

December 15, 2022

Mr. James Smith  
U.S. Nuclear Regulatory Commission  
11555 Rockville Pike  
Rockville, MD 20852-2738

Mr. Paul Davis  
Oklahoma Department of Environmental Quality  
707 North Robinson  
Oklahoma City, OK 73101

Re: Docket No. 07000925; License No. SNM-928  
Cimarron Environmental Response Trust  
Proposal to Abandon Monitor Wells T-99, T-100, and 1371 – 1373 – Corrected

Dear Sirs:

Solely as Trustee for the Cimarron Environmental Response Trust (CERT), Environmental Properties Management LLC (EPM) submits herein a proposal to abandon certain monitor wells at the Cimarron Site. Five monitor wells (Monitor Wells T-99, T-100, and 1371 through 1373) were installed near the Cimarron River in December 2014 as part of the 2014 Design Investigation project. EPM requests approval to abandon these monitor wells from both the U. S. Nuclear Regulatory Commission (NRC) and the Oklahoma Department of Environmental Quality (DEQ).

The NRC noted that the heading for the table that listed analytical data for Monitor Wells 1371, 1372, and 1372 in the September 8, 2022, letter proposing to abandon these monitor wells did not include “1373”. This submittal is a corrected version of that September 8, 2022, letter.

#### Background

The NRC Criterion of 180 picocuries per liter (pCi/L) for uranium in groundwater was established and stipulated in License SNM-928 in 1995. Prior to 2014, the extent of uranium in groundwater exceeding the NRC Criterion had been defined. However, the DEQ had not established remediation criteria for uranium, nitrate, and fluoride until after the CERT was established in 2011. The State Criteria for these contaminants are:

- Uranium - 30 micrograms per liter (µg/L)
- Nitrate – 22.9 milligrams per liter (mg/L)
- Fluoride – 4 mg/L

Prior to 2014, the extent of groundwater exceeding State Criteria had not been defined for any of these contaminants of concern (COCs). The 2014 Design Investigation completed the delineation of these contaminants in groundwater.

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Thirty-five (35) additional monitor wells were installed site-wide during the 2014 Design Investigation, and groundwater samples were collected from over 60 monitor wells for laboratory analysis.

Monitor Wells T-99 and T-100

Numerous flood events have occurred since Monitor Wells T-99 and T-100 (in the Western Alluvial Area) were installed. The deposition of sand during flood events has reconfigured the topography in the area surrounding these wells, resulting in the accumulation of sand around both wells. The following pictures show that all but 10-12 inches of the protector pipe for Monitor Well T-99 and all but 18-20 inches of the protector pipe for Monitor Well T-100 have been buried in sand. Re-grading the area to remove the sand is impractical; subsequent flood events will continue to bury them. EPM believes these wells should be abandoned before they are completely buried.



Monitor Well T-99



Monitor Well T-100

Attachment 1 contains a map showing the locations of these monitor wells and the analytical data obtained from samples collected from these monitor wells. Monitor Well T-99 has yielded groundwater averaging 33 mg/L nitrate and 36 ug/L uranium. Monitor Well T-100 has yielded groundwater averaging 26 mg/L nitrate and 29 ug/L uranium. Fluoride concentrations are less than 1 mg/L for groundwater in both wells. The concentration of uranium in both wells is far below the DCGL, but the concentration of uranium exceeds the MCL in T-99. The concentration of nitrate exceeds State Criteria in both monitor wells.

EPM believes that there is no reason to maintain these two monitor wells. They are no longer sampled on a regular basis, and they do not serve any purpose in the decommissioning of the site because they are far outside of the extent of uranium exceeding the NRC Criterion. Additionally, because they are within the area in which nitrate (and uranium in T-99) exceed the State Criterion, they don't complete the delineation of the respective dissolved plumes to those levels.

