

# INTERA

04008904360E

intera Technologies Inc.  
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40-8904

Dec-89-1

Member: Intera Technologies, Inc.

Check No: 1033

Amount: \$150

Fee Category: 2A

Type of Fee: Fund

Date Check Paid: 12/12/89

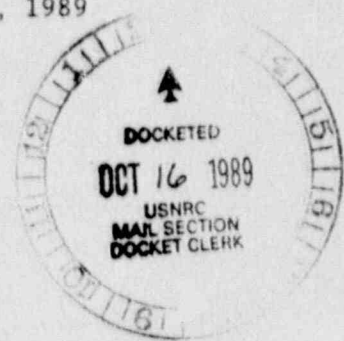
Date Completed: 12/12/89

By: [Signature]

OCT 13 1989

RETURN ORIGINAL TO PDR, HQ.

October 11, 1989



Ramon E. Hall  
Director  
U.S. Nuclear Regulatory Commission  
Uranium Field Office, Region IV  
730 Simms St., Suite 100A  
Golden, CO 80401

RE: Application for Amendment to the L-Bar Materials License SUA-1472,  
Docket 40-8904

Dear Mr. Hall:

The L-Bar Uranium Mine and Mill have undergone very significant changes over the past three years. The mine is closed and capped, the mill has been demolished and the tailings have been reclaimed per an approved reclamation plan. Certain of the conditions in SUA-1472 are no longer applicable to a reclaimed site and so on behalf of BP AMERICA and Kennecott Corporation, we hereby apply for modifications or deletions of the following conditions.

License Condition #16

We propose that these conditions be deleted. An interim stabilization program is no longer required as all tailings are covered by a minimum of 4.1 feet of permanent radom barrier as specified in the L-Bar Reclamation Plan. This barrier has been designed to provide 3.6 ft. of radon attenuating cover plus 0.5 feet to allow for possible erosion over the next 1,000 years.

License Condition #19

Since the mill site has been decommissioned and the tailings disposal area has been reclaimed, there is no longer a requirement for a RSO "who is responsible for radiation" safety aspects of the mill site decommissioning... ". We therefore propose that this condition be deleted.

License Condition #20

The need for this condition has been greatly reduced since the tailings area has been reclaimed. The solar evaporation areas where residual pond water is being evaporated and the sump area collecting tailings drainage water are the only remaining areas of any potential radioactive exposure, and the risk is slight in these areas. The only radiation monitoring

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DESIGNATED ORIGINAL

Certified By Mary C. Hood

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required at the site is the wearing of a TLD by a single site maintenance contractor and alpha scanning if personnel come into contact with evaporation cell or tailings drainage water. This scan is simple and straightforward and does not need an elaborate procedure which must be reviewed annually by an RSO. We propose that all other site procedures relating to reclamation activities be retired. Also the site facilities now consists of a single trailer inside a locked, unguarded gate. Because of the non-secure status of this facility, we propose that all written records and procedures be removed from the site to a more secure off-site facility.

#### License Condition #21

We can envision no circumstance under which an RWP would be required at the reclaimed site. We therefore request that this condition be deleted.

#### License Condition #22

Since the mill has been demolished and all tailings have been stabilized and permanently covered, airborne particulate sampling is no longer required. We therefore propose that this condition be modified by removing the last two sentences of the condition.

#### License Condition #28

All requirements of condition #28 have been met. The condition is no longer relevant and as such we propose that it be deleted.

#### License Condition #29

We propose that license condition #29 be deleted. All contaminated material at the site has been isolated beneath at least 4.1 feet of random barrier. As such, the potential source for airborne contamination has been removed. Regardless, as the following summary tables show, data since January 1988 have indicated little risk at the site even before closure occurred. Although the high volume air filters at the downwind "North Tails" site typically indicated a factor of 10 higher concentration of the three radionuclides measured, they were still quite low in terms of % MPC. Even during construction, between September 1988 and June 1989, when one would expect highest airborne concentration, the highest % MPC for Thorium 230 for a three-month period was only 2.5%. The highest % MPC's for Uranium and Radium 226 during this period was only  $4.4 \times 10^{-2}\%$  and  $1.6 \times 10^{-3}\%$ , respectively.

