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ASX Limited Company Announcements Office

30th April 2011

TECHNICAL REPORT – QUARTER ENDED 31st MARCH, 2011

ANDEWA

- A 10,000m diamond core drilling program will commence this month and progress throughout 2011 on the possibly 'World Class' Andewa gold and copper mineralised system (figure 1).
 - Exploratory drilling will test the excellent geophysical (chargeability/conductivity/ resistivity) and geochemical (gold/copper) soil and rock outcrop anomalies.
 - The planned drilling could demonstrate the existence of a significant epithermal gold and/or porphyry gold-copper-molybdenum deposit.
- The Frontier exploration team have been undertaking infill grid-based sampling and hand trenching in geochemical and geophysical anomalies to better define possible gold/copper drilling targets and further evaluate the possibility of near surface gold resources.

A 21 square kilometre geophysical and geochemical program was completed in the last half of 2010 and results were compiled, evaluated and reported.

- During the Quarter, the 3D-IP chargeability anomalies <u>doubled</u> in total area to approximately seven square kilometres.
- High-grade gold was also demonstrated in rock chip/channel outcrop assays.
- Extensive and high grade soil sample assays then confirmed that a very large scale gold mineralised system is present with coincident (variably) gold, copper, molybdenum, arsenic and antimony soil anomalism corresponding to high chargeability zones at 50m below topography and to greater depths.
- Epithermal and porphyry style mineralisation was noted and are exploration targets.

Frontier's 100% owned Central New Britain exploration portfolio has been maximised around

the Andewa Project, with the recent EL Application 1951 (2,477 km²) and the gold and copper prospective 'Andewa lookalike' at neighbouring Mt Schrader.

Mts Andewa and Schrader have good access by sea from the nearby port of Kimbe and strong relationships have been built with landowners.



OK TEDI MINING LTD JOINT VENTURES

- 13,000m of diamond core drilling is planned by the JV (figures 1 and 2) for the coming year in 3 of the 5 JV Exploration Licences, commencing late May (relative to aircraft availability).
- OTML have completed large aeromagnetic and radiometric programs at Bulago, Leonard Schultz and Likuruanga to discriminate and rank targets for follow up exploratory drilling.
- The Central New Britain (EL 1598) and East New Britain Exploration Licences (EL 1592) were granted. OTML will undertake aeromagnetic / radiometric geophysical programs within the next year.
- The Central New Britain EL contains multiple known porphyry copper-gold occurrences and/or zinc - gold skarns, plus an un-named porphyry aeromagnetic signature. It has had no exploration for more than 26 years.



- Uasilau -Yauyau is a copper in soil anomaly [historical data] more than 9,000m long and 700m to 2,000m wide. The gold in soil anomaly is more than 2,000m long and 700m wide at the NW end, but much of the grid was not analysed for gold. It has limited drilling, with only 15 generally shallow holes in the 1970's and a miniscule density of around 1 hole/sq km. An entire deep hole returned 304m of 0.12 % copper + 82 ppm molybdenum.
- The Pelepuna Skarn Prospect had continuous outcrops to 4m of 15.8% zinc and 5m of 128 g/t silver. Seven short holes were drilled with results to 16.7m grading 6.88% zinc from near surface. The copper-gold porphyry deposit potential remains undrilled.
- Gavuvu Prospect has very limited trenching completed, but has yielded <u>10m of 150 g/t</u> <u>silver</u>. In addition the Prospect has extensive low tenor gold in soils.

The East New Britain EL covers 1,003 sq km and a 100km strike length of the Baining Structural Zone and poorly explored intrusives (plus volcanics).

- The EL contains excellent potential (on the basis of historical exploration) for porphyry copper and epithermal gold deposits, with multiple aeromagnetic signatures and/or other signs of copper, gold and platinoid mineralisation.
- Most of the area has only had wide-spaced first pass exploration 25 to 30 years ago.
- The EL covers from the NW point of the Gazelle Peninsula to the SE, <u>almost</u> <u>encompassing the Sinivit epithermal gold Mine.</u>
- Limited bulldozer trenching at Doilene Prospect has included <u>10.9m of 26.9 g/t gold</u> (incl. 0.4m of 136.4 g/t gold and 1.0m of 147.8 g/t gold), 2m of 16.9 g/t gold and 4m of 9.84 g/t gold, which all remain un-drilled. These skarns are likely to have been generated by a mineralised porphyry.
- A large toxic element anomaly was shown at the Sikut Caldera, with the LK1 Breccia Prospect outcrop sampling up to 2.5m of 9.6 g/t gold.
- Alluvial platinoids and gold occur in two adjacent tributaries north of Sinivit at Angbitki, with pan concentrates to 29.44 g/t gold, 22.7 g/t platinum and 0.45 g/t palladium and no follow-up in the 3 sq km target area.

Five ELs are subject to 2 joint ventures that require a total earn-in of US\$60 million over 6 years, consisting of US\$12 million for each of the 5 projects. Frontier then has a deferred carry to completion of a Bankable Feasibility Study on each tenement. The Company will retain a 42% interest (dilutable) in the Bulago and Leonard Schultz ELs and a 19.9%

interest (non-dilutable) in the Likuruanga, Central and East New Britain ELs, to the completion of a Bankable Feasibility Study. The JVs cover a total area of 2,690 km². OTML is a major producer of copper concentrate from the Ok Tedi mine (that started operations in 1984) and has become the single largest business contributor to the economy of PNG. In 2009, OTML's export earnings were K4 billion, representing 33% of PNG's total export earnings. The contributions of the mine to PNG are not simply economic, with employment, education and health services all facilitated by the mine.

TASMANIA

- A 1,200m diamond drilling program is being finalised at the Elliott Bay Project in SW Tasmania. Equipment will be demobilised and utilised at the Moina Project over winter (figure 3).
- Exploration License 33/2010 Wanderer River was granted over the 'very lightly' explored belt of volcanic rocks adjoining and to the north of Frontier's Elliott Bay Project (EL 20/96), enhancing and consolidating the tenement portfolio in the southwest. The EL will be surveyed by deeper penetrating new generation beliconter borne electromagnetic methods in O4

helicopter borne electromagnetic methods in Q4.

GENERAL

- Frontier own two diamond drill rigs which are used to help cost effectively define precious and base metal mineralisation on the Company's PNG and Tasmanian exploration properties.
- Additional drilling rigs are being purchased to conduct the deeper drill testing, along with excavators, bulldozers and supporting machinery /vehicles at Andewa.

ANDEWA SUMMARY

The Andewa 3D-IP chargeability anomalies reported in February <u>doubled</u> in total area to approximately seven square kilometres (FIGURES 4 -6).

The awaited and final third of the 21 km², grid-based, three-dimensional induced-polarity geophysical survey at the Andewa gold and copper Project in Papua New

Guinea doubled the total chargeability anomaly area (at more than 30ms) to about <u>seven square kilometres</u>. The anomalies are not closed off in several directions.

- A very large sulphide mineralised system has been compellingly demonstrated by 3D-IP chargeability anomalies from surface to >800m total depth, in three major but discrete zones (Figures 7 -11).
- The newly defined Ekhos chargeability anomaly is 3.3 Km² in area (at 150m below sea level), which is larger than the previously announced Core Chargeability Zone (CCZ) (3.0 km²) and the Ber anomaly (approx. 0.5 km²).
- Ekhos has developed into the largest and closest to surface 3D-IP chargeability anomaly at Andewa, with much of it very intense (>45ms).







- 4 chargeability Each anomaly is surrounded by a sub-circular, highresistivity anomaly that appears to merge near and/or off the edge of the grid, to become one ~ 6km diameter anomaly in the centre of the Mt Andewa caldera, representing probable silicification around the intrusions.
- The CCZ and Ekhos chargeability anomalies are connected by an east-west trending zone and the Ekhos and Ber anomalies are located at higher elevations above sea level (than the CCZ).
- There are strong correlations between known surficial gold and copper and the 3D-IP chargeability anomaly at Ekhos, however, most of that region has never been explored.
- A geophysical consultant is evaluating the data and is defining conductive zones representing probable semi-massive sulphide type mineralisation, which will be drill targeted initially.

High-grade gold, plus silver and copper were demonstrated in Andewa rock channel assays from numerous gold mineralised outcrops, several with different styles of mineralisation 1 targets noted.

 Peak outcrop assay values were 23 g/t gold, 288 g/t silver, 0.919% copper (float rock), 114 ppm molybdenum 1 61% leac



molybdenum, 1.61% lead and 3.59% zinc.

- High gold and silver assays are related to structurally controlled, epithermal gold / silver mineralisation and other combinations to possible 'telescoped' porphyry copper-gold-molybdenum.
- Two highly significant gold mineralised outcrops were discovered and channel chip sampled, returning: 15.0m of 15.48 g/t gold + 21.9 g/t silver (indeterminate true width, but sampled partly along strike) and 11m of 5.44 g/t gold + 85 g/t silver + 0.22% copper. Also 6m of 7.56 g/t gold + 68 g/t silver + 0.25% copper and 3m of 9.20 g/t gold + 32 g/t silver + 0.30% copper.
- Silver mineralised outcrop channel chip samples included 4.0m of 210.5 g/t silver + 0.68 g/t gold + 0.55 % zinc and 3.0m of 137 g/t silver + 0.58 g/t gold.
- Copper mineralised outcrop channel samples included 2.0m of 0.18% copper + 0.90 g/t gold and 0.5m of 0.30% copper + 0.63 g/t gold.
- Additional significant gold mineralised outcrop channel chip intercepts included 0.6m of 23.0 g/t gold + strong arsenic, 2.0m of 6.48 g/t gold, 0.5m of 19.0 g/t gold, 0.6m of 10.3 g/t gold + strong arsenic, 0.3m of 11.4 g/t gold + strong arsenic, 4.0m of 3.80 g/t gold + 12.0 g/t silver + 0.95% lead + 0.87% zinc, 2.0m of 2.19 g/t gold + 21.1 g/t silver + 0.75% zinc, 1.5m of 4.49 g/t gold + low molybdenum and arsenic and 1.5m of 3.63 g/t gold + weak lead and zinc.
- The best rock float sample assayed 23.0 g/t gold + 0.92% copper. Several others contained moderate silver

Extensive and high grade grid based soil sample assay results confirmed that a very large scale gold mineralised system is present at Andewa. Gold, copper, molybdenum, arsenic and antimony in soils are coincident (variably) with the high chargeability zones at 50m below topography and to depth.

- The total extent of the relatively cohesive gold in soil anomaly at the 0.02 g/t gold (20ppb) cutoff is in excess of 5km long (east to west) and 4 km wide (north to south) (refer to figure 8).
 - Individual gold in soil assays at the Andewa Project are plotted on a thematic contoured image of the gold results (inverse distance algorithm), showing the location and major trends of the mineralised zones.
 - Note that 0.02 g/t gold (20 ppb) was chosen as the base mineralised threshold to define the total extent of the system and this is represented basically by light green and hotter colours (blue is NOT mineralised).
 - The economically significant areas however are greater than 0.05 g/t gold (50 ppb) and particularly greater than 0.10 g/t gold (100ppb); these zones are represented basically by yellow and hotter colours and by orange and hotter colours, respectively.
- Peak soil assay grades were 18.9 g/t gold and 0.19% copper.
- About 44% of the total samples are classified as anomalous (greater than 0.02 g/t gold) and cover an area of about 9.3 sq km or 44% of the gridded area.
- About 11.3% of the assays and area noted above are moderately anomalous (0.05 to 0.10g/t gold) and cover an area of 2.4 sq km and an <u>additional</u> 5.1% of assays are strongly mineralised (greater than 0.10 g/t gold) and cover an additional area of about 1.1 sq km.
- There is a very strong multi-element soil anomaly in the NE sector of the grid corresponding to an extensive near and on surface chargeability anomaly.
- The area above has the strongest and most extensive gold in soil recorded on the gridded area and it also contains extensive and moderate to very strong copper, molybdenum, arsenic and antimony mineralisation indicative of epithermal and /or porphyry copper-gold-molybdenum mineralisation.
- The main or central gold anomaly trends pseudo east west then turns to the north east. This anomaly is in excess of 5km long north east to south west at over 0.05 g/t gold (50 ppb).
- There are 2 additional major gold in soil anomalies (over 0.05 g/t gold) that are approximately 1.5km long and another that is approximately 1km long. The anomalies generally appear to trend north easterly. In addition, there are eight multi-line /multi-point soil anomalies that warrant follow-up.
- The highest tenor and longest gold intercepts demonstrated by the grid based soil sampling were 425m of 0.46 g/t gold + 400 ppm copper, 800m of 0.12 g/t gold + 226 ppm copper, 275m of 0.21 g/t gold + 586 ppm copper, 525m of 0.12 g/t gold + 279 ppm copper and 800m of 0.09 g/t gold + 184 ppm copper, in different sectors of the grid. There are many additional significant intercepts.

- The gold in soil anomalies corresponds to the chargeability at 50m below topography quite well, but there are exceptions (as divergence as to be expected - refer to figure 13).
- Gold in soils plotted on the 400m below topography chargeability plan also show generally good correlation between the chargeability anomalies and the higher tenor gold in soil results (see figure 4 and associated discussion).
- Gold in soil assays are plotted on an image of resistivity 50m below topography and some significant gold anomalies correspond to the shoulders of the highly resistive zones, but other strong gold anomalies appear to have an inverse relationship to the resistivity.
- Only very limited areas of the grid were below gold detection limits (they were not gold anomalous at all), which is very encouraging.
- The copper in soil anomaly is relatively coincident with the gold anomaly (at greater than 150 ppm and 0.05 g/t, respectively) and there is a good general correlation between higher tenor copper and higher tenor gold zones (that are greater than 300ppm and 0.1 g/t, respectively -see figure 6). Copper shows a generally inverse relationship with resistivity.

DETAILS

Figure 1 shows the locations of all Frontiers licenses in Papua New Guinea and selected exploration results.

