

# **Mining Plan Update**

The board of Ark Mines Ltd (**ASX:AHK**) is pleased to confirm its plans to mine Mt. Porter Central during Q2 this year.

During the 2016/17 wet season, AHK has reviewed its Mt. Porter mining plans with a view to:

- prioritise access to high grade ore from Mt. Porter Central;
- consider potential mining extensions at Mt. Porter Central;
- establish resources at Mt. Porter NW and SE; and
- minimise working capital requirements.

AHK is now focused on securing a contractor to undertake the required mining at Mt. Porter and haulage of ore to the Union Reef mill.

Advanced planning is now underway for gold production at:

- Glencoe (ML29679), which will require:
  - a drilling and metallurgical program; and
  - $\circ$  an amendment of the current Mining Management Plan (MMP); and
  - Frances Creek (EL23237), which will require:
    - compilation of a JORC resource;
    - o application for and issue of a Mining Licence;
    - o a native title agreement; and
    - MMP approval.

AHK's intention is to prepare:

- Glencoe for gold mining during the 2018/19 dry season; and
- Frances Creek for gold mining during the 2019/20 dry season.

To increase production of gold ounces during the 2018/19 dry season AHK is actively seeking to acquire other advanced projects, which require minimal work prior to commencement of mining.

## Mt. Porter Central

Mt. Porter Central consists of two parallel structures running along the length of Mt. Porter – see attached *Figure 1 (Mt. Porter Cross Section)*. AHK intends to mine Mt. Porter Central in two open cut mining phases during the 2017/18 dry season – see attached:

- Figure 2 (Mt. Porter Stage 1 Open Cut Mining Pit);
- Figure 3 (Mt. Porter Stage 2 Open Cut Mining Pit);
- Figure 4 (Mt. Porter Central and Mt. Porter South BCM Tables); and
- Figure 5 (Mt. Porter Central and Mt. Porter South Gold Recoveries).



The Western limb has a high grade upper component, which AHK plans to target in the first phase of mining. This strategy will reduce the initial overburden strip and bring forward ore processing and gold sales.

Since metallurgical testing of Mt. Porter ore in 2015, the Union Reef mill is now offering AHK new processing options and residency times that should materially increase recoveries from the Mt. Porter ore. AHK intends to conduct further drilling at Mt. Porter Central and metallurgical testing to confirm expectations for recoveries of Mt. Porter oxide and sulphide ore and to determine the best methodology to optimise profits.

The Mt. Porter metallurgical testing program comprises designing and drilling 4 holes with pre-design depth estimates between 40m and 60m for each hole (**Met Holes**), for a total of 160m to 220m. The Met Holes will be fire assayed by the metre in full, and representative grade/oxidation stated intervals will be screen fire assayed. This will pre-test the metallurgical sample for further compositing, allow checks against the laboratory and give indications on coarse gold content and nuggets.

The first two holes have now been assayed. Locations for these holes are set out in Table 1 (below) and the results are set out in Table 2 (below).

The final samples will then be tested by the laboratory in simulation of the Union Reef plant for both carbon in leach and Acacia backed gravity recovery, across fresh, transitional and oxide material types. These results are expected within the next 2 weeks.

Key points:

- grades are high in the oxide;
- the peak grades are better than previous results taken at 2m intervals;
- the higher resolution holes are showing a low-grade buffer outboard of the ore, whereas the older low resolution holes and the current model are not; they show the highest grades on the outer edges of the orebody. The new holes indicate that most dilution and loss may potentially be confinable in the low-grade halo, which is highly desirable and advantageous; and
- 32m at 3.41 grams on hole 347.

|         | MT Porter Grid | MT Porter Grid | MT Porter Grid | MT Porter Grid |     |
|---------|----------------|----------------|----------------|----------------|-----|
| Hole ID | E              | Ν              | RL             | Azimuth        | Dip |
| MPRC347 | 10207          | 10375.8        | 521.99         | 273            | 60  |
| MPRC348 | 10207          | 10390.7        | 525.5          | 270            | 60  |



