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Rio Algom

CERTIFIED MAIL - 7099 3220 0002 1631 3501
RETURN RECEIPT REQUESTED

May 12, 2000

Mr. Thomas Essig
Branch Chief
U.S. Nuclear Regulatory Commission
Uranium Recovery Branch
Division of Waste Management
Mail Stop T7J8
11555 Rockville Pike
Rockville, MD 20850

Re: Bioassay Report
License SUA-1548
Docket 40-8964

Dear Mr. Essig:

Attached, in accordance with license condition #12.10 of the above referenced license, is a report on a bioassay result, which Rio Algom received on April 14, 2000. The results indicated an individual had a bioassay exceeding the 130 μg/l.

If you have any questions concerning this report, please call me at (307) 358-3744, ext. 14.

Sincerely,

John P. McCarthy

John P. McCarthy
Radiation Safety Officer

xc: J. Cash, RAMC/Smith Ranch
B. Ferdinand, RAMC/Smith Ranch
M. Freeman, RAMC/OKC
P. Goranson, RAMC/OKC
NRC (Division of Radiation Safety and Safeguards) Arlington, Texas
Certified Mail - 7099 3220 0002 1631 3648, Return Receipt Requested
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RIO ALGOM MINING CORP.
SMITH RANCH FACILITY

On Friday, April 14, 1999 Energy Lab called to inform me of the results of our bioassays sent to them on April 7, 2000. There were three quality assurance samples submitted on the same date with the returning results within expected range. One reported sample, (364.0 μg/l) voided on April 3, 2000, was from a contractor replacing damaged rubber tiles in the thicknerr.

Upon receipt of these results, the independent lab (Energy Labs) testing the samples was requested to re-analyze the sample for conformation. Energy labs re-analyzed the sample and indicated the re-runs had no appreciable difference.

Regulatory Guide 8.22 recommends an individual exceeding 135 μg/l be placed on restricted duties, the individual was on site for three days and completed the contracted task on the same date of the sample, April 3, 2000. A follow-up bioassay was obtained from the individual on Monday, April 17, 2000 and the results returned at 14.6 μg/l. At the same time an interview was conducted with the individual in an attempt to determine the cause(s) of the elevated bioassay.

The contractors were given and completed radiation safety training on March 31, 2000. They demonstrated knowledge of the work to be completed and an understanding of the safety procedures to be followed. The work was performed under a Radiation Work Permit.

Pursuant to Regulatory guide 8.22, the second urine specimen was analyzed for albuminuria. The initial sample was not tested for albuminuria because it had lapsed the holding time as required by the medical laboratory. The results indicated the microalbumin found in the sample to be 10.3 mcg/ml. The creatinine results were <20 mg/dl. The microalbumin ÷ creatinine ratio is obtained by dividing the albumin (10.3) by the creatinine (<20). Since the calculation can not be made using a non-numeric result, the most liberal number will be used, in this case 19 mg/dl. The resulting calculation 10.3 mcg/ml ÷ 19 mg/dl = 0.5 is well within the normal expected range of 0.0-28.0.

Air samples were collected over the three day contracted work period and the results are shown on the table below. The individual was wearing a positive pressure Racal respirator while performing all tasks associated with the contracted work.

Airborne Concentration around the thickener during that time frame were:

ID Number and time	Date	Dpm/l	% DAC	*
1 (1005)	4/1/00	0.0010	0.09	0.0000010
2 (1243)	4/1/00	0.0002	0.02	0.0000002
3 (1607)	4/1/00	0.0131	1.18	0.0000131
4 (0913)	4/2/00	0.0110	0.99	0.0000110
5 (1129)	4/2/00	0.0105	0.95	0.0000105
6 (1441)	4/2/00	0.0010	0.09	0.0000010
7 (1631)	4/2/00	0.1901	17.13	0.0001901
8 (1254)	4/3/00	0.0078	0.07	0.0000078

* Dpm/l with positive pressure protective factor.

Lastly an interview was conducted with the individual on April 17, 2000. The individual indicated that he felt a cold coming on at the time of his involvement with the task and he had raised his Racal visor and covered his mouth by hand with each coughing attack. He said that he did recall our discussions about the necessity of maintaining the visor in a down position but that covering his mouth was a reflex action and he hadn't though about it until our interview. Being a contractor, we had requested that his post-work bioassay be submitted upon completion of the task and prior to leaving site. He did submit the bioassay as requested, but informed me that he was wearing protective coveralls (tyvek) when he filled the bottle.

Conclusions: The individual inadvertently contaminated himself by raising his Racal visor and covering his mouth by hand while sneezing. This led to a potential inhalation and or ingestion of contaminates. An intake based on actual results and assuming worst case scenario, the individual received 0.05% ALI.

Corrective Action: Proper respirator use, bioassay procedures, and personal hygiene have been and will continue to be the topic during weekly safety meetings and annual refresher training.