Andewa gold-copper Project

The Company completed a major 21 sq km geophysical, geochemical and geological exploration program at Andewa in December, 2010.

Three exceptionally extensive, voluminous and intense, three dimensional Induced Polarisation (3D-IP) chargeability anomalies compellingly demonstrate the presence of very large on-surface to more than 800m deep sulphide systems at the Andewa gold and copper Project on the island of New Britain in Papua New Guinea. Refer to figures 7, 9, 10 and 11 for detailed plans and cross sections.

The Andewa Project is owned 100% by Frontier. The Andewa Valley has no permanent settlements (figure 4 shows an SRTM topographic image of the Andewa EL and surrounds) with landowners living outside the 'caldera' on/ near the coast.

Rocks within the 9km wide crater show significant hydrothermal alteration, with seven high-level gold prospects demonstrated within a 7 km by 2.5 km structural zone.

Exploration has previously concentrated only the Komsen gold Prospect. Frontier has previously undertaken no exploration in the Ekhos 'district'.

The generalised shapes of the anomalies can be seen in figures 4a and b showing a pseudo 3D image (schematic) of the chargeability and resistivity zones (viewed from the southeast to the northwest and vice versa, respectively). The IP and soil geochemistry section lines are also shown with topography represented by dotted lines. The small inset plan is a vertical representation illustrating the viewing direction.

The orange sections are strongly chargeable zones (> 30ms), the light green regions represent relatively low resistivity (<65 ohm-m) and the darker green zones represent relatively high resistivity (>500 ohm-m). All of these zones are interesting for various reasons.

The orange sections represent strongly chargeable zones of interest (> 30ms). The light green regions represent relatively low resistivity (<65 ohm-m) and the darker green zones represent relatively high resistivity (>500 ohm-m). The >30ms chargeability anomaly is approx. 4.5km wide in the representation looking from the SE to the NW.

<u>The >30ms chargeability anomaly is approx. 4.5km wide</u> in figure 7a (looking from the SE to the NW).

The total area now known to have anomalous chargeability (>30ms) has doubled to approximately seven square kilometres. This consists of three very large, spatially related and intense chargeability anomalies, being the Core Chargeability Zone (CCZ), Ber Zone and the newly defined Ekhos Zone. The total anomalous chargeability area is approximately 5,400m long (E-W) and 3,000 wide (N-S). The chargeability anomaly is NOT closed off to the NE of Ekhos, though it appears it could be closed off to the south (at depth). The CCZ chargeability anomaly is NOT closed off to its south on surface or at depth, however, it's very intense core

(>45ms) does appear to be adequately resolved.

The Ekhos chargeability anomaly is 3.3 Km² in area, which is larger than the previously announced CCZ (3.0 km²) and Ber areas (~0.5 km²) (at 150m below sea level). Ekhos has developed into the largest and closest to surface 3D-IP chargeability anomaly at Andewa, with much of it very intense at >45ms. The CCZ also has large anomalous areas at >45ms chargeability that extend to depths greater than the 800m modelled maximum.

Each major chargeability anomaly is surrounded by a sub-circular high-resistivity anomaly that appears to merge near the edge and off the grid, to become one approximately 6km diameter resistivity anomaly in the centre of the Mt Andewa caldera/ volcano, with 'holes' in it where the strong chargeability anomalies exist (figures 10a-e).

The resistivity and chargeability anomalies are generally mutually exclusive, but Ekhos has demonstrated coincident zones that are interesting drilling targets and the CCZ also has some at greater depth.

Resistivity likely reflects major hydrothermal fluid movement that resulted in silicification or quartz veining in ring, radial and other types of fractures associated with a major mineralised porphyry intrusion. The margins and more intense central sectors of the resistivity anomalies are also valid drill targets and will be compared to the soil geochemistry and assessed.

The Ekhos chargeability anomaly is very large, sub-equant and approximately <u>3,850m long x 1,750m wide</u>. It averages about 1,000m wide and has a higher grade chargeability core zone that is approximately 2,400m long and 1,000m wide (at >30ms and 400m below topography). As a comparison, the CCZ is approximately 2,900m long ((NW to SE) and a maximum of 2,100m wide, averaging approximately 1,000m wide.

Ekhos clearly demonstrates a very large, voluminous, cohesive and extensive sulphide system commencing on surface and becoming consistently very intense (>50ms) with depth.

The Ekhos chargeability anomaly is pseudo saucer to cup shaped progressing SW to NE, in relation to both intensity and size, and it appears to depth limited to approximately 700m below surface. The CCZ in comparison is NOT depth limited and continues past the approximate 800m maximum modelled depth.

Frontier has previously drilled gold mineralisation at Komsen on the western margin of the CCZ from surface to a maximum depth of 320m below surface in a limited program, with drill intercepts containing significant base metals such as 1m of 19.0 g/t gold + 119.0g/t silver + 10.3% zinc + 0.22% copper, 2m of 5.43 g/t gold + 95 g/t silver + 11.1% zinc + 2.3% lead + 0.12% copper and 0.5m of 2.55 g/t gold + 36 g/t silver + 0.48% zinc + 0.19% copper.

The CCZ is located between the Komsen and Ekhos Prospects, where float rock samples assayed to 54.4 g/t gold + 990 g/t silver and outcrop rock samples assayed to 7.10 g/t gold. It is also marginal to the Samarung Prospect which had a historic float rock sample grading 37.2 g/t gold + 1.58% copper + 0.5 ppm platinum + 44 ppm palladium and numerous narrow auriferous veins and structures.

Mineralised and altered porphyry float rock has been noted in 2 locations and hypothesised in an Aster satellite evaluation, including a jarosite equivalent alteration zone, surrounded by a pyrophyllite clay alteration halo and a 1.1km diameter circular feature showing alunite equivalent clay alteration. Alunite can also be associated with High-Sulphidation epithermal gold systems, which can occur genetically related to porphyry mineralisation (at higher relative levels) and are also a valid target.



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Chairman and Managing Director Peter McNeil M.Sc. commented:

Results from the last third of the three dimensional Induced Polarisation geophysical survey have dramatically enhanced the economic potential for precious and base metals at the Andewa Project. Frontier have demonstrated the presence of three enormous IP chargeability anomalies that likely reflect sulphide mineralisation within a major gold and copper mineralised system.

The soil and rock samples from the 2010 exploration program have now been received and are being compiled for release as soon as possible. Interrogation of the geochemical and geophysical data sets are producing, high quality drilling targets in multiple prospect areas. Frontier has been remarkably successful with this exploration program defining chargeability anomalies over about 1/3 of the total 21 km² grid area.

An extensive drilling campaign will commence as soon as possible (likely in April) to test these enormous and incredibly impressive IP chargeability, conductivity and resistivity anomalies.

Frontier's previous surface and drilling programs have proven gold mineralisation at the Komsen Prospect from surface to a maximum depth of 320m below surface in a limited program, proving excellent lateral and vertical continuity in the structure, with drill results to 7.9m of 10.01g/t gold.

The 3D-IP geophysical survey has been a remarkable success and has demonstrated there is excellent depth potential for possible gold and copper mineralisation associated with the intense sulphide systems /chargeability /conductivity and resistivity anomalies.

Some basic geological and geophysical discussion is warranted regarding what these geophysical results could mean. Please refer to the brief discussion below.

- The strong chargeability anomalies are in themselves valid and compelling drilling targets, as are their shoulders (or the transition zones between high and low intensity), for both precious and base metal deposits. The intensely chargeable zones likely reflect areas with much higher sulphide concentrations.
- A "sulphide system" means disseminated or wide-spread, electrically conductive sulphide minerals are present. It is not known what type or quantity of sulphides are causing the chargeability response, but it is almost certainly pyrite and/or base metal sulphides (not graphite).
- The strength of the chargeability anomaly is directly proportional to the total volume and type of sulphides that are present (i.e. generally more sulphides = stronger chargeability anomaly). In a loose sense, the rocks become 'chargeable with electricity'. If there are no sulphides (or graphite) the rocks cannot become 'charged' and are in effect 'normal'.
- Pyrite is iron sulphide. It is the most common form of sulphide, but generally has no economic value. Base metal sulphides (primarily of copper +/- zinc and lead) and precious metals (gold and silver) are economically significant and are the exploration targets at Andewa.
- Conductivity anomalies probably represent semi-massive sulphides (because they 'conduct' electricity).
- The definition of a 'World Class Deposit' varies but is now generally considered to be about 4 million contained ounces of gold or copper equivalent.
- Gold and base metals have various three dimensional spatial relationships with pyrite/sulphides in different types of mineral deposits in these environments, depending on the precise physical and chemical conditions under which they formed.
- Higher grade zones of copper mineralisation sometimes contains lower total sulphides (less pyrite, but more base metal sulphides) and thus actually have <u>lower</u> total chargeability. As such, economically significant base metal sulphide zones could also occur adjacent to (not within) the highest chargeability anomalies. This means that the shoulders of the chargeability anomalies are also valid drilling targets.
- It is possible that the copper and gold grades of the sulphide mineralisation will increase with depth and that the chargeability anomalies at / near surface represent structurally related mineralisation peripheral to major porphyry copper gold mineralisation.
- Care should be exercised by 'novices' in the interpretation /significance of these anomalies. Drilling will provide a 'definitive' test of the multitude of geophysical, geochemical and structural targets.

Outcrop Rock Channel Assay Results

Very encouraging high-grade gold, plus silver and copper were demonstrated in multiple outcrop rock channel assays at Andewa conducted from mid to late 2010. Numerous gold mineralised outcrops were discovered and sampled over the 21 sq km gridded area from the limited outcrops in creeks. Several different styles of mineralisation / targets are noted.

Peak outcrop assay values were 23 g/t gold, 288 g/t silver, 0.919% copper (float rock), 114 ppm molybdenum, 1.61% lead and 3.59% zinc.

High gold and silver assays are related to structurally controlled, epithermal gold / silver mineralisation and other combinations to possible 'telescoped' porphyry copper-gold-molybdenum.

Two highly significant gold mineralised outcrops were discovered and channel chip sampled, returning:

- 15.0m of 15.48 g/t gold + 21.9 g/t silver (indeterminate true width, but sampled partly along strike).
- 11m of 5.44 g/t gold + 85 g/t silver + 0.22% copper (partly along strike see tan coloured zone in Figure 1). Also 6m of 7.56 g/t gold + 68 g/t silver + 0.25% copper (central width) and 3m of 9.20 g/t gold + 32 g/t silver + 0.30% copper (SE end exposed width).

Silver mineralised outcrop channel chip samples included:

- ✤ 4.0m of 210.5 g/t silver + 0.68 g/t gold + 0.55 % zinc
- ✤ 3.0m of 137 g/t silver + 0.58 g/t gold

Copper mineralised outcrop channel samples included:

- 2.0m of 0.18% copper + 0.90 g/t gold
- 0.5m of 0.30% copper + 0.63 g/t gold

Additional significant gold mineralised outcrop channel chip intercepts included:

- 0.6m of 23.0 g/t gold + strong arsenic
- 2.0m of 6.48 g/t gold
- ✤ 0.5m of 19.0 g/t gold
- ✤ 0.6m of 10.3 g/t gold + strong arsenic
- 0.3m of 11.4 g/t gold + strong arsenic
- 4.0m of 3.80 g/t gold + 12.0 g/t silver + 0.95% lead + 0.87% zinc
- 2.0m of 2.19 g/t gold + 21.1 g/t silver + 0.75% zinc
- 1.5m of 4.49 g/t gold + low molybdenum and arsenic
- 1.5m of 3.63 g/t gold + weak lead and zinc

The best rock float sample assayed 23.0 g/t gold + 0.92% copper. Several others contained moderate silver.

The better rock intercepts /assays are attached in Table 1.

Several distinct styles of mineralisation were demonstrated by the rock geochemistry, including:

Epithermal gold:

- > Very strong gold & arsenic with moderate silver & lead, low copper, zinc & antimony
- Weak to moderate gold + arsenic
- Strong silver & arsenic, with weak-moderate gold & antimony, moderate lead

Porphyry copper:

- Weak-moderate copper & gold, low arsenic, +/- molybdenum
- Strong gold, silver, copper & zinc, moderate lead & arsenic & very strong antimony. These may represent veins peripheral or at a higher level to a porphyry copper system.

