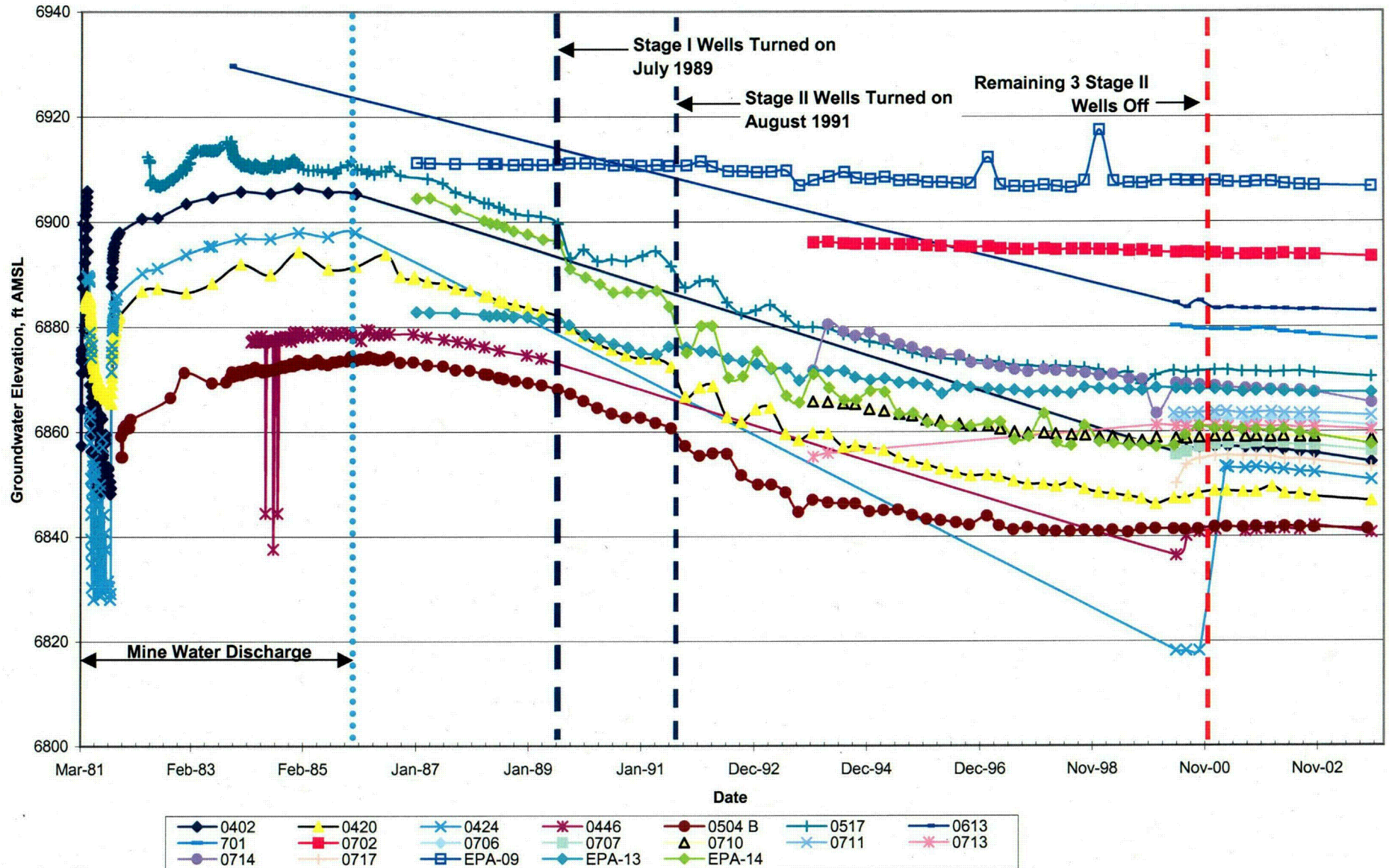


**FIGURE 36**  
 Effects of Past Pumping to Dewater Zone 3  
 United Nuclear Corporation, Church Rock Site, Church Rock, New Mexico



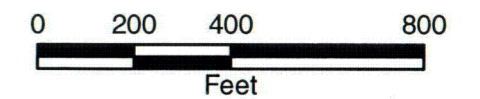


**Legend**

- Well Names
- Cell Boundaries
- - - - - Property Boundary
- - - - - Approximate Eastern Boundary of Zero Saturation
- Groundwater Elevation Contour
- - - - - Inferred Groundwater Elevation Contour

**Notes:**

1. Groundwater elevation values are displayed in feet above mean sea level.
2. Well names are displayed with black text.
3. Groundwater elevations are shown with blue text.
4. Aerial photo taken on August 1, 1996.



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**FIGURE 37**  
 Zone 3 Potentiometric Surface Map  
 October 2004

United Nuclear Corporation Church Rock Site,  
 Church Rock, New Mexico



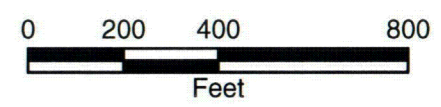


**Legend**

- Zone 3 Monitoring Well
- Saturated Thickness Contour
- - - - - Approximate Eastern Boundary of Zero Saturation
- Cell Boundary
- ▬▬▬▬ Property Boundary

**Notes:**

1. Well names are displayed with black text.
2. Values for saturated thickness in feet are shown with dark green text and enclosed in parentheses.
3. Aerial photo taken on August 1, 1996.



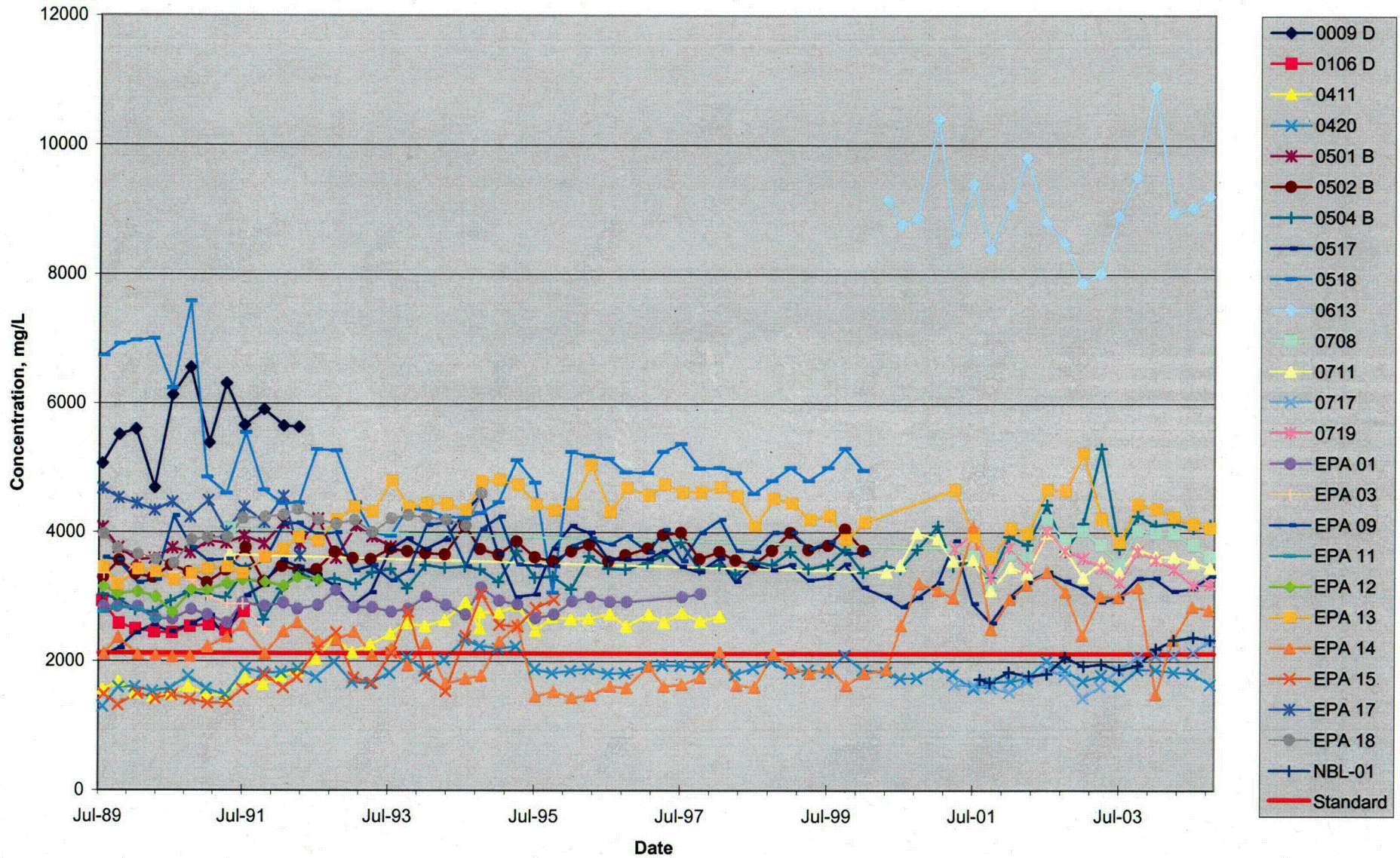
C24

**FIGURE 38**  
 Zone 3 Saturated Thickness Map  
 October 2004

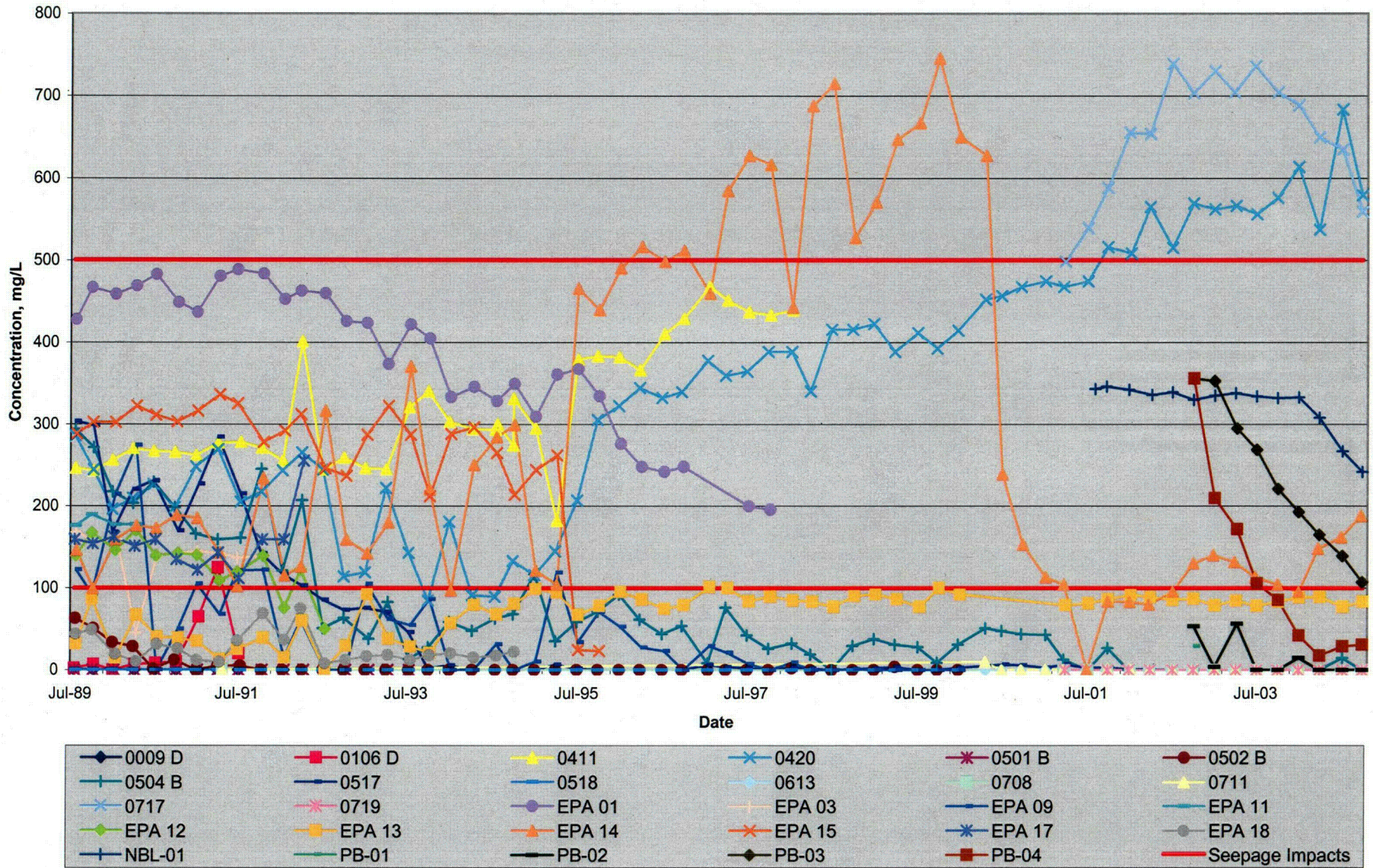
United Nuclear Corporation Church Rock Site,  
 Church Rock, New Mexico



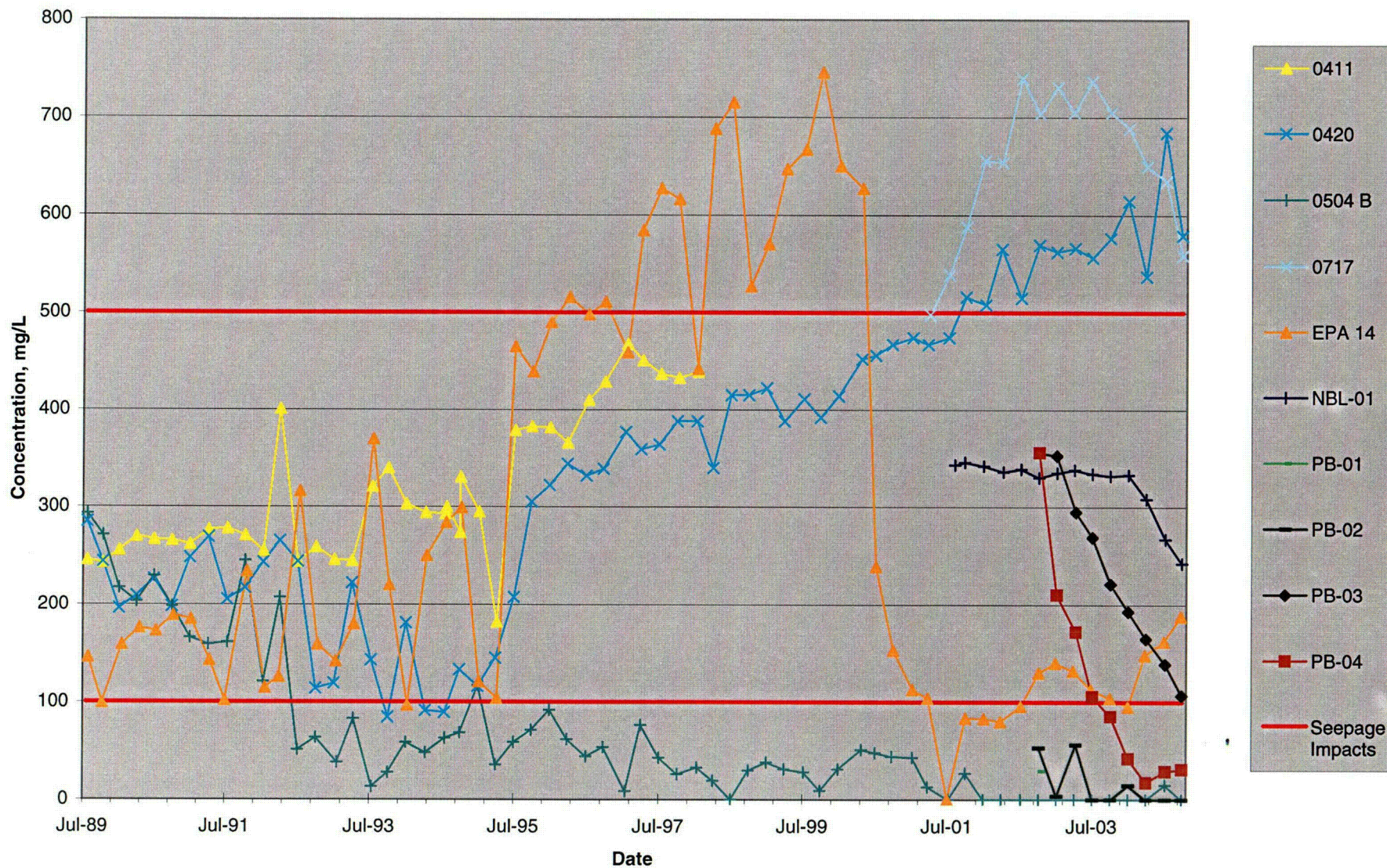
**FIGURE 39**  
 Zone 3 Sulfate Concentrations Over Time  
 United Nuclear Corporation, Church Rock site, Church Rock, New Mexico



