

23<sup>rd</sup> January 2013

Companies Announcement Office  
Via Electronic Lodgement

## **LANCE PROJECTS RESOURCE ESTIMATE ADDS 2.5 MILLION MEASURED AND INDICATED POUNDS**

### **Highlights:**

- **Measured and indicated resource increased by 2.5Mlbs to 17.2Mlbs U<sub>3</sub>O<sub>8</sub>**
- **Inferred resource has increased by 2.2Mlbs U<sub>3</sub>O<sub>8</sub>**
- **Total JORC Resource 53.7Mlbs U<sub>3</sub>O<sub>8</sub>**
- **Drilling during Oct 2011-Oct 2012 has added measured and indicated resource of twice the planned annual production rate at the Lance Projects**
- **2013 drilling planned to target the roll front nose of the measured and indicated resources areas, to convert further inferred resources to measured/indicated category and explore further known mineral occurrences**

### **Summary**

Peninsula Energy Limited (**Peninsula**) is pleased to announce a further upgrade to the JORC-compliant Resource Estimate for the Lance uranium projects in Wyoming, USA (**Lance Projects**). This upgrade has been achieved by the completion of an additional 676 rotary mud drill holes completed in the seven months subsequent to the March 2012 resource estimate.

The key objective of the 2012 drilling program was to increase the measured and indicated resources in preparation for commencement of mining operations at the Lance Projects. The revised JORC compliant resource estimate of 53.7Mlbs U<sub>3</sub>O<sub>8</sub> includes a further 2.2Mlb increase in inferred resource and a conversion of 2.5Mlbs to measured and indicated category since the March estimate.

The 12 month period spanning October 2011 – October 2012 has now seen in excess of 5Mlbs inferred U<sub>3</sub>O<sub>8</sub> resource converted to the measured and indicated categories. This is more than twice the planned annual steady state production levels for the Lance Projects.

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Since October 2012 the drilling programme has focused on completing aquifer monitoring wells that are part of the process to include the Kendrick Production Unit in the Permit Amendment process.

Executive Chairman Gus Simpson said "We are very pleased with the recent drilling results. The programme has successfully demonstrated the ability to convert significant inferred resource to the measured and indicated categories which was the primary objective of the 2012 programme".

Drilling during the current calendar year will have a dual focus of targeting the nose of the roll front systems in the measured and indicated resource locations and to continue to convert inferred resource to measured and indicated. The targeting of the roll front noses is expected to raise both the grade and GT of the measured and indicated resources.

#### Updated Lance JORC-Compliant Resource Estimate – December 2012

Since the release of the March 2012 JORC resource estimate Peninsula has continued resource conversion and exploration drilling with the completion of a further 676 drill holes, the majority within the Kendrick area.

Drilling during that period focused on converting resources from inferred to measured and indicated in the Kendrick area, located to the south and west of the Ross Production Unit. The drilling along the Kendrick roll front system has produced consistent thick high-grade intercepts and has been prioritised due to its resource expansion capacity and its proximity to the proposed site of the Lance Central Processing Plant. The drill density and continuity of mineralisation at Kendrick has resulted in a high proportion of inferred resources being upgraded to the measured and indicated category.

The resource has been calculated by applying a combined constraint of a grade thickness product (GT) of 0.2 contour and 200ppm eU<sub>3</sub>O<sub>8</sub>. These cut offs are considered to be appropriate for both calculating and reporting of in-situ recovery (ISR) resources at the Lance Project.

The measured, indicated and inferred resources are located in host sandstones that have demonstrated positive uranium recovery from test-work. Furthermore, geological modelling of the extensive down-hole geophysical data has accurately defined the impermeable shale and mudstone horizons that form the confining horizons to the mineralised sandstones.

**Table 1: Lance Project Classified Resource Summary (U<sub>3</sub>O<sub>8</sub>) December 2012**

Resource Classification	Tonnes Ore (M)	U <sub>3</sub> O <sub>8</sub> kg (M)	U <sub>3</sub> O <sub>8</sub> lbs (M)	Grade (ppm U <sub>3</sub> O <sub>8</sub> )
Measured	4.1	2.1	4.5	495
Indicated	11.6	5.7	12.7	497
Inferred	35.5	16.6	36.5	467
Total	51.2	24.4	53.7	476

(The JORC resource is reported above a lower grade cut-off of 200ppm and a GT of 0.2).