#### Table 2 Met Hole Gold assays at 1m intervals

| BHID    | FROM | то | WEATHR | Grade |
|---------|------|----|--------|-------|
|         | m    | m  |        | g/t   |
| MPRC347 | 0    | 1  |        |       |
| MPRC347 | 1    | 2  | ох     | 0.21  |
| MPRC347 | 2    | 3  | ох     | 0.06  |
| MPRC347 | 3    | 4  | ох     | 0.21  |
| MPRC347 | 4    | 5  | ох     | 0.44  |
| MPRC347 | 5    | 6  | ох     | 0.26  |
| MPRC347 | 6    | 7  | ох     | 0.40  |
| MPRC347 | 7    | 8  | ох     | 4.29  |
| MPRC347 | 8    | 9  | ох     | 1.15  |
| MPRC347 | 9    | 10 | ох     | 0.63  |
| MPRC347 | 10   | 11 | ох     | 1.76  |
| MPRC347 | 11   | 12 | ох     | 30.0  |
| MPRC347 | 12   | 13 | ох     | 9.68  |
| MPRC347 | 13   | 14 | ох     | 3.75  |
| MPRC347 | 14   | 15 | ох     | 1.73  |
| MPRC347 | 15   | 16 | ох     | 1.53  |
| MPRC347 | 16   | 17 | ох     | 1.52  |
| MPRC347 | 17   | 18 | ох     | 2.43  |
| MPRC347 | 18   | 19 | ох     | 1.24  |
| MPRC347 | 19   | 20 | ох     | 16.3  |
| MPRC347 | 20   | 21 | ох     | 3.14  |
| MPRC347 | 21   | 22 | ох     | 0.67  |
| MPRC347 | 22   | 23 | ох     | 0.95  |
| MPRC347 | 23   | 24 | ох     | 1.10  |
| MPRC347 | 24   | 25 | tr     | 1.15  |
| MPRC347 | 25   | 26 | tr     | 1.20  |
| MPRC347 | 26   | 27 | tr     | 0.85  |
| MPRC347 | 27   | 28 | tr     | 1.39  |
| MPRC347 | 28   | 29 | tr     | 1.35  |
| MPRC347 | 29   | 30 | tr     | 0.81  |
| MPRC347 | 30   | 31 | tr     | 0.38  |
| MPRC347 | 31   | 32 | fr     | 6.29  |
| MPRC347 | 32   | 33 | fr     | 3.26  |
| MPRC347 | 33   | 34 | fr     | 1.83  |
| MPRC347 | 34   | 35 | fr     | 2.27  |
| MPRC347 | 35   | 36 | fr     | 0.41  |
| MPRC347 | 36   | 37 | fr     | 4.63  |
| MPRC347 | 37   | 38 | fr     | 0.99  |
| MPRC347 | 38   | 39 | fr     | 0.53  |

| BHID    | FROM | то | WEATHR | Grade |
|---------|------|----|--------|-------|
|         | m    | m  |        | g/t   |
| MPRC350 | 0    | 1  | ох     | 0.18  |
| MPRC350 | 1    | 2  | ох     | 0.19  |
| MPRC350 | 2    | 3  | ох     | 0.02  |
| MPRC350 | 3    | 4  | ох     | 0.05  |
| MPRC350 | 4    | 5  | ох     | 0.15  |
| MPRC350 | 5    | 6  | ох     | L     |
| MPRC350 | 6    | 7  | ох     | L     |
| MPRC350 | 7    | 8  | ох     | 0.05  |
| MPRC350 | 8    | 9  | ох     | 0.02  |
| MPRC350 | 9    | 10 | ох     | L     |
| MPRC350 | 10   | 11 | ох     | L     |
| MPRC350 | 11   | 12 | ох     | 0.05  |
| MPRC350 | 12   | 13 | ох     | 0.03  |
| MPRC350 | 13   | 14 | ох     | 0.07  |
| MPRC350 | 14   | 15 | ох     | 0.05  |
| MPRC350 | 15   | 16 | ох     | 0.44  |
| MPRC350 | 16   | 17 | ох     | 0.20  |
| MPRC350 | 17   | 18 | ох     | 0.12  |
| MPRC350 | 18   | 19 | ох     | 0.12  |
| MPRC350 | 19   | 20 | ох     | 0.15  |
| MPRC350 | 20   | 21 | tr     | 0.62  |
| MPRC350 | 21   | 22 | tr     | 0.31  |
| MPRC350 | 22   | 23 | tr     | 1.15  |
| MPRC350 | 23   | 24 | tr     | 0.36  |
| MPRC350 | 24   | 25 | tr     | 3.22  |
| MPRC350 | 25   | 26 | fr     | 17.8  |
| MPRC350 | 26   | 27 | fr     | 5.07  |
| MPRC350 | 27   | 28 | fr     | 6.66  |
| MPRC350 | 28   | 29 | fr     | 1.94  |
| MPRC350 | 29   | 30 | fr     | 0.98  |
| MPRC350 | 30   | 31 | fr     | 1.55  |
| MPRC350 | 31   | 32 | fr     | 1.15  |
| MPRC350 | 32   | 33 | fr     | 1.60  |
| MPRC350 | 33   | 34 | fr     | 1.58  |
| MPRC350 | 34   | 35 | fr     | 0.65  |
| MPRC350 | 35   | 36 | fr     | 0.55  |
| MPRC350 | 36   | 37 | fr     | 2.00  |
| MPRC350 | 37   | 38 | fr     | 2.01  |
| MPRC350 | 38   | 39 | fr     | 0.39  |



