

JURA ENERGY CORPORATION ANNUAL INFORMATION FORM FOR THE YEAR ENDED DECEMBER 31, 2018

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## **DEFINITIONS**

In this Annual Information Form, the terms set forth below have the following meanings, unless the context requires or indicates otherwise:

"ABPL" means Al Baraka Bank (Pakistan) Limited.

"AIF" means this Annual Information Form.

"Aminah Lease" has the meaning as set forth under the heading "Description of the Business – Development and Production Leases – Ayesha, Aminah, and Ayesha North Leases".

"Ayesha Lease" has the meaning as set forth under the heading "Description of the Business – Development and Production Leases – Ayesha, Aminah, and Ayesha North Leases".

"Ayesha North Lease" has the meaning as set forth under the heading "description of the Business – Development and Production Leases – Ayesha, Aminah, and Ayesha North Leases".

"Badar Lease" has the meaning as set forth under the heading "Description of the Business – Development and Production Leases – Badar Lease".

"Badin IV North Exploration License" has the meaning as set forth under the heading "Description of the Business–Exploration Licenses – Badin IV North Exploration License".

"Badin IV South Exploration License" has the meaning as set forth under the heading "Description of the Business – Exploration Licenses – Badin IV South Exploration License".

"Badin IV South Leases" has the meaning as set forth under the heading "Description of the Business – Development and Production Leases – Ayesha, Aminah, and Ayesha North Leases".

"Board" or "Board of Directors" means the board of directors of Jura.

"C&F" has the meaning as set forth under the heading "Description of the Business – Overview of Concession Agreement Structure and Petroleum Pricing in Pakistan – Gas Pricing" means carriage and freight.

"CBCA" means the Canada Business Corporations Act, as amended, including the regulations promulgated thereunder.

"COGE Handbook" means the "Canadian Oil and Gas Evaluation Handbook" prepared jointly by The Society of Petroleum Evaluation Engineers (Calgary Chapter) and the Canadian Institute of Mining, Metallurgy & Petroleum (Petroleum Society), as amended from time to time.

"Common Shares" means the common shares of Jura.

"Consortium" means a consortium of four fertilizer manufacturers consisting of Pak Arab Fertilizers Limited, Agri Tech Limited, DH Fertilizers Limited, and Engro.

"DeGolyer" means DeGolyer and MacNaughton Canada Limited.

"DGPC" means the Directorate General of Petroleum Concessions in Pakistan.

"ECC" means Economic Coordination Committee of the Federal Cabinet, Government of Pakistan.

"EEL" means Energy Exploration Limited, a company formed under the laws of Pakistan.

"Engro" means Engro Fertilizers Limited.

"**Exploration License**" means an exclusive right to explore for petroleum within a designated portion of an onshore area under and pursuant to applicable rules.

"EWT" means extended well testing.

**"FHL**" means Frontier Holdings Limited, a company formed under the laws of Bermuda and an indirect wholly-owned subsidiary of Jura.

"Firstgold" means Firstgold Corp.

"FOGHL" means Frontier Oil and Gas Holdings Limited, a company formed under the laws of Mauritius and a wholly-owned subsidiary of Jura.

"GHPL" means Government Holdings (Private) Limited.

"GoP" means the Government of Pakistan including regulatory authorities, governmental departments, agencies, commissions, bureaus, officials, ministers, courts, bodies, boards, tribunals or dispute settlement panels or other law, rule or regulation-making organizations or entities exercising, or entitled or purporting to exercise any administrative, executive, judicial, legislative, policy, regulatory or taxing authority or power in Pakistan.

"GPA" means a Gas Pricing Agreement.

"GPX" means Gulf Petroleum Exploration International.

"GSA" means a Gas Sale and Purchase Agreement.

"Guddu Exploration License" has the meaning as set forth under the heading "Description of the Business–Exploration Licenses – Guddu Exploration License".

"Guddu Farm-Out Agreement" means the farm-out agreement between IPR and Spud dated January 1, 2008, relating to the acquisition by Spud of a 13.5% Working Interest in the Guddu Exploration License.

"Heritage Oil" means Heritage Oil & Gas Limited.

"Hycarbex" means Hycarbex American Energy Inc.

"IPR" means IPR Transoil Corporation.

"JSB" means JS Bank Limited.

"JSB Term Finance Facility" has the meaning as set forth under the heading "General Developments of the Business – History and Recent Business – Developments in 2017 – JSB Term Finance Facility".

"JSEL" means JS Energy Limited (formerly Eastern Petroleum Limited), a company formed under the laws of Mauritius and Jura's principal shareholder.

"Jura" or the "Corporation" means Jura Energy Corporation, a corporation existing under the laws of Canada.

"Kandra Lease" has the meaning as set forth under the heading "Description of the Business–Development and Production Leases – Kandra Lease".

"KIBOR" means the Karachi Inter Bank Offered Rate.

"KGPL" means Konnect Gas (Private) Limited.

"KPC" means Kandra Power Company Limited.

"Lease" means an exclusive right to develop and produce petroleum from a designated portion of an onshore area under and pursuant to the applicable rules.

"LIBOR" means the London Inter Bank Offered Rate.

"Loan Agreement" has the meaning as set forth under the heading "Interest of Management and Others in Material Transactions".

"Marginal Gas Pricing Criteria" means the Marginal Gas Fields – Gas Pricing Criteria and Guidelines 2013.

"McDaniel" means McDaniel & Associates Consultants Ltd.

"McDaniel 2018 Report" means the independent engineering evaluation of the corporation's oil, natural gas liquids and natural gas interests prepared by McDaniel effective December 31, 2018, and dated April 24, 2019.

"MEPD" means the Ministry of Energy (Petroleum Division).

"MPCL" means Mari Petroleum Company Limited.

**"NI 51-101"** means National Instrument 51-101 – *Standards of Disclosure for Oil and Gas Activities* of the Canadian Securities Administrators.

"OGDCL" means Oil and Gas Development Company Limited.

"OGRA" means the Pakistan Oil and Gas Regulatory Authority.

"PEL" means Petroleum Exploration (Private) Limited.

"PEPL" means PetExPro Ltd. (formerly Frontier Acquisition Company Limited), a company formed under the laws of Bermuda and a wholly-owned subsidiary of Jura.

"Petroleum" means all liquid and gaseous hydrocarbons existing in their natural condition, in the strata, as well as all substances, including sulphur, produced in association with such hydrocarbons, but do not include basic sediments and water.

"Petroleum Concession Agreement" or "PCA" means an agreement pursuant to which the GoP grants to the parties thereto an interest in a Petroleum concession, which interest is subject to the rights, obligations, and liabilities imposed by the applicable petroleum laws of Pakistan, including the enjoyment of the exclusive right to explore and prospect for, develop, produce, sell and otherwise dispose of Petroleum from the area covered under the Exploration License or the Lease, as the case may be.

"Petroleum Policy 2001" means the Pakistan Petroleum (Exploration and Production) Policy, 2001.

"Petroleum Policy 2009" means the Pakistan Petroleum (Exploration and Production) Policy, 2009.

"Petroleum Policy 2012" means the Pakistan Petroleum (Exploration and Production) Policy, 2012.

"POPEL" means Premier Oil Pakistan Exploration Limited (formerly PKP Exploration Limited).

"President" means the President of the Islamic Republic of Pakistan.

"Reti, Maru and Maru South Leases" have the meaning as set forth under the heading "Description of the Business – Development and Production Leases – Reti, Maru, and Maru South Leases".

"Rules 1986" means the Pakistan Petroleum (Exploration and Production) Rules, 1986.

- "Sanjawi Exploration License" has the meaning as set forth under the heading "Description of the Business Exploration Licenses Sanjawi Exploration License".
- "Sanjawi Farm-Out Agreement" means the farm-out agreement among Sprint, Spud, and EEL dated April 15, 2009, relating to the acquisition by Spud of a 16% Working Interest in the Sanjawi Exploration License.
- "Sara and Suri Leases" has the meaning as set forth under the heading "Description of the Business Development and Production Leases Sara and Suri Leases".
- "SEDAR" means the System for Electronic Document Analysis and Retrieval.
- "Services Agreement" has the meaning as set forth under the heading "Interest of Management and Others in Material Transactions".
- "Settlement Agreement" means an agreement, dated August 12, 2016, between FHL, Spud and PEL, pursuant to which all the disputes between FHL and PEL were resolved.
- "Sherritt" means Sherritt International Corporation.
- "Short Term Loan Agreement" has the meaning as set forth under the headings "General Developments of the Business History and Recent Business Developments in 2018 Short Term Loan Agreement".
- "Sprint" means Sprint Energy Limited.
- "**Spud**" means Spud Energy Pty Limited, a company incorporated pursuant to the Australian Corporations Act 2001 (Cth) and a wholly-owned subsidiary of Jura.
- "SSGCL" means Sui Southern Gas Company Limited.
- "Tight Gas Policy" means the Pakistan Tight Gas (Exploration and Production) Policy, 2011.
- "Trakker" means Trakker Energy (Private) Limited.
- "TSX" means the Toronto Stock Exchange.
- "TSX-V" means the TSX Venture Exchange.
- "Tullow" means Tullow Pakistan (Developments) Limited.
- "WAPDA" means the Pakistan Water and Power Development Authority.
- "Working Interest" means all or any undivided interest in the entirety of any petroleum right, and related obligations and liabilities imposed by the applicable rules in accordance with any Exploration License, Lease or PCA.
- "Working Interest Owner" means the owner of the applicable Working Interest.
- "Zamzama Farm-Out Agreement" means the farm-out agreement among Sprint, Spud, and EEL dated April 15, 2009, relating to the acquisition by Spud of a 12% Working Interest in the Zamzama North Exploration License.
- "Zamzama North Exploration License" has the meaning as set forth under the heading "Description of the Business Exploration Licenses Zamzama North Exploration License".
- "Zarghun South Lease" has the meaning as set forth under the heading "Description of the Business Development and Production Leases– Zarghun South Lease".

Words importing the singular number, where the context requires, include the plural and vice versa and words importing any gender include all genders.

## **CONVENTIONS**

Certain other terms used but not defined in this AIF are defined in NI 51-101 and, unless the context otherwise requires, have the same meanings as ascribed to them in NI 51-101. Unless otherwise indicated, references in this AIF to "\$" or "dollars" are to US dollars.

## **ABBREVIATIONS**

The following abbreviations are used in this AIF.

Crude Oi	and Natural Gas Liquids	Natural Gas	
Bbl	One barrel equalling 34.972 Imperial gallons	Bcf	Billion cubic feet
	or 42 U.S. gallons		
Bbls/d	Barrels per day	Bbl/MMcf	Barrel per million cubic feet
Boe	Barrels of oil equivalent	Mcf	Thousand cubic feet
Boe/d	Barrels of oil equivalent per day	Mcf/d	Thousand cubic feet per day
MBoe	Thousand barrels of oil equivalent	MMcf	Million cubic feet
MMBoe	Million barrels of oil equivalent	MMcf/d	Million cubic feet per day
MBbls	Thousand barrels	Btu	British Thermal Units
NGLs	Natural gas liquids, consisting of any one or	MMBtu	Million British Thermal Units
	more of ethane, propane, butane and condensate	Btu/Scf	British Thermal Unit per standard cubic feet

The use of the Boe unit of measurement may be misleading, particularly if used in isolation. A Boe conversion ratio of 5.8 Mcf:1Bbl is based on an energy equivalency conversion method primarily applicable at the burner tip and does not represent a value equivalency at the wellhead.

Other	
Km	Kilometer
L.Km	Line kilometer
Sq.Km	Square kilometer
Psi	Pounds per square inch
Md	Millidarcy
\$	United States dollars
C\$	Canadian dollars
PKR	Pakistan rupee

## **EQUIVALENCIES**

To Convert from	То	Multiply by
Thousand cubic feet	Cubic meters	28.317
Cubic meters	Cubic feet	35.315
Barrels	Cubic meters	0.159
Cubic meters	Barrels	6.293
Feet	Meters	0.305
Meters	Feet	3.281
Miles	Kilometers	1.609
Kilometers	Miles	0.621
Acres	Hectares	0.405
Hectares	Acres	2.471
Gigajoules	Thousand cubic feet	1.055

This AIF discloses test rates of production for certain wells over short periods of time, which are preliminary and not determinative of the rates at which those or any other wells will commence production and thereafter decline. Short-term test rates are not necessarily indicative of long-term well or reservoir performance or of ultimate recovery. Although such rates are useful in confirming the presence of hydrocarbons, they are

preliminary in nature, are subject to a high degree of predictive uncertainty as a result of limited data availability, and may not be representative of stabilized on-stream production rates.

## FORWARD-LOOKING STATEMENTS

This AIF contains forward-looking statements. These statements relate to future events or future performance of Jura. All statements other than statements of present or historical fact are forward-looking statements. When used in this AIF, the words "may", "would", "could", "will", "intend", "plan", "anticipate", "believe", "estimate", "predict", "seek", "propose", "expect", "potential", "continue", and similar expressions, are intended to identify forward-looking statements. These statements involve known and unknown risks, uncertainties, and other factors that may cause actual results or events to differ materially from those anticipated in such forward-looking statements. Jura believes that the expectations reflected in these forward-looking statements are reasonable but no assurance can be given that these expectations will prove to be correct and such forward-looking statements included in this AIF should not be unduly relied upon. Moreover, Jura does not assume responsibility for the accuracy and completeness of the forwardlooking statements. Jura's actual results, performance or achievements could differ materially from those expressed in, or implied by, these forward-looking statements and, accordingly, no assurance can be given that any of the events anticipated by the forward-looking statements will transpire or occur, or if any of them do so, what benefits Jura will derive therefrom. Should one or more of these risks or uncertainties materialize, or should assumptions underlying forward-looking statements prove incorrect, actual results may vary materially from those described in this AIF as intended, planned, anticipated, believed, estimated, or expected. Specific forward-looking statements in this AIF include, among others, statements pertaining to the following:

- the level of costs to perform well abandonment and reclamation, including future abandonment and reclamation costs:
- future commodity prices;
- future production rates;
- timing and development of undeveloped reserves;
- capital expenditure and development plans for 2019;
- future tax liability;
- future costs, including operating and production costs, transportations costs, capital costs and administration costs:
- the level of operational cash flows and other internal cash generation;
- anticipated business activities, projected growth and execution of corporate plans and strategies;
- the location and timing of, and the structures to be targeted by, the wells to be drilled in the Guddu, Zamzama North, Badin IV South and Badin IV North Exploration Licenses;
- expectations with respect to certain GoP approvals and exemptions and the treatment of Jura and its subsidiaries under governmental regulatory regimes, including future environmental laws and regulations;
- expectations regarding the extension or renewal of Jura's Leases and Exploration Licenses by the GoP:
- expectations regarding the level of production and timing of commencement of commercial production from the Sara-4 and Suri shut-in wells in Sara and Suri Leases, Ayesha-1, Aminah-1

and Ayesha North-1 gas and condensate discoveries in Badin IV South Exploration License, Umair-1 gas discovery in Guddu Exploration License, and the Zainab-1 gas and condensate discovery in Badin IV North Exploration License;

- expectations regarding grant of development and production lease for Zainab-1 gas and condensate discovery in Badin IV North Exploration License;
- execution of deeds of assignments by the GoP in respect of the Zamzama North Exploration License and Sanjawi Exploration License;
- execution of deeds of assignments by the GoP in respect of Mirpur Mathelo Exploration License, Salam Exploration License, Badar Lease and Kandra Lease;
- satisfaction of conditions to completion of the acquisition of EEL and the timing thereof;
- anticipated exploration upside potential in areas covered by the Kandra, Sara and Suri Leases;
- expected pricing under the Marginal Gas Pricing Criteria and the Petroleum Policy 2012;
- the timing of acquisition, processing and interpretation of 2D seismic data in Zarghun South and 3D seismic data in Guddu;
- the timing of approval of amendments in Zarghun South GSA by SSGCL and the GoP;
- the timing and approval of the GSA for the Avesha, Aminah and Avesha North Leases;
- expectations regarding GoP approval of GPA for the Reti, Maru, and Maru South discoveries in Guddu Exploration License;
- expectations regarding the GoP approval for the declaration of commerciality, field development plan and grant of development and production lease for Zainab-1 gas and condensate discovery in Badin IV North Exploration License;
- expectations regarding the GoP approval for the declaration of commerciality of Umair-1 in Guddu Exploration License;
- expectations regarding the allocation of gas from Umair-1 gas discovery in Guddu Exploration License to Engro by GoP;
- expectations regarding the allocation of gas from Zainab-1 gas and condensate discovery in Badin IV North Exploration License to SSGCL by GoP;
- expectations regarding entitlement of gas pricing under the Marginal Gas Pricing Criteria for the Ayesha-1, Aminah-1, Ayesha North-1 and Zainab-1 discoveries;
- expectations regarding GoP approval for exemption from applicability of Rule 43 of the Rules 1986 to Sara and Suri Leases:
- expectations regarding GoP approval for replacement of Badin South bank guarantee with the hypothecation of Spud's share of gas reserves in Zarghun South Lease;
- expectations regarding GoP approval of a supplemental GPA under the Tight Gas Policy, a supplemental PCA and a supplemental to the Zarghun South Lease;
- expectations regarding GoP approval for grant of additional area of 12.4 Sq.Km in the existing Zarghun South Lease; and

expectations regarding obtaining any regulatory/governmental approval.

Statements relating to reserves or resources are also deemed to be forward-looking statements, as they involve the implied assessment, based on certain estimates and assumptions that the reserves and resources described can be profitably produced in the future. For more information, see Appendix A – "Statement of Reserves Data and Other Oil and Gas Information".

With respect to forward-looking statements in this AIF, Jura has made assumptions, regarding, among other things:

- the impact of increasing competition;
- Jura's ability to obtain additional financing on satisfactory terms;
- Jura's ability to attract and retain qualified personnel;
- the stability of global and national economic and political structures;
- the absence of significant project delays, whether as a result of economic, regulatory, environmental or weather conditions; and
- the ability of the Corporation to market oil and natural gas products to new and existing customers.

Jura's actual results could differ materially from those anticipated in these forward-looking statements as a result of the risk factors set forth below and assumptions set forth above and elsewhere in this AIF:

- · general economic conditions;
- volatility in global market prices for oil and natural gas;
- acts of violence, terrorism and civil unrest affecting Jura's assets and personnel;
- changes of laws in Pakistan affecting foreign ownership, interpretation or renegotiation of existing contracts, government participation, taxation policies, including royalty and tax increases and retroactive tax claims, investment restrictions, working conditions, exploration licensing and government control over domestic oil and gas pricing;
- competition;
- liabilities and risks, including environmental liability and risks, inherent in oil and gas operations;
- volatility in capital markets;
- the availability of capital;
- alternatives to and changing demand for petroleum products;
- the risk that the GoP may revoke certain approvals;
- the risk that Jura's Exploration Licenses or Leases will expire and will not be renewed, or that Exploration Licenses or Leases that are currently past their term and are pending renewal will not be renewed, on terms acceptable to Jura, or at all; and
- the other factors considered under "Risk Factors" herein.

Undue reliance should not be placed on forward-looking statements. Such statements are inherently uncertain, are based on estimates and assumptions, and are subject to known and unknown risks and

uncertainties (both general and specific) that contribute to the possibility that the future events or circumstances contemplated by the forward-looking statements will not occur. There can be no assurance that the plans, intentions or expectations upon which forward-looking statements are based will, in fact, be realized. Actual results will differ, and the difference may be material and adverse to the Corporation and its shareholders.

These factors should not be considered exhaustive. The reader is cautioned that these factors and risks are difficult to predict and that the assumptions used in the preparation of such information, although considered reasonably accurate at the time of preparation, may prove to be incorrect. Accordingly, readers are cautioned that the actual results achieved by the Corporation will vary from the information provided herein and the variations may be material. Consequently, there are no representations by the Corporation that actual results achieved will be the same in whole or in part as those set out in the forward-looking information. Furthermore, the forward-looking statements contained in this AIF are made as of the date hereof, and the Corporation undertakes no obligation, except as required by applicable securities legislation, to update publicly or to revise any of the included forward-looking statements, whether as a result of new information, future events or otherwise. The forward-looking statements contained herein are expressly qualified by this cautionary statement.

## **CORPORATE STRUCTURE**

# Name, Address and Incorporation

Jura was incorporated under the *Business Corporations Act* (Alberta) on July 8, 1993, under the name 572571 Alberta Ltd. In accordance with the Articles of Amendment effective August 5, 1993, Jura's name was changed to "Proprietary Energy Industries Inc.", the "private company" restrictions were removed from the Corporation's articles and the authorized share capital of the Corporation was changed from an unlimited number of Common Shares to an unlimited number of Common Shares and an unlimited number of preferred shares, issuable in series. In accordance with the Articles of Amendment effective June 27, 2000, the Corporation changed its name to "Proprietary Industries Inc.". The Corporation was continued under the CBCA on June 3, 2002. In accordance with the Articles of Amendment effective June 19, 2006, the Corporation changed its name to "Jura Energy Corporation".

The Corporation's registered and head office is located at Suite 5100, 150 – 6<sup>th</sup> Avenue SW, Calgary, Alberta, T2P 3Y7.

## **Inter-Company Relationships**

Jura carries on its oil and gas exploration and production activities through its principal subsidiaries, Spud and FHL, both having branch offices in Islamabad, Pakistan.

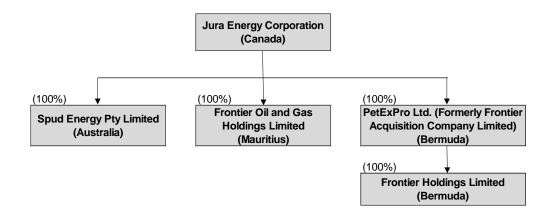
Spud was incorporated under the *Corporations Law of New South Wales*, Australia on May 2, 1996, as Novus Pakistan Pty Ltd. On April 14, 2005, Novus Pakistan Pty Ltd. changed its name to Spud Energy Pty Limited. Effective September 12, 2011, Spud repealed its memorandum and articles of association and adopted a new constitution for the company to better reflect current Australian corporate legislation in 2012. Spud is owned 100% by Jura.

FHL was incorporated under the *Companies Act 1981* of Bermuda on March 20, 2006. FHL is owned 100% by PEPL.

PEPL was incorporated under the *Companies Act 1981* of Bermuda on March 30, 2006, under the name Frontier Acquisition Company Limited. PEPL is owned 100% by Jura. On December 2, 2016, PEPL changed its name to "PetExPro Ltd."

FOGHL was incorporated as an investment holding company under the *Companies Act 2001* of Mauritius on December 30, 2016. FOGHL is owned 100% by Jura.

The following diagram describes the inter-corporate relationships among Jura and its principal subsidiaries as at the date of this AIF.



## **GENERAL DEVELOPMENT OF THE BUSINESS**

## **History and Recent Developments**

Jura, formerly known as Proprietary Industries Inc., has its origin as a merchant bank with investments in a variety of industries, including real estate, mining, manufacturing and automotive. During 2005, most of the Corporation's assets were converted to cash or near cash. The Corporation evaluated investment proposals and investigated various strategic plans. In June 2006, the Corporation acquired FHL and the Corporation changed its name to Jura Energy Corporation. On July 11, 2012, the Corporation completed a reverse takeover transaction with Spud. Effective September 1, 2017, Nadeem Farooq was appointed as the Interim Chief Executive Officer and director of Jura and Arif Siddiq was appointed as the Interim Chief Financial Officer of the Corporation.