The differences between the upwind "Moquino" site and the downwind "North Site" for direct radiation has been slight since January 1988 and the radon measurements actually show higher amounts at the upwind "Moquino" site for 3 of the 6 sampling periods.

The 1989 concentrations for all three measured radionuclides for both the annual vegetation and soil tests indicate a reduction in the already

low concentrations for 1988. Apparently closing the site has already had an impact of these concentrations.

Water supply wells in Bibo, Sebageta and Moquino and Moquino Creek at Moquino have also been sampled annually. Neither extensive ground water sampling at the site nor ground water modeling have suggested that these sources are threatened by L Bar operations. We can see no reason for continuing to sample these sources.

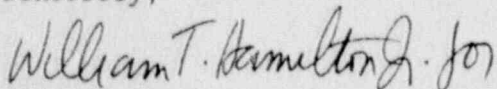
We will continue to sample the required wells for the constituents called for in the license, although we continue to believe the "background" concentrations required for remediation are unreasonably stringent and are based on far too little information about true background at such a potentially variable site.

We believe the data presented above supports our position that the sampling called for in condition #29 is no longer necessary, both because the site is not reclaimed and because the data showed insignificant risk existed for these items even before closure.

In summary, we propose that conditions #16, #19, #21, #28, and #29 be deleted and conditions #20 and #22 be modified to reflect current conditions. The \$150 application fee is enclosed. Also enclosed are the results of Air, Direct Radiation and Radon measurements for the second quarter of 1989. These were not included in August 31, 1989 Semi Annual Environmental Monitoring Report because they were not received from the RSO and lab until after the August 31 deadline. They will be formally submitted in the next semi-annual report.

If you have any questions, please call.

Sincerely,



Thomas G. Osborn  
Project Manager

Attachment  
Federal Express

cc: R. DeLeonardis, BP AMERICA  
G.E. Grisak, INTERA  
Gerry Schurtz, Kennecott

AIR FILTER SAMPLES

		<u>Moquino</u>	<u>% MPC</u>	<u>North Tails</u>	<u>% MPC</u>
01/05/88	UNat	1.0 x 10 <sup>-16</sup>	2.0 x 10 <sup>-3</sup>	4.7 x 10 <sup>-16</sup>	9.4 x 10 <sup>-3</sup>
through	Th230	5.3 x 10 <sup>-17</sup>	1.8 x 10 <sup>-2</sup>	2.6 x 10 <sup>-15</sup>	8.7 x 10 <sup>-1</sup>
03/23/88	Ra226	2.4 x 10 <sup>-17</sup>	1.2 x 10 <sup>-3</sup>	2.9 x 10 <sup>-17</sup>	1.5 x 10 <sup>-3</sup>
03/29/88	UNat	6.2 x 10 <sup>-16</sup>	1.2 x 10 <sup>-4</sup>	3.3 x 10 <sup>-16</sup>	6.6 x 10 <sup>-3</sup>
through	Th230	2.2 x 10 <sup>-16</sup>	7.2 x 10 <sup>-2</sup>	1.5 x 10 <sup>-15</sup>	5.0 x 10 <sup>-1</sup>
06/27/88	Ra226	4.3 x 10 <sup>-17</sup>	2.2 x 10 <sup>-3</sup>	4.2 x 10 <sup>-17</sup>	2.1 x 10 <sup>-3</sup>
06/27/88	UNat	1.4 x 10 <sup>-16</sup>	2.8 x 10 <sup>-3</sup>	2.4 x 10 <sup>-16</sup>	2.4 x 10 <sup>-3</sup>
through	Th230	1.2 x 10 <sup>-17</sup>	4.0 x 10 <sup>-3</sup>	6.3 x 10 <sup>-17</sup>	2.0 x 10 <sup>-2</sup>
09/30/88	Ra226	7.1 x 10 <sup>-18</sup>	3.6 x 10 <sup>-4</sup>	4.4 x 10 <sup>-18</sup>	2.2 x 10 <sup>-4</sup>
09/30/88	UNat	1.4 x 10 <sup>-16</sup>	2.8 x 10 <sup>-3</sup>	2.2 x 10 <sup>-15</sup>	4.4 x 10 <sup>-2</sup>
through	Th230	2.3 x 10 <sup>-17</sup>	7.7 x 10 <sup>-3</sup>	1.7 x 10 <sup>-15</sup>	5.7 x 10 <sup>-1</sup>
12/28/88	Ra226	2.0 x 10 <sup>-18</sup>	1.0 x 10 <sup>-1</sup>	3.0 x 10 <sup>-17</sup>	1.5 x 10 <sup>-3</sup>
01/06/89	UNat	3.5 x 10 <sup>-16</sup>	7.0 x 10 <sup>-3</sup>	1.2 x 10 <sup>-15</sup>	2.4 x 10 <sup>-2</sup>
through	Th230	1.7 x 10 <sup>-16</sup>	2.1 x 10 <sup>-1</sup>	2.0 x 10 <sup>-15</sup>	2.5
03/31/89	Ra226	3.0 x 10 <sup>-18</sup>	1.0 x 10 <sup>-4</sup>	4.9 x 10 <sup>-17</sup>	1.6 x 10 <sup>-3</sup>
03/31/89	UNat	2.2 x 10 <sup>-16</sup>	4.4 x 10 <sup>-3</sup>	7.2 x 10 <sup>-16</sup>	1.44 x 10 <sup>-2</sup>
through	Th230	1.8 x 10 <sup>-16</sup>	2.25 x 10 <sup>-1</sup>	1.3 x 10 <sup>-15</sup>	1.63
06/20/89	Ra226	0.0 x 10 <sup>-17</sup>	- -	1.3 x 10 <sup>-17</sup>	4.0 x 10 <sup>-4</sup>