|         |    | -  | -  | -    |         |    | -  | -  |      |
|---------|----|----|----|------|---------|----|----|----|------|
|         |    |    |    |      |         |    |    |    |      |
| MPRC347 | 39 | 40 | fr | 0.39 | MPRC350 | 39 | 40 | fr | 1.35 |
| MPRC347 | 40 | 41 | fr | 0.64 | MPRC350 | 40 | 41 | fr | 0.93 |
| MPRC347 | 41 | 42 | fr | 0.12 | MPRC350 | 41 | 42 | fr | 0.12 |
| MPRC347 | 42 | 43 | fr | 0.15 | MPRC350 | 42 | 43 | fr | 0.11 |
| MPRC347 | 43 | 44 | fr | 0.55 | MPRC350 | 43 | 44 | fr | 0.13 |
|         |    |    |    |      | MPRC350 | 44 | 45 | fr | 0.15 |
|         |    |    |    |      | MPRC350 | 45 | 46 | fr | 0.12 |
|         |    |    |    |      | MPRC350 | 46 | 47 | fr | 0.25 |
|         |    |    |    |      | MPRC350 | 47 | 48 | fr | 0.03 |
|         |    |    |    |      | MPRC350 | 48 | 49 | fr | 0.07 |
|         |    |    |    |      | MPRC350 | 49 | 50 | fr | 0.06 |
|         |    |    |    |      | MPRC350 | 50 | 51 | fr | 0.02 |
|         |    |    |    |      | MPRC350 | 51 | 52 | fr | 0.03 |
|         |    |    |    |      | MPRC350 | 52 | 53 | fr | 0.10 |

### Mt. Porter Central NW and SE Extensions

In 2005, a review of the geological model for the Mt. Porter 10400 zone gold deposit identified two small targets ("**NW**" and "**SE**"), which had potential to host additional gold resources that could be extracted together with open cut mining of the 10400 zone resource – see attached *Figure 6 (Mt. Porter NW and SE Extensions)*.

The NW target is situated on the northern continuation of the western anticline in the 10400 zone, between the EW trending F2 fault, which truncates the 10400 zone mineralisation at about 10510N, and high grade gold resources drilled on 10470N. A 15-20 metre gap remains between the F2 fault and the Payne's (2004) resource blocks in this area.

The SE target is located on the eastern anticline where it abuts the NNE trending F1 fault, which truncates the 10400 Zone resources to the southeast.

An RC drilling program was commenced in early November 2006 to test these targets, but was abandoned prematurely after drilling equipment was lost in the fourth hole of the planned 11 hole program.

AHK will undertake a small drilling program into the NW zone to investigate the potential of a small cut back in the designed pits to add some more ounces to Mt. Porter Central. The south west zone does not appear to present the same opportunity for high grades and will be considered further at a later date.

## Mt. Porter South

AHK has had an RC drilling rig on site since late 2016 and has now restarted that program, subject to intermittent rainfall.



The company intends to undertake further drilling to:

- evaluate the remaining strike of Mt. Porter South;
- establish two water monitoring holes;
- take metallurgical samples; and
- sample the waste for characterisation.

Information from the program will be used to prepare an MMP for governmental approval. The target date for MMP lodgement is June 2017. It is anticipated the approval process should be relatively short given that mining will be limited to oxide materials.

Subject to procuring the required MMP authorisation on or before December 2017 and weather permitting, AHK expects to mine approximately one-third of the Mt. Porter South resource prior to the onset of the 2017/18 wet season.

The initial section work from the Mt. Porter South resource program indicated the mineralisation is narrower than expected from the historic drilling, and that gold is distributed in two to three narrow lodes of around 2m to 3m thickness each, rather than one lode of 8m to 10m thickness. Grade tenor, however, was shown to be higher than the 1.3 g/t Au indicated in the historic drilling.

Due to wet weather, only half the strike length has been drilled, and only one third has been drilled at more than one hole per section. AHK's mining consultants have *inferred* a reserve *potential* of 53,000 tons of ore at 1.59 g/t yielding 2,700 gold ounces at a strip ratio of 2.8:1 over 4 small shallow (17m) oxide pits, based solely on existing drilling sectional data.

