

# **EXHIBIT S**



# Utah

Where ideas connect

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FILE

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(LM)

YVG

March 28, 2003

Mr. Harold Roberts  
Vice President – Corporate Development  
International Uranium Corporation  
Independence Plaza, Suite 950  
1050 17<sup>th</sup> Street  
Denver, CO 80265

Re: November 26, 2002 IUC Sampling Results from the Passive Diffusion Bag Samplers,  
August 14, 2002 Groundwater Split Sampling Event at the IUC White Mesa Uranium  
Mill: **DRC Results, Findings, and Request for Action.**

Dear Mr. Roberts,

We have reviewed the IUC submittal referenced above. Initially, the Passive Diffusion Bag (PDB) samplers were deployed in 12 different groundwater monitoring wells at the IUC White Mesa uranium mill facility as part of an on-going chloroform contamination investigation. The purpose of the PDB samplers was to determine if any organic contaminant free product or dense non-aqueous phase liquid (DNAPL) was present in the subsurface in any of these wells. This was important because the presence of DNAPLs would greatly complicate groundwater remediation activities at the site.

On July 9, 2002, IUC and DRC staff deployed the PDB samplers at or near the base of the well screen in each of the 12 IUC wells tested at the facility, including wells TW4-1 thru TW4-11, and MW-4. About 36 days later, the PDB samplers were retrieved on August 14, 2002, and split sampled by both DRC and IUC staff. All the wells tested were split sampled with one exception, well TW4-6, where insufficient volume was available for the DRC sample. Omission of this well was acceptable in that past chloroform concentrations there showed the well to be beyond the southern-most boundary of the chloroform plume, as evidenced by undetectable chloroform concentrations collected previously.

The IUC split samples were apparently analyzed by Energy Laboratories Inc. (ELI) of Casper, Wyoming. The DRC samples were analyzed by the Utah State Health Laboratory (SHL) in Salt Lake City. The SHL results from this sampling are attached below for your reference.

From review of both the IUC and DRC PDB results, we have made the several conclusions, and request your cooperation in several areas, as follows:

1. Dissolved VOC Contaminant Plume in Wells Tested – previously IUC proposed and we agreed that volatile organic compounds (VOC) found in the PDB samplers at concentrations at or above 1% of a contaminant's solubility limit would be deemed as an indicator of DNAPL in the groundwater system (see 5/23/02 IUC PDB Sampler Work Plan, p. 3). Review of the IUC and DRC results indicates that all the VOC contaminants detected in the PDB samplers were well below this 1% solubility criteria (see attached DRC spreadsheet PDBags.xls, tabsheet Compare2). As a result, we have concluded that the VOC contamination found in the 12 IUC wells tested in August, 2002 are the expression of a dissolved contaminant plume at these locations. This finding greatly simplifies design and operation of a groundwater remediation system at these locations.
2. Need to Improve VOC Analytical Methods – comparison of the IUC and DRC VOC analytical results shows that ELI failed to implement minimum detection limits (MDLs) in its analysis that were below the respective State Groundwater Quality Standard (GWQS). Such MDL failure effected the IUC results for six (6) different VOC parameters, including: dichloromethane, bromodichloromethane, carbon tetrachloride, benzene, chloromethane, and vinyl chloride (see attached DRC spreadsheet PDBags.xls, tabsheet Compare2). As a result of this problem, the IUC PDB results were unable to determine if the State GWQS had been exceeded for the six (6) parameters listed above in many wells at the facility. We request that this error be corrected for all future detection and compliance monitoring for VOC parameters at the IUC facility.
3. Three New VOC Plume Contaminants to Monitor – review of the DRC August, 2002 PDB results indicates that small quantities of three (3) new VOC contaminants may exist in the chloroform plume, including: benzene, naphthalene, and vinyl chloride (see attached DRC spreadsheet PDBags.xls, tabsheet Compare2). This finding is important in that:
  - A. These three (3) VOCs have not been detected before at the facility using traditional groundwater sampling methods, and
  - B. The vinyl chloride concentration detected in well MW-4, 3 ug/l, exceeded the 2 ug/l State GWQS.

In light of these findings, we request that future VOC analysis of groundwater at the IUC facility continue to include these three (3) VOC parameters.

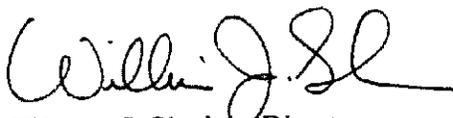
4. Lack of Bromodichloromethane in PDB Samples – the IUC PDB samples detected concentrations of a trihalomethane (THM) compound, bromodichloromethane, in six (6) different wells at the facility (TW4-1, TW4-2, TW4-4, TW4-7, TW4-9, and TW4-11). However, the DRC split samples showed no detectable quantities of this contaminant were found in any of the PDB samples. Consequently, we have concluded that the August, 2002 IUC PDB results for this compound are spurious. We have also considered your explanation for how bromodichloromethane came to be found in the IUC PDB samples, i.e., that bromide permeated the PDB membrane and complexed with chloromethane compounds. By way of information, we pass along the opinion of the inventor of PDB samplers at the USGS, who concluded that it charged solutes, like bromine, cannot permeate the polyethylene membrane of the PDB sampler (see attached email from Mr. Don Vroblesky).

