

Teams explore water supplies in Latin America

Interest raised in isotope techniques

by Roberto Gonfiantini

Latin American countries are particularly interested in applying isotope techniques in hydrology and other fields of earth sciences. Laboratories currently using these techniques exist in Argentina, Brazil, Chile, Colombia and Mexico, and others are being implemented or planned.

Interest has been heightened recently as a result of the IAEA's Co-ordinated Research Programme on the Application of Isotope Techniques in Hydrology in the Latin American Region.

Ten research contracts already have been awarded under the programme to various institutes in Latin America:

Argentina: Isotopic study of the aquifers of Valle de Tulum and Valle Fertil in the San Juan Province. Main investigators: M.C. Albero of the Instituto de Geocronología y Geología Isotópica, Buenos Aires, and D.O. Coria Jofre of the Universidad Nacional de San Juan and Centro Regional de Aguas Subterráneas, San Juan.

Bolivia: Study of groundwater resources of the sub-basin of Oruro-Caracollo with environmental isotopes. Main investigator: J. Lizarazu Valdivia of the Servicio Geológico de Bolivia, La Paz.

Brazil: Isotope study of the Botucatu and Bauru aquifers in the Paraná basin. Main investigators: E. Salati of the Centro de Energia Nuclear na Agricultura, Piracicaba, S.P., and A. da Cunha Rebouças of the Universidade de São Paulo.

Chile: Isotope hydrology of the area of the Salar de Llamara in the Atacama desert. Main investigator: H. Peña Torrealba of the Dirección General de Aguas, Santiago.

Colombia: Use of isotope techniques in the water resources evaluation of the aquifers Morroa and Sabana Larga, provinces of Atlántico and Bolívar. Main investigators: L. Sanchez R. of the Instituto de Asuntos Nucleares, Bogotá, and F. Mosquera of the Instituto Nacional de Investigaciones Geológicas-Mineras, Bogotá.

M. Gonfiantini is a staff member in the Isotope Hydrology Section of the Agency's Division of Research and Laboratories.

Cuba: Study of recharge in the southern plain of Pinar del Rio and the Matanzas basin. Main investigator: D.M. Arellano Acosta of the Instituto de Hidroeconomía, La Habana.

Dominican Republic: Environmental isotope study of the southwest region and of the Rio Sonador (Yásica). Main investigator: J.F. Febrillet of the Instituto Nacional de Recursos Hidráulicos, Santo Domingo.

Ecuador: Isotopic study of the hydrologic system of the Quito basin. Main investigators: A. Castro of the Comisión Ecuatoriana de Energía Atómica, Quito, and J. Moncayo of the Instituto Ecuatoriano de Recursos Hidráulicos, Quito.

Guatemala: Investigation with isotope techniques of Lake Petén Itzá and surrounding groundwater. Main investigator: E. Velasquez Vasquez of the Instituto Nacional de Sismología, Vulcanología, Meteorología e Hidrología, Ciudad de Guatemala.

Mexico: Study of the Baja California aquifers using environmental isotopes. Main investigator: J.J. Castro of the Secretaría de Agricultura y Recursos Hidráulicos, Ciudad de México.

All these studies have been in progress for about one year, and initial results will be discussed at the first Research Co-ordination Meeting scheduled for spring 1985.

IAEA's programme in Latin America is financed by the Government of the Federal Republic of Germany through the Gesellschaft für Strahlen- und Umweltforschung mbH (Society for Research on Radiation and the Environment), Neuherberg. An institute belonging to this organization — the Institut für Radiohydrometrie, directed by Prof. Herbert Moser — has co-operated with the Agency for many years in several isotope hydrology programmes, and now in particular in this new programme, which will end in 1986.

Regional seminar in Argentina

In July 1984, IAEA and the United Nations Educational, Scientific and Cultural Organization (UNESCO) sponsored a regional seminar for Latin America on the use of isotope techniques in water resources management. More than 40 participants — 27 from various Argentine institutions and 15 from ten other Latin American countries — attended sessions at the Instituto de Geocronología y Geología Isotópica (INGEIS) in the Ciudad Universitaria in Buenos Aires.

INGEIS has become an important centre for the application of isotope techniques in earth science investigations — and one of the best equipped. Fields of work there include rock dating by rubidium-strontium, potassium-argon, fission tracks, and other methods; stable isotope geochemistry (isotopes of hydrogen, carbon, oxygen, and sulphur); tritium in natural waters; carbon-14 measurements for groundwater investigations,