

## ASX Announcement

30 October 2018

### Kincora Oil & Gas Project

#### 40% Increase in 2P Reserves in Armour's Myall Creek Field

##### Highlights:

- **Independently verified 2P Petroleum Reserves Increase from 44.4 PJ to 63.1 PJ of gas in Myall Creek Field, part of the Armour's 100% owned Kincora Project.**
- **Total verified Kincora Project 2P Reserves net to Armour now 79.3 PJs.**
- **100% Reserve Replacement of all Myall Creek historical production to date from successful drilling, completion and connection of Myall Creek 4A wellbore.**

The Directors of Armour Energy ('Armour' or the 'Company') are pleased to provide a Reserves update on its operated Roma Shelf Assets, Queensland as part the Company's Kincora oil and gas project ("Kincora Project") refer **Map 1**. Following the successful completion of the Myall Creek 4A well and commencement of gas sales, Armour's Myall Creek Field has been reviewed and evaluated in accordance with the Society of Petroleum Engineers – Petroleum Resource Management System (SPE-PRMS) guidelines, resulting in increased Reserves on the Myall Creek field as follows:

Total Reserves Myall Creek <sup>(1)</sup>	1P	2P (1P+2P)	3P (1P+2P+3P)
Estimated Net Total Gas (BCF)	18.7	59.8	150.6
Estimated Net Total Gas (PJ)	19.7	63.1	158.9
LPG Yield (Tonne)	40,718	130,279	328,093
Condensate Yield (BBL)	195,957	626,978	1,578,979

**Table 1 – Armour Energy Myall Creek Field estimated aggregated quantities of Petroleum Reserves and an increase of 19 PJs 2P Reserves from May 2018 to October 2018**

Table 1 Notes:

1. Petroleum Reserves are classified according to SPE-PRMS.
2. Petroleum Reserves are stated on risked net basis with historical production removed.
3. Exclude Waldegrave JV Area
4. Petroleum Reserves are stated inclusive of previous reported estimates.
5. Petroleum Reserves are net to Armour with no shrinkage applied, but estimated to be 5%
6. BCF = billion cubic feet, LPG = liquefied petroleum gas, PJ = petajoules, kbbbl = thousand barrels, kTonne = thousand tonnes; Conversion 1.055 PJ/BCF.
7. 1P = Total Proved; 2P = Total Proved + Probable; 3P = Total Proved + Probable + Possible.
8. LPG Yield 2065 tonnes/petajoules, Condensate Yield 9938 barrels/petajoules.

This revised Reserves estimate, resulting from the Myall Creek 4A well, has replaced 100% of the previously produced 18.7 BCF (ie all production from commencement including Armour production to date) of petroleum Reserves from the Myall Creek Field, PL 511 & 227, refer **Map 1**.

The revised Reserves estimate for the Myall Creek field contributes to Armour's overall Kincora Project oil and gas reserves which are now estimated as follows:

Total Reserves Myall Creek and Other Fields <sup>(1)</sup>	1P	2P (1P+2P)	3P (1P+2P+3P)
Estimated Net Total Gas (BCF)	31.9	74.8	171.7
Estimated Net Total Gas (PJ)	33.8	79.3	182.0
LPG Yield (Tonne)	69,828	163,754	375,830
Condensate Yield (BBL)	335,904	788,083	1,808,716

**Table 2 – Armour Energy Kincora Project estimated aggregated quantities of Petroleum Reserves and increase of 19 PJs 2P Reserves from May 2018 to October 2018**

Table 2 Notes:

- Petroleum Reserves are classified according to SPE-PRMS.
- Petroleum Reserves are stated on risked net basis with historical production removed.
- Exclude Waldegrave JV Area
- Petroleum Reserves are stated inclusive of previous reported estimates.
- Petroleum Reserves are net to Armour with no shrinkage applied, but estimated to be 5%
- BCF = billion cubic feet, LPG = liquefied petroleum gas, PJ = petajoules, kbbl = thousand barrels, kTonne = thousand tonnes; Conversion 1.055 PJ/BCF.
- 1P = Total Proved; 2P = Total Proved + Probable; 3P = Total Proved + Probable + Possible.
- LPG Yield 2065 tonnes/petajoules, Condensate Yield 9938 barrels/petajoules.

