**- Caribou Zone Mineralized Corridor Extended by 230 metres to ENE**

**- 15.9 g/t Au over 8.9 Metres in FW3 Zone Extension at Depth**

**- 8.5 g/t Au over 4.7 Metres in New Wolf 2 Zone**

**- 28.1 g/t Au over 2.5 Metres in New FW0 Zone**

MONTREAL, QUEBEC--(Marketwired - Sep 19, 2016) - Osisko Mining Inc. (TSX:OSK) ("Osisko" or the "Corporation") is pleased to announce new results from the ongoing drill program at its 100% owned Windfall Lake gold project located in Urban Township, Québec. The current drill program is being expanded to 150,000 metres, and combines definition drilling above the Red Dog intrusion ("Red Dog"), expansion drilling above and below Red Dog and exploration drilling on the greater deposit and overall property area. Six drills are currently on site, and an additional four drills will be added to the program in the coming months. A total of 5 new drill holes are reported in this release, and are presented in greater detail in the table below.

Significant new results include: 391 g/t Au over 3.1 metres (uncut) in DDH OSK-W-16-728 (14.7 g/t Au over 3.1 metres cut); 15.9 g/t Au over 8.9 metres in DDH OSK-W-16-706-W1; 10.6 g/t Au over 10.9 metres in DDH OSK-W-16-706-W1; and 5.75 g/t Au over 16.5 metres in DDH OSK-W-16-706-W1.

The new results demonstrate the high potential for significant new mineralization near the known Windfall mineral inventory through continued definition and exploratory drilling, specifically in the eastern extension of the deposit and below the Red Dog intrusion.

The main mineralized zones are hosted within three broad corridors of mineralization trending WSW - ENE. Moving south to north across the Windfall deposit these three corridors are:

- the Caribou Corridor (includes the Caribou Zone, Wolf Zone and the new "Wolf 2" Zone);
- the Zone 27 Corridor; and
- the "Underdog" Corridor (newly renamed, previously known as the FW series corridor) hosting all zones below the Red Dog dike and includes the newly reported "FW0" Zone; FW1 Zone; FW2 Zone; FW3 Zone; and FW4 Zone).

The primary corridors of mineralization are depicted in diagrams available on Osisko's website at www.osiskomining.com.

Highlights of Current Results

- Caribou Zone mineralized corridor has been extended by 230 metres farther than previously known to the ENE; the partial results from hole DDH OSK-W-16-728 indicate the main deposit continues to host strong mineralization with a new high-grade intercept in Caribou Corridor; results for Zone 27 Corridor and Underdog Corridor are pending
- FW3 Zone expanded 50 metres down dip; new "FW0 Zone" defined in Underdog Corridor; new "Wolf 2 Zone" defined in Caribou Corridor
- Drill program expanded to 150,000 metres, current 6 drill rigs increasing to 10; aggressive 200 metre, 400 metre and 600 metre step out drilling from eastern limit of known mineralization is planned to pursue the main deposit to the ENE

Details of significant new results are outlined in the table below:

| Hole | From (m) | To (m) | Interval (m) | Au (g/t) | Zone | Corridor |
|---|---|---|---|---|---|---|
| OSK-W-16-309-W2 | 972 | 975 | 3.0 | 5.58 | New | Underdog |
| OSK-W-16-706-W1 | 546.5 | 563 | 16.5 | 5.75 | Caribou South 1 | Caribou |
| Including | 549.2 | 549.5 | 0.3 | 222 | Caribou South 1 | Caribou |
| *cut to 100 g/t Au* | 546.5 | 563 | 16.5 | 3.53 | Caribou South 1 | Caribou |
| OSK-W-16-706-W1 | 818.8 | 821.3 | 2.5 | 28.1 | FW0 | Underdog |
| OSK-W-16-706-W1 | 981.1 | 992 | 10.9 | 10.6 | FW2 | |
| *Including* | 981.9 | 983.7 | 1.8 | 24.0 | | Underdog |
| *including* | 988.50 | 992.00 | 3.5 | 19.4 | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| OSK-W-16-706-W1 | 1007.00 | 1012.00 | 5.0 | 7.1 | FW2 | Underdog |
| *including* | 1008.00 | 1010.00 | 2.0 | 13.8 | | |
| OSK-W-16-706-W1 | 1022.0 | 1024.3 | 2.3 | 18.6 | FW2 | Underdog |
| *including* | 1022.9 | 1023.7 | 0.8 | 49.9 | | |
| OSK-W-16-706-W1 | 1033 | 1041.9 | 8.9 | 15.9(3) | FW3 | |
| *including* | 1033.5 | 1034.3 | 0.8 | 93.6 | | Underdog |
| *including* | 1041 | 1041.4 | 0.4 | 117 | | |
| OSK-W-16-706-W1 | 1073.1 | 1077 | 3.9 | 8.74 | FW4 | Underdog |
| OSK-W-16-718 | 570.5 | 575.2 | 4.7 | 8.50 | Wolf 2 | Caribou |
| OSK-W-16-718 | 735.3 | 737.9 | 2.6 | 4.78 | Wolf | Caribou |
| OSK-W-16-722 | 53.00 | 55.00 | 2.0 | 6.08 | New | New |
| *including* | 53.00 | 54.00 | 1.0 | 12.0 | | |
| OSK-W-16-728 | 478.1 | 481.2 | 3.1 | 391 | Caribou | Caribou |
| *Including* | 478.1 | 478.5 | 0.4 | 3020 | Caribou | Caribou |
| *cut to 100 g/t Au* | 478.1 | 481.2 | 3.1 | 14.7(3) | Caribou | Caribou |

Notes:
(1) For complete drilling results please see www.osiskomining.com.
(2) True widths are estimated at 65-80% of the reported core length interval. See "Quality Control" below.
(3) High grade values cut to 100 g/t Au

Drill Hole Collar Coordinates and Information:

| Hole Number | Azimuth (°) | Dip (°) | Length (m) | UTM E | UTM N | Section |
|---|---|---|---|---|---|---|
| OSK-W-16-309-W2 | 325.8 | -63.2 | 1111.0 | 452548 | 5434514 | 2575 |
| OSK-W-16-706-W1 | 329.6 | -58.4 | 1276.5 | 452610 | 5434420 | 2525 |
| OSK-W-16-718 | 332.1 | -60.5 | 799.5 | 452742 | 5434575 | 2775 |
| OSK-W-16-722 | 330 | -60 | 774.8 | 452795 | 5434813 | 2925 |
| OSK-W-16-728 | 330.8 | -65.2 | 1460 | 453054 | 5434890 | 3200 |

President and Chief Executive Officer John Burzynski noted: "In recent weeks, our corporate and exploration focus has turned solidly to the Windfall project. Results coming from the current drill program have centered our attention on the growing potential for Windfall to be our "company maker" deposit. We are increasing the scale of our drill program for the second time in the past 3 months, and are planning on adding another four drills and 50,000 metres of drilling. The exploration team is having increasing success at intersecting new extensions of the currently known zones, and have also successfully begun to define new parallel mineralized zones like the recently announced Wolf Zone within the primary mineralized corridors. All indications at this point are leading us to believe that we will continue to expand the main deposit as we advance drilling, particularly to the ENE and at depth. The results outlined in today's press release define significant extensions and additions to the main mineralization at Windfall, and have added a new emphasis on exploring the main deposit to follow the currently known mineralized corridors in the ENE direction to try to find the center of gravity of the deposit."

DDH OSK-W-16-309-W2 intersected 5.58 g/t Au over 3.0 meters, 60 metres to the northwest of FW3. This new intercept correlates with 4.3 g/t Au over 2.1 metres in previously reported hole EAG-13-320-W1 located 60 metres below.

DDH OSK-W-16-706-W1 confirmed a new zone ("FW0 Zone") located 50 metres to the SE of FW1 with an intercept of 28.1 g/t Au over 2.5 metres in an altered porphyry dyke with 1% pyrite stringers. The FW0 Zone is currently modelled for over 300 metres along strike and 100 metres vertical, and remains open along strike and at depth. The previously reported intercepts interpreted to be part of the FW0 Zone include 11.2 g/t Au over 3.4 metres in DDH OBM-16-614, 7.49 g/t Au over 7.0 metres in DDH OBM-15-564, and 12.5 g/t Au over 2.0 metres in OBM-15-560.