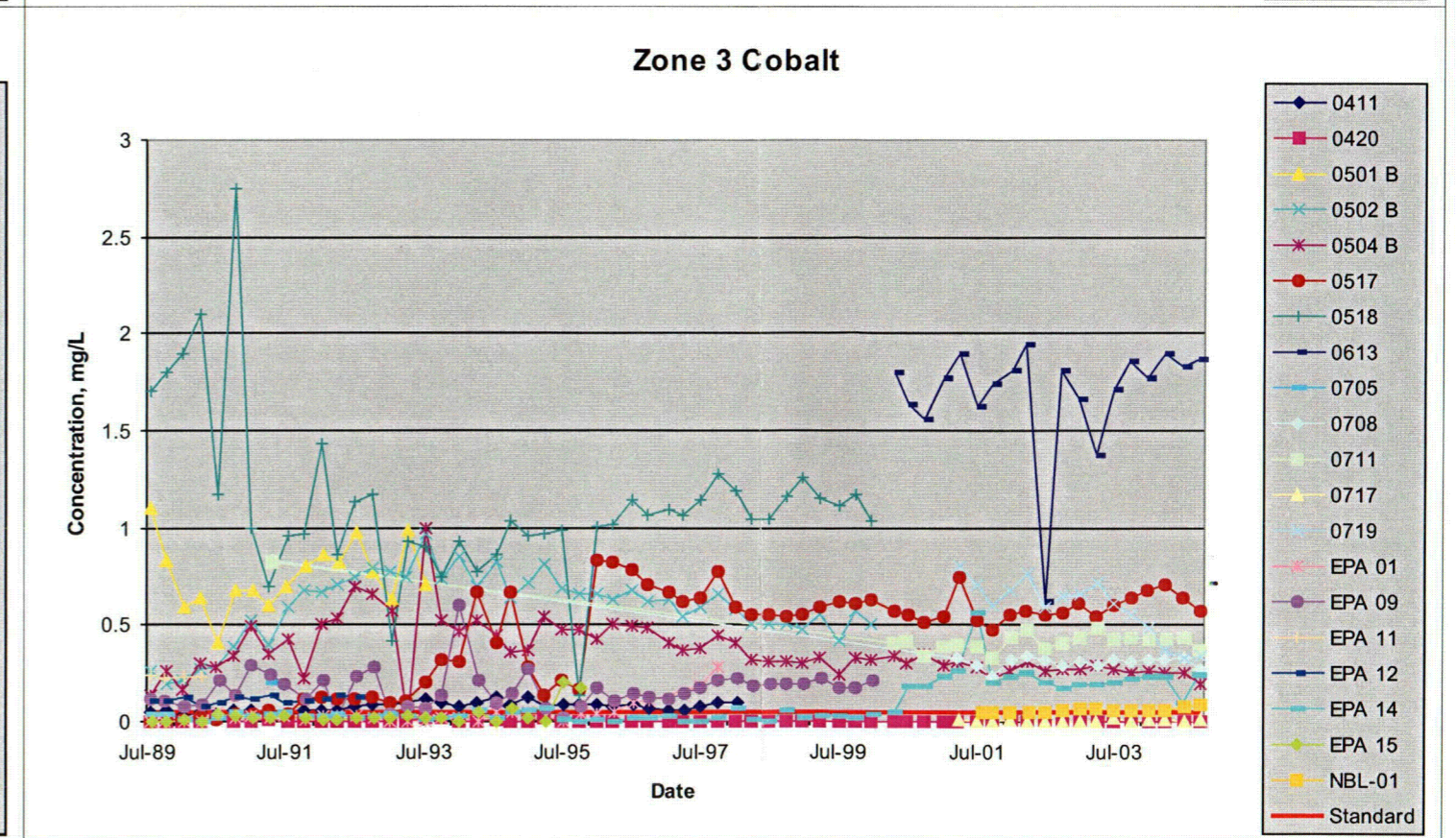
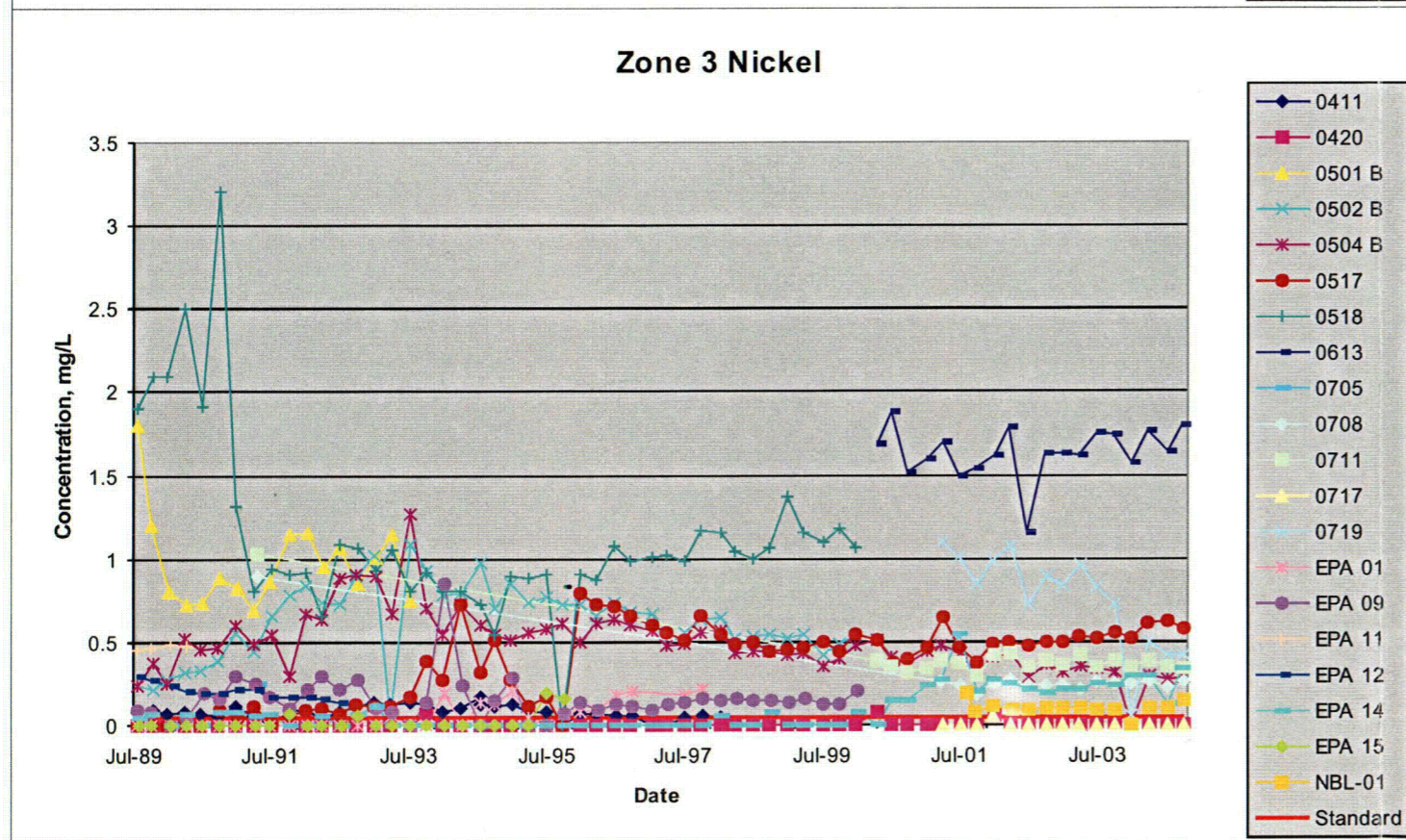
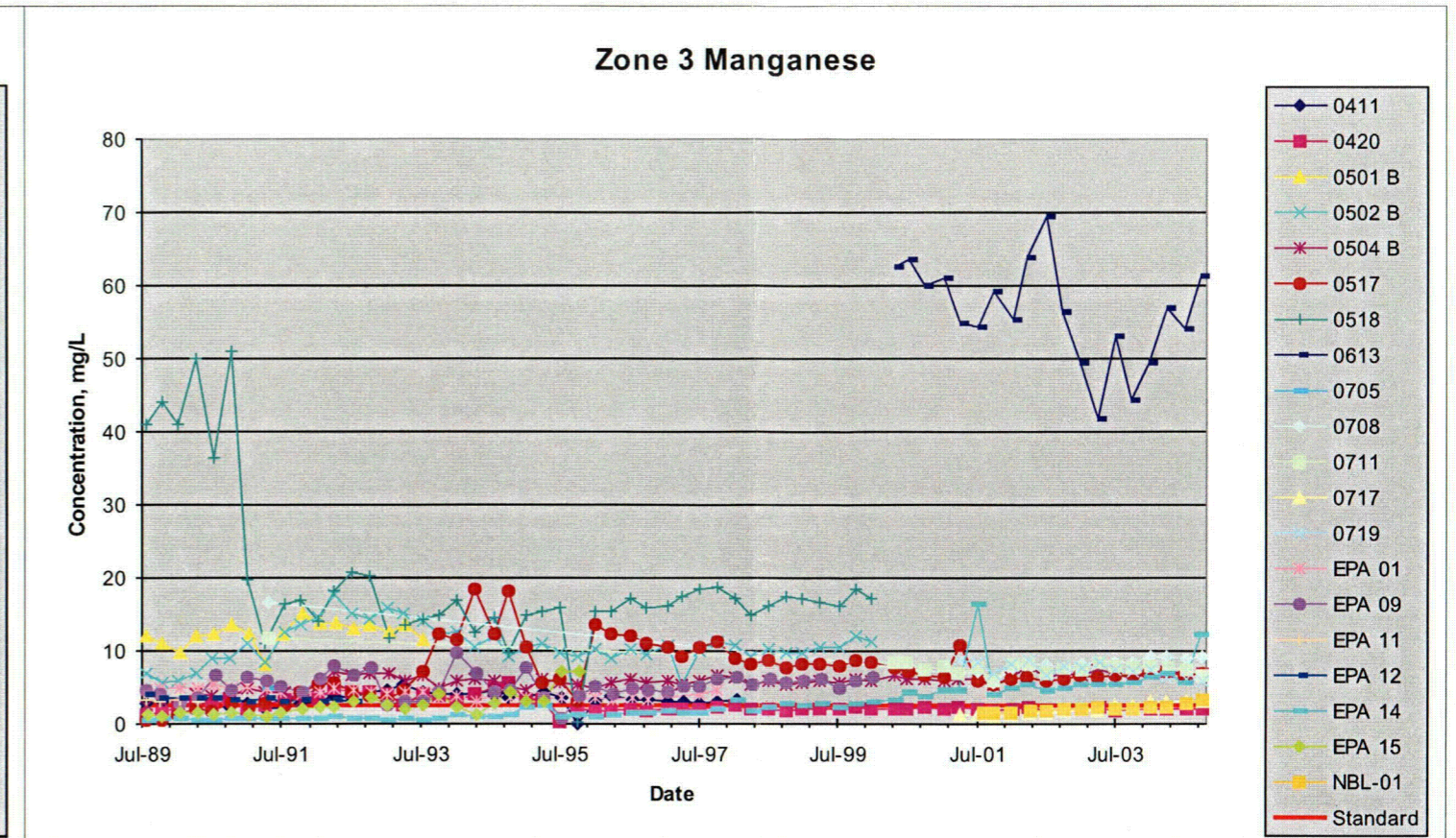
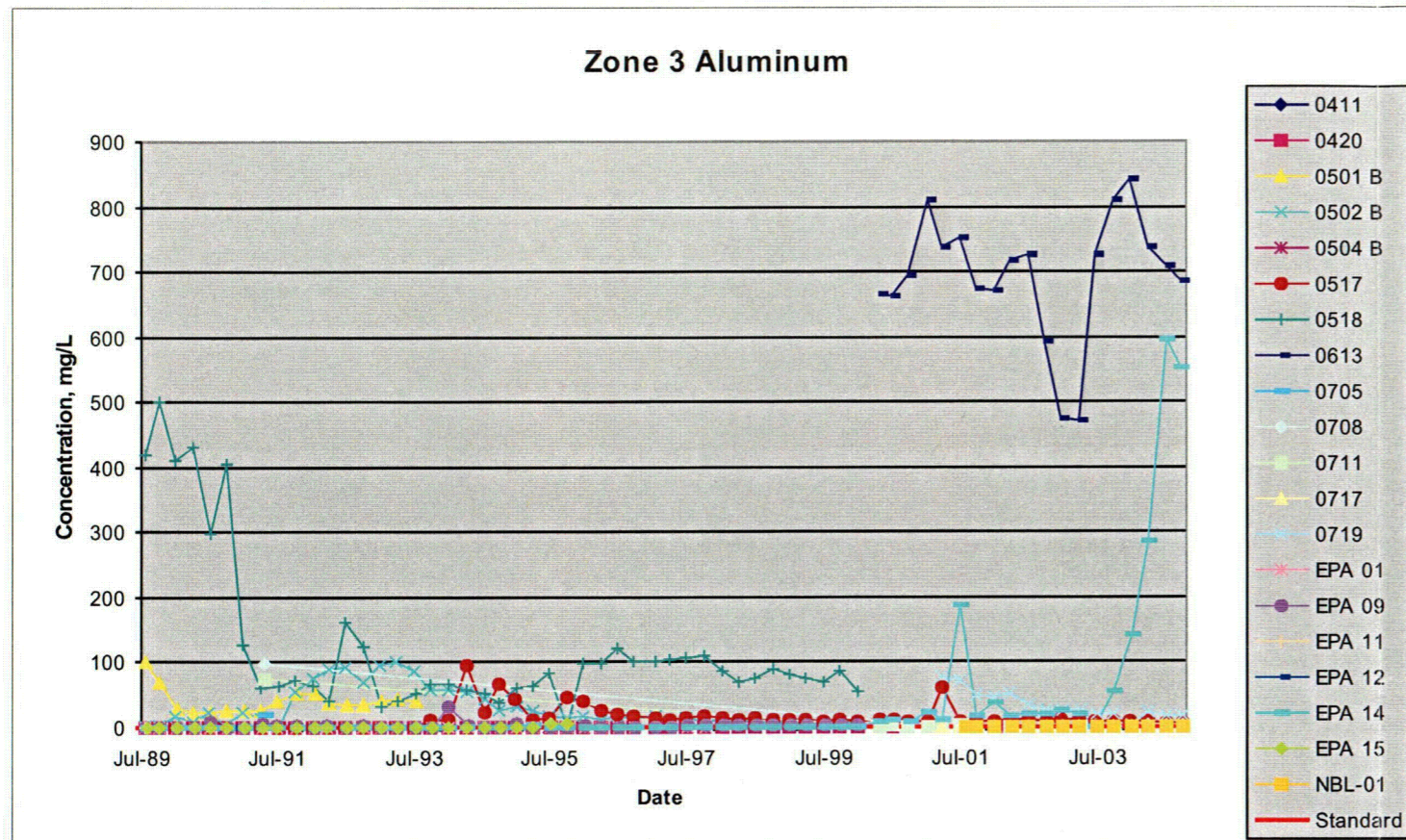
**FIGURE 40**  
 Zone 3 Bicarbonate Concentrations Over Time  
 United Nuclear Corporation, Church Rock Site, Church Rock, New Mexico



