

## Operations Update and Update on Laurel Formation Tight Gas Pilot Exploration Program (TGS)

Buru Energy Limited (Buru Energy or Buru) (ASX: BRU) is pleased to provide the following update on its operations and on its TGS program in the Canning Superbasin.

### Highlights

- Analysis of data from TGS program very encouraging
- Substantial upgrade to Ungani Resources by independent reviewer
- Evaluation of 3D data and oil prospects proceeding well

### Summary

#### Gas program update

The evaluation of the data obtained from the Laurel Formation tight gas stimulation program has confirmed the prospectivity and commercial potential of the resource. Although still cleaning up, the wells have performed very strongly, with gas flows from all stimulated zones, and initial gas peak rates on blowdown of up to 44 million cubic feet of gas per day ("mmcfcpd"), and average blowdown gas rates of up to 13.5 mmcfcpd. Although not direct indicators of long term productivity, these rates are very positive indicators of stimulated reservoir volumes and formation pressures.

Other positive results include the very good gas quality, with analysis of the commingled gas streams from the stimulated zones showing high liquids content (25 to 38 bbls per million cubic feet), and low inerts (2% to 5% CO<sub>2</sub>). As expected, individual zones in the more liquid rich sections of the wells appear to have higher liquids content. The excellent quality of the gas means it will not require any substantial processing before sale except for removal of the high value liquids content for separate sale.

The well stimulation operations went very well, with the placement of substantial amounts of proppant and the use of water and gas tracers confirming the effectiveness of the stimulation treatments and the extensive gas saturations in the reservoirs, with all stimulated zones flowing gas.

Building on these results, an independent resource estimate by DeGolyer and MacNaughton ("D&M") confirmed the Company's view of the potential of the resource with a contingent resource estimate of a gross 1.5 TCF of recoverable gas (as per ASX release of 18 April 2016). In addition, D&M confirmed gross prospective resources of some 13 TCF of gas in the immediate area of the evaluation. On the basis of these results, Buru has also defined a work program that could potentially lead to another 3 TCF of contingent resources in the evaluation area.

These estimates on the basis of the two stimulated wells and the previously drilled Valhalla 2 well are a very positive result for such a relatively small program. Other unconventional evaluation projects have had to undertake considerably more work and expense to progress to this point of resource definition.

## Ungani resources

In addition to the excellent results of the tight gas project, the Company has received the results of an independent review that it commissioned of the Ungani Field by Gaffney Cline and Associates. This review estimated the remaining gross recoverable contingent resources of oil for the field at the 1C level to be 2.08 million barrels, at the 2C level to be some 6.65 million barrels, and the 3C resources to be some 18.80 million barrels. Buru's equity share of these resources is 50%. These are significant increases to Buru's previous estimates at the 2C and particularly the 3C level, illustrating the potential upside of the field. The full resource statement in accordance with ASX Listing Rules is set out in the body of this release and must be referred to for details.

Buru's objective is to return the field to production as soon as practicable, with an intensive review underway of operating, transport, and marketing costs to ensure a restart can be made in a commercial framework that includes an oil price that delivers strong positive cash flow.

## Prospectivity evaluation

Buru's evaluation of the recently acquired 3D seismic data and the results of the 2015 oil exploration program is proceeding well with high quality prospects being mapped on the merged 3D seismic data sets. A regional geochemical analysis and basin modelling project is also providing new and valuable insights into the basin. A review of drilling rig availability for future drilling programs is also underway.

## Buru Energy's Executive Chairman, Eric Streitberg said:

*"We are very pleased with the results of the gas program to date. We have proven conclusively that we have a high quality gas resource with significant liquids content, and that we have the techniques to produce it safely and effectively. We know the overall resource is very large and we will now be focused on commercialising it. We are also very pleased that we have been able to produce these results with a small number of wells and prove that, as we have always believed, the Canning Basin has the potential to be a major source of gas and liquids for Western Australia.*

*We are also extremely pleased with the results of the independent review of the Ungani Oilfield which has given us a substantial uplift in resources at the 2C and 3C level. Ungani is a valuable resource of high quality oil and we are working hard to get it back to generating cash flow at good margins as soon as practicable.*

*We are also being very careful with our cash position and have taken all the steps we can to drive down costs and maintain our cash balance. We have a number of other initiatives underway that also have the potential to put us in a stronger financial position.*

*We look forward to adding value for shareholders in these difficult times."*

## Tight Gas Exploration and Appraisal Program (Laurel Formation Fracs)

### Project Background

The Canning Basin Joint Venture has identified and commenced the appraisal of a unique, world scale, gas and liquids resource in the Canning Basin in Northwestern Australia in the Laurel Formation, a thick and areally extensive sequence of tight sands, silts and limestones.

