14 January 2010

Companies Announcement Office
Via Electronic Lodgement

HIGH GRADE INTERSECTIONS AT BARBER EXTEND MINERALISATION AND RECENTLY DISCOVERED DEEPER ROLL FRONT SYSTEM

Highlights

- Hole RMR0155 which intersected **12ft @ 1,140ppm U_3O_8** from 386.75' to 398.75'
- Hole RMR0185 which intersected **15ft @ 390ppm U_3O_8** from 354.75' to 369.75'
- Hole RMR0187 which intersected **6.5ft @ 980ppm U_3O_8** from 361.25' to 367.75'
- Hole RMR0188 which intersected **13.5ft @ 410ppm U_3O_8** from 375.75' to 389.25'
- Hole RMR0189 which intersected **8ft @ 700ppm U_3O_8** from 381.25' to 389.25'
- **Recently discovered mineralised roll front system** encountered at depth in 7 holes.

Summary

Peninsula Minerals Limited **(Peninsula)** is pleased to announce that it has completed a further 35 development drill holes during December 2009 for a total of 19,900 feet at the Barber Project **(Barber). High grade intercepts** have been encountered along a sparsely drilled roll front indicating good continuity of mineralisation - 24 of these holes encountered significant mineralisation and 16 holes encountered multiple intersections with up to 10 intersections in 1 hole. Though not necessarily indicative of 10 roll fronts present it is an excellent indicator of the extensive uranium mineralisation present in the Barber Project. In addition, a previously reported deeper roll front system was encountered in 7 of the holes. This drilling and the new roll front, which is open in all directions, will significantly **expand the known mineralisation** at Barber.

Executive Chairman Gus Simpson said *"We are delighted with the results from this follow up drilling at Barber as they have been stepped out to extend the zones of known mineralisation and they bode well for our delineation efforts."*

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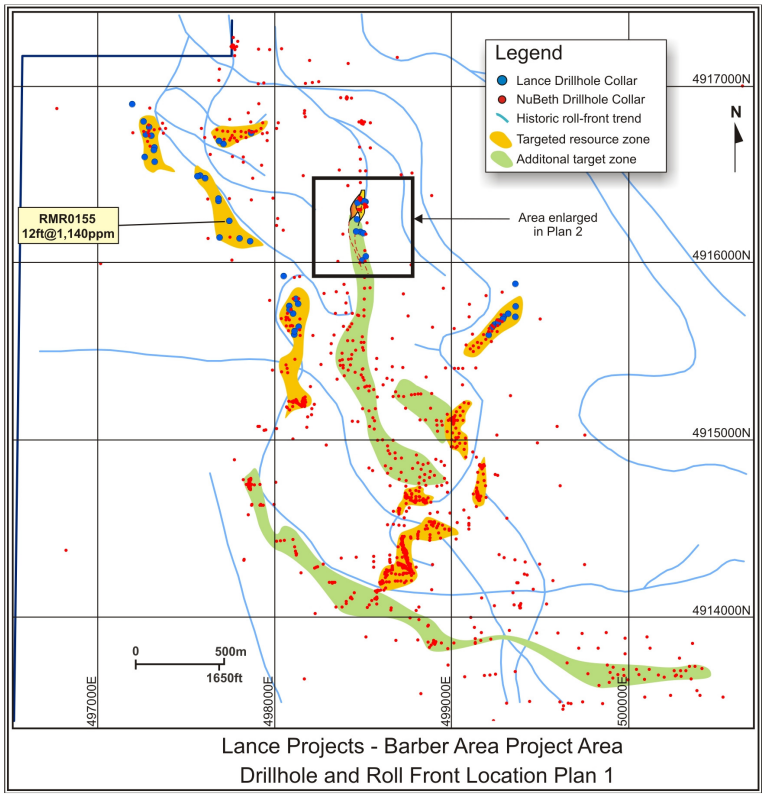