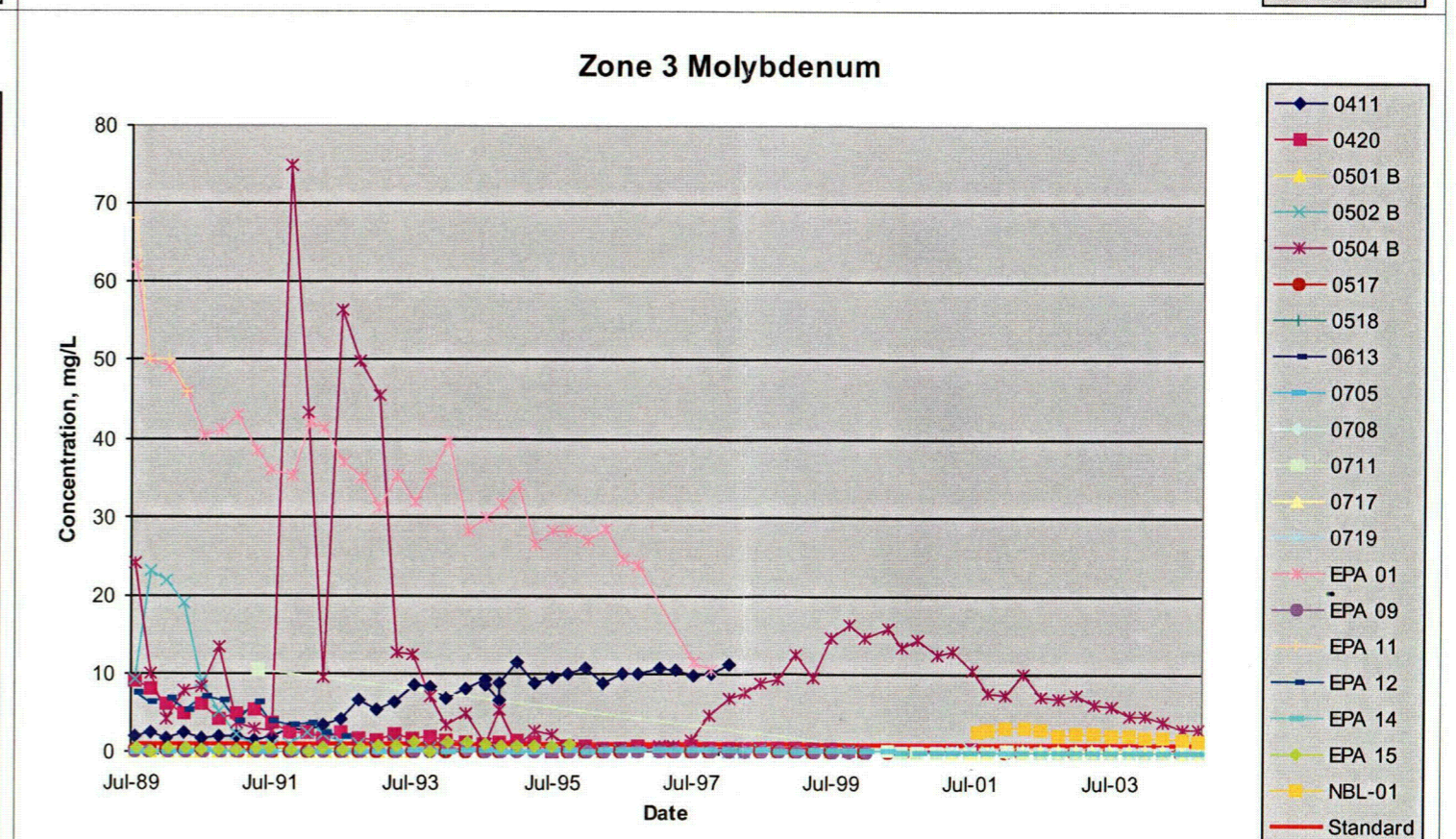
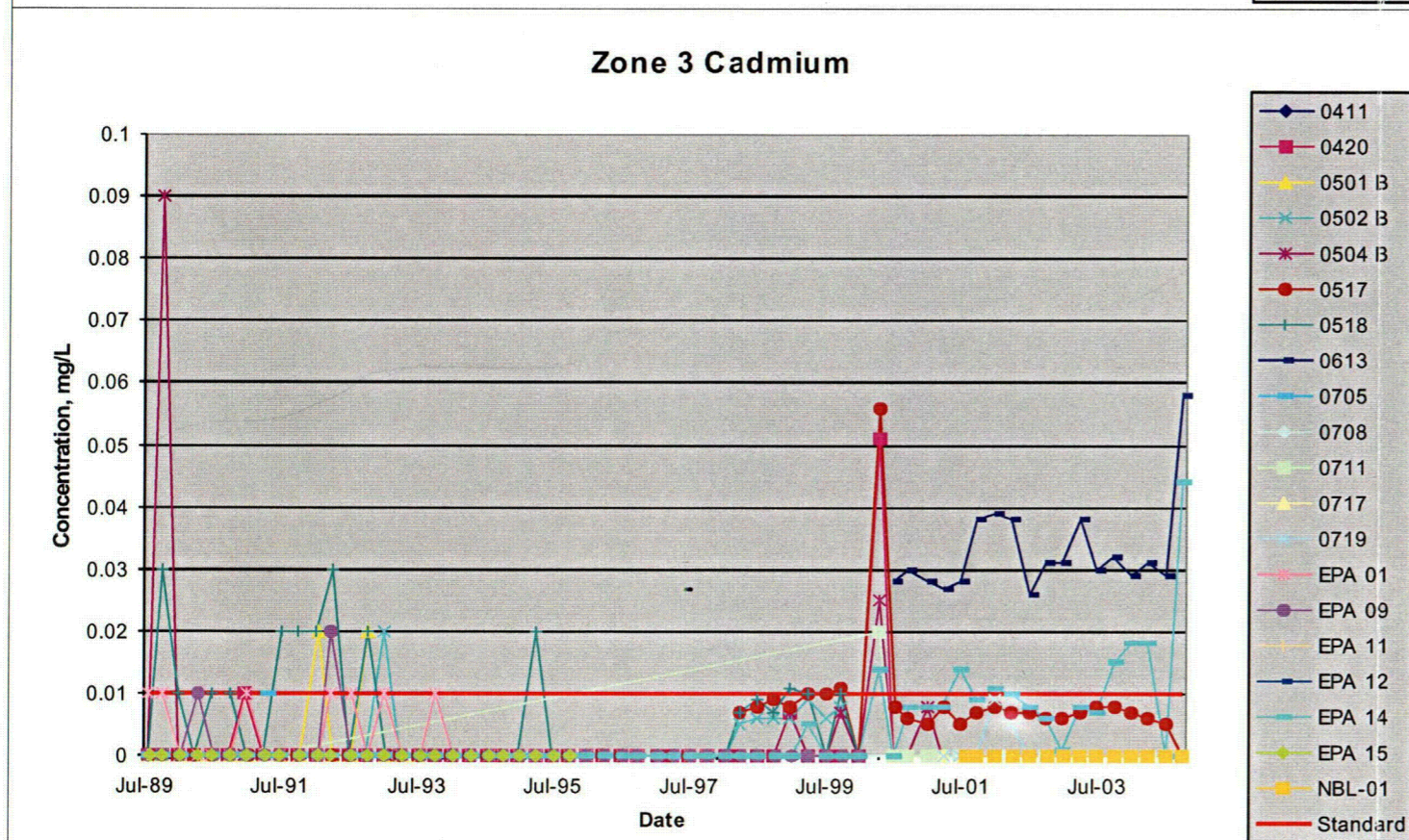
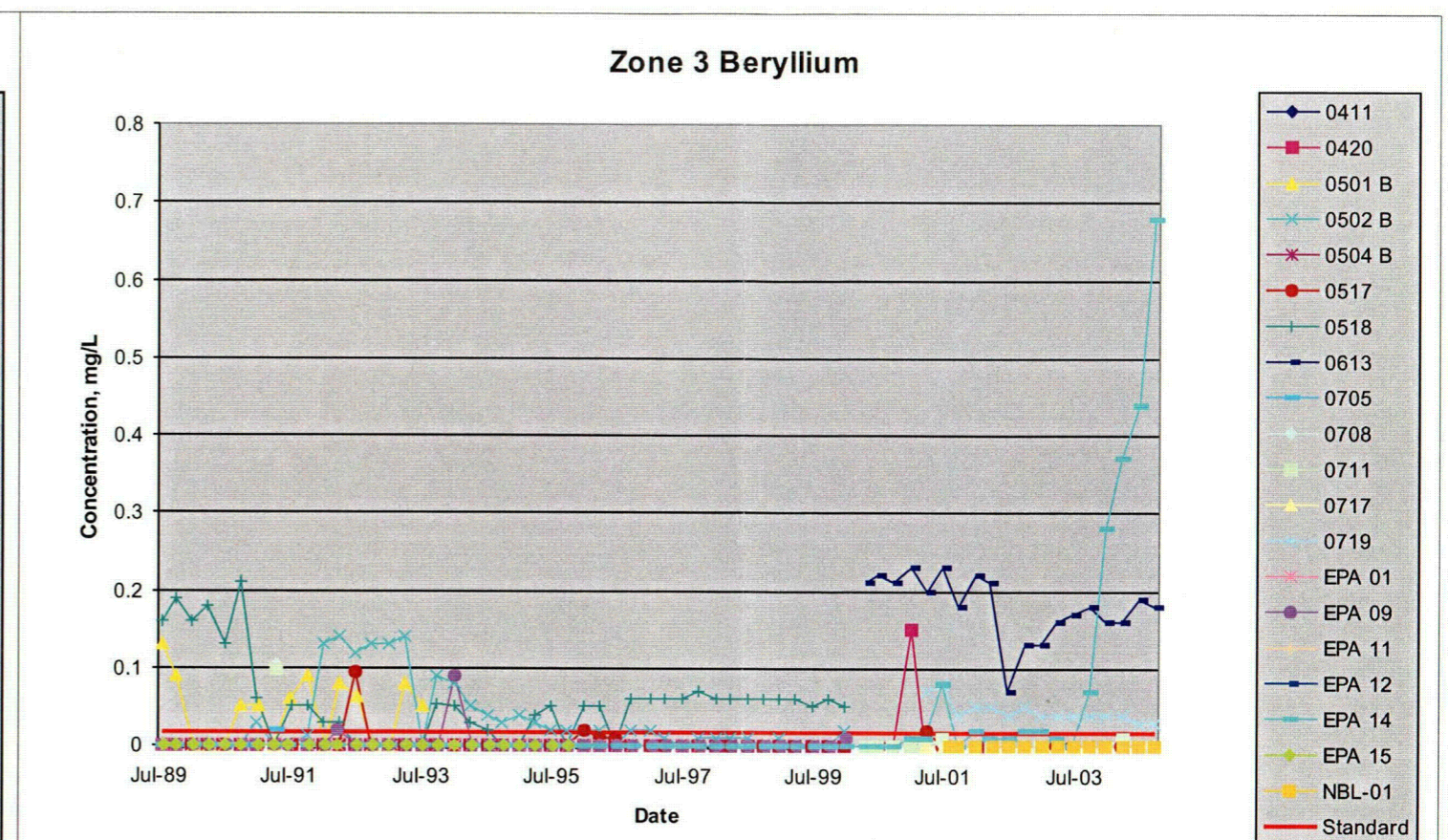
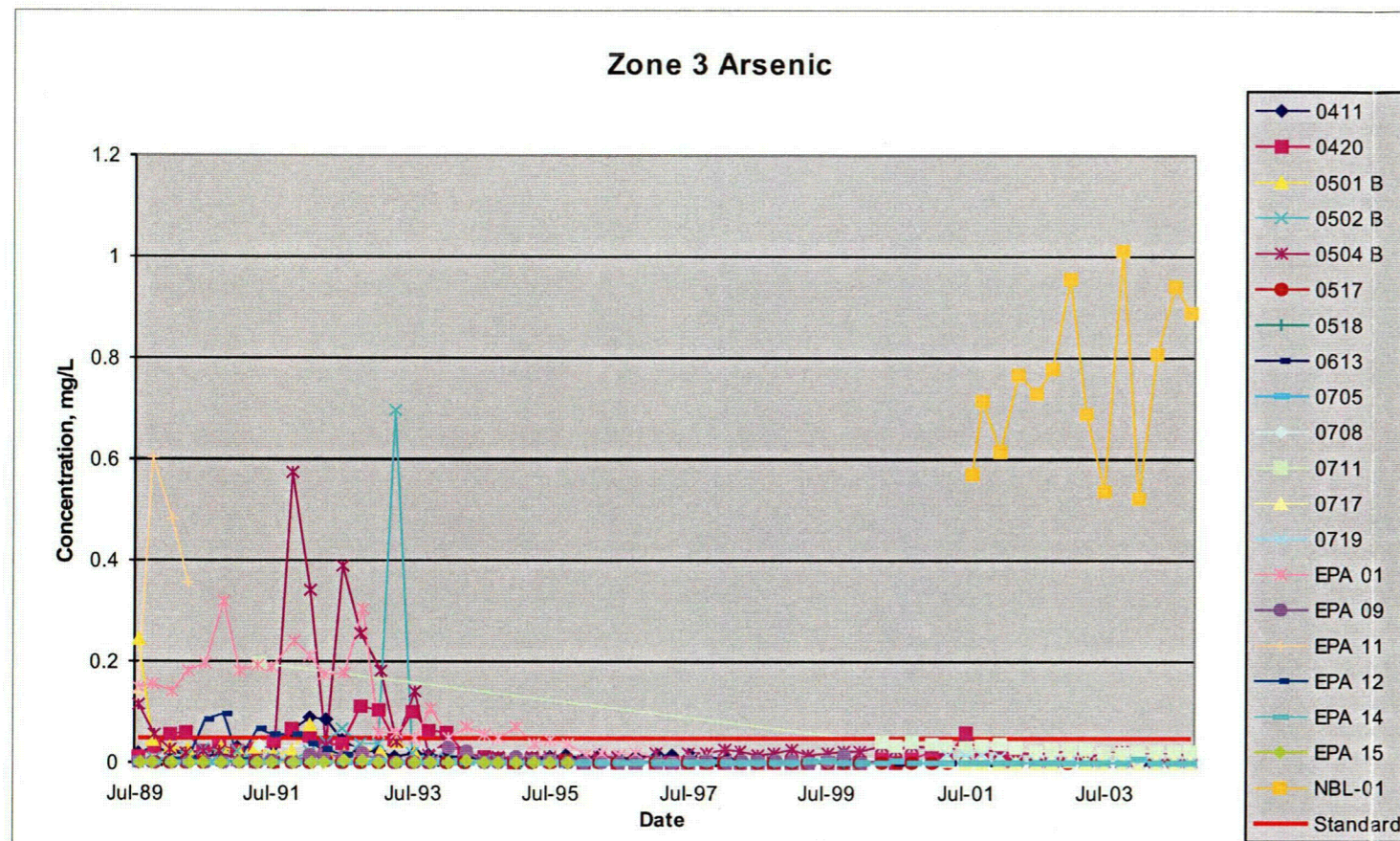
**FIGURE 41**  
 Zone 3 Impact Perimeter Bicarbonate Concentrations Over Time  
 United Nuclear Corporation, Church Rock Site, Church Rock, New Mexico