This resource is unique in Australia, and comparable in scope to global gas projects, with an independent initial Prospective Resource evaluation assigning some 47 TCF of gas to Buru's interests in the basin (RISC report – ASX release 8 February 2013). The accumulation was identified but not recognised by numerous historical wells drilled in the basin which intersected thick gas columns in the interbedded sands, silts and limestones of the Laurel Formation.

The Joint Venture has drilled six wells and fraced three wells to define the resource, with activity focused on the Yulleroo area in the west of the basin and on the Valhalla/Asgard ("VANA") area in the east. This program has led to the assignment of contingent resources by independent evaluators to both areas, with the most recent evaluation by DeGolyer and MacNaughton ("D&M") identifying a gross 1.5 TCF of contingent resources of gas in the VANA area, and Buru has also defined a path that could potentially lead to another 3 TCF of contingent resources in the evaluation area.

### Resource Background

The Laurel Formation hosts a basin centered tight wet gas accumulation ("BCGA"). A large proportion of current unconventional developments in North America are from shale formations which have important differences to BCGA accumulations.

The Laurel Formation is extensive, thick, and gas saturated over large intervals (+1,500 metres vertical thickness). The gas produced from the formation is of excellent quality with low inerts (generally <5% CO<sub>2</sub>) and is thus suitable for pipeline sale or industrial use with little or no processing apart from hydrocarbon liquids removal for separate sale.

There are also very significant quantities of hydrocarbon liquids in the upper zones of the accumulation. Liquids content has been estimated from commingled flows from dry gas and wet gas zones, and these commingled gas streams have contained liquids ranging between 25 and 38 barrels per million cubic feet of gas.

There are significant quantities of LPG fractions in the gas which could lead to local supply of these products which are sought after for transport and domestic use (including cars and barbecues).

The formation also has significant overpressure which is important for deliverability and flow rates and this has been clearly demonstrated by the strong flow rates from the current testing program.

Development of the resource will most likely require horizontal wells to be drilled into the best zones identified by the current program of vertical wells and fracs.

### Commercial and regulatory overview

The Joint Venture holds the permits covering the most prospective parts of the Laurel Formation under a State Agreement Act with the Western Australian Government. This agreement facilitates the systematic exploration and evaluation of the unconventional resources in the basin, and reflects the confidence that the resource has the potential to be a major contributor to the energy needs of the State of Western Australia.

There is a strong domestic demand for gas from the Canning Basin which would be supplied into the market through the Great Northern Pipeline from the project to Port Hedland. There is also a strong local market for the first stage gas from the project including power generation and local industry.

## 2015 Program objectives and results

Two wells were stimulated with details of the program in each well set out below. In general, the stimulation program was successful in achieving its objectives and confirming the presence of a major gas resource that has the potential for commercial development.

The stimulation zones were chosen on the basis of rock properties and hydrocarbon maturity to provide the best possible sampling of the accumulation. Four zones were stimulated in Valhalla North 1 and seven in Asgard 1.

The completions were designed to allow testing of individual zones, however, problems with running the completions meant that the lower zones in both wells were commingled rather than separated, which complicated interpretation of the results.

### Program results

The program was very successful having achieved in just two wells results that have taken tests on many wells in other basins to achieve, with the results also at the high end of the Company's expectations for the program.

The objectives of the tests were as follows.

- 1) Demonstrate well productivity through fracture stimulation.

This had two components, first to demonstrate that it was possible to fracture stimulate the reservoir, and second that there were volumes and pressures sufficient to provide a pathway to a potentially commercial flow. It should be noted that the stimulation of the Yulleroo 2 well in 2010 was also successful in achieving these objectives.