### **Technical Statement – Petroleum Reserves**

A report released on 29 October 2018 by SRK Consulting (Australasia) Pty Ltd, to which this announcement refers, documents the Reserves Update based upon Armour's successful drilling and sales production from the Myall Creek 4A well in PL 511 & PL 227. The estimated aggregated quantities of petroleum Reserves to be recovered from existing wells and through future capital are listed in Table 1 above and exclude 5% production processing fuel and provisional flaring.

The independently verified Reserves Update Report compiled by SRK Consulting (Australasia) Pty Ltd details a high degree of confidence in the commercial producibility of Permian aged reservoirs previously discovered and produced in operated granted petroleum licenses 511 & 227 using 2D-3D seismic, historic and modern well data, reservoir pressure data, electric logs and rock properties from chip & core samples, gas composition analysis, hydraulic stimulation results, analysis of historical well production, decline curve analysis, offset field production data and prior production data from wells before the Kincora Gas Plant was shut-in by the previous operator, Origin Energy. The reported Reserves are used in connection with estimates of commercially recoverable quantities of petroleum only and in the most specific category that reflects an objective degree of uncertainty in the estimated quantities of recoverable petroleum. The petroleum Reserves are estimated by probabilistic methods and reported net of fuel and net to Armour to the APA Group metered sales connection to the Roma to Brisbane Pipeline (Run 2) at Wallumbilla and the report discloses the portion of petroleum Reserves that will be consumed as fuel in production and lease plant operations. Armour will be using calibrated metering and gas chromatographs at the Kincora Gas Plant as a reference point for the purpose of measuring and assessing the estimated petroleum Reserves from the produced gas.

The economic assumptions used to calculate the estimates of petroleum Reserves are commercially sensitive to the Armour operated Kincora Project. The methodology used to determine the economic assumptions are based upon strategic objectives that include, but not limited to, new drills, hydraulic stimulation, workovers, recompletes and surface facility modifications to ramp up to and maintain a 20 TJ/day production profile for 15 years. The development model includes a starting and ending monthly schedule of working/net interest capital expenditure to develop and maintain the petroleum Reserves, operational expenditure to develop and produce the petroleum Reserves, fixed petroleum Reserve prices under-contract and escalated petroleum Reserve futures based upon Wallumbilla Hub prices, tax/royalty sensitivities, revenue from gross and net petroleum production yields and cash flow from petroleum production yields and summation of discounted cash flows.

The petroleum Reserves are located on granted petroleum licences with approved environmental authorities and financial assurances. Armour has a social licence to operate and relevant surface access agreements are in-place. Armour is the owner and operator of the Kincora Project and PPL3 sales gas pipeline which connects the Kincora Gas Plant to the Wallumbilla gas hub via the connection agreement with APA. Armour holds granted Petroleum Licenses over the reported estimates of petroleum Reserves, associated gathering and field compressors. The basis for confirming the commercial producibility and booking of the estimated petroleum Reserves is supported by actual historic production & sales and/or formation tests. The analytical procedures used to estimate the petroleum Reserves were decline-curve analysis to 50 thousand cubic-feet-day, historic production data and relevant subsurface data including, formation tests, 2D-3D seismic surveys, well logs and core analysis that indicate significant extractable petroleum.

The proposed extraction method of the estimated petroleum Reserves will be through approved conventional drilling and, where applicable, hydraulic stimulation techniques to accelerate production, commingle the productive zones and extract volumes from tight gas zones. Wellbores will be cased and cemented with a high pressure wellhead completion. Petroleum will be recovered through 2-3/8" production tubing and gathered to field compression sites for delivery to the Kincora Gas Plant.

Wellbores will be designed to protect aquifers and deviated drilling may be used to lessen the overall impact to surface owners, environmental receptors, strategic cropping and to consolidate surface infrastructure. Processing at the Kincora Gas Plant will be required to separate the extracted hydrocarbons into dry gas, liquid petroleum gas, oil and condensate and to remove any impurities prior to sales.



