophysical survey and Landsat7 thematic mapper (TM) data. The data was available on CD-ROM by request to the NTGS. Topographic and geological maps at a scale of 1:250 000 were acquired in raster format as a base for projecting the data.

Astro acquired 1 million line kilometers of geophysical over the Northern Territory. Geophysical and open file data obtained was processed in house to identify prospective kimberlite targets. Maps produced containing diamond exploration sampling data and airborne geophysical data are provided in Figure 4 and Figure 6 respectively. All selected targets are shown in Figure 7. For further detail, see Astro Mining NL Annual Report for 'Calvert Hills Project' for 2002-2004.



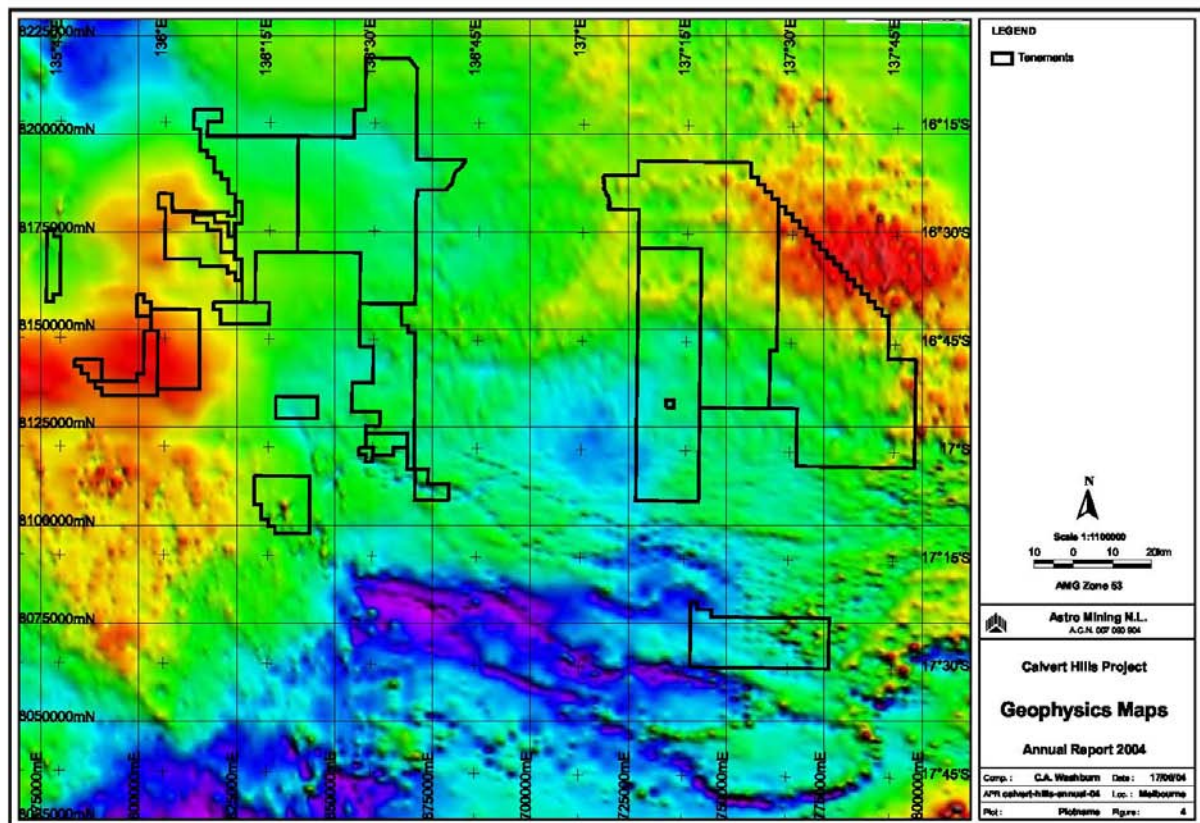


Figure 6: Aeromagnetic map of Calvert Hills Project.

## 2004-2005

Review process for Calvert Hills Project continued during the 2004-2005 reporting period. This included appraisal of geology and structure, results of historical drainage sampling and examination of previously generated stacked magnetic profiles. The data review highlighted several targets areas that warrant further follow-up (Figure 8).

Target selection and ranking was based on historical drainage sampling results. Those areas were selected where amount and distribution of diamonds matches well with the presence and abundance of coexisting indicator minerals. The idea was that diamonds and indicators are likely shedding from a same source in a discrete area, which could be further assessed by airborne electromagnetic survey. Further detail of review can be found in Astro Diamond Mines NL, Annual Report for 'Calvert Hills Project' for 2004-2005.

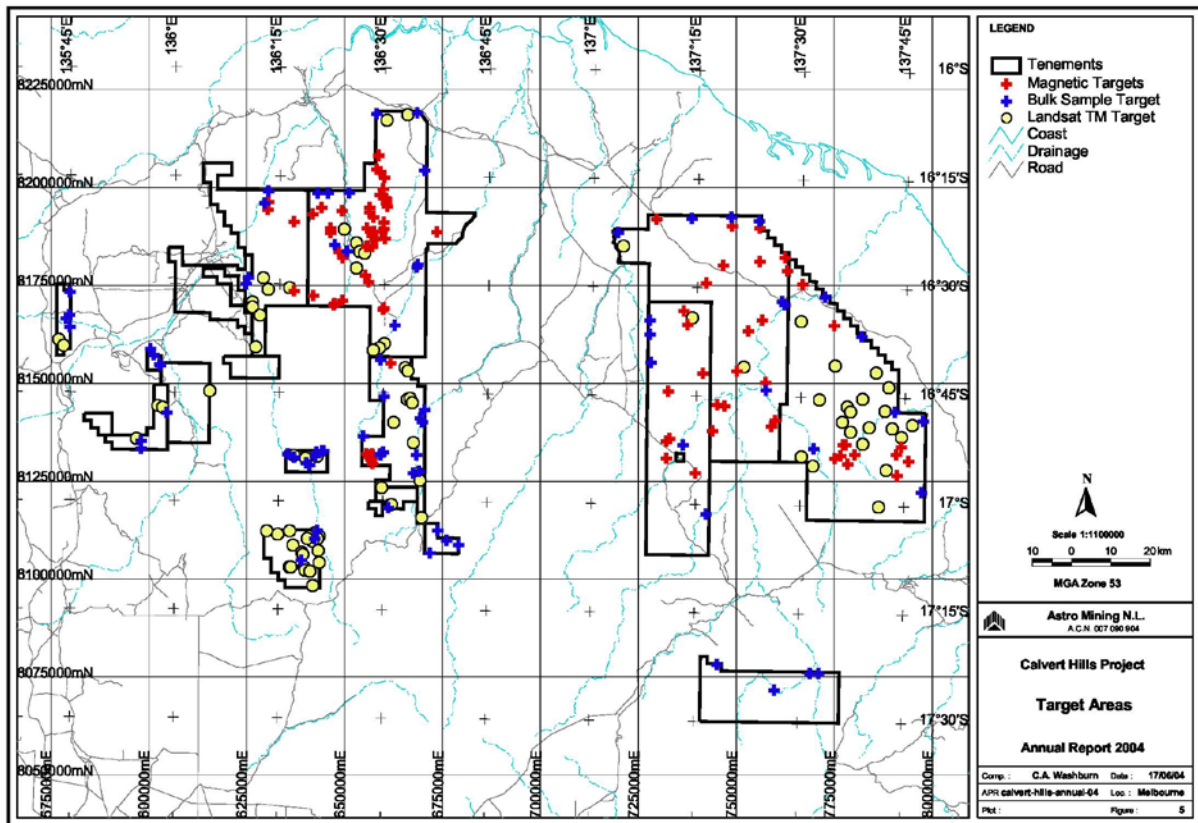


Figure 7: Identified exploration targets.