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The revised JORC compliant resource estimate of 53.7Mlbs U<sub>3</sub>O<sub>8</sub> includes a 17% increase in measured and indicated resource since the previous estimate in March 2012. This is well in excess of the inferred to indicated or better conversion factor used in the 2012 Feasibility Study.

Within the Ross Production Unit there is a combined measured, indicated and inferred resource of 11.2Mlbs U<sub>3</sub>O<sub>8</sub> with an average grade of 518ppm and an average GT of 0.47.

At Kendrick the combined measured and indicated resource totals 4.82Mlbs U<sub>3</sub>O<sub>8</sub> at an average grade of 497ppm and an average GT of 0.47.

At Barber the combined measured and indicated resource totals 2.41Mlbs U<sub>3</sub>O<sub>8</sub> at an average grade of 421ppm and an average GT of 0.42 (Table 2).

**Table 2: Lance Project Classified Resource by Production Unit (U<sub>3</sub>O<sub>8</sub>) December 2012**

Ross	Tonnes	Grade (ppm U <sub>3</sub> O <sub>8</sub> )	U <sub>3</sub> O <sub>8</sub> lbs	Average Thickness (ft)	Average GT
Measured	2,824,571	500	3,112,029	10.0	0.50
Indicated	5,823,143	531	6,818,822	8.4	0.45
Inferred	1,145,377	497	1,253,762	10.5	0.52
<b>Total</b>	<b>9,793,091</b>	<b>518</b>	<b>11,184,612</b>	<b>9.0</b>	<b>0.47</b>

Kendrick	Tonnes	Grade (ppm U <sub>3</sub> O <sub>8</sub> )	U <sub>3</sub> O <sub>8</sub> lbs	Average Thickness (ft)	Average GT
Measured	682,078	506	761,086	9.3	0.47
Indicated	3,706,808	496	4,056,866	9.4	0.47
Inferred	23,834,082	472	24,799,068	10.0	0.47
<b>Total</b>	<b>28,222,968</b>	<b>476</b>	<b>29,617,020</b>	<b>9.9</b>	<b>0.47</b>

Barber	Tonnes	Grade (ppm U <sub>3</sub> O <sub>8</sub> )	U <sub>3</sub> O <sub>8</sub> lbs	Average Thickness (ft)	Average GT
Measured	636,302	461	647,045	9.5	0.44
Indicated	2,002,184	400	1,765,263	9.8	0.39
Inferred	10,498,574	452	10,460,284	9.7	0.44
<b>Total</b>	<b>13,137,060</b>	<b>444</b>	<b>12,872,592</b>	<b>9.5</b>	<b>0.42</b>

Total	Tonnes	Grade (ppm U <sub>3</sub> O <sub>8</sub> )	U <sub>3</sub> O <sub>8</sub> lbs	Average Thickness (ft)	Average GT
Measured	4,142,951	495	4,520,159	9.8	0.49
Indicated	11,532,135	497	12,640,951	9.0	0.45
Inferred	35,478,033	467	36,513,114	9.79	0.46
<b>Total</b>	<b>51,153,119</b>	<b>476</b>	<b>53,674,224</b>	<b>9.7</b>	<b>0.46</b>

The resource delineation and exploration drilling program was suspended at the Lance Projects in October 2012 and the rigs deployed to complete multiple clusters of aquifer monitoring wells as part of the accelerated Mine Permit amendment process that incorporates the Kendrick Production Unit in the mine planning schedule.

Drilling during the current year will target the nose of the roll fronts in the areas of measured and indicated resource and conversion drilling will re-commence in February to continue upgrading existing inferred resources to measured or indicated status. Exploration drilling is also planned to re-commence at numerous sites with known mineralisation.

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The latest interpretation of the existing database by Peninsula's geological team has identified and priority ranked over 500 follow-up drill targets within the Lance Projects. It is estimated that these drill targets will form the basis for on-going exploration over the next 5-10 years.

Peninsula controls the majority of the surface and minerals rights in the Lance Projects Area and is currently acquiring additional locations that are considered prospective for roll front style uranium mineralisation.