## Developments in 2016

Exploration Drilling in Badin IV South Exploration License

The drilling of the Aminah-1 exploration well commenced on January 06, 2016 and it reached the targeted depth of 2297 meters on February 01, 2016. The well was logged and completed in the Lower Goru "A" Sands of Cretaceous age. Post-completion surface well testing was conducted in July 2016 after selective perforations of 14 meters in the Lower Goru A-Sand. During a 10 hour test on 48/64 inch fixed choke, the well flowed gas at an average rate of approximately 19 MMcf/d with an average wellhead flowing pressure of 1,607 Psi and having an average heating value of approximately 1,000 Btu/Scf. The average condensate to gas ratio was approximately 3.8 Bbl/MMcf with the water rate of 24.5 barrels per day.

The drilling of the Ayesha North-1 exploration well commenced on March 25, 2016 and it reached the target depth of 2820 meters on May 10, 2016. The well was logged and completed in the Lower Goru "A" Sands of Cretaceous age. Post-completion surface well testing was conducted in July 2016 after perforating 18 meters interval in the Lower Goru A-Sand. During an 8 hour test on 48/64 inch fixed choke, the well flowed gas at an average rate of approximately 8.7 MMcf/d with an average wellhead flowing pressure of 771 Psi and having an average heating value of approximately 970 Btu/Scf. The average condensate to gas ratio was approximately 8.17 Bbl/MMcf with water rate of 28 barrel per day. The gas rate and wellhead pressures are expected to improve after planned stimulation to remove the formation damage.

See "Description of the Business – Exploration Licenses – Badin IV South Exploration License" for additional details of Jura's interest in Badin IV South Exploration License.

Voluntary Delisting from the TSX to the TSX-V

On March 31, 2016, the TSX announced that it had placed the Corporation under a delisting review as result of a decline in the market value of the Corporation's Common Shares. The Board determined that it was in the best interest of the Corporation to voluntarily delist its Common Shares from the TSX and apply

for a listing of its Common Shares on the TSX-V pursuant to a streamlined listing procedure. Effective September 1, 2016, the TSX-V granted approval for the listing of the Common Shares on TSX-V.

## Exploration Drilling in Guddu Exploration License

The drilling of exploration well, Khamiso-1, commenced on June 30, 2016 to test the potential of hydrocarbons of the Pirkoh Limestone formation of Eocene age. Total depth of 753 meters was achieved on July 28, 2016. During a short duration pre-stimulation test for 8 hours on a 32/64 inch choke, the well flowed gas at an average rate of 2.95 MMcf/d, having a heating value of approximately 697 Btu/Scf, with an average wellhead flowing pressure of 505 Psi. The Khamiso-1 well was completed in the Pirkoh Limestone Formation of Eocene age.

See "Description of the Business – Exploration Licenses – Guddu Exploration License" for additional details of Jura's interest in Guddu Exploration License.

#### Loan Facilities

Effective October 1, 2016, Spud entered into a fourth amended and restated Loan Agreement with JSEL, pursuant to which, the following amendments were agreed:

- the loan currency was changed from Canadian dollars to US Dollars, the reporting currency for Jura;
- the interest rate was increased from US Dollar 3-month LIBOR plus 4% compounded quarterly to 11% compounded quarterly; and
- the Maturity Date, following which the loan facility was to be payable upon demand, and which was originally the earlier of: (a) February 20, 2014 and (b) ten (10) Business Days after the closing date of a qualifying financing, was replaced with a quarterly repayment schedule providing Spud with a grace period so that it was not required to make its first payment until January 1, 2018.

# Long Term Syndicated Islamic Financing Facility

On April 8, 2016, Spud entered into First Supplemental Musharaka Agreement in respect of the Zarghun South Lease, pursuant to which the Syndicated Credit Facility amount was increased from PKR 750 million (approximately \$5.36 million) to PKR 960 million (approximately \$6.87 million).

On May 11, 2016, Spud entered into a second Musharaka Agreement in respect of the Sara and Suri Leases under the Syndicated Credit Facility, in the amount of up to PKR 100 million (approximately \$0.72 million) pursuant to which the gross Syndicated Credit Facility amount was increased from PKR 960 million (approximately \$6.87 million) to PKR 1,060 million (approximately \$7.58 million). JSB participation in the Syndicated Credit Facility was increased from PKR 250 million (approximately \$1.79 million) to PKR 500 million (approximately \$3.58 million). JSB's participation in the Syndicated Credit Facility is on the same terms as each other unrelated syndicate member.

# Settlement with PEL

On August 12, 2016, Jura's wholly-owned operating subsidiaries, FHL and Spud, entered into a settlement agreement for the full and final settlement of various disputes with PEL. PEL is the operator of the Badin IV North Exploration License and Badin IV South Exploration License and the Badar, Ayesha and Kandra Development and Production Leases. In connection with the settlement of the disputes, FHL, Spud and PEL agreed to the following:

- two arbitration matters between FHL and PEL before the International Chamber of Commerce (the "Arbitrations") were withdrawn;
- each party agreed to bear its own legal and other costs with respect to the Arbitrations and the settlement and neither party can claim reimbursement of such costs from the other party;
- PEL irrevocably withdrew the default notice and forfeiture notice served to FHL with respect to the Badin IV South Exploration License;

- PEL irrevocably withdrew the application submitted to the GoP seeking assignment to PEL of FHL's working interest in the Badin IV South Exploration License;
- PEL agreed to pay certain current and future exploration and development costs attributable to FHL's working interest share of expenditures under the Kandra Lease and the Badin IV North Exploration License and the Badin IV South Exploration License;
- PEL agreed to pay certain development costs attributable to FHL's working interest share of expenditure in the Ayesha Lease and the Aminah and Ayesha North gas discoveries in the Badin IV South Exploration License;
- PEL agreed to carry a certain percentage of FHL's working interest in the drilling of an exploration well in the Kandra Lease:
- FHL agreed to waive its audit rights in relation to certain past costs;
- Spud agreed to sell its working interest in the Badar Lease to PEL for cash consideration payable upon completion of the transfer, which is subject to customary approvals in Pakistan; and
- FHL agreed to transfer its entire working interest in the Kandra Lease and assign its interest in KPC to PEL.

## Development drilling in Zarghun South Lease

The drilling of the development well Zarghun South-3 commenced on September 26, 2016. Zarghun South-3 was drilled as a deviated well to a total measured depth of 1820 meters. The targeted depth was achieved on January 06, 2017 and the well was completed as a gas producer in the Dunghan Limestone formation of Paleocene age.

During a short duration post completion test for 8 hours, the well flowed gas at an average rate of 10.5 MMcf/d at 32/64 inch choke size, having a heating value of approximately 920 Btu/Scf, with an average wellhead flowing pressure of 1800 Psi.

See "Description of the Business – Development and Production Leases – Zarghun South Lease" for additional details of Jura's interest in Zarghun South Lease.

## Developments in 2017

# **Board Reorganization**

Mr. Shahzad Ashfaq resigned from his position as director of Jura effective May 25, 2017. Mr. Ashfaq stepped down from the Jura board to devote more time to his other business interests.

Shahid Hameed resigned from his position as director and Interim Chief Executive Officer of Jura effective September 1, 2017. On the same date, Mr. Nadeem Farooq was appointed as the Interim Chief Executive Officer and director of Jura and Mr. Arif Siddiq was appointed as the Interim Chief Financial Officer of the Corporation.

# Long Term Syndicated Islamic Financing Facility

On February 2, 2017, Spud entered into a third Musharaka Agreement in respect of the Zarghun South-3 development well under the Syndicated Credit Facility, in the amount of up to PKR 170 million (approximately \$1.22 million) resulting in an increase in the Syndicated Credit Facility from PKR 1,060 million (approximately \$7.58 million) to PKR 1,230 million (approximately \$8.80 million).

On August 25, 2017, Spud entered into a supplemental third Musharaka Agreement in respect of the Zarghun South-3 development well under the Syndicated Credit Facility, resulting in an increase in the Syndicated Credit Facility from PKR 1,230 million (approximately \$8.80 million) to PKR 1,530 million (approximately \$10.94 million).

## JSB Term Finance Facility

On November 14, 2017, Spud entered into term finance facility with JSB (the "JSB Term Finance Facility") in the amount of up to PKR 200 million (approximately \$1.43 million). The facility carries mark-up at the rate of 3-month KIBOR plus 2.75%. The principal is repayable in twelve equal quarterly installments in arrears, commencing fifteen months after the date of the first disbursement (i.e. November 14, 2017). The facility is secured by way of ranking charge on all present and future fixed assets of Spud, first charge on all present and future assets of FHL, subordinated assignment of receivables originating from sale of gas from the Badar, Reti-Maru, Zarghun South, Badin IV North Exploration License and Badin IV South Exploration License and a corporate guarantee by Jura.

# Exploration Drilling in Badin IV North Exploration License

The drilling of Zainab-1 exploration well commenced on June 5, 2017, and reached the targeted depth on June 28, 2017. Based on the open hole logs and Modular Dynamic Tester ("**MDT**") results the well was completed in the Lower Goru "B" Sands of cretaceous age. Post-completion surface well testing was conducted after perforating selective intervals of approximately 16.5 meters. A summary of well testing results at various choke sizes is as follows.

Choke	Test duration	Average gas flow	Condensate	Water	Wellhead flowing
Size		rates	rate	rate	pressure
	Hours	MMcf/d	Bbls/d	Bbl/d	Psi
32 / 64"	12	10.20	451	72	2,133
40 / 64"	12	14.30	500	130	2,026
48 / 64"	12	19.04	500	130	1,861
56 / 64"	24	23.04	772	54	1.724

See "Description of the Business – Exploration Licenses – Badin IV North Exploration License" for additional details of Jura's interest in Badin IV North Exploration License.

## Developments in 2018

# Exploration Drilling in Guddu Exploration License

The drilling of the Umair-1 exploration well commenced on January 25, 2018 and reached the total depth of 790 meters on February 8, 2018 to target Pirkoh Limestone and Habib Rahi Limestone formations. During a short duration pre-stimulation test for 8 hours on a 36/64 inch choke, the well flowed gas at an average rate of approximately 2.47 MMcf/d, having a heating value of approximately 755 Btu/Scf, with an average wellhead flowing pressure of 330 Psi.

See "Description of the Business – Exploration Licenses – Guddu Exploration License" for additional details of Jura's interest in Guddu Exploration License.

# 3D Seismic Data Acquisition in Guddu Exploration License

In order to explore the southern part of the Guddu Exploration License, the Guddu joint venture partners approved the acquisition of 545 Sq.Km of 3D seismic data. On March 6, 2018, the operator commenced the 3D seismic acquisition, which was completed on December 9, 2018.

The operator has commenced data processing and the initial results are expected during the third quarter of 2019.

## Private Placement of Debentures

On May 21, 2018, the Corporation completed the private placement of \$3.5 million principal amount of 11% secured subordinated debentures due on April 30, 2020 and 700,000 warrants to purchase one Common Share in the share capital of the Corporation at an exercise price of C\$0.15 per Common Share. A further

50,000 warrants were also issued to ARK Point Advisors FZE, which acted as strategic and financial advisor to the Corporation, as well as a cash success fee.

Interest is payable in arrears in equal semi-annual payments on April 30 and October 31 each year. The warrants are subject to customary anti-dilution adjustments, including adjustments upon the payment of a dividend in Common Shares, subdivision or combination of the Common Shares, or the issuance of rights, options or warrants to all or substantially all holders of the outstanding Common Shares. Each warrant will expire on the earlier of: (a) April 30, 2020; (b) the 90th day following the redemption by the Corporation of all remaining outstanding debentures issued to the holder of such warrants; and (c) the tenth business day following the date on which notice is given by the Corporation to the subscriber of the warrants that, during a consecutive 30-day period ending not more than five business days prior to the date of such notice, the closing price of the Common Shares on the TSX-V exceeded C\$0.30 on each trading day.

## Short Term Loan Agreement

Effective April 23, 2018, Spud, Jura and JSEL entered into a short term loan agreement (the "**Short Term Loan Agreement**"), for the principal amount of \$2 million. The principal amount bears interest at a rate of 11% per annum compounded quarterly. The principal and accrued interest will be due for repayment on the 181<sup>st</sup> day following the first drawdown under the Loan Agreement. On April 30, 2018, Spud drew down the complete facility for the settlement of existing debentures.

GPA for Reti, Maru and Maru South Gas Discoveries in Guddu Exploration License

In August 2018, the operator submitted the revised GPA to MEPD for approval. Pursuant to the terms of revised GPA, the gas price shall be higher of the following:

- Petroleum Policy 2009 or Petroleum Policy 2012 price as applicable; and
- Notified consumer gas price for fertilizer sector by OGRA.

## Developments in 2019

On February 12, 2019, the GoP approved Spud's application for the replacement of Guddu block's bank guarantee with the hypothecation of its reserves in the Zarghun South Lease.

2D Seismic Data Acquisition in Zarghun South

In March 2019, a crew was mobilised to acquire 2D seismic data in the Zarghun South Lease. Parameter testing was carried out and the final parameters were selected based on the testing results. Surveying and drilling are currently in progress along the 2D seismic lines.

## Ayesha Central Processing Facility

The first shipment of seven containers containing ~65% of the facilities and auxiliary components arrived on the field in the first week of January 2019. The second shipment containing the remaining 35% of the facilities reached the site on February 24, 2019. The main contractor for the facility, Kocken Energy Systems Inc., has engaged a local subcontractor for the joint inspection of the shipments and the installation and commissioning of plant.

After completion of the joint inspection of the shipments, the local contractor has commenced the installation and commissioning of the processing facility, which is expected to be completed in May 2019.

# **DESCRIPTION OF THE BUSINESS**

## General

Jura is an international upstream oil and gas exploration and production company. The Corporation's activities are conducted exclusively in Pakistan, where it has interests in exploration, development and producing assets. All of Jura's oil and gas properties are located onshore.

Through its wholly-owned subsidiary, Spud, Jura holds Working Interests in three Exploration Licenses (Guddu, Zamzama North and Sanjawi) and six Leases (Reti, Maru, Maru South, Zarghun South, Sara and Suri). These Exploration Licenses and Leases cover a total area of 5,811.86 Sq.Km and are located across various basins in Pakistan, as more particularly described below. Spud is the operator of the Sara and Suri Leases only.

Spud also holds a Working Interest in the Badar Lease. Pursuant to the terms of the Settlement Agreement, effective August 12, 2016, Spud agreed to transfer its 7.89% Working Interest in the Badar Lease to PEL. The transfer is subject to receipt of customary approvals which are currently pending.

Through its wholly-owned subsidiary, FHL, Jura holds Working Interests in two Exploration Licenses (Badin IV North and Badin IV South), three Leases (Ayesha, Aminah, and Ayesha North) and exploration rights within the Kandra Lease, each of which is operated by PEL. These Exploration Licenses and Leases cover a total area of 2,051.78 Sq.Km in the Lower and Middle Indus Basin, as more particularly described below.

FHL also holds a Working Interest in the Mirpur Mathelo and Salam Exploration Licenses and the Kandra Lease. FHL is currently in the process of assigning its Working Interests in Mirpur Mathelo and Salam Exploration Licenses to PEL. Pursuant to the terms of the Settlement Agreement, effective August 12, 2016, FHL has agreed to transfer its 37.5% Working Interest in the Kandra Lease to PEL. The transfer is subject to receipt of customary approvals which are currently pending.

Pakistan has been divided into four zones based on relative prospectivity and geological risk. Of Jura's concessions, only the Zarghun South Lease and the Sanjawi Exploration License are located in Zone II (considered to be a medium-risk, medium to high-cost area), while all of Jura's other Leases and Exploration Licenses are located in Zone III (considered to be a low-risk, low to medium-cost area).

As part of the work program associated with Spud's Working Interests, to date, 584 L.Km of 2D seismic has been acquired and 1,907 L.Km of existing 2D seismic data has been purchased and an additional 197 Sq.Km of 3D seismic data has been purchased and reprocessed. Further, acquisition of 545 Sq.Km of 3D seismic data in Guddu Exploration License has been completed and processing is in progress. Moreover, the acquisition of 100 L.Km of 2D seismic data in Zarghun South Lease is in progress. As of the date of this AIF, the remaining work program associated with these blocks calls for the drilling of six exploration wells.

As part of the work program associated with FHL's Working Interests, to date, 1,146 L.Km of 2D seismic has been acquired, 8,004 L.Km of existing 2D seismic data and 1,619 Sq.Km of 3D seismic data have been purchased. As of the date of this AIF, the remaining work program associated with these blocks calls for the drilling of two exploration wells.

# Overview of Concession Agreement Structure and Petroleum Pricing in Pakistan

## **Exploration Licenses**

Prior to the commencement of exploration work in an area, an Exploration License is granted by the GoP (through the office of the President) providing the holder(s) thereof the exclusive right to conduct exploration activities, including drilling and production testing, in the area covered under the Exploration License. Each Exploration License has an initial phase and specified extension and renewal period(s) that may be applied for by the holder. Approval of an extension to the term of an Exploration License is granted by the GoP on a case by case basis.

Following the grant of an Exploration License, the GoP and the holder(s) enter into a Petroleum Concession Agreement with respect to the area. The terms of such Petroleum Concession Agreements may vary, but

each Petroleum Concession Agreement sets forth minimum work commitments and specified time periods to complete phases of the work required under the Exploration License. Each Petroleum Concession Agreement also has provisions dealing with the mandatory relinquishment of a portion of the area covered by the Exploration License as the applicable exploration phase or renewal periods that are described in the applicable Petroleum Concession Agreement expire. At the end of any exploration phase, the holder or holders, as applicable, has the opportunity to apply to continue to the next exploration phase. If a commercial discovery is not made by the end of the exploration phases, the holder has the obligation to relinquish the licensed area.

## Leases

In the event of a discovery that is determined to be commercial, the holder(s) of an Exploration License shall prepare a development plan and apply to the GoP for the grant of a Lease. A Lease is granted for a specified number of years and may be extended under certain circumstances. During the production phase of a Lease, the holder(s) is/are required to pay royalties specified in the applicable Petroleum Concession Agreement to which the Lease relates. Generally, these royalties are payable in an amount equal to 12.5% of the wellhead value or the value of petroleum produced, which is a deductible expense in computing income tax on production profits and gains. At the end of the term of the Lease, the fields revert to the GoP, although the holder(s) is/are responsible for the costs of abandonment and restoration.

# Gas Pricing

In Pakistan, the price for gas purchased by the GoP is based on a formula linked to the international prices for a basket of imported Arabian Persian Gulf crude oil. Prices are based upon a baseline of 1,000 Btu/Scf. If the gas which is sold has a Btu content less than or greater than 1,000 Btu/Scf, the price is proportionately decreased or increased respectively.

The wellhead gas price in Pakistan is determined by applying step up discounting using various sliding scales under the different applicable petroleum policies to the C&F price of a basket of crude oil. The basket will reflect the actual mix of imported crude oils in the previous six months (January to June and July to December) as notified by the MEPD. Each discounting table under a policy has a predetermined C&F floor and ceiling price. The discount table is designed to provide maximum benefit to the seller for a lower C&F price. As the C&F price increases, the applicable discount also increases until the C&F price reaches the ceiling price. The discounts applicable to the C&F price under various slabs range from 0% to 90%. No benefit is provided to the seller if the C&F price is higher than the ceiling price. The applicable floor and ceiling prices vary for each petroleum policy.

As a result of the formula used for calculating the price for gas purchased by the GoP, a decrease in international oil prices does not proportionately reduce the price of gas purchased by the GoP. For example, a 60% reduction in international crude oil pricing from \$100 per Bbl to \$40 per Bbl will result in a 33% decrease in the price for gas purchased by the GoP under the Petroleum Policy 2012. The Petroleum Policy 2012 has the highest ceiling price and, accordingly, gas prices under this policy are the most impacted by a reduction in international oil prices. The applicability of a particular petroleum policy to wellhead gas pricing for a discovery depends upon the timing of drilling and commencement of production from the discovery area.

The GoP has a first right to purchase 90% of any gas produced in Pakistan through a nominated buyer, and where such right is not exercised by the GoP, the producer has the right to sell such gas to a third party. In all cases, the producer has the right to sell 10% of any gas produced to a third party. However, such sale will be subject to the GoP's approval. Gas pricing for sales to a third party may be negotiated between the parties; provided that, to the extent that the negotiated price exceeds the applicable policy price, a 40% "windfall levy" is payable to the GoP on the difference between the two prices.

# **Working Interest Overview**

Table –1

The table below outlines Spud's and FHL's operated and non-operated Working Interests in Exploration Licenses and Leases which have been granted by the GoP.<sup>(1)</sup>

Name of Lease or	Working Interest		Rese (Proved + F		Ls Interest Owners	
Exploration License	held by the Corporation	Status	Natural Gas (Bcf)	NGLs (MBbls)		
SPUD Zarghun South	40.0%	Producing The Zarghun South Lease will expire in 2029.	42.75	18.00	MPCL <sup>(3)</sup> 35% GHPL 17.5% POPEL 7.5%	
Reti, Maru, Maru South, Maru East, Khamiso and Umair	10.66%	Producing     The Reti, Maru and Maru South Leases will expire in 2023, 2029 and 2026 respectively.     Maru East declaration of commerciality approved on September 26, 2017.     Khamiso declaration of commerciality approved on November 20, 2018.	3.79	-	OGDCL <sup>(3)</sup> 57.76% IPR 9.08% GHPL 22.5%	
Guddu Exploration	13.5% <sup>(4)</sup>	Exploration The Guddu Exploration License will expire on May 24, 2020.	-	-	OGDCL <sup>(3)</sup> 70% IPR 11.5% GHPL 5%	
Sanjawi	27.0% <sup>(5) (6)</sup>	Exploration On July 14, 2012, the operator on behalf of the Sanjawi Exploration License Working Interest Owners declared force majeure due to security concerns. On February 12, 2016, the DGPC, on behalf of the GoP, served a notice for termination of the Sanjawi Exploration License.	-	-	Heritage Oil <sup>(3)</sup> 54% Trakker 9% Hycarbex 10%	
Zamzama North	24.0% <sup>(5) (6)</sup>	Exploration The Zamzama North Exploration License is currently expired. On February 22, 2016, the DGPC issued a notice to the operator for the fulfilment of outstanding work obligations stipulated in the Zamzama North PCA within a period of 60 days. The joint venture partners are pursuing the matter with the DGPC.	-	-	Heritage Oil <sup>(3)</sup> 48% Trakker 8% Hycarbex 20%	
Sara and Suri (Operated)	60.0%	Development – Non-Producing The Sara and Suri Leases will expire in February 2020.  On September 7, 2018, the operator on behalf of the Sara and Suri Leases applied for an exemption from the applicability of Rule 43 <sup>(7)</sup> of Rules 1986 for a period of six months from the date of approval.	1.92	-	OGDCL 40%	
FHL	l	a period of six months from the date of approval.	l l			
Badin IV South	27.5%	Exploration On July 2, 2018, the operator on behalf of the Badin IV South Exploration License Working Interest Owners applied for extension with respect to Phase-II of the Badin IV South Exploration License for a period of 24 months.	-	-	PEL <sup>(3)</sup> 47.5% GPX 25%	
Ayesha, Aminah and Ayesha North	27.5%	Development – Non-Producing The Ayesha, Aminah and Ayesha North Leases will expire on September 16, 2020, February 21, 2024 and February 21, 2025, respectively.	10.18	74.00	PEL <sup>(3)</sup> 47.5% GPX 25%	
Badin IV North	27.5%	Exploration The GoP approved the entering into Phase-II of initial term of Badin IV North Exploration license with effect from December 7, 2017. The Exploration license will expire on December 6, 2019.	3.03	93.00	PEL <sup>(3)</sup> 47.5% GPX 25%	

# Notes:

(1) The information provided in this table excludes the Working Interests of Spud and FHL, as applicable, in certain properties that are in the process of being transferred to PEL (namely, the Badar Lease, the Mirpur Mathelo and Salam Exploration Licenses, and the Kandra Lease).