The samples were predominantly collected from creek exposures and as such may have limited sample lengths. The intercepts (samples) noted above are <u>not</u> from the known gold mineralised Komsen Prospect, but from new outcrops in different locations of the Andewa Project



Outcrop Rock Chip Information										
Sample Number	Outcrop or Float	Type Channel Or Grab	Width (m)	Gold (g/t)	Ag (g/t)	Cu ppm	Mo ppm	Pb ppm	Zn ppm	
1608	Outcrop	Channel	1.2	1.28	25.5	694	1	6820	35900	
1614 1621	Outcrop Outcrop	Channel Channel	2	2.59 1.21	0.5 0.4	24 67	1 9	107 60	63 412	
1622	Outcrop	Channel	1.5	4.49	0.6	52	7	123	107	
1623	Outcrop	Channel	1	2.07	0.6	87	9	12	61	
1625	Outcrop	Channel	1.5	1.65	0.3	61	5	14	54	
1641 1644	Outcrop Outcrop	Channel Channel	1.5 1	2.31 1.43	0.4	2890 683	3	25 16	99 5	
1647	Float	-		19.00	3.0	9190	<1	10	18	
1648	Float	-		1.18	115.0	2850	4	6670	19700	
1653	Outcrop	Channel	0.5	1.54	5.3	77	12	31	16	
1675 1716	Outcrop Outcrop	Channel Channel	0.5 0.6	1.71 4.25	9.2 1.5	184 69	<1 <1	1050 81	1470 204	
1717	Outcrop	Channel	0.6	2.37	0.7	83	2	11	145	
1718	Outcrop	Channel	0.6	23.00	2.4	45	3	25	14	
1720	Outcrop	Channel	0.6	1.51	0.9	49	1	335	111	
1777 1780	Outcrop Outcrop	Channel Grab	1.5 0.1	0.951 0.27	27.2 0.3	839 1630	3	6040 11	16100 42	
1782	Outcrop	Composite	1	0.256	0.2	1730	5	4	26	
1783	Outcrop	Channel	0.05	0.916	0.6	1760	26	16	70	
1784	Outcrop	Channel	0.2	0.331	0.8	1040	114	3	18	
1785	Outcrop	Channel	0.45	4.83	3.0	136	4	294	943	
1786 1787	Outcrop Outcrop	Channel Channel	0.6	2.50 3.80	2.7 8.4	79 493	3	238 16100	712 13100	
1788	Outcrop	Channel	0.3	3.74	8.0	886	13	10000	21500	
1789	Outcrop	Channel	0.3	11.40	4.7	371	2	1060	2200	
1839	Outcrop	Channel	2	0.213	53.3	1290	2	942	13400	
1840 1841	Outcrop Outcrop	Channel Channel	2	0.21 4.99	88.8 97.3	2290 2190	2	1250 1410	21100 17800	
1841	Outcrop	Channel	3	6.52	21.5	814	2	1010	2960	
1843	Outcrop	Channel	3	6.62	141.0	3570	1	2810	19700	
1844	Outcrop	Channel	2	2.75	77.8	2140	2	2830	21100	
1845	Outcrop	Channel	3	9.20	32.1	3040	1	341	3740	
1846 1847	Outcrop Outcrop	Channel Channel	3	5.92 3.31	103.0	1970 367	1	9020 53	19700 162	
1848	Outcrop	Channel	0.5	19.00	0.7	126	1	68	212	
1851	Outcrop	Channel	3	14.80	42.3	394	1	5300	5160	
1852	Outcrop	Channel	3	20.00	27.5	327	1	1730	1890	
1853 1854	Outcrop Outcrop	Channel Channel	3	14.90 19.00	14.4 13.5	183 268	1 2	1540 2880	2810 2710	
1855	Outcrop	Channel	3	8.70	11.8	405	1	465	25100	
1856	Outcrop	Channel	0.4	3.13	5.6	186	1	251	11700	
1857	Outcrop	Channel	4	0.884	7.0	155	2	699	3040	
1858 1859	Outcrop Outcrop	Channel Channel	3	0.58 0.58	4.8 137.0	124 121	1	862 1060	5120 2520	
1859	Outcrop	Channel	3	0.58	24.4	85	2	1000	1270	
1861	Outcrop	Channel	2	6.48	8.5	247	3	136	284	
1862	Outcrop	Channel	2	2.19	21.1	350	3	2580	7510	
1863	Outcrop	Channel	0.7	0.623	51.8	413	7	5360	601	
1864 1865	Outcrop Outcrop	Channel Channel	0.35 1.5	0.958 3.63	19.8 7.0	288 240	4	1460 1120	3210 1150	
1865	Outcrop	Channel	0.2	9.34	13.3	315	1	2750	987	
1867	Outcrop	Channel	2	0.456	133.0	176	2	2070	3530	
1868	Outcrop	Channel	2	0.9	288.0	226	5	2280	7460	
1869 1870	Outcrop Outcrop	Channel Channel	2	<u>2.51</u> 5.10	11.4 13.3	242 445	1	5580 3920	2670 5990	
1870	Outcrop	Channel	1.5	1.25	3.4	95	4	177	655	
1872	Outcrop	Channel	1.5	0.618	13.0	187	2	1720	4690	
1874	Outcrop	Channel	0.35	1.13	0.8	73	<1	88	307	
1075	Outcrop	Channel	0.45 1	1.49 0.03	1.3 26.3	231 109	1 4	108 869	816 105	
1875 1876	Outcrop			0.05		109		309		
1875 1876 1878	Outcrop Float	Channel -		1.32	4.2	193	<1	76	368	
1876		- Channel	0.7	1.32 0.128	4.2 20.2	193 275	<1 2	76 1890	368 11600	
1876 1878 1879 1881	Float Outcrop Float	- Channel -		0.128 3.43	20.2 6.1	275 228	2 1	<mark>1890</mark> 226	11600 323	
1876 1878 1879 1881 1883	Float Outcrop Float Outcrop	- Channel - Channel	0.8	0.128 3.43 1.22	20.2 6.1 0.2	275 228 144	2 1 1	1890 226 25	11600 323 103	
1876 1878 1879 1881 1883 1887	Float Outcrop Float Outcrop Outcrop	- Channel - Channel Channel	0.8 2	0.128 3.43 1.22 0.06	20.2 6.1 0.2 0.7	275 228 144 1360	2 1 1 4	1890 226 25 <2	11600 323 103 65	
1876 1878 1879 1881 1883	Float Outcrop Float Outcrop	- Channel - Channel	0.8	0.128 3.43 1.22	20.2 6.1 0.2	275 228 144	2 1 1	1890 226 25	11600 323 103	
1876 1878 1879 1881 1883 1887 1888	Float Outcrop Float Outcrop Outcrop	- Channel - Channel Channel Channel	0.8 2 0.5	0.128 3.43 1.22 0.06 0.626	20.2 6.1 0.2 0.7 0.4	275 228 144 1360 2970	2 1 1 4 1	1890 226 25 <2 <2 <2	11600 323 103 65 33	
1876 1878 1879 1881 1883 1887 1888 1889 1890 1890	Float Outcrop Float Outcrop Outcrop Outcrop Outcrop Outcrop	- Channel Channel Channel Channel Channel Channel	0.8 2 0.5 1 2 1.5	0.128 3.43 1.22 0.06 0.626 4.45 0.898 1.18	20.2 6.1 0.2 0.7 0.4 <0.1 0.4 <0.1	275 228 144 1360 2970 392 1810 133	2 1 4 1 2 2 2 2	1890 226 25 <2	11600 323 103 65 33 32	
1876 1878 1879 1881 1883 1887 1888 1889 1890 1890 1892 1898	Float Outcrop Outcrop Outcrop Outcrop Outcrop Outcrop Outcrop	- Channel Channel Channel Channel Channel Channel Grab	0.8 2 0.5 1 2 1.5 0.3	0.128 3.43 1.22 0.06 0.626 4.45 0.898 1.18 0.105	20.2 6.1 0.2 0.7 0.4 <0.1 0.4 <0.1 82.0	275 228 144 1360 2970 392 1810 133 4	2 1 4 1 2 2 2 <1	1890 226 25 <2	11600 323 103 65 33 32 44	
1876 1878 1879 1881 1883 1887 1888 1889 1890 1892 1898 1899	Float Outcrop Outcrop Outcrop Outcrop Outcrop Outcrop Outcrop Outcrop	- Channel Channel Channel Channel Channel Channel Grab Grab	0.8 2 0.5 1 2 1.5 0.3 1	0.128 3.43 1.22 0.06 0.626 4.45 0.898 1.18 0.105 1.24	20.2 6.1 0.2 0.7 0.4 <0.1	275 228 144 1360 2970 392 1810 133 4 2	2 1 4 2 2 2 <1 <1	1890 226 25 <2	11600 323 103 65 33 32 44 9	
1876 1878 1879 1881 1883 1887 1888 1889 1890 1890 1892 1898	Float Outcrop Outcrop Outcrop Outcrop Outcrop Outcrop Outcrop	- Channel Channel Channel Channel Channel Channel Grab	0.8 2 0.5 1 2 1.5 0.3	0.128 3.43 1.22 0.06 0.626 4.45 0.898 1.18 0.105	20.2 6.1 0.2 0.7 0.4 <0.1 0.4 <0.1 82.0	275 228 144 1360 2970 392 1810 133 4	2 1 4 1 2 2 2 <1	1890 226 25 <2	11600 323 103 65 33 32 44	

Table 1: Summary of significant rock samples collected at the Andewa Project in 2010).
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Figure 13. Gold assays from rock samples at the Andewa Project on an image of chargeability 50m below topography.

Figure 14. Gold mineralised outcrop exposed in a creek, showing 2 sub-parallel zones containing high volumes of sulphides that are oxidising to produce a distinctive orange ooze. Such zones are virtually always mineralised and often can represent structures such as faults.

Figure 15. Outcrop assaying 3m of 14.80 g/t gold + 42 g/t silver on the Field Technician's left side (at a high angle).



Figure 16. Secondary copper mineralisation on the fracture face of a porphyritic rock from Andewa at approx. real (100%) scale. Grid based soil assaying conducted from mid to late 2010 has confirmed that a very large scale gold mineralised system is present at Andewa. Gold, copper, molybdenum, arsenic and antimony in soils are coincident (variably) with the high chargeability zones at 50m below topography and to depth.

- The total extent of the relatively cohesive gold in soil anomaly at the 0.02 g/t gold (20ppb) cutoff is in excess of 5km long (east to west) and 4 km wide (north to south).
- Peak soil assay grades were 18.9 g/t gold and 0.19% copper.
- About 44% of the total samples are classified as anomalous (greater than 0.02 g/t gold) and cover an area of about 9.3 sq km or 44% of the gridded area.
- About 11.3% of the assays and area noted above are moderately anomalous (0.05 to 0.10g/t gold) and cover an area of 2.4 sq km and an <u>additional 5.1%</u> of assays are strongly mineralised (greater than 0.10 g/t gold) and cover an additional area of about 1.1 sq km.
- There is a very strong multi-element soil anomaly in the NE sector of the grid corresponding to an extensive near and on surface chargeability anomaly.
- The area above has the strongest and most extensive gold in soil recorded on the gridded area and it also contains extensive and moderate to very strong copper, molybdenum, arsenic and antimony mineralisation indicative of epithermal and /or porphyry copper-gold-molybdenum mineralisation.
- The main or central gold anomaly trends pseudo east west then turns to the north east. This anomaly is in excess of 5km long north east to south west at over 0.05 g/t gold (50 ppb).
- There are 2 additional major gold in soil anomalies (over 0.05 g/t gold) that are approximately 1.5km long and another that is approximately 1km long. The anomalies generally appear to trend north easterly. In addition, there are eight multi-line /multi-point soil anomalies that warrant follow-up.
- The highest tenor and longest gold intercepts demonstrated by the grid based soil sampling were 425m of 0.46 g/t gold + 400 ppm copper, 800m of 0.12 g/t gold + 226 ppm copper, 275m of 0.21 g/t gold + 586 ppm copper, 525m of 0.12 g/t gold + 279 ppm copper and 800m of 0.09 g/t gold + 184 ppm copper, in different sectors of the grid. There are many additional significant intercepts.
- The gold in soil anomalies corresponds to the chargeability at 50m below topography quite well, but there are exceptions (as divergence as to be expected refer to figure 3).
- Gold in soils plotted on the 400m below topography chargeability plan also show generally good correlation between the chargeability anomalies and the higher tenor gold in soil results (see figure 4 and associated discussion).
- Gold in soil assays are plotted on an image of resistivity 50m below topography (figure 5) and some significant gold anomalies correspond to the shoulders of the highly resistive zones, but other strong gold anomalies appear to have an inverse relationship to the resistivity.
- Only very limited areas of the grid were below gold detection limits (they were not gold anomalous at all), which is very encouraging.
- The copper in soil anomaly is relatively coincident with the gold anomaly (at greater than 150 ppm and 0.05 g/t, respectively) and there is a good general correlation between higher tenor copper and higher tenor gold zones (that are greater than 300ppm and 0.1 g/t, respectively -see figure 6). Copper shows a generally inverse relationship with resistivity.

Chairman / Managing Director Peter McNeil M.Sc. commented:

Frontier's exploration in 2010, subsequent to announcing the OTML JV, focussed solely on the Andewa licence. The enormous 3D-IP grid that we completed was a calculated risk during a time of global uncertainty. The program was remarkably successful and has now rewarded directors and shareholders for their faith in the concept and the project.

Andewa's geological / structural location is conceptually identical to Lihir's (based on my own experience working there) and Frontier have now geochemically and geophysically demonstrated the <u>potential</u> for a similar, large scale World Class epithermal gold deposit.

Frontier's drilling on this highly prospective project area will now commence later in May due to shipping issues. I await this program with anticipation and plan to be onsite initially to supervise the drilling.

The 3D-IP geophysical program demonstrated 3 very strong to intense chargeability anomalies covering a

total area of 7 sq km, plus numerous related and proximal (or coincident) resistivity and conductivity anomalies that warrant drilling in their own right.

Rock chip-channel outcrop sample results recently released demonstrated gold mineralisation on surface that was widely distributed throughout the gridded area. This scattering of outcrops is partly to mostly due to their limited occurrences, that are normally restricted to creeks. Two highly significant outcrops were discovered and sampled, returning intercepts including 15m grading 15.48 g/t gold. Significant higher grade silver was also noted locally.

The high gold and silver assays in rocks are likely related to structurally controlled, epithermal gold / silver mineralisation and further at depth to other deposit variants including possible 'telescoped' porphyry coppergold-molybdenum mineralisation. However, the true nature of both the geophysical and geochemical anomalies at Mt Andewa can only be determined via mechanical surface trenching and subsequent diamond core drilling. Frontier has begun planning for this next phase of the operation.

Hand trenching of conductivity anomalies (likely representing concentrations of semi-massive sulphides as opposed to chargeability anomalies that likely represent disseminated sulphide) and gold anomalies is currently being undertaken, along with infill soil sampling to better define the gold anomalous zones and assist in discriminating drilling targets.

The Andewa gold in soil anomaly, as it is now known, is 9.3 sq km and is the largest in extent or total area I have ever worked upon. The strongly mineralised soils cover a total area of approximately 1.2 sq km and peak at 18 g/t gold. The generally high tenor of the soils is very interesting because only 6% or about 1.2 sqkm of the 21 sq km grid were below the limits of detection [BDL]. This is a very low ratio for an enormous soil grid in PNG), which means 94% of the grid is to some level gold anomalous.