## 2005-2006

The assessment of the Clavert Hills Project highlighted targets in Foelsche, Selby and Abner for selective airborne EM survey. Within the Abner project, EL23118, a neighbouring tenement to EL23514, produced high-ranking anomalies and therefore mapped by airborne EM survey. No work however, was conducted on EL23514 during the 2005-2006 reporting period.



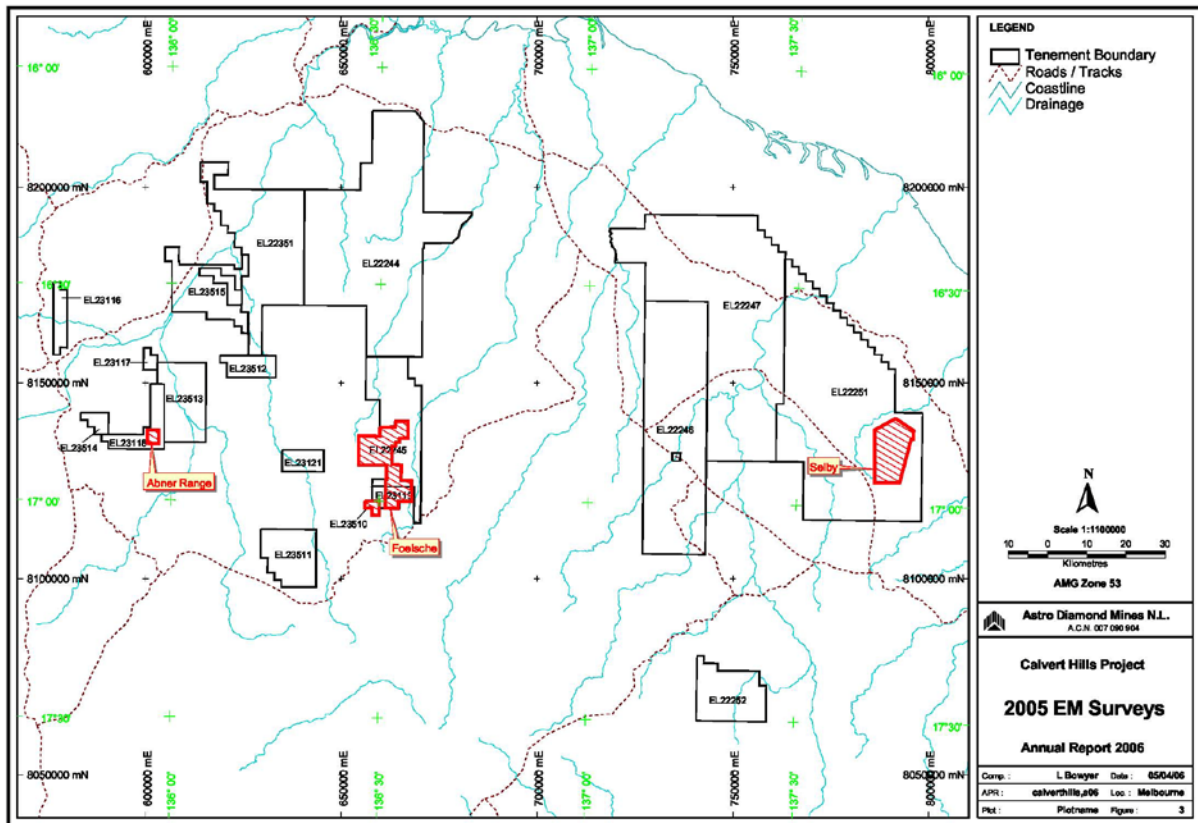


Figure 8: Locations of EM survey acquired during 2005.

## Legend International Holdings

### 2006-2007

During 2006-2007, airborne HoistEM/magnetic survey was acquired over the EL23514 and other tenements within the Calvert Hills Project. The GPX Airborne was contracted to conduct the survey. Complete survey report comprising HoistEM system specifications, magnetic data specification and images of processed data was submitted to the Department; please refer to 'Appendix 3 and 4, Legend International Holdings Inc., Annual Report for Calvert Hills Project for 2006-2007'.

In 2005, Gravity Diamonds Ltd flew Falcon® airborne gravity gradiometer survey over parts of the Abner Range project including EL23514. Falcon® data was supplied to the Legend in October 2006. The digital copy of the Falcon® gravity data was submitted to the Department; please refer to 'Appendix 5, Legend International Holdings Inc., Annual Report for Calvert Hills Project for 2006-2007'.

The airborne HoistEM/magnetic and Falcon® airborne gravity gradiometer data was interpreted. Forty-seven (ABEM4-1-ABEM4-47) HoistEM and nineteen Falcon® gravity anomalies were selected and prioritised for field investigation including sampling and drilling. The list of identified anomalies is provided in (Table 1 and Table 2).

ANOMALY	E	N	GEOPHYSICAL RESPONSE				RANK
	MGA53	MGA53	EM	MAGNETIC	DEM	GRAVITY	
ABEM4-01	588395	8141324	CDI 35m-75m	none	topo low	No	1
ABEM4-02	589849	8142060	CDI 35m-60m	none	topo low	No	1
ABEM4-03	587685	8137714	CDI 35m-60m	weak	topo low	No	1
ABEM4-04	587612	8136858	CDI 35m-100m	moderate	elevated topo	Yes FG19	1
ABEM4-05	587505	8141033	no HEM response	moderate	topo low	No	1
ABEM4-06	587725	8139207	CDI 35m	moderate	topo low	No	1
ABEM4-07	589840	8141683	no HEM response	moderate	topo low	No	1
ABEM4-08	587718	8142511	CDI 35m-75m	none	topo low	N/A	2
ABEM4-09	589474	8141110	CDI 35m-75m	weak	elevated topo	No	2
ABEM4-10	588027	8142477	CDI 35m-75m	none	topo low	N/A	2
ABEM4-11	589807	8140605	CDI 35m-50m	weak	topo low	No	2
ABEM4-12	587116	8141817	CDI 75m-150m	none	elevated topo	N/A	2
ABEM4-13	587183	8142477	CDI 100m-150m	none	topo low	N/A	2
ABEM4-14	587975	8139764	no HEM response	moderate	elevated topo	No	2
ABEM4-15	587098	8136849	no HEM response	moderate	topo low	No	2
ABEM4-16	589866	8140948	CDI 35m-50m	weak	moderate topo	No	2
ABEM4-17	585679	8141282	CDI 125m-150m	weak	topo low	N/A	2
ABEM4-18	585178	8139937	CDI 100m-150m	none	topo low	N/A	2
ABEM4-19	588704	8142218	CDI 35m-75m	none	topo low	No	2
ABEM4-20	587315	8136961	no HEM response	moderate	topo low	No	2
ABEM4-21	585395	8139151	CDI 100m-150m	moderate	topo low	N/A	2
ABEM4-22	586447	8142310	CDI 125m-150m	weak	topo low	N/A	2
ABEM4-23	584693	8141282	CDI 125m-150m	none	topo low	N/A	3
ABEM4-24	584810	8140998	CDI 125m-150m	none	topo low	N/A	3
ABEM4-25	585478	8141867	CDI 125m-150m	none	topo low	N/A	3
ABEM4-26	585704	8139235	CDI 100m-150m	none	topo low	N/A	3
ABEM4-27	585804	8138809	CDI 100m-150m	none	topo low	N/A	3
ABEM4-28	585612	8140455	CDI 100m-150m	weak	topo low	N/A	3
ABEM4-29	585487	8139970	CDI 100m-150m	none	topo low	N/A	3
ABEM4-30	585286	8140413	CDI 125m-150m	none	topo low	N/A	3
ABEM4-31	585353	8140848	CDI 100m-150m	weak	topo low	N/A	3
ABEM4-32	585612	8141149	CDI 125m-150m	weak	elevated topo	N/A	3
ABEM4-33	585027	8142076	CDI 125m-150m	none	topo low	N/A	3
ABEM4-34	584918	8141834	CDI 125m-150m	none	topo low	N/A	3
ABEM4-35	586398	8141433	CDI 100m-150m	none	elevated topo	N/A	3
ABEM4-36	586690	8142227	CDI 100m-150m	weak	elevated topo	N/A	3
ABEM4-37	586690	8142360	CDI 100m-150m	weak	elevated topo	N/A	3
ABEM4-38	590242	8141959	CDI 35m-45m	none	topo low	No	3
ABEM4-39	588412	8142252	CDI 35m-45m	none	elevated topo	No	3
ABEM4-40	588912	8140665	CDI 35m	weak	elevated topo	No	3
ABEM4-41	585495	8141575	CDI 35m-50m	none	topo low	N/A	3
ABEM4-42	585529	8142060	CDI 125m-150m	none	topo low	N/A	3
ABEM4-43	588237	8137687	CDI 35m-75m	weak	elevated topo	Yes FG12	3
ABEM4-44	583643	8141746	check GPX			N/A	3
ABEM4-45	583920	8141780	check GPX			N/A	3
ABEM4-46	583510	8140680	check GPX			N/A	3

