19 August 2019

## Eyre Peninsula High Purity Alumina Exploration Target

## Highlights

- Substantial Exploration Target reported for the Eyre Peninsula High Purity Alumina Project (EPHPA Project).
- Mineralisation outcrops and is easily accessed.
- The Exploration Target is based on historical exploration results.
- Additional High Purity Alumina (HPA) occurrences recorded within the Archer tenement area that have not been included in this Exploration Target provides exploration upside.
- The EPHPA Project is located 150km south east of Andromeda Metals' Poochera Project, 115km west of the Whyalla port and in close proximity to road, rail and other critical infrastructure.

Archer Exploration Limited ("Archer", "Company") is pleased to announce a maiden Exploration Target for its Eyre Peninsula High Purity Alumina Project ("EPHPA Project") located 12km south of Kimba, South Australia. The EPHPA Project area is approximately 150km south east of Andromeda Metals Ltd (ASX:ADN) Poochera Project and is within close proximity to existing power, water, road, rail and other critical infrastructure.

A review of historical drill results has resulted in the establishment of a maiden kaolin Exploration Target of 55Mt - 130Mt at a grade of 33 - 36% Al<sub>2</sub>O<sub>3</sub> (-53 µm size fraction) for the EPHPA Project. Kaolin is an aluminous clay that is used as the feedstock for high purity alumina production. Investors should be aware that the potential quantity and grade of the Exploration Target is conceptual in nature, there has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource.

The Exploration Target only includes the Kelly Tank and Bunora kaolin prospects (Fig. 1) and does not include other known kaolin occurrences within Archer's Eyre Peninsula tenement area. These other targets include Bunora East, Bunora West (Fig. 4).

The Exploration Target is based on historical drilling, across 72 percussion drill holes, and auger drilling undertaken by Pechiney (1968 - 1971) and CSR (1971 – 1973). This historical drilling and trenching intersected substantial widths of high purity alumina (HPA) mineralisation over an extensive area. The initial exploration work was focussed on the exploration for kaolin for use in paper manufacture rather than for HPA production.

**Commenting on the Project, Archer Executive Chairman Greg English said**, "We have been pleasantly surprised by the recent increase in merger and acquisition activity within the HPA sector. On the Eyre Peninsula we have declared a large HPA Exploration Target that is based on a relatively conservative interpolation of grade and tonnage from historical drill results".

"The Exploration Target only includes Kelly Tank and Bunora and does not include other known kaolin occurrences within the area of Archer's Eyre Peninsula tenements."

"The Project is ideally situated close to existing rail, power, gas and other significant infrastructure which will aide further exploration and possible project development. The development of this potential HPA project is consistent with Archer's strategy of pursuing opportunities in the reliable energy space." said Mr English.



#### Fig. 1. EPHPA Project location map.

#### High Purity Alumina (HPA) Markets

High purity alumina, or 'HPA', is a high margin and highly demanded product critical to a number of high-tech applications<sup>†</sup>, in particular HPA is critical for two fast-growing industries: Light emitting diode (LED) lighting and lithium-ion batteries. HPA is the non-substitutable ingredient essential for the production of synthetic sapphire substrates upon which LEDs are formed; there is no reported substitute for HPA in the synthetic sapphire production process.

HPA is a critical input in the production of synthetic sapphire - one which has no substitute. Applications include: substrates for LED lights, lenses and semiconductors; scratch-resistant sapphire glass used for optical lenses, watch faces, televisions, tablet and smartphone components; and bio-medical devices and phosphors.

Lithium-ion battery manufacturers are using HPA as a coating to reduce separator sheet shrinkage and combustibility.

<sup>&</sup>lt;sup>†</sup> IBISWorld Industry Report C2131 August 2018. Alumina Production in Australia





**Fig. 2.** Google Earth image showing outcropping kaolin (white colour) within the Kelly Tank Exploration Target area.

#### **Recent HPA Merger and Acquisition Activity**

HPA demand is set to escalate and outstrip production due to forecast global electric vehicle ("EV") adoption. The global increase in EV adoption and forecast increase in global HPA demand has led renewed interest in HPA companies and projects, examples include:

- <u>Andromeda Metals Ltd</u> (ASX:ADN) signs agreement to earn a joint venture interest in Minotaur Explorations Ltd's (ASX:MEP) kaolin-halloysite projects located approximately 100km west of Archer's EPHPA Project. Andromeda to spend \$6 million over five years to earn a 75% interest in the tenements (MEP ASX announcement 26 April 2018).
- <u>Metalsearch Limited</u> (ASX:MSE) entered into a binding agreement for the acquisition of the Abercorn High Purity Alumina Project located in Queensland. Metalsearch to acquire the project for \$1.76 million (payable in cash and MSE shares) plus total deferred consideration of up to 150 million MSE shares, subject to satisfaction of certain conditions precedent (MSE ASX announcement 13 August 2019).
- <u>Alltech Chemicals Limited</u> (ASX:ATC) entered into agreements for the transactions outlined in its German project equity strategy (ATC ASX announcement 18 July 2019). The strategy involves the acquisition of 29% of the shares of Frankfurt stock exchange listed Youbisheng Green Paper AG (to be re-named Altech Advanced Materials AG (AAM)); and the sale by Altech of a right to AAM to acquire 49% of Altech's high purity alumina (HPA) project for US\$100m.



#### About the Project

The EPHPA Project is 100% owned by Archer Energy & Resources Pty Ltd, a wholly owned subsidiary of Archer. The EPHPA Project kaolin Exploration Target includes the Kelly Tank and Bunora prospects. Kelly Tank crosses two separate tenements, Waddikee (EL 5815) and Caralue Bluff (ELA 2019/102) whereas Bunora is contained wholly within Waddikee (EL 5815). The regional targets not included in the Exploration Target are found within the Waddikee (EL 5815) tenement area.

Pechiney (Australia) Exploration Pty Ltd ("Pechiney") and CSR Limited ("CSR") drilled and trenched at Kelly Tank and Bunora between 1968 – 1971. CRA Ltd ("CRA") also explored the ground between 1979 - 1986 for metals and encountered numerous deeply weathered kaolin dominant intervals near to the old Pechiney drilling. The original Pechiney efforts was targeted on the exploration for kaolin suitable for use in paper manufacture. Therefore, only bright white kaolin was considered. The Company believes that the kaolin may be suitable for use in HPA processing based on the metallurgical test results reported by Pechiney.

#### **Exploration Target calculation and assumptions**

The kaolin Exploration Target for the EPHPA Project is reported as a range 55Mt – 130Mt at a grade of 30-36% Al<sub>2</sub>O<sub>3</sub> (at -53µm). The following methodology was used in the calculation of the Exploration Target at Kelly Tank and Bunora:

- An outline for each of the Kelly Tank and Bunora areas was created from historical Pechiney results (smaller area, lower range) and CSR exploration results (larger area, upper range). These surface areas were used to calculate the tonnage range estimation.
- Average thickness of 11m has been assumed for Kelly Tank and 10m for Bunora. Both Kelly Tank and Bunora are open at depth. No intervals deeper than 30m from the surface were included in the Exploration Target calculation.
- Density of 2 for kaolin has been assumed for tonnage targets. The density of the material (SG) is theoretical and considered to be conservative. No work has been completed determine the accuracy of the density assumption. It is believed to be conservative estimate due to density work completed on the nearby Campoona gneisses which have a density of +2.
- The Exploration Target is based upon a recovery from the -53µ size fraction of feed stock, this figure roughly equates to 50% of the feedstock (i.e. kaolin is 50% of the *in-situ* host material).

	Tonnes* (Mt)		Grade (Al₂O₃, <53µm)		
Location	Lower	Upper	Lower	upper	
Kelly Tank	45	105	30%	36%	
Bunora	10	25	30%	36%	
Exploration Target	55	130	30%	36%	

**Table 1**. EPHPA kaolin Exploration Target showing upper and lower ranges.



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The Exploration Target has an average grade of between 30 and 36% Al<sub>2</sub>O<sub>3</sub>. The grade was determined from results of Pechiney and CSR test work on the +10  $\mu$ m, -53  $\mu$ m size fraction. The Company would expect the grade to increase when measured at the +10  $\mu$ m, -40  $\mu$ m size fraction used by most ASX listed HPA companies to report Al<sub>2</sub>O<sub>3</sub> grade.



**Fig. 3.** EPHPA Project showing upper range areas (i.e. based on CSR exploration results) for Kelly Tank and Bunora Exploration Targets.