- (2) Jura's share of reserves estimates of the Zarghun South, Reti, Maru & Maru South, Maru East, Khamiso, Umair Sara & Suri, Ayesha, Aminah and Ayesha North and Zainab Gas Fields are based upon the McDaniel 2018 Report. For further information, see Appendix A "Statement of Reserves Data and Other Oil and Gas Information" to this AIF. The estimates of reserves for individual properties may not reflect the same confidence level as estimates of reserves for all properties due to the effects of aggregation.
- (3) The operator of the Exploration License / Development and Production Lease.
- (4) This represents Spud's pre-commercial Working Interest. However, upon declaration of commerciality, GHPL may elect to exercise its right to increase its Working Interest from 5% to 25%, whereupon, Spud's Working Interest will reduce to 10.66%.
- (5) Of the 27.0% and 24.0% Working Interests in Sanjawi and Zamzama North, 16.0% and 12.0%, respectively, are held directly by Spud and the remaining 11.0% and 12.0%, respectively, are held by EEL for the benefit of Spud pursuant to the terms of a trust agreement between Spud and EEL dated January 3, 2011. Pursuant to a share purchase agreement dated December 28, 2011, EEL will become the wholly-owned subsidiary of Spud upon fulfilment of certain conditions precedent to closing. On closing, EEL will cease to hold these Working Interests in trust for Spud.
- (6) This represents Spud's pre-commercial Working Interest. Pursuant to the terms of the Zamzama Farm-Out Agreement, upon the declaration of commerciality and approval from the DGPC, Hycarbex may elect to acquire a 3% Working Interest from Spud, thereby, decreasing Spud's Working Interest in the Zamzama North Exploration License from 24% to 21%. Pursuant to the terms of the Sanjawi Farm-Out Agreement, upon the declaration of commerciality and approval from the DGPC, Hycarbex may elect to acquire a 3% Working Interest from Spud, thereby, decreasing Spud's Working Interest in the Sanjawi Exploration License from 27% to 24%. In each case, the acquisition of an additional 3% Working Interest by Hycarbex will be subject to reimbursement of past costs incurred on exploration and development attributable to such 3% Working Interest.
- (7) Pursuant to Rule 43 of Rules 1986, a lease may be revoked if commercial production has not commenced within five years from the date of grant of the lease or if the production has terminated for more than 90 days, unless this is due to force majeure.

# Summary of Oil and Gas Reserves and Net Present Values of Future Net Revenue by Property as of December 31, 2018

# Table - 2

The following is a summary of the Corporation's reserves and net present values of future net revenue by property as at December 31, 2018, as determined by McDaniel, an independent qualified reserves evaluator, in the McDaniel 2018 Report prepared in accordance with NI 51-101. For definitions used in the table below and additional information regarding the Corporation's reserves as at December 31, 2018 please refer to Appendix A – "Statement of Reserves Data and Other Oil and Gas Information", which sets out the assumptions and qualifications used to prepare the reserves information contained in the McDaniel 2018 Report. The estimates of reserves and future net revenue for individual properties may not reflect the same confidence level as estimates of reserves and future net revenue for all properties, due to the effects of aggregation.

	Reser	ves	Net Present Value of Future Net Revenue befo Income Tax			e before	
	Gas	NGLs	NGLs 0% 5% 10%			15%	20%
Reserves Category	MMcf	MBbls	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)
Proved							
Developed Producing							
Guddu	2395	-	4,684	3,979	3,453	3,050	2,734
Zarghun South	9272	4	29,042	25,452	22,648	20,413	18,598
Undeveloped					,		,
Guddu	408	-	1,048	852	714	613	537
Zarghun South	13,474	6	53,448	38,389	28,355	21,466	16,602
Badin IV South	3,080	22	11,389	10,609	9,937	9,354	8,843
Badin IV North	1,679	51	9,206	8,204	7,380	6,695	6,117
Non-Producing	,		-,	-, -	,		-,
Sara and Suri	1,009	-	590	576	556	534	511
Total Proved	31,317	83	109,408	88,059	73,043	62,123	53,941
Probable							
Guddu	990	-	1,660	1,035	675	459	324
Zarghun South	20,000	8	73,351	41,575	25,618	16,943	11,888
Badin IV South	7,103	52	23,894	19,963	16,970	14,645	12,807
Badin IV North	1,348	41	7,980	6,597	5,559	4,763	4,140
Sara and Suri	907	-	663	564	482	415	359
Total Proved plus Probable	61,665	185	216,956	157,792	122,347	99,348	83,460
Possible							
	005		4 700	4 407	700	FC 4	400
Guddu	835	-	1,798	1,127	769	564	438
Zarghun South	5,223	97	16,471	9,166	5,540	3,589	2,472
Badin IV South	13,362		51,141	37,265	28,239	22,128	17,843
Badin IV North	2,101	64	12,876	10,189	8,332	6,997	6,004
Sara and Suri	971	-	1,174	913	723	583	477
Total Proved plus Probable plus Possible	84,157	348	300,416	216,454	165,950	133,210	110,694

#### Notes:

<sup>(1)</sup> The numbers in this table may not add exactly due to rounding.

<sup>(2)</sup> The information provided in the above table excludes the Working Interests of Spud and FHL, as applicable, in certain properties that are in the process of being transferred to PEL (namely, the Badar Lease, the Mirpur Mathelo and Salam Exploration Licenses, and the Kandra Lease).

# **Principal Areas**

The following is a description of the material oil and natural gas properties, pipelines, facilities and installations in which Jura holds Working Interests. Jura's properties are located in the Middle and Lower Indus Basins in Pakistan.

## Middle Indus Basin

The Middle Indus Basin or Central Gas Basin is located between the Sargodha, and Khairpur-Jacobabad highs onshore Pakistan. Several gas discoveries have been made in the Middle Indus Basin, some as recently as the early 1950s. The main producing gas reservoirs are Eocene Carbonates (Pirkoh Limestone, Habib Rahi Limestone, Sui Main Limestone, Paleocene Dunghan Carbonates and Ranikot Clastics and deeper Lower Cretaceous Lower Goru Sandstones). The Sui, Mari, Miano, Rehmat, Kandhkot and Qadirpur gas fields are adjacent to FHL's and Spud's Working Interests.

#### Lower Indus Basin

The Lower Indus Basin is located south of Khairpur-Jacobabad high area to the Arabian Sea. Several oil and gas discoveries have been made in the Lower Indus Basin, some as recently as the mid-1960s. The main producing oil and gas reservoirs are from Paleocene Ranikot and Dunghan Formation, Upper Cretaceous Pab and Mughal Kot Formation and Lower Cretaceous Lower Goru Formation. More than 100 fields have been discovered so far including the largest Khaskheli oilfield and Sari Hundi, Bhit, Badhra and Zamzama gas fields. FHL's Badin blocks are located in Badin Sub-Basin, the southern part of Lower Indus Basin.

## **Development and Production Leases**

## Badar Lease

Ghauspur Block

Spud's Working Interest: 7.89%

(Other Working Interest Owners: PEL 26.32%, OGDCL 50%, Sherritt 15.79%)

Spud is a party to, among other related agreements, the Badar Lease dated September 18, 2003, among the President, Spud, PEL, OGDCL and Sherritt (the "**Badar Lease**"), as amended and supplemented. The Badar Lease covers an area of 123.04 Sq.Km. Spud has a 7.89% Working Interest in the Badar Lease. Pursuant to the terms of the Settlement Agreement, effective August 12, 2016, Spud has agreed to transfer its 7.89% Working Interest in the Badar Lease to PEL.

## Zarghun South Lease

Block No. 2966-1 (Bolan Block) Spud's Working Interest: 40%

(Other Working Interest Owners: MPCL 35%, GHPL 17.5%, POPEL 7.5%)

Spud is a party to, among other related agreements, the Zarghun South Development and Production Lease dated September 16, 2004 among the President, Spud, MPCL, POPEL and GHPL (the "**Zarghun South Lease**"), as amended and supplemented. Spud has a 40% Working Interest in the Zarghun South Lease under the November 30, 1994 Bolan Petroleum Concession Agreement. The Zarghun South Lease is operated by MPCL.

The Zarghun South Lease covers an area of 124.22 Sq.Km and is located in the western part of the Sulaiman Fold and Thrust Belt of the Middle Indus Basin and is strategically located near the gas demand center of the city of Quetta. In March 2018, the operator applied to the DGPC for a grant of an additional area of 12.4 Sq.Km in the existing Zarghun South Lease over Zarghun West lead under related Rules 1986, which was declined by the DGPC. The joint venture partners have requested that the operator take up the matter with the highest level of MEPD.

The discovery well, Zarghun South-1, was drilled in 1998. During production testing, gas from naturally fractured Paleocene and Jurassic carbonates flowed at a rate of 3.5 MMcf/d to 17.7 MMcf/d. The appraisal well, Zarghun South-2, which was drilled in March 2000, tested gas at a rate of 15.6 MMcf/d from the Paleocene carbonates.

In June 2011, the GoP promulgated the Tight Gas Policy, under which tight gas reservoirs, subject to third party certification, would be eligible for an increased gas price.

Based on the criteria defined in the Tight Gas Policy, Zarghun South Paleocene reservoirs qualify for the incentives under the Tight Gas Policy. Accordingly, DeGolyer was engaged for the purposes of certification and, in its report dated April 30, 2012, DeGolyer certified the Zarghun South gas field reserves as follows: (i) gas initially in place (proved plus probable) of 102 Bcf; (ii) recoverable gas reserves of 68.70 Bcf; (iii) gas reserves eligible for Tight Gas Policy pricing of 58.10 Bcf; and (iv) conventional gas reserves eligible for Petroleum Policy 2001 pricing of 10.60 Bcf.

The tight gas production from Zarghun South is entitled to a price of \$5.88 per MMBtu, based on the C&F price of a basket of crude oil priced at \$65 per Bbl, as opposed to the price of \$2.73 per MMBtu for conventional gas production under the Petroleum Policy 2001.

Following this certification, a supplemental development plan seeking a revised Lease under the Tight Gas Policy was submitted to the GoP for approval in April 2012. In October 2012, the GoP approved the supplemental development plan and granted a tight gas Lease for a period of 17 years from October 10, 2012. A supplemental GPA for gas pricing under the Tight Gas Policy, draft supplemental amendments to the Zarghun South PCA and a supplemental Lease deed incorporating the Tight Gas Policy terms are pending GoP approval, which is expected in the ordinary course. Further, certain amendments to the GSA applicable to sales of production from the Zarghun South Lease are being discussed with the buyer and, following concurrence among the parties thereto, an addendum to the signed GSA will be submitted to the GoP for approval. All other GoP approvals, namely, the current GSA, conventional GPA and pipeline contribution agreement have been executed by the relevant parties.

Commercial production from Zarghun South commenced in August 2014 under an Interim Gas Sale Arrangement (the "Interim Arrangement"). The Interim Arrangement was approved by the Working Interest Owners pending installation and commissioning of an Amine Sweetening Unit required for removal of carbon dioxide and hydrogen sulphide from the inlet gas stream. The off-specification gas during the interim arrangement was sold at a discount of 30% to the price that would otherwise be applicable to the gas. Following the full commissioning of the processing facilities in November 2014, the specification gas as stipulated in the GSA is supplied to SSGCL without such discount.

In August 2015, the OGRA issued a provisional gas price notification for tight and conventional gas production from the Zarghun South Lease.

The development well, Zarghun South-3, was drilled in September 2016 to the total depth of 1,820 meters in the Dunghan Limestone formation of Palaeocene age. During a short duration post completion test, the well flowed gas at an average rate of approximately 10.5 MMcf/d at 32/64 inch choke size, having a heating value of approximately 920 Btu/Scf, with an average wellhead flowing pressure of 1,800 Psi. Commercial production from Zarghun South-3 commenced in January 2017.

During 2017, choke performance test and flowing Bottom Hole Pressure ("**BHP**") survey was carried out at Zarghun South-3 well. Based on the results of BHP survey, Zarghun South-3 well was choked-up from 29/64 inch to 36/64 inch.

During July 2018, the first Annual Turn Around (the "ATA") was performed. During the ATA, major plant over-hauling activities were carried out, along with installation of a SCADA system. Additionally, BHP surveys were recorded on all three wells.

In order to firm up the drilling location of a fourth development well, Zarghun South-4, the joint venture partners have approved the acquisition of 142 L.Km (100 L.Km firm and 42 L.Km contingent) 2D seismic data. In March 2019, the operator mobilised the seismic data acquisition crew and, following parameter testing, source parameters have been finalised. The seismic survey and drilling are currently in progress and, as of the date of this AIF, the acquisition of 22.24 L.Km of 2D seismic data is complete.

The current average field production is approximately 14.34 MMcf/d and, as of the date of this AIF, the field has produced a volume of approximately 23.05 Bcf of gas.

Spud has incurred \$40,199,192 of capital expenditures related to the Zarghun South Lease to date, of which \$105,669 were incurred in the fiscal year 2018.

The Zarghun South Lease will expire in 2029.

## Sara and Suri Leases

Block No. East Badin (Extension) Block B Spud's Working Interest: 60% (Other Working Interest Owner: OGDCL 40%)

Spud is a party to, among other related agreements, the Sara Development and Production Lease dated July 7, 1996 (the "Sara Lease") among the President, Spud and OGDCL and the Suri Development and Production Lease dated June 30, 2000 among the President, Spud and OGDCL (the "Suri Lease" and together with the Sara Lease, the "Sara and Suri Leases"), each as amended and supplemented.

Following its acquisition of a 38.2% Working Interest from Tullow on August 16, 2012 and a further 21.8% Working Interest from Pakistan Oilfields Limited and Attock Oil Company on December 24, 2012, Spud has a 60% Working Interest in the Sara and Suri Leases. The Sara and Suri Leases cover a total area of 106.54 Sq.Km located in the Middle Indus Basin, of which 82.72 Sq.Km comprises the Sara Lease and 23.82 Sq.Km comprises the Suri Lease. Spud acts as the operator of the Sara and Suri Leases.

Two dehydration facilities of 25 MMcf/d are installed at the field. In 2010, the Suri gas field was producing approximately 0.86 MMcf/d of gas, which was supplied to the Guddu thermal power station through the WAPDA. Production from the Sara and Suri Leases was stopped by Tullow in 2010 prior to the acquisition of Leases by Spud. In March 2013, Jura successfully performed rigless operations on three shut-in wells in the Sara and Suri Lease. Rigless operations included pressure and temperature surveys, saturation logs, isolation of various zones, perforations/reperforations, acid stimulation, nitrogen kick off using coil tubing and test these wells at various chokes. As a result of rigless operations, gas flow rate from both Suri-1 and Suri-2 wells at a 16/64 inch choke was approximately 1.5 MMcf/d with 160 to 170 Psi well head flowing pressure while Sui Upper Limestone in Sara-1 proved to be water wet.

Under the terms of a GSA dated March 26, 1999, production from the Sara and Suri Leases was supplied to the WAPDA. With the cessation of production in October 2010, the GSA is no longer valid and has expired. In May 2014, the GoP approved the allocation of gas from the Sara and Suri Leases to the Central Power Generation Company Limited.

The drilling of development well Sara-4 in the Sara Lease, commenced on December 1, 2015. The development well, Sara-4, was drilled to a total depth of 1,120 meters. The well was successfully completed in the Sui Upper Limestone formation of Eocene age. During a 7-hour post-completion test on a 20/64 inch choke, the well flowed gas at an average rate of approximately 1.6 MMcf/d with a wellhead flowing pressure of approximately 730 Psi. Sara-4 is located approximately 0.3 km from the existing Sara and Suri gas pipeline infrastructure.

After the drilling of the Sara-4 development well, the available 197 Sq.Km of 3D seismic data was reprocessed in 2016. The seismic data interpretation and mapping carried out at all key horizons and prospect inventory was updated.

In March 2018, the ECC granted an exemption from Rule 43 of Rules 1986 for the Sara and Suri Leases for a period of six months, an extension of the Sara and Suri Leases up to February 2020 and approval for the sale of gas from the Sara and Suri Leases to a third party at a negotiated price. In April 2018, Spud commenced the bidding process for the sale of gas to a third party.

The sale of gas from the Sara and Suri Leases to KGPL, an affiliate of Spud, being the sole bidder, was finalised and a summary of commercial terms was submitted to the OGDCL for approval. In August 2018, OGDCL approved the commercial terms for sale of gas to KGPL.

The exemption from Rule 43 of Rules 1986 for Sara and Suri Leases expired on September 8, 2018. On September 7, 2018, Spud submitted an application to DGPC for an exemption under Rule 43 of Rules 1986 for a period of six months from the date of approval. Spud believes that the approval of an exemption under Rule 43 of Rules 1986 will be granted in due course.

The sale of approximately 1-1.3 MMcf/d of gas from the Sara and Suri Leases to KGPL will commence after the exemption is granted under Rule 43 of Rules 1986 by DGPC.

Spud has incurred \$4,719,925 of capital expenditures related to the Sara and Suri Leases to date, of which \$292,038 were incurred in the fiscal year 2018.

## Kandra Lease

Block No. 2768-6 FHL's Working Interest 37.5% (Other Working Interest Owners: PEL 37.5%, GHPL 25%)

FHL is a party to, among other related agreements, the Kandra Development and Production Lease dated January 5, 2006, among the President, FHL, PEL and GHPL (the "Kandra Lease"), as amended and supplemented. The Kandra Lease covers an area of 314.43 Sq.Km. FHL has a 37.5% Working Interest in the Kandra Lease under the Kandra Petroleum and Concession Agreement dated March 27, 1999. The Kandra Lease is operated by PEL and is currently under development. Pursuant to the terms of the Settlement Agreement, effective August 12, 2016, FHL has agreed to transfer its 37.5% Working Interest in Kandra Lease to PEL.

# Reti, Maru and Maru South Leases

Block No. 2869-9 (Reti-Maru and Maru South Leases) Spud's Working Interest: 10.66% (Other Working Interest Owners: OGDCL 57.76%, IPR 9.08%, GHPL 22.50%)

Spud is a party to, among other related agreements, the Reti, Maru and Maru South Development and Production Leases dated June 25, 2013, June 28, 2013 and June 18, 2013, respectively, among the President, Spud, OGDCL, IPR and GHPL (the "**Reti, Maru, and Maru South Leases**"). The Reti, Maru and Maru South Leases cover an area of 8.6 Sq.Km, 15.41 Sq.Km and 6.64 Sq.Km respectively.

A combined document of commerciality of the Reti, Maru and Maru South gas fields was approved by the DGPC on May 17, 2012. In January 2013, the GoP allocated the gas from the Reti, Maru and Maru South discoveries to the Consortium. Development plans for the Reti, Maru and Maru South gas discoveries were submitted to the GoP for approval on February 11, 2013. On March 15, 2013, the Working Interest Owners executed a GSA with the Consortium. Pursuant to the GSA, the Consortium constructed a 26 Km sale gas pipeline for supply of gas to Engro. Further to the execution of the GSA for the supply of untreated gas, the

GoP communicated a provisional price of \$6.0 per MMBtu, subject to a quality discount of 10%, in accordance with the Petroleum Policy 2012. However, the GoP issued the following clarifications in March 2013: (i) the gas price would be in accordance with applicable petroleum policies/relevant gas pricing agreements or equal to gas sale price of other fertilizers plants, whichever is higher and (ii) the applicability of the Petroleum Policy 2012 price will be subject to execution of a supplemental PCA. On September 18, 2013, the operator submitted a draft GPA for the Reti, Maru, and Maru South gas fields with the GoP for approval. On December 11, 2013, the GoP advised that Reti, Maru and Maru South Leases are entitled to a gas price under the Petroleum Policy 2009 and requested OGDCL to submit a draft GPA in line with the Petroleum Policy 2009 for conversion of the regime. The operator has taken up the pricing matter with the GoP.

Commercial production under the Maru and Maru South Leases commenced on December 26, 2013 and commercial production under the Reti Lease commenced on January 4, 2014.

To effectively drain the reservoir and to increase gas production from the Reti Lease, the Working Interest Owners approved the drilling of the Reti-2 development well. The drilling of the Reti-2 development well commenced on February 7, 2015. The total depth of the well was 700 meters, which targeted the Pirkoh Limestone formation of Eocene age. During a short duration post stimulation test on a 48/64 inch choke, the well flowed gas at the rate of approximately 6.22 MMcf/d at a wellhead flowing pressure of 400 Psi. Production from development well Reti-2 commenced in May 2015.

In August 2018, the operator submitted the revised GPA to the MEPD for approval. The gas pricing mechanism under the revised GPA is in line with the clarifications issued by the GoP in March 2013, pursuant to which the gas price is required to be the higher of the following: (i) the Petroleum Policy 2009 or Petroleum Policy 2012 price as applicable; and (ii) the notified consumer gas price for the fertilizer sector as published by OGRA. The approval of a revised GPA is expected in due course.

In August 2018, an acid stimulation job was carried out at the Maru-2 and Khamiso-1 wells. The results showed slight improvement in the flow rates and well head flowing pressures. Further, in February and March 2019, BHP surveys were carried out at all wells except the Reti-2 and Maru-2 wells. The down-hole gauge data is under review and will be used to update the material balance estimates and determine the current skin value.

The current average production from Reti, Maru and Maru South Leases is approximately 7.20 MMcf/d, and as of the date of this AIF, the cumulative production from the Reti, Maru and Maru South Leases is approximately 18.33 Bcf.

Spud has incurred \$5,773,569 of capital expenditures related to the Reti, Maru and Maru South Leases to date, of which \$32,035 were incurred in the fiscal year 2018.

The Reti, Maru and Maru South Leases will expire in 2023, 2029 and 2026 respectively.

Ayesha, Aminah, and Ayesha North Leases

Block No. 2468-5 FHL's Working Interest 27.5% (Other Working Interest Owners: PEL 47.5%, GPX 25%)

FHL is a party to, among other related agreements, the Ayesha Lease (the "Ayesha Lease") dated September 16, 2014 and the Aminah (the "Aminah Lease") and Ayesha North (the "Ayesha North Lease") Leases each dated February 21, 2017, among the President, FHL, PEL and GPX together (the "Badin IV South Leases"). The Ayesha, Aminah and Ayesha North Leases cover an area of 19.71 Sq.Km, 13.67 Sq.Km and 6.11 Sq.Km respectively.

The drilling of the exploration well Ayesha-1, targeting the Upper Sands of the Lower Goru formation, commenced on December 31, 2013. On January 27, 2014, the Ayesha-1 exploration well achieved a total depth of 2,400 meters. Gas shows were observed over a 50-meter section in the Lower Goru "A" and "B" Sands. The Ayesha-1 discovery well was completed in the 'B' Sands of the Lower Goru Formation of the Cretaceous age. During a short test on a 32/64 inch choke, the well flowed gas with a heating value of approximately 1,000 Btu/Scf at a rate of 11.34 MMcf/d with a wellhead flowing pressure of 1,998 Psi. The condensate to gas ratio was in the range of 10-12 Bbl/MMcf.

In July 2014, the GoP approved gas price for the Ayesha gas field under its "Marginal Gas Pricing Criteria". The price for Ayesha gas field is expected to be \$5.19 per MMBtu, based on the C&F price of a basket of crude oil priced at \$65 per Bbl.

On September 16, 2014, the GoP approved the declaration of commercial discovery and field development plan of the Ayesha Gas Field and granted a development and production lease (the "Ayesha Lease") over the discovery area for a period of six years commencing September 16, 2014.