On behalf of the board  
Karl Schlobohm  
Company Secretary

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## **Competent Persons Statement**

### **Consents**

The Reserves information in this ASX release is based on, and fairly represents, data and supporting documentation prepared by, or under the supervision, of Dr Bruce McConachie. Dr McConachie is an Associate Principal Consultant of SRK Consulting (Australasia) Pty Ltd and has a PhD (Geology) from QUT and is a member of AusIMM, AAPG, PESA and SPE. The Resources information in this ASX announcement was issued with the prior written consent of Dr McConachie in the form and context in which it appears.

The Reserves review was carried out in accordance with the SPE Reserves Auditing Standards and the SPE-PRMS guidelines under the supervision of Mr. Luke Titus, Chief Geologist, Armour Energy Limited. Mr. Titus qualifications include a Bachelor of Science from Fort Lewis College, Durango, Colorado, USA and he is an active member of AAPG and SPE. He has over 20 years of relevant experience in both conventional and unconventional hydrocarbon exploration & production in the US and multiple international basins. Mr. Titus meets the requirements of qualified petroleum reserve and resource evaluator as defined in Chapter 19 of the ASX Listing Rules and consents to the inclusion of this information in this release.

### **SPE-PRMS**

Society of Petroleum Engineer's Petroleum Resource Management System - Petroleum resources are the estimated quantities of hydrocarbons naturally occurring on or within the Earth's crust. Resource assessments estimate total quantities in known and yet-to-be discovered accumulations, resources evaluations are focused on those quantities that can potentially be recovered and marketed by commercial projects. A petroleum resources management system provides a consistent approach to estimating petroleum quantities, evaluating development projects, and presenting results within a comprehensive classification framework.

PRMS provides guidelines for the evaluation and reporting of petroleum reserves and resources.

### **Under PRMS**

"Reserves" are those quantities of petroleum which are anticipated to be commercially recovered from known accumulations from a given date forward. All reserve estimates involve some degree of uncertainty. The uncertainty depends chiefly on the amount of reliable geologic and engineering data available at the time of the estimate and the interpretation of these data. The relative degree of uncertainty may be conveyed by placing reserves into one of two principal classifications, either proved or unproved. Unproved reserves are less certain to be recovered than proved reserves and may be further sub-classified as probable and possible reserves to denote progressively increasing uncertainty in their recoverability.

"Contingent Resources" are those quantities of petroleum estimated, as of a given date, to be potentially recoverable from known accumulations, but the applied project(s) are not yet considered mature enough for commercial development due to one or more contingencies. Contingent Resources may include, for example, projects for which there are currently no viable markets, or where commercial recovery is dependent on technology under development, or where evaluation of the accumulation is insufficient to clearly assess commerciality. Contingent Resources are further categorized in accordance with the level of certainty associated with the estimates and may be sub-classified based on project maturity and/or characterized by their economic status.

"Prospective Resources" are those quantities of petroleum estimated, as of a given date, to be potentially recoverable from undiscovered accumulations by application of future development projects. Prospective Resources have both a chance of discovery and a chance of development. Prospective Resources are further subdivided in accordance with the level of certainty associated with recoverable estimates assuming their discovery and development and may be sub-classified based on project maturity.



The estimated quantities of petroleum that may potentially be recovered by the application of future development project(s) relate to undiscovered accumulations. These estimates have both an associated risk of discovery and a risk of development. Further exploration appraisal and evaluation is required to determine the existence of a significant quantity of potentially moveable hydrocarbons.