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Monitor Wells 1371 Through 1373

Numerous flood events have occurred since Monitor Wells 1371, 1372, and 1373 (in Burial Area #1) were installed. The deposition of sand and the scouring of channels during flood events has reconfigured the topography in the area surrounding these wells, creating ridges and gullies in the path to these wells. Re-grading the area to level the terrain is impractical; subsequent flood events will continue to both scour and deposit sand. These monitor wells are now a challenge to access on an annual basis when groundwater sampling crews obtain depth-to-water measurements for all monitor wells on the Site. EPM believes that paths to these wells should be cleared and the wells abandoned before ridges and scour-channels make it still more difficult to access the wells.

Attachment 2 contains a map showing the locations of these monitor wells and the analytical data obtained from samples collected from these monitor wells. Monitor 1371 has yielded groundwater averaging 27 ug/L uranium. Monitor Well 1373 has yielded groundwater averaging 43 ug/L uranium. Monitor Well 1372 has yielded groundwater averaging 10 ug/L uranium. Both nitrate and fluoride concentrations are less than 1 mg/L for groundwater in both wells. The concentration of uranium in all three wells is far below the DCGL.

EPM believes that there is no reason to maintain these two monitor wells. They are no longer sampled on a regular basis, and they do not serve any purpose in the decommissioning of the site because they are far outside of the extent of uranium exceeding the NRC Criterion. There is no nitrate or fluoride in Burial Area #1 and Monitor Well 1373 does not complete the delineation of the uranium in groundwater to the State Criterion.

Well Abandonment

Upon approval by the NRC and the DEQ, all five wells will be abandoned in accordance with Oklahoma Water Resources Board regulations. Assuming approval by both agencies is received by the end of September 2022, the work will be completed during 2022, being funded by budget Task 6, "Out of Scope Work". 93.2% of the cost will be paid out of the Federal Environmental Cost Account and 6.8% of the cost will be paid out of the State Environmental Cost Account.

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If you have any questions or desire clarification, please call me at (405) 641-5152.

Sincerely,

A handwritten signature in black ink, appearing to read "Jeff Lux". The signature is fluid and cursive, with the first name "Jeff" and last name "Lux" clearly distinguishable.

Jeff Lux, P.E.  
Project Manager

cc: Robert Evans, US Nuclear Regulatory Commission, Region IV  
Michael Broderick, Oklahoma Department of Environmental Quality

Attachments:

- Attachment 1 – Monitor Wells T-99 and T-100 Map and Data
- Attachment 2 – Monitor Wells 1371, 1372, and 1373 Map and Data



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Proposal to Abandon Monitor Wells T-99, T-100, 1371 and 1372