ABEM4-47	583619	8141048	check GPX			N/A	3
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**Table 1: HoistEM anomalies**

FALCON® GRAVITY ANOMALIES							
FG01	587215	8141979	No	none	elevated topo	Yes	2
FG02	588053	8142017	No	none	elevated topo	Yes	2
FG03	587995	8141632	No	none	topo low	Yes	2
FG04	588621	8140862	No	none	no topo	Yes	2
FG05	589517	8139879	No	none	elevated topo	Yes	2
FG06	589951	8139696	No	none	topo low?	Yes	2
FG07	588593	8139041	No	none	topo low	Yes	2
FG08	588246	8139061	No	none	topo low	Yes	2
FG09	587244	8139398	No	none	topo low	Yes	2
FG10	587649	8138184	No	none	elevated topo	Yes	2
FG11	587368	8137797	No	none	elevated topo	Yes	2
FG12	588178	8137625	CDI 35m-75m	none	no topo	Yes	1
FG13	587851	8137346	No	none	elevated topo	Yes	2
FG14	588477	8137365	No	none	topo low	Yes	2
FG15	589103	8137568	No	none	in centre of drainage	Yes	3
FG16	589045	8137269	No	none	In centre of drainage	Yes	3
FG17	588978	8136845	No	none	In centre of drainage	Yes	3
FG18	589787	8136864	No	none	topo low	Yes	2
FG19	587572	8136942	CDI 35m-100m	none	no topo	Yes	1

**Table 2: Falcon gravity anomalies.**

In December 2006, two RC drill holes (ABR-11 and ABR-13) were drilled at photo anomalies and structural targets in EL23514 (Figure 9). The drill collars are listed in Table 3 and drill logs were previously provided in 'Appendix 7, Legend International Holdings Inc., Annual Report for Calvert Hills Project for 2006-2007'.

HOLE_NO	TENEMENT	E_MGA53	N_MGA53	DEPTH (m)	AZIMUTH	DIP	DRILL TYPE
ABR-11	EL23514	588050	8142000	50	0	90	RC
ABR-13	EL23514	588390	8141900	9	0	90	RC

**Table 3: Drill holes data - ABR-11 and ABR-13.**

Drilling did not intersect any kimberlite. Two samples (ABEM 11 and ABEM 13) one from each hole was submitted for geochemical analysis. No anomalous results were noted. Geochemical data was previously provided in 'Appendix 8, Legend International Holdings Inc., Annual Report for Calvert Hills Project for 2006-2007'.

One HMA sample (ABR-009) was collect from EL 23514 (Figure 9). It was sent to Diotech Laboratory in Perth for analysis. Sample was found to be negative for diagnostic kimberlitic minerals (Table 4).

SAMPLE_NO	E_MGA53	N_MGA53	TYPE	MACRO DIAMOND	MICRODIAMOND	CHROMITE
ABR-009	588836	8142096	stream	0	0	0

**Table 4: HMA sample ABR-009 location and result.**

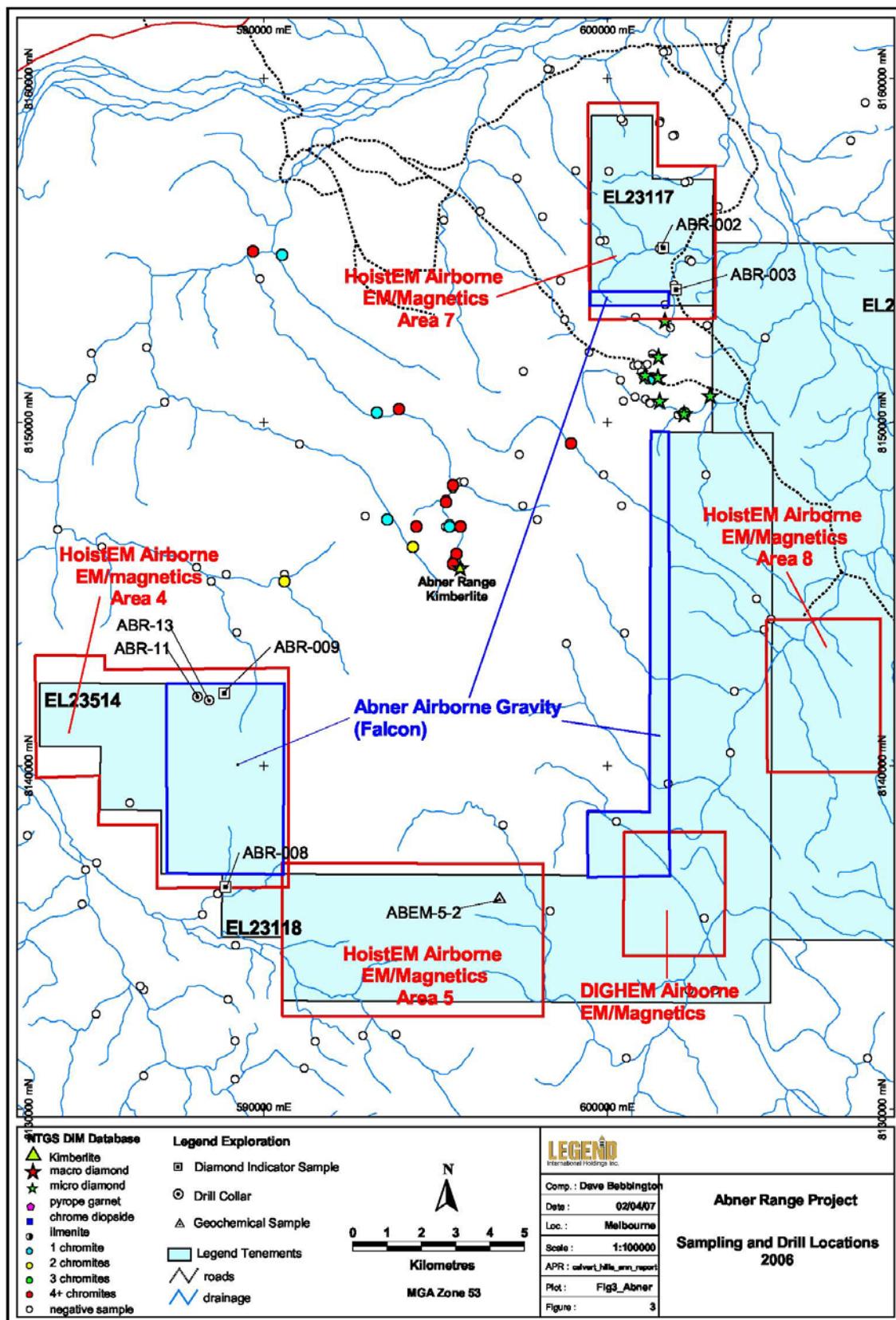


Figure 9: Map showing locations of geophysical surveys and drill holes projected on NTGS DIM database.

