



State of Utah

Department of  
Environmental Quality

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November 29, 2006

CERTIFIED MAIL  
RETURNED RECEIPT REQUESTED

Mr. Harold R. Roberts  
Vice President – Corporate Development  
International Uranium Corporation (IUC)  
Independence Plaza, Suite 950  
1050 Seventeenth Street  
Denver, CO 80265

**SUBJECT: March 31, 2006 IUC Submittal Regarding Fate and Transport Modeling Work Plan for Chloroform, IUC, White Mesa Uranium Mill, Blanding Utah: DRC Findings and Notice to Proceed.**

Dear Mr. Roberts:

The March 24, 2006 HGC *Work Plan Evaluation of Fate and Transport of Chloroform Detected In The Perched Groundwater White Mesa Uranium Mill Near Blanding, Utah (WP)* was received by the Division of Radiation Control (DRC) on April 3, 2006.

The DRC has decided not to review this WP and instead let IUC proceed to prepare a contaminant modeling report (Report) that will address fate and transport of chloroform and other volatile organic compounds (VOC). As you are aware the purpose of this Report is to demonstrate if natural monitored attenuation (NMA) is a valid method to protect local groundwater quality and remediate the VOCs detected in the perched groundwater at the mill site.

As mentioned previously in the October 25, 2006 letter, an acceptable corrective action plan (CAP) will initially focus on hydraulic control and containment of the chloroform and VOC plume. Thereafter, the DRC review and approval of this Report may be undertaken as part of a future revision to the CAP.

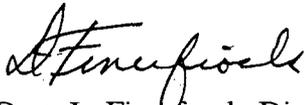
In the Report submitted for Executive Secretary review and approval, IUC would:

- a) Determine and justify all information necessary for infiltration and contaminant transport modeling, including but not limited to representative input values for vadose zone and aquifer soil-water partitioning ( $K_d$ ) coefficients, chloroform source and other VOC source term concentrations, vadose zone and aquifer groundwater velocities, vadose zone and aquifer dispersivity, contaminant half-life or other rates of decay, etc. In the event that any required information is not currently available, IUC may select conservative assumptions for use in the required infiltration and contaminant transport models.
- b) Provide predictive models that are publicly available computer codes that adequately represent field characteristics and physical processes at the site. Said description will also include specific information on model design, including, but not limited to: governing equations and their applicability to site conditions, grid design, duration of simulation, and selection of time steps.
- c) Determine the conceptual model used and justify why it is representative or conservative of actual field conditions at the site. Said conceptual model will identify the physical domain(s) and geometries simulated including all boundary and initial conditions assigned in the model(s), and the shallow aquifer locations where future potential contaminant concentrations have been predicted.
- d) Justify how the infiltration and contaminant transport problem has been adequately conceptualized, planned, and executed to demonstrate compliance.
- e) Provide, describe and justify the following:
  - 1) Model Results – including electronic input and output files from all infiltration, groundwater flow and contaminant transport models used in the report.
  - 2) Model Calibration – including description of results and efforts used to demonstrate how the model adequately reproduced field measured heads, flows, and contaminant concentrations.
  - 3) Transient and Steady State Conditions – including a demonstration on how the models adequately simulate transient and steady state conditions. This includes, but is not limited to disclosure, evaluation and justification of water and mass balance error values reported by the models.
  - 4) Sensitivity Analyses – including description of various model simulations run and evaluated to define the range of model uncertainty. Such uncertainty includes, but is not limited to: boundary and initial conditions, model input values, and spatial and temporal distribution of model parameters used in the problem domain.
  - 5) Post-model Audit Plan – including plans to revisit the modeling effort at some future time to re-assess its ability to represent site characteristics and predict long-term performance of tailings cell design and construction, and groundwater protection.

As discussed in our September 8, 2006 meeting and restated in the DRC October 25, 2006 letter, ground water modeling is a lengthy and iterative process. In order to ensure timely development and implementation of a CAP, it is imperative to focus first on hydraulic containment and control of the chloroform plume. Upon submittal, DRC review of the Report will be conducted by URS Corporation. After Executive Secretary approval of the Report, the CAP may be modified to accommodate necessary changes to protect public health and the environment.

Thank you for your continued cooperation. Please contact Dean Henderson at 801-536-0046 with any questions.

Sincerely,



Dane L. Finerrock, Director  
Utah Division of Radiation Control

DLF/DCH:dh

cc: Rob Herbert, DWQ  
Bill VonTill, NRC – Washington, D.C.