



# Department of Environmental Quality



To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.

Matthew H. Mead, Governor

Todd Parfitt, Director

December 1, 2016

Mr. Scott Schierman  
Uranium One Americas, Inc.  
907 N. Poplar Street, Suite 260  
Casper, WY 82601

**COPY**

**RE: LQD 2015-2016 Annual Inspection Report, Uranium One, Willow Creek ISR Project, Permit No. 478**

Dear Mr. Schierman:

Enclosed is a copy of the Annual Inspection Report conducted on October 18, 2016 at the Willow Creek ISR Project, Permit No. 478. This inspection was conducted with your assistance and the assistance of Mr. Kevin Filbert of Uranium One.

A copy of this report will be placed in the permanent inspection file for Permit No. 478, Willow Creek ISR Project, as will any written comments you may have.

In summary, no compliance issues were noted. However, as discussed in the attached inspection report, Uranium One is reminded to continue implementing BMP's to control erosion in disturbed areas as soon as possible following disturbance.

If you have any questions or comments, please contact me at 307-675-5619 or at [luke.mcmahan@wyo.gov](mailto:luke.mcmahan@wyo.gov).

Regards,

Luke McMahan, P.G.  
Project Geologist  
WDEQ-LQD District 3

Attachment: 2015-2016 Annual Inspection Report

cc: **Mr. Ron Linton, US Nuclear Regulatory Commission, Mail Stop T-8F5,**  
11545 Rockville Pike, Rockville, MD 20852 w/attach.

*ask  
12/2/16*



# IN SITU MINE INSPECTION REPORT

Wyoming Department of Environmental Quality, Land Quality Division  
2100 West 5th Street Sheridan, WY 82801  
Phone: (307) 673-9337 FAX: (307) 672-2213



|                              |            |                          |                                |
|------------------------------|------------|--------------------------|--------------------------------|
| <b>Permit Number:</b>        | PT0478     | <b>Permittee:</b>        | URANIUM ONE USA INC            |
| <b>Inspection Date:</b>      | 10/18/2016 | <b>Inspector(s):</b>     | Luke McMahan                   |
| <b>Report Date:</b>          | 12/1/2016  | <b>Participant(s):</b>   | Scott Schierman, Kevin Filbert |
| <b>Last Inspection:</b>      | 12/29/2015 | <b>Current Bond:</b>     | \$21,672,638                   |
| <b>Inspection Reason(s):</b> | Annual     | <b>Field Conditions:</b> | Clear, calm, dry ~60°          |
|                              |            | <b>Approval Date:</b>    | 4/18/1978                      |

|                |         |                          |          |
|----------------|---------|--------------------------|----------|
| <b>Status:</b> | Active  | <b>Approved Acreage:</b> | 14986.38 |
| <b>County:</b> | Johnson | <b>Mineral:</b>          | Uranium  |

## Opening Comments

The Annual Inspection for Uranium One's Willow Creek Mine was conducted by LQD District 3 Project Geologist Luke McMahan on October 18, 2016. The inspection was conducted with the assistance of Mr. Scott Schierman and Mr. Kevin Filbert of Uranium One. The inspection consisted of a records review which was conducted at the Christensen Ranch field office and a field inspection which was conducted at Willow Creek's Christensen Ranch and Irigaray sites.

## Current and proposed activities:

Irigaray is receiving and processing loaded resin from Strata Energy. Anfield proposes to send loaded resin to Irigaray at a future date, however the details regarding these plans were not available at the time of the inspection. Uranium One is currently pursuing the option to permit Class V injection wells for treated disposal. Class V injection wells are permitted through the WDEQ-Water Quality Division and Uranium One has been communicating with WQD regarding this option. LQD will address any needed PT478 permit revisions associated with this proposal following the outcome of WQD's review. The LQD inspector was advised that the mine is maintaining a constant bleed from all active wellfields (MU5-2, MU7, MU8, MU10). There was no drilling or well completions that occurred at the Willow Creek Project during the reporting period.

## Records Review:

Mechanical Integrity Testing: MIT records were found to be kept at the Christensen Ranch office. The MIT records viewed during the inspection appeared to be in order.