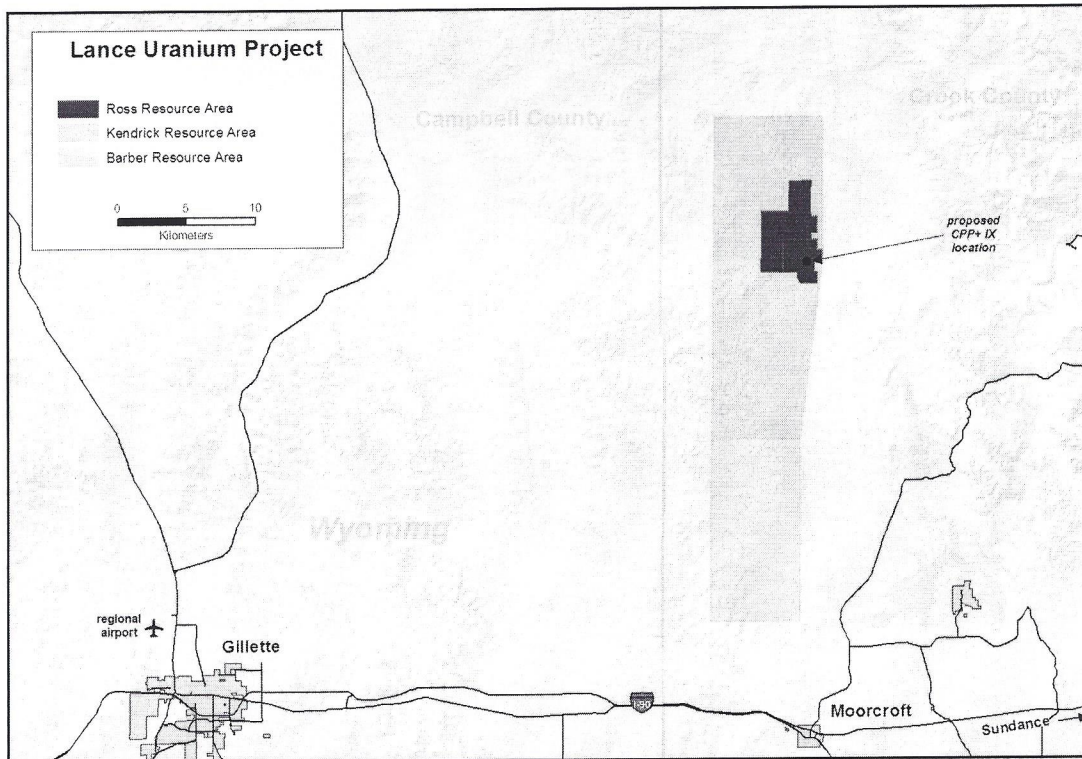


Figure 1: Resource Area Location Map

**Mineralised Potential**

The Lance Project, operated by Peninsula's US subsidiary, Strata Energy Inc, covers an area of over 120km<sup>2</sup> within which there is a combined total of at least 305 line kilometres (190 miles) of known stacked roll fronts. Of this total, only a small percentage has been explored, with over 90% of the drilling concentrated within the more advanced Ross, Kendrick and Barber areas. Based on the historic conversion rate from roll front length to a drill-defined resource, the mineralised potential of the Lance Project, which is in addition to the JORC-compliant resource, is assessed at between 104 and 163 Mlbs U<sub>3</sub>O<sub>8</sub>. The mineralised potential is based on an anticipated grade range of 426ppm to 530ppm U<sub>3</sub>O<sub>8</sub>. This grade range approximates the minimum and maximum modelled grades respectively.



**Lance Project Mineralised Potential**

Exploration Areas	Tonnes (M)		Grade (ppm U <sub>3</sub> O <sub>8</sub> )		eU <sub>3</sub> O <sub>8</sub> (Mlbs)	
	From	To	From	To	From	To
Total	168.9	185.9	426	530	157.7	217

(Totals include existing JORC Resource)

Yours Sincerely



**John (Gus) Simpson**  
Chairman

For further information, please contact our office on (08) 9380 9920 during normal business hours.