5. Implications of Bromodichloromethane on Chloroform Ad Hoc GWQS – as you will recall, the DRC set an ad hoc GWQS for chloroform on the basis of an EPA Drinking Water MCL for Total THMs (80 ug/l). Because chloroform is a part of this class of compounds, the appearance of any other THM compound in groundwater at the facility would require that the DRC decrease the ad hoc GWQS for chloroform, in order to ensure that the Total THM concentration in groundwater not exceed the 80 ug/l EPA criteria. Consequently, we request that IUC continue to monitor for all THM compounds in all VOC samples collected in the future at the facility. Said compounds include: bromodichloromethane, bromoform, chloroform, and dibromochloromethane.

In summary, from the August, 2002 PDB sampling event the DRC has concluded that the VOC contaminant plume, including chloroform, observed in wells TW4-1 thru TW4-11 at the IUC facility consists of dissolved compounds and not a DNAPL. We also request that VOC analytical detection limits be decreased and future groundwater sampling continue to include several VOC parameters, as outlined above. Also please be advised that the DRC may request that additional PDB sampling be conducted on other IUC wells recently installed at the facility, e.g., wells TW4-12 thru TW4-19.

We appreciate your continued cooperation in the characterization and cleanup of the VOC plume at your White Mesa facility. If you have any questions or concerns about the above findings or requests, please contact Mr. Loren Morton of my staff at 801-536-4262.

Sincerely,



William J. Sinclair, Director

WJS/LBM:lm

Attachments (4)

cc: Don Ostler, DWQ  
Dennis Frederick, DWQ (w/attachments)  
Bill von Till, U.S. NRC (w/attachments)

Cost Code: 342

EPA METHOD 524.2/8260B GC/MS  
Purgeables

Lab #: 200206412

Send Report To:  
UDEQ - DRC  
ATTN:  
168 N 1950 W BLDG 2  
SALT LAKE CITY UT 84114-4850

Utah Division of Laboratory Services  
46 North Medical Drive  
Salt Lake City, UT 84113

Date/Time Collected: 08/14/02 09:25 Sample Matrix: Water  
Collected By: LOREN B MORTON Sampling Site:  
Description of Sampling Point: IUC-PDB TW4-7

Analyst: JBO Date Received: 08/15/2002 Date Analyzed: 8/19/02

Regulated	MRL	Results	List 1	MRL	Results
		ug/L			ug/L
Benzene	1.0	U	Chloroform	1.0	1290.0
Carbon Tetrachloride	1.0	J0.8	Bromodichloromethane	1.0	U
1,2-Dichloroethane	1.0	U	Chlorodibromomethane	1.0	U
1,1-Dichloroethylene	1.0	U	Bromoform	1.0	U
Para-Dichlorobenzene	1.0	U	m-Dichlorobenzene	1.0	U
1,1,1-Trichloroethane	1.0	U	1,1-Dichloropropene	1.0	U
Trichloroethylene	1.0	U	1,1-Dichloroethane	1.0	U
Vinyl Chloride	1.0	U	1,1,2,2-Tetrachloroethane	1.0	U
o-Dichlorobenzene	1.0	U	1,3-Dichloropropene	1.0	U
cis 1,2-Dichloroethylene	1.0	U	Chloromethane	1.0	U
trans 1,2-Dichloroethylene	1.0	U	Bromomethane	1.0	U
1,2-Dichloropropane	1.0	U	1,2,3-Trichloropropane	1.0	U
Ethylbenzene	1.0	U	1,1,1,2-Tetrachloroethane	1.0	U
Monochlorobenzene	1.0	U	Chloroethane	1.0	U
Styrene	1.0	U	2,2-Dichloropropane	1.0	U
Tetrachloroethylene	1.0	U	o-Chlorotoluene	1.0	U
Toluene	1.0	U	p-Chlorotoluene	1.0	U
Xylenes (total)	1.0	U	Bromobenzene	1.0	U
Dichloromethane	1.0	J0.8	cis-1,3-Dichloropropene	1.0	U
1,2,4-Trichlorobenzene	1.0	U	trans-1,3-Dichloropropene	1.0	U
1,1,2-Trichloroethane	1.0	U	Dibromomethane	1.0	U
Ethylene Dibromide	1.0	U			
1,2-dibromo-3-chloropropane	1.0	U			

List 3	MRL	Results	MRL	Results	
		ug/L		ug/L	
1,2,4-Trimethylbenzene	1.0	U	p-Isopropyltoluene	1.0	U
1,2,3-Trichlorobenzene	1.0	U	Isopropylbenzene	1.0	U
n-Propylbenzene	1.0	U	Tert-butylbenzene	1.0	U
n-Butylbenzene	1.0	U	Sec-butylbenzene	1.0	U
Napthalene	1.0	U	Fluorotrichloromethane	1.0	U
Hexachlorobutadiene	1.0	U	Dichlorodifluoromethane	1.0	U
1,3,5-Trimethylbenzene	1.0	U	Bromochloromethane	1.0	U
Methyl T-Butyl Ether	1.0	U			

U- Analyzed for but not detected

J- An estimated value for a tentatively identified compound OR a value less than the detection limit but greater than zero.

Analysis Certified By: SL Date: 09/07/02