

## QUARTERLY REPORT SEPTEMBER 2011

### ABOUT ARGO EXPLORATION LTD

Argo Exploration Limited ('Argo') (ASX Code 'AXT') is a junior exploration company searching for iron oxide copper-gold, gold, uranium and base metal deposits in prospective locations of the Gawler Craton, South Australia. Argo is a focused explorer searching for world-class ore deposits currently within two key project areas, namely Intercept Hill and Toondulya.

Argo Exploration Limited  
ACN: 120 917 535  
Suite 304, 22 St Kilda Road  
St Kilda Victoria 3182  
Australia

Phone (61 3) 9692 7222  
Fax (61 3) 9529 8057

[www.argoexploration.com.au](http://www.argoexploration.com.au)

**Dr Hugh K Herbert, Chairman  
& Managing Director**

Phone (61 7) 4636 2788 (Direct)  
Fax (61 7) 4635 6867 (Direct)  
Mob (61 7) (0)417 005 465

Email  
[hugh.herbert@argoexploration.com.au](mailto:hugh.herbert@argoexploration.com.au)

### KEY POINTS

#### ***Intercept Hill (EL4164)*** **Argo – Xstrata Copper Joint Venture**

- Drilling at Winjabbie East Prospect commenced 16<sup>th</sup> June with second hole of 2011 program, WJEDH001, passing into iron oxide-altered basement, overprinted by massive chlorite-magnetite-garnet-pyroxene ± sulfide skarn, at 708.8 meters depth. Hole completed at 1053.6 meters in weakly chlorite-altered, locally crackle-fractured meta-siltstone on 14<sup>th</sup> July.
- Drill core shipped to Xstrata Copper's Mt Isa facilities for sampling. Analyses undertaken by ALS in Townsville and Brisbane.
- Analytical results received. Broadly similar to results from Argo's drill hole IHAD8.
- Xstrata Copper encouraged by results and plans an additional 2 to 3 holes to further test the Winjabbie Prospect with options for further drilling subject to results. Cultural heritage clearances in place.
- JV meeting planned for mid-October to review project, timetables and consider other possible drilling options moving forward.

#### ***Toondulya (EL4284)*** **Argo 100%**

- Reprocessing and modeling of Argo's high resolution aeromagnetic data set by Xstrata Copper underway.
- Orientation Induced Polarization (IP) survey by Search Exploration Services Pty Ltd of Adelaide halted following completion of two lines due to access difficulties and damage to equipment.

#### ***Pantheon Plc*** **Argo 6.83%**

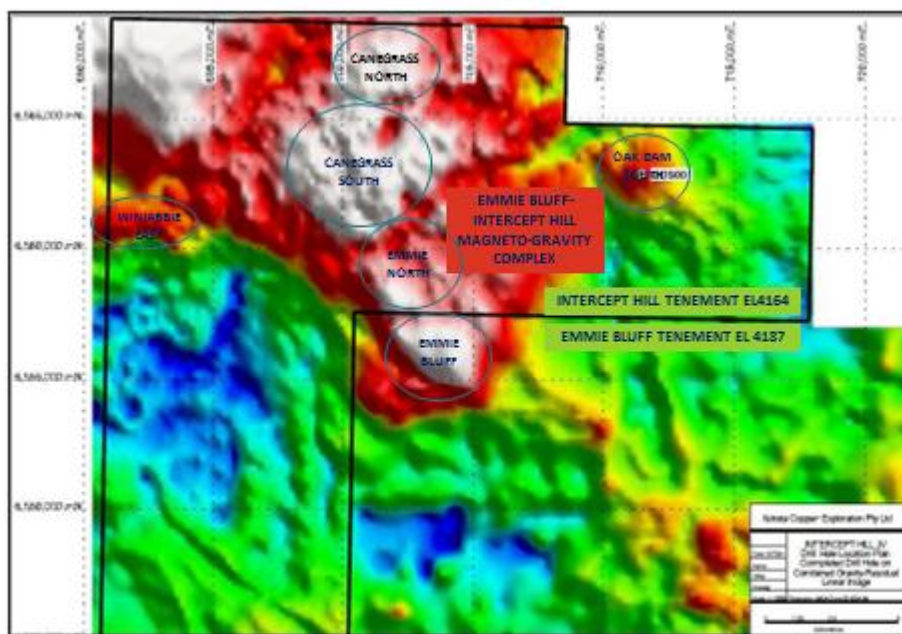
- No updates have been received from Pantheon during Quarter concerning on-going delay in securing suitable drill rig to commence the Kara Farms #1 well in Tyler County, East Texas.
- The delays, coupled with lack of news flow, is clearly impacting Pantheon's share price. This, coupled with current high exchange rates, is having a near-term, adverse impact on unrealized value of Argo's shareholding in Pantheon.

