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我国首次完成区域性地下水污染调查评价成果

中国地质科学院水文地质环境地质研究所承担的“珠江三角洲地区地下水污染调查评价专题研究项目”取得重要成果。该项目圆满完成了任务书和设计书规定的各项任务，于2009年底通过专家评审。一致认为资料翔实、数据可靠、依据充分，综合研究方法先进、有创新性，结论可信。这是我国首次完成的区域性地下水污染调查评价成果。所取得的成果有：

一、完成了1:2 500 000调查面积36550 km²；1:50 000调查面积4300 km²；分析有机样品994组，无机样品922组，现场测试物化指标1486组，共获得分析数据170550个；调查机井1467眼，泉点32个，地质剖面观测点42个，工业污染源调查点137个，垃圾场60个，油库25个；野外划定工业区622片，农业区98片。

二、基本查明了地下水潜在污染源状况。污染多发生在城市周边、城市及工矿企业开发区附近范围，特别是污水灌溉导致污染物向地下水的扩散，区域酸雨已导致部分地区地下水pH值明显酸化的现象，海咸水特别是海潮活动导致地下水质量下降。

三、选取对珠江三角洲地区地下水水质有较大影响的指标，运用SPSS统计方法，进行了该区的地下水背景值初步研究，建立了12个指标的地下水背景值系列。

四、提出了新的地下水水质与污染层级阶梯评价方法，建立了评价指标体系，评价了地下水水质与污染状况。

五、选择地下水埋深、包气带介质、河网密度、地形地貌等四个影响因子对地下水防污性能进行评价，划分出五个等级，完成了地下水污染防治区划。

六、按数据库建设要求，完成了170000多个分析调查数据的录入。

七、编制完成了《珠江三角洲地区地下水污染防治区划图集》。该图集具有统一的设计原则和编制体系、分幅系统协调、选题全面、结构合理，对该类图件的编制具有借鉴作用。

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《中国大陆科学钻探工程综合研究（东海）》项目 通过成果评审验收

2009年12月4日, 中国地质科学院地质研究所承担的《中国大陆科学钻探工程综合研究（东海）》项目顺利通过中国地质调查局组织的成果评审验收。评审专家组在听取项目组汇报的基础上, 对照任务书和设计书, 审查了报告全文。成果报告最终得分94.71分, 为优秀级。

大别-苏鲁造山带是世界上规模最大、保存最完整的高压-超高压变质带, 广泛出露含金刚石和柯石英的榴辉岩及其它类型的超高压变质岩, 代表了曾俯冲至200 km以下的典型大陆地壳物质。《中国大陆科学钻探工程综合研究（东海）》项目以中国大陆科学钻探主孔岩石学研究为主线, 以板块汇聚边界地幔动力学为指导, 深入开展矿物学、岩石学、地球化学、同位素年代学、岩石流变学、构造地质学等多学科综合研究, 首次建立中国大陆科学钻探主孔岩石学、地球化学、流变学、同位素年代学、地球物理等多学科系列剖面, 系统研究了扬子板片的深俯冲和折返过程中的岩石流变学状态, 建立了苏鲁UHP变质岩原岩深俯冲-折返-隆升-去顶全过程动态演化的时限, 验证了苏鲁地球物理VSP剖面并建立了精细的CCSD孔区5000 m深度的三维结构剖面, 提出新的板块会聚边界大陆地壳分片、多重的深俯冲/折返模式。这些成果在国内外获得了同行的高度评价, 推动了大陆深俯冲和折返动力学、大陆动力学理论的发展。

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罗布泊盐湖第一个地质科学深钻开钻

2009 年岁末, 罗布泊盐湖首个地质科学深钻正式开钻, 标志着罗布泊盐湖找钾第二次创业正式拉开帷幕。这对深化认识罗布泊的形成演化具有重要的科学意义。至 2010 年 3 月 3 日, 已获得钻井进尺 487m, 预计 2010 年 6 月份内可以完工。

罗布泊找钾第一次创业始于 1995 年, 查明其资源量只能满足 300 万吨产能规模 30 年需要, 后备资源勘查的重要性已凸现出来。因此, 中国地质科学院矿产资源研究所钾盐专家建议, 开展罗布泊找钾二次创业, 开辟第二找矿空间。

科学家提出了罗布泊深部找钾的科学依据: 一、沉积年代对比, 目前罗北凹地已揭示的钾盐矿层年代都不超过 25 万年, 而与之山一山之隔的柴达木盆地中西部, 自上新世以来就已出现盐湖沉积, 一些盐湖在早-中更新世时期还沉积了薄层固体钾盐, 因此, 罗布泊在早更新世或更早时期可能已出现盐湖环境。二、柴达木盆地西部第三系碎屑岩中赋存有富钾卤水, 推测罗布泊第三系地层也可能蕴藏有富钾卤水。三、柴达木盆地在 100 万~180 万年之间, 出现一个极端干旱气候期, 据此, 罗布泊也应出现过有利于盐湖环境发育的气候环境。四、在罗布泊干盐湖区发现很多深部卤水补给盐湖的通道等重要证据。五、连续电导率成像技术揭示罗布泊盐湖深部地层 1000m 处可能还有卤水分布, 重力测量表明, 罗布泊盐湖第四系底界埋深达 1000 余 m。六、罗布泊出现系列地堑凹地, 沉降作用一直持续进行, 最深沉降区位于北部地带。

本次钻探目标是: 探测罗布泊盐湖深部 200m~1000m 是否存在富钾卤水与富钾卤水赋存状态; 研究查清罗布泊盐湖第四纪沉积环境演化历史及成钾规律; 研究钾盐富集机理与后备资源量评价预测; 提出下一步深部卤水勘查方案与开发建议。

罗布泊是世界最大干盐湖之一, 目前, 还没有一个穿透第四系的地质科学钻探。科钻 1 井的实施, 对深化认识罗布泊的形成演化具有重要的科学意义。

罗布泊盐湖钾盐科钻 1 井研究项目由中国地质科学院矿产资源研究所承担, 国投罗布泊钾盐公司出资, 新疆第二水文地质大队施实钻井工程, 吐哈油田测井公司完成钻孔测井。

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《地球学报》2008 年度影响因子 0.940

根据 2009 年 11 月出版的《中国科技期刊引证报告(核心版)》(2009 年版), 在对 1765 种核心期刊的计量指标统计中,《地球学报》2008 年度的主要指标为影响因子 0.940, 总被引频次 1064。

据统计, 在 1868 种核心期刊中, 总被引频次 ≥ 1000 次以上的期刊共有 447 种; 影响因子 ≥ 1 的期刊共有 123 种。

表 1 《地球学报》2008 年度主要引证指标及对比数据

	总被引频次		影响因子	
	数值	排名	数值	排名
《地球学报》	1064		0.940	
地球科学类期刊(平均值)	939	14	0.842	14
全部核心期刊(平均值)	804	406	0.445	138

(资料来源:《中国科技期刊引证报告(核心版)》(2009 年版))