ATTACHMENT 1  
MONITOR WELLS T-99 AND T-100 MAP AND DATA







**Cimarron Environmental Response Trust**  
**Analytical Data for Monitor Wells T-99 and T-100**

| Monitor Well | Date       | Analyte         | Result | Total Uranium          | DL    | Unit | Qual |
|--------------|------------|-----------------|--------|------------------------|-------|------|------|
| T-99         | 12/16/2014 | Fluoride        | 0.552  |                        | 0.033 | mg/L |      |
| T-100        | 12/16/2014 |                 | 0.772  |                        | 0.033 | mg/L |      |
| T-99         | 11/6/2018  | Nitrate/Nitrite | 37.3   |                        | 1.7   | mg/L |      |
|              | 12/16/2014 |                 | 22.3   |                        | 0.425 | mg/L |      |
|              | 3/26/2015  |                 | 24.1   |                        | 0.850 | mg/L |      |
|              | 2/18/2016  |                 | 36.8   |                        | 0.850 | mg/L |      |
|              | 5/9/2016   |                 | 46.6   |                        | 0.850 | mg/L |      |
|              | 8/9/2016   |                 | 38.4   |                        | 1.700 | mg/L |      |
|              | 10/17/2016 |                 | 31.4   |                        | 1.700 | mg/L |      |
|              | 2/7/2017   |                 | 30.8   |                        | 0.425 | mg/L |      |
|              | 4/19/2017  |                 | 18.1   |                        | 0.425 | mg/L |      |
|              | 8/1/2017   |                 | 34.3   |                        | 1.700 | mg/L |      |
|              | 11/8/2017  |                 | 40.8   |                        | 0.850 | mg/L |      |
|              | 2/6/2018   |                 | 46.2   |                        | 1.700 | mg/L |      |
|              | 5/9/2018   |                 | 37.2   |                        | 0.850 | mg/L |      |
|              | 8/21/2018  |                 | 18.9   |                        | 1.700 | mg/L |      |
|              |            |                 | 33.1   | Mean                   |       |      |      |
|              |            |                 | 46.6   | Maximum                |       |      |      |
|              |            |                 | 9.3    | Standard Deviation (σ) |       |      |      |
|              |            |                 | 51.7   | Mean + 2σ              |       |      |      |
| T-100        | 11/6/2018  | Nitrate/Nitrite | 21.3   |                        | 0.85  | mg/L |      |
|              | 12/16/2014 |                 | 49.3   |                        | 0.850 | mg/L |      |
|              | 3/26/2015  |                 | 51.6   |                        | 1.700 | mg/L | J+   |
|              | 2/18/2016  |                 | 32.3   |                        | 0.425 | mg/L |      |
|              | 5/9/2016   |                 | 25.4   |                        | 0.850 | mg/L |      |
|              | 8/9/2016   |                 | 14.6   |                        | 0.850 | mg/L |      |
|              | 10/17/2016 |                 | 21.9   |                        | 0.425 | mg/L |      |
|              | 2/7/2017   |                 | 27.3   |                        | 0.425 | mg/L |      |
|              | 4/19/2017  |                 | 22.5   |                        | 0.850 | mg/L |      |
|              | 8/1/2017   |                 | 25.4   |                        | 1.700 | mg/L |      |
|              | 11/8/2017  |                 | 18.7   |                        | 0.850 | mg/L |      |
|              | 2/6/2018   |                 | 20.6   |                        | 1.700 | mg/L |      |
|              | 5/9/2018   |                 | 16.0   |                        | 0.850 | mg/L |      |
|              | 8/21/2018  |                 | 20.7   |                        | 1.700 | mg/L |      |
|              |            |                 | 26.3   | Mean                   |       |      |      |
|              |            |                 | 51.6   | Maximum                |       |      |      |
|              |            |                 | 11.2   | Standard Deviation (σ) |       |      |      |
|              |            |                 | 48.7   | Mean + 2σ              |       |      |      |