The specific objectives for this part of the program included demonstrating that perforating, fluid systems, and proppant placement systems were effective to stimulate large rock volumes. This objective was achieved with the emplacement of large quantities of proppant in the stimulated zones as set out in the following zonal parameters:

Asgard 1				
Stage	Interval (metres MD)		Fluid (barrels)	Proppant (pounds)
	From	To		
1	3,402	3,447	4,295	55,070
2	3,343	3,387	6,437	111,840
3	3,289	3,321	5,729	100,267
4	3,235	3,267	4,459	32,076
5	2,983	3,027	7,956	269,852
7	2,743	2,787	9,583	287,685
8	2,568	2,612	7,881	243,169
Valhalla North 1				
1	3,258	3,302	6,652	165,919
2	3,093	3,137	7,124	159,845
3	2,983	3,027	4,756	87,553
4	2,828	2,872	3,146	159,122

*Note: Zone 6 in Asgard was not stimulated for operational reasons*

The Tight Rock Analysis and formation strength tests (DFIT's) performed prior to the program demonstrated the low clay content in the rocks and that they were brittle and should react well to stimulation. These analyses were conclusively proven correct, with the acquisition of microseismic data to identify the size and location of the stimulated zones, and water and gas tracer data to identify which zones the subsequent fluid flows were from. These data clearly

demonstrated that the fracs were effective in stimulating large rock volumes with the potential for large gas volumes to be recovered. These large stimulated reservoir volumes (“SRV”) are a key determinant of the potential for commercially successful outcomes.

Generally at this stage of appraisal programs, plays in other areas have been deemed to be successful if they recovered hydrocarbons to surface, even at low rates. As this had already been achieved in the VANA area from gas flows at surface during the drilling of the wells, the objective of the program was to duplicate or exceed the recovery of hydrocarbons that had already been achieved with the Yulleroo 2 program in 2010.

This objective was very clearly achieved with continuous hydrocarbon flows at surface and very strong pressure response from the wells. Although the wells are still cleaning up, they have performed very strongly, noting that in other projects wells have taken several months to clean up unaided.

The production characteristics of the two wells to date are as follows:

Parameter/Well	Injection fluid recovery to date	Gas produced (mmcf)	Shut in pressure	Blow down rate
Valhalla North 1	74%	10.3	4,150 psi (40 day)	44 mmcf/gpd - peak, 13 mmcf/gpd average over 1.5 hour period
Asgard 1	37%	6.4	1,500 psi (5 day)	1.6 mmcf/gpd peak, 0.5 mmcf/gpd average

The pressure in the wells was increasing as the wells cleaned up and this supports the calculation from microseismic monitoring data that the stimulated reservoir volume is large and the formation is over-pressured, two key positive results of the program. Surface behavior of the wells was also very impressive with large strong flares and obvious condensate loading.



*Valhalla North 1*



*Asgard 1*

## 2) Achieve sustained hydrocarbon production.

The continuing increase in pressure, the constant gas flows at varying rates, and the recovery of substantial volumes of gas as the pressure was increasing, points to the potential to achieve strong sustained rates. Issues with the wells cleaning up included the completion configuration with a 7 inch “sump” underneath the completion tubing leading to liquid loading and cycling behaviour. It is anticipated that reconfiguring the completion could assist with final cleanup and achieving stabilised rates and this is currently being reviewed.

What was noted, however, was that after being shut-in the wells quickly built up to high pressure, and became loaded with condensate. Initial blowdown rates after shut-in were extremely high in some cases with gas rates of over 44 mmcf/gpd. This is a very good sign that the wells have the drive and the gas content to be a substantial producer when stimulated and completed in a more optimal configuration.