The drilling of the Aminah-1 exploration well commenced on January 6, 2016 and reached the targeted depth of 2,297 meters on February 1, 2016. The well was logged and completed in the Lower Goru "A" Sands of Cretaceous age. Post-completion surface well testing was conducted in July 2016 after selective perforations of 15 meters in the Lower Goru "A" Sands. During the ten-hour test on 48/64 inch fixed choke, the well flowed gas at an average rate of approximately 19 MMcf/d with an average wellhead flowing pressure of 1,607 Psi and having an average heating value of approximately 1,000 Btu/Scf. The average condensate to gas ratio was approximately 3.8 Bbl/MMcf with the water rate of 24.5 barrels per day.

On May 26, 2017 and August 11, 2017, the GoP approved the declaration of commercial discovery over Aminah gas field and the field development plan for the Aminah-1 gas field respectively and granted a development and production lease over the discovery area for a period of seven years commencing February 21, 2017.

The drilling of the Ayesha North-1 exploration well commenced on March 25, 2016 and reached the targeted depth of 2,820 meters on May 10, 2016. The well was logged and completed in the Lower Goru "A" Sands of Cretaceous age. Post-completion surface well testing was conducted in July 2016 after perforating 18 meters interval in the Lower Goru "A" Sands. During the eight-hour test on 48/64 inch fixed choke, the well flowed gas at an average rate of approximately 8.7 MMcf/d with an average wellhead flowing pressure of 771 Psi and having an average heating value of approximately 970 Btu/Scf. The average condensate to gas ratio was approximately 8.17 Bbl/MMcf with the water rate of 28 barrels per day.

On June 13, 2017 and on August 11, 2017, the GoP approved the declaration of commercial discovery over Ayesha North gas field and the field development plan for the Ayesha North-1 gas field respectively and granted a development and production lease over the discovery area for a period of eight years commencing February 21, 2017.

On November 30, 2017, the GoP allocated 8.0 and 6.8 MMcf/d gas from Aminah Lease and Ayesha North Lease respectively to SSGCL.

On July 30, 2018, the operator submitted draft GPA to the DGPC for approval. The approval of the GPA is expected in due course.

On November 10, 2018, a BHP survey was carried out at the Aminah-1 well to ascertain the reservoir pressure drop due to production from the Aqeeq-1 well in the adjacent block. Based on the BHP results, there is a pressure drop of approximately 109.5 Psi, which established hydrocarbon communication

between the Aminah-1 and Aqeeq-1 wells. This communication may have an adverse effect on the estimated ultimate recovery assumed from the Aminah-1 well due to gas production from the Ageeq-1 well.

The joint venture partners are working on a fast track development of Badin IV South gas and condensate discoveries. The development plan envisages construction of a 30 MMcf/d Central Processing Facility (the "CPF") at the Ayesha well location. Aminah and Ayesha North wells will be tied into the CPF through gathering flow lines. Processed gas from the CPF shall be transported through an approximately 28 km gas sale pipeline for tie-in into the SSGCL transmission system.

The development work is comprised of civil work, laying of gathering flow lines, construction of condensate storage tanks, fire water system, portable cabins, and processing plant. The processing plant arrived at the field site in February 2019 and the installation and commissioning is in progress. The installation and commissioning of the processing plant and all other ancillary development work is expected to be completed in May 2019.

SSGCL has started the laying and construction of sale gas pipeline. A gas sale and purchase agreement has been finalized with SSGCL, however, such agreement does not cover a waiver/discount for higher carbon dioxide contents, which is anticipated to be finalized after approval by OGRA. The operator has submitted an application to OGRA for approval. SSGCL is anticipated to provide a waiver for a period of four to six months from the date of commencement of commercial production.

First gas from Badin IV South Leases is expected to commence in May 2019.

FHL has incurred \$5,876,417 of capital expenditures related to the Badin IV South Leases to date, of which \$1,700,985 were incurred in the fiscal year 2018.

The Ayesha, Aminah and Ayesha North Leases will expire in 2020, 2024 and 2025 respectively.

## Maru East Gas Field

Block No. 2869-9 (Maru East Gas Field) Spud's Working Interest: 10.66%

(Other Working Interest Owners: OGDCL 57.76%, IPR 9.08%, GHPL 22.50%)

The drilling of exploration well, Maru East-1 commenced on January 26, 2014 to test the potential of hydrocarbons of the Pirkoh Limestone formation of Eocene age. Total depth of 770 meters was achieved on February 6, 2014. During a short duration, post-stimulation test on a 32/64 inch choke, the well flowed gas at a rate of 3 MMcf/d with wellhead flowing pressure of 450 Psi and a heating value of approximately 700 Btu/Scf. The Maru East-1 well was completed in the Pirkoh Limestone Formation of Eocene age.

Effective September 26, 2014, the GoP granted a provisional approval for EWT of Maru East-1 for a period of six months. In March 2015, the GoP allocated production from Maru East-1 to Engro, the existing buyer of the Reti-Maru gas. Production from Maru East gas field commenced in June 2015.

On September 26, 2017, the GoP approved the declaration of commerciality for the Maru East-1 discovery effective April 4, 2017 in accordance with Article-6 of the Guddu PCA and under Rules 24(1) & 52(d) of Rules 1986. The GoP also regularised the production under EWT from August 15, 2015 until April 4, 2017.

On November 14, 2017, the GoP allocated approximately 3 MMcf/d of gas from Maru East gas field to Engro during the EWT period.

The current average production from Maru East gas field is approximately 0.63 MMcf/d, and as of the date of this AIF, the cumulative production from the Maru East gas field is approximately 1.58 Bcf.

Spud has incurred \$385,572 of expenditures related to the Maru East gas field to date, of which \$nil were incurred in the fiscal year 2018.

## Khamiso Gas Field

Block No. 2869-9 (Khamiso Gas Field) Spud's Working Interest: 10.66%

(Other Working Interest Owners: OGDCL 57.76%, IPR 9.08%, GHPL 22.50%)

The drilling of exploration well, Khamiso-1, commenced on June 30, 2016 to test the potential of hydrocarbons of the Pirkoh Limestone formation of Eocene age. Total depth of 753 meters was achieved on July 28, 2016. During a short duration pre-stimulation test on a 32/64 inch choke, the well flowed gas at an average rate of 2.95 MMcf/d, having a heating value of approximately 697 Btu/Scf, with an average wellhead flowing pressure of 505 Psi. The Khamiso-1 well was completed in the Pirkoh Limestone Formation of Eocene age.

On June 23, 2017, the GoP approved the allocation of gas up to approximately 2.9 MMcf/d from Khamiso-1 to Engro, the existing buyer of the Reti-Maru gas. Production from Khamiso-1 commenced on June 29, 2017 under the EWT arrangement for a period of 4 months.

On January 10, 2018, the production from Khamiso-1 recommenced after the GoP's approval of a six-month extension under the EWT arrangement.

On November 20, 2018, the GoP approved the declaration of commerciality for the Khamiso discovery in accordance with Article-6 of the Guddu PCA and under Rules 24 and 52(d) of Rules 1986.

The current average production from Khamiso gas field is approximately 3.28 MMcf/d, and as of the date of this AIF, the cumulative production from the Khamiso gas field is approximately 1.72 Bcf.

Spud has incurred \$333,265 of expenditures related to the Khamiso gas field to date, of which \$nil were incurred in the fiscal year 2018.

## **Exploration Licenses**

# **Guddu Exploration License**

Block 2869-9

Spud's Working Interest: 13.5%

(Other Working Interest Owners: OGDCL 70%, IPR 11.5%, GHPL 5%)

Spud is a party to, among other related agreements, the Guddu Exploration License No.272/Pak/1999 (the "Guddu Exploration License"), which provides Spud with a 13.5% Working Interest in the Guddu PCA. The Guddu Exploration License and the Guddu PCA grant exploration rights with respect to an area located in the Sindh and Punjab Provinces in Pakistan, which covers an area of 2,093.40 Sq.Km. The Guddu Block contains the Reti, Maru, Maru South, Maru East, Khamiso gas fields and recent Umair-1 discovery. The Guddu Block lies close to gas markets in the prolific Middle Indus Basin which contain Pakistan's major gas fields.

Spud farm-in into the Guddu Exploration License after acquiring working interests from IPR in 2008. Prior to Guddu Farm-Out Agreement, Guddu joint venture partners purchased 337 L.Km 2D seismic and acquired 981 L.Km 2D seismic data. Based on interpretation and mapping, the first exploratory well, Reti-1, was drilled in January 2008 and showed the presence of gas on the logs in Pirkoh (Eocene) Limestone, whereas, the results from the primary objective, the Cretaceous 'C' Sands reservoirs, were found to be water-bearing. In order to exploit Pirkoh gas, a replacement well "Reti-1A" was drilled which was first declared gas discovery in the Guddu Exploration License.

The Guddu Working Interest Owners acquired and interpreted an additional 244 L.Km of seismic data in 2009. Subsequently, the Maru, Maru South, Maru East, Khamiso and Umair gas fields were discovered in shallow ±650 meters Pirkoh formation carbonate build-ups by drilling of the Reti-1A, Maru-1, Maru South-1, Maru East-1 and Khamiso-1 exploratory wells in August 2009, January 2010, August 2011, January 2014, July 2016 and February 2018 respectively.

On November 28, 2014, the Guddu Working Interest Owners approved the drilling of another exploratory well Ismail-1 to test the Pirkoh Limestone to the depth of 835 meters. The targeted Pirkoh Limestone formation was encountered at 700 meters. Based on the interpretation of logs and the results of MDT, the formation was found to be water bearing. Consequently, the well was plugged and abandoned without testing.

The drilling of exploration well, Umair-1, commenced in January 2018. Umair-1 was drilled to the total depth of 790 meters, to target Pirkoh and Habib Rahi limestone formations. During a short duration pre-stimulation test on a 36/64 inch choke, the well flowed commingled gas from Pirkoh and Habib Rahi limestone formations at an average rate of 2.47 MMcf/d, having a heating value of approximately 755 Btu/Scf, and a wellhead flowing pressure of approximately 330 Psi. The well has been completed as a gas producer in the Pirkoh and Habib Rahi limestone formations.

Anticipated future production from the Umair-1 is expected to be entitled to a gas price of \$4.45 per MMBtu, based on the carriage and freight crude oil price of \$65 per barrel, under the Petroleum Policy 2012.

The Guddu Exploration License expired on May 24, 2018. On April 1, 2019, the GoP granted approval of a two-year extension during the third year of the Guddu Exploration License effective May 25, 2018. The current term of the Guddu Exploration License will expire on May 24, 2020.

In order to fully explore the hydrocarbon potential of the block, the Guddu Working Interest Owners approved the acquisition and processing of 545 Sq.Km of 3D seismic data. 3D seismic acquisition has been completed. The operator has commenced data processing and the initial results are expected during the third quarter of 2019.

The GoP has approved Spud's application for replacement of Guddu block's bank guarantee with the hypothecation of its reserves in the Zarghun South Lease.

Spud has incurred \$2,601,558 of expenditures related to the Guddu Exploration License to date, of which \$2,277,017 were incurred in the fiscal year 2018.

## Zamzama North Exploration License

Block No. 2667-8

Spud's Working Interest: 24%

(Other Working Interest Owners: Heritage Oil 48%, Trakker 8%, Hycarbex 20%)

Spud is a party to, among other related agreements, the Zamzama North Exploration License No. 396/Pak/2007 (the "Zamzama North Exploration License") which provides Spud with a 24% Working Interest in the December 15, 2007 PCA. Pursuant to the terms of the Zamzama Farm-Out Agreement, Spud has a carry obligation of 3% towards Hycarbex, meaning Spud is responsible for 27% of the exploration costs in the Zamzama North Block. Additionally, upon the declaration of commerciality and approval from the DGPC, Hycarbex may elect to acquire an additional 3% full-paying Working Interest from Spud, the acquisition of which will be subject to the reimbursement by Hycarbex of past costs incurred on exploration and development attributable to such 3% Working Interest. The Zamzama North Exploration License pertains to a 1,229.23 Sq.Km block located in the Sindh province of Pakistan and in the Kirthar foredeep geological formation. The Zamzama North Exploration License is operated by Heritage Oil.

Of Spud's 24% Working Interest in the Zamzama North Exploration License, 12% is directly held by Spud and the remaining 12% Working Interest is held by EEL for the benefit of Spud pursuant to the terms of a related trust agreement. The trust arrangement between Spud and EEL is in place to satisfy Pakistani regulations requiring that local Pakistani entities must hold certain minimum ownership in Pakistani Petroleum concessions. Spud has entered into an agreement to purchase EEL. Closing of the transaction is subject to the following conditions precedent: (i) the receipt of duly executed Deeds of Assignment evidencing the assignment by Sprint of its 11% and 12% Working Interests in the Sanjawi and Zamzama North Exploration Licenses, respectively, to EEL; (ii) the approval by the State Bank of Pakistan of Spud's investment in EEL; and (iii) the issuance of a share transfer deed. These conditions have not been fulfilled as of the date of this AIF.

Formal assignment of Working Interests in Pakistan is subject to the execution of a deed of assignment by the GoP. Spud and EEL submitted their respective deeds of assignment relating to the acquisition of their Working Interests in the Zamzama North Exploration License to the GoP on November 14, 2011; however, these remain outstanding as of the date of this AIF.

The Zamzama North Exploration License Working Interest Owners purchased 750 L.Km 2D vintage seismic and adjacent wells data. In 2009 the joint venture partners acquired, processed and interpreted 340 L.Km of 2D seismic data. The mapping resulted in the delineation of an approximately 12 Sq.Km low relief fourway dip closed robust structure named the "Khairpur Prospect". Although the Khairpur-1 exploratory well was initially planned to be drilled in 2013, however, drilling of this well has been delayed due to the expiry of the license term.

The Khairpur Prospect is located within 10 Km of existing pipeline infrastructure, which could allow for early commercialization of gas discovery.

The Zamzama North Exploration License has been converted to the Petroleum Policy 2012 and therefore, any gas sales from future discoveries in the Zamzama North Exploration License will be entitled to gas pricing under the Petroleum Policy 2012.

The Zamzama North Exploration License reached the end of its initial term on December 14, 2011. On February 22, 2016, the DGPC issued a notice to the operator for the fulfillment of outstanding work obligations stipulated in the Zamzama North PCA within a period of 60 days. The joint venture partners are pursuing the matter with the DGPC.

On May 20, 2016, the DGPC issued a Show Cause Notice to the operator to explain within a period of 30 days from the issuance of the notice, as to why the Zamzama North Exploration License and the Zamzama North PCA may not be revoked. The operator and joint venture partners are pursuing the matter with the DGPC.

Spud has incurred \$871,168 of capital expenditures related to the Zamzama North Exploration License to date, of which \$7,330 were incurred in the fiscal year 2018.

## Sanjawi Exploration License

Block No. 3068-2

Spud's Working Interest: 27%

(Other Working Interest Owners: Heritage Oil 54%, Trakker 9%, Hycarbex 10%)

Spud is a party to, among other related agreements, the Sanjawi Exploration License No. 395/Pak/2009 (the "Sanjawi Exploration License"), which provides Spud with a 27% Working Interest in the November 16, 2007 Petroleum Concession Agreement. Pursuant to the terms of the Sanjawi Farm-Out Agreement, Spud has a carry obligation of 3% towards Hycarbex, meaning Spud is responsible for 30% of the exploration costs in the Sanjawi Block. Additionally, upon the declaration of commerciality and approval from the DGPC, Hycarbex may elect to acquire an additional 3% full-paying Working Interest from Spud,

the acquisition of which will be subject to the reimbursement by Hycarbex of past costs incurred on exploration and development attributable to such 3% Working Interest. The Sanjawi Exploration License pertains to a 2,258.47 Sq.Km block located in Baluchistan province of Pakistan and the western part of the Sulaiman Fold Belt. The Sanjawi Exploration License is operated by Heritage Oil.

Of Spud's 27% Working Interest in the Sanjawi Exploration License, 16% is directly held by Spud and the remaining 11% Working Interest is held by EEL for the benefit of Spud pursuant to the terms of a related trust agreement. The trust arrangement between Spud and EEL is in place to satisfy Pakistani regulations requiring that local Pakistani entities must hold certain minimum ownership in Pakistani Petroleum concessions. Spud has entered into an agreement to purchase EEL. Closing of the transaction is subject to the following conditions precedent: (i) the receipt of duly executed Deeds of Assignment evidencing the assignment by Sprint of its 11% and 12% Working Interests in the Sanjawi and Zamzama North Exploration Licenses, respectively, to EEL; (ii) the approval by the State Bank of Pakistan of Spud's investment in EEL; and (iii) the issuance of a share transfer deed. These conditions have not been fulfilled as of the date of this AIF.

Formal assignment of Working Interests in Pakistan is subject to the execution of a deed of assignment by the GoP. Spud and EEL submitted their respective deeds of assignment relating to the acquisition of their Working Interests in Sanjawi to the GoP on November 14, 2011; however, these remain outstanding as of the date of this AIF.

The Sanjawi Exploration License Working Interest Owners purchased 2D vintage seismic data of 222 L. Km and wells data of Dabbar-1 and Dabbar-2. ConocoPhillips Co. drilled the Dabbar-2 well in the license area in 1997 on surface anticline, which was plugged and abandoned without testing. The post well analysis of the Dabbar-2 well shows the likely presence of gas on logs in the low matrix porosity naturally fractured Jurassic Chiltan Limestone. Based on surface geological information and previous mapping, a number of surface leads have been identified with significant upside potential.

Due to the security situation and lack of free and orderly access to the license area, the operator of the Sanjawi Exploration License, Heritage Oil, on behalf of all the Sanjawi Working Interest Owners, declared force majeure by way of letter to the DGPC on October 26, 2011, pursuant to the terms of the related PCA. On February 12, 2016, the DGPC issued a notice to the operator under Article 27.5 of the Sanjawi PCA for the termination of license owing to the force majeure status of the license for a continuous period of three years. The joint venture partners are pursuing the matter with the DGPC. On November 21, 2017, the GoP issued another notice of termination to the operator and asserted its stance in consultation with the Law and Justice Division that the joint venture partners are under the obligation to pay the financial obligations (i.e. training, social welfare and rentals, alongwith liquidated damages for the undischarged work commitments) for the period between the effective date of grant (i.e. November 16, 2007) and the date of declaration of force majeure (i.e. October 26, 2011). On December 13, 2017, the operator on behalf of Sanjawi joint venture partners wrote a letter to the GoP explaining the joint venture partner's position that the joint venture partners have no further obligations whatsoever under the license and or Sanjawi PCA.

Spud has incurred \$497,128 of capital expenditures related to the Sanjawi Exploration License to date, of which \$nil was incurred in the fiscal year 2018.

## Kandra – Exploration Activities

Block No. 2768-6

FHL's Working Interest 35%

(Other Working Interest Owners: PEL 35%, GPX 25%, GHPL carried 5%)

Pursuant to the Kandra Lease, the Working Interest Owners have exclusive rights to carry out exploration activities in the Lease area. Accordingly, the 2007 seismic program for the Kandra Lease also covered the deeper Lower Goru formation at Kandra. The Kandra Exploration License is operated by PEL.

In 2009, Kandra joint venture partners acquired new 2D seismic data of 361.3 L.Km which was processed along with re-processing of vintage purchased data of 107.7 L.Km 2D seismic. Based on interpretation and mapping of the seismic data a location was selected to target the Lower Goru Massive Sandstone Formation ("Kandra-4 Deep"). On August 16, 2008, drilling of the Kandra-4 Deep began. It was drilled to a total depth of 2,229 meters on October 26, 2008, and tested during November 2008. Although significant quantities of high-Btu gas were flared from both the Lower Goru Massive Sandstone and the underlying Chiltan Limestone Formation, which appears fractured, the flares were followed by water influx and the well tested non-commercial quantities of gas from both targets. The well was temporarily suspended on December 5, 2008, pending further technical studies, which were inconclusive. The well has not been plugged and abandoned since it may be possible to recomplete the well as a producer in the SML. Geochemical study on samples of Kandra-4 Deep shows promising source potential in the Sembar and Lower Goru formations.

In 2016-2017, additional 2D seismic of 229 L.Km has been purchased along with one well Jhatpat-1 data. The purpose of the data was to evaluate the hydrocarbons potential deeper Triassic reservoirs.

# Badin IV North Exploration License

Block No. 2468-6 FHL's Working Interest 27.5% (Other Working Interest Owners: PEL 47.5%, GPX 25%)

FHL is a party to, among other related agreements, the Badin IV North Exploration License among the President, FHL, PEL and GPX (the "Badin IV North Exploration License"), as amended and supplemented. The Badin IV North Exploration License lies in lower Indus basin and covers an area of 872.94 Sq.Km. FHL has a 27.5% Working Interest in the Badin IV North Exploration License under the Badin IV North Petroleum Concession Agreement dated January 5, 2006. The Badin IV North Exploration License is operated by PEL.

Initial geological and geophysical evaluation started by the purchase of 3D seismic data of 993 Sq.Km and vintage 2D seismic data of 4493 L.Km. As a result of mapping, new 2D seismic of 301 L.Km was acquired in 2007 which was processed along with re-processing of 595 L.Km 2D vintage seismic. Based on revised interpretation and mapping, Jamali Deep-1 and Wahid-1 exploration wells were drilled.

The Jamali Deep-1 well was drilled to test the Jamali Deep Prospect, at the Lower Goru Basal Sandstone level. On December 31, 2008, drilling of the Jamali Deep-1 well began. It was drilled to a total depth of 3,862 meters on May 5, 2009, and tested during May and June 2009. Although hydrocarbon shows were encountered during drilling from the Lower Goru Basal and Massive Sandstones, the well tested non-commercial quantities of gas from both targets. The well was temporarily suspended on June 8, 2009, pending further technical studies and subsequently plugged and abandoned. Post well analysis indicated that Lower Goru Upper Sands were faulted in well supported by seismic and FMI data while Basal and Massive Sands were tight and hydrocarbon bearing. These sands did not flow because of the tight nature of the sands. Several other prospects exist in the Badin IV North Exploration License within the main established hydrocarbon fairway at Upper Sand, Middle, Basal and Massive Sand levels, and ranking of these on a technical and economic basis is being finalized for future drilling priority.

Drilling of the Wahid-1 well began in May 2011. The well was drilled to a total depth of 2,300 meters. The target sands within the Lower Goru were encountered close to prognosis. Based on the open hole logs, the target Upper Sands were water bearing. Consequently, the well was plugged and abandoned without testing in June 2011.

After the negative drilling results of Jamil Deep-1 and Wahid-1 exploration wells, another seismic data reprocessing campaign was launched in 2011 after test re-processing from various vendors. Total of 536 L.Km 2D seismic was re-processed.

The drilling of exploration well, Zainab-1 commenced on June 5, 2017, and reached the targeted depth on June 28, 2017. The well was logged and completed in the lower Goru "B" sands of cretaceous age. Post-completion surface well testing was conducted after perforating selective intervals of approximately 16.5 meters. A summary of the well testing results at various choke sizes is as follows.

Choke	Test duration	Average gas flow	Condensate	Water	Wellhead flowing
Size		rates	rate	rate	pressure
	Hours	MMcf/d	Bbl/d	Bbl/d	Psi
32 / 64"	12	10.20	451	72	2,133
40 / 64"	12	14.30	500	130	2,026
48 / 64"	12	19.04	500	130	1,861
56 / 64"	24	23.04	772	54	1,724

The operator has submitted the declaration of commerciality, field development plan and the application for grant of development and production lease for Zainab gas and condensate discovery for a period of ten years.

Phase I of the initial term of the Badin IV North Exploration License expired on December 6, 2017. On August 30, 2018, the GoP approved entry into Phase II of the initial term of the Badin IV North Exploration License effective December 7, 2017. The current term of the Badin IV North Exploration License will expire on December 6, 2019. The outstanding commitment comprises of one shallow exploration well up to 1650 meters or 100 meters inside the Lower Goru Upper Sands.