**Cimarron Environmental Response Trust**  
**Analytical Data for Monitor Wells T-99 and T-100**

| Monitor Well | Date       | Analyte     | Result | Total Uranium                   | DL    | Unit  | Qual |
|--------------|------------|-------------|--------|---------------------------------|-------|-------|------|
| T-99         | 12/16/2014 | Uranium-238 | 48.1   | 48.1                            | 0.067 | ug/L  |      |
|              | 3/26/2015  | Uranium-238 | 46.6   | 46.6                            | 0.067 | ug/L  |      |
|              | 2/18/2016  | Uranium-238 | 36.8   | 36.8                            | 0.067 | ug/L  |      |
|              | 5/9/2016   | Uranium-238 | 35.1   | 35.1                            | 0.067 | ug/L  |      |
|              | 8/9/2016   | Uranium-238 | 33.2   | 33.2                            | 0.067 | ug/L  |      |
|              | 10/17/2016 | Uranium-238 | 35.1   | 35.1                            | 0.067 | ug/L  |      |
|              | 2/7/2017   | Uranium-235 | 0.288  | 35.088                          | 0.010 | ug/L  |      |
|              | 2/7/2017   | Uranium-238 | 34.8   |                                 | 0.067 | ug/L  |      |
|              | 4/19/2017  | Uranium-235 | 0.290  | 35.790                          | 0.010 | ug/L  |      |
|              | 4/19/2017  | Uranium-238 | 35.5   |                                 | 0.067 | ug/L  |      |
|              | 8/1/2017   | Uranium-235 | 0.260  | 32.260                          | 0.010 | ug/L  |      |
|              | 8/1/2017   | Uranium-238 | 32.0   |                                 | 0.067 | ug/L  |      |
|              | 11/8/2017  | Uranium-235 | 0.269  | 32.769                          | 0.010 | ug/L  |      |
|              | 11/8/2017  | Uranium-238 | 32.5   |                                 | 0.067 | ug/L  |      |
|              | 2/6/2018   | Uranium-235 | 0.286  | 33.686                          | 0.010 | ug/L  |      |
|              | 2/6/2018   | Uranium-238 | 33.4   |                                 | 0.067 | ug/L  |      |
|              | 5/9/2018   | Uranium-235 | 0.303  | 34.503                          | 0.010 | ug/L  |      |
|              | 5/9/2018   | Uranium-238 | 34.2   |                                 | 0.067 | ug/L  |      |
|              | 8/21/2018  | Uranium-235 | 0.205  | 25.705                          | 0.010 | ug/L  |      |
|              | 8/21/2018  | Uranium-238 | 25.5   |                                 | 0.067 | ug/L  |      |
|              | 11/6/2018  | Uranium-235 | 0.312  | 34.612                          | 0.01  | ug/L  |      |
|              | 11/6/2018  | Uranium-238 | 34.3   |                                 | 0.067 | ug/L  |      |
|              |            |             | 35.7   | Mean                            |       |       |      |
|              |            |             | 48.1   | Maximum                         |       |       |      |
|              |            |             | 5.6    | Standard Deviation ( $\sigma$ ) |       |       |      |
|              |            |             | 46.9   | Mean + 2 $\sigma$               |       |       |      |
| T-100        | 12/16/2014 | Uranium-238 | 30.8   | 30.8                            | 0.067 | pci/L |      |
|              | 3/26/2015  | Uranium-238 | 31.6   | 31.6                            | 0.067 | ug/L  | J    |
|              | 4/19/2017  | Uranium-235 | 0.189  | 24.789                          | 0.010 | ug/L  |      |
|              | 4/19/2017  | Uranium-238 | 24.6   |                                 | 0.067 | ug/L  |      |
|              |            |             | 29.1   | Mean                            |       |       |      |
|              |            |             | 31.6   | Maximum                         |       |       |      |
|              |            |             | 3.7    | Standard Deviation ( $\sigma$ ) |       |       |      |
|              |            |             | 36.5   | Mean + 2 $\sigma$               |       |       |      |

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ATTACHMENT 2  
MONITOR WELLS 1371, 1372, AND 1373 MAP AND DATA



Monitor Wells to be Abandoned

+1372

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+1371

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+1412

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+1361

+1364

+1411

+02W45

+02W43

+1352

+02W82

+02W35

+02W37

+02W44

+1410

+02W34

+02W36

+02W16

+02W33

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2018 BASE MAP - BA1 AREA  
CIMARRON ENVIRONMENTAL  
RESPONSE TRUST  
CIMARRON SITE, OKLAHOMA