Spill Records and Reporting: hard copy records of reportable and non-reportable spills were found to be kept on-site in the Christensen Ranch office. As discussed in the 2015-2016 Annual Report, there was one (1) reportable spill during the reporting period in Mine Unit 2, Module 2-4.

Excursion Records: Electronic excursion records are accessible at the Christensen Ranch office. Three (3) monitoring wells, 2MW84, 8MW36A and 8MW37A were on excursion status during the reporting period (July 1, 2015 through June 30, 2016). The excursions in these three wells had been controlled and taken off excursion status prior to this inspection.

Well Completion Records: hard copy well construction records were available in the Christensen Ranch office and the records viewed were found to be in order.

Monitoring Well Water Quality Data: hard copy water quality data is available at the Christensen Ranch office in the quarterly reports. Electronic water quality data and tracking records are also accessible for viewing.

12/1/2016

## Compliance Assessment

| Inspection Topic   | In Compliance |
|--|---------------|
| General  | N/A           |
| • Ponds  | Yes           |
| <p>Installation of the new liner (36 mil) for CR Pond 2 was completed in October 2016 (<b>Photo #2</b>). Uranium One performed a visual inspection of the old liner and patched holes identified during the visual inspection. The new liner system (which included geofabric between the old and new liner) was then installed over the old liner. No issues were noted with the installation of the new liner. As indicated in the Annual Report, the CR Permeate Pond was taken out of service in November of 2015 due to a crack identified on the east embankment. Repair work for the crack in the east embankment of the Permeate Pond had been completed and the area seeded (<b>Photos #3 &amp; #4</b>). There was no change in the Permeate Pond design or capacity as a result of this repair. No issues were noted with the repaired embankment. At the time of the inspection, the Mine was working to locate a leak in Irigaray Pond D. Enough water was left in the pond to cover the sludge and keep it from drying out (<b>Photo #14</b>). The Mine was also pumping out the leak detection system while progressing with plans to locate and repair the leak. Irigaray Facility Ponds RA &amp; RB were also viewed during the inspection. Both ponds were observed to be retaining water and no issues were noted with the liners or embankments (<b>Photo #13</b>).</p> |               |
| • Signs  | Yes           |
| <p>The permit signs for Irigaray and Christensen Ranch have been updated with the current agent (<b>Photos #1 &amp; #11</b>).</p>  |               |
| • Topsoil Stockpiles   | Yes           |
| <p>All topsoil stockpiles viewed were stable, well vegetated and posted with a topsoil identification sign (<b>Photo #9</b>).</p>  |               |
| • Vegetation   | Yes           |
| <p>Areas of interim vegetation (MU8 &amp; MU10) were observed. Interim vegetation in Module 8-4/5 of Mine Unit 8 continues to be sparse, however erosion control efforts are preventing significant erosion at this time. Interim vegetation in Mine Unit 10 appears to be established (<b>Photo #10</b>).</p>   |               |
| Well Field Development   | N/A           |
| • Drilling Activity  | Yes           |
| <p>Pilot holes in Mine Unit 10B (Modules 10-7 &amp; 10-8) remain temporarily capped (<b>Photo #10</b>). The Mine continues to monitor and report the absence or presence of water in the open portion of a select number of temporarily capped pilot holes. Uranium One has provided LQD with information demonstrating that the plug gel in the pilot holes remains approximately 50 feet above the shallow groundwater in the area. As of this inspection, monitoring of these pilot holes has not identified groundwater in the open portion above the plug gel in the boreholes.</p>   |               |
| Well Fields  | N/A           |