**SUMMARY OF ACTIVITY**

**INTERCEPT HILL EL4164 (Argo-Xstrata Copper Joint Venture)**

**Drilling Program - Winjabbie East Prospect**

Drilling at Winjabbie East Prospect (Fig. 1) commenced 14<sup>th</sup> June 2011. The vertical hole, WJEDH001, was collared at 691467E; 6560951N MGA94, Zone 53), some 650 meters WSW of Argo’s diamond drill hole IHAD8, and was completed to a depth of 1053.6 meters on 14<sup>th</sup> July.



**Figure 1: Regional gravity image illustrating the distribution of the Emmie Bluff-Intercept Hill magneto-gravity complex and showing the principal prospect areas. 5,000 meter grid. Winjabbie East Prospect presents as moderate, crescent-shaped gravity anomaly draped off the northern flank of strong circular magnetic anomaly, close to the western boundary of EL4164.**

WJEDH001 was designed to further test the economic potential of the dense, copper-mineralized, iron oxide altered basement, overprinted by skarn and calc-silicate rock types, intersected in Argo’s drill hole IHAD8.

**Tapley Hill Formation**

WJEDH001 intersected a thick sequence of Tapley Hill Formation, a dolomitic black shale unit, from 486.8 meters to 670.0 meters. Only sparse mineralization, in the form of some zones of very fine grained pyrite with rare possible chalcopyrite or chalcocite, appear to be visually present in the core. This paucity of mineralization is reflected in the assay results (Table 1):

From (m)	To (m)	Meters	Zn (%)	Ag (g/t)	Cu (%)	Cut-off
515	529	14	0.12			0.1%
515	539	24		1.7		1.0 g/t
507	519	12			0.05	0.02%

**Table 1: Assay results for zinc, silver and copper in Tapley Hill Formation exceeding the designated cut-offs.**

For personal use only

**Basement**

Basement was intersected around 670m (the unconformity is not totally clear), and showed strong chlorite-magnetite/hematite alteration (670-757m), strong clinopyroxene-garnet-chlorite-magnetite-hematite skarn alteration (757-822m), followed by moderate to weakly altered (chlorite, earthy and specular hematite, albitization/silicification) granitic sandstones, sandstones and laminated siltstones (822- EOH at 1053.6).

Patchy copper, gold and silver is reported in skarn-altered basement rocks with moderate cerium and lanthanum (up to 0.2% and 0.15% respectively) reported as generally coinciding with some copper-enriched intervals. Iron levels are high in skarn-altered basement at around 20% with a maximum of about 38% in the main skarn zone.

Sulfide mineralization in the basement is mainly localized within the intense iron oxide altered and skarn zones (Fig. 2) as blebs and disseminations within the Fe oxides, and as veins and stringers, often associated with quartz and feldspar. Species identified include pyrite and chalcopyrite, with possible bornite and pyrrhotite. The veins are particularly significant in a 10 meter interval centered around 815m, with numerous chalcopyrite-pyrite veins and a thick chalcopyrite-quartz vein (Fig. 3). Elsewhere, in areas of visually inconspicuous mineralization, assays returned better than expected values. Metal values drop off markedly once through the skarn and into the footwall sandstone and siltstone.



Figure 2: Iron oxide altered basement with localized sulfide commencing two meters below unconformity with cover sequence rocks, WJEDH001.