#### **Regional Geology**

Basement rocks on Eyre Peninsula are part of the Gawler Craton, an ancient shield comprising metasediments, volcanics and granite of Archaean to Middle Proterozoic age. Oldest basement rocks are Sleaford Complex granitic gneiss and garnetiferous and migmatitic paragneiss of late Archaean to early Proterozoic age. These were deformed during the Sleaford Orogeny (2500-2300 Ma), a high metamorphic grade, gneiss-forming event. Deep weathering of the Cleve Uplands, south of Kimba on northern Eyre Peninsula, has resulted in widespread kaolinisation of early Proterozoic Hutchinson Group schist and Lincoln Complex.

#### **Historical exploration**

During the late 1960s and early 1970s, kaolinised bedrock, south of Kimba on northern Eyre Peninsula, was investigated by Pechiney and CSR Ltd. Exploration drilling of 102 holes outlined four broad areas of kaolinisation at Kelly Tank, Bunora, Campoona Hill and Chinmina Creek. Kaolin from areas with greatest perspectivity (Kelly Tank and Bunora) were subsequently



investigated as a possible source of raw material for coating paper and for refractory and ceramic manufacture.

In late 1969, a joint venture between Pechiney and CSR Ltd, through its subsidiary Mineral Engineers Pty Ltd, was negotiated to assess the potential of Kimba kaolin for use in the paper industry. A total of 72 percussion holes (1,096m) were drilled at Kelly Tank, Bunora and Bunora East by Pechiney, additional holes were drilled regionally (Fig. 4).



**Fig. 4.** Map showing collar locations of Pechiney and CSR drill collars. Collar coordinates are also presented in Appendix A.

Preliminary tests on brightness and particle size distribution indicated that the kaolin had potential for use in the paper industry. Trenches were bulldozed in the Kelly Tank and Bunora areas to obtain bulk samples. Two trenches to a maximum 7m (20 ft) depth were excavated at Bunora and Kelly Tank and bulk samples were extracted by cutting vertical channels down the sides of the trenches. At the time, the kaolin was considered not to be suitable for use in the high-grade paper coating markets.

Between 1979 – 1986, CRA explored the district for metals and encountered numerous deeply weathered kaolin dominant intervals near to the old Pechiney drilling. No additional work was undertaken by CSR on kaolin material as it was not the focus of their exploration.

#### **Next Steps**

The Company intends to undertake shallow aircore drilling and metallurgical test work to verify the results from the Pechiney and CSR exploration. Exploration activities can commence once cropping is finished and all landowner and government approvals are in place. The Company will look for opportunities for co-development or divestiture the EPHPA Project.



#### For further information, please contact:

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#### **Competent Person Statement**

The information in this announcement that relates to Exploration Results is based on information compiled by Mr Wade Bollenhagen, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy and is a full-time employee of Archer Exploration Limited.

Mr Bollenhagen has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr. Bollenhagen consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.



JORC Code, 2012 Edition – Table 1 Section 1 Sampling Techniques and Data (Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code Explanation	Commentary
Sampling Techniques	<ul> <li>Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as downhole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul> <li>No details are reported on the sampling techniques provided.</li> <li>All historical work will need repeating for any resource reporting.</li> </ul>
Drilling Techniques	• Drill type (e.g. core, reverse circulation, open hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).	<ul> <li>Percussion drilling (Mahew 1000) with a cyclone and wet-dry splitter.</li> <li>No other details provided</li> </ul>
Drill Sample Recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</li> </ul>	Drill sample recovery is unknown.



Criteria	JORC Code Explanation	Commentary
Logging	<ul> <li>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul> <li>Simple hand written logs exist from the time of drilling and trenching.</li> <li>It is a quantitative in nature.</li> <li>It is assumed whole holes are logged.</li> <li>All drill samples were examined under binocular microscope for kaolin</li> </ul>
Sub-Sampling Techniques and Sample Preparation	<ul> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate/second-half sampling.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul> <li>Sampling methodology has not been exhaustively reviewed, it is believed that sub-sampling would have occurred at the drill rig, however the nature of this is unknown.</li> <li>Quality control measures are unknown, along with sample size being appropriate.</li> </ul>
Quality of Assay Data and Laboratory Tests	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> <li>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</li> </ul>	<ul> <li>Considerable work was undertaken during 1969 to 1972 by Penchiney on the kaolin it discovered</li> <li>Particle size distribution and powder XRF was undertaken for mineralogy on drill and trench samples collected in 1969.</li> <li>Sept 1970, Amdel test work on the brightness of the 53 µm fractions of trench material determined a range of 86% to 96%.</li> <li>Nov-1971 to April_1972 Amdel work included size fractions and testing of size fractions of industrial clay use and by-product potential, these tests were directed at the 2 µm fraction.</li> <li>No modern day work has been completed on the prospects.</li> </ul>