AHK intends to complete the Mt. Porter South resource as planned, with only minor modifications. (refer to figure 7). This modified plan contemplates:

- a single hole per section will be drilled on all sections, to allow correction of spatial location and drill angle of second pass holes on each section, to maximise target acquisition. If the mineralisation is not acquired, structural interpretation from satellite image will be used in conjunction with data from the adjacent section to plan a second attempt hole, after the first pass drilling is completed;
- a second hole will be drilled on each section to provide grade and geometric control for the development of a resource estimate;
- a third hole will be drilled on each section, as per the initial plan, only if structural complexity or grade anomalies warrant the extra definition. This will be:
  - $\circ~$  based on sectional delineation and the need for a statistically valid and variographically amenable data set; and
  - moderated by the understanding that grade control drilling will afford high definition spatial control for mining, and will inform as required pit boundary changes during operations;
- all holes will be sampled by the metre to afford full delineation of the ore zones, near ore waste grade and specific gravity;



- waste characterisation samples will be drawn from the duplicate sample set as specified by Northern Resources, to assist MMP amendment;
- water samples will be taken to provide a pre-mining background data set to assist MMP amendment and provide AHK with water quality surety against future closure testing;
- metallurgical samples will be conserved from the duplicate sample set against future needs;
- some selected intervals will be assayed by screen fire to assist in determination of coarse gold content and nuggets;
- quality assurance and control will be carried out as planned on a minimum cost model for compliance regime;
- all holes on ERL 116 will be cancelled, saving 360m over 9 holes;
- the two water bores requested by Northern Resources to allow MMP amendment will be completed late in the programme; and
- lowest priority will be given to the 5 holes for 200m in the MPS / MPC gap, and no final decision for their progression will be taken until the rest of the programme is complete.

The completion time for both stages of the works programme, based on an average 120m per day including time for rig movements, splitting, water sampling, waste sampling, relogging and site work is expected to be to between 3 and 4 weeks.

## Glencoe

Upon completion of the:

- metallurgical test program at Mt. Porter Central; and
- resource program at Mt. Porter South;

AHK will consider a metallurgical drill sampling at Glencoe. This sampling will assist AHK to determine its mining plans and the nature of the MMP amendment that is required.

## Frances Creek

AHK intends to undertake further drilling at Frances Creek during the 2017/18 dry season. Subject to a successful program the company expects to establish a maiden resource at Frances Creek and will then apply for a mining lease.



Figure 1 – Mt. Porter Cross Section

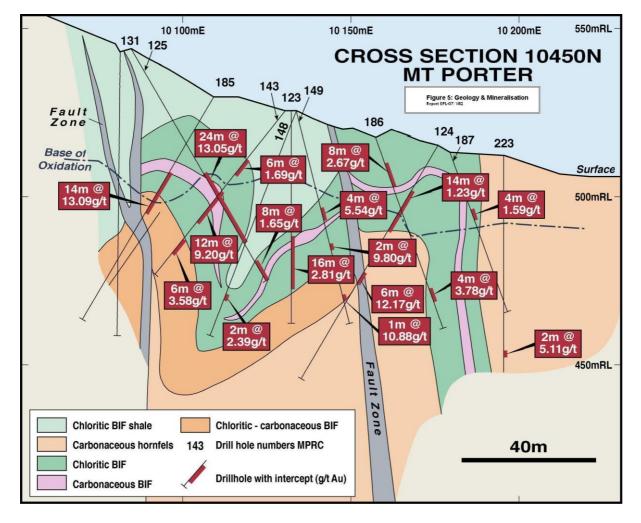
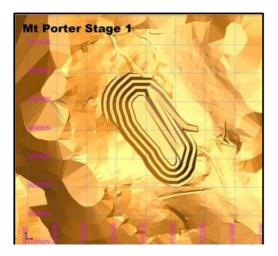
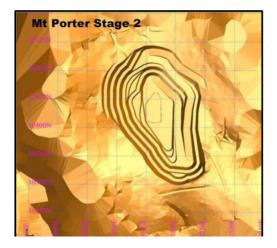