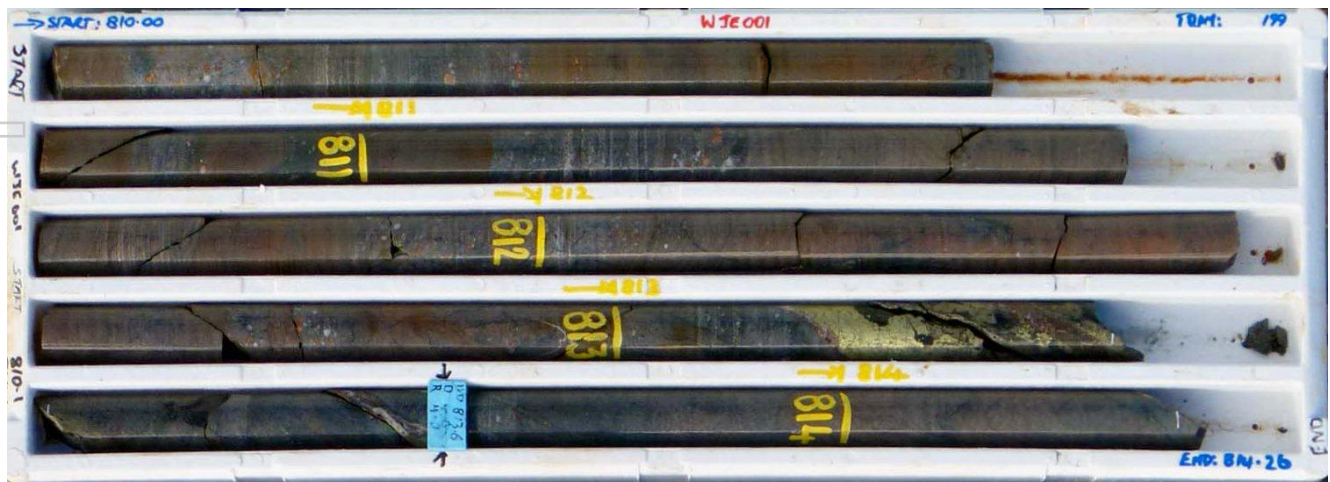


Figure 3: Granitic conglomerate and sandstones traversed by massive chalcopyrite vein, WJEDH001.

For personal use only

Using a 0.1% Cu cut-off and allowing 2 meters internal waste, the main zones of metal enrichment in the basement are as follows (Table 2):

From	To	Meters	Cu %	Au g/t	Ag g/t
709	715	6	0.31	0.02	-
718	725	7	0.10	-	-
787	791	4	0.38	0.06	1.8
813	818	5	0.85	0.06	1.6
Includes					
813	814	1	3.61	0.23	7.5

**Table 2: Main zones of copper, gold and silver enrichment in iron oxide and skarn altered basement; the interval 787 to 791 meters roughly coincides with the best zone (~5m) of cerium-lanthanum enrichment.**

Assay results from WJEDH001 are broadly similar to those obtained from Argo's diamond drill hole IHAD8, collared some 650 meters to the ENE of WJEDH001. Furthermore, WJEDH001 intersected a very similar sequence of lithologies to those observed in IHAD8.

The cover sequence consists of Arcoona Quartzite/Corroberrra Sandstone, Tregolanna Shale, Whyalla Sandstone and a thick package of Tapley Hill Formation. Like IHAD8, the Pandurra Formation is apparently absent (Fig. 4).

The basement package of strong chlorite-magnetite and clinopyroxene-garnet skarn alterations, and the underlying pale sandstones and laminated siltstones is also practically identical to IHAD8, although it is thinner and shallower. Mineralization is associated with the chlorite-magnetite and skarn alterations as blebby interstitial pyrite ± chalcopyrite, as pyrite ± chalcopyrite veins or as massive pyrite-chalcopyrite in quartz feldspar veins.

The alteration in the basement is quite complex. Xstrata Copper has recommended that every effort should be made to characterize the different phases of alteration and relevant timing relations between them. Of most interest are the chlorite-magnetite (hematite) alteration, and the (probably overprinting) skarn assemblage of clinopyroxene (zoned euhedral and anhedral), garnet (multiple colours and zoning), magnetite-hematite, ±chlorite, epidote and carbonate. There is also a late-stage stockwork of gypsum-anhydrite veins requiring assessment.