**Competent Person**

The information in this report that relates to Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Mr Jim Gullinger. Mr Gullinger is a Member of a Recognised Overseas Professional Organisation included in a list promulgated by the ASX (Member of Mining and Metallurgy Society of America and SME Registered Member of the Society of Mining, Metallurgy and Exploration Inc). Mr Gullinger is Principal of independent consultants World Industrial Minerals. Mr Gullinger has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking as a Competent Person as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Gullinger consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Please note that in accordance with Clause 18 of the JORC (2004) Code, the potential quantity and grade of the "Mineralised Potential" in this announcement must be considered conceptual in nature as there has been insufficient exploration to define a Mineral Resource and it is uncertain if further exploration will result in the determination of a Mineral Resource.

Grade/thickness contouring is the most appropriate method to transition resources to reserves when the planned mineral recovery method is ISR.

ISR involves the drilling of clusters of injection, recovery and monitoring wells to facilitate the recycling of oxygen enriched ground water through the mineralised sandstone to re solubilise and mobilize the uranium for pumping it to the surface processing plant for processing into yellow cake.

When mineral content is presented as an amount per tonne it assumes that there is a cost per tonne to mine and process the ore to recover the mineral which has an absolute value.

In ISR mining this is not the case; this recovery method has a cost structure associated with the drilling, casing and perforating of extraction, injection and monitoring well clusters. These, combined with the cost of reagents and processing into yellow cake are deducted from mineral revenues to determine gross margin.

Subsequently it is the grade/thickness (0.20GT) quotient, not grade alone, that determine if a bounded mineral zone is to be mined. Once these costs are incurred, it is recovered pounds of mineral that determines the gross margin. Thus when an ISR feasibility study estimates mineral recovery costs it is as a cost per pound recovered.

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Disequilibrium Explanatory Statement: eU3O8 refers to the equivalent U3O8 grade. This is estimated from gross-gamma down hole measurements corrected for water and drilling mud in each hole. Geochemical analysis may show higher or lower amounts of actual U3O8, the difference being referred to as disequilibrium. Disequilibrium factors were calculated using the Peninsula PFN database and categorized by area and lithological horizon. Specific disequilibrium factors have been applied to the relevant parts of the resource based on comparative studies between PFN and gamma data.

The methodology, estimation details and assumptions used in estimating the Inferred and Indicated Resource and also the Mineralised Potential at the Lance Projects is summarised as follows:

- Each log was scanned by Cadd Services (Denver) and then digitized by Logdigi Inc. (Houston). The gamma curves for each log were further processed in Wyoming to convert each gamma curve to numerical equivalent counts per second and percent grade eU3O8.
- Down-hole grade composites were calculated using a 2.5ft/100ppm cut off. Each grade composite was then extracted to obtain the centroid position of each composite. Every composite was then analysed in 3D and manually classified according to area and vertical horizon.
- Using Surpac, a Voronoi tessellation algorithm was then applied to the respective data from each area and horizon to create a series of polygons each of which were attributed with thickness, volume and tonnage and grade. These polygons were intersected by the 0.2GT contour so that no measured or indicated material was reported outside the GT contour.
- The JORC-compliant resource is reported above a lower grade cut off of 200ppm and a GT of 0.2.
- Disequilibrium factors were calculated using the Peninsula PFN database comprising over 830 determinations and categorized by area and lithological horizon.
- Specific disequilibrium factors have been applied to the relevant parts of the resource based on comparative studies between PFN and gamma data. Disequilibrium factors were applied only to the intervals for gamma-only data was available.
- An average bulk density of 2.1, as determined from 66 core samples, has been used for the tonnage calculation.
- The resource is reported a U3O8 based on the following criteria:
  - 30% of the resource input data comprises PFN logging data and is considered by some to be a better measure of uranium grade in sandstone-hosted deposits
  - The remaining gamma-based data has been corrected for disequilibrium using the disequilibrium database and are therefore considered to be an accurate measure of in situ grade.
- Comprehensive QAQC chemical assaying has shown that chemical assays produce consistently higher grades (above 200ppm U3O8) as compared to PFN. Until further investigations are complete no correction factor has been applied to take into account possible under-calling of grade by the PFN.