FIGURE 1

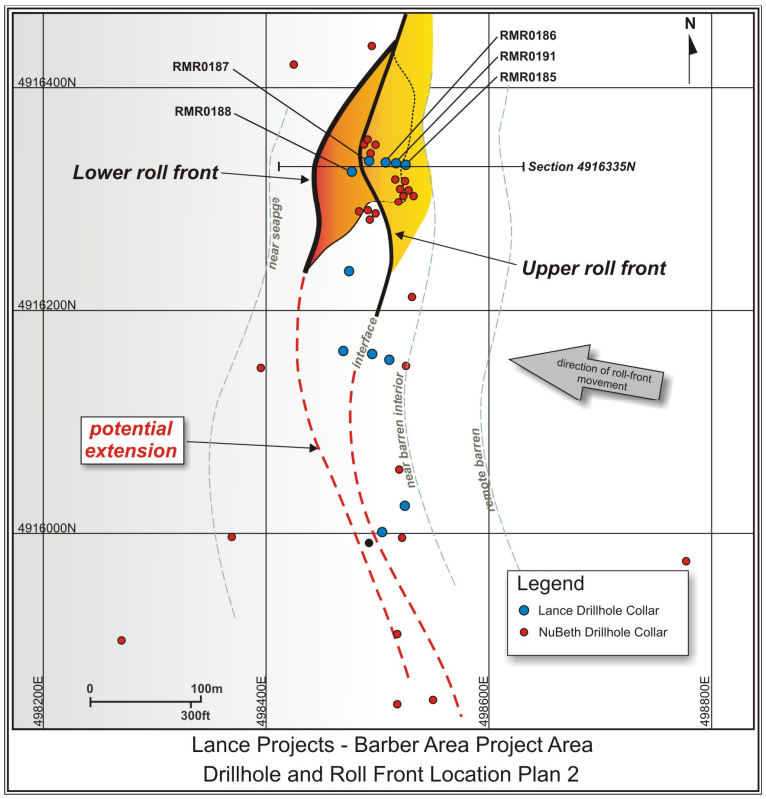

FIGURE 2

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Barber Drilling Program

Drilling commenced at Barber on 16 October 2009 with 79 holes completed to date, of which **51 holes encountered significant mineralisation**.

While the focus of the initial drilling at Barber was the development of both a shallow target and a more robust deeper roll front in section 16 (refer drill hole RMR0155), the focus of subsequent drilling to the east in section 15 has been the development of shallow multiple, stacked roll front systems, as depicted in Figures 2 and 3. Generally, when intersected, the higher-grade ore zone ranges from 5-15 feet in thickness. However, mineralised zones may be as much as 25 feet thick near the nose of the roll front.

As previously mentioned, a total of 79 holes had been drilled by the end of December with 50 drill holes completed in section 16, and 29 drill holes completed in section 15. Overall, the drilling in section 15 has intersected significantly thick intervals of higher-grade mineralisation in shallow intervals with average depths in the 350-400 feet range.

Figures 1 and 2 illustrate the drill hole and roll front locations at Barber.

TABLE 1: Drilling Summary Results, Drill Period December 2009 BARBER DRILLING

Hole ID	Local Northing (ft)	Local Easting (ft)	Depth (ft)	From ft	Intercept ft over PFN U_3O_8 grade ppm	Peak Concentration U_3O_8 ppm	Grade Thickness ft% U_3O_8
RMR0179	4915675	499290	440	393.25	3' @ 740 ppm	2' @ 1,030 ppm	0.221
RMR0148	4916339	497685	760	379.25	7.5' @ 350 ppm	5.5' @ 430 ppm	0.266
RMR0150	4916307	497698	760	388.75	11' @ 260 ppm	5' @ 390 ppm	0.288
RMR0189	4915660	499265	500	379.75	12.5' @ 540 ppm	8' @ 700 ppm	0.673
RMR0155	4916305	497704	760	386.75	12' @ 1,140 ppm	10.5' @ 1,270 ppm	1.374
RMR0185	4916331	498523	420	354.75	15' @ 390 ppm	3.5' @ 630 ppm	0.587
RMR0156	4915585	498412	620	412.75	3.5' @ 670 ppm	2.5' @ 880 ppm	0.236
RMR0187	4916334	498492	420	361.25	6.5' @ 980 ppm	5' @ 1,240 ppm	0.638
RMR0188	4916325	498477	420	375.75	13.5' @ 410 ppm	4.5' @ 940 ppm	0.559
RMR0191	4916332	498516	420	391.25	4.5' @ 560 ppm	2' @ 1,020 ppm	0.250

There are numerous other relatively untested roll fronts in the Barber area and the successes experienced in these drill programmes auger well for future development efforts.

The drilling in section 15 complements and expands the mineralised trend that was developed and expanded in section 16.