Criteria	JORC Code Explanation	Commentary
Verification of Sampling and Assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul> <li>No verification of historical work has been undertaken by Archer.</li> <li>In 1993, the SA government undertook a review of the kaolin deposits on the Eyre peninsula, Report Book 93/57, where this historical work is summarised.</li> </ul>
Location of Data Points	<ul> <li>Accuracy and quality of surveys used to locate drillholes (collar and downhole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	• Data points were all originally recorded in AMG co-ordinates and cannot be used for resource estimation, all work will need to be replicated for accuracy.
Data Spacing and Distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul> <li>Data spacing and accuracy is sufficient for an Exploration target, but is insufficient for any resource estimation</li> <li>Compositing has occurred.</li> </ul>
Orientation of Data in Relation to Geological Structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	<ul> <li>It is unknown if the drilling has introduced any bias, as there is too little information at this stage.</li> <li>The types of rocks that have been weathered to produce the kaolin cover very large aerial extents, far beyond the areas deemed exploration targets.</li> <li>Faults and other fracture type systems can enhance local weathering, ie deepen the system, it is unknown what influence if any these have played in the kaolin development,</li> </ul>
Sample Security	The measures taken to ensure sample security.	• Unknown for the time, best practices for the era are believed to have been used.



Criteria	JORC Code Explanation	Commentary
Audits or Reviews	• The results of any audits or reviews of sampling techniques and data.	<ul> <li>No audits undertaken.</li> <li>One review by the SA government in 1993 and summarised in Report book 93/57.</li> </ul>



## Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code Explanation	Commentary
Mineral Tenement and Land Tenure Status	<ul> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</li> </ul>	<ul> <li>Tenement status confirmed on SARIG</li> <li>All work being reported is from EL 5815 and ELA 2019/102, Archer Energy &amp; Resources Pty Ltd (a subsidiary of AXE) owns the tenement.</li> <li>The granted tenement is in good standing with no known impositions.</li> <li>It is unknown if the ELA will be granted, however no reason can be seen for it not to be.</li> </ul>
Exploration Done by Other Parties	Acknowledgment and appraisal of exploration by other parties.	<ul> <li>Pechiney (1968 - 1971) and CSR (1971 - 1973).</li> <li>WMC (CRA) mid 1980's, exploring for base metals.</li> <li>Other explorers have held exploration licences over the ground up till the current date. Exploration has been for precious metals</li> </ul>
Geology	Deposit type, geological setting and style of mineralisation.	• Deep weathering of the Cleve Uplands, south of Kimba on northern Eyre Peninsula, has resulted in widespread kaolinisation of early Proterozoic Hutchinson Group schist and Lincoln Complex.



Criteria	JORC Code Explanation	Commentary
Drillhole Information	<ul> <li>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:         <ul> <li>Easting and northing of the drill hole collar</li> <li>Elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>Dip and azimuth of the hole</li> <li>Downhole length and interception depth</li> <li>Hole length</li> </ul> </li> <li>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</li> </ul>	<ul> <li>Collar data are presented as Appendix A to the release.</li> <li>All holes were drilled vertically.</li> <li>Elevations are unknown.</li> </ul>
Data Aggregation Methods	<ul> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul> <li>No drill assays are being reported, a Exploration target range for Kaolin is being presented as between 30 to 36 % AL<sub>2</sub>O<sub>3</sub>.</li> </ul>
Relationship Between Mineralisation Widths and Intercept Lengths	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the downhole lengths are reported, there should be a clear statement to this effect (e.g. 'downhole length, true width not known').</li> </ul>	<ul> <li>It is unknown if there are relationships between hole angles (vertical) and the geometry of the weathered rocks containing kaolin.</li> <li>Only down hole lengths are known</li> </ul>
Diagrams	• Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	• Plans are shown indicating drill holes in the area and those being used to influence the Exploration Target.



