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October 5, 2018

*Via Email: [ken.diemer@alaska.gov](mailto:ken.diemer@alaska.gov)*

Ken Diemer  
Petroleum Land Manager  
Division of Oil and Gas  
550 W. 7th Avenue, Suite 1100  
Anchorage, AK 99501-3560

**Re: Kitchen Lights Unit - Sixth Plan of Development**

Dear Mr. Diemer:

I am sending you this correspondence as counsel to Furie Operating Alaska, LLC. Enclosed please find the Sixth Plan of Development for the Kitchen Lights Unit ("KLU"), which Furie Operating Alaska, LLC is submitting as operator of the KLU.

If you have questions or would like to discuss this Plan of Development, please contact me at (907) 263-8420 or [jon.iversen@stoel.com](mailto:jon.iversen@stoel.com).

Best regards,

A handwritten signature in blue ink, appearing to read "Jon Iversen", is written over the typed name.

Jon Iversen

Enclosure

**SIXTH PLAN OF DEVELOPMENT**

**KITCHEN LIGHTS UNIT**

**OCTOBER 5, 2018**

**Furie Operating Alaska, LLC  
Operator**

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## 1. OBJECTIVE

This Sixth Plan of Development for the Kitchen Lights Unit (KLU) is submitted by Furie Operating Alaska, LLC (Furie) as Operator on behalf of itself and the other working interest owners to the Department of Natural Resources (DNR) pursuant to Article 8 of the Kitchen Unit Agreement and 11 AAC 83.343. Consistent with 11 AAC 83.343, this plan of development covers the entire KLU for 2019 activities.

The Fifth Plan of Development called for the following activities in 2018:

- (i) Complete the KLU #A-1 well in the Corsair Block; and
- (ii) One of the following: (a) drill, evaluate and test a new development well in the Corsair Block to the Sterling Formation; (b) drill, evaluate and test the KLU #4; or (c) drill, evaluate and test the KLU #6.

Furie has met these commitments in a timely manner, and has also drilled an additional tail on the KLU #4 well into the Tyonek.

The Spartan 151 jack-up rig was mobilized from Seward and was on site at the Julius R offshore production platform on July 5, 2018. Furie then re-entered the #A-1 well and completed it on July 30, 2018. The #A-1 well initially produced gas from the lower Sterling zone and subsequently produced gas from the middle Sterling zone. Furie spudded the #A-4 well on August 3, 2018, intersecting the top of the Sterling at 3,082' MD (-2,862' TVDss) and the top of Beluga at 5,996' MD (-5,109' TVDss). The well was then drilled into the Tyonek section as an additional tail to evaluate identified 3-D amplitude targets, an activity not required under the current POD.

Other well work this season included adding perforations to the KLU #3 (producing) well at 4973 – 5803' (Beluga) and closing sleeves on perforations at 4565 – 4632'.

Furie has contracted with a new technical team for analysis of well and seismic data, which has included interpretation and evaluation of the 3-D geophysical seismic data Furie previously acquired, as well as 2-D seismic data and other wells in the area. In addition to further analysis of development prospects in the Corsair Block, Furie's team has been conducting in-depth analysis of other blocks in the KLU and anticipates that it will propose an enhanced suite of targets for exploration drilling over the next few years.

Furie's efforts in 2018 also included the following work on the offshore production platform:

- Front end loading and permitting to replace generators
- Adding sand monitors on each producing well flowline
- Repairing air compressors
- Upgrading platform crane load line and fast line alarm system

In addition, Furie conducted a cathodic protection survey on the 15-mile pipeline that runs from the production platform to the onshore facilities, including a survey of the installation of tie points to measure current readings. Furie also repaired and replaced packing, wiper rings, glycol, and numerous pumps on the dehydration system at the production facility.

As stated above, Furie used the Spartan 151 jack-up drilling rig to complete the #A-1 development well and drill the #A-4 development well. The Spartan rig underwent a thorough commissioning process, including a 5 year American Bureau of Shipping (ABS) inspection and certification, a Coast Guard inspection and certification, and an independent third party inspection by Lloyds Registry to prepare the rig for use at the offshore production platform. The rig is scheduled to commence demobilization from the site in mid-October.