## 2007-2008

Encouraging results from the Abner Range tenements maintained exploration focus on the project during the 2007-2008 reporting period. Initially HMA stream and loam sampling program was conducted over EL23514. Eighteen (18) samples (ABR010-ABR019, ABR024, ABR028-ABR029, ABR039-ABR043) were collected for recovery of diamond indicator minerals (DIM). The positive DIM anomalies were followed up by the comprehensive gridded loam sampling program. Two hundred and twenty seven (227) HMA loam samples (ABS1-ABS171, ABS173-ABS190, ABS192-ABS211 and ABS230-ABS246) were collected (Figure 10). Analytical results for all samples were previously provided in 'Table 1 and Appendix 1, Legend International Holdings Inc., Annual Report for Calvert Hills Project for 2007-2008'.

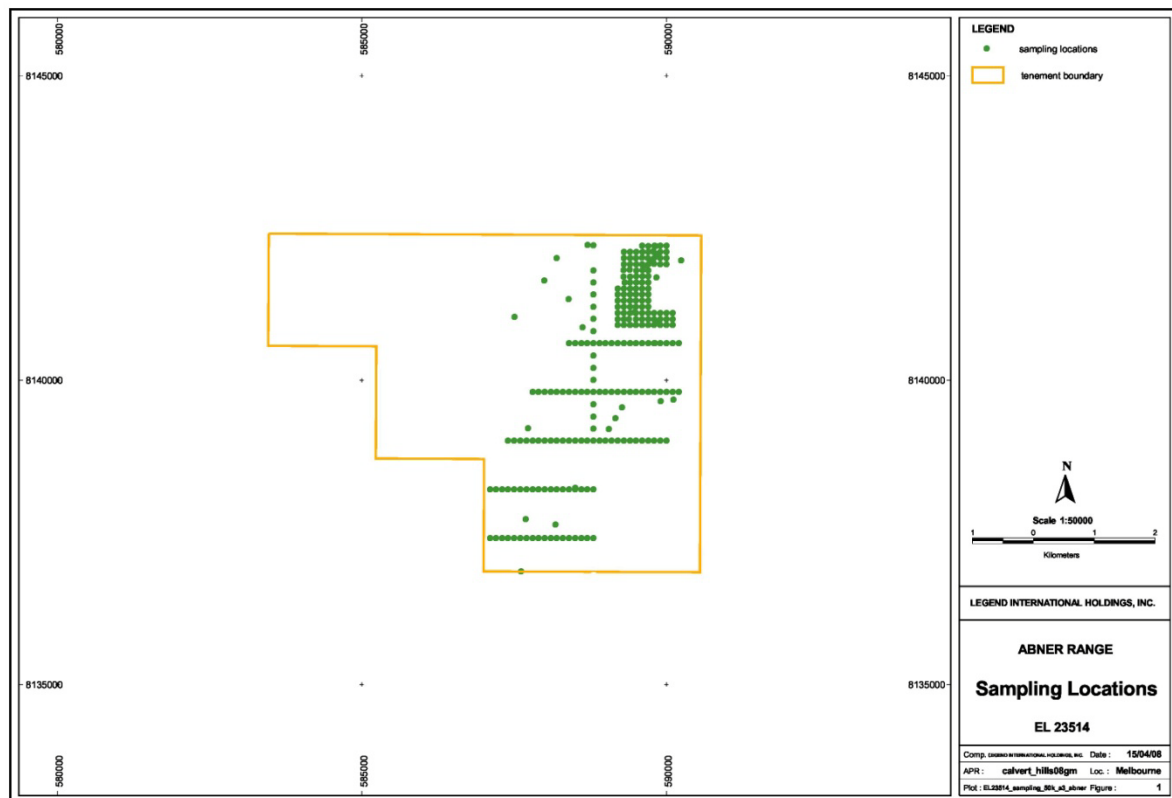


Figure 10: HMA stream and loam sample locations collected during 2007-2008.

Moreover, a program of three drill holes (ABDD1-ABDD3) was carried out targeting individual geophysical magnetic anomalies for a total of 95.1 m. The drill collar locations are shown in Figure 11 and listed in Table 5. Drill logs have previously been submitted to the Department (see Appendix 5, in Legend International Holdings Inc., Annual Report for Calvert Hills Project for 2007-2008).

HOLE NO	TENEMENT	Project	Easting MGA53	Northing MGA53	DEPTH (m)	AZIMUTH	DIP	DRILL TYPE
ABDD1	EL23514	Abner Range	589842	8142060	44.5	0	-90	Diamond
ABDD2	EL23514	Abner Range	589884	8141678	28.3	0	-90	Diamond
ABDD3	EL23514	Abner Range	589839	8141682	22.3	0	-90	Diamond

Table 5: Drill collar locations for drill holes ABDD1, ABDD2, ABDD3.