### 3) Obtain definitive gas composition and hydrocarbon ratios

A comprehensive gas sampling program was carried out. This has confirmed that the gas is of high quality with substantial quantities of liquids. The gas contains significant amounts of condensate and LPG fractions which vary according to the thermal maturity of each zone tested. The gas samples were surface samples obtained from commingled zones including both dry gas and liquids rich zones, but on average the composition is 87% methane, 5.5% ethane, 2.7% propane and low inerts (2% to 5% CO<sub>2</sub>). The CO<sub>2</sub> content at <5% is of pipeline quality, and thus the gas will require little processing apart from stripping out of the valuable liquid components. Because of the nature of the reservoir it is not expected that any significant amounts of water will be produced once the wells have cleaned up.

As stable flow rates have not yet been achieved, except for a short period in Valhalla North 1 prior to running the completion, definitive liquid ratios have not been obtained from separator measurements. However, the Valhalla North 1 initial flow period and calculations from other flow periods suggest that the gas includes some 25 to 38 barrels per million cubic feet of gas from the commingled zones. This amount of liquids adds very substantial value to the produced gas stream.

### 4) Confirm the vertical and areal extent of the accumulation

The frac zones were specifically chosen to achieve this objective. The four zones in Valhalla North were spaced across the interval 2,828 to 3,302 metres and in Asgard the seven zones were spaced over the interval 2,568 metres to 3,447 metres. The zones were also targeted at different rock types and hydrocarbon maturity zones with the lower zones in the dry gas maturity window and the upper zones in the wet gas maturity window. The tracer data and zonal isolation flow data confirmed that all stimulated zones were contributing to gas flow. The behavior of the zones in the two wells located some 40 kms apart also gave confidence in the lateral continuity of the zones.

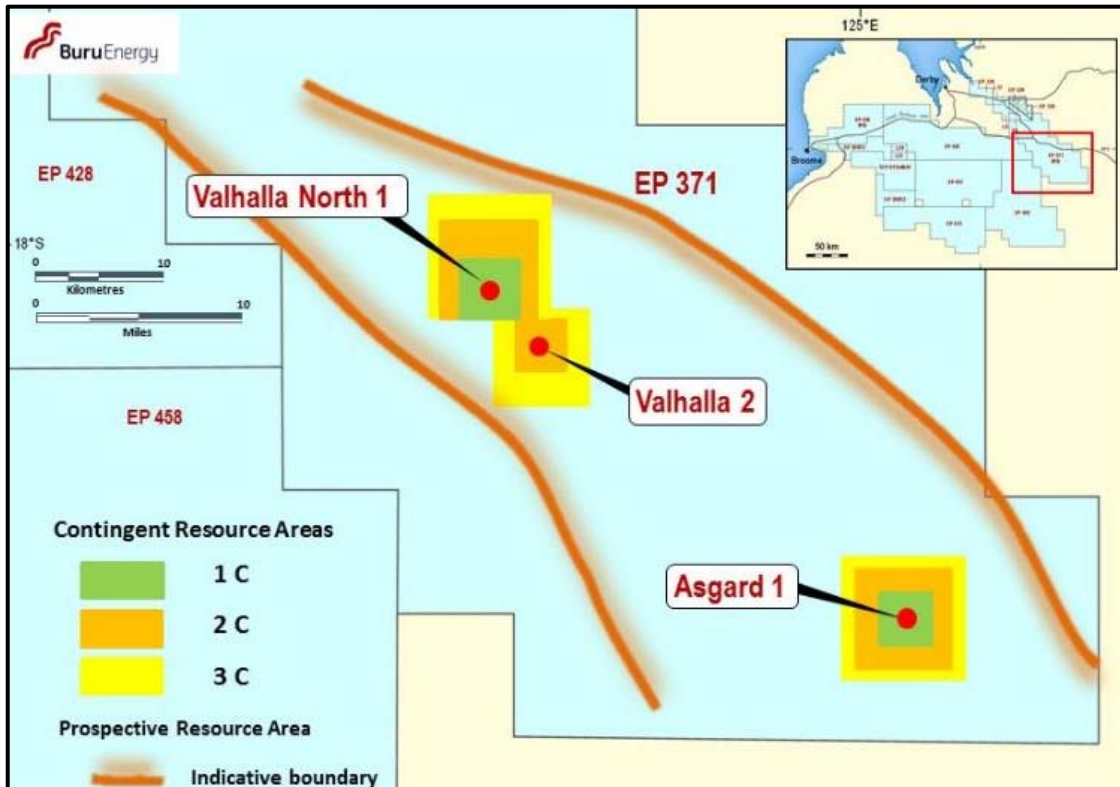
These two parameters are very important to give confidence that the accumulation is large and continuous – two vital components for an unconventional development.