| Inspection Topic  | In Compliance |
|---|---------------|
| • Class 3 Wells   | Yes           |
| Wells that have failed MIT have been plugged, and plugging operations continue for additional wells that have failed MIT ( <b>Photos #7 &amp; #8</b> ). Wells that have passed MIT are marked on the well box with green paint. Wells that have failed MIT are marked on the well box with red paint. Select wells that have failed MIT have been converted to recovery wells by pulling the stinger installing a pump ( <b>Photo #5</b> ). Converted wells 7I-100 and 7I-116 were viewed.  |               |
| • MITs  | Yes           |
| MIT operations were active at the time of the inspection. Equipment associated with conducting the testing was observed on-site in Mine Unit 8. However, an MIT was not being performed while on-site in Mine Unit 8 and therefore an MIT was not viewed during the inspection.   |               |
| • Spills  | Yes           |
| Two spill areas were viewed during the inspection. One spill was from the MU7-4 header house which was discovered on October 17, 2016 and the other was from MU7-5 injection well 7I-319 which occurred on October 11, 2016 ( <b>Photo #6</b> ). LQD was notified of the MU7-5 injection well spill prior to the inspection on October 12, 2016. The LQD inspector was notified of the MU7-4 header house spill during the inspection. No visible erosion or impact to the vegetation was observed while viewing the spill locations. |               |

#### Actions Required

There are no unresolved Maintenance Items

#### Actions Completed Since Last Inspection

| Inspection Topic  | Inspection Date   | Proposed Resolution Date | Resolution Date   |
|---|-------------------|--------------------------|-------------------|
| <b>Drill Holes</b>  | <b>10/23/2014</b> | <b>1/2/2015</b>          | <b>12/29/2015</b> |
| Reenter temporarily surface capped holes in Mine Unit 10B, Modules 10-7 and 10-8 in order to complete permanent reclamation or to complete as mine production or injection wells; or obtain approval from LQD that Uranium One may postpone reentering the holes until a later date.                        |                   |                          |                   |
| <b>Erosion Control</b>  | <b>10/23/2014</b> | <b>5/31/2015</b>         | <b>12/29/2015</b> |
| Shore up sediment control in Mine Unit 10B drainage ( <b>Photos #5 &amp; #6</b> ). Reposition wattles controlling erosion next to the well access road (10-448) so that surface flow does not undercut the wattle. Clean sump to provide capacity for sediment control and shore-up silt fence around sump. |                   |                          |                   |
| <b>Signs</b>  | <b>12/29/2015</b> | <b>12/31/2016</b>        | <b>10/18/2016</b> |
| Update Mine Identification signs at Christensen Ranch and Irigaray with the current agent/contact person.   |                   |                          |                   |

#### Inspection Summary Comments

No violations were issued as a result of this inspection. No new maintenance items were generated as a result of this inspection. Growth of interim vegetation continues to be sparse in Mine Unit 8, Module 8-4/5. However, erosion control efforts appear to be effective at this time. The Mine is reminded to continue to closely watch this area and reinforce sediment control measures as needed while continuing efforts to establish vegetative cover. Additionally, Uranium One is reminded to continue implementing BMP's to control erosion in disturbed areas as soon as possible after disturbance.

**Inspection Recipient and Attachment Information**

| Recipient | Email | Address/Notes       |
|-----------|-------|---------------------|
| Operator  | No    | URANIUM ONE USA INC |

Attachment Types: ☒ Photo Addendum ☐ Map(s) ☐ Table(s) ☐ Other

**Attachment Notes**

|  |
|--|
|  |
|--|

| Type         | FileName                                 | Size (MB) | # Pages |
|--------------|--|-----------|---------|
| Cover Letter | 2016_12_01_PT478_Annual IR_cvrltr_LM.pdf | 0.06      | 1       |
| Photos       | PT478_Annual_IR_Photo Log_10.18.16LM.pdf | 3.05      | 7       |