Criteria	JORC Code Explanation	Commentary
Balanced Reporting	<ul> <li>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</li> </ul>	The reporting is considered to be balanced.
Other Substantive Exploration Data	<ul> <li>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</li> </ul>	None to report at this stage of the review.
Further Work	<ul> <li>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	• Exploration work is required to confirm the historical work and advance the projects towards a more certain nature, which will hopefully lead to a confidence level where resources can be estimated.



Hole Id	MGA East	MGA North	Depth (m)	Dip	Azimuth
A01	632748	6317852	1	-90	0
A02	632756	6317669	10	-90	0
A03	632482	6317730	2	-90	0
A04	632627	6317692	1	-90	0
A05	632886	6317692	3	-90	0
A06	633015	6317692	2	-90	0
A07	629473	6317783	10	-90	0
A08	629579	6317813	2	-90	0
A09	629724	6317799	10	-90	0
A10	629778	6317974	8	-90	0
A11	629366	6317783	10	-90	0
A12	628901	6315483	9	-90	0
A13	629016	6315201	5	-90	0
A14	629191	6315124	6	-90	0
A15	631766	6315048	4	-90	0
A16	631926	6314919	5	-90	0
A17	632078	6314911	5	-90	0
A18	634021	6317669	7	-90	0
A19	634211	6317836	4	-90	0
A20	634348	6317653	4	-90	0
A21	640491	6318862	4	-90	0
A22	640636	6319014	3	-90	0
A24	641055	6319129	5	-90	0
A25	640948	6319030	4	-90	0
A26	641161	6319250	3	-90	0
A27	638540	6317130	5	-90	0
BB01	623777	6322680	20	-90	0
BB02	624148	6321453	24	-90	0
BB03	623860	6319917	20	-90	0
BB04	624238	6320053	15	-90	0
BB05	624620	6320209	15.5	-90	0
BB06	625260	6320530	7	-90	0
BB07	626845	6321235	8	-90	0
BB08	624437	6317836	7	-90	0
BB09	624921	6317889	9	-90	0
BB10	625257	6318091	11	-90	0
BB11	625042	6316672	8	-90	0
BB12	625687	6316870	8	-90	0
BB13	627851	6317688	10	-90	0
BB14	625611	6316333	13.5	-90	0
BB15	628558	6315809	4.5	-90	0
BB16	623565	6323188	10.5	-90	0
BB16 bis	623262	6323637	14	-90	0
BB17	623282	6322523	12	-90	0

# Appendix A Drill Hole Collars used to calculate EPHPA Exploration Target (MGA Zone 53)



Hole Id	MGA East	MGA North	Depth (m)	Dip	Azimuth
BB18	624079	6322740	11	-90	0
BB19	623028	6321650	14	-90	0
BB20	623945	6322045	17	-90	0
BB21	623440	6321140	14	-90	0
BB21 bis	623860	6321250	6	-90	0
BB22	624502	6321554	17	-90	0
BB23	623971	6320659	14	-90	0
BB24	624356	6320829	16	-90	0
BB25	624673	6320956	20	-90	0
BB26	624942	6320354	19	-90	0
BB27	624172	6319425	7	-90	0
BB28	624775	6319672	14	-90	0
BB29	627741	6318697	17	-90	0
BB28bis	625420	6319914	33	-90	0
BB30	624047	6318478	9	-90	0
BB31	625347	6318947	7.5	-90	0
BB32	628509	6321703	7	-90	0
BB33	628856	6311336	7.5	-90	0
BB34	629147	6320913	12	-90	0
BB35	629324	6320472	29	-90	0
BB36	629799	6320899	20	-90	0
BB37	629705	6320462	8	-90	0
CP332	620440	6322030	8	-90	0
CP333	620390	6322000	10	-90	0
CP334	620340	6321980	10	-90	0
CP335	620300	6321960	8	-90	0
CP336	620250	6321940	20	-90	0
CP337	620230	6321740	20	-90	0
CP338	620220	6321730	52	-90	0
CP339	620200	6321720	20	-90	0
CP340	620100	6321720	20	-90	0
CP3/1	620100	6321720	10	-90	0
CP3/2	620000	6321730	10	-90	0
CP342	619900	6321730	8	_90	0
CP343	619800	6321730	30	-70	0
CP344	619710	6321730	14	-70	0
CP345	619610	6321730	40	-70	0
CP340	619500	6321730	40	-70	0
CP347	620420	6321730	1/	-70	0
CP340	620420	6221020	4	-70	0
CP350	620400	6221010	52	-70	0
CP350	620370	6321000	52	-70	0
CP351	620330	6321000	JZ 16	-70	0
CP352	620330	6320770	40	-70	0
CF 333	620310	6320700	20	-70	0
CF 334	620410	6320700	10	_00	0
	620740	6320070	10	_00	0
CP400	620230	6320770	1/	-70	0
CP407	620170	6320700	1/1	-70	0
UF 400	020140	0320730	14	-70	U