## Resource Evaluation

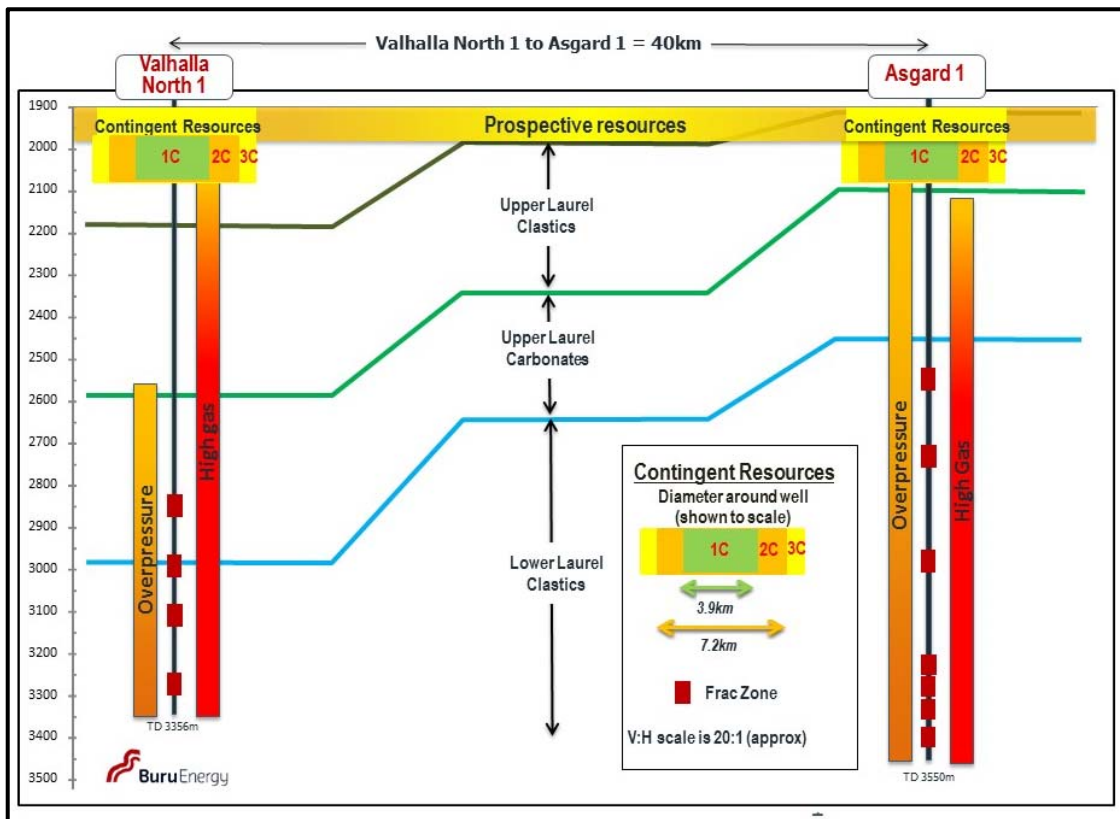
Subsequent to the successful completion of the 2015 tight gas stimulation program at the Valhalla North 1 and Asgard 1 wells, DeGolyer and MacNaughton (“D&M”), a specialist North American tight gas and unconventional resource assessment consulting group ([www.demac.com](http://www.demac.com)), were commissioned to undertake an independent assessment of the gas and liquids resources of the Laurel Formation in the Valhalla area.

D&M used the extensive data base collected by the Joint Venture over the course of the drilling and evaluation of the wells in the area including the extensive core and tight rock analysis data, detailed petrophysical analysis, and the observations from the flowbacks of the stimulated wells.