The Fe oxides are quite abundant and are present in various forms such as interstitial magnetite-hematite, vein magnetite, hematite, specular hematite and as selectively replaced bands. Interestingly, most of the magnetite appears to coexist with hematite. At this stage it is not clear exactly what this relationship is, but initial thoughts are that a later stage of alteration partially oxidized early-stage magnetite. The gypsum-anhydrite stockwork possibly indicates that the system progressively became more oxidizing through time. Albitization is apparent, especially in the less altered sediments beneath the skarn.

Although the mineralization occurs within the strongly altered zones, the actual relationship between sulfides and the alteration phases is not yet clear and will be investigated further.

The alteration observed in basement of both WJEDH001 and IHAD8 is impressive, and while no wide intersections of significant copper mineralization has been made, it is clear that there is both metal and sulphur in the system. The separation of the 2 holes (650m) also indicates that the alteration system already is of a large size, and the geophysics initially indicates it could be significantly larger still.

The Winjabbie East residual gravity target is, at least in part, related to massive, 'dense' skarn. Such rocks host world-class ore bodies which commonly illustrate sharp transition from economically mineralized to 'unmineralised' skarn. Hence, the target is believed to merit further drill testing and, to this end, Xstrata has advised plans to drill an additional 2 to 3 holes at Winjabbie East to further test the prospect moving forward

For personal use only

with the option to increase the number of holes based on results. Relevant cultural heritage clearances of additional drill sites are in place.