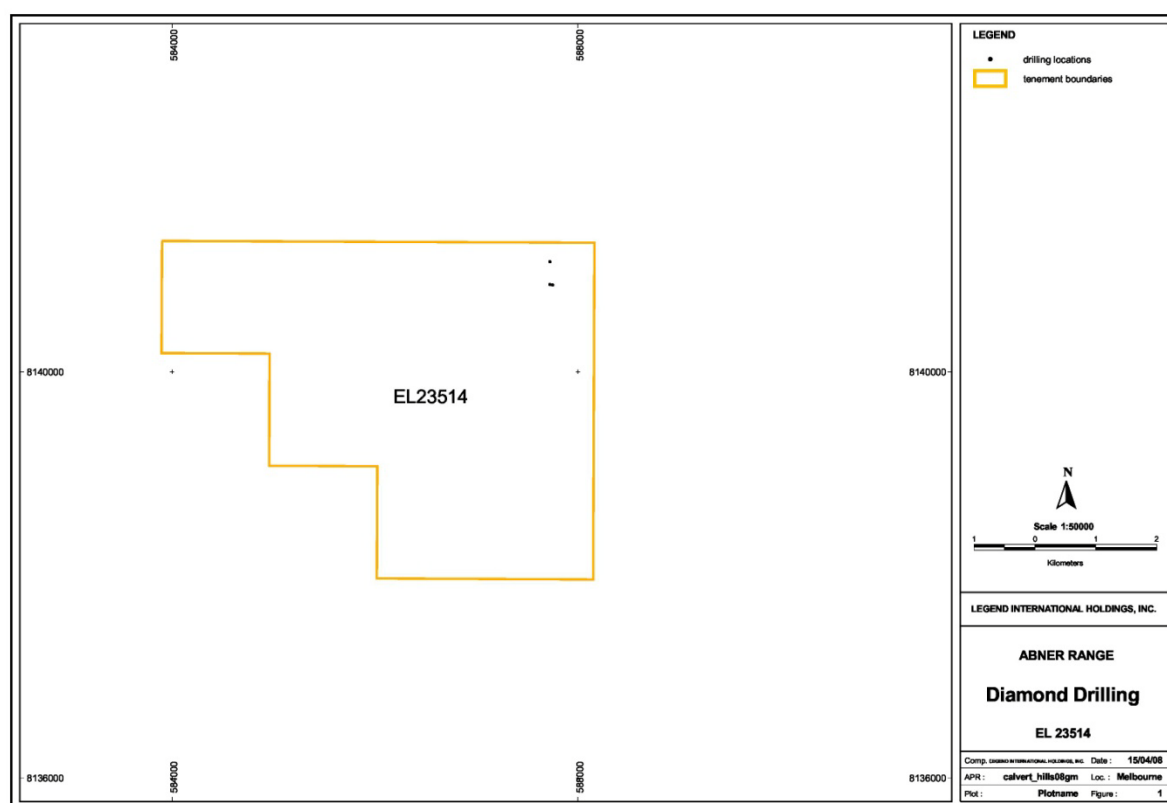


Figure 11: Map depicting drill holes ABDD1, ABDD2 and ABDD3 locations

## 2008-2009

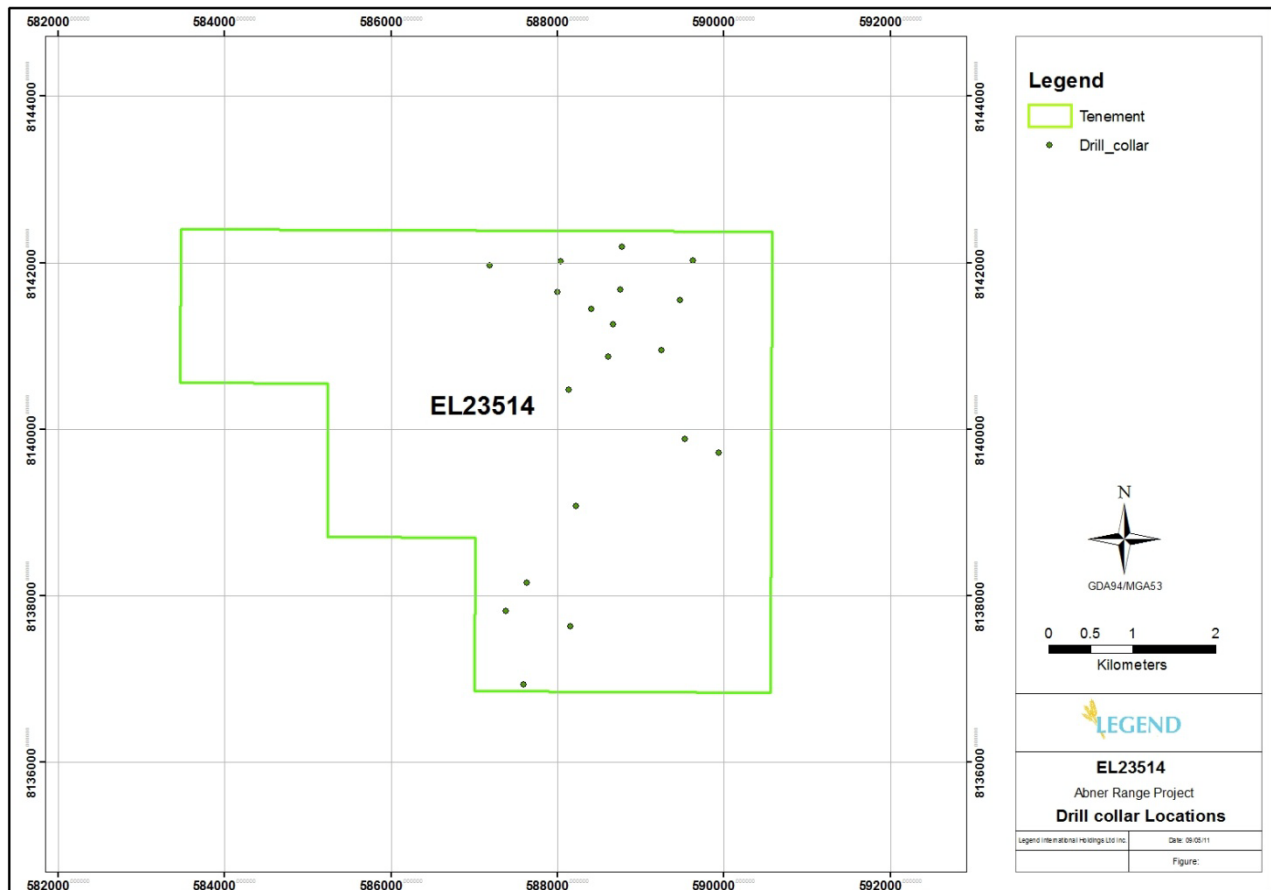
During 2008-2009, a program of 18 RC drill holes for 928 m was completed on EL23514. The drill collar locations are shown in Figure 12 and listed in Table 6. One planned hole ABRC 14 was not drilled.

HOLE NO	TENEMENT	Project	Easting MGA53	Northing MGA53	DEPTH (m)	AZIMUTH	DIP	DRILL TYPE
ABRC01	EL23514	Abner Range	587590	8136935	60.00	0	-90	RC
ABRC02	EL23514	Abner Range	588155	8137640	55.00	0	-90	RC
ABRC03	EL23514	Abner Range	587380	8137820	55.00	0	-90	RC
ABRC04	EL23514	Abner Range	587630	8138155	55.00	0	-90	RC
ABRC05	EL23514	Abner Range	588610	8140875	55.00	0	-90	RC
ABRC06	EL23514	Abner Range	587185	8141970	43.00	0	-90	RC
ABRC07	EL23514	Abner Range	588000	8141645	42.00	0	-90	RC
ABRC08	EL23514	Abner Range	588040	8142015	97.00	0	-90	RC
ABRC09	EL23514	Abner Range	588775	8142195	49.00	0	-90	RC
ABRC10	EL23514	Abner Range	588750	8141675	43.00	0	-90	RC
ABRC11	EL23514	Abner Range	588406	8141440	37.00	0	-90	RC
ABRC12	EL23514	Abner Range	588670	8141265	37.00	0	-90	RC
ABRC13	EL23514	Abner Range	589625	8142030	55.00	0	-90	RC
ABRC14	EL23514	Abner Range	589468	8141555	0.00	0	-90	RC
ABRC15	EL23514	Abner Range	589245	8140955	49.00	0	-90	RC
ABRC16	EL23514	Abner Range	588135	8140480	49.00	0	-90	RC
ABRC17	EL23514	Abner Range	589935	8139720	49.00	0	-90	RC

ABRC18	EL23514	Abner Range	589530	8139880	49.00	0	-90	RC
ABRC19	EL23514	Abner Range	588215	8139080	49.00	0	-90	RC

**Table 6: Drill collars locations**

Two hundred and forty one (241) composite samples from 18 holes were analysed for suite of nine elements (Mg, Ni, P, Ti, V, Cr, Nb, Y, Zr) at ALS Chemex in Brisbane. Samples were collected over 4 m intervals. Drill collars are provided in Appendix 1 and Analytical data in Appendix 2.



**Figure 12: Map showing RC holes locations drilled during 2008-2009.**

## 2009-2010

EL23514 remained central to the exploration activities within the Abner Project. Revised exploration program led to the completion of considerable work during 2009-2010 reporting period.

A comprehensive open-file review was conducted to generate and rank new and existing targets. Historic HMA samples data and inherited exploration data sourced from Gravity Diamonds was compiled into GBIS database system. Yoshi Creek a positive microdiamonds site in a restricted drainage on Abner Plateau was recognized as a primary target within the EL23514.

Two consultants-a geophysicist and a photogeologist, were engaged to provide independently detailed interpretation of geophysical and photogeological data from Abner and Legend's other projects in the region. The objective was to delineate geophysical and litho-structural favourable targets that may host kimberlite pipes.

Targets generated from the geophysical study are listed in Table 7 and are shown in Figure 13.