The full results of the D&M analysis are contained in the ASX release of 18 April 2016: “Laurel Formation Tight Gas Independent Review for Permit EP 371”. The D&M analysis concentrated on the Valhalla North 1, Asgard 1 and Valhalla 1 and 2 wells on the EP 371 permit. The areas in which Contingent Resources were assigned are shown in the coloured squares on the following map and illustrated on the diagrammatic cross section. As the geology is interpreted to be continuous and the Prospective Resources are present between the two wells, and generally along the trend, these diagrams illustrate the potential for the addition of very material resources between and surrounding the two wells as more evaluation work is undertaken.



VANA area Contingent and Prospective resource locations



VANA cross section illustrating Contingent and Prospective resource extent

## Forward Gas Program

The data acquired to date, together with the independent certification of the Contingent Resources in the VANA area has significantly advanced the project, with confidence that there is the potential for a material commercial development once further appraisal and evaluation work is undertaken.

The currently estimated gross Contingent Resources of 1.5 TCF is a sufficient volume to underpin a major commercial development if a suitable cost structure and market arrangement can be put in place. Buru has identified a relatively modest operational program that has the potential to increase the Contingent Resources by up to 3 TCF in the area of the evaluation and if this was achieved, further work would then focus on the commercialisation pathway.

In Buru's view, the work program leading to confirmation of a higher Contingent Resource volume is likely to include the further flow testing of the Valhalla North 1 and Asgard 1 wells, and the drilling of an additional well with a horizontal section. A micro project to supply gas to local communities could then be supported by the existing wells.

Subject to the success of this Contingent Resource program, Buru is of the view that a further pilot program consisting of the drilling of a number of wells from a central pad could lead to the establishment of a local supply project probably using a compressed natural gas ("CNG") system. This project would then allow the conversion of Contingent Resources to Reserves and the scaling up of the project.

A full scale project delivering gas into the Pilbara and the Southwest would be able to supply a significant proportion of WA's future domestic gas needs.

Planning for the forward program is underway now that the data obtained from the program has provided confidence of the scale and potential of the resource.

The forward program is subject to joint venture, regulatory and all other approvals required for a program of this nature.

It should also be noted that in accordance with the definition of Contingent Resources that there is no certainty that it will be commercially viable to produce any portion of the resources, and that the contingent resources determined by D&M have an economic status of Undetermined, since the evaluations of those contingent resources are at a stage such that it is premature to clearly define the ultimate chance of commerciality.

## Ungani Field Resources

Further to the Company's internal resource estimates as set out in the ASX release of 28 April 2015, the Company has commissioned Gaffney Cline and Associates ("GCA") to undertake an assessment of the resources of the Ungani Oilfield for Buru's corporate use.

This assessment has now been completed and the results are set out below in summary, and in accordance with the ASX listing rules. The resources are classified as Contingent Resources at this time as production from the field is currently suspended pending a recovery in the oil price and the completion of a program aimed at reducing operating costs. The GCA 3C assessment is significantly greater than the internal assessment by Buru in 2015 which illustrates the potential upside in the field.

GCA's estimate of the Contingent Resources of the Ungani Field as of 30 April 2016 is as follows. Buru's interest is 50% of these estimates. The field has produced some 615,000 barrels since production commenced on 31 May 2012 until the most recent suspension of production on 26 January 2016.



Ungani Oilfield Contingent Resources (100%WI, MMstb)			
	P90	P50	P10
Original in place	8.99	16.13	32.30
Estimated Ultimate Recovery (EUR)	2.70	7.26	19.41
Production until the 26 of January 2016	0.62	0.62	0.62
Contingent Resources as at 30 April 2016	1C	2C	3C
	2.08	6.65	18.80
For comparison, Buru's estimate of the initial Contingent Resources (EUR) as previously reported as at 28 April 2015 for the Ungani Field	3.90	6.10	9.40

- i. The estimates of Contingent Resources are based on a probabilistic methodology with the main Central Fault block and Eastern Ungani-3 Fault Block aggregated arithmetically.
- ii. Based on current drilling results, GCA estimates that most of the Expected Ultimate Recovery to occur from the Central Fault Block which has already produced 0.615 MMstb with an initial EUR range 2.70-7.26-19.41 MMstb.
- iii. The Eastern Ungani-3 fault block requires additional appraisal
- iv. "Gross Contingent Resources" are 100% of the volumes estimated to be recoverable from the field/reservoir without any economic cut-off being applied and include volumes attributable to third parties, thus containing volumes which are not attributable to Buru.
- v. The volumes reported here are "unrisked" in the sense that no adjustment has been made for the risk that the project may not be developed in the form envisaged or may not go ahead at all (i.e. no "Chance of Development" factor has been applied).