FHL has incurred \$8,525,163 of capital expenditures related to the Badin IV North block to date, of which \$126,835 were incurred in the fiscal year 2018.

# Badin IV South Exploration License

Block No. 2468-5 FHL's Working Interest 27.5%

(Other Working Interest Owners: PEL 47.5%, GPX 25%)

FHL is a party to, among other related agreements, the Badin IV South Exploration License among the President, FHL, PEL and GPX (the "Badin IV South Exploration License"), as amended and supplemented. The Badin IV South block lies in lower Indus basin and covers an area of 864.41 Sq.Km. FHL has a 27.5% Working Interest in the Badin IV South Exploration License under the Badin IV South Petroleum Concession Agreement dated January 5, 2006. The Badin IV South Exploration License is operated by PEL.

The exploration activities started with the purchase of vintage data. The vintage data set includes 3D seismic data of 626 Sq.Km, 2D seismic of 3175 L.Km and adjacent wells data of 29 wells. After initial interpretation and mapping, new 2D seismic data of 484 L.Km was acquired in 2007 which was processed along with re-processing of approximately 622 L.Km of vintage data. The interpretation and mapping of new data set resulted in numbers of prospects and leads but unfortunately, could not be drilled due to failure in Badin IV North. Another seismic re-processing campaign commenced in 2011 and a total of 729 L.Km 2D data was re-processed. After the interpretation and mapping of the full data set, four prospects were firmed up for drilling to target shallow reservoir i.e. Lower Goru Upper Sands. These prospects were drilled in two drilling campaigns, which resulted in three gas and condensate discoveries and one dry hole.

In 2013, the Badin IV South Working Interest Owners approved the drilling of two exploratory wells namely Ayesha-1 and Haleema-1.

On December 31, 2013, the Working Interest Owners commenced drilling of Ayesha-1, targeting the Upper Sands of the Lower Goru Formation. On January 27, 2014, Ayesha-1 achieved the total depth of 2,400 meters. Gas shows were observed over a 50-meter section in the Lower Goru "A" and "B" Sands. The

Ayesha-1 well was successfully completed in the "B" Sands of the Lower Goru Formation of Cretaceous age. See "Development and Production Leases – Ayesha, Aminah and Ayesha North Leases".

On February 27, 2014, drilling commenced at Haleema-1. On March 17, 2014, Haleema-1 reached the total depth of 1,849 meters. The target Lower Goru Upper Sands were encountered deeper then prognosis. Based on the interpretation of open hole logs the formations were found to be water bearing. Consequently, the well was plugged and abandoned without testing.

The second drilling campaign started with the drilling of Aminah-1 exploration well which was spud on January 6, 2016. On February 1, 2016, Aminah-1 reached the targeted depth of 2,297 meters. The well was logged and completed without DST in the Lower Goru "A" Sands of Cretaceous age after selective perforations of 15 meters. A short duration CIT was performed. Surface well testing was conducted in July 2016. During the ten-hour test on 48/64 inch fixed choke, the well flowed gas at an average rate of approximately 19 MMcf/d with an average wellhead flowing pressure of 1,607 Psi and having an average heating value of approximately 1,000 Btu/Scf. The average condensate to gas ratio was approximately 3.8 Bbl/MMcf with the water rate of 24.5 barrels per day.

The drilling of Ayesha North-1 exploration well commenced on March 25, 2016. On May 10, 2016, Ayesha North-1 reached the targeted depth of 2,820 meters. The well was logged and completed without DST in the Lower Goru "A" Sands of Cretaceous age after perforating 18 meters interval. Surface well testing was conducted in July 2016. During the eight-hour test on 48/64 inch fixed choke, the well flowed gas at an average rate of approximately 8.7 MMcf/d with an average wellhead flowing pressure of 771 Psi and having an average heating value of approximately 970 Btu/Scf. The average condensate to gas ratio was approximately 8.17 Bbl/MMcf with the water rate of 28 barrels per day. The gas rate and wellhead pressures are expected to improve after planned stimulation to remove the formation damage.

Based on the interpretation and mapping along with the integration of data from newly drilled wells, five prospects and a number of leads have been identified.

On November 3, 2016, the GoP approved the entering into of Phase II of the initial term of the Badin IV South Exploration License effective July 5, 2016. The Badin IV South Exploration License expired on July 4, 2018.

On July 2, 2018, the operator on behalf of the Badin IV South Exploration License Working Interest Owners applied for extension with respect to Phase-II of the Badin IV South Exploration License for a period of 24 months. The outstanding commitment will be one shallow exploration well up to 1600 meters or 50 meters inside the Lower Goru Upper Sands.

FHL has incurred \$7,408,850 of expenditures related to the block to date, of which \$102,170 were incurred in the fiscal year 2018.

# **Exploration Risks**

Exploration drilling involves substantial risk and no assurance can be given that drilling will prove successful in establishing commercially recoverable reserves. While the Corporation is of the view that its personnel have the skills and that it will have the resources to achieve its objectives, participation in the exploration for and the development of oil and natural gas has a number of inherent risks. See "Risk Factors" for a discussion of exploration risk.

## Cycles

Unlike countries with more developed oil and gas industries where gas prices have, over time, been increasingly deregulated and are set by the market, gas prices in Pakistan are set pursuant to the prevailing petroleum policy based on the cost and freight price of a basket of crude oil imported into Pakistan. Therefore, current gas prices in the North American market, or elsewhere in the world, are not reflective of

gas prices in Pakistan. The relevant petroleum policies have been drafted considering, among other things, the following factors:

- The need to encourage the accelerated development of Pakistan's hydrocarbon resources. The
  country faces a severe power generation deficit with urban areas across the country suffering multihour power load-shedding and "brown-outs". The load-shedding is severely damaging to industrial
  production and the economy as well as being a serious "street level" political issue.
- Pakistan's alternative energy sources. The country has no liquefied natural gas import terminals or cross-border gas pipelines (both are under consideration). The substantial domestic hydrocarbon shortfall, therefore, has to be met by the import of oil. This has a severe impact on Pakistan's trade balance and foreign reserves position.

The long-term and higher gas policy prices in Pakistan are set to provide gas producers like Jura with certainty as to revenues, thereby facilitating development financing and offsetting perceived and actual emerging market risk.

# **Competitive Conditions**

Jura actively competes for reserve acquisitions, exploration leases, licenses and concessions and skilled industry personnel with a substantial number of other oil and natural gas companies, many of which have significantly greater financial resources than Jura. The Corporation's competitors include major integrated oil and natural gas companies and numerous other independent oil and natural gas companies and individual producers and operators.

## **Economic Dependence**

Jura is not substantially dependent on any contract or license, such as a contract to sell the major part of its products or services or to purchase the majority of its goods, services or raw materials, or any franchise or license or other agreement to use a patent, formula, trade secret, process or trade name upon which its business depends.

# **Foreign Operations**

Jura's oil and gas operations and related assets are located exclusively in Pakistan. Pakistan is a federal republic with Islamic influence. Its official languages are Urdu and English, and English is the language used by most government agencies, including the MEPD. The legal framework for the petroleum industry is drafted in the English language, and correspondence with government agencies with respect to exploration and production activities is carried out in English.

The upstream petroleum sector in Pakistan is closely regulated by the DGPC, an extension of the federal MEPD, while the midstream and downstream petroleum sectors are regulated by the Oil and Gas Regulatory Authority. Among other things, the DGPC is responsible for ensuring proper maintenance of the computerized national petroleum database, awarding concessions through a transparent and publicly-advertised bidding process and monitoring companies under contract.

Pakistan has legislation governing oil and gas operations, including laws and regulations relating to offshore production, taxation, safety and environmental protection. In 1991, the MEPD introduced its first petroleum policy document to establish clear policies, procedures, tax and pricing for the upstream sector. Since that time, the MEPD has implemented seven new petroleum policies, none of which has adversely affected any rights granted under prior policies.

See "Risk Factors" for further discussion of the Corporation's foreign operations.

#### **Change to Contracts**

There is no aspect of the Corporation's business that the Corporation reasonably expects to be affected by renegotiation or termination of contracts or sub-contracts.

#### **Revenue Sources**

For the financial year ended December 31, 2018, natural gas sales accounted for 99% of Jura's revenue. Jura currently sells its production to the GoP and Engro, a third-party purchaser. Gas sales to the GoP are made at the applicable regulated gas price. Gas sales to third party purchasers other than the GoP are made at a negotiated price equal to, less than or in excess of the regulated gas price. In the case of sales at a price in excess of the regulated gas price, a 40% "windfall levy" must be paid to the GoP on the amount by which the third-party sales price exceeds the applicable regulated price.

#### **Seasonal Considerations**

Some of the Corporation's assets in the Middle Indus Basin in Pakistan are located on the flood plain near the Indus River. Traditionally, during the rainy season (generally from April through to November), there can be difficulty in accessing the area covered by the Corporation's Leases and Exploration Licenses. For example, in 2010, heavier than normal monsoon rains in the Sindh, Punjab, Khyber Pakhtunkhwa and Baluchistan regions of Pakistan resulted in extensive flooding in areas adjacent to the Indus River. The flooding impacted Pakistan's infrastructure and also negatively affected access to the Corporation's Leases and Exploration Licenses.

#### **Substantial Capital Requirements**

The Corporation anticipates that it will make substantial capital expenditures for the acquisition, exploration, development and production of oil and natural gas reserves in the future. If the Corporation's revenues or reserves decline, the Corporation may have limited ability to expend the capital necessary to undertake or complete future drilling programs. There can be no assurance that debt or equity financing, or cash generated by operations will be available or sufficient to meet these requirements or for other corporate purposes or, if debt or equity financing is available, that it will be on terms acceptable to the Corporation. Moreover, future activities may require the Corporation to alter its capitalization significantly. Transactions involving the issuance of securities may be dilutive. The inability of the Corporation to access sufficient capital for its operations could have a material adverse effect on the Corporation's financial condition, results of operations or prospects. See "Risk Factors" for further discussion of capital requirements.

#### **Employees**

As at December 31, 2018, the Corporation had seventeen full-time employees in Pakistan. The Corporation also uses consultants in Canada, the United Arab Emirates, United Kingdom, Australia and Pakistan on a part-time basis.

#### **Environmental Protection**

Jura is subject to a range of environmental regulations, as are its competitors in the oil and natural gas industry. To ensure that the Corporation complies with its environmental obligations the Board of Directors monitors the Corporation's environmental policies and procedures. As the environmental regulations applicable to the Corporation are also applicable to its competitors, environmental protection did not affect the competitive position of the Corporation in 2018, nor did the Corporation incur any material environmental protection or regulatory costs out of the ordinary course of business in 2018. For a further discussion of the Corporation's environmental policies, see "Risk Factors".

#### **Social or Environmental Policies**

The Corporation places appropriate emphasis on environmental protection and the Board provides oversight to management in the environmental area. All necessary employees are trained and educated on environmental policies as such policies pertain to their particular roles. The Corporation adheres to all government regulations and policy directives. For a further discussion of the Corporation's environmental and safety policies, see "Risk Factors".

#### STATEMENT OF RESERVES DATA AND OTHER OIL AND GAS INFORMATION

In accordance with NI 51-101, McDaniel prepared the McDaniel 2018 Report evaluating the Corporation's oil, NGLs and natural gas reserves as at December 31, 2018. For more information regarding the Corporation's reserves as they were at December 31, 2018, please refer to Appendix A – "Statement of Reserves Data and Other Oil and Gas Information", which sets out the assumptions and qualifications used to prepare the reserves information contained in the McDaniel 2018 Report, all of which is prepared in compliance with NI 51-101.

#### **DIVIDENDS**

During the three most recently completed financial years of the Corporation, the Corporation has not paid any dividends on the outstanding Common Shares and has no intention to declare dividends on Common Shares in the foreseeable future. Any decision to pay dividends on Common Shares in the future will be dependent upon the financial requirements of the Corporation to finance future growth, the financial condition of the Corporation and other factors which the Board may consider relevant.

#### **DESCRIPTION OF CAPITAL STRUCTURE**

The Corporation is authorized to issue an unlimited number of Common Shares and preferred shares ("**Preferred Shares**"), issuable in series (none of which exist as at the date of this AIF), of which 69,076,328 Common Shares and no Preferred Shares are issued and outstanding as at the date of this AIF. The Corporation has also issued debentures in the principal amount of \$3,500,000.

#### **Common Shares**

Holders of Common Shares of the Corporation are entitled to dividends as and when declared by the Board and to notice of, and one vote per share at, meetings of the shareholders of the Corporation. Upon liquidation or dissolution of the Corporation, holders of Common Shares are entitled, subject to the rights of holders of Preferred Shares of the Corporation, to share equally in the remaining property of the Corporation.

#### **Preferred Shares**

Subject to the filing of Articles of Amendment in accordance with the CBCA, the Board may at any time and from time to time issue Preferred Shares in one or more series, each series to consist of such number of shares as may, before the issuance thereof, be determined by the Board. Subject to the provisions of the CBCA, the Board may by resolution fix from time to time before the issuance thereof the designation, rights, privileges, restrictions and conditions attaching to each series of Preferred Shares. The Preferred Shares of each series shall rank ahead of the Common Shares and rateably with holders of each other series of Preferred Shares with respect to payment of dividends and with respect to the distribution of the assets of the Corporation in the event of the liquidation, dissolution or winding-up of the Corporation or any other distribution of the assets of the Corporation among its shareholders for the purpose of winding up its affairs.

#### **Debentures**

The Corporation's outstanding debentures were issued in amounts of \$1,000, have no voting rights and are not convertible into Common Shares. The debentures yield interest at an annual rate of 11% and are redeemable by the Corporation at any time prior to April 30, 2020 (the maturity date). The debentures are redeemable in whole or in part, at the option of the Corporation, at a price equal to the principal amount of the Debenture plus all accrued and unpaid interest thereon. Warrants to purchase 200 Common Shares at an exercise price of C\$0.15 per Common Share are attached to each unit of Debenture.

#### **MARKET FOR SECURITIES**

#### **Trading Price and Volume**

The Common Shares are listed and posted for trading on the TSX-V under the trading symbol "JEC". The following table sets forth the market price ranges and the trading volumes of the Common Shares for the financial year ended December 31, 2018, as reported by the TSX-V:

	High (C\$/Share)	Low (C\$/Share)	Volume
January	0.09	0.07	62,000
February	0.075	0.065	40,500
March	0.065	0.06	5,800
April	0.06	0.06	0
May	0.07	0.06	18,200
June	0.075	0.06	364,300
July	0.075	0.065	24,100
August	0.08	0.07	6,000
September	0.08	0.045	383,500
October	0.075	0.06	14,500
November	0.08	0.045	113,600
December	0.045	0.045	46,000

#### PRIOR SALES

During the financial year ended December 31, 2018, the Corporation did not issue any securities of a class of securities outstanding but not listed or quoted on a marketplace.

#### **DIRECTORS AND OFFICERS**

#### **Current Directors and Officers**

The current directors of the Corporation are Stephen C. Akerfeldt, Timothy M. Elliott, Nadeem Farooq, Syed Hasan Akbar Kazmi, Stephen C. Smith, and Frank J. Turner. Each person elected as a director of the Corporation will hold office until the close of the next annual meeting of the shareholders or until his or her successor is duly elected or appointed or his or her office is earlier vacated in accordance with the CBCA and the articles and by-laws of the Corporation.

The following table sets forth the name, province and country of residence of each director and officer, the date each first became a director or officer of the Corporation, the current principal occupation, business or employment of each director and officer and the principal occupation, business or employment of each director or officer over the past five years, as at the date hereof:

Name and Position with Jura	Jurisdiction of Residence	Director of the Corporation Since	Principal Occupation, Business or Employment at Present and Held During the Preceding Five Years	Number of Common Shares Beneficially Owned, or Controlled or Directed, Directly or Indirectly
Nadeem Farooq, Interim Chief Executive Officer and Director	Punjab, Okara Pakistan	September 1, 2017	Mr. Farooq has been Interim Chief Executive Officer and a director of the Corporation since September 2017 and was previously the Chief Financial Officer of the Corporation from July 2012 to August 2017. He has also been a director and Chief Executive Officer of Spud since September 2017.	Nil
Arif Siddiq, Interim Chief Financial Officer	Islamabad Pakistan	N/A	Mr. Siddiq has been Interim Chief Financial Officer of the Corporation since September 2017 and was previously Manager Financial Reporting and Compliance of Spud from October 2012 to August 2017. He is a qualified Chartered Accountant from Institute of Chartered Accountants of Pakistan (ICAP) and has more than 14 years of Professional experience.	Nil
Syed Hasan Akbar Kazmi, Director <sup>(2)</sup>	Toronto, Ontario, Canada	February 25, 2013	Mr. Kazmi is also a director of the Corporation's subsidiary, Spud. Since July 2011, Mr. Kazmi has been a director of JS Group, in its principal finance office in UAE. He is the head of Middle East & Africa operations for JS Group and is based in Dubai. Mr. Kazmi has an investment banking, corporate finance and private equity background. He has deep knowledge of oil & gas sector in Pakistan due to his long association with Spud as a director and former Chief Executive Officer.	17,500 <sup>(5)</sup>
Steve Smith, Director <sup>(1)</sup>	London, United Kingdom	July 11, 2012	Mr. Smith held the position of Chairman of the Board of Directors of the Corporation from July 11, 2012 until February 25, 2013. In 2004, Mr. Smith joined JS Group, one of Pakistan's leading financial services groups and a diversified investor in Pakistan and internationally. Mr. Smith is responsible for JS Group's international activities and oversees its private equity business. He sits on the board of a number of privately-held companies in which JS Group has an investment.	1,506,000
Stephen C. Akerfeldt, Director (1) (2) (3) (4)	Toronto, Ontario, Canada	January 24, 2003	Mr. Akerfeldt has held the positions of Chairman of the Board of Directors of the Corporation from January 24, 2003 until March 14, 2007, as well as Interim President and CEO of the Corporation from February 18, 2003 until May 10, 2005. Mr. Akerfeldt has been President and a director of Ritz Plastics Inc., a private company that produces plastic parts primarily for the automotive industry by injection molding since 1999. From June 2011 to September 2016, Mr. Akerfeldt was a director of Serinus.	90,363
Timothy M. Elliott, Chairman and Director (1) (2) (3)	Dubai, United Arab Emirates	March 14, 2007	Mr. Elliott is an independent businessman and is the current Chairman of the Board of Directors of the Corporation. From February 2006 to August 2016, Mr. Elliott was the President and CEO of Serinus Energy Inc. Mr. Elliott is also the chairman of Loon Energy Corporation a company listed on CDNX.	390,638
Frank J. Turner, Director <sup>(4)</sup>	Calgary, Alberta, Canada	December 31, 2013	Mr. Turner has been a Partner of Osler, Hoskin & Harcourt LLP, a leading Canadian law firm, since 1999, practicing in the areas of mergers and acquisitions and corporate finance and he presently serves as Co-Head of Osler's Asia-Pacific Initiative. From mid-2009 to early 2014, Mr. Turner served as National Co-Chair of Osler's Corporate Group. Mr. Turner serves as director of several private and public companies including GAP (Canada) Inc. and Trakopolis IoTCorp. and has served on long term secondments with Morgan Stanley & Co. and BMO Capital Markets.	Nil

#### Notes:

- (1) Member of the Audit Committee.
- (2) Member of the Reserves Committee.
- (3) Member of the Compensation Committee.
- (4) Member of the Corporate Governance and Nominating Committee.
- (5) Mr. Kazmi is a director of JSEL. JSEL holds 50,659,076 Common Shares. By virtue of his position with JSEL, Mr. Kazmi is deemed to have direction over the JSEL shares in addition to those Common Shares that are shown above.
- (6) The information as to residence, principal occupation and Common Shares beneficially owned or controlled or directed, not being within the knowledge of Jura, has been furnished by the respective individuals as at April 30, 2019.

As at the date hereof, the directors and senior officers of the Corporation as a group beneficially own, directly or indirectly, or exercise control or direction over, an aggregate of 52,663,577 Common Shares (representing approximately 76.24% of the outstanding Common Shares).

#### **Corporate Cease Trade Orders**

Except as set forth in this AIF, no current director or executive officer is, or has been within 10 years prior to the date of this AIF, a director, chief executive officer or chief financial officer of any company that:

- (a) was subject to a cease trade order, an order similar to a cease trade order or an order that denied the relevant company access to any exemption under securities legislation and that was in effect for a period of more than 30 consecutive days, that was issued while the director or executive officer was acting in the capacity as director, chief executive officer or chief financial officer of the relevant company; or
- (b) was subject to a cease trade order, an order similar to a cease trade order or an order that denied the relevant company access to any exemption under securities legislation and that was in effect for a period of more than 30 consecutive days, that was issued after the director or executive officer ceased to be a director, chief executive officer or chief financial officer and which resulted from an event that occurred while that person was acting in the capacity as director, chief executive officer or chief financial officer.

On January 27, 2010, Firstgold, a company for which Stephen C. Akerfeldt served as a director, filed for Chapter 11 protection under the United States Bankruptcy Code. On January 28, 2010, Firstgold's shares were delisted from the TSX for failure to meet the TSX's minimum listing requirements.

On July 22, 2009, a cease trade order was issued by the Ontario Securities Commission against the insiders, management, officers and directors of Firstgold, including Mr. Akerfeldt, for failure to file various continuous disclosure materials within the prescribed time frame as required by Ontario securities law. All outstanding continuous disclosure materials were subsequently filed and the cease trade order expired on October 10, 2009.

#### **Penalties or Sanctions**

None of Jura's directors, executive officers, or shareholders holding a sufficient number of securities of the Corporation to affect materially the control of the Corporation has been subject to:

- (a) any penalties or sanctions imposed by a court relating to securities legislation or by a securities regulatory authority or has entered into a settlement agreement with a securities regulatory authority; or
- (b) any other penalties or sanctions imposed by a court or regulatory body that would likely be considered important to a reasonable investor making an investment decision.

#### **Bankruptcies**

Except as set forth in this AIF, no current director, executive officer or shareholder holding a sufficient number of securities of the Corporation to affect materially the control of the Corporation is, or has within 10 years prior to the date of this AIF:

(a) been a director or executive officer of any company that, while that person was acting in that capacity, or within a year of that person ceasing to act in that capacity, became bankrupt, made a proposal under any legislation relating to bankruptcy or insolvency or was subject to or instituted any proceedings, arrangement or compromise with creditors or had a receiver, receiver manager, or trustee appointed to hold its assets; or

(b) become bankrupt, made a proposal under any legislation relating to bankruptcy or insolvency, or become subject to or instituted any proceedings, arrangement or compromise with creditors, or had a receiver, receiver manager or trustee appointed to hold the assets of the director, executive officer or shareholder.

In January 2010, Firstgold filed for protection under Chapter 11 in the United States. Mr. Akerfeldt was at the time of the filing a director of Firstgold.

#### **Conflicts of Interest**

Certain directors of the Corporation are associated with other companies, which may give rise to conflicts of interest. In accordance with the CBCA, directors who have a material interest in any entity which is a party to a material contract or proposed material contract with the Corporation are required, subject to certain exceptions, to disclose that interest and abstain from voting on any resolution to approve that contract. In addition, the directors are required to act honestly and in good faith with a view to the best interests of the Corporation.

#### **RISK FACTORS**

The following are certain risk factors related to Jura, its business, and the ownership of the securities of Jura which investors should carefully consider. The following information is a summary only of certain risk factors and is qualified in its entirety by reference to, and must be read in conjunction with, the detailed information appearing elsewhere in the AIF. If any event arising from the risk factors set forth below occurs, Jura's business, prospects, financial condition, results of operation or cash flows and in some cases its reputation could be materially adversely affected.