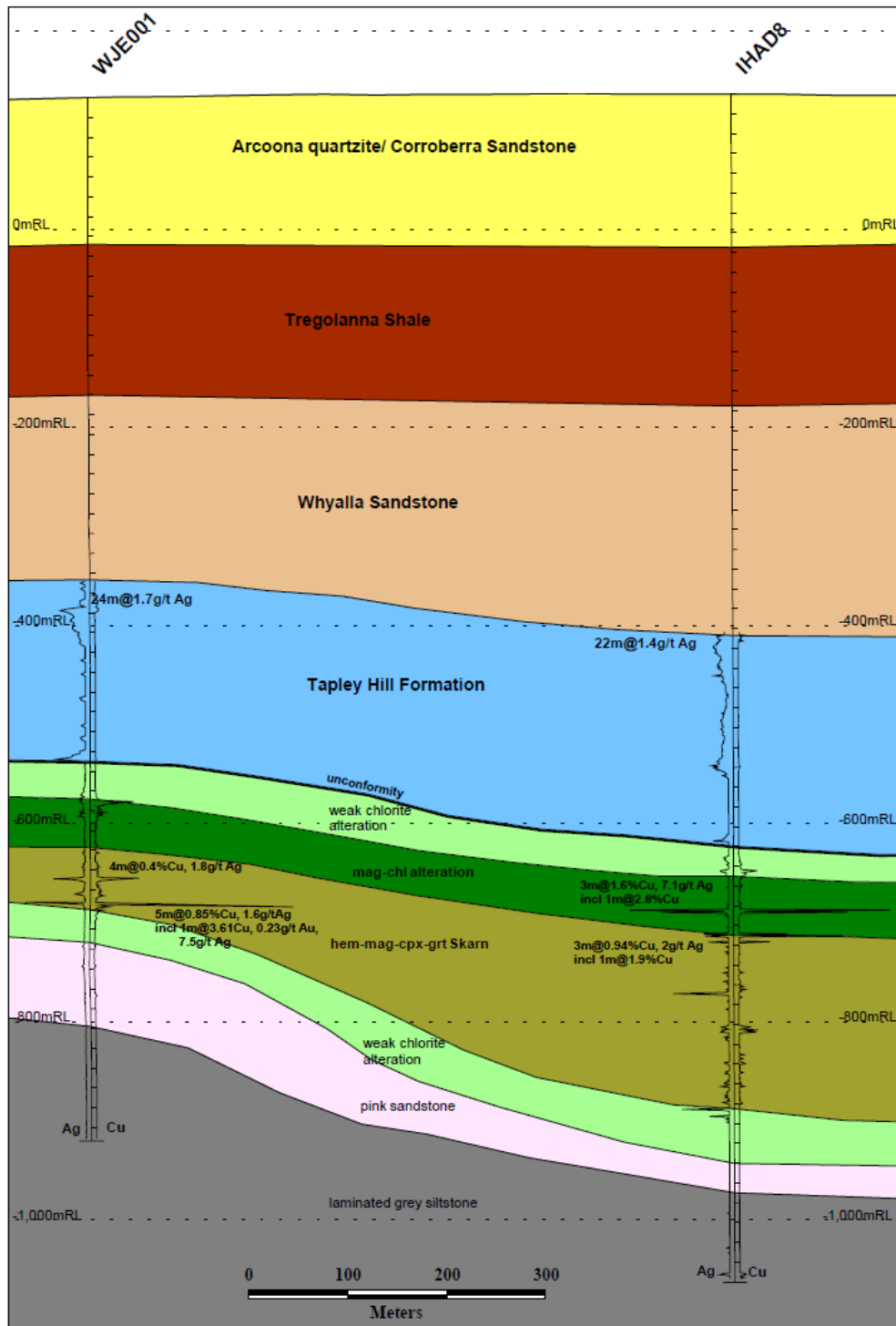


Figure 4: Geological cross section WJEDH001-IHAD8, looking WNW and showing intervals of enhanced copper and silver values. Note the general downward thickening of stratigraphic units in IHAD8 relative to WJEDH001 from Whyalla Sandstone downwards. This may represent thinning over a basement high or it may be due to a growth fault, located between the holes and propagating from the basement up to the base of the Tregolanna Shale.

However, prior to any further drilling, a comprehensive study of core from drill holes WJEDH001 and IHAD8 will be undertaken in coming months in an attempt to establish geochemical and mineralogical vectors which may better indicate preferred sites for future drilling assessment. Planned work during the next quarter includes:

- Detailed characterization of alteration and of alteration parageneses in WJE001 and IHAD8, including detailed petrography and mineral chemistry;
- Comparison with other IOCG and/or Skarn systems (especially Magnetite Skarns);
- Comparison of mineral chemistry between holes for possible system vectors;
- Stable isotope analysis for fluid origin analysis (and therefore prospectivity);
- Reconciliation of geological and geophysical models; and
- Advancement of geological and geophysical models as a means to try and produce a feel for the greater system.

Such work should allow for better placed future drilling. It is planned that this work be commenced promptly to allow for proposals and drilling in early 2012.

#### ***Drill Site Rehabilitation***

Rehabilitation of the ODSDH001 and WJEDH001 drill sites is in progress and will be progressively monitored to ensure full environmental compliance.

#### ***Expenditure***

Total expenditure by Xstrata Copper, for the September Quarter is approximately \$251K giving a cumulative expenditure total since 15<sup>th</sup> March 2010 of about \$1.195M.

#### **TOONDULYA EL4284 (Argo 100%)**

No new field-based activities were undertaken during the Quarter. Orientation Induced Polarization (IP) survey by Search Exploration Services Pty Ltd of Adelaide was halted following completion of two lines due to access difficulties and damage to equipment. Further IP surveying is likely to require line clearing which would be deemed to be high-impact and require extensive submissions to be made and approvals to be obtained. The cost-benefit of proceeding may far outweigh the benefits of direct low-impact drill testing employing techniques not requiring the disturbance of vegetation and other related earth works. Work during the Quarter has focused on assessing the merits of direct drill testing geophysical features versus biogeochemical, and further IP geophysical, surveying.

#### ***Aeromagnetic Data Reinterpretation***

Xstrata Copper has generously offered to reprocess and model Argo's high resolution aeromagnetic data set. This work is in progress and may prove particularly helpful in refining potential drilling targets.

#### ***Renewal of term of EL4284***

Argo has not, at the time of this report, received confirmation of renewal of the term of the tenement for a further period from 15<sup>th</sup> July 2011.