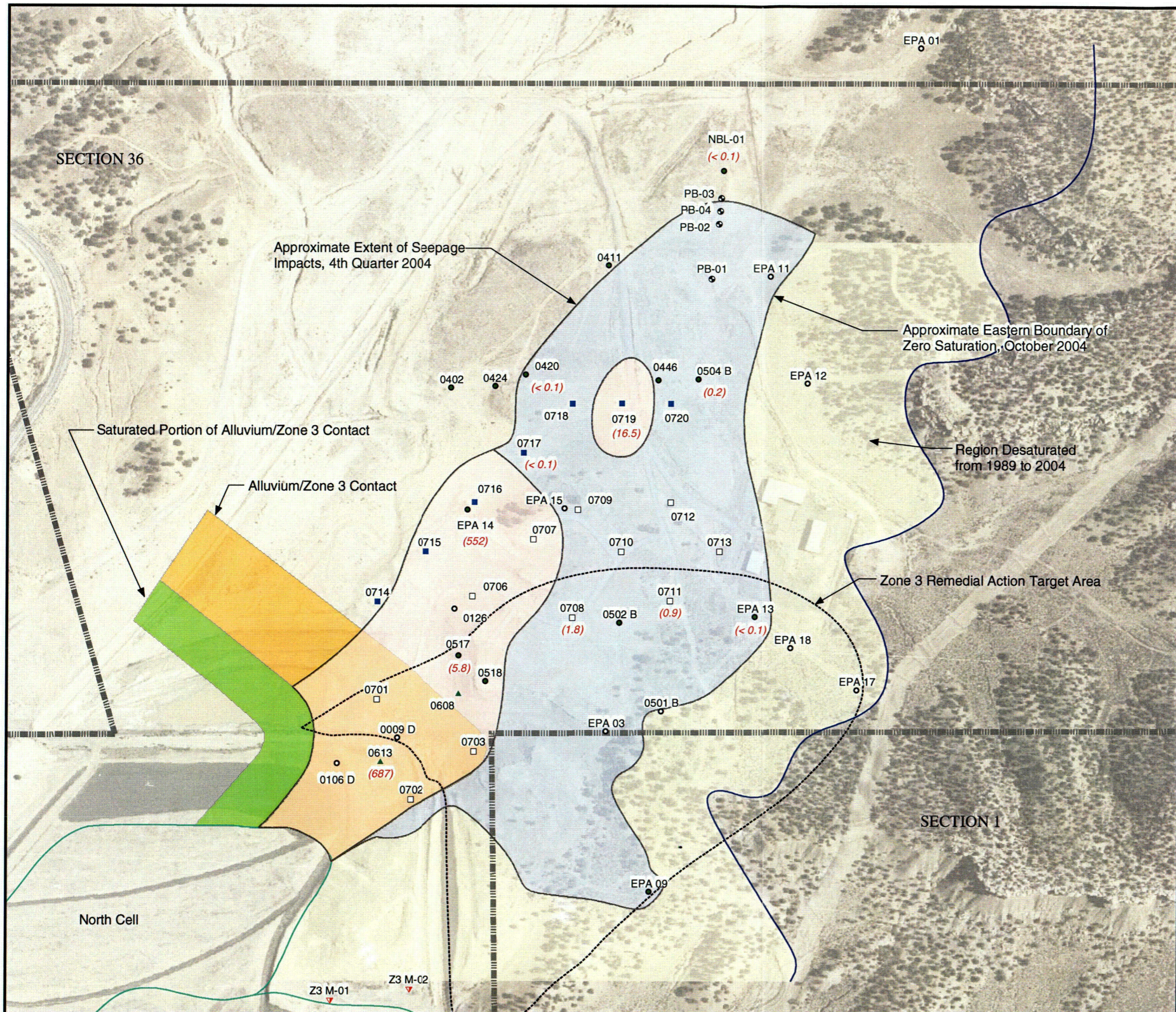
**FIGURE 42A**  
 Zone 3 Metals Concentrations Over Time  
 United Nuclear Corporation Church Rock site, Church Rock, New Mexico



**FIGURE 42B**  
 Zone 3 Metals Concentrations Over Time  
 United Nuclear Corporation Church Rock site, Church Rock, New Mexico



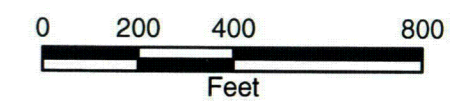




- Legend**
- ▬ Property Boundary
  - ⋯ Zone 3 Target Remedial Action Area
  - Section Boundary
  - Cell Boundary
- Well Type**
- Monitoring
  - Dry Monitoring
  - Stage I Extraction
  - Stage II Extraction
  - Plume Boundary
  - ▲ Northeast Pump-Back
  - ▼ Piezometer
- Approximate Extent of Aluminum Exceeding 5.0 mg/L
  - Approximate Area Impacted By Tailings Seepage
  - (3.43) Aluminum values in mg/L

**Notes:**

1. Well names are displayed with black text.
2. Aerial photo taken on August 1, 1996.

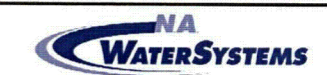


C30

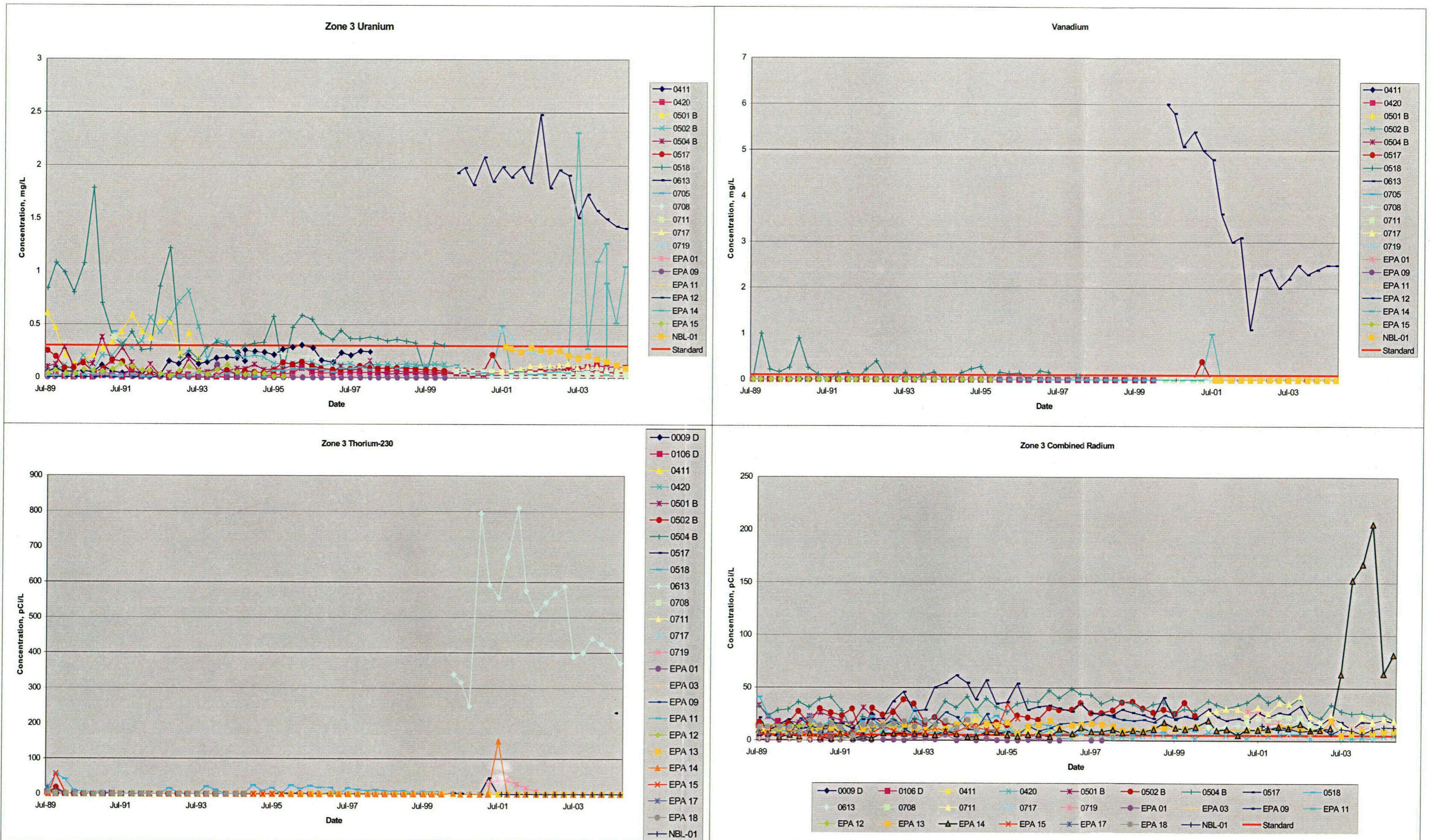
**FIGURE 43**

**Zone 3 Approximate Extent of Aluminum Exceeding 5.0 mg/L, October 2004**

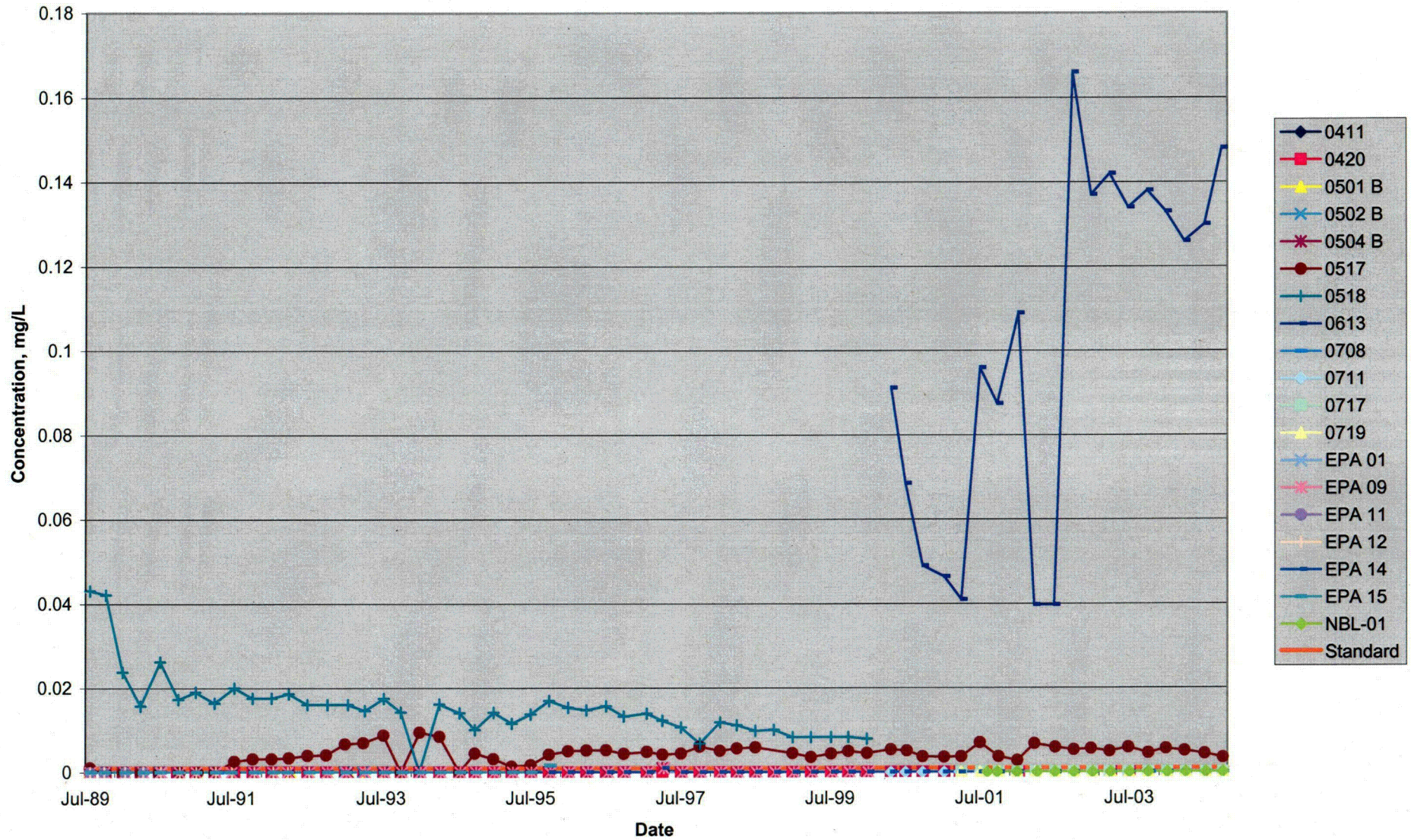
United Nuclear Corporation Church Rock Site,  
Church Rock, New Mexico