The Corporation's business is subject to the risks normally encountered in the oil and natural gas industry such as the marketability of oil and natural gas, competition with companies having greater resources, acquisition, exploration and production risks, need for capital, fluctuations in the market price and demand for oil and natural gas and the regulation of the oil and natural gas industry by various levels of government. The oil and natural gas reserves and recovery information contained in this AIF are estimates only and the actual production and ultimate reserves recovered from the Corporation's properties and acquisitions may be greater or less than the estimates contained in this AIF. The success of acquisitions and further exploration or development projects cannot be assured. Such risks and any such risks described below may not be the only risks facing the Corporation. Additional risks not currently known may also negatively impact the Corporation's business operations and results of operation.

An investment in the Corporation should be considered highly speculative due to the nature of Jura's business, the stage of development of Jura's oil and gas operations and the geographic location of the Corporation's properties. A prospective investor should consider carefully the risk factors set out below. In addition, prospective investors should carefully review and consider all other information contained herein before making an investment decision.

#### **Exploration, Development and Production Risks**

Oil and natural gas operations involve many risks that even a combination of experience, knowledge and careful evaluation may not be able to overcome. The long-term commercial success of the Corporation depends on its ability to find, acquire, develop and commercially produce oil and natural gas reserves. Without the continual addition of new reserves, any existing reserves the Corporation may have at any particular time and the production therefrom will decline over time as such existing reserves are produced. A future increase in the Corporation's reserves will depend not only on its ability to explore and develop any properties it may have from time to time, but also on its ability to select and acquire suitable producing properties or prospects. No assurance can be given that the Corporation will be able to continue to locate satisfactory properties for acquisition or participation. Moreover, if such acquisitions or participations are identified, the Corporation may determine that current markets, terms of acquisition and participation or pricing conditions make such acquisitions or participations uneconomic. There is no assurance that further commercial quantities of oil and natural gas will be discovered or acquired by the Corporation.

Future oil and natural gas exploration may involve unprofitable efforts, not only from dry wells, but from wells that are productive but do not produce sufficient net revenues to return a profit after drilling, operating and other costs. Completion of a well does not assure a profit on the investment or recovery of drilling, completion and operating costs. In addition, drilling hazards or environmental remediation could greatly increase the cost of operations, and various field operating conditions may adversely affect the production from successful wells. These conditions include delays in obtaining governmental approvals or consents, shut-ins of connected wells resulting from extreme weather conditions, insufficient storage or transportation capacity or other geological and mechanical conditions.

While diligent well supervision and effective maintenance operations can contribute to maximizing production rates over time, production delays and declines from normal field operating conditions cannot be eliminated and can be expected to adversely affect revenue and cash flow levels to varying degrees.

Oil and natural gas exploration, development and production operations are subject to all the risks and hazards typically associated with such operations, including hazards such as fire, explosion, blowouts, cratering, sour gas releases and spills, each of which could result in substantial damage to oil and natural gas wells, production facilities, other property and the environment, or in personal injury. In accordance with standard industry practice, the Corporation is not fully insured against all of these risks, nor are all such risks insurable. Although the Corporation carries its own well insurance and maintains liability insurance through the operator of the properties in an amount that it considers consistent with industry practice, the nature of these risks is such that liabilities could exceed policy limits, in which event the Corporation could incur significant costs that could have a material adverse effect upon its financial condition. Oil and natural gas production operations are also subject to all the risks typically associated with such operations, including encountering unexpected formations or pressures, a premature decline of reservoirs and the invasion of water into producing formations. Losses resulting from the occurrence of any of these risks could have a material adverse effect on future results of operations, liquidity and financial condition.

#### **Additional Funding Requirements**

The Corporation's current cash and cash flow from any reserves subsequently acquired will not be sufficient to fund its ongoing activities at all times. The Corporation will require additional funding in order to satisfy its capital expenditure requirements and carry out its oil and gas acquisition, exploration and development activities. Failure to obtain such funding on a timely basis could cause the Corporation to forfeit its interest in certain properties, miss certain acquisition opportunities and reduce or terminate its operations. If the Corporation's revenues from any reserves subsequently acquired decrease as a result of lower oil and natural gas prices or otherwise, it will affect the Corporation's ability to spend the necessary capital to replace its reserves or to maintain its production. In these circumstances, no assurance can be given that additional capital will be available at all or available on terms acceptable to the Corporation.

#### **Exploration License Expiry**

With respect to certain of the Corporation's Working Interests, it is not anticipated that committed work programs will be completed prior to expiry dates set forth in the relevant Petroleum Concession Agreements with the GoP. While the operator has advised that it anticipates that extensions will be granted for the completion of committed work, there is no guarantee that extensions will be granted. In the event that extensions are not granted, the Corporation may be liable to the GoP for its share of the minimum expenditure of undischarged work obligations upon the expiry of the Exploration Licenses.

#### **Governmental Approvals**

The Corporation's operations are subject to a range of licenses, regulations, and approvals of governmental authorities, including those relating to the exploration, development, operation, production, marketing, pricing, transportation and storage of gas. The Corporation has no control over whether or not necessary government approvals or licenses (or renewals thereof) are granted, the timing of obtaining (or renewing) such approvals or licenses, the terms on which they are granted or the Lease or Exploration License areas in which the Corporation has interests. As a result, the Corporation may have limited or no control over the

nature and timing of Lease or Exploration License areas in which the Corporation has or seeks interests or the manner in which operations are conducted on such license areas.

#### **Availability of Drilling Equipment and Access**

Oil and natural gas exploration and development activities are dependent on the availability of drilling and related equipment in the particular areas where such activities will be conducted. Demand for such limited equipment or access restrictions may affect the availability of such equipment to the Corporation and may delay exploration and development activities. As the Corporation is not the operator of many of its oil and gas properties, the Corporation will be dependent on such operators for the timing of activities related to such properties and will be largely unable to direct or control the activities of the operators.

#### **Title to Assets**

It is the practice of the Corporation in acquiring significant oil and gas Exploration Licenses and Leases or interests in oil and gas Exploration Licenses and Leases to fully examine the title to the interest thereunder. Nevertheless, there may be title defects which affect lands comprising a portion of the Corporation's properties which may adversely affect the Corporation.

#### Seasonal Impact on Industry

Some of the Corporation's assets in the Middle Indus Basin in Pakistan are located on the flood plain near the Indus River. Traditionally, during the rainy season (generally from April through to November), there can be difficulty accessing those assets. In 2010, heavier than normal monsoon rains in the Sindh, Punjab, Khyber and Baluchistan regions of Pakistan resulted in extensive flooding in areas adjacent to the Indus River. The flooding impacted Pakistan's infrastructure and also negatively affected access to the Corporation's assets. The recovery from the flooding is ongoing and may affect the operator's ability to implement the work programs.

#### Acts of Violence, Terrorist Attacks or Civil Unrest in Pakistan

All of Jura's operations are in Pakistan. Historically, Pakistan has experienced political, social and economic problems, terrorist attacks, insurgencies and civil unrest. Two concessions of Jura, namely Sanjawi and Zarghun South, are located in the province of Baluchistan, which has experienced significant instability and unrest. In these locations, the Working Interest Owners may incur substantial costs to maintain the safety of personnel and operations. Despite these precautions, the safety of the operator's personnel or of Jura's personnel and operations in these locations may continue to be at risk, and Jura may in the future suffer loss of personnel and disruption of operations, any of which could have a material adverse effect on Jura's business and results of operations.

#### **Foreign Operations**

Jura currently has and will continue to have operations in Pakistan. As such, Jura's operations, financial condition and operating results could be significantly affected by risks over which it has no control. These risks may include risks related to economic, social or political instability or change, terrorism, hyperinflation, currency non-convertibility or instability and changes of laws affecting foreign ownership, interpretation or renegotiation of existing contracts, government participation, taxation policies, including royalty and tax increases and retroactive tax claims, and investment restrictions, working conditions, rates of exchange, exchange control, exploration licensing, petroleum and export licensing and export duties, government control over domestic oil and gas pricing, currency fluctuations, devaluation or other activities that limit or disrupt markets and restrict payments or the movement of funds; the possibility of being subject to exclusive jurisdiction of foreign courts in connection with legal disputes relating to licenses to operate and concession rights in countries where Jura currently operates; and difficulties in enforcing Jura's rights against a governmental agency because of the doctrine of sovereign immunity and foreign sovereignty over international operations. Problems may also arise due to the quality or failure of locally obtained equipment or technical support, which could result in failure to achieve expected target dates for exploration operations

or result in a requirement for greater expenditure. Jura's operations may also be adversely affected by applicable laws and policies of Pakistan, the effect of which could have a negative impact on Jura.

Jura operates in such a manner as to minimize and mitigate its exposure to these risks. However, there can be no assurance that Jura will be successful in protecting itself from the impact of all of these risks and the related financial consequences.

#### Competition

Oil and gas exploration is intensely competitive in all its phases and involves a high degree of risk. The Corporation competes with numerous other participants in the search for, and the acquisition of, oil and natural gas properties and in the marketing of oil and natural gas. The Corporation's competitors include oil and natural gas companies that have substantially greater financial resources, staff and facilities than those of the Corporation. The Corporation's ability to increase reserves in the future will depend not only on its ability to explore and develop its present properties, but also on its ability to select and acquire suitable producing properties or prospects for exploratory drilling. Competitive factors in the distribution and marketing of oil and natural gas include price, methods and reliability of delivery. Competition may also be presented by alternate fuel sources.

#### Regulatory

Oil and natural gas operations (exploration, production, pricing, marketing and transportation) are subject to extensive controls and regulations imposed by various levels of government that may be amended from time to time. The Corporation's operations may require licenses from various governmental authorities. There can be no assurance that the Corporation will be able to obtain all necessary licenses and permits that may be required to carry out exploration and development with respect to its projects and the obtaining of such licenses and permits may delay operations of the Corporation. It is not expected that any of these controls or regulations will affect the operations of the Corporation in a manner materially different than they would affect other oil and gas companies of similar size and operating in similar jurisdictions.

#### **Environmental**

All phases of the oil and natural gas business present environmental risks and hazards and are subject to environmental regulation pursuant to a variety of laws and regulations in Pakistan. Environmental legislation provides for, among other things, restrictions and prohibitions on spills, releases or emissions of various substances produced in association with oil and natural gas operations. The legislation also requires that wells and facility sites be operated, maintained, abandoned and reclaimed to the satisfaction of applicable regulatory authorities. Compliance with such legislation can require significant expenditures and a breach may result in the imposition of fines and penalties, some of which may be material. Environmental legislation is evolving in a manner expected to result in stricter standards and enforcement, larger fines and liability and potentially increased capital expenditures and operating costs. The discharge of oil, natural gas or other pollutants into the air, soil or water may give rise to liabilities to governments and third parties and may require the Corporation to incur costs to remedy such discharge. Although the Corporation believes that it is in material compliance with current applicable environmental regulations, no assurance can be given that environmental laws will not result in a curtailment of production or a material increase in the costs of production, development or exploration activities or otherwise adversely affect the Corporation's financial condition, results of operations or prospects.

#### **Prices, Markets and Marketing**

The marketability and price of oil and natural gas that may be acquired or discovered by the Corporation will be affected by numerous factors beyond its control. The Corporation's ability to market oil and natural gas may depend upon its ability to acquire space within pipelines that deliver oil and natural gas to commercial markets. The Corporation may also be affected by deliverability uncertainties related to the proximity of its reserves to pipelines and processing facilities, and related to operational problems with such pipelines and facilities as well as extensive government regulation relating to price, taxes, royalties, land

tenure, allowable production, the export of oil and natural gas and many other aspects of the oil and natural gas business. The Corporation's revenues, profitability and future growth, and the carrying value of its oil and gas properties are substantially dependent on prevailing prices of oil and gas. The Corporation's ability to borrow and to obtain additional capital on attractive terms is also substantially dependent upon oil and gas prices. The price of oil and natural gas in Pakistan is determined by government regulation and is below the international market price. There is no certainty that this will change in the future. In addition, international market prices for oil and gas are subject to large fluctuations in response to relatively minor changes in the supply of and demand for oil and gas, market uncertainty and a variety of additional factors beyond the control of the Corporation. These factors include economic conditions in various countries, the actions of the Organization of Petroleum Exporting Countries, governmental regulation, political stability in the Middle East and elsewhere, the foreign supply of oil and gas, the price of foreign imports and the availability of alternative fuel sources. Any substantial and extended decline in the price of oil and gas would have an adverse effect on the Corporation's carrying value of its reserves, borrowing capacity, revenues, profitability and cash flows from operations.

Exchange rate fluctuations between Canadian and US dollars and other foreign currencies also affect the profitability of the Corporation. World oil prices are quoted in United States dollars as are any revenues received by the Corporation and are therefore affected by the Canadian/US exchange rate that may fluctuate over time. The Corporation may reduce the impact of foreign exchange fluctuations by using risk management tools related to foreign exchange rates and commodity prices. The Corporation has not entered into any foreign exchange contracts that are open as at the date of this AIF.

Volatile oil and gas prices make it difficult to estimate the value of producing properties for acquisition and often cause disruption in the market for oil and gas producing properties, as buyers and sellers have difficulty agreeing on such value. Price volatility also makes it difficult to budget for and project the return on acquisitions and development and exploitation projects.

In addition, financial resources available to the Corporation are in part determined by the Corporation's borrowing base. A sustained material decline in prices from historical average prices could reduce the Corporation's borrowing base, therefore, reducing the bank credit available to the Corporation.

#### **Issuance of Debt**

From time to time the Corporation may enter into transactions to acquire assets or the shares of other companies. These transactions may be financed partially or wholly with debt, which may increase the Corporation's debt levels above industry standards. Depending on future exploration and development plans, the Corporation may require additional equity and/or debt financing that may not be available or, if available, may not be available on favourable terms. Neither the Corporation's articles nor its by-laws limit the amount of indebtedness that the Corporation may incur. The level of the Corporation's indebtedness from time to time could impair the Corporation's ability to obtain additional financing in the future on a timely basis to take advantage of business opportunities that may arise.

#### Hedging

From time to time the Corporation may enter into agreements to receive fixed prices on oil and natural gas production to offset the risk of revenue losses if commodity prices decline; however, if commodity prices increase beyond the levels set in such agreements, the Corporation would not benefit from such increases. Similarly, from time to time the Corporation may enter into agreements to fix the exchange rate of Canadian dollars to United States dollars and other foreign currencies in order to offset the risk of revenue losses if the Canadian dollar increases in value compared to foreign currencies; however, if the Canadian dollar declines in value compared to foreign currencies, the Corporation would not benefit from the fluctuating exchange rate for the fixed price agreement amount.

#### Insurance

The Corporation's involvement in the exploration for and development of oil and natural gas properties may result in the Corporation becoming subject to liability for pollution, blow outs, property damage, personal injury or other hazards. The Corporation, together with the well operator, has obtained well control insurance in accordance with industry standards to address certain of these risks; however, such insurance has limitations on liability that may not be sufficient to cover the full extent of such liabilities. In addition, such risks may not in all circumstances be insurable or, in certain circumstances, the Corporation may elect not to obtain insurance to deal with specific risks due to the high premiums associated with such insurance or other reasons. The payment of such uninsured liabilities would reduce the funds available to the Corporation. The occurrence of a significant event that the Corporation is not fully insured against, or the insolvency of the insurer of such event, could have a material adverse effect on the Corporation's financial position, results of operations or prospects.

#### **Management of Growth**

The Corporation may be subject to growth related risks including capacity constraints and pressure on its internal systems and controls. The ability of the Corporation to manage growth effectively will require it to continue to implement and improve its operational and financial systems and to expand, train and manage its employee base. The inability of the Corporation to deal with this growth could have a material adverse impact on its business, operations and prospects.

#### **Expiration of Permits, Exploration Licenses and Leases**

The Corporation's properties are held in the form of permits, Exploration Licenses and Leases and Working Interests in permits, Exploration Licenses and Leases. If the Corporation or the holder of the Exploration License or Lease fails to meet the specific requirement of an Exploration License or Lease, the Exploration License or Lease may terminate or expire. There can be no assurance that any of the obligations required to maintain each Exploration License or Lease will be met. The Badar Lease and the Zamzama North Exploration License has passed its respective term and pending renewal by the GoP. In management's experience, it is not uncommon in Pakistan for oil and natural gas permits, Exploration Licenses and Leases to expire without prompt renewal. In these circumstances, Jura relies on the continued involvement of government authorities on its operating properties as an indication that such permits, Exploration Licenses and Leases are not being treated as terminated by the GoP. However, there can be no assurance that delays in obtaining government permits and approvals will not result in the termination of an Exploration License or Lease. The termination or expiration of the Corporation's Exploration Licenses or Leases or the Working Interests relating to an Exploration License or Lease without renewal may have a material adverse effect on the Corporation's results of operations and business.

#### Reliance on Operators, Working Interest Owners and Key Personnel

As the Corporation is not the operator of many of its oil and gas properties, the Corporation will be dependent on such operators for the timing of activities related to such properties and will largely be unable to direct or control the activities of the operators. Additionally, the Corporation's success depends in large measure on certain key personnel. The loss of the services of such key personnel could have a material adverse effect on the Corporation. The Corporation does not have key person insurance in effect for management. The contributions of these individuals to the immediate operations of the Corporation are of central importance. In addition, the competition for qualified personnel in the oil and natural gas industry is intense and there can be no assurance that the Corporation will be able to continue to attract and retain all personnel necessary for the development and operation of its business. Investors must rely upon the ability, expertise, judgment, discretion, integrity and good faith of the management of the Corporation.

#### Jura May Not Realize the Benefits of its Growth Projects

As part of its strategy, Jura will continue existing efforts and initiate new efforts to develop new projects. A number of risks and uncertainties are associated with the development of these types of projects, including

political, regulatory, design, construction, labour, operating, technical, and technological risks, uncertainties relating to capital and other costs, and financing risks. The failure to develop one or more of these initiatives successfully could have an adverse effect on Jura's financial position and results of operations.

### Jura will be Subject to Significant Capital Requirements Associated with its Expanded Portfolio of Development Projects and may Issue Additional Equity Securities or Incur Significant Borrowings

Jura must be able to utilize available financing sources to finance its growth and sustain capital requirements. Jura could be required to raise significant additional capital through equity financings in the capital markets or to incur significant borrowings through debt financings to meet its capital requirements. If these financings are required, Jura's cost of raising capital in the future may be adversely affected. In addition, if Jura is required to make significant interest and principal payments resulting from a debt financing, Jura's financial condition and ability to raise additional funds may be adversely impacted. If Jura were to issue Common Shares, an existing holder of Common Shares may experience dilution in Jura's cash flow or earnings per share. Moreover, as Jura's intention to issue additional equity securities becomes publicly known, the Common Share price may be materially adversely affected.

Any significant delay in completing its development projects or the incurring of capital costs that are significantly higher than estimated, could have a significant adverse effect on Jura's results of operations and financial condition.

#### **Current Global Financial Conditions**

Current global financial conditions have been subject to significant and sustained volatility. Numerous financial institutions have either gone into bankruptcy or have had to be rescued by governmental authorities and numerous governments and governmental entities have had their credit ratings downgraded and their ability to support still fragile economies impeded. Access to public financing has been negatively impacted by both the credit market crisis and the current sovereign debt crisis. These factors may impact the ability of Jura to obtain equity or debt financing in the future and, if obtained, on terms favourable to Jura. If these increased levels of volatility and market turmoil continue, Jura's operations could be adversely impacted and the value and the price of the Common Shares could continue to be adversely affected.

### The Trading Price of the Common Shares May Be Volatile and Control Blocks May Depress the Trading Price and Liquidity of the Common Shares

The trading price of the Common Shares has been and may continue to be subject to material fluctuations and may increase or decrease in response to a number of events and factors, including:

- changes in the market price of the commodities that Jura sells and purchases;
- current events affecting the economic situation in Pakistan and otherwise internationally;
- trends in the oil and gas industry;
- regulatory and/or government actions;
- acquisitions and financings;
- the economics of current and future projects of Jura;
- quarterly variations in operating results;
- the operating and share price performance of other companies, including those that investors may deem comparable;

- the issuance of additional equity securities by Jura or the perception that such issuance may occur;
   and
- purchases or sales of blocks of Common Shares.

Part of this volatility may also be attributable to the current state of the stock market, in which wide price swings are common. This volatility may adversely affect the prices of Common Shares, regardless of the relative operating performance and could cause the market price of such shares to decline.

Further, JSEL holds 50,659,076 (73.3%) Common Shares, all or any number of which may only be traded pursuant to one or more prospectuses or certain exemptions from applicable Canadian securities laws. As a result of JSEL's significant controlling position, it may be more difficult for Jura to be acquired by a third party, and therefore the likelihood of the market price of Common Shares reflecting a possible take-over premium is significantly diminished. In addition, given the impediments and restrictions on trading in relation to the foregoing Common Shares, the liquidity of the Common Shares may be depressed.

#### **Reserve Replacement**

Jura's future oil and natural gas reserves, production, and cash flows to be derived therefrom, are highly dependent on Jura successfully acquiring or discovering new reserves. Without the continual addition of new reserves, any existing reserves Jura may have at any particular time and the production therefrom, will decline over time as such existing reserves are exploited. A future increase in Jura's reserves will depend not only on Jura's ability to develop any properties it may have from time to time, but also on its ability to select and acquire suitable producing properties or prospects. There can be no assurance that Jura's future exploration and development efforts will result in the discovery and development of additional commercial accumulations of oil and natural gas.

#### **Reserve Estimates**

There are numerous uncertainties inherent in estimating quantities of oil, natural gas and NGLs (or similar substances) reserves and cash flows to be derived therefrom, including many factors beyond Jura's control. The information concerning reserves and associated cash flow set forth in this AIF represents estimates only. In general, estimates of economically recoverable oil and natural gas reserves and the future net cash flows therefrom, are based upon a number of variable factors and assumptions, such as historical production from the properties, production rates, ultimate reserve recovery, timing and amount of capital expenditures, marketability of oil and natural gas, royalty rates, the assumed effects of regulation by governmental agencies and future operating costs, all of which may vary from actual results. All such estimates are to some degree speculative, and classifications of reserves are only attempts to define the degree of speculation involved. For those reasons, estimates of the economically recoverable oil and natural gas reserves attributable to any particular group of properties, classification of such reserves based on risk of recovery and estimates of future net revenues expected therefrom, prepared by different engineers, or by the same engineers at different times, may vary. Jura's actual production, revenues, taxes and development and operating expenditures with respect to its reserves will vary from estimates thereof and such variations could be material. Further, the evaluations are based, in part, on the assumed success of the exploitation activities intended to be undertaken in future years. The reserves and estimated cash flows to be derived therefrom, contained in such evaluations will be reduced to the extent that such exploitation activities do not achieve the level of success assumed in the evaluation.

Estimates of proved reserves that may be developed and produced in the future are often based upon volumetric calculations and upon analogy to similar types of reserves rather than actual production history. Estimates based on these methods are generally less reliable than those based on actual production history. Subsequent evaluation of the same reserves based upon production history and production practices will result in variations in the estimated reserves and such variations could be material. Many of Jura's producing wells have a limited production history and thus there is less historical production on which to base the reserves estimates. In addition, a significant portion of Jura's reserves may be attributable to a

limited number of wells and, therefore, a variation in production results or reservoir characteristics in respect of such wells may have a significant impact upon Jura's reserves.

In accordance with applicable securities laws, McDaniel has used forecast price and cost estimates in calculating reserve quantities. Actual future net cash flows will be affected by other factors such as actual production levels, supply and demand for oil and natural gas, curtailments or increases in consumption by oil and natural gas purchasers, changes in governmental regulation or taxation and the impact of inflation on costs. Actual production and cash flows derived therefrom will vary from the estimates contained in the McDaniel 2018 Report and such variations could be material. The McDaniel 2018 Report is based in part on the assumed success of activities Jura intends to undertake in future years. The reserves and estimated cash flows to be derived therefrom, contained in the McDaniel 2018 Report will be reduced to the extent that such activities do not achieve the level of success assumed in the McDaniel 2018 Report.