The objective of this Sixth Plan of Development is to:

- Continue the safe and effective development of the proven gas reserves in the KLU;
- Continue and increase production of natural gas on the Julius R Platform; and
- Continue the pragmatic exploration of the KLU, including further analysis of seismic data to identify specific targets for exploration outside of the Corsair Block.

## **2. RESERVOIR CHARACTERISTICS AND MANAGEMENT**

### **2.1 Reservoir Characteristics**

The geologic formations that Furie has been targeting thus far are the Sterling and the Beluga formations. Multiple pools within the Sterling and Beluga formations have been identified by well logs, geophysical mapping, and flow tests as being productive. The Sterling and Beluga sands within the KLU are braided fluvial sands, with varying levels of amalgamation and connectivity. The sands are typically normally pressured with hydrostatic gradient. Gas samples contained 99% methane.

### **2.2 Reservoir Management**

Furie is currently producing the KLU #3 well from the Beluga formation. As producing zones are depleted, Furie will use the KLU #3 for recompletion or redrilling to capture additional reserves from zones in both the Beluga and Sterling formations.

The KLU #A-2A well was drilled and completed in 2016 and is currently producing from the Beluga formation. As the producing zones are depleted, Furie plans to capture additional reserves from other zones using the KLU #A-2A wellbore through recompletion or redrilling.

The KLU #A-1 well was completed in 2018 and it initially produced gas from the lower Sterling zone and subsequently produced gas from the middle Sterling zone. Individual 4-point testing was performed on the middle and lower Sterling zones. The Beluga interval is anticipated to be completed at a later date with through tubing perforating and single packer or multipacker completion.

Furie's continued efforts to interpret and evaluate the 3-D geophysical seismic data have provided additional insight regarding reservoir management. Furie plans to continue managing the reservoirs within the field for maximum recovery. To optimize recovery, Furie intends to produce each reservoir to its minimum depleted pressure and then implement compression, as appropriate, to increase recovery. Additional wells are expected to be drilled from the Julius R. Platform as appropriate to maximize recovery from the reservoir and as demand for natural gas dictates. The platform has six well slots, four of which are currently utilized. Well workovers are expected also to be performed as appropriate during the life of the field.

As described in Section 4, provided financing is available, Furie may drill one new development well in 2019 and add perforations to the #A-2A and #3. The rate of production and drilling of additional development wells will be based on market conditions.

All of these reservoir management activities will be supported by the existing platform and onshore production facilities. No new surface locations are anticipated for full development of the known gas reservoir.

### **3. WELLS AND DRILLING**

Development wells have been and will continue to be drilled using a jack-up rig brought to the platform for that purpose, and the platform will support a workover rig (platform rig) that may be used for well maintenance. When needed, a workover rig (platform rig) will be transported to the platform and installed using the platform crane, then removed after completion of the well work.

As market conditions dictate, additional development wells may be directionally drilled from the Julius R. Platform using directional drilling techniques. Additional wells will be targeted to access incremental reserves, upgrade reserves to proven developed producing (PDP), and increase the rate of production to deplete the Beluga and Sterling formations within the reservoir more quickly than producing only via the existing wells (#A-1, #A-2A, #3, #A-4). The wells will be completed with selective single completions as drilling results justify. No new surface locations are anticipated for full development of the producing gas reservoir. As discussed in Section 4, one new development well may be drilled in 2019, and as stated in Section 2.2, additional wells may be drilled in later years based upon market demand for gas.

As stated above, Furie has also drilled the #A-4 well into the Tyonek formation, and this additional tail is currently being evaluated.

Furie intends to continue exploration drilling throughout the KLU to the extent it can do so safely while continuing to develop and produce from the Julius R. Platform. Exploration drilling has been severely hampered by the lack of any meaningful appropriation to the oil and gas tax credit fund for the purchase of Alaska oil and gas production tax credit certificates over the last few years. To date, there has been no payment on these tax credits in fiscal year 2019, which constrains funding for exploration. Furie has invested hundreds of millions of dollars in exploring and developing the KLU in reliance on the tax credit program and has a very

substantial amount of tax credit certificates in the queue awaiting purchase by the state. Payment for these certificates is a key component to funding further exploration and activities in the KLU.