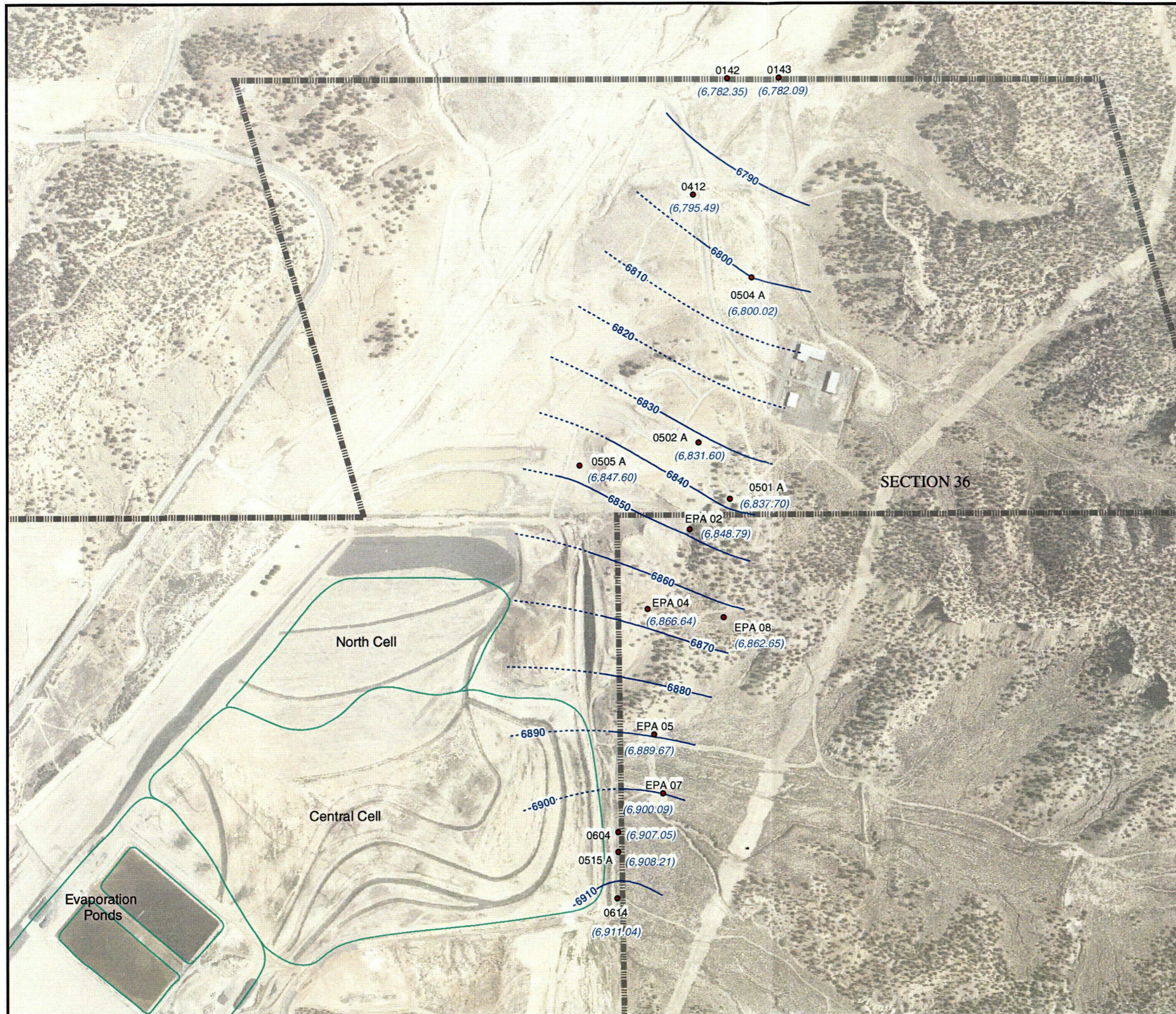


**FIGURE 44**  
 Zone 3 Uranium, Vanadium, and Radionuclides Concentrations Over Time  
 United Nuclear Corporation Church Rock site, Church Rock, New Mexico



**FIGURE 45**  
 Zone 3 Chloroform Concentrations Over Time  
 United Nuclear Corporation, Church Rock Site, Church Rock, New Mexico



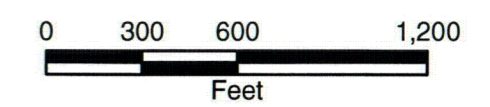


**Legend**

- Zone 1 Monitoring Well
- Groundwater Elevation Contour
- - - - Inferred Groundwater Elevation Contour
- Cell Boundary
- ▬▬▬▬ Property Boundary

**Notes:**

1. Groundwater elevation values are displayed in feet above mean sea level.
2. Well names are displayed with black text.
3. Groundwater elevations are shown with blue text and enclosed in parentheses.
4. Aerial photo taken on August 1, 1996.



C33

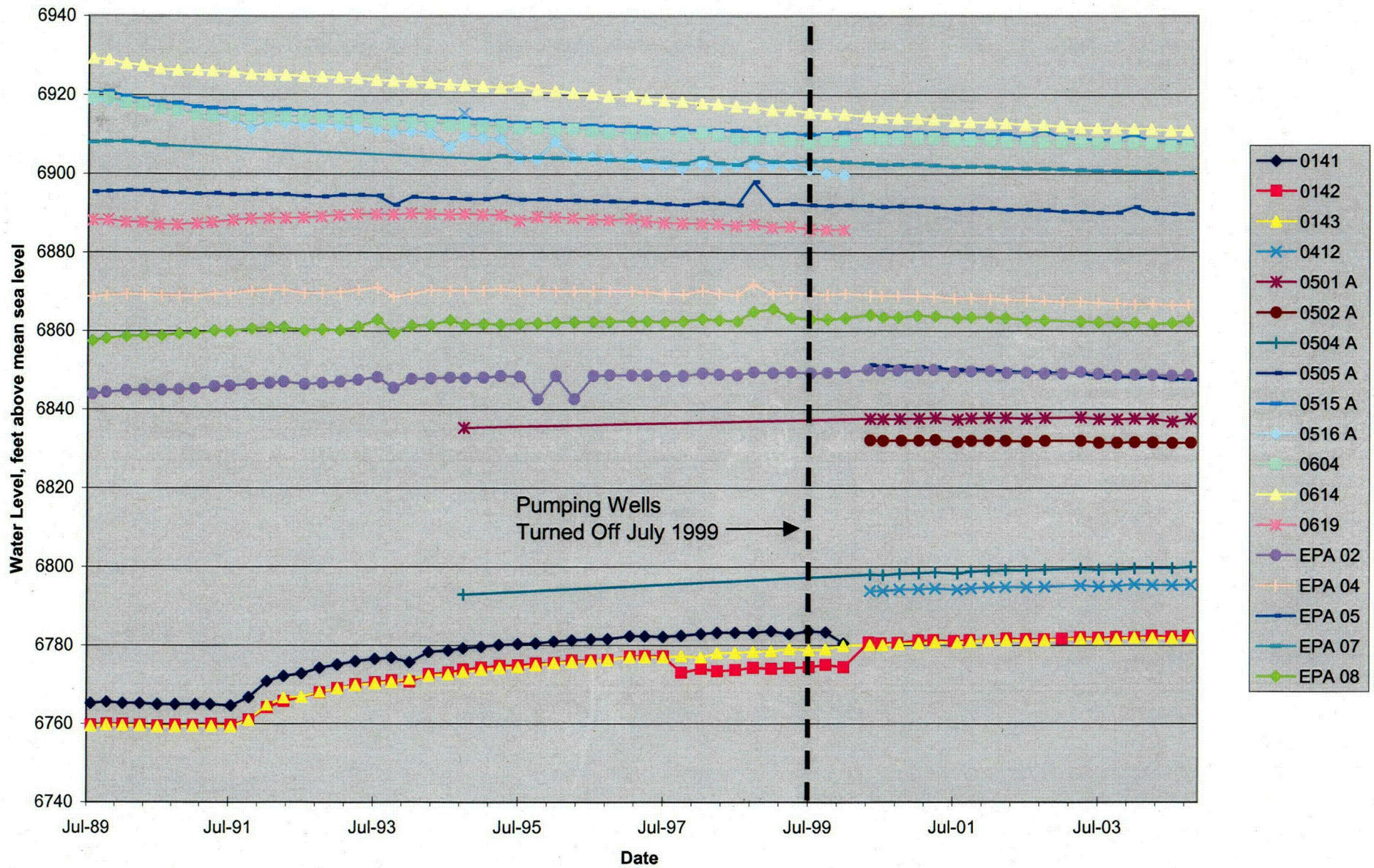
**FIGURE 46**  
 Zone 1 Potentiometric Surface Map  
 October 2004

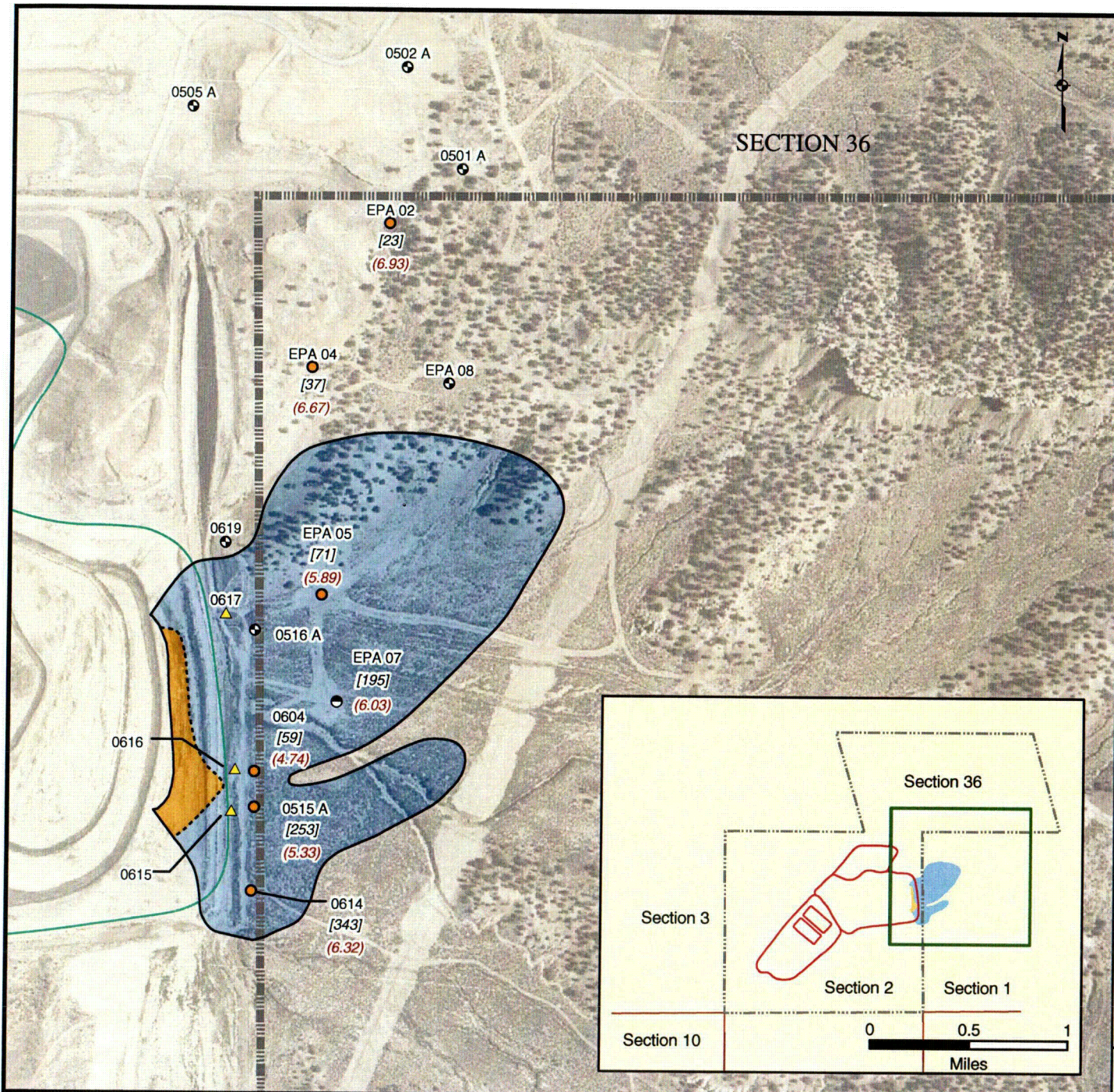
United Nuclear Corporation Church Rock Site,  
 Church Rock, New Mexico



**FIGURE 47**

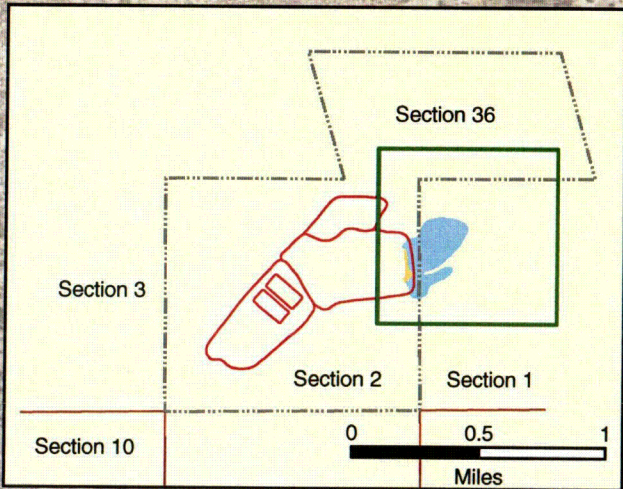
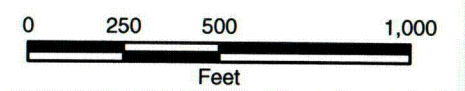
Zone 1 Water Levels Over Time  
United Nuclear Corporation, Church Rock Site, Church Rock, New Mexico





- Legend**
- Well Type**
- Water Quality and Water Level Monitoring
  - ⊙ Water Level Monitoring
  - ⊙ Decomissioned East Pump Back
  - ▲ Revised East Pump Back (Inactive)
  - Cell Boundary
  - ▤▤▤▤ Property Boundary
  - Approximate Extent of Zone 1 Seepage Impact
  - Approximate Extent of Zone 1 pH Less Than 4.0
- [71] Chloride result in mg/L  
 (6.03) Field-measured pH in SU

- Notes:**
1. Seepage impacts delineated by Chloride detections greater than 50 mg/L.
  2. Aerial photo taken on August 1, 1996.