NOTE – the full Contingent Resources Statement in accordance with ASX listing rules is set out below.

## Contingent Resources

Contingent Resources are defined as "those quantities of petroleum estimated, as of a given date, to be potentially recoverable from known accumulations, but the project is not yet considered mature enough for commercial development due to one or more contingencies". In the case of Ungani these contingencies relate to current oil price as set out below. The restart of production may lead to the re-classification of the resources to reserves.

GCA's estimate of the range of the gross Contingent Resources for the Ungani field are set out in the table above.

The following statements are provided in accordance with the requirements of ASX Listing Rule 5.33:

- The date of this evaluation is 30 April 2016
- This evaluation is in relation Petroleum Production Licences L20 and L21.
- Buru Energy is the Operator and holds a 50% working interest in the licences.
- All necessary agreements are in place for production from the licences.
- The basis for confirming the existence of a significant quantity of moveable hydrocarbons and the determination of a discovery is that substantial quantities of oil have already been produced from the Field.
- The analytical procedures used to estimate the contingent resources are based on Monte Carlo Simulation using ranges for each parameter of the volumetric equation. The output of this simulation is a range of original oil in place ("OIP") and gross contingent resources. The estimates of contingent resources were prepared by the use of appropriate geologic, petroleum engineering and evaluation principles and techniques that are in accordance with practices generally recognised by the petroleum industry and in accordance with the definitions established by the Petroleum Resources Management System ("PRMS") approved in March 2007 by the Society of Petroleum Engineers, the World Petroleum Council, the American Association of Petroleum Geologists and the Society of Petroleum Evaluation Engineers.
- The key contingencies that prevent the contingent resources from being classified as petroleum reserves are that the wells are currently shut-in while a determination is made of the potential for the reduction in operating

costs to allow a restart of production that is commercial. The necessary facilities and infrastructure are in place to support the development plan associated with these contingent resources.

- Further work required to convert the resources to reserves include a review of operating, export, and marketing arrangements.

## Qualified Petroleum Reserves and Resources Evaluator Statement

The Contingent Resources information included in this ASX release dated 16 May, 2016 relating to the Ungani Field are based on, and fairly represents information and supporting documentation prepared by, or under the supervision of Mr. Stephen Lane.

Mr. Lane is a full-time employee of Gaffney, Cline & Associates (GCA) holding the position of Technical Director who has a BSc. (Hons.) Geology degree from the University of Manchester is a member of the Society of Petroleum Engineers and is qualified in accordance with ASX listing rule 5.41.

GCA is acting as Qualified Petroleum Reserves and Resources Evaluators for Buru Energy Limited. GCA is an international petroleum consultancy, which has been operating worldwide for over 50 years providing both broad-based and detailed technical, commercial and strategic advice to clients across the upstream, midstream and downstream sectors of the oil and gas industry.

GCA and Mr. Lane have consented to the statements and the supporting information in the form and context in which the statements and supporting information appear in this ASX release.

## Ungani Forward Program

The Joint Venture is currently conducting an extensive review of the alternatives for restarting production from the field. These include evaluation of alternate export points, reduction of operating and transport costs, and alternate marketing arrangements. As part of this review, production from Ungani 3, Ungani Far West 1 and Ungani North 1 is also being reviewed. The Joint Venture has an objective to restart production as soon as practicable, but in a commercial framework that includes an oil price that delivers strong positive cash flow.