**Photo #1:** Christensen Ranch Facility/Permit sign.



**Photo #2:** Completed installation of new liner in CR Pond #2.



**Photo #3:** View of CR Permeate Pond, CR Satellite Facility in background of photo.



**Photo #4:** View of completed embankment repair along east side of CR Permeate Pond.



**Photo #5:** View of injection well converted to recovery well, stinger removed, pump installed.



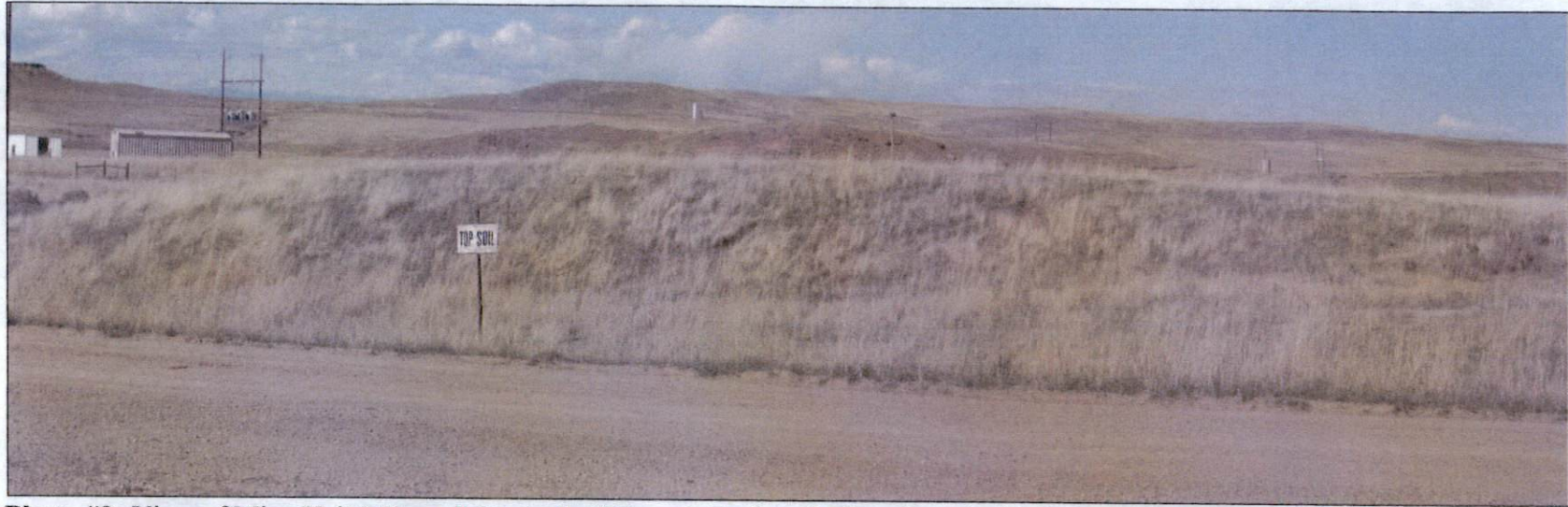
**Photo #6:** View of Mine Unit 7 (Mod 7-4) Injection Well 71-319 fluid spill, spill area flagged.



**Photo #7:** View of former injection well 71-94, plugged due to failed MIT.



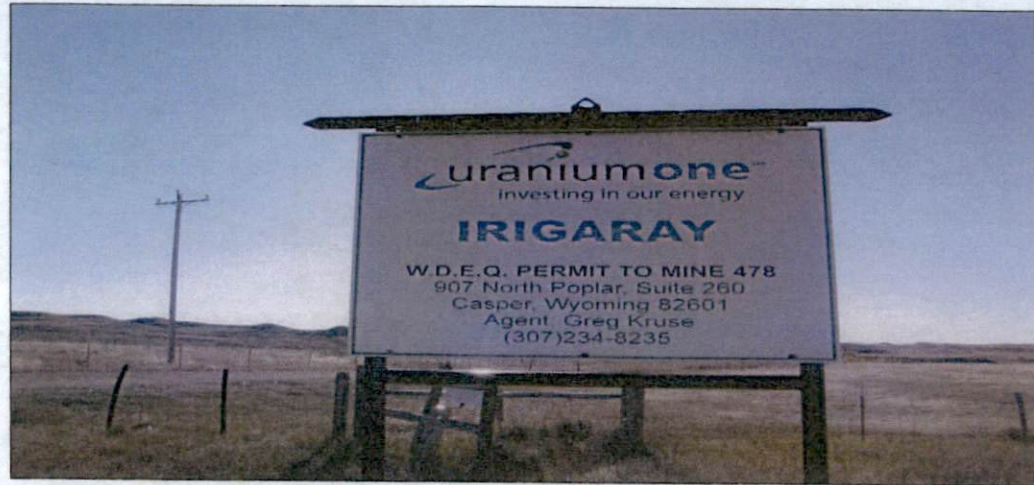
**Photo #8:** View of bentonite chips at surface in plugged well 71-94.



