

# CIMARRON CORPORATION LETTER OF TRANSMITTAL

DATE: 11/22/96

Ken Kalman  
Project Manager  
Low Level Waste and Decommissioning Project Branch  
Division of Waste Management  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001  
Mail Drop T7F27

70-925

FROM: Mickey Hodo, Quality Assurance Manager  
Cimarron Corporation  
P.O. Box 315  
Crescent, OK 73028

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| COPY NO. | DATE     | DESCRIPTION   |
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|          | 11/20/96 | Docket No. 79-925; License No. SNM-928 Cimarron Corporation, Lung Fluid Solubility Test |
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REMARKS: The above items are for your use. Please sign and return transmittal letter to me.

NOTE:

*Mickey Hodo*

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PRINTED NAME OF RECIPIENT: Kenneth L. Kalman

SIGNATURE OF RECIPIENT: Kenneth L. Kalman

DATE RECEIVED: December 2 1996

If enclosures are not noted, kindly notify Cimarron Corporation at once.

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# **CIMARRON CORPORATION**

P. O. BOX 25861 • OKLAHOMA CITY, OKLAHOMA 73125

S. JESS LARSEN  
VICE PRESIDENT

November 20, 1996

Mr. Ken Kalman  
Project Manager  
Low-Level Waste and Decommissioning Project Branch  
Division of Waste Management  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

**Ref: Docket No. 79-925; License No. SNM-928  
Cimarron Corporation  
Lung Fluid Solubility Test**

Dear Mr. Kalman:

As discussed during the meeting with NRC on October 15, 1996 in Washington, D.C., Cimarron Corporation is proposing to utilize the Kalkwarf Method for determining uranium solubility in simulated lung fluid (SLF) with the same minor modifications which were approved by the NRC for use by another licensee. The specific proposal is described below:

- Five samples of contaminated soils from the Cimarron site will be submitted to the independent laboratory for analysis. One of the samples will be split and run as a duplicate. Therefore, a total of six samples will be collected and submitted to the independent laboratory for solubility analysis.
- The NRC guidance for performing solubility analysis for uranium in soils recommended that the soil be reduced in particle size to less than fifty (50) microns by sieving. Therefore, all of the samples will be dried, ground (ball mill) and sieved to ensure a maximum particle size of fifty (50) microns.
- Cimarron Corporation proposes that the "third dissolution" technique recommended in the Kalkwarf procedure be performed. This technique is suitable for 0.05 gram sample aliquots and 5.0 ml volumes of Simulated Lung Fluid (SLF). The sample and the SLF will be placed in a reaction vessel, constantly stirred and the temperature will be maintained at 37 °C. Every three (3) days up to day ten (10), the solution will be

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withdrawn and filtered through a 0.22µm filter into a storage container, where it will be held until a total uranium analysis is performed. The filter residue will then be backwashed off of the filter with 5.0 ml of fresh SLF into the reaction vessel. The dissolution will continue for seventy (70) days, with aliquots removed every three (3) days during the first ten (10) days, and every ten (10) days thereafter.

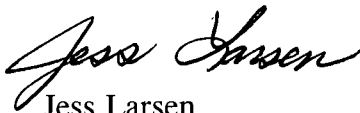
- At the end of the seventy (70) day test period, the residual sample will be acid digested with 5.0 ml of concentrated nitric acid and 2.0 ml of 48% hydrofluoric acid.
- Cimarron Corporation proposes to analyze the initial soil samples for total uranium prior to initiating the analysis.
- Cimarron Corporation proposes to utilize pulsed laser induced kinetic phosphorescence analysis (KPA) to determine the total uranium concentration in the SLF solutions. The minimum detectable activity (MDA) for this analysis method is 1µg uranium per liter. Therefore, like the method approved by NRC for another licensee, the uranium analysis method proposed in the Kalkwarf method will not be utilized.
- Documentation of all analyses performed on the samples by the independent laboratory will be provided to the NRC in the Cimarron Corporation Lung Fluid Solubility Analysis Report.

Cimarron Corporation estimates that the analysis process, data evaluation and report preparation will take approximately 100 days after receipt of the samples by the independent laboratory.

Cimarron Corporation requests NRC concurrence with the proposed solubility test methods described herein such that the solubility of the enriched uranium contaminated soils at the Cimarron site can be confirmed. Cimarron Corporation will submit the soil samples to the independent laboratory for analysis as described herein upon receipt of NRC concurrence.

Please feel free to contact me if there are any additional questions or concerns, or if we can be of any further assistance.

Sincerely,



Jess Larsen  
Vice President