There is locally good correlation between higher tenor soil assays and higher chargeability zones, with the very low chargeability zones virtually always very weakly or unmineralised. This is very encouraging for the probability of demonstrating mineralisation associated with the chargeability anomalies (because the gold in soils have already correlated well to them.

Much of the gold anomalous area within the Andewa crater has now been adequately defined in my opinion for first pass exploration. However, both the geophysical and the soil + rock geochemical anomalies extend of the grid in the south-east and south-central sectors, indicating that additional follow up grid based soil sampling and 3D-IP will be eventually required to fully close off the mineralised system within the crater area.

Table 2. Approximate statistics relating to the grid based gold in soil assays.

Significantly, 45% of the total samples are classified as anomalous (greater than 0.02 g/t gold) and cover an area of about 9.3 sq km or 44% of the gridded area.

About 11% of the assays are moderately anomalous (0.05 to

Soil Assa (g/t g		Number of	Percentage	Approximate Area (sq km)	
From	То	Samples	of Total		
>1	>1.0		0.2%	0.05	
0.50	1.00	14	0.3%	0.06	
0.10	0.50	210	4.6%	0.97	
0.05	0.10	514	11.3%	2.4	
0.02	0.05	1247	27.5%	5.8	
BDL	0.02	2534	56.0%	11.7	

0.10g/t gold) and cover an area of 2.4 sq km. An additional 5.1 % are strongly mineralised (greater than 0.10 g/t gold) and cover an area of 1.1 sq km.

Figure 17.

Individual <u>gold in soil</u> assays at the Andewa Project plotted on a thematic contoured image of the gold results (inverse distance algorithm), showing the location and major trends of the mineralised zones.

Note that 0.02 g/t gold (20 ppb) was chosen as the base mineralised threshold to define the total extent of the system and this is represented basically by light green and hotter colours (blue is NOT mineralised).

The economically significant areas however are greater than 0.05 g/t gold (50 ppb) and particularly greater than 0.10 g/t gold (100ppb); these zones are represented basically by yellow and hotter colours and by orange and hotter colours, respectively.



Figure 18.

Goldin soil assay valuerangesplottedascoloureddotsonanimageofchargeabilityat50mbelowtopography.

Note that there is locally good correlation between higher tenor soil assays and higher chargeable zones, but it is not a 1:1 correlation.

The zones that are NOT anomalous in soils generally have a very good correlation with very low chargeability zones.

Thisisveryencouragingfortheprobabilityofdemonstratingmineralisationassociatedwiththechargeabilityanomalies,becausethesoilsalreadydo such.



Figure 19.

GoldinsoilassaysattheAndewaProjectonanimageofchargeability400mbelowtopography.

There is good general correlation between higher tenor soil assays and higher tenor chargeable zones.

The gold anomalies at the Ekhos Zone (in the east) correspond very well to the subsurface highly chargeable zone.

large cohesive The anomaly in the central west appears to have a zone with no gold in soil anomalism above it, however, this is only apparent, as the chargeable zone dips to the north-east from the surface further to the south-west and hence it plunges under the zone with no gold anomalies.



Figure 20.

Goldin soilassaysonan image ofresistivityat50mbelowtopography.

Note that there are some significant gold anomalies that correspond to the shoulders of the highly resistive zones, but other strong gold anomalies such as in the north-east of the grid, appear to have an inverse relationship to the resistivity (i.e. the assays are strongest where the resistivity is weakest).



Figure 21.

Copperin soil assaysonanimageofchargeability50mbelow topography.

There is a reasonable correlation between stronger copper assays and stronger chargeability zones.



Figure 22. Very tightly located <u>molybdenum</u> in soil assays.

There is a good correlation between stronger copper assays, molybdenum and arsenic assays and a major NW trending chargeability zone.

Elevated molybdenum assays can be indicative of porphyry copper mineralisation and is a useful vector.



Frontier's exploration portfolio has been maximised around the Andewa Project, with ELA 1951 encompassing it and the gold and copper prospective 'lookalike' at neighbouring Mt Schrader

The Company has lodged a 2,477 kilometre Exploration square License Application (ELA) for precious and base metal mineral exploration in West New Britain Province, Papua New Guinea (PNG). ELA 1951 - Mt Schrader encompasses the Company's highly prospective Mt Andewa Project and significantly enhances Frontier's exploration portfolio in the district (Figures 1 and 23).

The Mt Andewa and Mt Schrader craters are 150km and 180km west of the port of Kimbe (capital of West New Britain Province), respectively (Figure 2). The areas are accessible by barge, boat, helicopter and locally logging tracks.

Most known mineral prospects on New Britain Island are already covered by existing tenements or ELAs.

The Schrader area is a grassroots ELA and it will enable systematic exploration and evaluation of Mt Schrader itself, plus the 'very lightly' to unexplored surrounding district.

There are no known impediments to the granting of the ELA (subject to normal procedures with the PNG Mineral Resource Authority/Mining Act and subsequent Ministerial approval) The suggested financial commitment K750,000 is (~A\$300,000) over the initial 2 year renewable term.

ELA 1951 -Schrader also covers two major WNW trending structural zones (and a N-S zone) that could host gold and copper mineralisation. Andewa's Komsen



gold Prospect is within a WNW trending mineralised structure. These structural zones are important for the localisation of mineralised intrusions further east in New Britain, such as the Kulu - Awit trend that hosts (SE to NW) the Nakru, Plesyumi, Simuku and Mt Penck deposits, plus other prospects.

The Mt Schrader stratovolcano crater has several amphitheatre like topographic anomalies that have previously been explored partially (figures 26 and 27).

Known mineralisation includes two gold stream sediment anomalies (to 0.175 g/t gold in Borei Creek and Ugurisi River -Figure 6), copper in rock samples (to 530 Cu and 1020 ppm ppm arsenic at Yepmaling Creek

Prospect) and strong mercury anomalies (to <u>17,900 ppm</u>) with hydrothermal breccias in the Yep amphitheatre.

Alteration zones were identified at Yep and Aour the Schrade outside crater and arsenio alteration haloes are associated with dacite domes. These are al favourable indicators for possible gold and copper mineralisation /deposits in this type of 'high level geological environment.

Exploration at Schrader will initially consist of ASTER hyperspectra





(satellite) and SRTM digital imagery evaluation to locate clay alteration zones and topographic anomalies. Detailed work inside Mt Schrader plus regional evaluation and reconnaissance in the structural zones will utilise panned concentrate + silt + rock chip/float + soil sampling, geological mapping and hand trenching. A three dimensional Induced Polarisation geophysical survey will be a <u>high priority</u> inside Mt Schrader (due to its success at Andewa) if evidence suggests it is warranted.

OK TEDI MINING LTD JOINT VENTURE

Bulago Geophysical, Geochemical, Corporate and Proposed Exploration Update

- Aeromagnetics demonstrate an 8.0 x 4.5km NW-SE trending zone with multiple targets
- Soil assays delineate extensive zones of gold and copper mineralisation
- 5,000m drilling program to commence late May

A large and detailed aeromagnetic and radiometric geophysical survey was completed by Ok Tedi Mining Ltd (OTML) at the Bulago JV in early 2011 and a number of 'Low Latitude Total Magnetic Intensity Anomalies' (probable intrusives) were demonstrated in the Bulago aeromagnetic data.

- The main cluster of complex magnetic features occur in a NW-SE trending zone that is around 8,000m long and 4,500m wide (Figures 28, 29 and 30).
- The geophysical data is being interpreted and will be integrated with the existing geological and geochemical information to discriminate



and rank targets for follow up exploration, including drilling.

Multiple, areally extensive and strong gold and copper anomalous soil zones have been demonstrated in grid based soil sampling (Figures 30 and 31).

- The gold anomaly (>50ppb) trends broadly NW-SE and is around 2,500m long and 2,000m wide. It has about 10 distinct higher grade zones or prospects.
- The copper anomaly consists of two approximately N-S (+ NE-SW) trending, 1,600m long and 200m to 550m wide zones at >300 ppm. The total anomaly is around 4,000m long (NW-SE) at >150ppm copper.
- Historic trench channel assays in 2 discrete horizons at Suguma included 27m of 66.8 g/t gold and 18m of 40.3 g/t gold. The soil geochemistry shows Suguma only as a strong point anomaly, indicating that every cohesive and/or moderate to strong gold anomaly could be highly significant.

Joint Venture partner OTML have indicated they intend to move to 'Advanced Stage Exploration' on the Bulago EL and a 5,000m drilling program with 2 rigs from mid to late May.

- Holes are planned to average 350m depth, with some to 500m, however, they will drill to 700m maximum downhole depth if warranted.
- Five camps have been established at Bulago as bases from which to conduct exploration.
- ✤ A 600m trench has been completed in the eastern copper anomaly (where drilling is proposed from pads 2, 4 & 6) and with samples taken despatched to the laboratory for analysis.
- OTML's geological data collection, detailed aeromagnetic /radiometric data modelling and interpretation of the area is continuing.
- ✤ JV terms require OTML to expend US\$12 million over 6 years (from May 2010) to earn 58% of EL 1595, then carry Frontier to completion of a Bankable Feasibility Study, with pro-rata (carried) repayments from 50% of future FNT metal sales. Under certain circumstances, OTML and the PNG National Government can <u>purchase</u> up to 80.1% equity in the project.

Aeromagnetic Survey Details

The Survey covers the central sector of EL 1595 at an exceptionally good mean terrain clearance of 37m, on 50m traverse spacing, with 500m spaced tie lines, for approximately 3,190 line kilometres total. Images of aeromagnetic Total Magnetic Intensity (TMI), First vertical derivative TMI and the digital elevation model are included as figures 29 and 30.

The line profile data was gridded to 12.5m resolution and the magnetic data is of good quality with no inconsistencies. At the low magnetic latitude of this survey (and PNG in general), the shape of magnetic anomalies is more complicated than in an area of steep magnetic inclination (closer to the earth's poles).

At low magnetic latitudes (near the equator), the magnetic inclination is low and the intensity of magnetisation is relatively weak. These factors combine to reduce the Total Magnetic Intensity (TMI) anomaly magnitude, and at Bulago the largest anomalies have a peak to peak amplitude of around 2000nT.

Low Latitude TMI anomalies are generally characterised by a magnetic low over the centre of the body flanked by magnetic highs at the northern and southern ends. A number of this type are present in the Bulago data, with a main cluster of complex magnetic features lying in a 4.5km wide zone trending NW-SE

and about 8km in length.

Anomalies within the cluster are between 300m and 600m in width, suggesting relatively shallow sources or 100m-300m depth (based on slope depth formula). More detailed inversion and interpretation work will be completed.





Geophysical Update and Proposed OTML Joint Venture Exploration, Likuruanga and Leonard Schultz Exploration Licences, PNG

- Detailed aeromagnetic and radiometric data from the Likuruanga and Leonard Schultz Exploration Licences have demonstrated major anomalous zones (in each EL) with multiple and compelling geophysical and geochemical targets, that will be drill tested over the next 12 months.
- Ok Tedi Mining Ltd is moving to 'Advanced Exploration' in relation to all three granted Exploration Licences in the 2 Joint Ventures (2 JV Applications are yet to be granted).
 - ► A 5,000m drilling program is proposed for the Esis and Bukuam porphyry copper- gold prospects at the <u>Likuruanga</u> Exploration Licence, commencing in late May with 2 rigs.
 - A 3,000m drilling program is proposed for the Wasi porphyry copper- gold and Kru gold Prospects at the <u>Leonard Schultz</u> Exploration Licence, commencing in November with 1 rig.
 - A 5,000m drilling program was recently announced for the Bulalo porphyry copper-gold and the Suguma high-grade gold Prospects at the <u>Bulago</u> Exploration Licence, commencing late May with 2 rigs.

Large and very detailed aeromagnetic and radiometric geophysical surveys were completed by Ok Tedi Mining Ltd (OTML) in later 2010 at the Likuruanga Joint Venture (EL 1351) and at the Leonard Schultz Joint Venture (EL 1597) in Papua New Guinea (Figures 33 and 44).

- Initial interpretation of the data has demonstrated a number of 'Low Latitude Total Magnetic Intensity Anomalies' (probable intrusives) for each EL.
- The data is now being enhanced by further geophysical ground data collection and integration with the existing geological and geochemical information to discriminate and rank targets for the upcoming drilling programs.
- Various plans including total magnetic intensity –TMI, first vertical derivative TMI (1VD), radiometrics, digital elevation model and unconstrained inversion models are attached for evaluation as figure 34 -40.
- Multiple, extensive/large area and strong copper and gold anomalous soil and trench zones have been demonstrated in previous grid based soil sampling at each Licence (Figures 10-11 and 18-20).

OTML have indicated they intend to move to 'Advanced Stage Exploration' on all ELs 1351, 1595 and 1597 in the two Joint Ventures with Frontier. A 5,000m drilling program will commence at Likuruanga with 2 rigs from late May and a 3,000m drilling program will commence at Leonard Schultz EL in November 2011.

- Holes are planned to average 350m depth, with some to 500m, however, they will drill to 700m maximum downhole depth if warranted.
- ✤ JV terms for <u>Leonard Schultz</u> require OTML to expend US\$12 million over 6 years (commencing May 2010) to earn 58% of EL 1597, then carry Frontier to completion of a Bankable Feasibility Study, with pro-rata (carried) repayments from 50% of future FNT metal sales. Under certain circumstances, OTML and the PNG National Government can <u>purchase</u> up to 80.1% equity in the project.
- ✤ JV terms for Likuruanga require OTML to expend US\$12 million over 6 years (commencing May 2010) to earn 80.1% of EL 1351, then carry Frontier to completion of a Bankable Feasibility Study, with prorata (carried) repayments from 50% of future FNT metal sales. Frontier cannot be further diluted from the 19.9% carried interest.

Background Information on the Likuruanga Exploration Licence

EL 1351 is highly prospective for World Class porphyry copper – gold, high-grade gold - silver -zinc skarns and structurally controlled and/or epithermal gold deposits. The EL contains the Esis porphyry Deposit and the over 4.8km long Bukuam porphyry related copper, molybdenum, gold and zinc soil anomaly (refer to the Conceptual Model in Figure 43).

