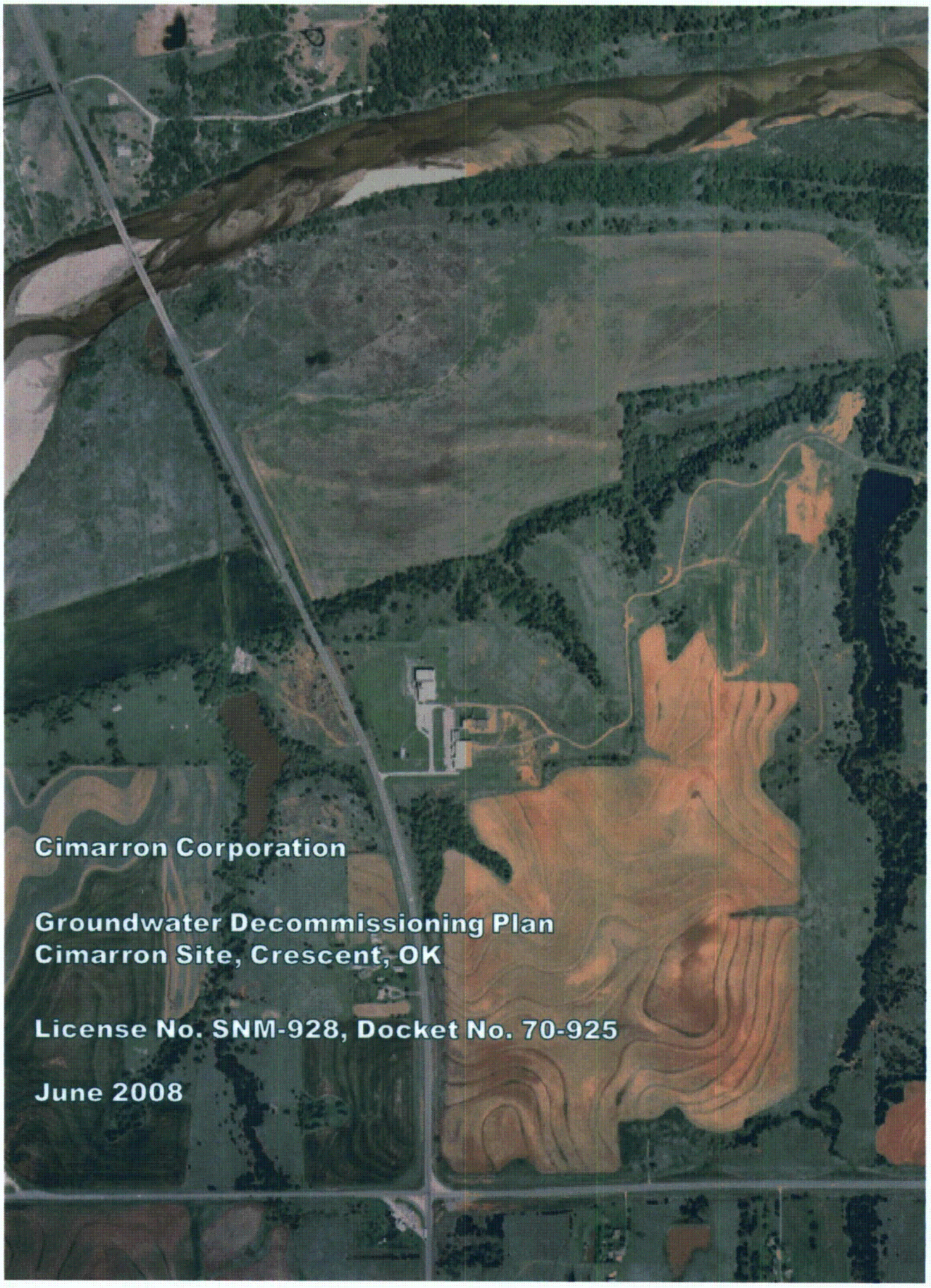

Cimarron Corporation

Groundwater Decommissioning Plan
Cimarron Site, Crescent, OK

License No. SNM-928, Docket No. 70-925

June 2008

CIMARRON CORPORATION
P.O. BOX 315 • CRESCENT, OK 73028

June 2, 2008

Mr. Kenneth Kalman
Office of Nuclear Materials Safety & Safeguards
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Re: Docket No. 70-925; License No. SNM-928
License Amendment Request for Groundwater Decommissioning

Dear Mr. Kalman:
Cimarron Corporation (Cimarron) has completed the decommissioning of buildings and soils at the Cimarron site, and is prepared to complete decommissioning by reducing the concentration of uranium in groundwater to comply with the license criterion of 180 pCi/l total uranium. Cimarron proposes to remediate groundwater by converting dissolved uranium to the solid phase, and establishing geochemical conditions that prevent its remobilization at concentrations exceeding the license criterion.

In 1999, NRC approved a site decommissioning plan (combining the April 1995 Site Decommissioning Plan and the July 1998 Decommissioning Plan Groundwater Evaluation Report) requiring additional groundwater assessment, and committing to additional action should it be determined that natural attenuation would not reduce groundwater concentrations to acceptable levels. Subsequent evaluation indicated that it would take decades for groundwater to attain the stipulated release criteria by natural attenuation. Consequently, Cimarron now submits the enclosed Groundwater Decommissioning Plan as an amendment to the NRC approved Site Decommissioning Plan. Cimarron provides Attachment 1 describing the content and status of the documents referenced in License Condition 10, which relate to the decommissioning of the site. Cimarron requests that License Condition 10 be revised to read:

> *For use in accordance with statements, representations, and conditions contained in letters dated September 14, 1990; July 25, 1995; January 28, 1997; February 10, 1998, and June 2, 2008.*

Attachment 2 provides a table showing how this submittal, in conjunction with previously submitted documents, satisfy the requirements for the content of a decommissioning plan as presented in NUREG-1757, "Consolidated Decommissioning Guidance".