Three additional zones currently interpreted to represent elements of the FW2 Zone were intersected between FW1 and FW3, respectively returning: 10.6 g/t Au over 10.9 metres (hosted in a strongly silicified porphyry dyke containing 2-5% pyrite stringers with traces of sphalerite and specks of visible gold); 7.1 g/t Au over 5.0 metres and 18.6 g/t Au over 2.3 metres (both hosted in a porphyry dyke containing 2-3% pyrite stringers and traces of chalcopyrite).

This hole also expanded the FW3 Zone by 50 metres down dip, returning 15.9 g/t Au over 8.9 metres hosted in a porphyry dyke containing 2-3% pyrite stringers with traces of chalcopyrite and several specks of visible gold.

Additionally, the hole intersected gold mineralization below FW3 (currently interpreted as FW4 Zone), returning 8.74 g/t Au over 3.9 metres.

DDH OSK-W-16-718 extended the newly discovered Wolf Zone by 26 metres vertically with an intercept of 4.78 g/t Au over 2.6 metres located above previously reported DDH OBM-15-559 which returned 7.0 g/t Au over 10.0 metres. This drill hole also confirmed a new zone ("Wolf 2 Zone") located between the Caribou S-3 Zone and the recently discovered Wolf Zone with 8.5 g/t Au over 4.7 metres. Wolf 2 Zone extends for more than 130 metres laterally and is open in its up-dip extension; it now includes previously reported intercepts of 9.09 g/t Au over 5.2 metres in DDH EAG-12-448, 3.25 g/t Au over 2.4 metres in DDH OSK-16-708-W1, and 3.33 g/t Au over 1.2 metres in DDH EAG-13-504.

DDH OSK-W-16-722 intersected new near surface gold mineralization returning 6.08 g/t Au over 2.1 metres at the contact of a porphyry dyke. This intersection correlates with a previously reported intersection of 5.23 g/t Au over 2.0 metres in DDH EAG-13-497 located 63 metres below and to the SW.

DDH OSK-W-16-728 intersected 391.43 g/t Au over 3.1 metres, (14.65 g/t Au over 3.1 metres cut to 100 g/t Au), including 3,020 g/t Au over 0.4 metres along the projected Caribou Zone. This drill hole is a 440 metre step-out to the ENE of the current mineral resource and is located 230 metres from the nearest known mineralization in previously reported DDH OBM-16-580 which returned 4.3 g/t Au over 5.4 metres.

Full analytical results from the 5 new drill holes are available at www.osiskomining.com.

Qualified Person

*The scientific and technical content of this press release has been reviewed, prepared and approved by Mr. Jean-Philippe Desrochers, Ph.D., P.Geo. Senior Project Manager of the Windfall Lake gold project, who is a "Qualified Person" as defined by National Instrument 43-101 - Standards of Disclosure for Mineral Projects ("NI 43-101").*

Quality Control

*True widths of the new exploration intercepts reported in this press release have yet to be determined. Additional drilling is planned for the immediate area which will enable the true width determination. Assays are uncut except where indicated. All NQ core assays reported were obtained by either 1 kg whole rock metallic screen/fire assay or standard 50 gram fire-assaying with AA or gravimetric finish at ALS Laboratories in Val d'Or, Québec or Sudbury, Ontario. The 1 kg metallic screen assay method is selected by the geologist when samples contain coarse gold or present a higher percentage of pyrite than surrounding intervals. All samples are also analysed for multi-elements, including silver, using an Aqua Regia-ICP-AES method at ALS laboratories. Drill program design, Quality Assurance/Quality Control and interpretation of results is performed by qualified persons employing a QA/QC program consistent with NI 43-101 and industry best practices. Standards and blanks are included with every 20 samples for QA/QC purposes by the Corporation as well as the lab. Approximately 5% of sample pulps are sent to secondary laboratories for check assays.*