Data Base Modelling

In excess of 1,100 drill holes have now been drilled at the Barber project area with 589 of these being mineralised. The data from these holes have now been integrated in the 3D modelling system and are being used to plan further drilling at Barber and will ultimately form the basis for resource generation.

Two rigs are currently working at Barber with a third set to commence at the Ross Project **(Ross)** and a fourth expected at Ross by the 2nd week in February 2010.

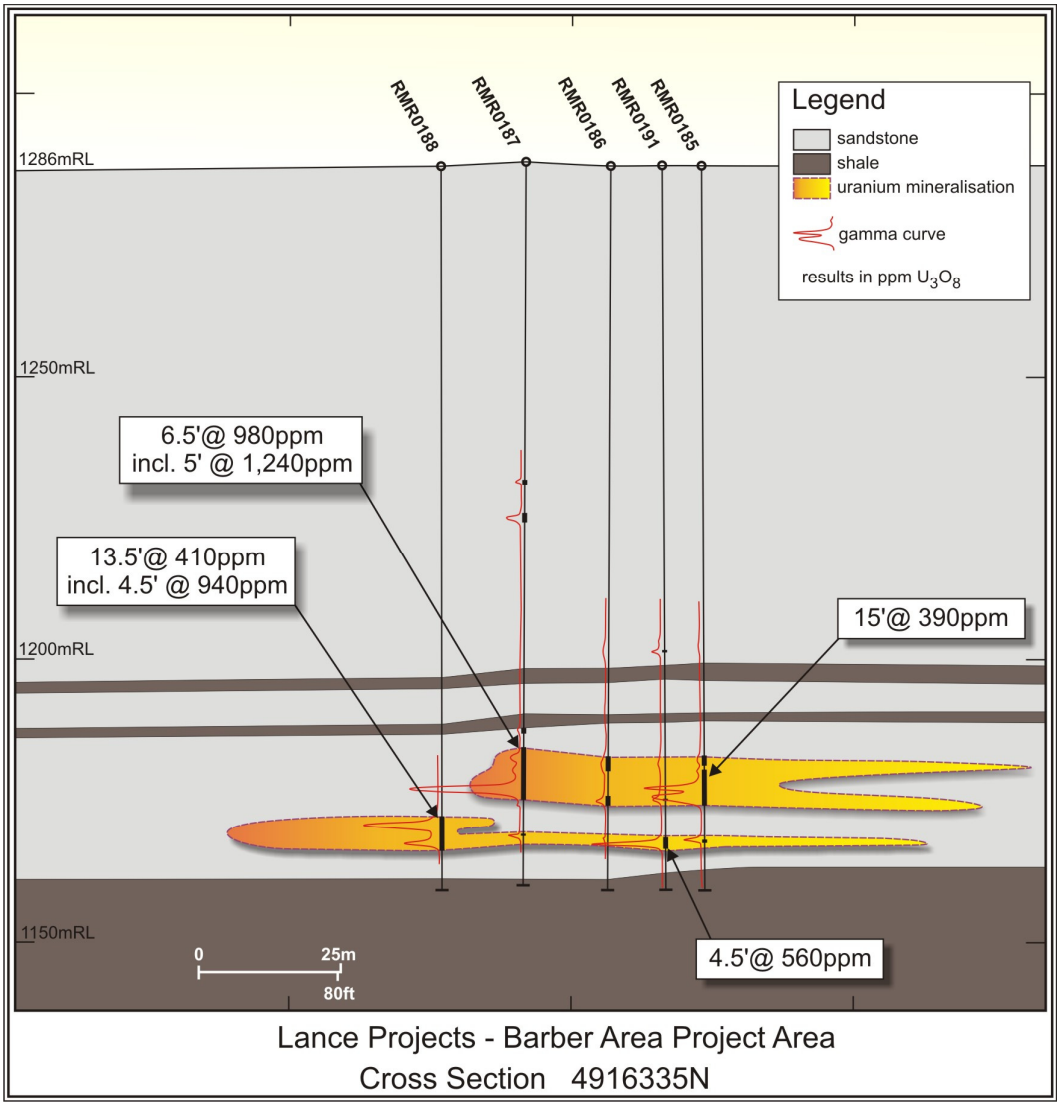

FIGURE 3: Section 15.