Attachment 3 provides a table showing how Cimarron's Quality System satisfies the quality assurance requirements of Regulatory Guide 4.15, "Quality Assurance for Radiological Monitoring Programs (Inception Through Normal Operations to License Termination) – Effluent Streams and the Environment".

Jeff Lux, Senior Project Manager • Tronox Worldwide, LLC
One Leadership Square • 211 N. Robinson Ave. • Oklahoma City, OK 73126-8859
405.775.5194
Fax – 405.302.4637

Attachment 4 provides a table showing how this submittal addresses technical issues raised in the PNNL report, "Evaluating the Efficacy of Uranium Bioremediation in the Subsurface: Technical Bases and Performance Indicators"

Finally, Attachment 5 provides a table listing the deficiencies identified by NRC in Cimarron's December 2003 license amendment request, identifying how and where those deficiencies are addressed in the Groundwater Decommissioning Plan.

Cimarron and its contractors (ENSR, LNST and ARCADIS) have been pursuing the implementation of an effective, cost-efficient approach to remediate the groundwater at the Cimarron site for more than three years through an in situ bioremediation program. We believed that such an approach is consistent with NRC's "Principles of Good Regulation". However, it has become apparent that the NRC is reluctant to support this approach, as shown by the continuing requests for additional information. A chronology of the numerous requests for information and conference calls over the past 18 months are summarized in Attachment 6.

NRC has informed Cimarron that NRC will not approve full-scale implementation of an in situ bioremediation program, stating that NRC will approve the development of in situ reactive zones in small areas. NRC asserts that information obtained from pilot-scale tests is needed to justify full-scale implementation of this technology, as well as to determine how long post-decommissioning monitoring should be performed.

Cimarron concludes that the conduct of pilot scale tests is impractical for two reasons. First, if Cimarron conducts pilot tests and NRC then does not approve full-scale implementation, there will be areas within which groundwater has been converted to reducing conditions and uranium has been immobilized. This will make any subsequent remediation technology, other than excavation of the water-bearing unit, prohibitively more expensive. Second, if NRC does not accept the geochemical modeling which demonstrates that immobilized uranium will not re-mobilize whether or not reducing conditions are maintained as sufficient to demonstrate the longevity of remediation, even decades of post-decommissioning monitoring will be insufficient to predict uranium concentration in groundwater over a thousand year period.

Cimarron submits as Attachment 7 an ALARA Evaluation for groundwater remediation. This ALARA Evaluation shows that no form of groundwater remediation is justifiable on a cost-benefit basis even if groundwater in the most contaminated area were currently being used as drinking water. Since groundwater is not being used, there is actually no reduction in dose as a result of groundwater remediation.

There has been no measurable exposure to licensed material at the site for several years. This lack of exposure will continue as long as the site is controlled, preventing the use of shallow groundwater for drinking water. Consequently, if NRC is unable to approve the enclosed plan through full-scale implementation, Cimarron proposes to "default" to natural attenuation, which will over time reduce groundwater concentrations

Jeff Lux, Senior Project Manager • Tronox Worldwide, LLC 405.775.5194
One Leadership Square • 211 N. Robinson Ave. • Oklahoma City, OK 73126-8859 Fax – 405.302.4637

to less than the license criterion for uranium. This is the method originally approved by NRC in the April 1995 Site Decommissioning Plan and the July 1998 Decommissioning Plan Groundwater Evaluation Report. Cimarron proposes to implement the following controls in lieu of more "active" groundwater remediation:

- Continue annual environmental monitoring of approximately 20 wells distributed throughout the three areas in which groundwater exceeds license criteria. Monitoring wells to be sampled and analytical parameters will be agreed upon by NRC, DEQ, and Cimarron.
- Control use of the site to prevent use of shallow groundwater as drinking water, documented by quarterly site inspections. Cimarron would be willing to incorporate a restriction against the use of shallow groundwater for drinking water in the deed. Cimarron would not consider the use of such a control to result in a "restricted release" because this institutional control would be in effect only until groundwater complies with unrestricted release criteria.
- Discontinue its radiation protection program except as necessary to monitor the annual sampling and analysis of groundwater.
- Pursue closure for those issues addressed in the August 31, 2007 submittal.
- Pursue NRC concurrence that surface and subsurface soil in Subarea F complies with license criteria for unrestricted release.

Cimarron acknowledges that the time period required for natural attenuation to reduce groundwater concentrations to less than the license criterion is longer than was anticipated when the July 1998 Decommissioning Plan Groundwater Evaluation Report was approved by NRC. However, the proposed groundwater remediation program would represent expenditures of millions of dollars per man-rem avoided *if someone were currently using groundwater from the most highly impacted area*. But, as noted above, no one is using the water. Consequently, the application of more expensive technologies cannot be justified.

NRC approval of this license amendment request is respectfully requested. If you have any questions regarding this license amendment request, please call me at 405-775-5194 (OKC) or 405-642-5152 (mobile).

Sincerely,

Jeff Lux
Project Manager

Cc: Blair Spitzberg, NRC Region IV
David Cates, DEQ
Mike Broderick, DEQ

Jeff Lux, Senior Project Manager • Tronox Worldwide, LLC
One Leadership Square • 211 N. Robinson Ave. • Oklahoma City, OK 73126-8859
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