ANOMALY	MGA_EAST	MGA_NORTH	TENEMENT	Field Evaluation/ Samples
AB_KJ1	589107	8138125	EL23514	ABH000060 and ABH00061
AB_KJ2	594898	8139618	SEL26397	Slight depression, changes in lithology
AB_KJ3	599323	8137094	SEL26397	Requires field visit, access difficult
AB_KJ4	596737	8136459	EL23118	ABH000059
AB_KJ5		8141185	SEL26397	No distinctive features
AB_KJ6	600972	8138475	EL23118	ABH000054
AB_KJ7	602571	8140069	EL23118	Requires field visit, access difficult
AB_KJ8	592569	8148385	SEL26397	ABH000088
AB_KJ9	586267	8143774	EL23993	ABH000062
AB_KJ10	585820	8150954	EL23993	Helicopter Program
AB_KJ11	584720	8148272	EL23993	Helicopter Program
AB_KJ12	597727	8146281	SEL26397	Field reconnaissance
AB_KJ13	598578	8144805	SEL26397	No work completed

Table 7: Abner Range Geophysical Targets from regional geophysics review

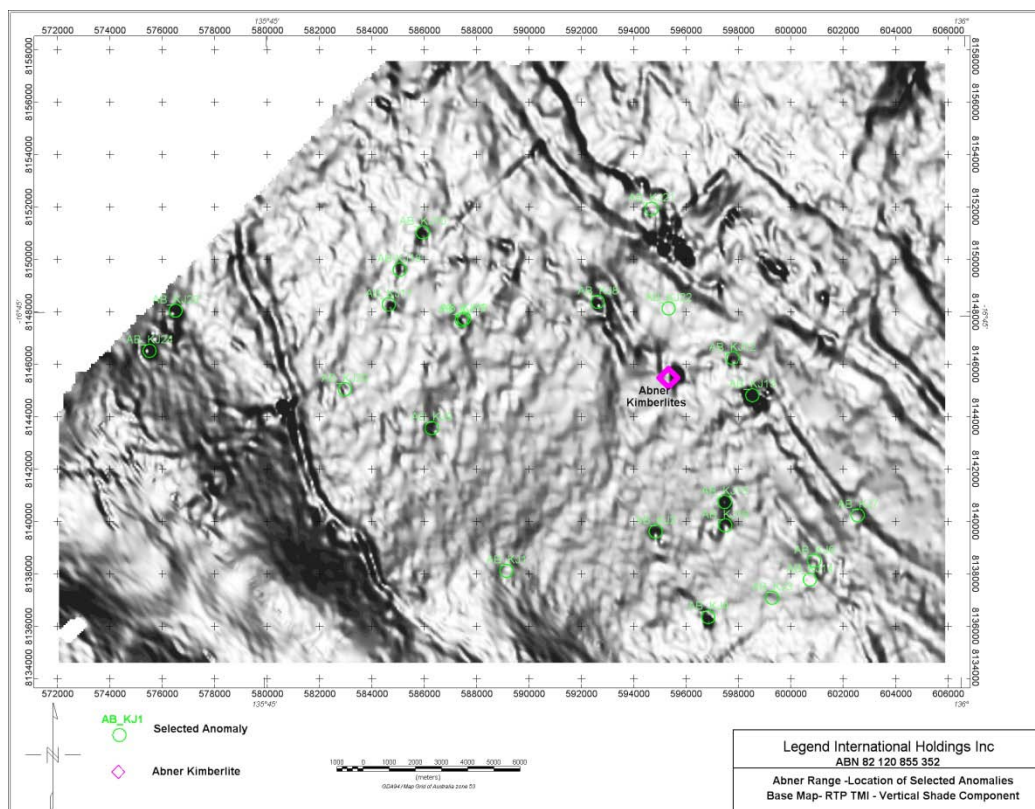


Figure 13: Location of Abner Range selected anomalies superimposed on vertical shade component of RTP TMI Image.

### EM Survey:

In the past, electromagnetic survey carried out over the kimberlite pipes at Merlin has displayed distinct conductive signature. With this in mind, Legend conducted a first-pass Ground EM-34 survey in August-September 2010. The area targeted in EL23514 was Yoshi Creek. Initially, orientation survey was conducted

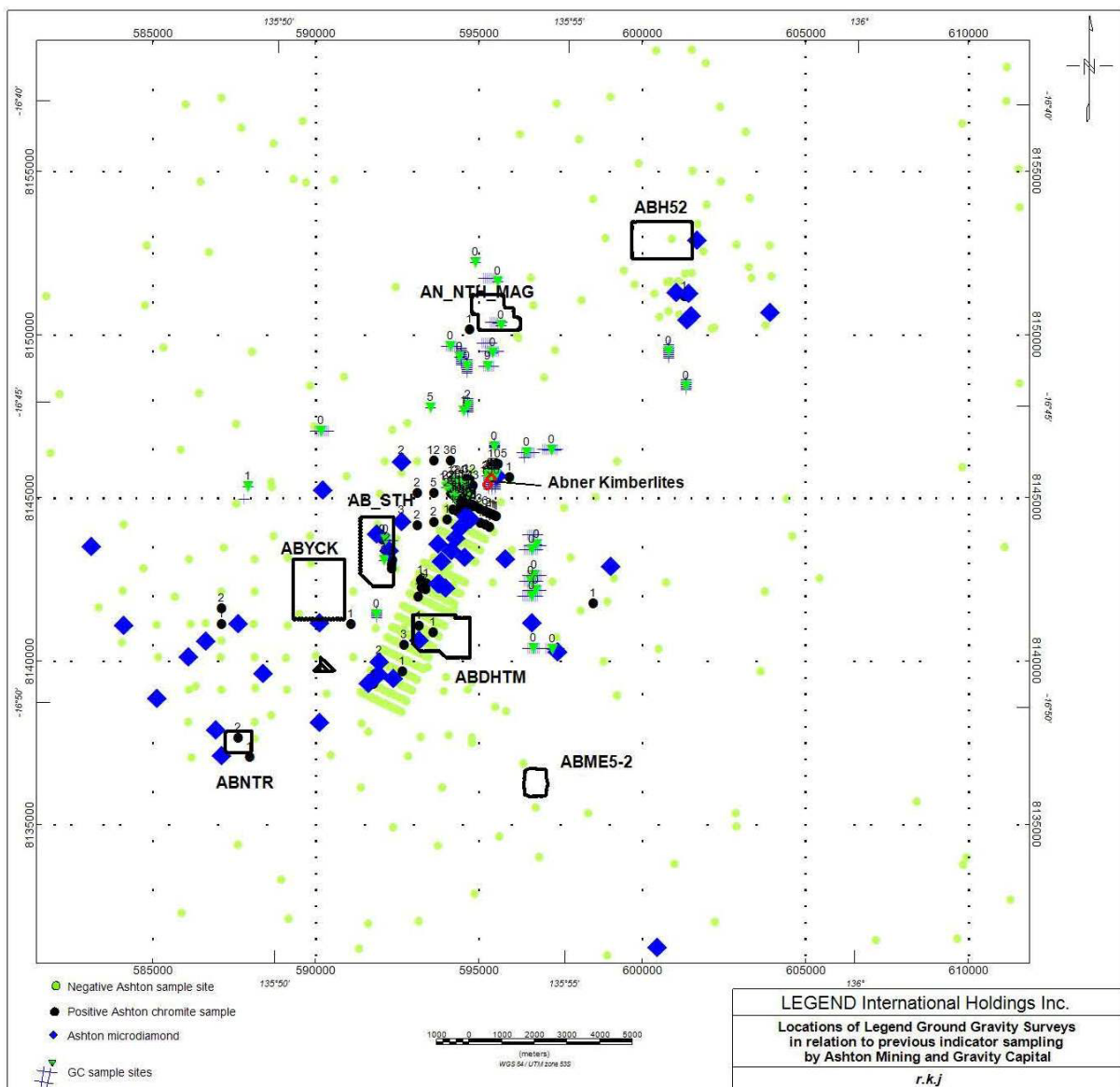


along N-S and E-W traverses to establish the best direction of the survey grid. A small grid was then planned over the target area first at 20m spacing and then at 40m spacing. The 40m spacing was designed to cross validate responses observed in 20m spacing survey.

The ground EM-34 survey highlighted an anomalous EM high response coincident with MMI high response close to the sample ABH000058. The initial phase of survey using 20m spacing cable gave average maximum depth coverage of 15m. A second pass survey was acquired in early September with the 40m spacing cable to confirm the depth of earlier identified anomalies. It has been recommended that detailed interpretation of the data with respect to the known stratigraphy of the area will be advantageous.

#### **Ground Gravity Survey:**

Ground gravity survey was acquired by Daishat over selected target areas on the Abner Plateau in early June 2010. Two target areas, ABYCK and ABNTR, were selected for survey in the EL23514 (Figure 14). The interpretation of the acquired ground gravity data was carried out by geophysical consultant Keith Jones. Following conclusions were drawn from survey results.