#### **PANTHEON RESOURCES PLC (*Argo principal shareholder*)**

Progress at the planned Kara Farms #1H well ("KF#1H") in Tyler County, East Texas, continues to be delayed due to the operator, Vision Operating Company LLC., taking the view that the cost structure for drilling costs remains artificially high in the context of the present weaker price for natural gas, as a function of the rig count being at or near record highs. This has been spawned in part by the strong oil price and the proliferation of activity in a number of recently discovered unconventional shale plays in the USA. Notwithstanding these delays, the joint venture remains extremely optimistic about the potential for this play, which remains undiminished.

The Texas Department of Transportation has granted the Joint Venture two permits essential for the final stages, both for the completion of the site works for KF#1H and, separately, for a natural gas export pipeline. This will ensure that when a rig is contracted, drilling should be able to commence shortly thereafter.

Despite the lack of activity by the Vision JV, Argo believes that the value of its investment in Pantheon continues to offer the potential to generate material value for Argo shareholders. It is important to note that the delays experienced to date in no way impact the potential of this project; they have simply been a result of the operator taking a view on macroeconomic conditions impacting all gas producers in the USA.

Interestingly, despite the present softer US natural gas prices (and higher drilling costs), a number of larger players in the USA are making significant and material natural gas acquisitions, consistent with a view of stronger possible natural gas prices in the medium term. BHP Billiton's recent \$US12.1 billion takeover of Petrohawk Energy at a 65% premium to the Petrohawk share price follows its \$US4.75 billion purchase of Chesapeake Energy Corp's interest in the Fayetteville Shale gas field in Arkansas in February. In October 2011, Kinder Morgan announced a deal to acquire natural gas pipeline operator El Paso Corporation for \$21 billion, at a 37% premium to El Paso's share price. These acquisitions of on-shore US domestic gas assets are acknowledgement of the move towards cleaner energy in a gas hungry domestic market.

The deal with Petrohawk Energy provides BHP with entry into the prized Eagle Ford Shale in Texas where Petrohawk's Black Hawk project is recognized for delivering the best returns in the onshore oil and gas sector in the United States. Importantly, within Vision's acreage, the primary and secondary target oil/gas reservoirs of the Austin Chalk and Woodbine Sandstone are separated by Eagle Ford Shale. For the time being, Vision is focused on development of its primary and secondary target reservoirs.

## CORPORATE

Cash reserves at the end of the September Quarter stood at \$948,698 with no secured debt. The value of the Pantheon Resources Plc investment stood at \$1,535,332 at an exchange rate of 0.6269.

The Board continues to examine quality commercial opportunities to expand its exploration/development portfolio.

## CORPORATE DIRECTORY

### Board of Directors

Hugh Herbert	Chairman & MD
Meredith Bird	Non-Executive Director
Justin Hondris	Non-Executive Director

### Company Secretary

Melanie Leydin

The information in this report that relates to exploration results, mineral resources and ore reserves is based on information compiled by Dr HK Herbert, who is a Member of the Australasian Institute of Mining and Metallurgy. Dr Herbert has sufficient experience which is relevant to the styles of mineralization and types of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Dr Herbert consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

### Issued Share Capital

Argo Exploration Ltd has 82,800,000 ordinary shares currently on issue.

### Quarterly Share Price Activity

	High	Low	Last
Dec 2010	\$0.135	\$0.064	\$0.125
Mar 2011	\$0.150	\$0.080	\$0.100
Jun 2011	\$0.160	\$0.073	\$0.090
Sept 2011	\$0.110	\$0.036	\$0.040

### Registered Office

Argo Exploration Limited  
Suite 304, 22 St Kilda Road  
St Kilda Victoria 3182  
Australia

Phone (61 3) 9692 7222  
Fax (61 3) 9529 8057  
[www.argoexploration.com.au](http://www.argoexploration.com.au)

### Share Registry

Advanced Share Registry Ltd  
150 Sterling Highway  
Nedlands Western Australia 6009  
Australia

Phone (61 8) 9389 8033  
Fax (61 8) 9389 7871  
[www.advancedshare.com.au](http://www.advancedshare.com.au)

Please direct shareholding enquiries to the share registry