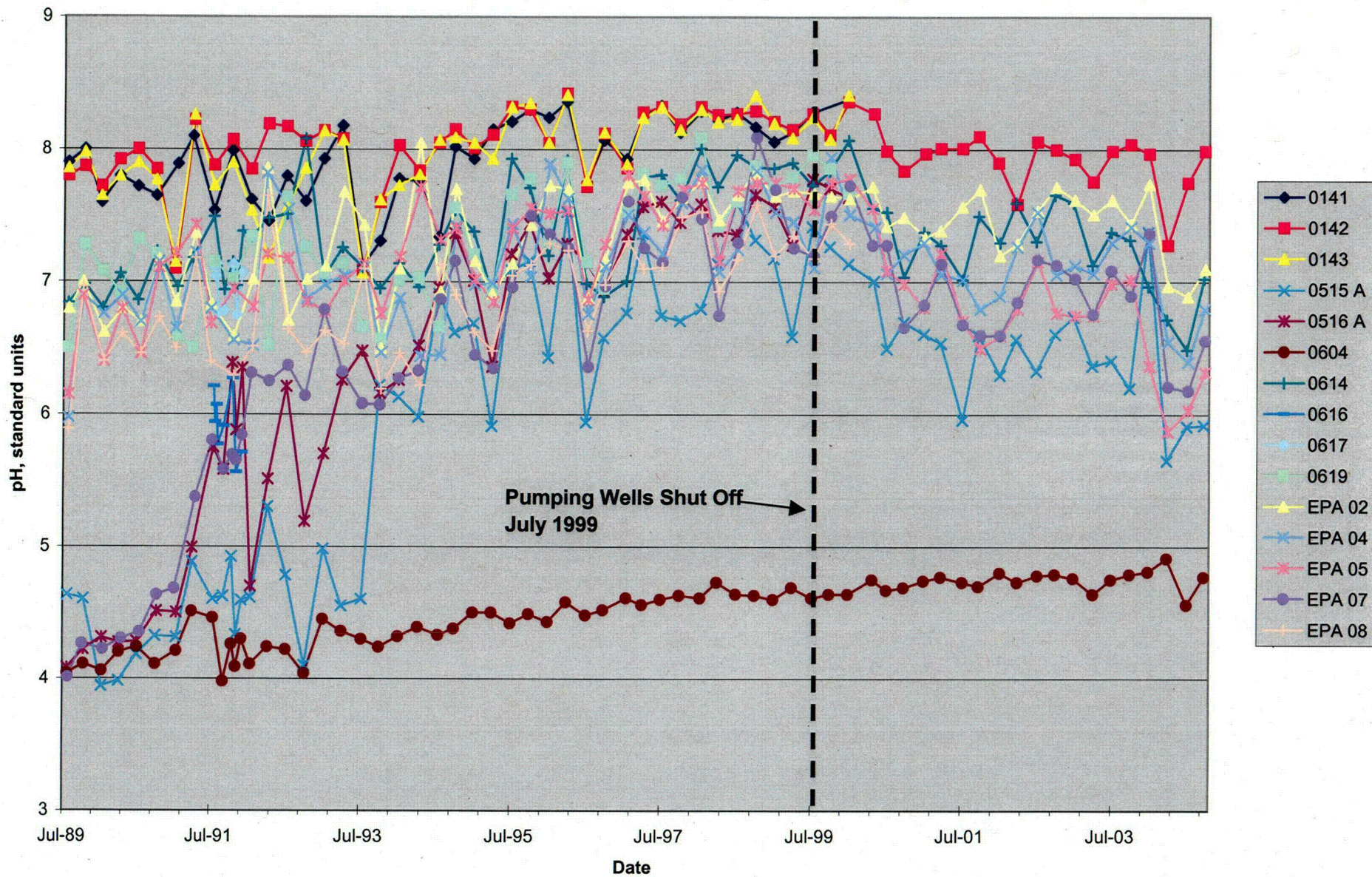


**FIGURE 48**  
 Zone 1 Extent of Seepage Impacts, October 2004  
 United Nuclear Corporation Church Rock Site,  
 Church Rock, New Mexico

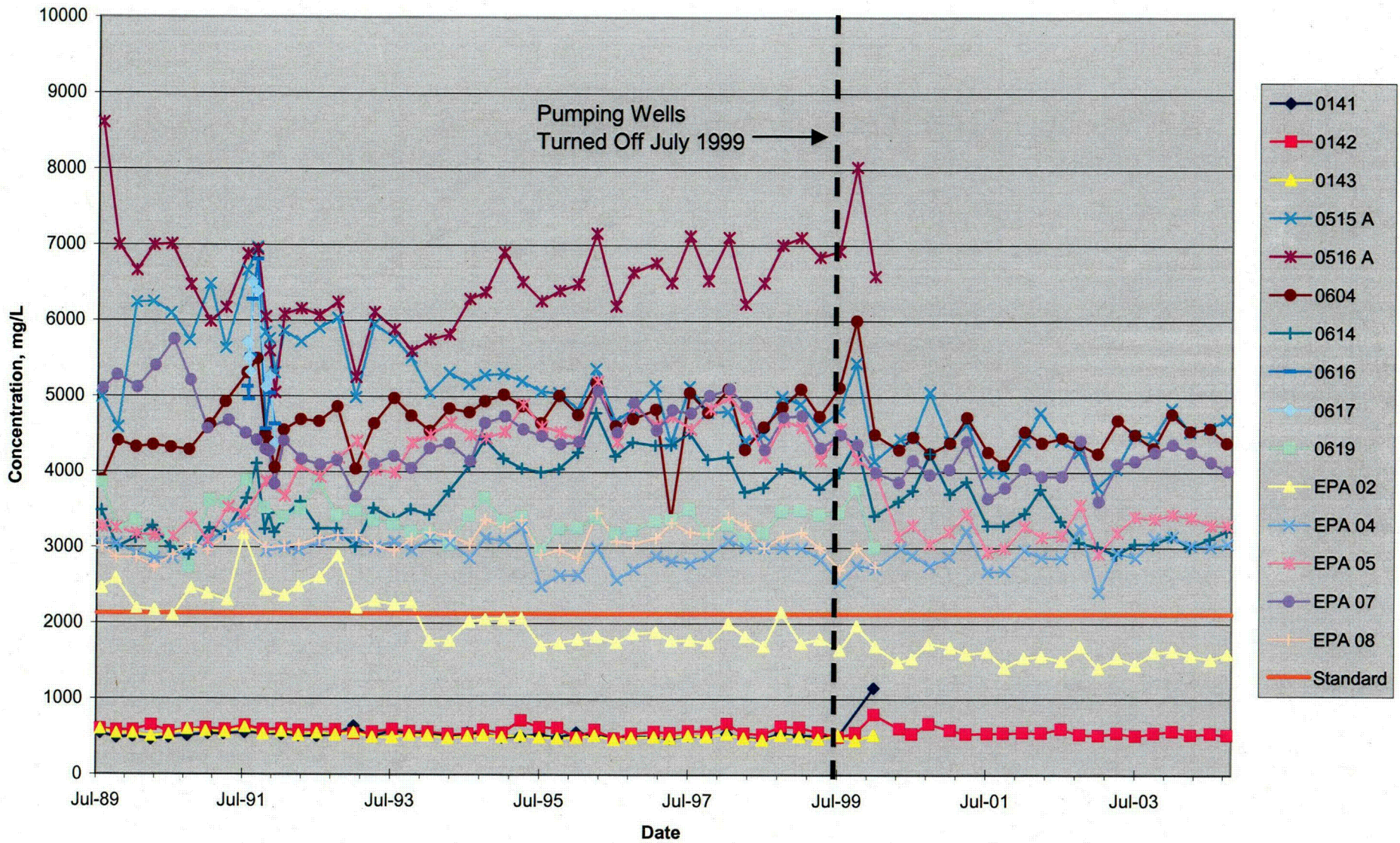


C35

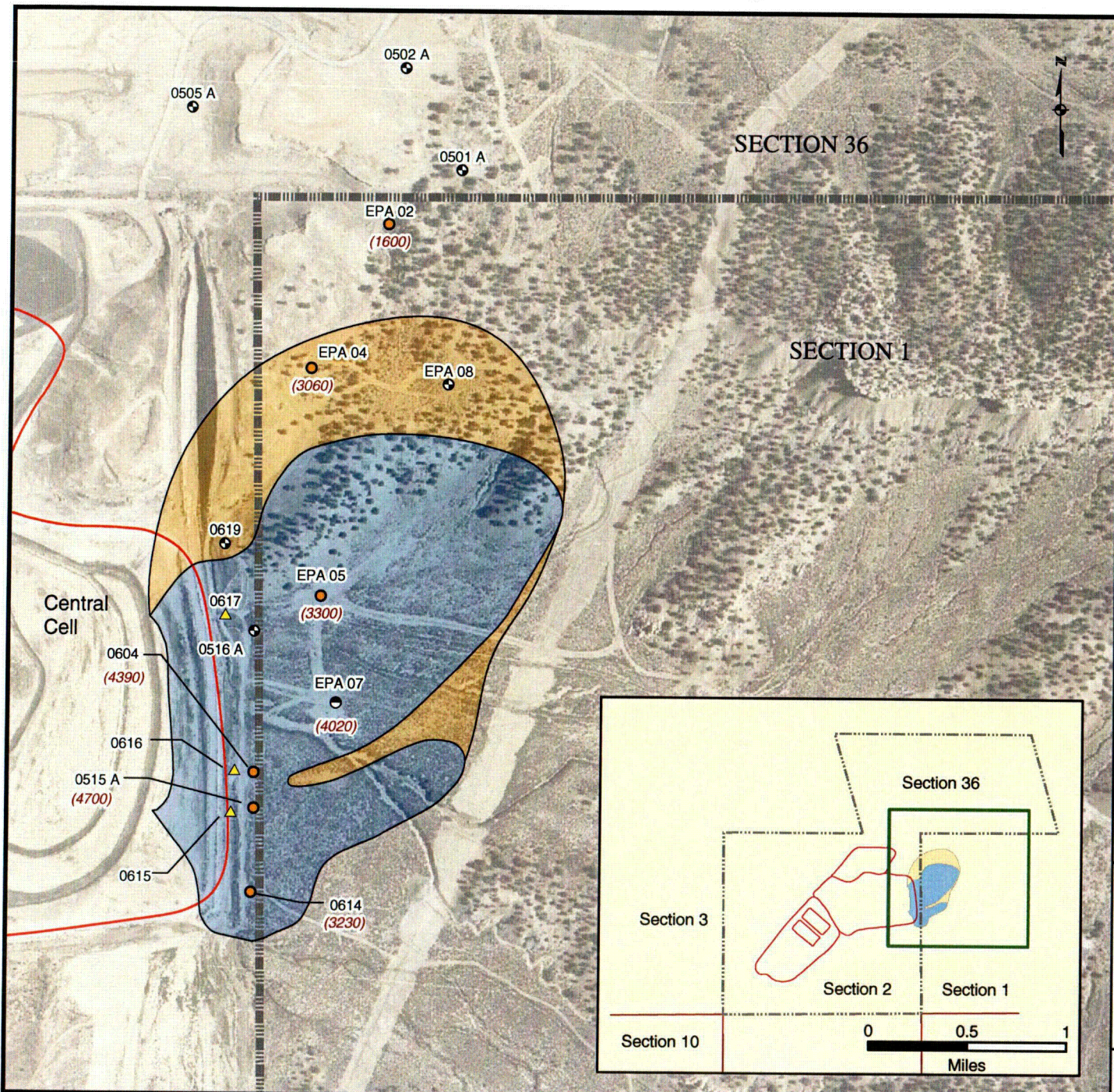
**FIGURE 49**  
 Zone 1 pH Over Time  
 United Nuclear Corporation, Church Rock Site, Church Rock, New Mexico



**FIGURE 50**  
 Zone 1 Sulfate Concentrations Over Time  
 United Nuclear Corporation, Church Rock Site, Church Rock, New Mexico







**Legend**

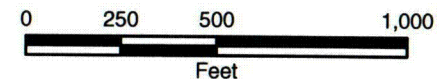
**Well Type**

- Water Quality and Level Monitoring
- ⊕ Water Level Monitoring
- ⊖ Decomissioned East Pump Back
- ▲ Revised East Pump Back
- Cell Boundary
- - - - Property Boundary
- Approximate Extent of Zone 1 Seepage Impacts
- Approximate Extent of Sulfate Exceeding 2,125 mg/L

(<0.01) Sulfate Concentration, mg/L

**Notes:**

1. Seepage impacts delineated by Chloride detections greater than 50 mg/L.
2. Well names are displayed with black text.
3. Aerial photo taken on August 1, 1996.