The evaluation by McDaniel of the reserves associated with Jura's oil and gas reserves in the McDaniel 2018 Report is effective as of a specific effective date and has not been updated and thus does not reflect changes in Jura's reserves since that date.

#### **Income Taxes**

Jura believes that it is in full compliance with all applicable tax legislation. However, such returns are subject to reassessment by the applicable taxation authority. In the event of a successful reassessment of Jura, whether by re-characterization of exploration and development expenditures or otherwise, such reassessment may have a significant impact on current and future taxes payable by Jura, which in turn could materially and adversely affect its financial condition.

#### **Alternatives to and Changing Demand for Petroleum Products**

Fuel conservation measures, alternative fuel requirements, increasing consumer demand for alternatives to oil and natural gas, and technological advances in fuel economy and energy generation devices could reduce the demand for crude oil and other liquid hydrocarbons. Jura cannot predict the impact of changing demand for oil and natural gas products, and any major changes may have a material adverse effect on Jura's business, financial condition, results of operations and cash flows.

#### **Third-Party Credit Risk and Delays**

Jura is or may be exposed to third-party credit risk through its contractual arrangements with its current or future Working Interest Owners, marketers of its petroleum and natural gas production and other parties. In the event, such entities fail to meet their contractual obligations to Jura, such failures could have a material adverse effect on Jura and its operations. In addition, poor credit conditions in the industry and of Working Interest Owners may impact a Working Interest Owner's willingness to participate in Jura's ongoing capital program, potentially delaying the program and the result of such program until Jura finds a suitable alternative partner.

In addition to the usual delays in payments by purchasers of oil and natural gas to Jura or to the operators, and the delays by operators in remitting payment to Jura, payments between these parties may be delayed due to restrictions imposed by lenders, accounting delays, delays in the sale of delivery of products, delays in the connection of wells to a gathering system, adjustment for prior periods, or recovery by the operator of expenses incurred in the operation of the properties. Any of these delays could reduce the amount of cash flow available for the business of Jura in a given period and expose Jura to additional third party credits risks.

#### **Accounting Policies**

The Corporation's audited consolidated financial statements for the year ended December 31, 2018, filed on SEDAR, were prepared using accounting policies and methods prescribed by IFRS as issued by the

International Accounting Standards Board. Significant accounting policies under IFRS are described in more detail in the notes to the audited consolidated financial statements.

Jura has internal controls over financial reporting. These controls are designed to provide reasonable assurance that transactions are properly authorized, assets are safeguarded against unauthorized or improper use, and transactions are properly recorded and reported. These controls cannot provide absolute assurance with respect to the reliability of financial reporting and financial statement preparation.

#### Risk to Information Technologies Systems and Cyber Security

The Corporation may be negatively affected by cybersecurity incidents or other IT systems disruption. The Corporation relies heavily on its information technology systems including, without limitation, its networks, equipment, hardware, software, telecommunications, and other information technology (collectively, "IT systems"), and the IT systems of its vendors and third party service providers, to operate its business as a whole. Although the Corporation has not experienced any material losses to date relating to cybersecurity, or other IT systems disruptions, there can be no assurance that the Corporation will not incur such losses in the future. Despite the Corporation's efforts to mitigate IT systems security risks, the risk and exposure to these threats cannot be fully mitigated because of, among other things, the evolving nature of cybersecurity threats. As a result, cybersecurity and the continued development and enhancement of controls, processes and practices designed to protect IT systems from cybersecurity threats remain a priority. As these threats continue to evolve, the Corporation may be required to expend additional resources to continue to modify or enhance protective measures or to investigate and remediate any cybersecurity vulnerabilities. Any cybersecurity incidents or other IT systems disruption could result in operational delays, destruction or corruption of data, security breaches, financial losses from remedial actions, the theft or other compromising of confidential or otherwise protected information, fines and lawsuits, or damage to the Corporation's reputation. Any such occurrence could have an adverse impact on the Corporation's financial condition and operations.

#### **Assessments of Value of Acquisitions**

Acquisitions of oil and gas issuers and oil and gas assets are typically based on engineering and economic assessments made by independent engineers and the issuer's own assessments. These assessments will include a series of assumptions regarding such factors as recoverability and marketability of oil and gas, future prices of oil and gas and operating costs, future capital expenditures and royalties and other government levies which will be imposed over the producing life of the reserves. Many of these factors are subject to change and are beyond Spud's control. In particular, the prices of, and markets for, oil and natural gas products may change from those anticipated at the time of making such assessment. In addition, all such assessments involve a measure of geologic and engineering uncertainty which could result in materially lower production and reserves than anticipated.

#### Forward-Looking Information may Prove Inaccurate

Investors are cautioned not to place undue reliance on forward-looking information. By its nature, forward-looking information involves numerous assumptions, known and unknown risks and uncertainties, of both a general and specific nature, that could cause actual results to differ materially from those suggested by the forward-looking information or contribute to the possibility that predictions, forecasts or projections will prove to be materially inaccurate.

Additional information on the risks, assumptions and uncertainties are found in this AIF under the heading "Forward-Looking Statements".

#### **LEGAL PROCEEDINGS AND REGULATORY ACTIONS**

From time to time, the Corporation may become involved in legal or administrative proceedings in the normal conduct of business.

To the knowledge of the Corporation, there are no legal proceedings or regulatory actions material to the Corporation to which the Corporation is a party or of which any of its properties are the subject matter, nor are any such proceedings known to the Corporation to be contemplated.

Since the beginning of the most recently completed financial year, there have not been any penalties or sanctions imposed against the Corporation by a court relating to securities legislation or by a securities regulatory authority, nor have there been any other penalties or sanctions imposed by a court or regulatory body against the Corporation that would likely be considered important to a reasonable investor in making an investment decision, and the Corporation has not entered into any settlement agreements before a court relating to securities legislation or with a securities regulatory authority.

#### INTEREST OF MANAGEMENT AND OTHERS IN MATERIAL TRANSACTIONS

Other than as disclosed in this AIF, to the knowledge of the directors and officers of the Corporation, none of the directors or executive officers of the Corporation, nor any person or Corporation that beneficially owns, or controls or directs, directly or indirectly, more than 10% of the voting rights attached to all outstanding voting securities of the Corporation, nor any of their respective associates or affiliates, has or has had any material interest, direct or indirect, in any transaction within the three most recently completed financial years or during the Corporation's current year or in any proposed transaction which has materially affected or is reasonably expected to materially affect the Corporation except:

- Effective February 20, 2013, Jura entered into a loan agreement (the "Loan Agreement") with JSEL, which agreement was subsequently assigned by Jura to Spud in accordance with its terms, pursuant to which JSEL agreed to provide Jura with an \$11,000,000 credit facility (the "Facility") to enable Jura to satisfy cash call requirements associated with its development and production leases and exploration licenses and for general working capital purposes. The Facility was repayable at the demand of JSEL on the earlier of: (i) the first anniversary of the date of the Loan Agreement; and (ii) ten business days after the closing of a "Qualifying Financing", being a debt or equity financing by Jura for an amount in excess of the aggregate of amounts drawn under the Facility. On March 5, 2014, JSEL agreed to extend the term of the Loan Agreement and the Facility such that it was repayable at the demand of JSEL on the earlier of: (i) August 20, 2014; and (ii) ten business days after the closing of a Qualifying Financing. On October 1, 2014, JSEL agreed to further extend the term of the Loan Agreement and the Facility such that it is repayable at the demand of JSEL on the earlier of: (i) February 20, 2015; and (ii) ten business days after the closing of a Qualifying Financing. JSEL has provided a written undertaking to the Corporation that it will not demand repayment of the Facility unless the Corporation has sufficient funds to repay the Facility, in JSEL's reasonable judgment, or the Corporation closes a "Qualifying Financing". Pursuant to the Loan Agreement, the principal amount of advances outstanding at any time, and any overdue interest outstanding, bear interest at the US Dollar 3-month LIBOR plus 4%, compounded quarterly, not in advance. Outstanding principal and interest under the Facility is convertible in whole or in part at the option of JSEL on the basis of one (1) Common Share in the capital of Jura for each \$1.00 so converted on the terms set out in the Loan Agreement. Effective October 1, 2016, Spud and JSEL entered into a fourth amended and restated loan agreement, pursuant to which: (i) the repayment currency was changed to US dollars; (ii) the interest rate on the Facility was changed from a US Dollar 3-month LIBOR plus 4% to 11% per annum compounded quarterly; and (iii) the principal and accrued interest was made repayable in four quarterly installments commencing from January 1, 2018.
- On April 29, 2019, and with an effective date of January 1, 2018, Spud entered into an amended and restated services agreement (the "Services Agreement") with JS Investment Consultancy FZE (the "Consultant"), which is wholly owned by Stephen C. Smith. Pursuant to the Services

Agreement, the Consultant agreed to, among other things; provide the services of Mr. Smith to act as an advisor to the management of the Corporation. Jura also anticipates receiving the benefits of the Consultant's extensive network of contacts, offices and specialists in Pakistan and internationally. The Services Agreement and fees payable there under have been approved by the independent directors of Jura unrelated to the transaction. Under the Services Agreement, the Consultant receives quarterly fees of \$20,000 in aggregate (equal to \$80,000 per annum). The term of the Services Agreement will continue indefinitely unless terminated on at least ninety days' written notice by either party to the other party.

- On December 30, 2015, Spud entered into a Musharaka Agreement dated effective December 18, 2015 in respect of the Zarghun South lease under a syndicated credit facility (the "Syndicated Credit Facility") with ABPL, as lead arranger, in the amount of up to PKR 750 million (approximately \$5.36 million). On April 8, 2016, Spud entered into a First Supplemental Musharaka Agreement, pursuant to which the Syndicated Credit Facility amount in respect of the Zarghun South lease was increased from PKR 750 million (approximately \$5.36 million) to PKR 960 million (approximately \$6.87 million). On May 11, 2016, Spud entered into a second Musharaka Agreement in respect of the Sara and Suri leases in the amount of up to PKR 100 million (approximately \$0.72 million) pursuant to which the gross Syndicated Credit Facility amount was increased from PKR 960 million (approximately \$6.87 million) to PKR 1,060 million (approximately \$7.58 million). Effective February 2, 2017, Spud entered into a third Musharaka Agreement in respect of the Zarghun South-3 development well pursuant to which the gross Syndicated Credit Facility was increased to PKR 1,230 million (approximately \$8.80 million). Included among the participants which comprise the syndicate for the Syndicated Credit Facility is JSB with participation of PKR 670 million (approximately \$4.79 million). JSB is a Pakistani bank which is indirectly controlled by Mr. Jahangir Siddiqui, who controls JSEL. JSB's participation in the Syndicated Credit Facility is on the same terms as each other unrelated syndicate member.
- On November 14, 2017, Spud entered into a term finance facility with JSB in the amount of up to PKR 200 million (approximately \$1.43 million). The facility carries mark-up at the rate of 3-month KIBOR plus 2.75%. The principal is repayable in twelve equal quarterly installments in arrears, commencing fifteen months after the date of the first disbursement, being November 14, 2017.
- On April 23, 2018, Spud, Jura and JSEL entered into a short term loan agreement (the "Short Term Loan Agreement"), for an amount of \$2 million. The principal amount under the Loan Agreement carries interest at a rate of 11% per annum compounded quarterly. The principal and accrued interest will be due for repayment on the 181st day following the first drawdown under the Loan Agreement.

#### **REGISTRAR AND TRANSFER AGENT**

The registrar and transfer agent for the Common Shares is Computershare Trust Company of Canada, Suite 600, 530 – 8<sup>th</sup> Avenue SW, Calgary, Alberta T2P 3S8.

#### **MATERIAL CONTRACTS**

Other than the following contracts, there are no material contracts entered into by the Corporation or its subsidiaries during the most recently completed financial year or since January 1, 2002 which are still in effect other than contracts entered into in the ordinary course of business:

- the Loan Agreement;
- the Services Agreement;
- the Short Term Loan Agreement;

- the agreements in respect of the Syndicated Credit Facility;
- the agreements in respect of the JSB Term Finance Facility;
- the Settlement Agreement;
- the trust agreement between Spud and EEL dated January 3, 2011 pursuant to which EEL holds an 11% and a 12% Working Interest in the Sanjawi and Zamzama North concessions, respectively, for the benefit of Spud;
- the share purchase agreement between Spud and Jahangir Siddiqui & Sons Limited dated December 28, 2011 pursuant to which Spud agreed to purchase EEL for consideration of \$1,000;
- the Zarghun South Lease;
- the Sara and Suri Leases;
- the Ayesha Lease;
- the Aminah Lease;
- the Ayesha North Lease;
- the Sanjawi Exploration License;
- the Sanjawi Farm-Out Agreement;
- the Zamzama North Exploration License;
- the Zamzama Farm-Out Agreement;
- the Guddu Exploration License;
- the Reti, Maru and Maru South Leases;
- the Guddu Farm-Out Agreement;
- the Badin IV North Exploration License;
- the Badin IV South Exploration License; and
- the farm-in agreement between Spud and MPCL dated January 31, 2002 relating to the acquisition by Spud of its Working Interest in Zarghun South.

#### **INTERESTS OF EXPERTS**

Reserves estimates contained in this AIF are derived from a report prepared by McDaniel, an independent reserves evaluator. As of the date hereof, to the knowledge of the Corporation, neither McDaniel nor its officers, directors, employees or consultants beneficially own, directly or indirectly, any of the outstanding Common Shares. In addition, none of the officers, directors, employees or consultants of McDaniel is currently expected to be elected, appointed or employed as a director, officer or employee of the Corporation or any of its associates or affiliates.

As of the date of this AIF, PricewaterhouseCoopers LLP, Chartered Professional Accountants have reported that they are independent in accordance with the Rules of Professional Conduct as outlined by the Chartered Professional Accountants of Alberta.

#### ADDITIONAL INFORMATION

Additional information regarding Jura may be found on SEDAR at www.sedar.com. Additional information, including directors' and officers' remuneration and indebtedness, the principal holders of Common Shares and the securities authorized for issuance under equity compensation plans, is contained in the Corporation's information circular relating to the annual meeting of shareholders, or any adjournment thereof. Additional financial information is provided in the annual audited consolidated financial statements of the Corporation and the management's discussion and analysis for the financial year ended December 31, 2018.

## APPENDIX A FORM 51-101F1 Statement of Reserves Data and Other Oil and Gas Information

The reserves data set forth below (the "2018 Reserves Data") is based upon the evaluation by McDaniel of the reserves associated with Jura's assets and the value of future net revenue attributable to such reserves. The McDaniel 2018 Report has been prepared in accordance with the standards contained in the COGE Handbook and the reserves definitions contained in NI 51-101 and the COGE Handbook. The 2018 Reserves Data summarizes the oil, liquids and natural gas reserves associated with Jura's assets and properties and the net present values of future net revenue for these reserves using forecast prices and costs as at December 31, 2018.

All evaluations of future revenue are stated after the deduction of future income tax expenses (unless otherwise noted in the tables), royalties, development costs, production costs and well abandonment costs but before consideration of indirect costs such as administrative, overhead and other miscellaneous expenses. The estimated future net revenue contained in the following tables does not represent the fair market value of reserves associated with Jura's assets and properties. There is no assurance that the forecast price and cost assumptions contained in the McDaniel 2018 Report will be attained and variances could be material. Other assumptions and qualifications relating to costs and other matters are summarized in the notes to the following tables. The recovery and reserves estimates for Jura's assets and properties described herein are estimates only and there is no guarantee that the estimated reserves will be recovered. The actual reserves for Jura's assets and properties may be greater or less than those calculated. In the various reserves related tables included herein, columns may not add due to rounding.

All of Jura's oil and natural gas reserves are located in Pakistan. The following table summarizes the reserves evaluated at December 31, 2018 using forecast prices and costs.

Unless otherwise indicated, references herein to "\$" or "dollars" are to United States (U.S.) dollars and references herein to "\$MM" are to million United States (U.S.) dollars.

## SUMMARY OF OIL AND GAS RESERVES AND NET PRESENT VALUES OF FUTURE NET REVENUE as of December 31, 2018

	Light and	Medium Oil	Heavy Oil		Natural Gas <sup>(9)</sup>		Natural Gas Liquids	
RESERVES CATEGORY	Gross	Net	Gross	Net	Gross <sup>(10)</sup>	Net <sup>(11)</sup>	Gross <sup>(10)</sup>	Net <sup>(11)</sup>
	(MBbls)	(MBbls)	(MBbls)	(MBbls)	(MMcf)	(MMcf)	(MBbls)	(MBbls)
PROVED <sup>(1)</sup>								
Developed Producing <sup>(2)</sup>	-	-	•	•	11,667	10,440	4	4
Developed Non-Producing <sup>(3)</sup>	-	-	-	-	1,009	883	-	ı
Undeveloped <sup>(4)</sup>	-	-	•	•	18,642	16,648	79	70
TOTAL PROVED	-	-	•		31,317	27,971	83	73
PROBABLE <sup>(5)</sup>	-	-	•	•	30,348	27,054	101	89
TOTAL PROVED PLUS PROBABLE <sup>(6)</sup>	-	-	-	-	61,665	55,025	185	162
POSSIBLE <sup>(7)</sup>	-	-	-		22,492	19,811	163	143
TOTAL PROVED PLUS					_			_
PROBABLE PLUS POSSIBLE <sup>(8)</sup>	-	-	ı	ı	84,157	74,837	348	305

#### Net Present Value(12) of Future Net Revenue Based on Forecast Prices and Costs:

	Befor	e Deductin	g Income Ta	axes Disco	unted at	Unit Value
RESERVES CATEGORY	0% (\$000s)	5% (\$000s)	10% (\$000s)	15% (\$000s)	20% (\$000s)	Disc. @ 10%/Yr. (13) (\$/Boe)
PROVED <sup>(1)</sup>						
Developed Producing <sup>(2)</sup>	33,726	29,431	26,101	23,463	21,332	14.47
Developed Non-Producing <sup>(3)</sup>	590	576	556	534	511	3.65
Undeveloped (4)	75,091	58,052	46,386	38,127	32,099	15.78
TOTAL PROVED	109,408	88,059	73,043	62,123	53,941	14.92
PROBABLE <sup>(5)</sup>	107,548	69,734	49,304	37,225	29,519	10.37
TOTAL PROVED PLUS PROBABLE <sup>(6)</sup>	216,956	157,792	122,347	99,348	83,460	12.68
POSSIBLE <sup>(7)</sup>	83,461	58,661	43,603	33,861	27,234	12.25
TOTAL PROVED PLUS PROBABLE PLUS POSSIBLE <sup>(8)</sup>	300,416	216,454	165,950	133,210	110,694	12.56

#### Net Present Value<sup>(12)</sup> of Future Net Revenue Based on Forecast Prices and Costs:

RESERVES CATEGORY	After	Deducting	Income Tax	kes Discou	nted at
	0% (\$000s)	5% (\$000s)	10% (\$000s)	15% (\$000s)	20% (\$000s)
PROVED <sup>(1)</sup>					
Developed Producing <sup>(2)</sup>	33,726	29,431	26,101	23,463	21,332
Developed Non-Producing <sup>(3)</sup>	590	576	556	534	511
Undeveloped (4)	75,091	58,052	46,386	38,127	32,099
TOTAL PROVED	109,408	88,059	73,043	62,123	53,941
PROBABLE <sup>(5)</sup>	80,784	54,736	40,406	31,699	25,957
TOTAL PROVED PLUS PROBABLE <sup>(6)</sup>	190,192	142,794	113,449	93,823	79,898
POSSIBLE <sup>(7)</sup>	57,946	41,694	31,874	25,505	21,133
TOTAL PROVED PLUS PROBABLE PLUS POSSIBLE <sup>(8)</sup>	248,138	184,489	145,323	119,327	101,031

#### Notes to Reserves Data Tables:

- (1) "Proved Reserves" are those Reserves that can be estimated with a high degree of certainty to be recoverable. It is likely that the actual remaining quantities recovered will exceed the estimated Proved Reserves. At least a 90% probability that the quantities actually recovered will equal or exceed the estimated Proved Reserves is the target level of certainty.
- (2) "Developed Producing" reserves are those reserves that are expected to be recovered from completion intervals open at the time of the estimate. These reserves may be currently producing or, if shut-in, they must have previously been on production, and the date of resumption of production must be known with reasonable certainty.
- "Developed Non-Producing" reserves are those reserves that either have not been on production, or have previously been on production, but are shut-in, and the date of resumption of production is unknown.
- "Undeveloped" reserves are those reserves expected to be recovered from known accumulations where a significant expenditure (for example, when compared to the cost of drilling a well) is required to render them capable of production. They must fully meet the requirements of the reserve classification (proved, probable, possible) to which they are assigned.
- "Probable Reserves" means those additional reserves that are less certain to be recovered than Proved Reserves. It is equally likely that the actual remaining quantities recovered will be greater or less than the sum of the estimated Proved plus Probable Reserves. At least a 50% probability that the quantities actually recovered will equal or exceed the sum of the estimated Proved plus Probable Reserves is the target level of certainty.
- (6) "Proved plus Probable Reserves" means the aggregate of Proved Reserves and Probable Reserves.
- (7) "Possible Reserves" means those additional reserves that are less certain to be recovered than Probable Reserves. It is unlikely that the actual remaining quantities recovered will exceed the sum of the estimated Proved plus Probable plus Possible Reserves. There is a 10% probability that the quantities actually recovered will equal or exceed the sum of Proved plus Probable plus Possible Reserves.
- (8) "Proved plus Probable plus Possible Reserves" means the aggregate of Proved Reserves, Probable Reserves and Possible Reserves.
- (9) Estimates of reserves of natural gas include associated and non-associated gas.
- "Gross Reserves" are Jura's Working Interest (operating or non-operating) reserves before the deduction of royalties and without including any royalty interests.
- (11) "Net Reserves" are Jura's Working Interest (operating or non-operating) reserves after deductions of royalty obligations plus Jura's royalty interests.
- (12) **Net Present Value of Future Net Revenue** includes all resource income: sale of oil, gas, by-product reserves; processing of third party reserves; other income.
- (13) The unit values are based on net reserve volumes before income tax.
- (14) Income taxes include all resource income, appropriate income tax calculations and prior tax pools.

- "Reserves" or "reserves" are estimated remaining quantities of oil and natural gas and related substances anticipated to be recoverable from known accumulations, from a given date forward, based on: (a) analysis of drilling, geological, geophysical and engineering data; (b) the use of established technology; and (c) specified economic conditions, which are generally accepted as being reasonable. Reserves are classified according to the degree of certainty associated with the estimates.
- (16) Numbers may not add exactly due to rounding.

## TOTAL FUTURE NET REVENUE (UNDISCOUNTED) AS OF DECEMBER 31, 2018 FORECAST PRICES AND COSTS

	Revenue (\$000s)	Royalties (\$000s)	Operating Costs (\$000s)	Development Costs (\$000s)	Abandonment and Reclamation Costs (\$000s)	BT Future Net Revenue (\$000s) (1)	Income Taxes (\$000s)	AT Future Net Revenue (\$000s) (1)
Proved	173,764	18,447	33,021	11,510	1,378	109,408	-	109,408
Proved plus Probable	352,281	37,749	79,109	16,725	1,743	216,956	26,764	190,192
Proved plus Probable								
plus Possible	485,459	53,634	105,461	24,144	1,804	300,416	52,278	248,138

#### Notes:

- (1) BT = Before Taxes and AT = After Taxes
- (2) Operating cost less processing and other income.