As to potential exploration well locations, Furie's new technical team is thoroughly analyzing 3-D and 2-D seismic and well data as part of an in-depth analysis of the entire KLU and anticipates that it will propose an enhanced suite of targets outside of the Corsair Block for exploration drilling over the next few years. At this time, Furie has no revisions to the well locations stated in its plan of operations, LOCI 16-001 ("POO") and shown on the attached map, which are anticipated to be vertical wells such that the bottom hole locations will coincide with the tophole coordinates provided in the POO. It is anticipated that the locations and sequence of exploration wells will evolve based on the additional analysis Furie is undertaking.

#### **4. PROPOSED 2019 KLU DEVELOPMENT**

Development is focused on ongoing production from the KLU #3, #A-2A, #A-1 and #A-4 wells. Additional development wells may be drilled for increased reserves and deliverability. However, existing natural gas market constraints through 2019 impact the need for additional wells.

Accordingly, Furie proposes the following development activities in 2019 (contingent upon the company obtaining financing):

(i) Drill and acquire all necessary logs and data to properly evaluate one new development well from the Julius R. Platform to the stratigraphic equivalent of the Sterling flow tested zones in the KLU #3 well, namely the sand encountered from 6964 feet to 6998 feet measured depth in the KLU #3 well, unless interpretations from the shallower data in a well indicate that producible hydrocarbons are unlikely to be found by drilling to that equivalent horizon depth. Based on the logs and data acquired from the new development well, develop a plan for completing the well and present the plan to DNR.

(ii) Conduct development operations specific to the #A-2A and #3 wells to increase production, including adding perforations.

The development well discussed in (i) above will be drilled from the Julius R. Platform with a bottom hole location based on the ongoing 3D seismic interpretation, including Amplitude Variation with Offset (AVO), Spectral Decomposition, and other seismic attribute analysis.