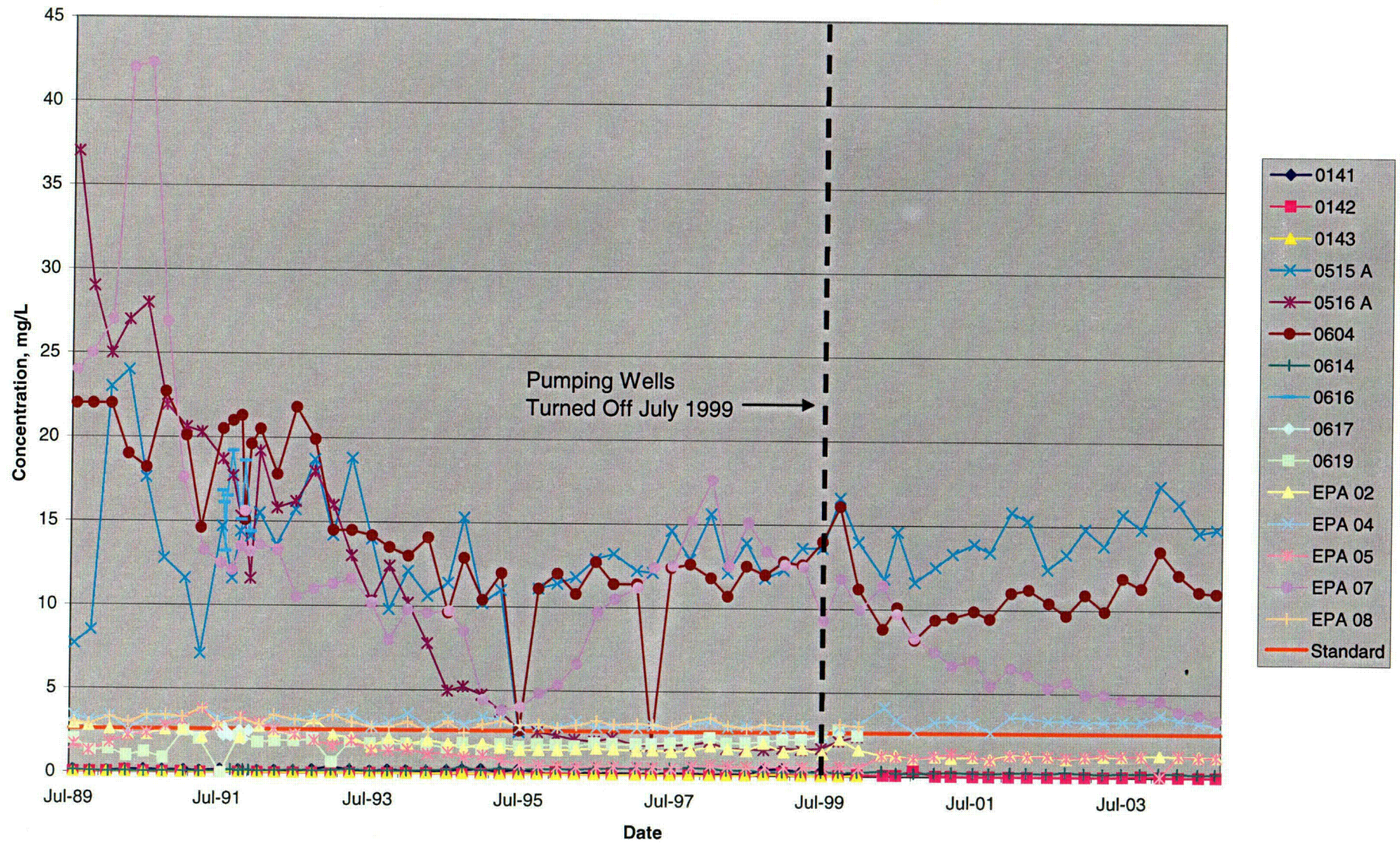
**FIGURE 51**

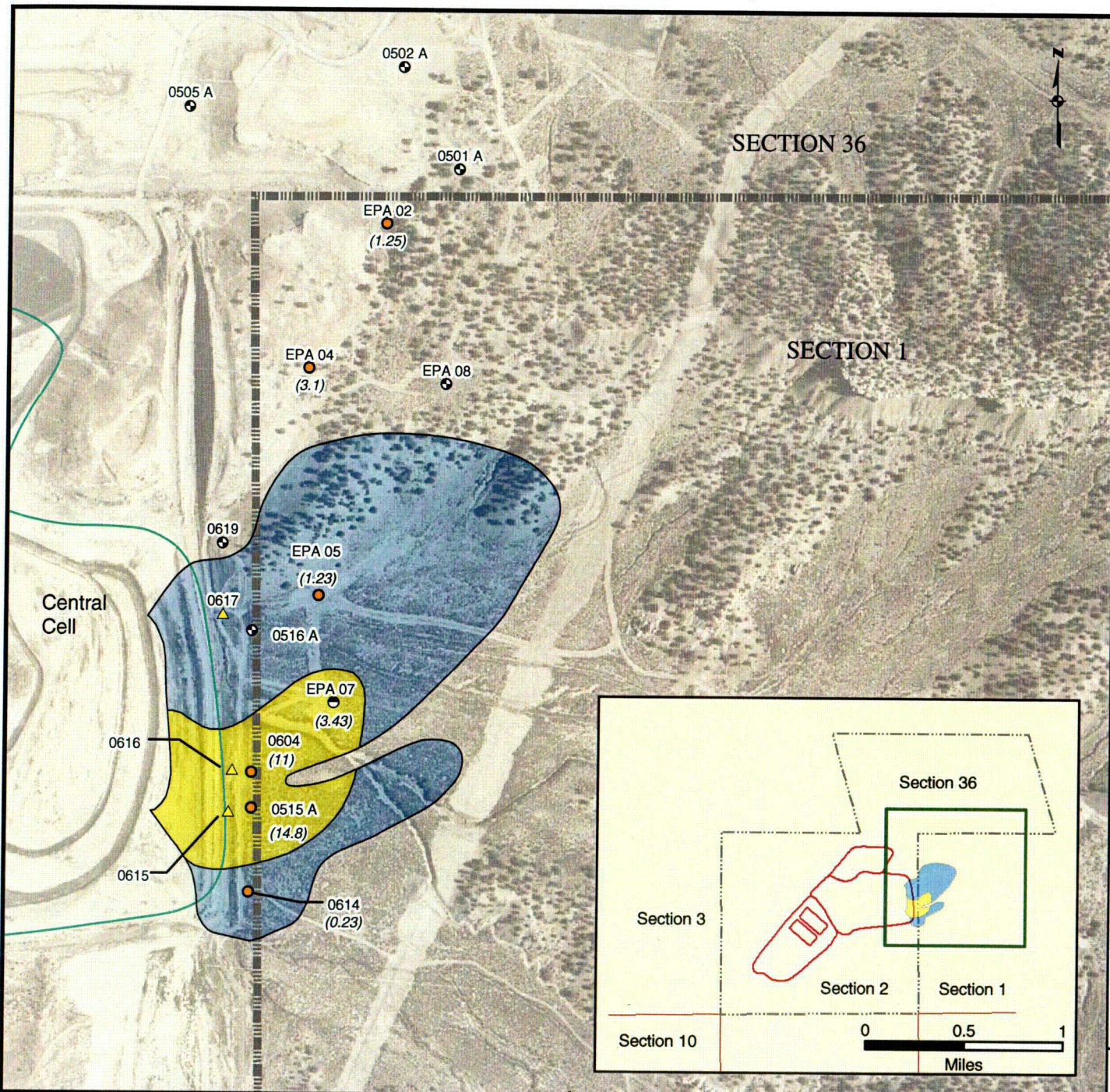
**Zone 1 Approximate Extent of Sulfate Exceeding 2,125 mg/L, October 2004**

United Nuclear Corporation Church Rock Site, Church Rock, New Mexico



**FIGURE 52**  
 Zone 1 Manganese Concentrations Over Time  
 United Nuclear Corporation, Church Rock Site, Church Rock, New Mexico





**Legend**

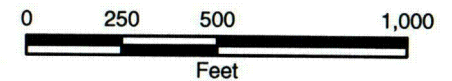
**Well Type**

- Water Quality and Water Level Monitoring
- ⊙ Water Level Monitoring
- ⊖ Decommissioned East Pump Back
- △ Revised East Pump Back (Inactive)
- Cell Boundary
- ▬ Property Boundary
- Approximate Extent of Zone 1 Seepage Impacts
- Approximate Extent of Manganese Exceeding 2.60 mg/L

(3.43) Manganese values in mg/L

**Notes:**

1. Seepage impacts delineated by Chloride detections greater than 50 mg/L.
2. Aerial photo taken on August 1, 1996.



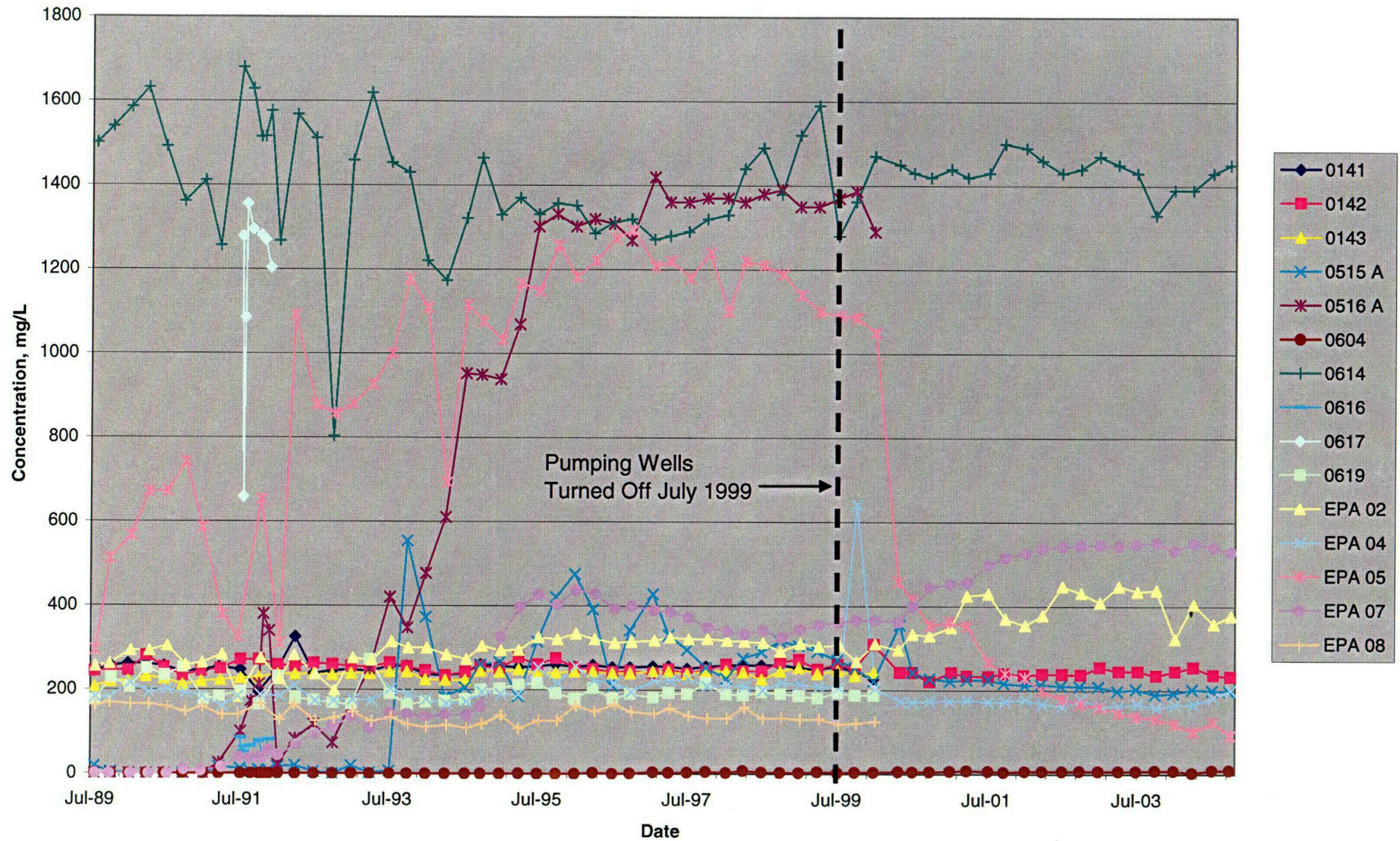
**FIGURE 53**

**Zone 1 Approximate Extent of Manganese Exceeding 2.6 mg/L, October 2004**

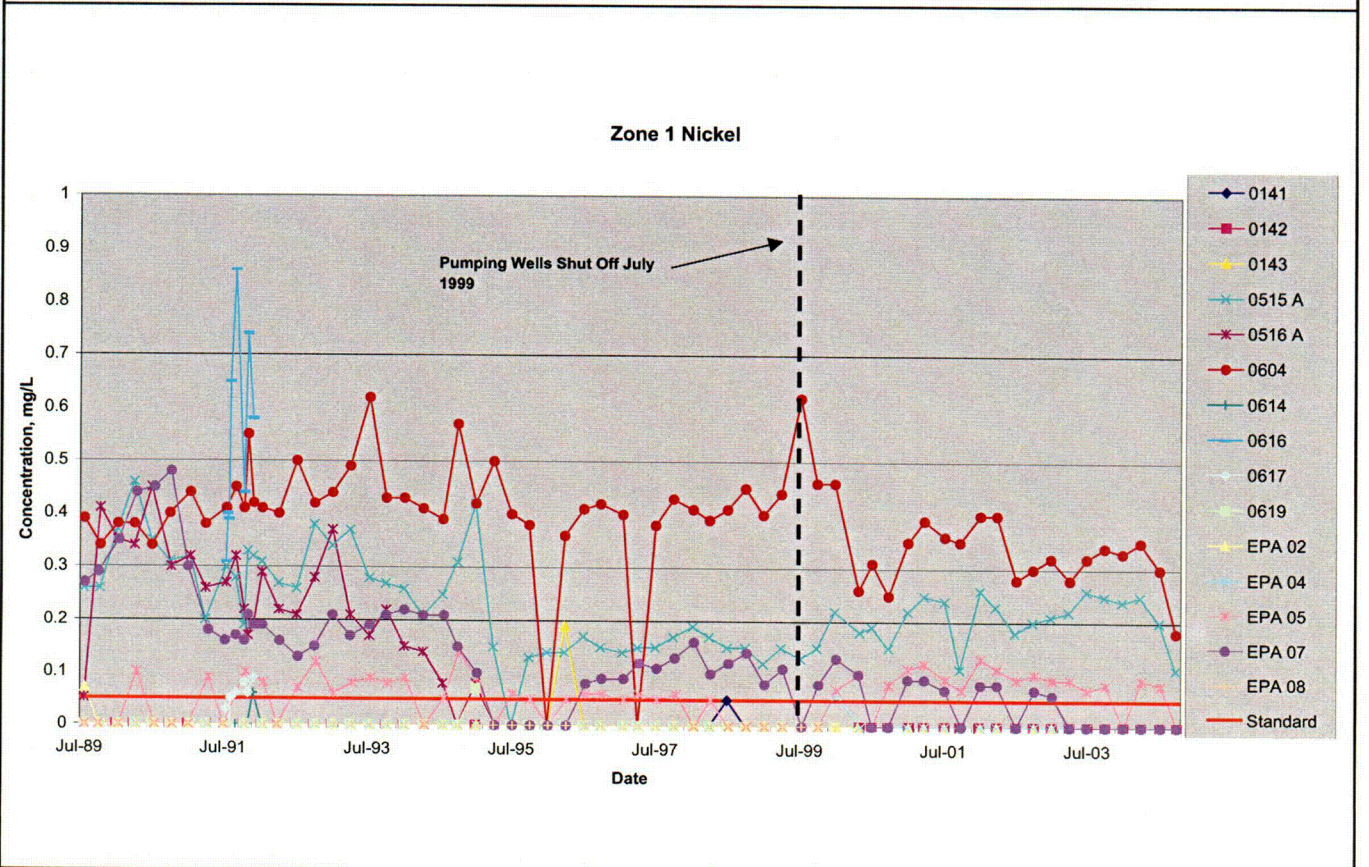
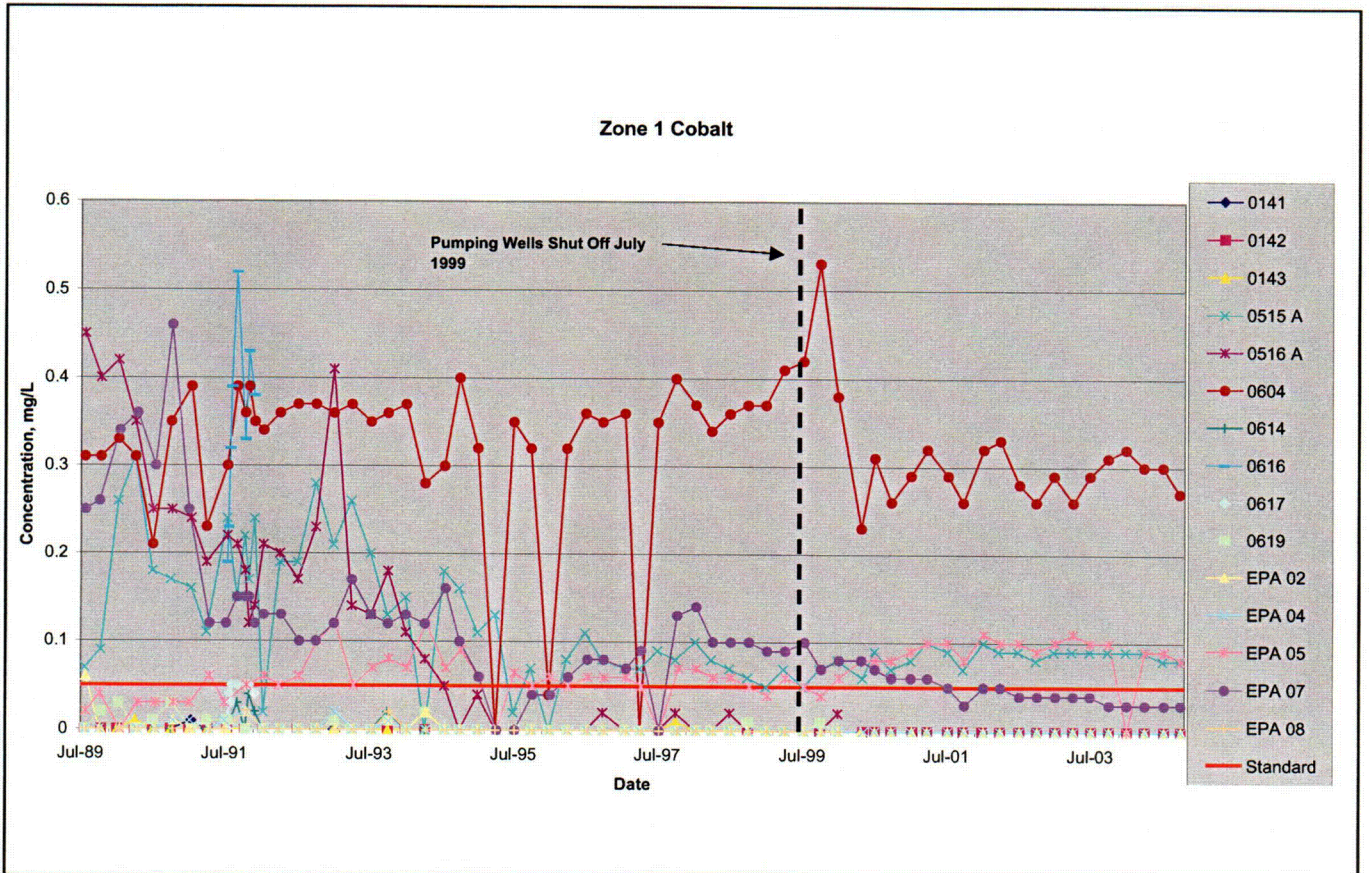
United Nuclear Corporation Church Rock Site, Church Rock, New Mexico