#### NET PRESENT VALUE OF FUTURE NET REVENUE BY PRODUCTION GROUP AS OF DECEMBER 31, 2018 FORECAST PRICES AND COSTS

Reserves Category	Production Group	Future Net Revenue Before Income Taxes (discounted at 10%/year) (\$000s)	Unit Value Before Income Taxes (discounted at 10%/ year) (\$/Boe)
Proved	Light and Medium Crude Oil(1)	-	i
	Heavy Oil	-	-
	Natural Gas	73,043	14.92
Proved plus	Light and Medium Crude Oil(1)	-	-
Probable	Heavy Oil	=	-
	Natural Gas	122,347	12.68
Proved plus	Light and Medium Crude Oil(1)	-	-
Probable plus	Heavy Oil	-	-
Possible	Natural Gas	165,950	12.56

#### Note:

(1) Includes solution gas.

#### **Summary of Pricing and Inflation Rate Assumptions**

Sale prices used by McDaniel in preparing the 2018 Reserves Data were:

Year	Crude oil price	Badin IV S	South	Badin IV	North	Zarghun South			Guddu	Sara and Suri
	Forecast <sup>(1)</sup>	Condensate	Gas	Condensate	Gas	Condensate	Tight	Conventional	Gas	Gas
	\$/Bbl	\$/Bbl	\$/Mcf	\$/Bbl	\$/Mcf	\$/Bbl	\$/Mcf	\$/Mcf	\$/Mcf	\$/Mcf
2019	64.50	55.93	5.07	55.93	6.21	64.50	5.57	2.56	3.32	1.72
2020	67.90	58.31	5.19	58.31	6.35	67.90	5.68	2.56	3.39	1.81
2021	70.70	60.31	5.27	60.31	6.45	70.70	5.76	2.56	3.45	1.90
2022	73.70	62.43	5.33	62.43	6.53	73.70	5.81	2.56	3.50	2.00
2023	75.30	63.65	5.37	63.65	6.57	75.30	5.84	2.56	3.52	2.10
2024	76.70	64.73	5.40	64.73	6.61	76.70	5.87	2.56	3.54	2.20
2025	78.30	65.95	5.43	65.95	6.65	78.30	5.89	2.56	3.56	2.31
2026	79.80	67.10	5.47	67.10	6.69	79.80	5.92	2.56	3.59	2.43
2027	81.40	68.31	5.50	68.31	6.74	81.40	5.94	2.56	3.61	2.55
2028	83.10	69.59	5.54	69.59	6.78	83.10	5.97	2.56	3.64	2.67

#### Note:

(1) Escalation rate of 2% per year applied after 2028.

#### **Reconciliation of Changes in Reserves**

The following tables set forth a reconciliation of the changes in gross total company Working Interest reserve volumes as at December 31, 2018 against such gross reserves as at December 31, 2017, based on the forecast prices and costs assumptions:

		Natural Gas		NGLs			
	Proved	Probable	Proved plus Probable	Proved	Probable	Proved plus Probable	
	(MMcf)	(MMcf)	(MMcf)	(MBbls)	(MBbls)	(MBbls)	
December 31, 2017	34,094	28,278	62,372	86	100	186	
Technical revision	(422)	1,926	1,504	(1)	1	-	
Discoveries	408	144	552	-	-	-	
Dispositions	-	ı	-	-	1	•	
Extensions	-	ı	=	-	ı	ı	
Improved recovery	-	ı	=	-	ı	ı	
Acquisitions	-	ı	=	-	ı	ı	
Production	(2,763)	ı	(2,763)	(1)	ı	(1)	
Economic Factors	-	-	-	-	-		
December 31, 2018	31,317	30,348	61,665	83	101	185	

		Light Crude O	il	Total			
	Proved	Probable	Proved plus Probable	Proved	Probable	Proved plus Probable	
	(MBbls)	(MBbls)	(MBbls)	(MBoe)	(MBoe)	(MBoe)	
December 31, 2017	-	-		5,964	4,976	10,940	
Technical revision	-	-	-	(74)	333	259	
Discoveries	- 1	-	-	70	25	95	
Dispositions	- 1	-	-	-	-	-	
Extensions	- 1	-	-	-	-	-	
Improved recovery	-	-	-	-	-	-	
Acquisitions	- 1	-	-	-	-	-	
Production	- 1	-	-	(477)	-	(477)	
Economic Factors	-	-	-	-	-		
December 31, 2018	-	-	-	5,483	5,334	10,817	

#### Notes:

- Figures may not add due to rounding.
- (1) (2) The Corporation has no unconventional reserves (including, for example, bitumen, synthetic crude oil, coalbed methane), nor any heavy oil.

#### ADDITIONAL INFORMATION RELATING TO RESERVES DATA

#### **Undeveloped Reserves**

The following table sets forth the Proved Undeveloped Reserves and the Probable Undeveloped Reserves, each by product type, attributed to Jura's assets in each of the most recent three financial years based on forecast prices and costs.

		Gross Reserves First Attributed by Year				
Product Type	Units	2016	2017	2018	Total	
Proved Undeveloped						
Light & Medium Oil	MBbls	-	-	-	=	
Heavy Oil	MBbls	-	-	-	=	
Natural Gas	MMcf	8,237	15,823	408	24,468	
Natural Gas Liquids	MBbls	28	81	-	109	
Total: Oil Equivalent	MBoe	1,448	2,809	70	4,327	
Probable Undeveloped						
Light & Medium Oil	MBbls	-	-	-	-	
Heavy Oil	MBbls	-	-	-	=	
Natural Gas	MMcf	8,910	(2,881)	144	6,173	
Natural Gas Liquids	MBbls	30	60	-	90	
Total: Oil equivalent	MBoe	1,566	(437)	25	1,131	

Undeveloped reserves are attributed by McDaniel in accordance with standards and procedures contained in the COGE Handbook. Proved Undeveloped Reserves are those Reserves that can be estimated with a high degree of certainty and are expected to be recovered from known accumulations where a significant expenditure is required to render them capable of production. Probable Undeveloped Reserves are those Reserves that are less certain to be recovered than Proved Reserves and are expected to be recovered from known accumulations where a significant expenditure is required to render them capable of production.

Jura is planning to develop its Proved Undeveloped Reserves over the next two years through commencement of development activities and further drilling of development wells where deemed necessary to achieve optimal depletion of reserves. Jura is planning to develop its Probable Undeveloped Reserves over the next two years through geological and geophysical studies, seismic acquisition/interpretation and the drilling of appraisal/exploratory wells.

#### **Significant Factors or Uncertainties**

The process of evaluating reserves is inherently complex. It requires significant judgments and decisions based on available geological, geophysical, engineering and economic data. These estimates may change substantially as additional data from ongoing development activities and production performance becomes available and as economic conditions impacting oil and gas prices and costs change. The reserve estimates contained herein are based on current production forecasts, prices and economic conditions and other factors and assumptions that may affect the reserve estimates and the present worth of the future net revenue therefrom. These factors and assumptions include, among others: (i) historical production in the area compared with production rates from analogous producing areas; (ii) initial production rates; (iii) production decline rates; (iv) ultimate recovery of reserves; (v) success of future development activities; (vi) marketability of production; (vii) effects of government regulations; and (viii) other government levies imposed over the life of the reserves.

As circumstances change and additional data becomes available, reserve estimates also change. Estimates are reviewed and revised, either upward or downward, as warranted by the new information. Revisions are often required due to changes in well performance, prices, economic conditions and government restrictions. Revisions to reserve estimates can arise from changes in year-end prices, reservoir performance and geological conditions or production. These revisions can be either positive or negative.

While Jura does not anticipate that any significant economic factors or significant uncertainties will affect any particular components of the reserves data, the reserves can be affected significantly by fluctuations in product pricing, capital expenditures, operating costs, royalty regimes and well performance that are beyond the control of Jura. See "Risk Factors".

#### **Future Development Costs**

The following table sets forth the development costs deducted in estimating Jura's future net revenue attributable to the reserve categories set forth below as of December 31, 2018, stated with no discount and a discount rate of 10%, as indicated:

Forecast Prices and Costs								
Year	Proved Reserves (\$000s)  Proved Plus Probable Reserves (\$000s)		Proved Plus Probable Plus Possible Reserves (\$000s)					
2019	3,399	3,399	3,399					
2020	5,304	5,317	5,317					
2021	-	2,393	2,393					
2022	-	2,702	8,220					
2023	104	104	1,890					
Thereafter	2,703	2,809	2,924					
Total Undiscounted	11,510	16,724	24,143					
Discounted @ 10%	9,361	13,256	18,418					

#### Note:

(1) Future development costs shown are associated with booked reserves in the McDaniel 2018 Report and do not necessarily represent Jura's full exploration and development budget.

Future development costs are expected to be funded through a combination of funds from operations and future capital injections. Jura's management does not anticipate that costs incurred in connection with future development will have a material adverse impact on the economic viability of the reserves.

#### OTHER OIL AND GAS INFORMATION

#### **Description of Principal Oil and Gas Properties**

For a description of Jura's principal oil and gas properties, see "Description of the Business – Principal Areas".

#### Oil and Gas Wells

The following table sets out the number and status of oil and gas wells associated with the properties in which Jura held a Working Interest and which were producing, or considered to be capable of production, as at December 31, 2018.

	Oil		Natural	Gas
	<b>Gros</b> s	Net	Gross	Net
Zarghun South				
Producing	-	-	3	1.2
Non-producing	-	-	-	=
Guddu				
Producing	-	-	7	0.75
Non-producing	-	-	1	0.11
Badin IV South				
Producing	-	-	-	=
Non-producing	-	-	3	0.83
Badin IV North				
Producing	-	=	-	=
Non-producing	-	-	1	0.28
Sara and Suri				
Producing	-	-	-	=
Non-producing	-	-	3	1.8

Total				
Producing	-	-	10	1.95
Non-producing	-	-	8	3.02

#### **Properties with no Attributed Reserves**

The following table sets information concerning Jura's assets with no attributed reserves as at December 31, 2018.

Unproved Properties	Gross Acres (1)	Net Acres (2)
Sanjawi Exploration License	558,080	150,682
Zamzama North Exploration License	303,749	72,898
Badin IV North Exploration License	215,708	59,320
Badin IV South Exploration License	213,600	58,740
Guddu Exploration License	517,290	55,143

#### Notes:

- (1) "Gross Acres" are the total acres in which Jura has or had an interest.
- (2) "Net Acres" is the aggregate of the total acres in which Jura has or had an interest multiplied by Jura's Working Interest percentage held therein.

Jura expects that all Exploration Licenses in respect of its unproven properties will be renewed. Accordingly, it does not expect that any of its rights to explore, develop and exploit its unproven properties will expire within one year.

The following tables set out the nature, timing, and cost of outstanding minimum work commitments under Exploration Licenses for the above properties:

Zamzama North Exploration License					
Phase I – Year	Work Program	Minimum Financial Commitment Gross (\$MM)	Minimum Financial Commitment Net (\$MM)		
Three	Three exploratory wells (firm) to a depth of 3,700 meters or 100 meters in Pab Sandstone, whichever is shallower	5.1	1.2		
	Total	5.1	1.2		

Award date: December 15, 2007

**Exploration License Status:** Phase I of the exploration license for the Zamzama North Exploration License expired on December 14, 2011. On February 22, 2016 and DGPC has issued a notice to the operator for the fulfillment of outstanding work obligations stipulated in the Zamzama North PCA within a period of 60 days.

Sanjawi Exploration License					
Phase I – Year	Work Program	Minimum Financial Commitment Gross (\$MM)	Minimum Financial Commitment Net (\$MM)		
One	Acquisition of 330 L.Km of 2D seismic data	2.5	0.7		
Two	Processing and interpretation of data	0.4	0.1		
Three	Drilling of 2 wells. Objectives are Dunghan, Parh and Chiltan. Committed well depth is Chiltan Limestone or 1,750 meters, whichever is shallower	6.5	1.8		
	Total	9.3	2.5		

Award date: November 16, 2007

**Exploration License Status:** An application for *force majeure* was made to the DGPC on October 26, 2011 and remains subject to DGPC approval. On February 12, 2016, the DGPC served a notice for termination of the Sanjawi exploration license.

	Badin IV South Exploration License					
Phase II – Year	Minimum Financial Minimum Financial Commitment Commitment Gross (\$MM) Net (\$MM)					
One	One exploratory well to test the potential of the lower Goru	3.6	1.0			
	Total	3.6	1.0			

Award date: January 5, 2006

**Exploration License Status:** On July 2, 2018, the operator, on behalf of Badin IV North Exploration License Working Interest Owners, applied for extension with respect to Phase-II of the Badin IV South Exploration License for a period of 24 months.

#### **Badin IV North Exploration License**

Badin IV North Exploration License				
Phase II – Year	Work Program	Minimum Financial Commitment Gross (\$MM)	Minimum Financial Commitment Net (\$MM)	
One	One exploratory well to test the potential of the lower Goru	3.6	1.0	
	Total	3.6	1.0	

Award date: January 5, 2006

Exploration License Status: The Badin IV North Exploration License will expire on December 6, 2019.

	Guddu Exploration License					
Phase 1 – Year	Work Program	Minimum Financial Commitment Gross (\$MM)	Minimum Financial Commitment Net (\$MM)			
Three	One exploratory well to test the potential of the lower Goru Sands	3.0	0.4			
	Total	3.0	0.4			

Award date: February 2, 2000

Exploration License Status: The Guddu Exploration License will expire on May 24, 2020.

#### Significant Factors or Uncertainties Relevant to Properties with no Attributed Reserves

The development of properties with no attributed reserves can be affected by a number of factors including, but not limited to, project economics, forecasted commodity price assumptions, cost estimates and access to infrastructure. These and other factors could lead to the delay or the acceleration of projects related to these properties.

Other than the Sanjawi Exploration License, in respect of which Heritage Oil (as operator) has submitted an application for the declaration of a *force majeure* due to the security situation and lack of free and orderly access to the Sanjawi Block, there are no significant economic factors or uncertainties that may affect the anticipated development or production of Jura's properties with no attributed reserves.

The Zamzama North concession is located in the immediate vicinity of existing pipeline infrastructure. No pipeline facilities exist near the Sanjawi Concession. If the resource potential of the Sanjawi area is confirmed, the construction of major pipeline facilities would be warranted.

#### **Forward Contracts**

There are no contracts under which Jura may be precluded from fully realizing, or may be protected from the full effect of, future market prices for oil or gas.

Jura is under no transportation obligations or commitments for future physical deliveries of oil or gas which exceed Jura's expected related future production from its proved reserves.

#### **Costs Incurred**

The following table summarizes capital expenditures made by Jura for the financial year ended December 31, 2018.

	(\$000s)
Property Acquisition Costs:	
Proved Properties	-
Unproved Properties	-
Exploration Costs	2,549
Development Costs	2,131
Total	4,680

#### **Exploration and Development Activities**

For the financial year ended December 31, 2018, Jura participated in the following exploration and development wells.

Number of Wells Drilled						
	Explo	ration	Development		Total	
	Gross	Net	Gross	Net	Gross	Net
Oil	-	=	-	-	-	-
Natural gas	1	0.3	-	-	1	0.3
Service	-	-	-	-	-	-
Stratigraphic Test	-	-	-	-	-	-
Dry	-	-	-	-	-	-
Total	1	0.3	-	-	1	0.3

For details in respect of the important current and likely exploration and development activities, see "Description of the Business – Principal Areas".

#### **Abandonment and Reclamation Costs**

Jura has estimated the cost to perform well abandonment and reclamations by taking into account well depths, geographical location, existing well status and tangible assets. A well's abandonment is scheduled to occur after the total Proved plus Probable production forecast deems the well no longer capable of production. Where possible, a well's abandonment is scheduled as part of a multi-well program to achieve an economy of scale. The expected cost to be incurred in respect of Proved Reserves, net of salvage value, is \$1,378,000 without discount and \$597,000 using a discount rate of 10%. The expected cost to be incurred in respect of Proved plus Probable Reserves, net of salvage value, is \$1,743,000 without discount and \$363,000 using a discount rate of 10%.

The following tables sets forth the abandonment costs deducted in the estimation of Jura's future net revenue:

Year	Proved Reserves (\$000s)	Proved Plus Probable Reserves (\$000s)
2019	-	-
2020	-	-
2021	-	-
2022	-	-
2023	-	-
Thereafter	1,378	1,743
Total Undiscounted	1,378	1,743
Discounted @ 10%	597	363

#### **Tax Horizon**

As at December 31, 2018, Jura had cumulative assessed tax losses totalling \$18.04 million and unclaimed exploration expenditures totalling \$82 million. Based on these figures and Jura's expected future revenue stream, it is expected that Jura will not be in a tax-paying situation until 2026.

#### **Production Estimates**

The following table is a summary of the gross volume of Jura's share of estimated production for 2019.

	Light and Medium Oil (Bbls/d)	Heavy Oil (Bbls/d)	Conventional Natural Gas (Mcf/d)	Natural Gas Liquids (Bbls/d)	Oil Equivalent (Boe/d)
Proved					
Badin IV South	-	-	3,204	23	576
Badin IV North		-	842	26	171
Zarghun South			5,376	2	929
Guddu	-	-	1,248	=	215
Sara and Suri	-	-	340	=	59
Total Proved	-	-	11,008	51	1,949
Proved plus Probable					
Badin IV South	-	-	4,366	32	784
Badin IV North			959	29	195
Zarghun South	-	-	5,477	2	947
Guddu	-	-	1,299	-	224
Sara and Suri	-	-	383	-	66
Total Proved plus Probable	-	-	12,484	63	2,216

#### **Production History**

The following table summarizes Jura's average daily production before deduction of royalties, for the periods indicated.

Product	Q1 2018	Q2 2018	Q3 2018	Q4 2018
Light and Medium Crude Oil (Bbls/d)	-	=	-	-
NGLs (Bbls/d)	2	2	2	2
Natural Gas (Mcf/d)	7,522	7,314	6,961	6,977
Total (Boe/d)	1,299	1,263	1,202	1,205

#### **Netback History**

The following table sets forth certain production information in respect of product prices received, royalties paid, operating expenses and resulting netback associated with Jura's assets for the periods indicated.

			\$per unit of production				
Product Type	Period	Price Received	Royalties Paid	Production Costs	Netback s		
Light & Medium Crude Oil (\$/Bbl)	Q1 2018	-	-	-	-		
	Q2 2018	-	-	-	-		
	Q3 2018	-	-	-	-		
	Q4 2018	-	-	-	-		
Heavy Oil (\$/Bbl)	Q1 2018	-	-	-	-		
	Q2 2018	-	-	-	-		
	Q3 2018	-	-	-	-		
	Q4 2018	-	-	-	-		
Natural Gas (\$/Mcf)	Q1 2018	4.42	0.45	0.93	3.04		
	Q2 2018	4.47	0.46	1.00	3.01		
	Q3 2018	4.55	0.46	0.90	3.19		
	Q4 2018	5.39	0.55	0.73	4.11		
Natural Gas Liquid (\$/Bbl)	Q1 2018	73.21	9.15	7.32	56.74		
	Q2 2018	80.68	10.09	8.07	62.52		
	Q3 2018	82.35	10.29	8.23	63.83		
	Q4 2018	75.33	9.42	7.53	58.38		

#### **Production by Area**

The table below indicates the production volumes by area from Jura's important oil and natural gas properties for the financial year ended December 31, 2018.

Area	Conventional Light and Medium Oil (Bbls/d)	Heavy Oil (Bbls/d)	Conventional Natural Gas (Mcf/d)	Natural Gas Liquids (Bbls/d)
Guddu	-	•	11,496	=
Zarghun South	-	=	14,915	2
Total	-	•	26,411	2

# APPENDIX B FORM 51-101F2 REPORT OF RESERVES DATA BY INDEPENDENT QUALIFIED RESERVES EVALUATOR OR AUDITOR

To the board of directors of Jura Energy Corporation (the "Corporation"):

- We have evaluated the Corporation's reserves data as at December 31, 2018. The reserves data are
  estimates of proved reserves and probable reserves and related future net revenue as at December
  31, 2018 estimated using forecast prices and costs.
- 2. The reserves data are the responsibility of the Corporation's management. Our responsibility is to express an opinion on the reserves data based on our evaluation.
- 3. We carried out our evaluation in accordance with standards set out in the Canadian Oil and Gas Evaluation Handbook as amended from time to time (the "COGE Handbook") maintained by the Society of Petroleum Evaluation Engineers (Calgary Chapter).
- 4. Those standards require that we plan and perform an evaluation to obtain reasonable assurance as to whether the reserves data are free of material misstatement. An evaluation also includes assessing whether the reserves data are in accordance with principles and definitions in the COGE Handbook.
- 5. The following table shows the net present value of future net revenue (before deduction of income taxes) attributed to proved plus probable reserves, estimated using forecast prices and costs and calculated using a discount rate of 10 percent, included in the reserves data of the Corporation evaluated for the year ended December 31, 2018, and identifies the respective portions thereof that we have evaluated and reported on to the Corporation's board of directors:

Independent Qualified	Effective Date of	Location of Reserves (Country or Foreign	Net Present Value of Future Net Revenue (before income taxes, 10% discount rate - \$000s)			
Reserves Evaluator	Evaluation Report	Geographic Area)	Audited	Evaluated	Reviewed	Total
McDaniel and Associates	December 31, 2018	Pakistan	-	122,347	-	122,347

- 6. In our opinion, the reserves data respectively evaluated by us have, in all material respects, been determined and are in accordance with the COGE Handbook consistently applied. We express no opinion on the reserves data that we reviewed but did not audit or evaluate.
- 7. We have no responsibility to update our reports referred to in paragraph 5 for events and circumstances occurring after the effective date of our reports.
- 8. Because the reserves data are based on judgements regarding future events, actual results will vary and the variations may be material.

EXECUTED as to our report referred to above:

McDaniel and Associates Consultants Ltd, Calgary, Alberta, Canada, April 24, 2019

(signed)" C. T. Boulton" C. T. Boulton, P. Eng. Vice President

# APPENDIX C FORM 51-101F3 REPORT OF MANAGEMENT AND DIRECTORS ON RESERVES DATA AND OTHER INFORMATION

Management of Jura Energy Corporation (the "**Corporation**") is responsible for the preparation and disclosure of information with respect to the Corporation's oil and gas activities in accordance with securities regulatory requirements. This information includes reserves data.

An independent qualified reserves evaluator has evaluated the Corporation's reserves data. The report of the independent qualified reserves evaluator is presented herein.

The Reserves Committee of the board of directors of the Corporation has:

- a) reviewed the Corporation's procedures for providing information to the independent qualified reserves evaluator;
- b) met with the independent qualified reserves evaluator to determine whether any restrictions affected the ability of the independent qualified reserves evaluator to report without reservation and, in the event of a proposal to change the independent qualified reserves evaluator, to inquire whether there had been disputes between the previous independent qualified reserves evaluator; and
- c) reviewed the reserves data with management and the independent qualified reserves evaluator.

The Reserves Committee of the board of directors has reviewed the Corporation's procedures for assembling and reporting other information associated with oil and gas activities and has reviewed that information with management. The board of directors has, on the recommendation of the Reserves Committee, approved:

- a) the content and filing with securities regulatory authorities of Form 51-101F1 containing reserves data and other oil and gas information;
- b) the filing of Form 51-101F2 which is the report of the independent qualified reserves evaluator on the reserves data; and
- c) the content and filing of this report.

Because the reserves data are based on judgements regarding future events, actual results will vary and the variations may be material.

Dated: April 30, 2019

(signed) "Nadeem Farooq"
Nadeem Farooq
Interim Chief Executive Officer and Director

(signed) "Timothy Elliott" Timothy Elliott Director

(signed) "Stephen C. Akerfeldt" Stephen C. Akerfeldt Director

(signed) "Arif Siddiq" Arif Siddiq Interim Chief Financial Officer