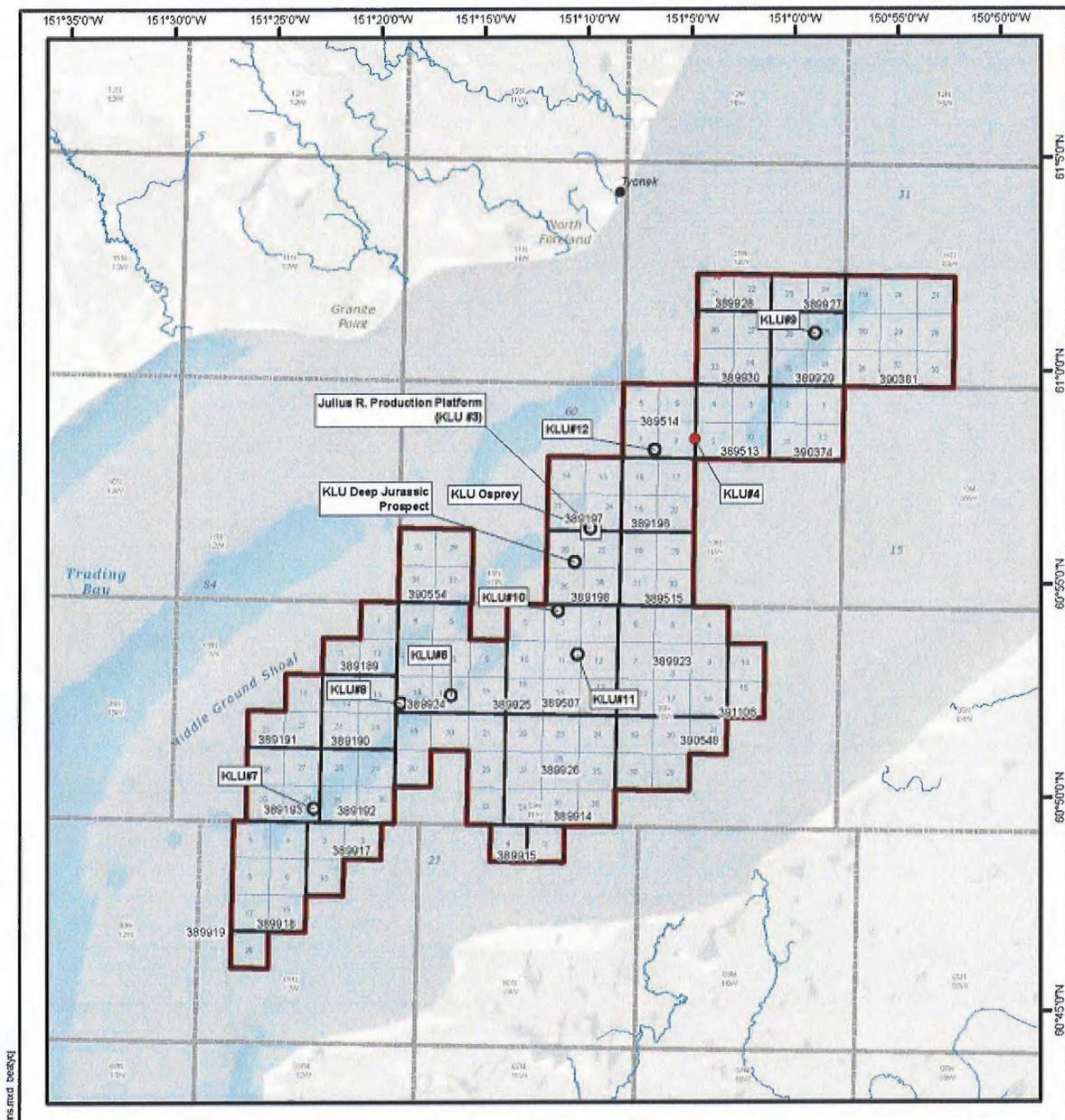
As the need arises, Furie will continue to perform additional well work on existing development wells, including workovers to maintain or improve production rates.

#### **5. PLANS FOR EXPLORATION OR DELINEATION OF LANDS OUTSIDE PA**

As stated above, Furie intends to continue exploration drilling throughout the KLU, including outside the Corsair Block, but exploration activities have been severely constrained by the state's lack of meaningful payment for outstanding production tax credits for the last several years—and the absence of any payment so far this fiscal year. However, Furie's technical team has been working to compile a suite of options for exploration drilling. This new effort has been

underway for several months and will continue through the rest of this calendar year and well into 2019. Accordingly, Furie proposes that by February of 2019, provided that additional financing is available, it will mature two prospects for exploration wells outside the Corsair Block and present them to DNR along with evidence that commercially reasonable efforts are underway to drill these wells in either 2019 or 2020. Whether one of these wells is drilled in 2019 will greatly depend on the amount and timing of payment by the state for outstanding production tax credits.

Looking beyond 2019, Furie intends to continue diligent exploration, delineation and development activities throughout the KLU. This is reflected in the KLU plan of operations for exploration activities that DNR approved in May of 2016, and includes wells to be drilled throughout the KLU in all of the exploration blocks and into various formations - see the attached map. It is anticipated that the locations and sequence of exploration wells will evolve with the additional analysis Furie is undertaking, including natural gas and oil-bearing targets.

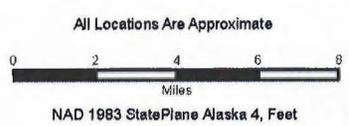


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- Existing Well Location
- Proposed Well Location
- Platform
- KLU Boundary
- KLU Alaska Division of Lands (ADL) Lease Tract
- PLSS Section
- PLSS Township

Note: All proposed well locations are on state waters over state submerged lands.



<b>FURIE OPERATING ALASKA PROPOSED EXPLORATION WELL LOCATIONS 2016 EXPLORATION PLAN OF OPERATIONS COOK INLET, ALASKA</b>			
<b>JACOBS</b>	DATE: 22 JAN 2016	PROJECT MANAGER: K. NEPTUN	FIGURE NO: A-2