Figure 2 – Mt. Porter Stage 1 Open Cut Mining Pit





# Figure 3 – Mt. Porter Stage 2 Open Cut Mining Pit



# Figure 4 – Mt. Porter Central and Mt. Porter South BCM Tables

| MP Stage 1 | Item          | Unit | Totals    | MP Stage 2 | Item          | Unit | Totals  | MP South | Item          | Unit | Total   |
|------------|---------------|------|-----------|------------|---------------|------|---------|----------|---------------|------|---------|
|            | Oxide t       | t    | 111,454   |            | Oxide t       | t    | 15,257  |          | Oxide t       | t    | 53,278  |
|            | Oxide Au g/t  | g/t  | 1.82      |            | Oxide Au g/t  | g/t  | 1.76    |          | Oxide Au g/t  | g/t  | 1.59    |
|            | Oxide Au oz   | oz   | 6,527     |            | Oxide Au oz   | oz   | 864     |          | Oxide Au oz   | oz   | 2,727   |
|            | Fresh t       | t    | 154,666   |            | Fresh t       | t    | 163,612 |          | Fresh t       | t    | -       |
|            | Fresh Au g/t  | g/t  | 2.78      |            | Fresh Au g/t  | g/t  | 2.74    |          | Fresh Au g/t  | g/t  | -       |
|            | Fresh Au oz   | oz   | 13,814    |            | Fresh Au oz   | oz   | 14,430  |          | Fresh Au oz   | oz   | -       |
|            | Fresh waste t | t    | 287,902   |            | Fresh waste t | t    | 372,744 |          | Fresh waste t | t    | -       |
|            | Oxide Waste t | t    | 781,310   |            | Oxide Waste t | t    | 413,707 |          | Oxide Waste t | t    | 147,408 |
|            | Total tonnes  | t    | 1,335,332 |            | Total tonnes  | t    | 965,320 |          | Total tonnes  | t    | 200,686 |
|            | Total BCM     | m3   | 578,849   |            | Total BCM     | m3   | 403,381 |          | Total BCM     | m3   | 77,187  |

# Figure 5 – Mt. Porter Central and Mt. Porter South Gold Recoveries

| Total Mining | Oxide t       | t   | 179,990   | Ore Production | Oxide t      | t   | 179,990 | Ore Processing | Oxide t         | t   | 179,990 |
|--------------|---------------|-----|-----------|----------------|--------------|-----|---------|----------------|-----------------|-----|---------|
|              | Oxide Au g/t  | g/t | 1.75      |                | Oxide Au g/t | g/t | 1.75    |                | Oxide Au g/t    | g/t | 1.75    |
|              | Oxide Au oz   | oz  | 10,119    |                | Oxide Au oz  | oz  | 10,119  |                | Oxide Au oz     | oz  | 10,119  |
|              | Fresh t       | t   | 318,278   |                | Fresh t      | t   | 318,278 |                | Fresh t         | t   | 318,278 |
|              | Fresh Au g/t  | g/t | 2.76      |                | Fresh Au g/t | g/t | 2.76    |                | Fresh Au g/t    | g/t | 2.76    |
|              | Fresh Au oz   | oz  | 28,244    |                | Fresh Au oz  | oz  | 28,244  |                | Fresh Au oz     | oz  | 28,244  |
|              | Fresh waste t | t   | 660,646   |                | Total ore    | t   | 498,268 |                | Total ore       | t   | 498,268 |
|              | Oxide Waste t | t   | 1,342,425 |                | Total ore    | g/t | 2.39    |                | Total ore       | g/t | 2.39    |
|              | Total tonnes  | t   | 2,501,339 |                | Total ore    | oz  | 38,362  |                | Total ore       | oz  | 38,362  |
|              | Total BCM     | m3  | 1,059,417 |                |              |     |         |                |                 |     |         |
|              |               |     |           |                |              |     |         |                | Gold Production | oz  | 31,542  |

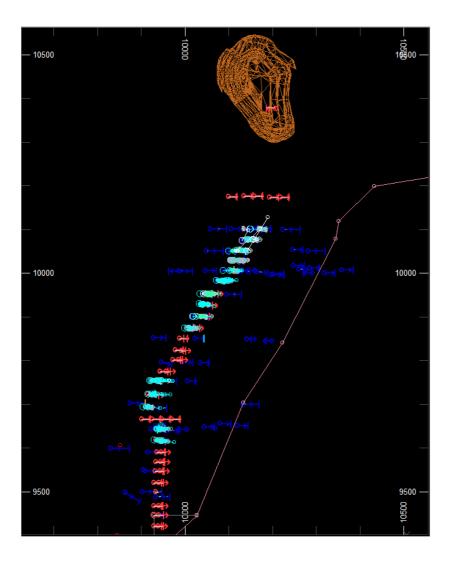


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Figure 6 – Mt. Porter NW and SE Extensions



**Figure 7**: Mount Porter South drill programme. Red are planned holes. Dark blue are historic holes. Turquoise lines are lines including new drilling. The brown shape to the north is the Mount Porter Central design C pit shell. The pink line to the east is the Allamber Springs Granite. Two met holes shown in Central Pit.





## JORC Code, 2012 Edition – Table 1 – Mt Porter South Prospect – ML23839 – Reverse **Circulation Drilling Results - JORC 2012**

### Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria JORC Code explanation Sampling Nature and quality of sampling (eq cut channels, techniques random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of samplina Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information. Drilling techniques Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc). Drill sample Method of recording and assessing core and chip recovery sample recoveries and results assessed. Measures taken to maximise sample recovery and ensure representative nature of the samples. Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material. Logging Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation. mining studies and metallurgical studies. Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography. The total length and percentage of the relevant intersections logged. Sub-sampling If core, whether cut or sawn and whether quarter, half techniques and or all core taken. sample If non-core, whether riffled, tube sampled, rotary split, preparation etc and whether sampled wet or dry For all sample types, the nature, quality and

appropriateness of the sample preparation technique. Quality control procedures adopted for all subsampling stages to maximise representivity of samples.

Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.

Commentary

- Reverse Circulation (RC) drilling was carried out on the current program with drill cuttings collected every one metre.
- Samples were passed through a cyclone and attached riffle splitter in order to obtain a larger sample collected in a plastic bag and a smaller representative sample weighing approximately 3kg was collected in a calico bag for each metre drilled.
- Intervals for initial 1m assay were selected on a visual basis and submitted to the laboratory, pulverised to produce a 50g charge for fire assay and then analysed for gold. Standards and duplicates were not inserted into the original sample sequence but instead industry standard Gannett standards for a range of values were used with each laboratory job, included at the end of each sample sequence submitted.
- Each sample collected was noted qualitatively for moisture content with the vast majority of samples collected being essentially dry.
- Following receiving assay results duplicate, approximately 3kg samples were collected from the retained plastic bag samples for the full range of the assay values noted. These samples were obtained by means of a stand-alone riffle splitter for approximately one in eight of the samples originally assayed.
- Kelly Drilling was contracted to undertake RC drilling.
- Drilling was completed using a 5 3/8 inch (13.562cm) face sampling hammer
- RC drilling was inclined. No downhole surveys were undertaken for this program.
- A visual estimate of percentage recovery was made for each metre drilled.
- Each sample was qualitatively logged for moisture content and sample size consistency of the smaller calico bag sample continuously monitored while drilling.
- This phase of drilling is follow-up to previous drilling carried out in 2004 utlising a smaller drilling rig and sample size so it is problematic to fully make comparisons from this phase of drilling.
- ٠ All drill cuttings qualitatively logged and representative cuttings collected in chip trays on one metre intervals.
- Qualitative logging includes colour, lithology, description, weathering, alteration and mineralisation. Water table depths and key weathering marker horizons also recorded.
- Each hole logged over the entire interval drilled.
- See sampling section for a description of sampling and duplicate sampling techniques.
- Duplicate samples were taken using the same riffle splitting method as collected from the drilling rig when the holes were drilled.
- Duplicate sample results for a range of assay values indicate that original assay results are largely reproducible, with no obvious sample bias.
- The nature, quality and appropriateness of the sampling technique are considered adequate for the style of mineralisation and are in line with, and directly comparable to the sampling techniques used by the previous explorers in their 2004 program for which the results are reported here.
- Sample sizes are considered appropriate for the nature and grain



Criteria JORC Code explanation Commentary Whether sample sizes are appropriate to the grain size size of the gold mineralisation intersected. of the material being sampled. Quality of assay The nature, quality and appropriateness of the A certified and accredited laboratory, North Australian Laboratories data and assaying and laboratory procedures used and whether (NAL) was used for the current assays and is the same laboratory laboratory tests the technique is considered partial or total. used by the previous explorers in 2004. For geophysical tools, spectrometers, handheld XRF Samples were analysed utilising the industry standard fire assay technique using a 50g charge and AAS finish (0.01ppm detection instruments, etc, the parameters used in determining the analysis including instrument make and model, limit). All assays over 1 ppm have been routinely re-assayed at least once and in some cases twice to establish acceptable levels of reading times, calibrations factors applied and their derivation, etc. accuracy and precision. Nature of quality control procedures adopted (eg Internal certified QA/QC is carried out by NAL. In addition, industry standards, blanks, duplicates, external laboratory standard Gannett standards for a range of values were used with checks) and whether acceptable levels of accuracy (i.e. each laboratory job, included at the end of each sample sequence. lack of bias) and precision have been established. Verification of The verification of significant intersections by either Primary data is verified on paper reports certified by the laboratory sampling and independent or alternative company personnel. and significant intersections initially calculated by direct reference assaying The use of twinned holes. to the drill logs produced in the field. The data is then entered into Documentation of primary data, data entry Excel spreadsheets for further processing and cross validation procedures, data verification, data storage (physical checks. and electronic) protocols. No adjustment has been made to the data except replacing L for gold assays <0.01ppm with a numerical value. Discuss any adjustment to assay data. Location of data Accuracy and quality of surveys used to locate drill All co-ordinates are recorded in GDA94 MGA Zone 52. points holes (collar and down-hole surveys), trenches, mine Previous drilling originally reported to the NT DME in the AGD66 workings and other locations used in Mineral Resource datum was initially located in the field with hand-held Garmin GPS estimation. Garmin 60CSxc, but around ± 5m or worse accuracy not considered Specification of the grid system used. sufficiently accurate to define the relatively closely spaced drill Quality and adequacy of topographic control. spacing used for the current infill and extension program, so tape/compass survey conducted to obtain approximately ± 1m accuracy Current drillholes at the completion of the program then surveyed using Real Time Kinematic (RTK) by nearby minesite (Frances Creek Iron Ore Mine) surveyor for highly accurate 1-2cm accuracy coordinate and topographic control. Previous drillholes then transformed to GDA94 MGA Zone 52 and current drillhole positions related back to the old holes with confidence to at least ± 1-2m and RLs within approximately ± 0.1-0.2m. Due to the commonly shallow depths of the holes (average around 40m) no downhole surveys were carried out for the current program. Data spacing and Data spacing for reporting of Exploration Results. Line spacings between drilling lines are variable because of the distribution relatively steep terrain and the need to infill in areas of previous Whether the data spacing and distribution is sufficient highest grade results. Current line spacing following the completion to establish the degree of geological and grade of the current program varies between drilling lines 6-20m apart. continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and The relatively steep terrain has also resulted in several holes past classifications applied. and present to be drilled within 1-1.5 metres of each other with Whether sample compositing has been applied. shallow and steeper dips, in order to obtain shallow intercepts 5-10 apart vertically. It is considered that the data spacing that now exists from the current drilling program at Golden Honcho will allow for the consideration of a JORC Mineral Resource to be calculated for this deposit. No sample compositing has been carried out for the current program (see above). Orientation of data Whether the orientation of sampling achieves The drilling program has been designed to intersect a steeply east in relation to unbiased sampling of possible structures and the dipping or sub-vertical lode structure with westerly directed holes at geological extent to which this is known, considering the deposit inclinations of either 57° or 70° and it is considered that this structure type. provides a consistent unbiased result. If the relationship between the drilling orientation and As the drilling orientation has been consistent and the lode the orientation of key mineralised structures is orientation also predictable at this stage of exploration it is not considered to have introduced a sampling bias, this considered that a sampling bias has been introduced. should be assessed and reported if material. Sample intervals sent to the laboratory have been collected in Sample security The measures taken to ensure sample security.