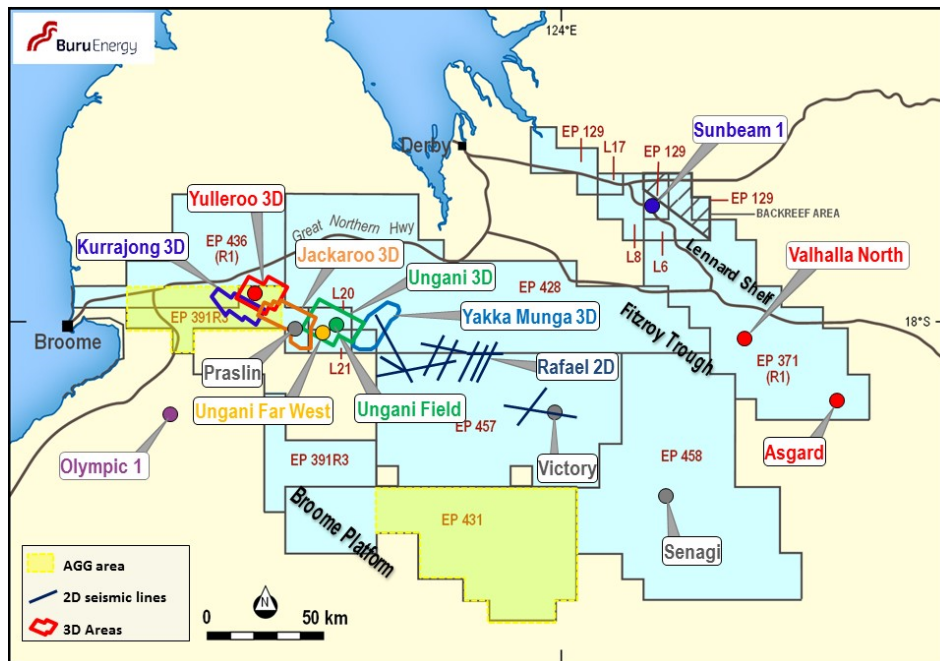
## Exploration forward plan

As set out in the Company's quarterly report for the quarter ending 31 March 2016, during 2015 the Company drilled 6 wells, acquired two 3D seismic surveys, 163 kms of 2D data and 4,900 sq kms of aero gravity, and is currently interpreting this large body of data. This includes the merged 3D data set of over 1,050 sq kms of 3D seismic data.

All of the data obtained from the wells and the seismic and aerogravity surveys needs to be fully assessed and integrated prior to further drilling activity in the area of the evaluation. The joint venture has agreed on a formal work plan and budget for this activity with initial review mid-year and completion in the third quarter. The forward exploration program for the area of the evaluation will be assessed at that time.

Buru considers the initial results of the evaluation to be very encouraging, with a number of high potential targets being mapped including substantial targets at the Anderson level where an oil column was intersected in the Ungani Far West 1 well.

The rig situation is also being assessed with a number of proposals having been made to the Company for the use of various rigs with a range of capabilities and these will be assessed as part of the review of the forward program options.



*Location of 2015 exploration activities*

Visit [www.buruenergy.com](http://www.buruenergy.com) for information on Buru Energy's current and future activities.

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## About Buru Energy

Buru Energy Limited (ASX: BRU) is a Western Australian oil and gas exploration and production company headquartered in Perth with an operational office in Broome. The Company's petroleum assets and tenements are located onshore in the Canning Basin in the southwest Kimberley region of Western Australia. Its flagship high quality conventional Ungani Oilfield project is owned in 50/50 joint venture with Diamond Resources (Fitzroy) Pty Ltd. As well as Ungani, the Company's portfolio includes potentially world class tight gas resources in partnership with Diamond Resources Canning Pty Ltd.

The Company's goal is to deliver material benefits to its shareholders, the State of Western Australia, the Traditional Owners of the areas in which it operates, and the Kimberley community, by successfully exploring for and developing the petroleum resources of the Canning Basin in an environmentally and culturally sensitive manner.

## Competent Persons Statement

Except where otherwise noted, information in this release related to exploration and production results and petroleum resources is based on information compiled by Eric Streitberg who is an employee of Buru Energy Limited. Mr Streitberg is a Fellow of the Australian Institute of Mining and Metallurgy and the Australian Institute of Company Directors, and a member and Certified Petroleum Geologist of the American Association of Petroleum Geologists. He has over 40 years of relevant experience. Mr Streitberg consents to the inclusion of the information in this document.