The Bukuam Prospect in contained within a 5.5km long x 1km wide copper in stream sediment anomaly located on the eastern margin of the approximately 20km long x 6km wide Esis-Sai granitoid complex (opposite Esis).

 $\mathbf{\Phi}$ Frontier defined an impressive multi element soil anomaly over 4,800m long (open to the north, south east) and and completed a limited ground magnetic survey.



- Historic trenching returned 55m of 5.8g/t gold, 10m of 5.1g/t gold and 70m of 1.7g/t gold in different zones.
- Only 3 historic holes were drilled, returning 6m of 2.2g/t gold + 9.5g/t silver + 1.2% zinc, 2m of 3.5g/t gold + 9.5g/t silver and 10m of 1.7g/t gold + 2.7 g/t silver + 4.8% zinc. One hole did not reach the target.
- ✤ A 55m long gold mineralised trench remains untested by drilling and according to the CRA geologists who drilled it, "the gold grade in the skarn could increase towards the shear zone with a possible bonanza at the contact".

The Esis porphyry copper deposit is situated on a north-north-west trending ridgeline, on the western flanks of the Esis-Sai granitoid complex (opposite Bukuam).

- Mineralisation is in quartz-diorite and magnetite breccias.
- The strongly copper mineralised zone is more than 1,400m long before going under volcanic rocks to the north and is generally about 400m wide (but is up to 1,000m wide). Fifteen very shallow 'Winkie' reconnaissance holes were drilled into primary mineralisation.
 - Six holes had a weighted copper average for their entire length greater than 0.2% and were terminated in copper mineralisation.
 - The best holes included DW7 with 21.6m grading 0.50% copper and DW15 with 30.3m grading 0.41% copper.
 - These holes cover 1,000m of strike extent with the mineralized zone open to the N and S.
- Four diamond holes (152.6m each) were drilled to test the supergene about 36 years ago.
 - The best result was from MD23, with 27m of supergene mineralisation grading 0.71% copper (from 33m depth), plus 66m of primary mineralisation grading 0.42% copper (from 86.6m to end of hole),.
 - The entire hole weighted assay average was 152.6m grading 0.39% copper + 24ppm molybdenum, with peak grades of 1.62% copper and 124 ppm molybdenum, proving a significantly mineralised system.
 - The hole was terminated in potentially economic copper mineralisation, with the last 7.6m of the hole grading 0.49% copper.
- A resource has not been estimated to date.



Figure 38 Unconstrained inversion model of the entire Likuruanga survey block, block size 100m.



Figure 39. Unconstrained 3D inversion model of the Esis area, block size 50m.



Figure 40. Unconstrained 3D inversion model of the Bukuam area, block size 50m.


Figure 41. Gold over gridded copper assays in soils at Bukuam demonstrate a more than 4,800m long cohesive and locally coincident copper, gold and molybdenum anomaly. A surrounding zinc halo demonstrates zinc – silver skarns proximal to the intrusion.



Figure 42. Copper in trenches at Esis.





Figure 44. SRTM location plan of EL 1597 – Leonard Schultz, showing the Wasi-Kru Prospect locations. Major faults are seen as cross cutting linear features.



Figure 45. A digital terrain model from the EL 1597 geophysical survey showing its boundaries.



Figures 46 & 47.

Total I magnetic intensity image of the survey area and the TMI first vertical derivative. Figure 48. Unconstrained inverted of the aeromagnetic data at 50m resolution. A major anomaly exists on the SW edge as noted.



Figures 49 & 50. Copper and gold in soil samples at the Wasi porphyry copper-gold–molybdenum Prospect.



Figure 51. Gold in trench channel chip samples at the Kru Prospect.



EL 1598 – Central New Britain

The 693 sq km Central New Britain Exploration Licence is located about 90km east southeast of Kimbe (figure 52) and contains a 9km long porphyry copper-gold-molybdenum occurrence at Uasilau/Yau Yau, 1 x zinc - gold skarn + porphyry copper-gold-molybdenum occurrence at Pelepuna, 1x zinc - gold skarn prospect at Ala River (+ a hidden porphyry copper-gold deposit), 1x aeromag porphyry signature and 1 x intrusive/epithermal silver-gold occurrence at Gavuvu (figure 2). The geological plan (figure 53). shows the intrusives, volcanics and sediments. The area has had <u>no</u> exploration conducted for more than 26 years.



A multi-phase, 15km by 6km intrusive complex has intruded older volcanics and limestone and there is widespread surficial tephra cover. The intrusives were emplaced in three pulses over a 6.6 million years ago (Ma) period during the Miocene (30 to 23.5 Ma). Alteration and mineralisation was associated with the youngest phase of intrusion.

The Uasilau / Yauyau porphyry copper molybdenum Prospect was discovered in 1965 and has been cursorily tested for porphyry and skarn-related copper mineralization, with mapping, rock / soil geochemistry, airborne / ground geophysics and drilling of about 15 holes. Known primary porphyry-style copper grades are sub-economic (in the range 0.1-0.2% copper) with low gold and silver, but often moderate levels of molybdenum. Rock and soil geochemistry indicates there has been surficial enrichment of copper.

The rock and ridge/spur soil geochemistry defined a NW trending anomalous area more than <u>9,000m long</u> <u>and between 700m and 2,000m wide</u>, with 5 areas about 1 sq km each with over 500ppm copper, plus 4 smaller areas over 500ppm copper. Bedrock sampling highlights included a 360m x 550m area of over 0.1% copper and about 500m grading 0.15% copper correlating with zones of more intense shearing and brecciation. The copper anomalism is strongest at the south end and is not closed off. The gold, conversely is strongest at the north end, but that is also an artefact of how much gold sampling was conducted at the time.

Drilling of mostly short holes included 304m grading 0.12% copper (including 3m of 0.47g/t copper) + 82 ppm molybdenum with low gold, and silver. One hole appears to have intersected 300m of a possible diatreme breccia (the Golpu /Wafi Deposits are associated with a mineralised diatreme). The drill density is approximately 1 hole per 1.5 sq km of anomalous area.



Figures 54 and 55 are copper and gold in ridge and spur soil samples, respectively, to compare.



Intrusive types include quartz diorite, granodiorite, gabbro and quartz feldspar porphyry, with associated andesitic and rhyolitic volcanics. There is a large associated area of advanced argillic alteration representing possible unevaluated epithermal gold mineralisation. Gold analyses are limited, but indicate significant anomalous areas in soils and rock chips that warrant follow up.

Zinc-rich skarns are present at Pelepuna and Ala River Prospects. At Pelepuna a variety of calc-silicate skarns

are developed related to dyke-like gabbro-diorite bodies. Surface sampling and drilling shows the skarns are zinc-rich and copper-poor. Seven diamond holes tested a fault-controlled skarn with sphalerite, galena and pyrite and returned 16.75m grading 6.88% zinc + 0.14% copper +0.15 g/t gold + 4 g/t silver, from 6.5m. The Ala River Prospect noted 8m of 2.41% copper + 0.11 g/t gold in a trench and up to 4.34% copper in float.

The Gavuvu area has low and higher order silver anomalies in several drainages. The silver mineralisation occurs in silicification and quartz sericite alteration and limited trenching has demonstrated 10m of 150 g/t silver (incl 5m of 252 g/t silver). A grab sample of a semi massive sulphide pod graded 0.90 g/t gold + 112 g/t silver + 47.5 % zinc + 6.1 % copper + 132 ppm molybdenum.

The area has a strong NW trending structural control and the prospects are robust and require drilling.

EL 1592 East New Britain

The EL of about 1,003 square kilometres covers a 100km strike length of the Baining Structural Zone and associated poorly explored intrusives. The East New Britain EL <u>surrounds the Sinivit epithermal gold Mine</u> at the east end and has perhaps half of the Magiabe porphyry /diatreme copper occurrence that occurs on the Sinivit boundary EL.

The Doilene Prospect remains un-drilled but limited bulldozer trenching included 10.9m of 26.9 g/t gold (incl. 1.0m of 147.8 g/t gold and 40cm of 136.4 g/t gold), 2m of 16.9 g/t gold, 4m of 9.84 g/t gold, 3.5m of 5.14 g/t gold and 3m of 4.65 g/t gold. Visible gold and anomalous pan concentrate gold values are noted associated with an altered intrusive dyke and previous soil sampling was quite limited. Scout drill testing is strongly warranted.

There are occurrences of magnetite skarns in the Doilene district that could be a sign of a porphyry copper deposit at shallow depths.

A toxic element anomaly at Mali was defined over an 80 km² area associated with the Sikut Caldera. The LK1 Breccia Prospect has outcrop sampling up to 2.5m of 9.6 g/t gold with grab samples to 17.8 g/t gold.

Figure 56 below shows an SRTM image of the Gazelle Peninsula in East New Britain and the outline of EL 1592 and known prospects.



Figure 57 below shows regional geology of the East New Britain area based on the 1:250,000 PNG Geological Survey Series.



Palang Hill Prospect is a 500m by 100m brecciated and veined zone with trenches to 12m of 2.64 g/t gold in the central part of the prospect and 15m of 2.13 g/t gold in the northern section of the area. A 2.5 m channel returned 9.66 g/t gold + 0.20% copper + 12 g/t silver.

Alluvial platinoids (platinum, palladium) and gold occur in two adjacent tributaries [pan concentrates to 29.44 g/t gold, 22.7 g/t platinum and 0.45 g/t palladium. There has been no follow-up in the 3 km² target area.

TASMANIAN EXPLORATION

Exploration continued on Frontier's Tasmanian Exploration and Retention Licenses targeting known highgrade plus potentially bulk mineable tungsten mineralisation, gold and base metals.

Cethana Project (EL 29/2009 Cethana, RL 3/2005 Narrawa and EL 42/2010 Stormont)

The three contiguous tenements have excellent potential for a range of metals (figure 3). The mineralising Dolcoath Granite has a spine like shape extending east-west and is responsible for skarn and vein style gold, lead, zinc, tungsten, silver, tin, fluorine mineralisation in a number of forms.

Elliott Bay (EL 20/96)

Drilling targets a triple geophysical anomaly (IP/EM/Gravity) at Wart Hill for a large, high-grade, polymetallic base and precious metal deposit, Southern Mount Read Volcanics (SMRV) Project, Tasmania

A highly prospective triple geophysical anomaly at the Wart Hill Prospect in south-west Tasmania, Australia (figure 3), targeted mineralisation/an orebody with 10 to 40 million tonnes grading 10 to 25% zinc, 50 to 700 g/t silver and 6 to 14% lead, with significant gold and copper credits (this target is based on exploration to date, including assay and geophysical information noted below, but is <u>speculative</u> and may not be achieved).

- The SMRV (Wart Hill) has been proven to be the correct address for a World Class polymetallic base and precious metal deposit.
- The current hole (WD024) is targeting coincident and cohesive >30 ms chargeability (IP), UTEM conductivity (EM) and gravity (0.3mgals) anomalies located immediately east and stratigraphically overlying the Wart Hill hydrothermal alteration zone (figure 2). An angled hole is half completed and

is drilling due east to intersect the target zone at about 200 metres downhole depth. Geological dogma has led to this excellent target remaining untested (though it 'ticked all the other boxes').

- The presence of the Mt Read Volcanics "Holy Host" Horizon has been confirmed by spectral mapping (SWIR) of hydrothermal alteration (figure 3) around the high grade massive sulphide lenses on surface and a major geological/ geochemical and geophysical review by an experienced Mt Read Volcanics VHMS geologist. The Rosebery and Hellyer (World Class polymetallic), Mt Lyell (World Class copper+gold) and Henty (1 million oz gold) deposits all occur in/on this horizon.
- The presence of very high grade VHMS-style base metal massive sulphides has been confirmed historically by Frontier's grab outcrop samples containing 34.5% zinc + 193 g/t silver + 18.5% lead + 1.5 g/t gold and also:

Lens A	4.0m of 17.9% zinc + 132g/t silver + 10.2% lead + 0.60g/t gold
Lens B	3.0m of 21.9% zinc + 680g/t silver + 13.9% lead + 0.80g/t gold
Hole WH8	1.1m of 24.7% zinc + 123g/t silver + 10.4% lead + 0.63g/t gold

The Wart Hill massive sulphide orebody has excellent depth potential, when compared to suitable models in the district such as the Rosebery Deposit (which had a pre-mining resource of 32 million tonnes grading 14.6% zinc + 146g/t silver + 4.5% lead + 0.6% copper + 2.3g/t gold). The metal grades demonstrated at Wart Hill are very similar in tenor and range to Rosebery, except for slightly lower copper and gold.

Figure 4 shows a long section of the Rosebery Deposit rotated and plotted on top of the Wart Hill mineralisation, showing drill hole piercement points. It is obvious that Frontier have barely 'scratched the surface' at Wart Hill. It is imperative to continue drilling to relocate and track the mineralised horizon down plunge to greater depths to define a substantial body of mineralisation.

- A modest resource has been demonstrated at Wart Hill by Frontier's previous drilling and this will be quantified systematically for the first time during Q2, subsequent to proposed infill drilling and assay returns. The host horizon was faulted off at approximately 300m down plunge and must be re-located and drilled. Downhole EM has not assisted in this goal.
- The next drillhole is planned to test the "Holy Host" Horizon beneath outcropping massive sulphide lens A (which is 10m long on surface). There has been remarkably limited drilling in this area.
- Drilling will subsequently continue to test beneath the known high grade intersections to extend the massive sulphide mineralisation, prior to undertaking a resource estimation in Q2.
- A secondary target is Henty Deposit style, high-grade gold in silicification in this horizon. Previous intersections of favourable silicification in other holes at Wart Hill have often been unsampled (in spite of locally anomalous gold where it is sampled). Sampling of relevant sections of core will be undertaken as possible to check this possibility.