Hole Id	MGA East	MGA North	Depth (m)	Dip	Azimuth
CP489	630100	6320930	14	-90	0
CP489	630100	6320930	14	-90	0
CP490	620050	6320920	10	-90	0
CP491	620000	6320910	30	-90	0
CP492	619950	6320890	42	-90	0
CP493	619900	6320880	32	-90	0
CP494	619850	6320880	28	-90	0
CP495	619800	6320860	28	-90	0
CP496	619750	6320850	28	-90	0
CP497	619700	6320840	28	-90	0
CP501	632750	6322780	28	-90	0
CP502	632700	6322780	28	-90	0
CP503	632650	6322780	44	-90	0
CP504	632600	6322790	32	-90	0
CP505	632550	6322790	26	-90	0
CP506	632490	6322790	14	-90	0
CP507	632450	6322790	16	-90	0
CP508	632220	6322810	14	-90	0
CP509	632130	6322810	20	-90	0
CP510	631990	6322820	14	-90	0
CP511	631940	6322820	16	-90	0
CP512	631890	6322830	20	-90	0
CP513	631840	6322830	16	-90	0
CP514	631780	6322830	14	-90	0
CP515	631740	6322840	14	-90	0
CP516	631680	6322840	20	-90	0
CP517	631640	6322840	28	-90	0
CP518	631590	6322840	26	-90	0
CP519	631530	6322840	20	-90	0
CP520	631490	6322850	10	-90	0
CP521	631440	6322840	6	-90	0
CP522	631390	6322850	10	-90	0
CP604	621290	6318490	50	-90	0
CP605	621250	6318490	30	-90	0
CP606	621210	6318490	6	-90	0
CP607	621200	6318920	14	-90	0
CP608	621160	6318910	32	-90	0
CP620	628730	6315330	40	-90	0
CP621	628790	6315260	48	-90	0
CP622	628840	6315230	52	-90	0
CP623	629260	6315010	36	-90	0
CP624	629280	6315000	30	-90	0
CP627	636300	6317600	24	-90	0
CP628	636360	6317600	12	-90	0
CP629	636410	6317600	6	-90	0
CP630	636210	6317600	28	-90	0
KT01	637832	6317802	15	-90	0
KT02	638249	6317645	20	-90	0
KT03	638649	6317057	47	-90	0



Hole Id	MGA East	MGA North	Depth (m)	Dip	Azimuth
KT04	638971	6317392	9	-90	0
KT05	639236	6315955	20	-90	0
KT06	639585	6316322	15	-90	0
KT07	639891	6316758	9	-90	0
KT08	640063	6315234	3	-90	0
KT09	640438	6315566	20	-90	0
KT10	640672	6316012	4	-90	0
KT10bis	640650	6316125	14	-90	0
KT11	640933	6314462	4.5	-90	0
KT12	641252	6314880	14	-90	0
KT13	641506	6315241	18	-90	0
KT14	642149	6314106	20	-90	0
KT15	638923	6316837	28	-90	0
KT16	638603	6316471	15.5	-90	0
KT17	638260	6316320	13.5	-90	0
KT18	638821	6317208	26	-90	0
KT19	638634	6316920	28	-90	0
KT20	638346	6317308	18	-90	0
KT21	638249	6317645	9	-90	0
KT22	637868	6317240	26	-90	0
KT23	637778	6318269	20	-90	0
KT24	637340	6317757	20	-90	0
KT25	637317	6318217	4.5	-90	0
KT25bis	637276	6318225	27.5	-90	0
KT26	637352	6316175	7.5	-90	0
KT27	636631	6316774	16	-90	0
KT28	637323	6316806	38	-90	0
KT29	637295	6317252	12	-90	0
KT30	637820	6316720	18	-90	0