**Previously Disclosed Reports:**

AEP021\_Armour Surat Basin Reserves Update\_Rev1, May 14, 2018

AEP022\_Armour Basal Rewan Contingent Resource Estimation\_Rev2, May 14, 2018

AEP022\_Surat Prospects and Leads Resources\_Main\_Rev1, May 14, 2018

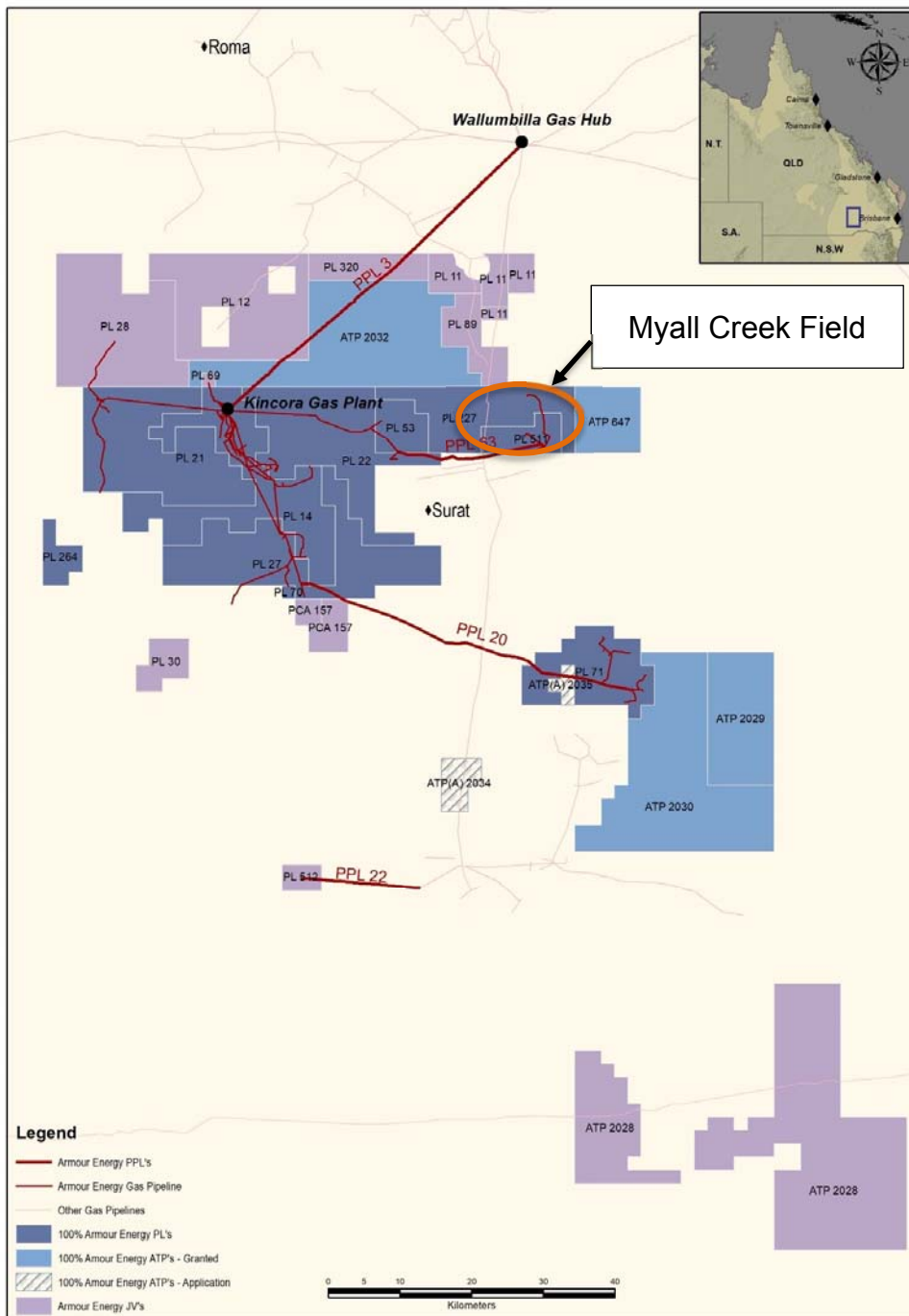
AEP022\_Surat Prospects and Leads Resources\_ATP754\_Rev1, May 14, 2018

AEP022\_Surat Prospects and Leads Resources\_ATP1190\_Rev1, May 14, 2018

AEP022\_Surat Prospects and Leads Resources\_PL71 Exploration\_Rev1, May 14, 2018

**New Report**

AEP023\_Armour Energy Limited Myall Creek Reserves Update Report, 29 October 2018



**Map 1- Location Map & Kincora Gas Project Tenements, October 2018**