Exploration completed at the SMRV Project this year has included:

Downhole electromagnetic (DHEM) surveys of 3 historic holes (SWD004, WWD001 and WD022) which have intersected or passed near to the "Holy Host" horizon. No conductive responses due to massive sulphide orebodies were recorded. The survey warranted undertaking, but 'no result' was a strong possibility given the very high zinc [non-conductive] concentrations at Wart Hill.

Historic hole SWD004 was extended from 297.1m (termination depth at the end of the 2008 drilling program), to 387.4m, continuing in favourably altered and mineralized rocks (similar in appearance to an intercept of 13.5m at about 0.2% zinc from 265.0m to 278.5m). The targeted "Holy Host" horizon was not intersected and must lie at greater depths than our current drilling capability.

Introduction and Targets

Frontier Resources Ltd's SMRV project covers the southernmost part of the highly mineralised Mt Read Volcanics in Tasmania, which has a history of highly significant mines operating continuously for more than 130 years.

There are/were six World Class mineral deposits in an area of 10 000 square kilometres, including three related to the Cambrian Mount Read Volcanics (i.e. applicable to Frontier's SMRV Project and Wanderer

River Application) and three related to Devonian–Carboniferous granite aureoles (i.e. applicable to Frontier's Cethana, Narrawa, Stormont and Interview River tenements and applications). There are also a wide variety of other styles of mineralisation that can be targeted in the State.

Pre-mining resources in the Mount Read Volcanics were:

Rosebery 32 million tonnes grading 14.6% zinc + 146g/t silver + 4.5% lead + 0.6% copper + 2.3g/t gold.

Hellyer16.9 million tonnes grading 13.8%zinc + 167g/t silver + 7.2% lead + 2.5g/t gold.

Mount Lyell 311 million tonnes grading 0.97% copper + 0.31 g/t gold.

The Henty Deposit in the Mount Read Volcanics contained 2.83 million tonnes grading 12.5 g/t gold. The Eskay Creek Gold Mine in Canada and Henty represent hybrid VHMS (volcanic hosted massive sulphide) -epithermal gold that could be present in the SMRV Project area and warrant targeting. Eskay Creek's pre-mining resource contained 2.3 million tonnes grading 36.8 g/t gold plus 1,562 g/t silver.

VHMS deposits occur as clusters in prospective districts, generally with a large and several smaller deposits. Frontier's 'Elliott Bay' Exploration Licence (EL 20/96) has a high pedigree, as it is one of the few locations in the Mt Read Volcanics where smaller "daughter" VHMS deposits have <u>yet</u> to reveal a larger "mother deposit" nearby (or at least a cluster of similarly sized deposits).

A geological review by a geologist with considerable experience in VHMS-style massive sulphide deposits has confirmed the presence of an in-situ body of high grade base metal massive sulphide that was intersected in previous drilling, with grades typified by the intersections noted on page 1, but up to 25% zinc, 680 g/t silver and 14% lead, with gold and copper credits. A surface sample assayed 34.5% zinc + 193 g/t silver 18.5% lead + 1.5 g/t gold. The photos (figures 58 and 59) show lens A in outcrop and also a cut slab approximately at normal size. The brown mineral is dominantly sphalerite (the principal mineral of zinc) and the grey-silver mineral is galena (the principal mineral of lead).



These metal grades are very high, even by the <u>high</u> standards set by the other VHMS deposits in the Mt Read Volcanics.

Presence of "Holy Host" Horizon Confirmed

A geological, geochemical and geophysical review plus recently acquired SWIR (Short Wavelength Infra-Red) data, have confirmed the presence of the highly sought after "Holy Host" Horizon which is host to the VHMS style orebodies in Tasmania's Mt Read Volcanics.

The Wart Hill massive sulphide orebody was formed by exhalation of metal rich, hot water out onto the seafloor as "black smokers" (figure 60). Recent deep sea submersible video footage from the southwest Pacific (and other submarine locations) have documented the presence of "black smokers", upright chimneys of massive sulphide from which exhale hot, acidic, metal rich fluids which precipitate this metal, generally accumulating as mounds on the seafloor (Refer to Nautilus, which is seeking to mine such deposits underwater in PNG).



Recognising the particular layer in the rock which represents the seafloor at the time the mineralisation occurred is highly important in locating further orebodies along this layer. In the rest of the Mt Read Volcanics this layer is known colloquially as the "Holy Host" Horizon (coined by exploration geologists associated with the Rosebery and Hercules Mines).

Frontier Resources Ltd's drilling to date has clearly defined the southern extension of this "Holy Host" Horizon. More correctly, the "Holy Host" Horizon is not actually a single mineralized horizon but rather a number of such horizons within a single package of rocks tens of metres thick (stratigraphically this package is known as the Lynchford Member of the Comstock Formation of the Tyndall Group). These multiple horizons accord with the results of drilling at Wart Hill where base metal +/- gold mineralisation occurs on at least two horizons known as the Upper (Main) Exhalite and Lower Exhalite Horizons.

Frontier's exploration has focused on the Main (Upper) Exhalative Horizon though many holes also intersect a Lower Exhalative Horizon (which is also mineralised).

The recognition of the "Holy "Host" Horizon also has ramifications for the potential of the newly acquired Wanderer River EL to the north - it has improved its prospectivity markedly.

SWIR Spectroscopy

The VHMS orebodies of the Mt Read Volcanics have been the subject of considerable research over the years with much attention given to understanding the host rocks to these orebodies and particularly in the use of zonation of hydrothermal alteration minerals around them.

The hot, acidic metal rich fluid which exhales onto the seafloor to form the massive sulphide mounds is very reactive and as it passes through the rocks below the seafloor on its way up it interacts with the minerals in the rock through which it passes. This reaction is called alteration. The geological term for this hot fluid is hydrothermal fluid and so this chemical reaction between the fluid and the rock is known as hydrothermal alteration.

The rocks which occur below the seafloor when this hydrothermal activity took place will show evidence of hydrothermal alteration. Contemporaneous or younger rocks, laid down over this seafloor will often show either little or quite distinct evidence of hydrothermal alteration. The rocks which had been deposited on the seafloor prior to this hydrothermal activity took place are called the footwall rocks, rocks which formed over the top of this seafloor following the hydrothermal activity are called the hangingwall rocks.

Earlier studies of hydrothermal alteration associated with orebodies in the Mt Read Volcanics have shown there is often a zonation in the distribution of hydrothermal minerals in the footwall rocks around these orebodies. Recent advances in the study of these hydrothermal minerals has allowed the recognition of even more subtle changes than can't be recognized by the naked eye.

In particular, minerals commonly known as white mica or sericite, are actually group names for a range of visually indistinct minerals but which can be detected and categorized by measuring subtle shifts in the crystal structure of these minerals. Short Wavelength Infra-Red (SWIR) spectroscopy is capable of measuring these subtle shifts. Perhaps the most useful feature measured is the precise wavelength of the spectral peak measured around 2200nm.

252.000 r

Frontier conducted a SWIR study of over half of the drillholes at the Wart Hill Prospect. A total of 1005 spectra were collected at a nominal spacing of 5 metres downhole using a Terraspec ASD. A selection of holes in and around the massive sulphide resources as well as all other holes at Wart Hill were sampled in this way. Results are presented graphically in figures 61 and 62.

In this study the contrast between white micas with higher wavelengths (shown as red) and those with lower wavelengths (shown as blue) clearly demonstrate the Main (Upper) Exhalative Horizon to the south of ~5251400mN. This contrast is exemplified by a section through historic drillhole V19/3 where geochemical trends also define the position of the Upper (Main) Exhalite Horizon.

Coincident IP, EM and Gravity Anomaly (Immediately East of the Wart Hill Massive Sulphide Lenses)

Frontier carried out a 3D-IP



Hep datum is AGD66 Zone 55

survey over the prospective rocks at Wart Hill in 2005. That work defined a moderate chargeability anomaly in the eastern half of the survey corresponding with the footwall to the Main (Upper) Exhalite Horizon. Towards the northern end of the zone (i.e. in the immediate footwall to the Wart Hill massive sulphide lenses), the chargeability response was stronger suggesting this was the focus of hydrothermal fluid flow.

The eastern half of the survey defined а very high chargeability anomaly in excess of 30ms. The position of this anomaly corresponds with black shales near the base of the Tyndall Group and the anomaly was dismissed as being due to these shales, a reasonable interpretation since shales are well known to give positive responses to IP surveys and the rocks were considered non-prospective. It was always intriguing that whilst the shales are continuous over a much longer distance, the length of high chargeability (pink in figure 63) is quite discrete.

The coincidence of a UTEM conductivity anomaly with the IP and shales has also been attributed to the shales, again reasonable interpretation а since shales are well known to give positive responses to EM surveys. However, the coincidence of а gravity anomaly with the IP and EM anomalies is a different story. Shales are normally less dense than other rocks and will show a gravity low – not a high. The gravity high requires a body which is more dense than the surrounding rocks to create the



anomaly. Base metal massive sulphides, with a specific gravity of about 4t/m³, are a prime candidate for this body.

Drill testing of this anomaly has been previously proposed but never occurred due to the geological dogma that the rocks are not prospective (the lithologic host to the anomaly is not definitely known). In part this was due to an interpretation that the sequence faces west and thus the contact between the shales and the volcanics is a high angle unconformity. Frontier's drilling has confirmed an east facing to the volcanics, consistent with that of the shales and this helps explain the reported interdigitation of felsic volcanics and shale.

The "Holy Host" Horizon (the lowermost member of the Tyndall Group), is commonly characterized by shale with interdigitated felsic volcanics! Further, there are many occurrences of massive sulphide deposits hosted within black shales, such as Jabiru's Jaguar Deposit in W.A. which shows up as a chargeability anomaly over its whole length, though immediately over the deposit itself, the chargeability response increases in a similar way to this survey.

Wart Hill Massive Sulphide Orebody Depth Potential

The Wart Hill massive sulphide orebody has excellent potential to be extended to depth. Figure 64 shows the known extent of the Wart Hill massive sulphide lens superimposed on a same scale long section of the Rosebery orebody (shown with north and south reversed). The figure also shows the drillhole piercement

points of the mineralised horizon to date.

The Rosebery orebody is typified by numerous lenses of massive sulphide mineralization separated by relatively unmineralised zones. It is clear that drilling to date has barely scratched the surface of the potential for the outcropping massive sulphide lenses at Wart Hill to constitute part of a large, and potentially very high grade (given grades intersected to date) polymetallic massive sulphide orebody

Additional drilling is being considered (weather dependant), however, the next hole will test beneath the intersections at the northern end of the current drilling (to the north of a post-mineral fault in this area).

Only three holes have tested the downplunge potential of the host horizon north of this fault. The first Geopeko hole (V19/1) drilled beneath the lens did not intersect massive sulphides (it did intersect base metal anomalous alteration). Hole WH3 was collared almost directly along strike and may have missed the host horizon completely. The third hole (WH9) intersected a number of dolerite dykes at depths where the host horizon was expected and it is a reasonable proposition that the ore position has been stoped out by the dykes.



Silicification – Henty High Grade Gold Model

The geological review of existing drillcore has shown large sections of favourably silicified zones in the footwall to the Main (Upper) Exhalative Horizon to be unsampled. Those sections which have been assayed include results (e.g. hole V19/3's 1.0m of 0.955g/t gold). There is clearly a strong association between gold and silicification, now the aim is to locate higher grade zones within this silicification.

The Henty gold Deposit was discovered by assaying similarly silicified core (for gold) some 10 years after the hole had been drilled. Similar low grade assays such as V19/3's also occur in the periphery at Henty. It is not inconceivable that a similar story might occur here. A programme of assaying of silicified zones will commence soon.

Drillhole SWD004

This hole was targeted at the "Holy Host" Horizon ~150m's south of V19/3's testing for base metal massive sulphide mineralization on the Main (Upper) Exhalite Horizon and also to test for further gold in silicification. The hole passed through the target horizon between 256m and 264m. No massive sulphides were intersected on this horizon with carbonate representing the exhalite in this hole. Some zones of potentially favourable silicification were intersected in the footwall to this horizon. Sampling and assaying of these samples is underway.

MISCELANEOUS TASMANIA

An exploration license application was withdrawn for precious and base metals over the Cygnet historic hard rock and alluvial goldfield in southern Tasmania.

CORPORATE

During the January quarter, 1,800,000 employee options were converted, consisting of 1,250,000 at \$0.04 and 550,000 at \$0.03. Frontier currently have 249,235,238 shares on issue.

The following ASX announcements were released during the January 2011 quarter.

14/02/2011	ASX Price Query.
18/02/2011	Andewa 3D-IP Chargeability Anomalies Doubled in Total Area to Approx. 7Km ² .
22/02/2011	Frontier's exploration portfolio has been maximised around the Andewa Project, with ELA 1951 encompassing it and the gold and copper prospective 'lookalike' at neighbouring Mt Schrader.
27/02/2011	Bulago Geophysical, Geochemical, Corporate and Proposed Exploration Update
4/03/2011	Attendance at Conference and Investor Presentations.
18/03/2011	Very Encouraging High–Grade Gold, plus Silver and Copper Demonstrated in Multiple Outcrop Rock Channel Assays at the Andewa Project, West New Britain Province, Papua New Guinea.
22/03/2011	Geophysical Update and Proposed OTML Joint Venture Exploration, Likuruanga and Leonard Schultz Exploration Licences, PNG.
25/03/2011	Allotment of Securities.
28/03/2011	Gold Mineralised System (5km x 4km) Confirmed by Grid Based Soil Assays, Andewa Project, Papua New Guinea.
31/03/2011	Drilling Targets a Triple Geophysical Anomaly (IP /EM/Gravity) at Wart Hill for a Large, High-Grade, Polymetallic Base and Precious Metal Deposit, Southern Mount Read Volcanics (SMRV) Project, Tasmania.
1/04/2011	Letter to Shareholders - Share Purchase Plan.
11/04/2011	Change of Company Secretary.
15/04/2011	Two Exploration Licences Granted in Papua New Guinea, Covering 1,696 Sq Km and Seven Possible Porphyry Copper Deposits Plus Multiple Gold / Silver Occurrences.