Direct Radiation    m(REM)/qtr

	<u>Control</u>	<u>North Site</u>	<u>Moquino</u>
1/15/88 - 3/29/88	59.0	32.4	21.2
4/1/88 - 6/26/88	64.2	29.8	20.6
6/27/88 - 9/30/88	74.4	40.0	24.4
10/1/88 - 1/9/89	39.8	46.0	34.2
1/9/89 - 4/5/89	37.8	35.8	24.6
4/6/89 - 7/3/89	27.0	33.6	25.2
		$\bar{x}=36.3$	$\bar{x}=25.0$

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Radon-Track Etch (pCi/L)

	<u>North Site</u>	<u>Moquino</u>
1/15/88 - 3/29/88	2.3	<0.4
3/30/88 - 6/26/88	2.0	3.2
6/27/88 - 9/30/88	2.2	3.6
10/1/88 - 1/8/89	2.1	1.0
1/9/89 - 4/5/89	3.3	2.5
4/6/89 - 6/29/89	3.6	5.8
	$\bar{x} = 2.58$	$\bar{x} = 2.75$

SURFACE AND DRINKING WATER (ANNUAL)

	<u>Moquino Creek</u>			<u>Seboyeta Well</u>		
	Ra	Th	U	Ra	Th	U
	<u>(pCi/kl)</u>	<u>(pCi/kl)</u>	<u>(mg/l)</u>	<u>(pCi/kl)</u>	<u>(pCi/kl)</u>	<u>(mg/l)</u>
2/16/88	.01	0.05	<0.05	1.0	<.005	<0.5
4/24/89	.03	.13	0.5	.78	.04	<0.5

	<u>Bibo Well</u>			<u>Moquino Well</u>		
	Ra	Th	U	Ra	Th	U
	<u>(pCi/kl)</u>	<u>(pCi/kl)</u>	<u>(mg/l)</u>	<u>(pCi/kl)</u>	<u>(pCi/kl)</u>	<u>(mg/l)</u>
2/16/88	.50	.01	<.5	<.2	.04	<0.5
4/24/89	.47	.15	<0.5	.28	.06	<0.5

VEGETATION

	Ra	Th	U
	<u>(pCi/kg)</u>	<u>(pCi/kg)</u>	<u>(µg/g)</u>
7/6/88	$5.0 \times 10^{-4}$	$4.0 \times 10^{-4}$	$2.7 \times 10^{-4}$
6/14/89	$2.0 \times 10^{-4}$	$3.0 \times 10^{-4}$	$0.3 \times 10^{-4}$