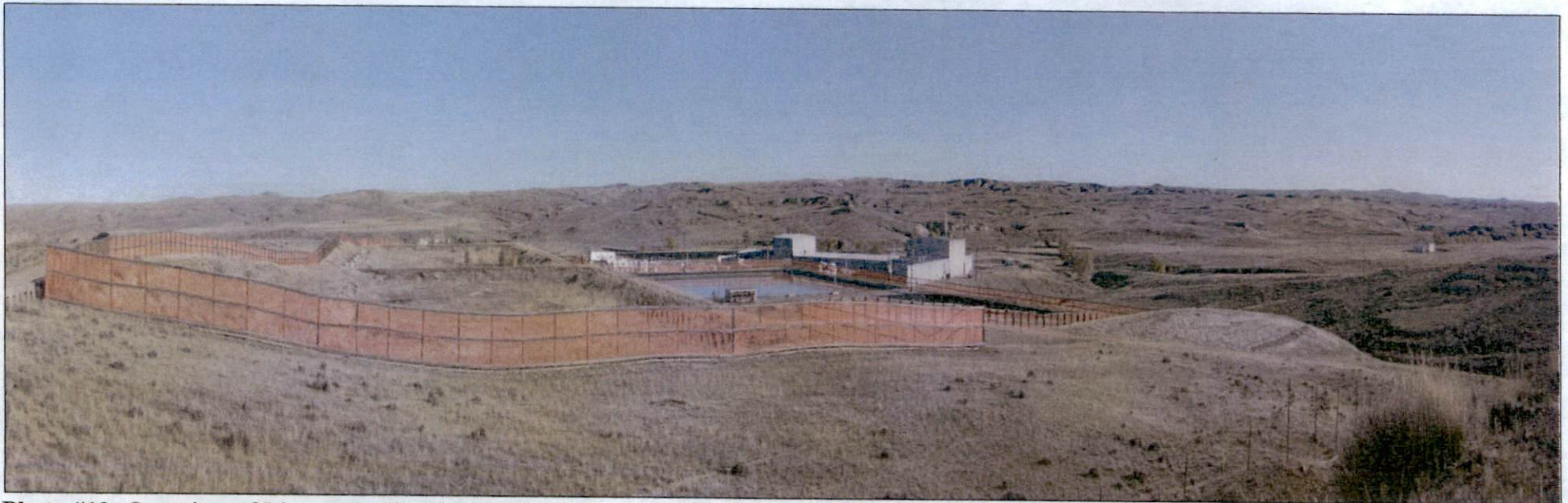
**Photo #9:** View of Mine Unit 7 Topsoil Stockpile #14, typical of stockpiles viewed with signage and vegetative erosion control.



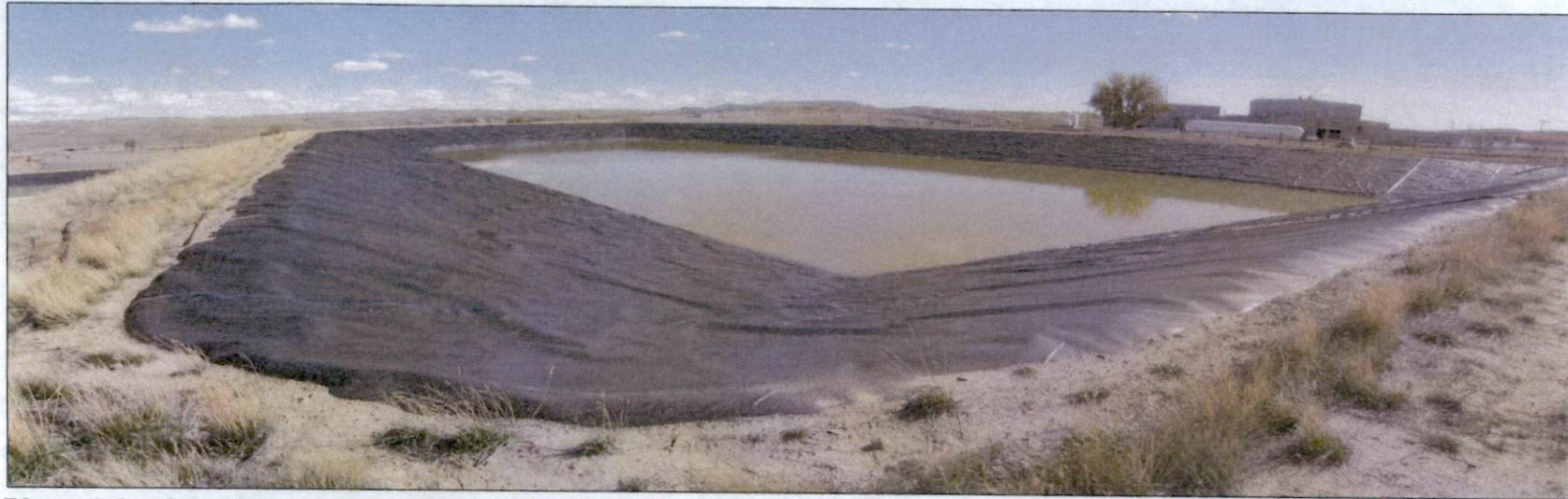
**Photo #10:** View of Mine Unit 10B, temporarily capped pilot-hole markings and interim vegetation.