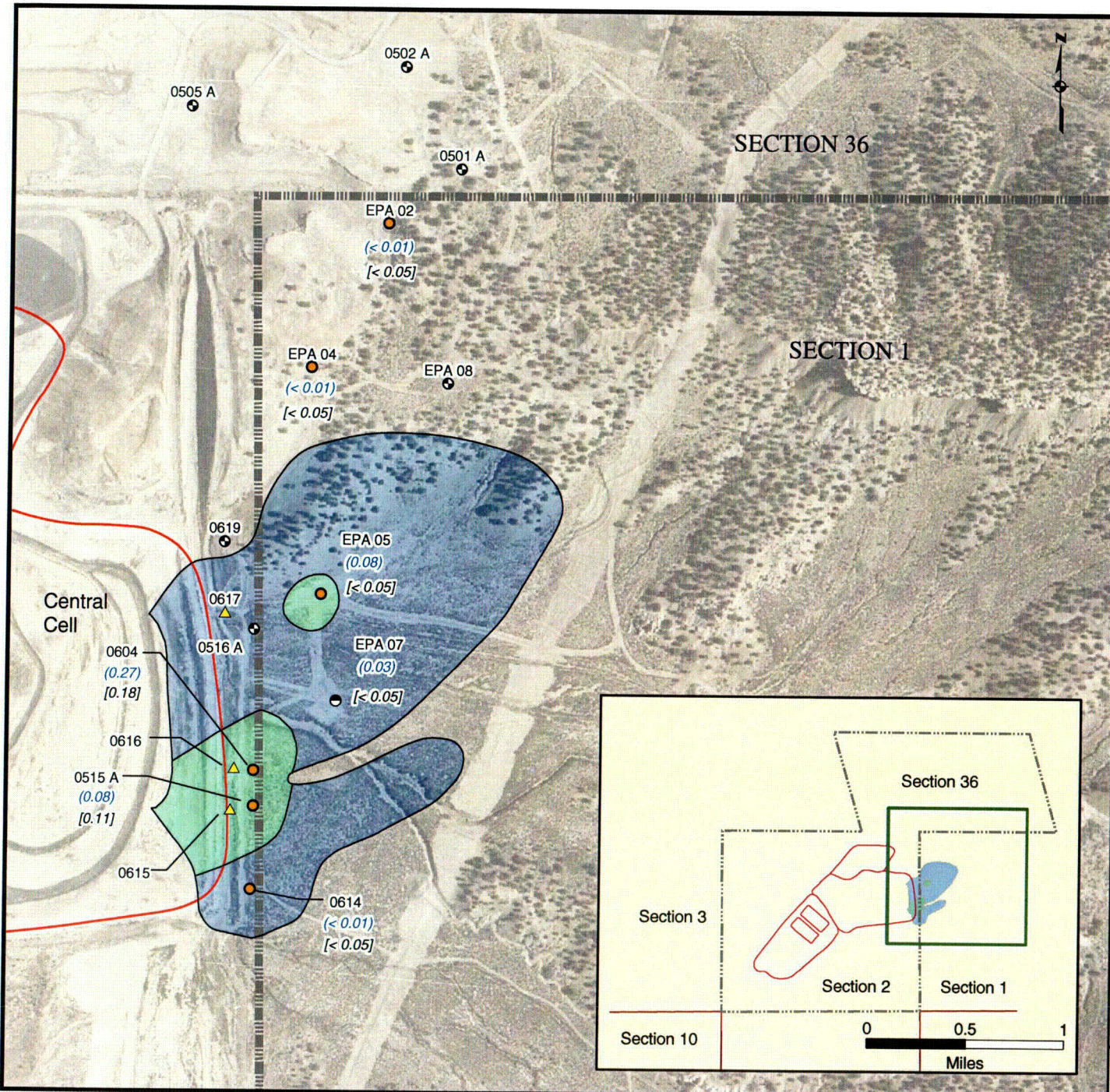


**FIGURE 54**  
 Zone 1 Bicarbonate Concentrations Over Time  
 United Nuclear Corporation, Church Rock Site, Church Rock, New Mexico



**FIGURE 55**  
**Zone 1 Cobalt and Nickel Concentrations Over Time**  
 United Nuclear Corporation Church Rock site, Church Rock, New Mexico





**Legend**

**Well Type**

- Water Quality and Level Monitoring
- ⊙ Water Level Monitoring
- ⊖ Decommissioned East Pump Back
- ▲ Revised East Pump Back

— Cell Boundary

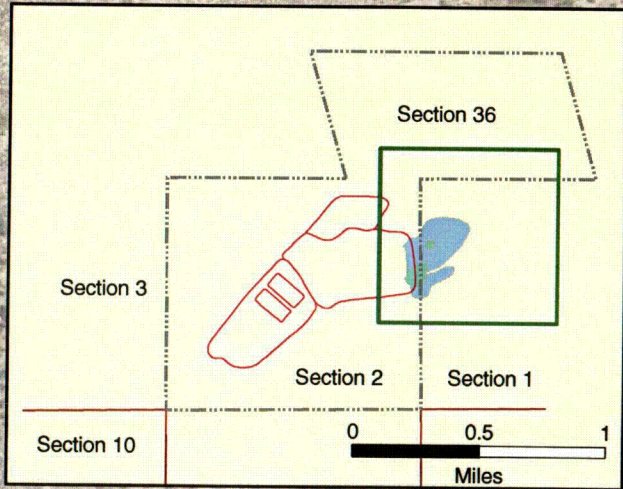
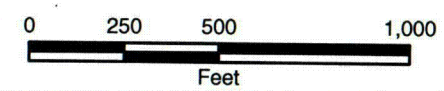
▬ Property Boundary

■ Approximate Extent of Zone 1 Seepage Impacts

■ Approximate Extent of Cobalt and/or Nickel Exceeding 0.05 mg/L

(<0.01) Cobalt Concentration, mg/L  
[<0.05] Nickel Concentration, mg/L

- Notes:**
1. Seepage impacts delineated by Chloride detections greater than 50 mg/L.
  2. Well names are displayed with black text.
  3. Aerial photo taken on August 1, 1996.

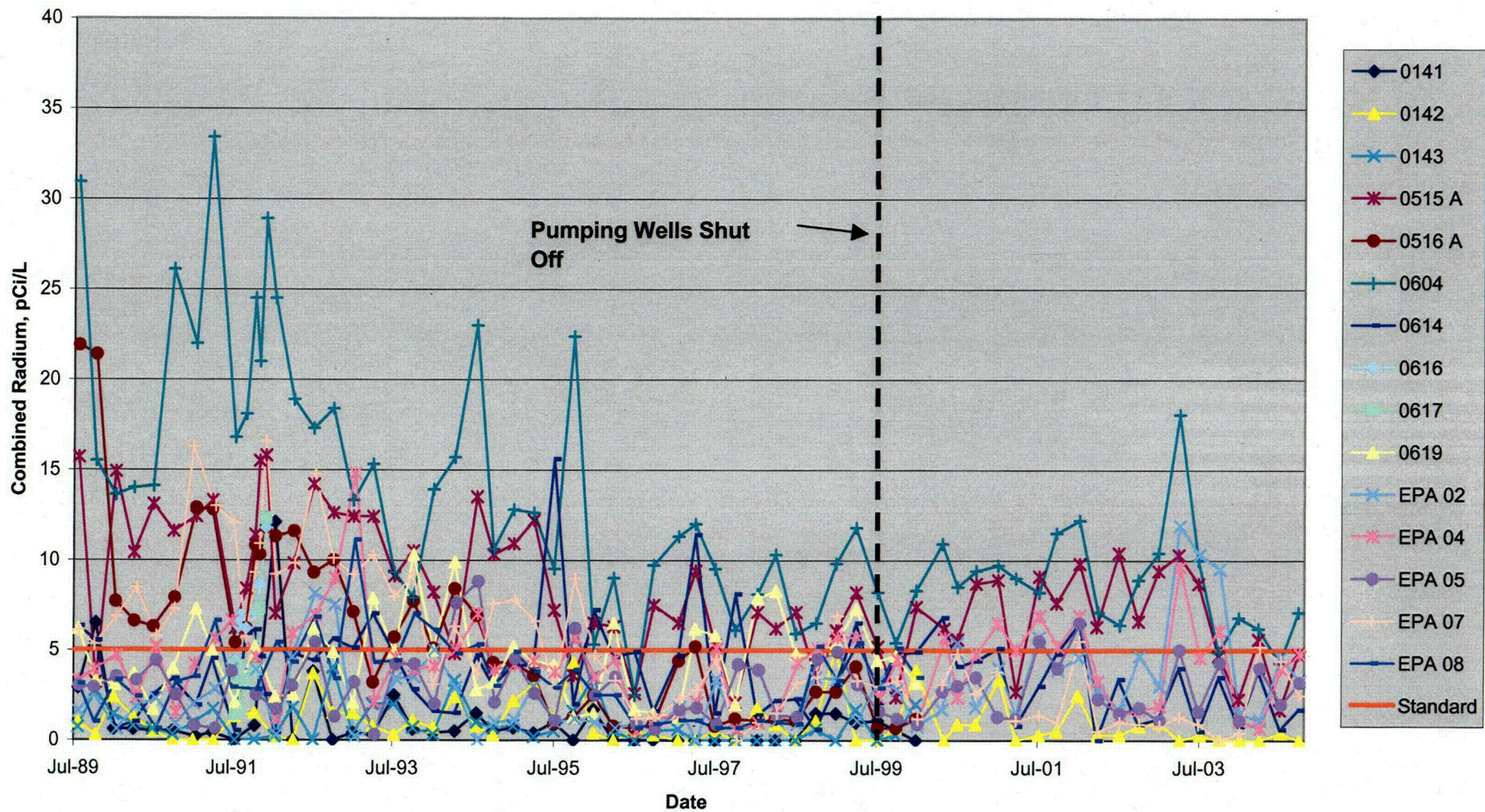


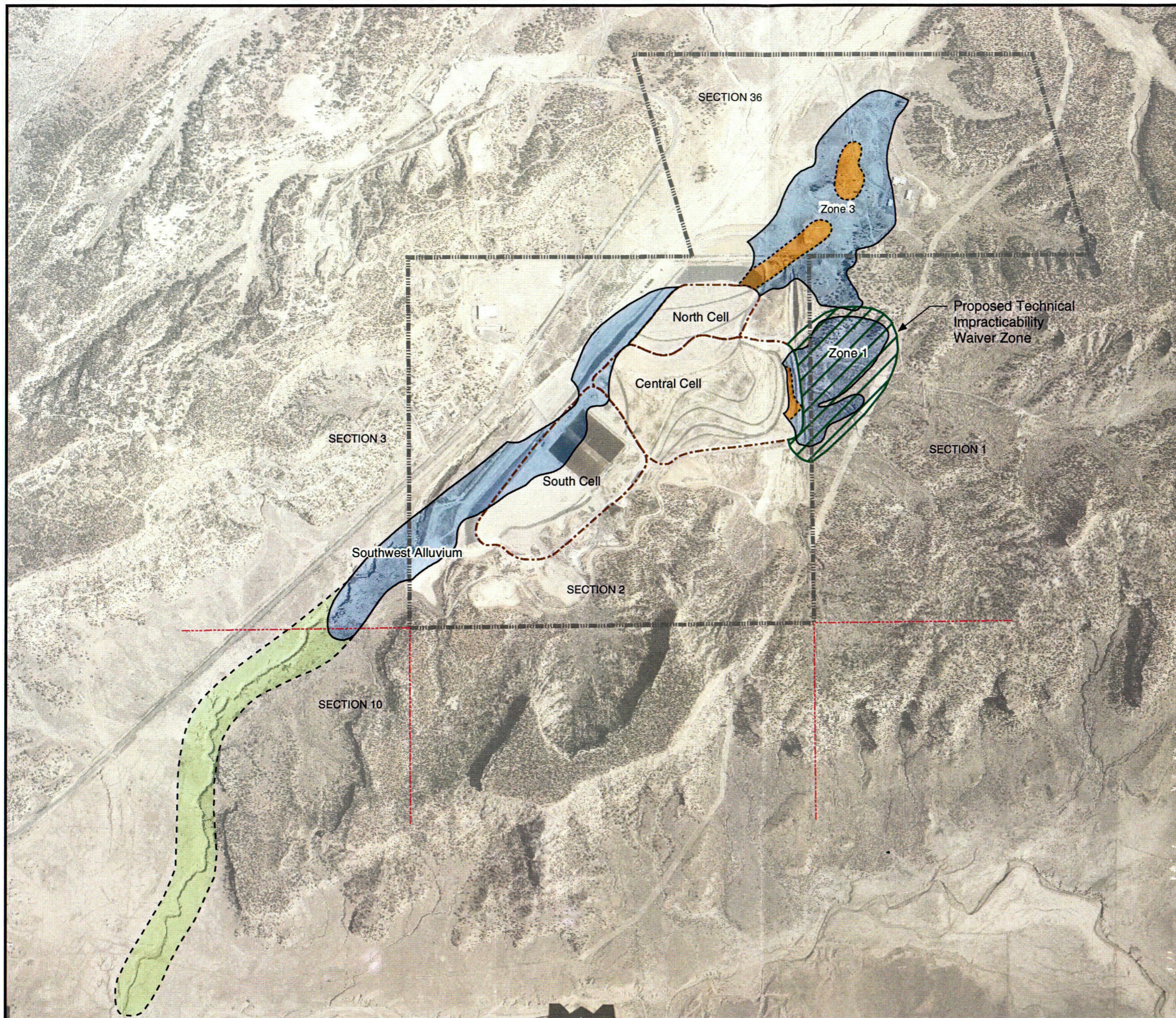
**FIGURE 56**  
**Zone 1 Extent of Cobalt and Nickel Exceeding 0.05 mg/L, October 2004**  
 United Nuclear Corporation Church Rock Site, Church Rock, New Mexico



CL3

**FIGURE 57**  
 Zone 1 Combined Radium-226 and Radium-228 Over Time  
 United Nuclear Corporation, Church Rock Site, Church Rock, New Mexico



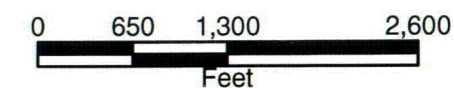


**Legend**

- Section Boundary
- Property Boundary
- Tailings Pond
- Groundwater with pH <= 4
- Seepage-Impacted Groundwater
- Proposed Technical Impracticability Waiver Zone
- Seepage Impact in 2204
- Extrapolated Extent of Seepage Impact in Southwest Alluvium in 2204

**Notes:**

1. Extrapolated Extent of Southwest Alluvium Seepage Impact in 2204 based upon an average annual seepage impact advance of 30 feet per year.
2. Aerial photo taken on August 1, 1996.



C45

**FIGURE 58**

Proposed TI Waiver for Zone 1 and Extrapolated Extent of Southwest Alluvium Seepage Impact in 2204

United Nuclear Corporation Church Rock Site  
Church Rock, New Mexico