About the Windfall Lake Gold Deposit

*The Windfall Lake gold deposit is located between Val-d'Or and Chibougamau in the Abitibi region of Québec, Canada. The current mineral resource comprises 2,762,000 tonnes at 8.42 g/t Au (748,000 ounces) in the indicated category and 3,512,000 tonnes at 7.62 g/t Au (860,000 ounces) in the inferred category (sourced from a technical report dated June 10, 2015 entitled "Preliminary Economic Assessment of the Windfall Lake Gold Property, Québec, Canada" with an effective date of April 28, 2015, prepared in accordance with NI 43-101). The Windfall Lake gold deposit is currently one of the highest grade resource-stage gold projects in Canada. The bulk of the mineralization occurs in the Main Zone, a southwest/northeast trending zone of stacked mineralized lenses, measuring approximately 600 metres wide and at least 1,400 metres long. The deposit is well defined from surface to a depth of 500 metres, and remains open along strike and at depth. Mineralization has been identified only 30 metres from surface in some areas and as deep as 870 metres in others, with significant potential to extend mineralization up and down-plunge and at depth.*

About Osisko Mining Inc.

*Osisko is a mineral exploration company focused on the acquisition, exploration, and development of precious metal resource properties in Canada. Osisko holds a 100% in the high-grade Windfall Lake gold deposit located between Val-d'Or and Chibougamau in Québec and holds a 100% undivided interest in a large area of claims in the surrounding Urban Barry area (82,400 hectares), a 100% interest in the Marban project located in the heart of Québec's prolific Abitibi gold mining district, and properties in the Larder Lake Mining Division in northeast Ontario, including the Jonpol and Garrcon deposits on the Garrison property, the Buffonta past producing mine and the Gold Pike mine property. The Corporation also holds interests and options in a number of additional properties in northern Ontario. Osisko continues to be well financed and has approximately $50 million in cash and cash equivalents as well as marketable securities of approximately $60 million.*

Cautionary Note Regarding Forward-Looking Information

*This news release contains "forward-looking information" within the meaning of the applicable Canadian securities legislation that is based on expectations, estimates and projections as at the date of this news release. The information in this news* *release about the potential for significant new mineralization near the Windfall mineral inventory; continued definition and exploratory drilling (specifically in the eastern extension of the deposit and below the Red Dog intrusion); strong mineralization in the Caribou Zone; the extension of the Caribou Zone mineralized corridor; the expansion of the FW3 Zone; the expansion of the drill program at Windfall Lake (including the number of drills and meters of drilling); the potential for Windfall to be a "company maker" deposit for the Corporation; the ability of the exploration team to continue intersecting new extensions and to define new parallel mineralized zones; pending transactions and any interests and options of the Corporation; any potential mineralization; the ability to realize upon any mineralization in a manner that is economic; the ability to complete any proposed drilling or exploration activities and the results of such activities; the continuity or extension of any mineralization; and any other information herein that is not a historical fact may be "forward-looking information". Any statement that involves discussions with respect to predictions, expectations, beliefs, plans, projections, objectives, assumptions, future events or performance (often but not always using phrases such as "expects", or "does not expect", "is expected", "anticipates" or "does not anticipate", "plans", "budget", "scheduled", "forecasts", "estimates", "believes" or "intends" or variations of such words and phrases or stating that certain actions, events or results "may" or "could", "would", "might" or "will" be taken to occur or be achieved) are not statements of historical fact and may be forward-looking information and are intended to identify forward-looking information.*

*This forward-looking information is based on reasonable assumptions and estimates of management of Osisko, at the time it was made, involves known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of Osisko to be materially different from any future results, performance or achievements expressed or implied by such forward-looking information. Such factors include, among others, risks relating to the quality of drilling results; the ability of drill results to forecast actual mineralization; property interests; our ability to obtain required approvals, complete definitive documentation and complete transactions on the terms announced, ability of Osisko to complete further exploration activities, including drilling; the results of exploration activities; risks relating to mining activities; the global economic climate; metal prices; dilution; environmental risks; and community and non-governmental actions. Although the forward-looking information contained in this news release is based upon what management believes, or believed at the time, to be reasonable assumptions, Osisko cannot assure shareholders and prospective purchasers that actual results will be consistent with such forward-looking information, as there may be other factors that cause results not to be as anticipated, estimated or intended, and neither Osisko nor any other person assumes responsibility for the accuracy and completeness of any such forward-looking information. Osisko does not undertake, and assumes no obligation, to update or revise any such forward-looking statements or forward-looking information contained herein to reflect new events or circumstances, except as may be required by law.*

Contact

Osisko Mining Inc.
John Burzynski
President and Chief Executive Officer
(416) 363-8653