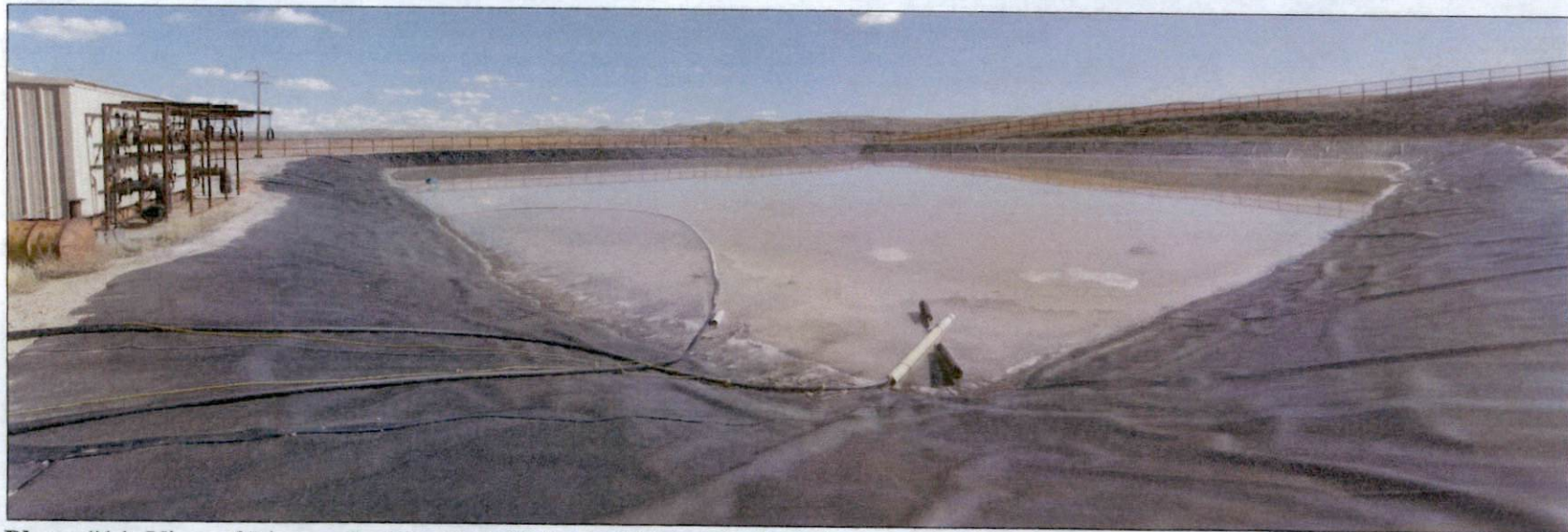
**Photo #11:** View of Irigaray Facility/Permit sign.



**Photo #12:** Overview of Irigaray Facility, looking NNE.



**Photo #13:** View of Irigaray Facility Pond RA, from NW corner of pond.



**Photo #14:** View of Irigaray Facility Pond D, from NW corner of pond.