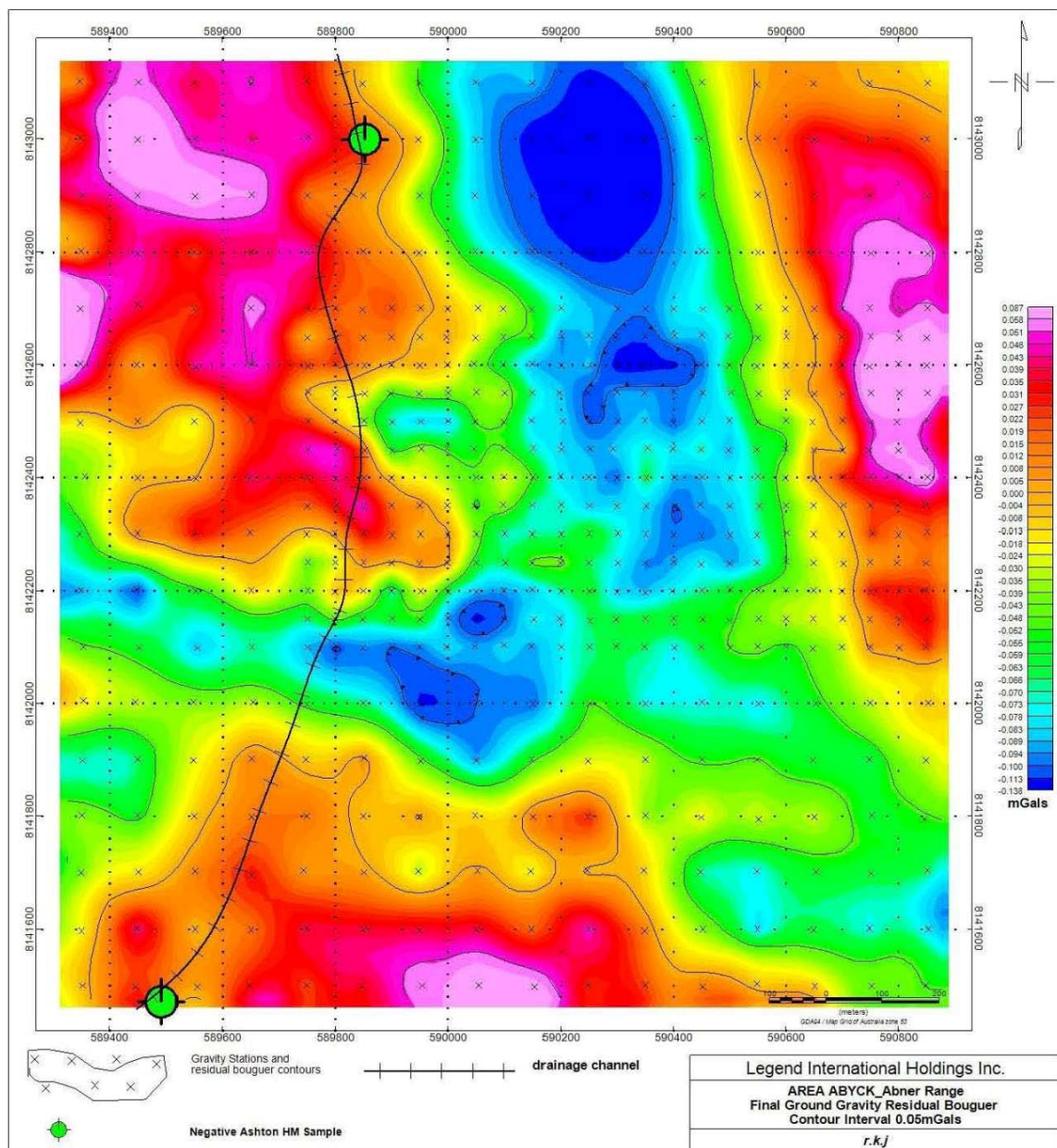


**Figure 14: Locations of Gravity Survey and historical HMA sampling by Ashton Mining and Gravity Capital.**

**ABCYK:** The ABCYK survey area partially covers northeastern portion of EL23514 and extends into neighboring northern tenement. The ABCYK inclusion in the ground gravity program was to follow-up positive indicators and diamonds anomalies with an adjacent Falcon gravity low. The gravity stations spacing was chosen at 50m over the positive indicators locations.

The target area is centered on a north-trending drainage channel which over the width of the surveyed area has a vertical topographic range of ~6m. Laterite and Cretaceous sediments cover the basement to the west of the drainage and Cainozoic sediments to its east.

There are no high priority residual bouguer anomalies evident in the acquired data (Figure 15). The residual ground gravity grid shows only a broad correlation with the weak Falcon GDD low identified by Legend. A residual anomaly of 0.17mGals at coordinate 590250E, 8142965N is the only most prominent gravity "Low" within the surveyed area. There is no significant EM or magnetic anomalies recorded within the surveyed area.