BURNS  
MCDONNELL

environmental  
group south oklahoma llc



0 35 70 140 210 280  
Feet

DATE:  
MAP PRODUCED - 1/16/2019



**Cimarron Environmental Response Trust**  
**Analytical Data for Monitor Wells 1371, 1372, and 1373**

| Monitor Well | Date       | Analyte         | Result | Total Uranium                   | Unit | Qual |
|--------------|------------|-----------------|--------|---------------------------------|------|------|
| 1371         | 12/16/2014 | Fluoride        | 0.41   |                                 | mg/L |      |
| 1372         |            |                 | 0.42   |                                 | mg/L |      |
| 1373         |            |                 | 0.37   |                                 | mg/L |      |
| 1371         | 12/16/2014 | Nitrate-Nitrite | 0.05   |                                 | mg/L | U    |
| 1372         |            |                 | 0.05   |                                 | mg/L | U    |
| 1373         |            |                 | 0.05   |                                 | mg/L | U    |
| 1371         | 12/16/2014 | Uranium-238     | 30.8   | 30.8                            | ug/L |      |
|              | 3/23/2015  | Uranium-238     | 31.3   | 31.3                            | ug/L |      |
|              | 4/19/2017  | Uranium-235     | 0.2    | 21.5                            | ug/L |      |
|              |            | Uranium-238     | 21.3   |                                 | ug/L |      |
|              |            |                 | 27.9   | Mean                            |      |      |
|              |            |                 | 31.3   | Maximum                         |      |      |
|              |            |                 | 5.5    | Standard Deviation ( $\sigma$ ) |      |      |
|              |            |                 | 38.9   | Mean + 2 $\sigma$               |      |      |
| 1372         | 12/16/2014 | Uranium-238     | 10.5   | 10.5                            | ug/L |      |
|              | 3/23/2015  | Uranium-238     | 8.8    | 8.8                             | ug/L |      |
|              | 4/19/2017  | Uranium-235     | 0.1    | 8.8                             | ug/L | J    |
|              |            | Uranium-238     | 8.8    |                                 | ug/L |      |
|              |            |                 | 9.4    | Mean                            |      |      |
|              |            |                 | 10.5   | Maximum                         |      |      |
|              |            |                 | 1.0    | Standard Deviation ( $\sigma$ ) |      |      |
|              |            |                 | 11.3   | Mean + 2 $\sigma$               |      |      |

**Cimarron Environmental Response Trust**  
**Analytical Data for Monitor Wells 1371, 1372, and 1373**

| Monitor Well | Date       | Analyte     | Result | Total Uranium                                   | Unit | Qual |
|--------------|------------|-------------|--------|---|------|------|
| 1373         | 12/16/2014 | Uranium-238 | 31.2   | 31.2  | ug/L |      |
|              | 3/23/2015  | Uranium-238 | 29.0   | 29.0  | ug/L | U    |
|              | 2/17/2016  | Uranium-238 | 57.5   | 57.5  | ug/L |      |
|              | 5/9/2016   | Uranium-238 | 55.1   | 55.1  | ug/L |      |
|              | 8/11/2016  | Uranium-238 | 64.3   | 64.3  | ug/L |      |
|              | 10/18/2016 | Uranium-238 | 33.8   | 33.8  | ug/L |      |
|              | 12/15/2016 | Uranium-235 | 0.3    | 27.9  | ug/L |      |
|              | 12/15/2016 | Uranium-238 | 27.6   |   | ug/L |      |
|              | 2/7/2017   | Uranium-235 | 0.4    | 31.3  | ug/L |      |
|              | 2/7/2017   | Uranium-238 | 30.9   |   | ug/L |      |
|              | 4/19/2017  | Uranium-235 | 0.3    | 25.3  | ug/L |      |
|              | 4/19/2017  | Uranium-238 | 25.0   |   | ug/L |      |
|              | 8/2/2017   | Uranium-235 | 0.5    | 44.1  | ug/L |      |
|              | 8/2/2017   | Uranium-238 | 43.6   |   | ug/L |      |
|              | 11/9/2017  | Uranium-235 | 0.4    | 37.6  | ug/L |      |
|              | 11/9/2017  | Uranium-238 | 37.2   |   | ug/L |      |
|              | 2/7/2018   | Uranium-235 | 0.7    | 64.4  | ug/L |      |
|              | 2/7/2018   | Uranium-238 | 63.7   |   | ug/L |      |
|              | 5/8/2018   | Uranium-235 | 0.8    | 68.6  | ug/L |      |
|              | 5/8/2018   | Uranium-238 | 67.8   |   | ug/L |      |
|              | 8/27/2018  | Uranium-235 | 0.4    | 28.9  | ug/L |      |
|              | 8/27/2018  | Uranium-238 | 28.5   |   | ug/L |      |
|              | 11/7/2018  | Uranium-235 | 0.5    | 40.3  | ug/L |      |
|              | 11/7/2018  | Uranium-238 | 39.8   |   | ug/L |      |
|              |            |             | 42.6   | <b>Mean</b>                                     |      |      |
|              |            |             | 68.6   | <b>Maximum</b>                                  |      |      |
|              |            |             | 15.3   | <b>Standard Deviation (<math>\sigma</math>)</b> |      |      |
|              |            |             | 73.1   | <b>Mean + 2<math>\sigma</math></b>              |      |      |