Roll Front Delineation Drilling

Drilling completed to date by Peninsula has been designed to broadly delineate the roll front trends at Ross and Barber, which are formed at the interface between oxidised and un-oxidised host sandstone. It is within these trends that discrete roll front deposits are developed. The roll front is not a discrete point but generally exists within a transitional zone. The main mineralised part of the transition zone with reference to the illustration would be the areas designated as the interface and the ore zone. The "nose" of the roll front occurs within these zones. The drilling to date, although not specifically targeting "nose" mineralisation, has been more than encouraging as it has successfully positioned and identified several miles of roll fronts and encountered several highly mineralised roll front noses, including hole RMR0155 listed above which returned a nose ore intercept of 12 feet at 1,140ppm U_3O_8.

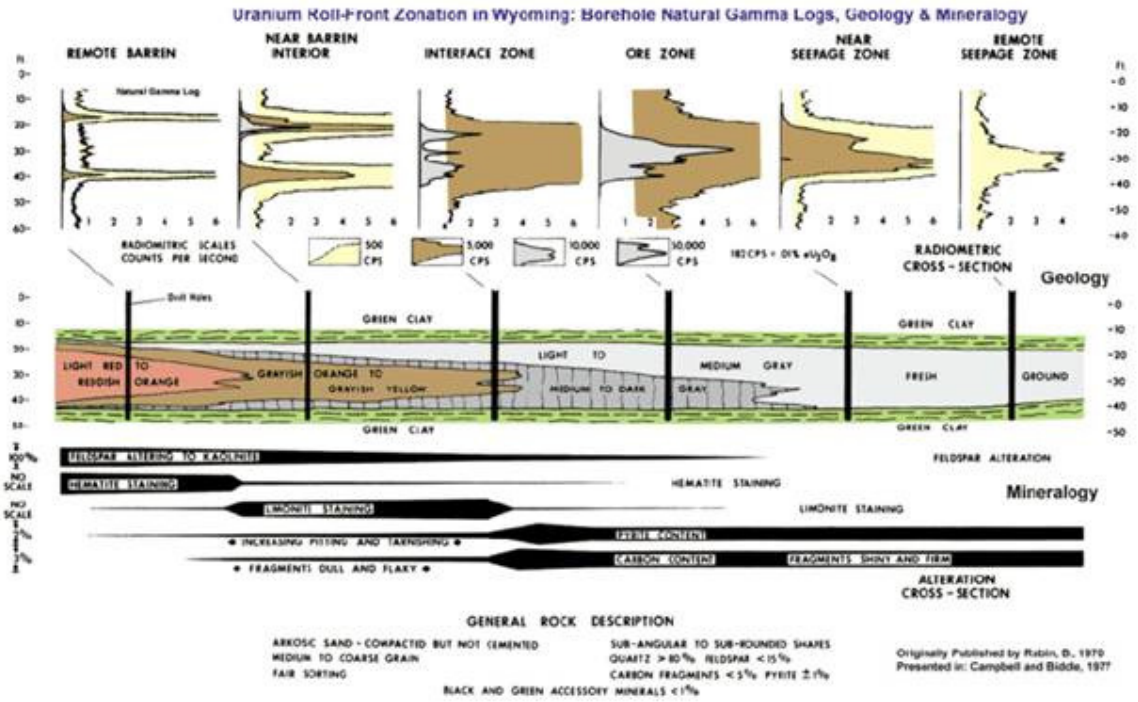

FIGURE 4

The roll front delineation methodology, as shown in Figure 4, basically requires a drill pattern, which places one hole on the oxidised side and one hole on the un-oxidised side. These initial wide-spaced holes are intended to intersect a roll front trend. However, every hole that has been drilled to date has encountered uranium mineralisation. This is considered to be a very good indicator that roll front nose deposits are in the very near vicinity. Over the next two months infill drilling will be undertaken to pinpoint the location of the roll front noses themselves.

Barber is planned to be the second production centre at Peninsula's Lance Projects in Wyoming, USA.

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 Jim Guilinger, Principal of independent consultants World Industrial Minerals who 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 Guilinger consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

All U3O8 grades from the 2009 drilling were obtained from the prompt fission neutron (PFN) down- hole probe and are not subject to disequilibrium effects.

Please note that the potential quantity and grade of the Exploration Targets in this announcement are conceptual in nature, that there has been insufficient exploration to define a Mineral Resource and that it is uncertain if further exploration will result in the determination of a Mineral Resource.