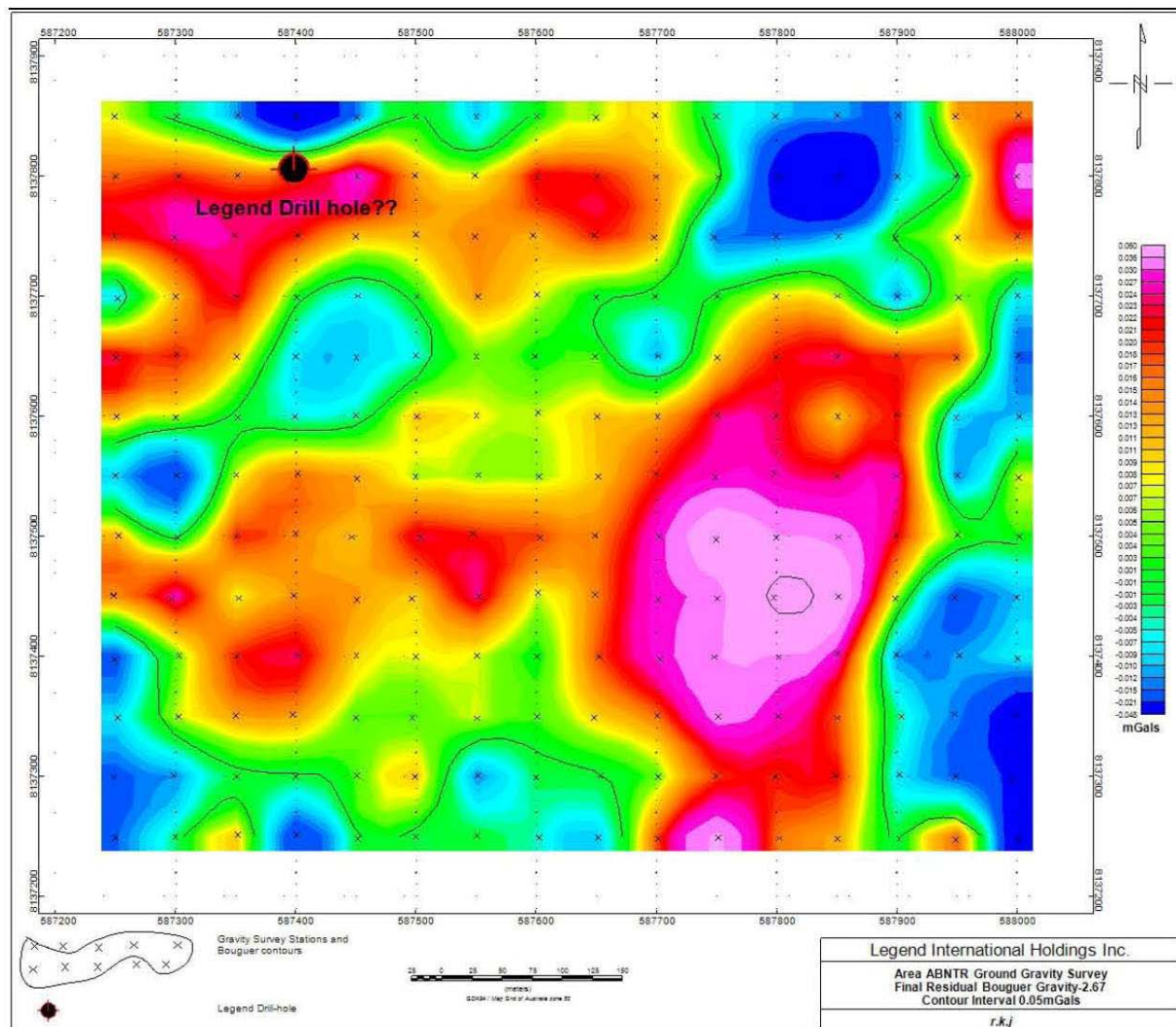


**Figure 15: Residual Bouguer Gravity- Area ABCYK contour interval 0.05mGals**



**ABNTR:** The ABNTR survey area fully confined within EL23514's and is located along its southern limit (Figure 14). The inclusion of this site in the ground gravity survey was to follow-up EM, MMI and indicators anomalies. The geology of the survey area comprises Abner Sandstone overlain in places by unconsolidated Cainozoic sediments.

The ABNTR survey area was part of the Abner Range Falcon Gravity survey. The correlation between the acquired ground gravity and Falcon gravity gradient GDD is extremely poor. The EM anomaly evident in the Legend's HoistEM data has no coincident bouguer gravity or magnetic response (Figure 16). Similarly photo-geological data did not reveal likely source of EM response which correspond to the outcropping Abner Sandstone. Therefore, no obvious geological target was identified from the ground gravity survey.



**Figure 16: Area ABNTR-Residual Bouguer Gravity**

The acquired ground gravity data is provided in Appendix 3.

### **HMA Sampling:**

Twenty three (23) HMA samples were collected from main drainages that have previously recorded indicator occurrences as well as loam grid where streams sampling was not possible. Sample details including results are given in Table 8 and locations are shown in Figure 17. Sample size and sampling method was adjusted according to the trap-site. However most of the samples were 40-50kg of 1.6mm or

1.0mm sieved material. Heavy mineral samples were sent to the Diatech Laboratories in Perth for processing using a wilfly table for recovery of KIM from the -0.5mm +0.2mm fraction of concentrate.

Sample No	Sample Type	Easting MGA53	Northing MGA53	Anomaly ID	Weight (Kg)	DIM Recovered	Result
ABH000055	Stream	589385	8141078	MMI-Yoshi	44	None	Negative
ABH000056	Stream	589442	8141728	MMI-Yoshi	51	None	Negative
ABH000057	Stream	590072	8141061	MMI-Yoshi	42	None	Negative
ABH000058	Stream	589390	8141251	MMI-Yoshi	39	None	Negative
ABH000060	Loam	589105	8138127	ABKJ-1	40	None	Negative
ABH000061	Loam	589060	8137914	ABKJ-1	40	1 chromite	Unresolved
ABH000063	Loam	587954	8137490		45	None	Negative
ABH000064	Loam	587570	8137633	Nth Truffle	45	1 chromite	Unresolved
ABH000073	Stream	588806	8138439		38	None	Negative
ABH000074	Stream	587465	8137480		37	None	Negative
ABH000075	Stream	587570	8137480	Nth Truffle	31	1 chromite	Unresolved
ABH000076	Stream	587671	8137475		37	None	Negative
ABH000077	Stream	587666	8137560	Nth Truffle	41	1 chromite	Unresolved
ABH000078	Stream	587565	8137560		34	None	Negative
ABH000079	Stream	587470	8137560		30	None	Negative
ABH000080	Stream	587470	8137641		47	None	Negative
ABH000081	Stream	587670	8137641		33	None	Negative
ABH000082	Stream	587670	8137685		37	None	Negative
ABH000083	Stream	587570	8137719		38	None	Negative
ABH000084	Stream	587470	8137720		47	None	Negative
ABH000105	Stream	589928	8142480		44	None	Negative
ABH000106	Stream	589952	8142412		38	None	Negative

**Table 8: HMA sample coordinates and results**

### **MMI Sampling:**

A total of 315 samples were collected over three small scale MMI grids focusing three prospects, Yoshi Creek, North Truffle and the Northeast Structure within EL23514 (Figure 17). Target locations contain positive HMA sites supported by anomalous geophysical responses.

The aim of MMI survey was that it would be able to display geochemical signature of a buried kimberlite pipe. Kimberlite chemistry differs significantly from the composition of host Proterozoic sedimentary lithologies.

158 MMI samples (ABM000394-ABM000399, ABM000413-ABM000445, ABM000452 -ABM000529, ABM000536-ABM000576) were taken on EL23514 over a topographic low which possibly drains from the northeast to the southwest, where few sporadic indicator samples were collected in previous sample programs. No kimberlitic chemistry was evident from the results.

36 MMI samples (ABM000667-ABM000702) were collected from the broad Yoshi Creek drainage.

121 MMI samples (ABM000703 – ABM000823) were taken along an inferred NE trending structure that had historical diamond occurrences. No significant results were received.



MMI data from EL23514 is attached in Appendix 4.

### ***Geochemical study of chromites:***

Wayne Taylor, a mineralogist, was contracted to carry out detailed geochemical interpretation of the chromite grains recovered by Legend and predecessor explorer Gravity Diamonds from their HMA sampling programs. The final report received has been forwarded to the Department in 'Appendix 3, Legend International Holdings Inc., Annual Report for Calvert Hills Project for 2009-2010'.

## DISCUSSION

The EL23514 has been an important part of the exploration effort being conducted by the Legend International Holdings in the Northern Territory. It is one of the highly prospective licenses within the Abner Project for commercial source of diamonds.

A substantial exploration program has been conducted on EL23514 during 8 years of tenure, initially by Astro (2003-2006) and then by Legend (2006-2011). Varieties of exploration tools were used with an aim to develop a coherent exploration model and identification of highly prospective drilling targets. Geophysical work included acquisition of Falcon Gravity, HoistEM/magnetic and ground gravity data and detailed interpretation of proprietary, historical company and semi-regional NTGS geophysical data. HMA sampling was conducted to find new or validate previously known indicator mineral targets. Geochemical surveys comprise microprobe analysis of indicator minerals and assaying of surface samples.

Photogeological mapping was carried out to enhance litho-structural understanding of the area. Drilling was conducted to drill test high ranking targets.

There is now a greater appreciation of chemical characteristics of indicator minerals (mainly chromites) from the Abner Range. The variability in the indicators mineralogy highlights the complexity and difficulty in pinpointing a particular source within the project. Notwithstanding with the unfavourable exploration outcomes achieved so far, all samples which have been flagged as 'Unresolved' or 'Positive' will need to be followed up in the field in the coming year.

An SEL application has been lodge with the Department over EL23514 to gain sufficient time to follow up encouraging results to a successful conclusion.

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Legends International Holdings Inc., Combined Technical Report GR140/09: SEL26397, EL23117, EL23118, EL23513, **EL23514**, EL24285, EL24286, EL23993, EL26404, EL22307, EL23931 Calvert Hills Project, for the period 3 August 2009 to 2 August 2010.

# APPENDIX 1

## Drill Collars

### (Drill holes ABRC01-ABRC19)

(see attached file: EL23514\_2011\_F\_01\_Collars )

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## APPENDIX 2

### Downhole Geochemical Data (Drill holes ABRC01-ABRC19)

(see attached file: EL23514\_F\_02\_DownholeGeochem)

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# APPENDIX 3: Geophysical Data Ground Gravity Survey (see attached file)

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# APPENDIX 4:

## MMI Geochemical Data

(see attached file: EL23514\_2011\_F\_04\_SurfaceGeochem)

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