individually numbered calico bags and then loaded into large plastic bags annotated with the sample sequence. These bags have then



Criteria

Audits or reviews

The results of any audits or reviews of sampling • techniques and data.

# Section 2 Reporting of Exploration Results

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

| Criteria  | JORC Code explanation   | Commentary  |
|---|---|---|
| Mineral tenement<br>and land tenure<br>status           | <ul> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</li> </ul>  | <ul> <li>All results pertaining to the current program are from MA 389, held<br/>by Frances Creek Pty Ltd a wholly owned subsidiary of Territory<br/>Resources Ltd. AHK has signed an Agreement with Arafura<br/>Resources Ltd (ARU) whereby they can earn up to 70% of the gold<br/>rights currently held by ARU with an expenditure of \$400,000 by 26<br/>August 2015 with an initial earn-in of \$200,000 due by 26 December<br/>2014.</li> <li>MA 389 is located on PL 815/ Mary River West Station and PPL<br/>1111/ Ban Ban Springs Station.</li> <li>AHK has consulted with the Traditional Owners (TOs) of MA 389, the<br/>Jaywon People on cultural heritage and the TOs have been kept<br/>informed of exploration activities carried out by AHK.</li> </ul> |
| Exploration done by other parties                       | • Acknowledgment and appraisal of exploration by<br>other parties.  | • The last phase of exploration work has been carried out by ARU and comprised RC drilling in 2004 that is referred to in the text.   |
| Geology   | • Deposit type, geological setting and style of mineralisation.   | • The drilling has targeted sub-vertical to steeply dipping, ferruginous quartz lodes and alteration zones originally found outcropping on steep ridge crests. Both the Golden Honcho (drilled this program) and Golden Slips are N to NNE oriented mineralised shoots on the same structure and hosted within the massive sandstone sequence of the Mundogie Sandstone on the west limb of the Thelma Anticline.   |
| Drill hole<br>Information                               | <ul> <li>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:         <ul> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</li> </ul> | <ul> <li>All drillhole information is retained in the AHK database and full drillhole details have already been announced.</li> <li>No material information is excluded.</li> </ul>   |
| Data aggregation<br>methods                             | <ul> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>   | <ul> <li>In reporting of mineralised intercepts quoted in this announcement, these are shown without top cuts, using standard averaging techniques with a maximum internal dilution of two metres, non-consecutive for mineralised intervals stated &gt; 1 g/t gold.</li> <li>Higher grade results, generally over 1-2m lengths within longer lengths of lower grade results are indicated where considered significant.</li> <li>There are no metal equivalents reported.</li> </ul>   |
| Relationship<br>between<br>mineralisation<br>widths and | <ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be</li> </ul>  | <ul> <li>Intercepts quoted are downhole widths with the drillholes angles at 57°, 60° and 70° to intersect a steeply dipping to sub-vertical lode structure.</li> <li>The geometry of the mineralisation relative to drillhole angle is</li> </ul>  |

Commentary

program.