SOIL

	Ra	Th	U
	<u>(pCi/kg)</u>	<u>(pCi/kg)</u>	<u>(µg/g)</u>
7/6/88	$1.7 \times 10^{-3}$	$1.1 \times 10^{-3}$	$1.2 \times 10^{-3}$
6/14/89	$1.2 \times 10^{-3}$	$0.5 \times 10^{-3}$	$0.6 \times 10^{-3}$



# CHEM-NUCLEAR SYSTEMS, INC.

3190 South Wadsworth Boulevard • Suite 250 • Denver, Colorado 80227

CC: TGO  
BGM  
GEG  
PJP  
WTH

September 7, 1989

Mr. Tom Osborn  
Intera Technologies  
Suite 300  
6850 Austin Center Blvd.  
Austin, Texas 78731

Dear Tom:

Following is a summary of the second quarter 1989 Environmental Data from the L-Bar Ranch Uranium Operation:

### 1. Air Samples

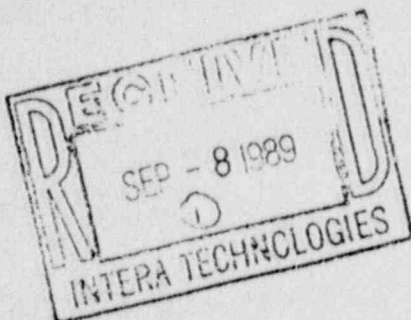
Location: Moquino  
Dates: 3/31/89 to 6/20/89

Radio-nuclide	Concentration (uCi/ml)	Error Estimate (uCi/ml)	LLD (uCi/ml)	%MPC
U-Nat	$2.2 \times 10^{-16}$	*	$1.21E^{-16}$	$4.4 \times 10^{-3}$
Th-230	$1.8 \times 10^{-16}$	$4 \times 10^{-17}$	$4.04E^{-16}$	$2.25 \times 10^{-1}$
Ra-226	$0.0 \times 10^{-17}$	$7 \times 10^{-18}$	$4.04E^{-16}$	-

Location: North Tailings  
Dates: ~~1/6/89 to 3/31/89~~  
3/31/89 to 6/20/89

Radio-nuclide	Concentration (uCi/ml)	Error Estimate (uCi/ml)	LLD (uCi/ml)	%MPC
U-Nat	$7.2 \times 10^{-16}$	*	$1.67 \times 10^{-16}$	$1.44 \times 10^{-2}$
Th-230	$1.3 \times 10^{-15}$	$1.0 \times 10^{-16}$	$5.56 \times 10^{-16}$	1.63
Ra-226	$1.3 \times 10^{-17}$	$1.5 \times 10^{-17}$	$5.56 \times 10^{-16}$	$4.0 \times 10^{-4}$

\*Fluorimetric





Mr. Tom Osborn  
Intera Technologies  
September 7, 1989  
Page 2

2. Direct Radiation Measurements

All TLDs issued 4/1/89 and returned 7/3/89

<u>Location</u>	<u>Exposure Rate</u> mRem/qtr	<u>Error Estimate</u> mRem/qtr	<u>mRem/wk</u>	<u>mRem/day</u>
Control	27.0	4.2	1.70	0.24
North Site	33.6	6.4	2.12	0.30
Moquino	25.2	9.3	1.59	0.23

3. Track Etch Radon-222 Data

Date: 4/5/89 to 6/29/89

<u>Location</u>	<u>Radon</u> pCi/l	<u>Error Estimate</u> pCi/l
North Site	3.6	+/- 0.20
Moquino	5.8	+/- 0.28

Criteria for Air Filter and Radon Data can be found in 10CFR20, Appendix B, Table II, Column 1.

Sincerely,

CHEM-NUCLEAR SYSTEMS, INC.

Michael L. Griffin  
Western Operations Manager

MLG/mc

cc: E. Michaels (Intera -L Bar)  
L. Sears  
M. Whitaker  
File





# BARRINGER LABORATORIES INC.

1500 W. 6TH AVE., SUITE 350  
GOLDEN, COLORADO 80401  
PHONE: (303) 277 1667

1455 DEMING WAY, SUITE 15  
SPARKS, NEVADA 89431  
PHONE: (702) 264 1144

Chem Nuclear Systems  
c/o Intera Tech  
Sohio "L-Bar Ranch"  
NM Hwys 279 & 334  
Seboyeta, NM 87055

ATTN: J. Voorhies

Client No.