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- Figure 2. Frontier's Exploration Licences and EL applications on the island of New Britain, PNG.
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- Figure 4. SRTM topographic image of the Andewa Exploration License.
- Figure 5. The Andewa Valley, from the Ekhos chargeability anomaly along the structural zone and across the CCZ to the WNW. The Komsen gold zone is near the shadow line in the central background of the photo.
- Figure 6. Andewa Prospect locations, the Komsen structures, drainage geochemistry and the initially proposed 3D -IP grid. Please use this grid as a scale <u>and reference shape</u> when evaluating the IP plans and sections. The 'gap' in the central-outer northeast edge of the grid has now been mostly surveyed in.
- Figures 7a-b. Pseudo 3D representations of chargeability and resistivity anomalies viewed from the southeast to the northwest and vice versa, respectively (also showing the IP and soil geochemistry section lines). A small inset plan view illustrates the viewing direction.
- Figure 8 Andewa grid based gold in soil assays.
- Figure 9a-e. Interpreted chargeability plans at 300m and 150m above sea level, at sea level and at 150m and 300m below sea level, respectively. The scale bar is 1,000m long in 200m segments. Line spacing

is about 200m. The grid is almost 5.5 km across from the SW to the NE.

Blue regions of the plans are <15ms and are not anomalous. The yellow areas are from 15 to 30ms and represent low level anomalism.

The chosen threshold for significant chargeability anomalies is 30ms and as such, the orange zones are strongly anomalous (30 to 45ms) and the red zones are intensely chargeable (>45 ms).

Note that the projection utilised in plans for the last release (11/2010) was depth below topography and the current figures show depth below or above sea level (i.e. a horizontal plane, not a surface relative to topography). Both projections have different uses. The plans have also been simplified to only show 4 colours (not anomalous, weakly anomalous, strongly anomalous and intensely anomalous).

Figures 10a-e. Interpreted resistivity plans at 300m above sea level, at sea level and at 300m below sea level. The scale bar is 1,000m long (in 200m segments). Line spacing is about 200m.

The blue regions on the plans are not anomalous (<200 ohm-m) and the yellow areas represent low level anomalism (200 to 350 ohm-m).

The chosen threshold for a resistivity anomaly is >350 ohm-m, so the orange zones are moderately anomalous (350 to 500 ohm-m) and the red zones are strongly resistive (>500 ohm-m).

Figures 11a-h. Interpreted resistivity (upper) and chargeability (lower) cross sections for 9400E, 9800E, 10200E, 10600E, 11200E, 12400E and 12800E, respectively (legends are as noted above for the plans).

The vertical and horizontal scales are 1:1. The vertical scale is from 500m below sea level to 800m above sea level. The total field of view between the vertical relative level (RL) posts is \sim 7,700m. Note that the cross section sequence progresses from the Komsen side through the CCZ to the Ekhos /Ber side (from the SW to NE), looking to the NE.

The upper right part of the figure shows the location of that section line relative to the entire grid. The previously announced CCZ cross sections are represented by the 9400E-10600E lines and the 'new' Ekhos sections are represented by the 11200E-12800E lines.

- Figure 12. Photo of outcrop grading 15m of 15.48 g/t gold.
- Figure 13 Gold assays from rock samples at the Andewa Project on an image of chargeability 50m below topography.
- Figure 14. Gold mineralised outcrop exposed in a creek, showing 2 sub-parallel zones containing high volumes of sulphides that are oxidising to produce a distinctive orange ooze. Such zones are virtually always mineralised and often can represent structures such as faults.
- Figure 15. Outcrop assaying 3m of 14.80 g/t gold + 42 g/t silver on the Field Technician's left side (at a high angle).
- Figure 16. Secondary copper mineralisation on the fracture face of a porphyritic rock from Andewa at approx. real (100%) scale.
- Figure 17. Individual <u>gold in soil</u> assays at the Andewa Project plotted on a thematic contoured image of the gold results (inverse distance algorithm), showing the location and major trends of the mineralised zones.
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- Figure 21. <u>Copper</u> in soil assays on an image of <u>chargeability 50m</u> below topography.
- Figure 22. Very tightly located <u>molybdenum</u> in soil assays.
- Figure 23 An SRTM topographic image of the Mt Schrader Exploration License Application in West New Britain Province, surrounding the highly prospective Andewa EL.
- Figure 24. The Mt Schrader Exploration License Application plotted over the PNG Geological Survey regional geology plan, showing the location of EL 1345.
- Figure 25. Photo looking from the NE slope of Mt Andewa (outside EL 1345) and looking to the east. It shows the ELA area is easily accessible from the coast, logging tracks and kunai grass areas. The eastern edge of the ELA is in the 'indent' in the bay.
- Figure 26. SRTM topographic image of the Schrader ELA showing gold anomalous areas in drainages (in the magenta areas) from historic exploration results, the crater rims, plus several circular features.
- Figure 27. Close-up SRTM topographic image of the Mt Schrader crater showing gold anomalous areas in drainages from late 1980's exploration results. Note the paucity of existing sampling.
- Figure 28. An SRTM topographic image of EL 1595 Bulago in the Southern Highlands Province, showing the strongly anomalous and sub-circular Bulago basin on the central eastern side of the three prominent circular features/ intrusions.
- Figure 29 TMI and TMI -1VD images for Bulago
- Figure 30. Digital terrain model for Bulago.
- Figure 31 Grid based soil gold assays on thematic contour plan, with proposed locations of initial OTML drill holes
- Figure 32. Grid based copper soil assays on thematic contour plan, with initially proposed OTML drill holes.
- Figure 33: SRTM image of EL 1351
- Figure 34. EL 1351 Raw magnetic data
- Figure 35. Raw radiometric data.
- Figure 36. Raw magnetic data with copper sampling
- Figure 37 EL 1351 digital terrain model.
- Figure 38. Inversion model of the Likuruanga block.
- Figure 39. 3D inversion model of the Esis area.
- Figure 40 3D inversion model of the Bukuam area.
- Figure 41. Gold over gridded copper at Bukuam
- Figure 42. Copper in trenches at Esis.
- Figure 43. Schematic cross section from Bukuam to Esis.
- Figure 44. SRTM topographic plan of EL 1597.
- Figure 45. DTM of EL 1597.

Figures 46 and 47. TMI and TMI 1VD for EL 1597.

Figure 48. Unconstrained inverted aeromagnetic data for EL 1597

Figure 49 and 50. Copper and gold in soil samples at Wasi Prospect.

- Figure 51. Gold in trench channel chip samples at Kru prospect.
- Figure 52. Central New Britain EL showing location of the Uasilau Prospect
- Figure 53. Geological plan of the Central New Britain EL.
- Figure 54 Gold in soil at Uasilau Prospect
- Figure 55. Copper in soil samples at the Uasilau Prospect.
- Figure 56. SRTM plan showing the East New Britain EL and prospects.
- Figure 57. East New Britain geological plan showing location of Prospects.
- Figure 58. Lens A at Wart Hill Prospect
- Figure 59. Close up of high grade polymetallic mineralisation.
- Figure 60. Modern day "black smokers" exhaling base and precious metal rich fluids onto the seafloor.
- Figure 61: Simplified geology of the Wart Hill Prospect, Elliott Bay, showing the position of the Upper (Main) Exhalite Horizon and Lower Exhalite Horizon (part of the Mt Read Volcanics extensive "Holy Host" Horizon), and precise wavelength of 2200nm wavelength in white micas (see discussion below).
- Figure 62: Cross-section through old drillhole V19/3 showing Upper (Main) Exhalite Horizon clearly defined by SWIR spectral analysis of white mica alteration minerals with support from lithogeochemistry.
- Figure 63: Chargeability image showing coincident 30 ms chargeability (IP), UTEM conductivity (EM) and 0.3 mgals gravity anomaly to the immediate east of the wart Hill alteration zone. Currently being tested by hole WD024.
- Figure 64: Long section along the Upper (Main) Exhalite Horizon (part of the regionally extensive "Holy Host" Horizon) showing drillhole intersections of horizon to date as well as the known extent of Wart Hill massive sulphide orebody superimposed on a 2008/2009 long section of Rosebery orebody for comparison.

For additional information relating to Frontier Resources please visit our website at <u>www.frontierresources.com.au</u> or feel free contact me.

FRONTIER RESOURCES LTD

to MM

P.A.McNeil, M.Sc. CHAIRMAN / MANAGING DIRECTOR

The information in this report that relates to Exploration Results and Mineral Resources is based on information compiled by, or compiled under the supervision of Peter A. McNeil - Member of the Aust. Inst. of Geoscientists. Peter McNeil is the Managing Director of Frontier Resources, who consults to the Company. Peter McNeil has sufficient experience which is relevant to the type of mineralisation and type of deposit under consideration to qualify as Competent Person as defined in the 2004 Edition of the Australasian Code of Reporting Exploration Results, Mineral Resources and Ore Resources. Peter McNeil consents to the inclusion in the report of the matters based on the information in the form and context in which it appears.

ABOUT FRONTIER RESOURCES LTD

FRONTIER IS FOCUSED ON EXPLORING FOR AND DEVELOPING MINERAL DEPOSITS IN THE HIGHLY MINERALISED PACIFIC 'RIM OF FIRE' IN PAPUA NEW GUINEA AND THE HIGHLY PROSPECTIVE DOLCOATH GRANITE AND MT READ VOLCANICS OF TASMANIA,

- Frontier is an innovative and socially responsible ASX listed junior mineral explorer whose shares also trade on the Frankfurt, Berlin and Munich Stock Exchanges.
- Directors have more than 150 years combined experience in PNG and Australia to serve the interests of the company, its shareholders and stakeholders.
- Frontier operates with a general policy of *drilling* our quality projects using our purpose built and self manufactured, cost effective, environmentally friendly, man-portable diamond core rigs.
- The Company has a 100% interest in six Exploration Licences (approx. 2,807 km²) and two Exploration Licence Applications (approx. 2,933km²) in PNG. Five ELs (approx. 2,690km²) are subject to two Joint Ventures with PNG copper-gold producer Ok Tedi Mining Ltd.
- Frontier also has four Exploration Licences and one Retention Licence (348 km²) + several EL Applications in Tasmania.
- The tenement portfolio offers excellent mineral deposit potential. Primary targets are World Class copper-gold-molybdenum porphyry, high grade gold epithermal, gold–base metal & tungsten skarns + polymetallic VMS (zinc-lead-silver-gold) deposits.
- The projects <u>all</u> have high-grade exploration results in rock, trenches and/or drill hole and are in the same or similar geological terranes as existing World Class and/or major mines.

PAPUA NEW GUINEA

THE 100% OWNED MT ANDEWA EL IN PNG HAS EXCELLENT GOLD AND COPPER MINERALISATION POTENTIAL

- Frontier's exploration team is in the field conducting infill soil sampling and preparing for an extensive and deep drilling
 program scheduled for May 2011 with our own drilling rigs.
- Frontier undertook a major three dimensional Induced Polarisation (3D-IP) geophysical program over a 21 sq km grid at the Andewa gold and copper Project on the island of New Britain in Papua New Guinea in 2010 and collected in excess of 4,600 soil and rock samples.
- The 3D-IP survey was a remarkable success that showed three exceptionally voluminous and intense, chargeability anomalies indicating the presence of very large sulphide systems from on-surface to more than 800m deep.
- The total chargeability anomaly (>30ms) area is approximately seven square kilometres, consisting of three very large, spatially related and intense chargeability anomalies called the Core Chargeability (CCZ), Ekhos and Ber Zones. The Ekhos chargeability anomaly is 3.3 Km² in area, the CCZ is 3.0 km² and Ber is approximately 0.5 km² (at 150m below sea level).
- The total anomalous chargeability area is approximately 5,400m long (E-W) and 3,000 wide (N-S). The Ekhos chargeability anomaly is approximately 3,850m long x 1,750m wide. It averages about 1,000m wide and has a higher grade chargeability core zone that is approximately 2,400m long and 1,000m wide (at >30ms and 400m below topography). The CCZ is approximately 2,900m long (NW to SE) and a maximum of 2,100m wide, averaging 1,000m wide.
- Ekhos is the largest and closest to surface 3D-IP chargeability anomaly at Andewa, with much of it very intense at >45ms; it is open to the south and east but appears defined in general at depth. The CCZ chargeability anomaly is open to the south AND at depth, however, it's very intense core (>45ms) appears to be adequately resolved. The CCZ also has large anomalous areas at >45ms chargeability that extend to depths greater than the 800m modelled maximum.
- Each major chargeability anomaly is surrounded by a sub-circular high-resistivity anomaly that appears to merge near the edge and off the grid, to become 1 x⁶km diameter resistivity anomaly in the centre of the Mt Andewa crater, with 'holes' present where the strong chargeability anomalies exist.
- Frontier has previously drilled gold mineralisation at Komsen on the western margin of the CCZ from surface to a maximum depth of 320m below surface in a limited program, with drill intercepts containing significant gold and base metals such as 2m of 5.43 g/t gold + 95 g/t silver + 11.1% zinc + 2.3% lead + 0.12% copper and 7.9m of 10.01g/t gold.