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been transported directly from the drillsite to the NAL laboratory in

Retained coarse residue and assay pulps are currently securely

No audits or reviews undertaken at this stage of the exploration

Pine Creek by Ark Mines (AHK) contract personnel.

stored at the NAL laboratory in Pine Creek.



|                                       | MINES   |  |
|---------------------------------------|---|--|
| Criteria                              | JORC Code explanation   | Commentary   |
| intercept lengths                     | <ul> <li>reported.</li> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').</li> </ul>  | mentioned in the text and shown in diagrams.   |
| Diagrams                              | <ul> <li>Appropriate maps and sections (with scales) and<br/>tabulations of intercepts should be included for any<br/>significant discovery being reported These should<br/>include, but not be limited to a plan view of drill hole<br/>collar locations and appropriate sectional views.</li> </ul>   | <ul> <li>See text figures showing drillhole locations with traces for both of<br/>the Golden Honcho and Golden Slips prospects along with cross-<br/>sections (see above).</li> </ul>  |
| Balanced reporting                    | <ul> <li>Where comprehensive reporting of all Exploration<br/>Results is not practicable, representative reporting of<br/>both low and high grades and/or widths should be<br/>practiced to avoid misleading reporting of Exploration<br/>Results.</li> </ul>   | <ul> <li>The text also describes targeted sub-economic mineralised gold<br/>intercepts from the most recent drilling program.</li> </ul>   |
| Other substantive<br>exploration data | <ul> <li>Other exploration data, if meaningful and material,<br/>should be reported including (but not limited to):<br/>geological observations; geophysical survey results;<br/>geochemical survey results; bulk samples – size and<br/>method of treatment; metallurgical test results; bulk<br/>density, groundwater, geotechnical and rock<br/>characteristics; potential deleterious or contaminating<br/>substances.</li> </ul> | <ul> <li>Earlier rock chip and soil sampling results have been incorporated into targeting the current drilling.</li> <li>From targeting shallow, easily mineable gold mineralisation the depth of partial oxidation has been observed down to 40-50m vertical depth (see text)</li> <li>Water table is variable depending on topographic height but generally in the range of 20-30m downhole depth.</li> <li>Earlier surface rock chip results averaging &gt; 10g/t gold is now confirmed from the most recent and earlier 2004 drilling at the Golden Honcho prospect.</li> </ul> |
| Further work                          | <ul> <li>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>   | <ul> <li>Mineralised intercepts now to be examined for extra elements including Cu, Pb, Zn, Ag and As (see text).</li> <li>Desktop work to bring the Golden Honcho prospect to JORC resource status (see text)</li> <li>Figure 6 shows the area of the current drilling relative to the future planned for drilling Golden Slips prospect and other not fully or untested by drilling adjacent prospect areas.</li> </ul>  |

### **About Ark Mines**

Ark Mines Ltd (ASX: AHK) is a publicly listed company with Gold Tenements in Northern Territory. Ark is focussed on Mining its tenements and to develop further cash generating projects in the Northern Territory.

### FURTHER INFORMATION: Roger Jackson, Managing Director, Ark Mines Limited:

#### rjackson@arkmines.com.au

The information in this announcement that relates to Exploration Results, Mineral Resources or Ore Reserves has been compiled by Roger Jackson BSc, Grad Dip Fin Man, Dip Ed, AICD, who is a Member of The Australasian Institute of Mining and Metallurgy and who has more than five years' experience in the field of activity being reported on. Mr Jackson is a director of the Company. Mr Jackson has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration and to the activity, which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Jackson consents to the inclusion in the announcement of the matters based on his information in the form and context in which it appears.

Note:

Runge Limited who purchased the assets of Resource Evaluations Pty Ltd have reviewed the documentation relating to the Mount Porter resource and have confirmed that this resource estimation conforms to the reporting guidelines of the JORC Code (2004).

<u>Note</u>



In early 2004, an updated resource estimate was completed for Arafura by Reseval Pty Ltd. Published Identified Resources for the Mt. Porter 10400 Zone deposit, calculated in compliance with the requirements of the JORC Code, now stand at:

|                     | Cut-off 1.7 g/t        |
|---------------------|------------------------|
| Indicated Resources | 300,000 t @ 3.1 g/t Au |
| Inferred Resources  | 55,000 t @ 2.6 g/t Au  |
| TOTAL RESOURCES     | 355,000 t @ 3.0 g/t Au |
|                     | 34,000ozs              |