Log No. 575

Client PO No. N452813

Req. I-B

Sample Type: filters

Date Collected: 3/89-6/89

Date Received: 7/5/89

Date Reported: 9/7/89

## AMENDED REPORT

### RESULTS OF ANALYSIS

Sample Identification	Total Ra-226 pCi/filter Composite ±Precision*	Total Ra-226 10 <sup>-17</sup> uCi/ml ±Precision*	Total Th-230 pCi/filter Composite ±Precision*	Total Th-230 10 <sup>-17</sup> uCi/ml ±Precision*
	LBN-2-89	1.6 ± 1.8	1.3 ± 1.5	160 ± 10
LBM-2-89	0.0 ± 1.2	0.0 ± 0.7	30 ± 6	18 ± 4

Sample Identification	Total Gross Alpha pCi/filter Composite ±Precision*	Total Gross Alpha 10 <sup>-17</sup> uCi/ml ±Precision*	Total Gross Beta pCi/filter Composite ±Precision*	Total Gross Beta 10 <sup>-17</sup> uCi/ml ±Precision*
	LBN-2-89	1240 ± 460	1000 ± 400	2800 ± 200
LBM-2-89	800 ± 360	480 ± 220	3000 ± 200	1800 ± 100

\* Variability of the radioactive disintegration process

Barringer Laboratories  
15000 W. 6th Avenue  
Suite 300  
Golden, CO 80401  
(303) 277-1687

Chem Nuclear Systems  
c/o Intera Tech  
Sohio "L-Bar Ranch"  
NM Hwys 279 & 334  
Seboyeta, NM 87055

ATTN: J. Voorhies

ADDITIONAL ANALYSIS

<u>Sample Identification</u>	<u>Uranium pCi/filter Composite</u>	<u>Uranium 10-17uCi/ml</u>
LBN-2-89	86	72
LBM-2-89	36	22

# Radon Monitoring Report

SMOKE WESTERN MINING COMPANY  
 L-BAR URANIUM OPERATIONS  
 (3 MILES EAST OF)  
 SEBOYETA NM 87055

Acct. No. 0400111



**Terradex**  
 Radon Detection Products  
**Tech Ops Landowner, Inc.**  
 2 Science Road  
 Glenwood, Illinois 60425-1588

Detector Number	Detector Type	Starting Date	Ending Date	Field Data / Comments	Exposure pCi/days	Avg Radon Conc. pCi/l	FCT STD DEV	NO. OF DAYS
950722	DF	05-APR-89	29-JUN-89	MUGUINO STATION	304.3	3.6	5.6	85
950723	DF	05-APR-89	29-JUN-89	NORTH STATION	494.1	5.8	4.9	85

① ② ③ ④ ⑤ ⑥ ⑦ ⑧  
 O.C. Release: DLH  
 Process No: A04644  
 Report Date: 11-JUL-89  
 Date Received: 05-JUL-89  
 PAGE 1 OF 1

BADGE NUMBER	IDENTIFICATION	DOSIMETER READINGS (mrem)					AVERAGE	2 σ	MREM/WEEK **	FREQUENCY
		FIRST	SECOND	THIRD	FOURTH	FIFTH				
9000	CONTROL	29	27	26	24	29	27.0	4.2	1.70	Q
9001	NORTHSITE	34	34	38	29	33	33.6	6.4	2.12	Q
9002	MOQUIND	23	26	22	33	22	25.2	9.3	1.59	Q
9003	EAST GATE	46	46	42	39	42	43.0	6.0	2.71	Q

\* - DOSIMETER DAMAGED  
 \*\* - BASED ON ELAPSED TIME FROM DATE ANNEALED TO DATE READ

FREQUENCY CODES  
 M - MONTHLY  
 Q - QUARTERLY  
 S - SEMI-ANNUAL  
 A - ANNUAL  
 I - IRREGULAR

CUSTOMER ATTENTION ADDRESS CITY  
 CHEM NUCLEAR SYSTEMS INC  
 JAMES VOORHIES  
 NM HWY 279 & 334  
 SEBOYETA NM 87055