OK TEDI MINING LTD JOINT VENTURE

HIGHLY PROSPECTIVE TENEMENTS AND FRONTIER'S EXPLORATION SUCCESS IN PNG CULMINATED IN AN EXCELLENT STRATEGIC ALLIANCE - JOINT VENTURE WITH WORLD CLASS COPPER PRODUCER OK TEDI MINING LTD (OTML)

- 13,000m of JV drilling is planned in the coming year
- Five ELs are subject to 2 joint ventures that require a total earn-in of US\$60 million over 6 years, consisting of US\$12 million for each of the 5 projects.
- Frontier then has a deferred carry to completion of a Bankable Feasibility Study on each tenement, repayable from 50% of future cash flow.
- The Company will retain a 42% interest (dilutable) in the Bulago and Leonard Schultz ELs and a 19.9% interest (non-dilutable) in the Likuruanga, Central and East New Britain ELs, to the completion of a Bankable Feasibility Study.
- The JVs cover a total area of 2,690 km².
- OTML have completed large aeromagnetic and radiometric programs at Bulago, Leonard Schultz and Likuruanga to discriminate and rank targets for follow up exploration,.
- The Central and East New Britain licences have been granted and aeromagnetic programs will be flown as soon as reasonably possible.
- OTML is a major producer of copper concentrate from the Ok Tedi mine (that started operations in 1984) and has become the single largest business contributor to the economy of PNG. In 2009, OTML's export earnings were K4 billion, representing 33% of PNG's total export earnings. The contributions of the mine to PNG are wide reaching improving opportunities for employment, education and health services.

PNG exploration results from the JV projects have included:

- The Bulago JV has 10 zones of high-grade gold in outcrop channel samples at the Suguma and Funutu Prospects from continuous chip outcrop channel samples. Trench intercepts included 27m of 66.8 g/t gold, 4m of 135.6 g/t gold, 9m of 64.0 g/t gold, 16m of 36.5 g/t gold, 18m of 40.3 g/t gold, 7.5m of 67.0 g/t gold and 9m of 24.0 g/t gold.
- The Kru and nearby Wasi Prospects in the Leonard Schultz JV have excellent gold outcrop trench channel sample assay results including 16m of 18.60 g/t gold contained within 76m of 5.35 g/t gold. Additional significant assay results included 22m of 2.71 g/t and 36m of 1.15 g/t (within 384.3m of 0.67 g/t gold) in outcrop trench.
- Likuruanga JV Esis Prospect has 27m of supergene mineralisation grading 0.71% copper (from 33m depth), plus 66m of primary grading 0.42% copper (from 86.6m to end of hole), with the last 7.6m of the hole grading 0.49% copper. The Bukuam porphyry copper-gold-molybdenum soil anomaly is >4.8km long and has not yet been drilled.

TASMANIA

EXPLORATION IS RAMPING UP ON FRONTIER'S TASMANIAN EXPLORATION AND RETENTION LICENCES, TARGETING KNOWN HIGH-GRADE (PLUS POTENTIALLY BULK MINEABLE) TUNGSTEN, GOLD AND BASE METAL DEPOSITS

The Moina Project consists of EL 42/2010 (Stormont), RL 3/2005 (Narrawa) and EL 29/2009 (Cethana). It covers an E-W spine of the highly mineralised Dolcoath Granite and a number of skarn and vein deposits [from east to west (proximal to distal) including silver, tin, tungsten, molybdenum, gold+ silver + zinc + lead, zinc+ gold, fluorspar (excised RL not FNT's) and gold + bismuth].

Frontier is specifically targeting tungsten along with other metals in this highly mineralised district.

- There are at least 55 historic workings (shafts, adits and small open pits) within the targeted area testifying to its highly prospective and mineralised status.
- The primary commodity mined in the district was tungsten in at least 23 workings, tin in 9 workings and gold in 7 workings (many are unspecified).
- Previous Frontier tungsten drill intersections included 1m grading 1.98% WO₃ near the NW end of the Narrawa Deposit, within a broad low grade geochemical halo that averaged 14m of 0.20% WO₃ (from 21m).

Narrawa is a stratabound/stratiform skarn Deposit hosted within 4 steeply dipping on/near surface lodes, which could be mined by open pit mining methods.

- The deposit contains an Indicated and Inferred resource with 14,125 ounces of gold, plus 131,300 ounces of silver, 2,765 tonnes of lead and 2,335 tonnes of zinc (at 0.5g/t gold cut-off grade), that is up to 220m long, 20m wide and 60m deep, within 209,330 tonnes of rock grading 2.10 g/t gold, 19.5 g/t silver, 1.32% lead and 1.12% zinc.
- The Indicated Resource consists of 162,755 tonnes grading 2.11 g/t gold, 20.5 g/t silver, 1.42% lead and 1.2% zinc.
- The Inferred Resource consists of 46,574 tonnes grading 2.07 g/t gold, 16 g/t silver, 0.98% lead and 0.81% zinc.

The Stormont Deposit is a skarn hosted within on/near surface fold keels, which could be easily mined by open pit mining methods.

- The on-surface Stormont Deposit, with an Inferred Resource of 14,250 ounces of gold plus 304 tonnes bismuth, within 112,500 tonnes of mineralised rock grading 3.94 g/t gold plus 0.27% bismuth (1.0g/t gold cut-off grade).
- It is planned to increase the size of the Stormont resource and upgrade it from Inferred to Indicated. The 9 km² provides additional highly prospective ground for exploration.

DRILLING IS NOW TARGETING THE WART HILL PROSPECT, SMRV PROJECT, SW TASMANIA

Frontier is targeting a 45km total strike length of the highly prospective Mt Read Volcanics in SW Tasmania for World Class Rosebery and Eskay Creek type of Volcanic Hosted Massive Sulphide Deposits (EL 20/96 and EL 33/2010).

- A high-grade 'Rosebery' style VHMS base metal (zinc, lead, silver, gold) horizon has been tracked for 290m down a fold keel by Frontier's drilling. A 3D-IP survey was completed and it has provided useful targeting vectors. The faulted off southern extension and the 'sides' are good exploration targets and there is good regional potential to locate additional volcanic hosted massive sulphide and also high grade gold deposits.
- Trench results have included 3m of 21.9% zinc + 13.9% lead + 680g/t silver + 0.84g/t gold and 4m of 17.9% zinc + 10.2% lead + 138g/t silver + 0.60g/t gold.
- Drill results have included 3.9m of 12.1% zinc + 7.3% lead +124 g/t silver +0.60 g/t gold, 1.1m of 23.6% zinc +10.4% lead+123 g/t silver +0.60 g/t gold and 5.7m of 7.5% zinc + 4.0% lead +77 g/t silver + 0.35 g/t gold.

Appendix 5B

Rule 5.3

Mining exploration entity quarterly report

Introduced 1/7/96. Origin: Appendix 8. Amended 1/7/97, 1/7/98, 30/9/2001.

Name of entity

FRONTIER RESOURCES LIMITED

ACN

095 684 389

Quarter ended ("current quarter") March 2011

Current quarter

\$A'000

Year to date

9 Months

Consolidated statement of cash flows

Cash flows related to operating activities

	rating activities	\$A 000	9 Months \$A'000
Receipts from pro	duct sales and related debtors	22	38
Payments for evaluation	(a) exploration and	(915)	(1,799)
	(b) development		
		(201)	(420)
	(d) administration	(201)	(429)
Interest and othe received	r items of a similar nature	9	9
-			
Other Expenditure	reimbursable by others		
Net Operating Ca	ash Flows	(1,085)	(2,181)
Cash flows ralata	d to investing activities		
(a)prospects			
(c) other fixed asso	ets	(85)	(85)
Proceeds from sale	e of:		
(a)prospects			
-		. ,	(6)
-			(91)
	and investing cash flows	(1,236)	(2,272)
	Payments for evaluation Dividends received Interest and other received Interest and other Income taxes paid Other Expenditure Net Operating Ca Cash flows relate Payment for purch (a)prospects (b)equity investme (c) other fixed asse Proceeds from sale (a)prospects (b)equity investme (c)other fixed asse Loans to other entit Loans repaid by of Other (provide det Net investing cash	evaluation (b) development (c) production (d) administration Dividends received Interest and other items of a similar nature received Interest and other costs of finance paid Income taxes paid Other Expenditure reimbursable by others <u>Net Operating Cash Flows</u> Cash flows related to investing activities Payment for purchases of: (a)prospects (b)equity investments (c) other fixed assets Proceeds from sale of: (a)prospects (b)equity investments (c)other fixed assets Loans to other entities Loans repaid by other entities Other (provide details if material) Net investing cash flows Total operating and investing cash flows	Payments for evaluation(a)explorationand exploration(915)Payments for evaluation(b)development (c)production (d)(201)Dividends received Interest and other items of a similar nature received Interest and other costs of finance paid Income taxes paid Other Expenditure reimbursable by others9Net Operating Cash Flows(1,085)Cash flows related to investing activities Payment for purchases of: (a)prospects (b)equity investments (c) other fixed assets(85)Proceeds from sale of: (a)prospects (b)equity investments (c) other fixed assets(85)Proceeds from sale of: (a)prospects (b)equity investments (c) other fixed assets(66)Net investing cash flows(151)Total operating and investing cash flows(151)

⁺ See chapter 19 for defined terms.

1.13	Total operating and investing cash flows (brought forward)	(1,236)	(2,272)
1.14	Cash flows related to financing activities Proceeds from issues of shares, options, etc. net of costs Proceeds from sale of forfeited shares	113	1,884
1.16 1.17 1.18	Proceeds from borrowings Repayment of borrowings Dividends paid		
1.19	Other (provide details if material) Net financing cash flows	113	1,884
	Net increase (decrease) in cash held	(1,123)	(388)
1.20 1.21	Cash at beginning of quarter/year to date Exchange rate adjustments to item 1.20	1,932	1,197
1.22	Cash at end of quarter	809	809

Payments to directors of the entity and associates of the directors Payments to related entities of the entity and associates of the related entities

		Current quarter \$A'000
1.23	Aggregate amount of payments to the parties included in item 1.2	84
1.24	Aggregate amount of loans to the parties included in item 1.10	

1.25 Explanation necessary for an understanding of the transactions

Consulting Fees and Director Fees

Non-cash financing and investing activities

- 2.1 Details of financing and investing transactions which have had a material effect on consolidated assets and liabilities but did not involve cash flows
- 2.2 Details of outlays made by other entities to establish or increase their share in projects in which the reporting entity has an interest

⁺ See chapter 19 for defined terms.

Financing facilities available

Add notes as necessary for an understanding of the position.

		Amount available \$A'000	Amount used \$A'000
3.1	Loan facilities		
3.2	Credit standby arrangements		

Estimated cash outflows for next quarter

		\$A'000
4.1	Exploration and evaluation	350
4.2	Development	
4.3	Production	
4.4	Administration	200
	Total	550

Reconciliation of cash

showr	nciliation of cash at the end of the quarter (as n in the consolidated statement of cash flows) to lated items in the accounts is as follows.	Current quarter \$A'000	Previous quarter \$A'000
5.1	Cash on hand and at bank	20	38
5.2	Deposits at call	789	1,894
5.3	Bank overdraft		
5.4	Other (provide details)		
	Total: cash at end of quarter (item 1.22)	809	1,932

Changes in interests in mining tenements

		Tenement reference	Nature of interest (note (2))	Interest at beginning of quarter	Interest at end of quarter
6.1	Interests in mining tenements relinquished, reduced or lapsed				
6.2	Interests in mining tenements acquired or increased	EL1592 EL1598 33/2010 42/2010	Exploration Licence Exploration Licence Exploration Licence Exploration Licence	0 0 0	100% 100% 90% 100%

⁺ See chapter 19 for defined terms.

Issued and quoted securities at end of current quarter Description includes rate of interest and any redemption or conversion rights together with prices and dates.

		Total number	Number quoted	Issue price per security (see note 3) (cents)	Amount paid up per security (see note 3) (cents)
7.1	Preference +securities (description)	Nil	Nil		
7.2	Changes during quarter (a) Increases through issues (b) Decreases through returns of capital, buy- backs, redemptions				
7.3	⁺ Ordinary securities	249,235,238	249,235,238		
7.4	Changes during quarter (a) Increases through issues (b) Decreases through returns of capital, buy- backs	2,950,000	2,950,000		
7.5	+Convertible debt securities (description)	Nil	Nil		
7.6	Changes during quarter (a) Increases through issues (b) Decreases through securities matured, converted				
7.7	Options (description and conversion factor)	2,500,000 2,500,000 1,200,000 4,500,000 2,500,000 2,500,000		<i>Exercise price</i> 4.0 cents 5.0 cents 4.0 cents 11.0 cents 9.0 cents 10.0 cents	Expiry date 31-Dec-12 31-Dec-12 19-Oct-13 30-Dec-14 31-Dec-12 31-Dec-12
7.8	Issued during quarter				
7.9	Exercised during quarter	950,000 2,000,000		3.0 cents 4.0 cents	21-1-14 19-10-13

⁺ See chapter 19 for defined terms.

7.10	Expired during quarter	180,000		14 cent	20/10/11 - cancelled
7.11	Debentures (totals only)	Nil	Nil		
7.12	Unsecured notes (totals only)	Nil	Nil		

Compliance statement

- 1 This statement has been prepared under accounting policies which comply with accounting standards as defined in the Corporations Act or other standards acceptable to ASX (see note 4).
- 2 This statement does give a true and fair view of the matters disclosed.



Sign here:

..... Date: 31 January 2011 (Director/Company secretary)

Print name: Jay Stephenson

Notes

- 1 The quarterly report provides a basis for informing the market how the entity's activities have been financed for the past quarter and the effect on its cash position. An entity wanting to disclose additional information is encouraged to do so, in a note or notes attached to this report.
- 2 The "Nature of interest" (items 6.1 and 6.2) includes options in respect of interests in mining tenements acquired, exercised or lapsed during the reporting period. If the entity is involved in a joint venture agreement and there are conditions precedent which will change its percentage interest in a mining tenement, it should disclose the change of percentage interest and conditions precedent in the list required for items 6.1 and 6.2.
- 3 **Issued and quoted securities** The issue price and amount paid up is not required in items 7.1 and 7.3 for fully paid securities.
- 4 The definitions in, and provisions of, *AASB 1022: Accounting for Extractive Industries* and *AASB 1026: Statement of Cash Flows* apply to this report.
- 5 Accounting Standards ASX will accept, for example, the use of International Accounting Standards for foreign entities. If the standards used do not address a topic, the Australian standard on that topic (if any) must be complied with.

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⁺ See chapter 19 for defined terms.