

RP 2009-02(A)

U-PB AGE DATING IN THE ABITIBI AND LA GRANDE SUBPROVINCES IN 2006-2007

Documents complémentaires

Additional Files



Licence



License

Cette première page a été ajoutée
au document et ne fait pas partie du
rapport tel que soumis par les auteurs.

Énergie et Ressources
naturelles

Québec 

U-Pb Age Dating in the Abitibi and La Grande Subprovinces in 2006-2007

Jean David¹, Donald W. Davis², Daniel Bandyayera, Pierre Pilote and Claude Dion³

RP 2009-02(A)

Keywords: geochronology, U-Pb, zircon, Abitibi, La Grande, Archean

This report presents the results of U-Pb geochronology analyses on zircons carried out in 1998, 2000, 2001, and 2006, on six samples collected in the Abitibi and Baie-James regions. The samples were analyzed by isotopic dilution (ID-TIMS).

La Grande Subprovince, Rivière Eastmain Area

Samples 2006-DB-1125 and 2006-JY-9014 (NTS 33C09) are from the Opinaca Pluton, a polyphase intrusive dome enclosed in basalts and intermediate to felsic lapilli and blocky tuffs of the Kasak Formation. The hornblende-biotite tonalite sample 2006-DB-1125 was dated at 2708.9 ± 0.9 Ma, an age comparable to those obtained for the last synvolcanic intrusive phases in the region. The age of 2703.5 ± 2.8 Ma obtained for the diorite phase of the Opinaca Pluton (sample 2006-JY-9014) is very similar to the age obtained for the diorite phase of the Ell Lake intrusion (2705.6 ± 1.9 Ma).

Sample 2006-DB-1076 (NTS 33C09) is a calc-alkaline felsic tuff of the Kasak Formation. Geochronology results indicate an age of crystallization of 2704.4 ± 1.1 Ma for this sample, i.e. comparable to the age of the diorite phase in the Ell Lake intrusion (2705.6 ± 1.9 Ma) and the sedimentation age of the polygenic conglomerate at the base of the Low Formation (2702 ± 3 Ma).

Abitibi Subprovince, Urban-Barry Area

Sample SGNO-2001-06 is a diorite from the Hébert Pluton, a polyphase intrusion located north of the Urban-Barry volcanic belt. This pluton was traditionally interpreted as a synvolcanic intrusion. The age obtained for the sample, 2695.3 ± 1.0 Ma, suggests instead that the diorite phase of the Hébert Pluton is syntectonic in origin. It is possible that the dioritic phase of the pluton represents a late phase that was emplaced at the contact between the polyphase intrusion and the Urban-Barry belt.

Abitibi Subprovince, Casa Berardi Area

We present the analytical results for two samples of sedimentary rocks of the Taibi Group. Sample SGNO-1998-10 is a sandstone with predominantly sedimentary pebbles collected at the Casa Berardi West gold mine. The age of the youngest zircon, 2696 ± 1 Ma, is interpreted as the maximum sedimentation age for the sandstone. Sample SGNO-2000-01 represents a quartzitic sandstone intercalated in thick iron formation sequences occurring to the northeast of the Casa Berardi East gold deposit. A maximum sedimentation age of 2697.2 ± 0.8 Ma was obtained for this sedimentary rock. The age of sedimentation for the Taibi Group in the Casa Berardi area is 20 to 25 Ma younger than that of nearby volcanism, established at 2719-2721 Ma. This age is comparable to those determined for many syntectonic sedimentary basins dated elsewhere in the Abitibi Subprovince (Cadillac, Caste or Kewagama) and in the Pontiac Subprovince.

1 - GEOTOP UQAM-McGill

2 - Jack Salterly Geochronological Laboratory, University of Toronto

3 - Ministère des Ressources naturelles et de la Faune