BACKGROUND INVESTIGATION AND ADDITIONAL DATA COLLECION

HOMESTAKE NPL SITE

March 31 Meeting

Santa Fe, New Mexico

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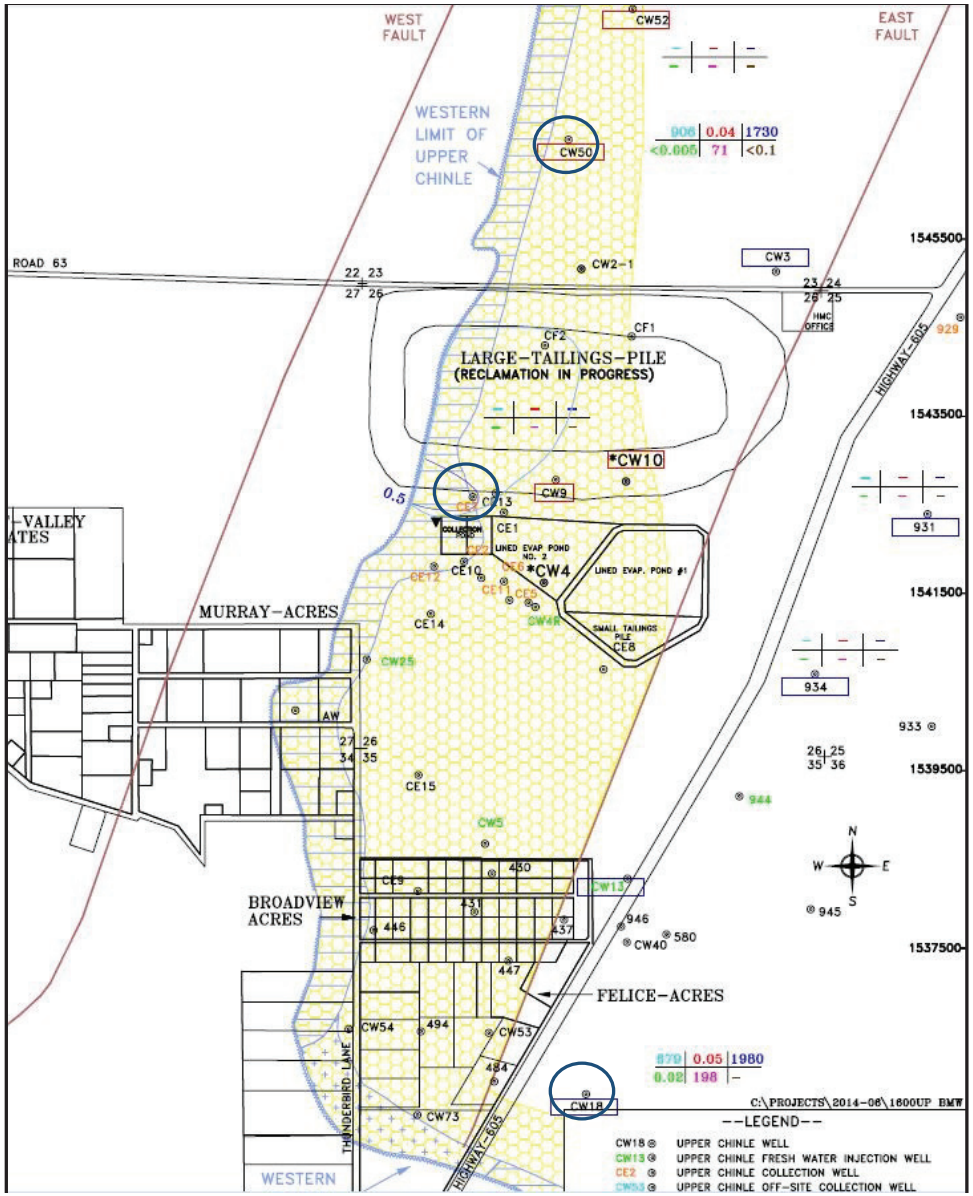
9787558



UPPER CHINLE MIXING ZONE AND BACKGROUND WELL LOCATION

HMC 2013 ANNUAL REPORT

Wells Selected for Additional Testing

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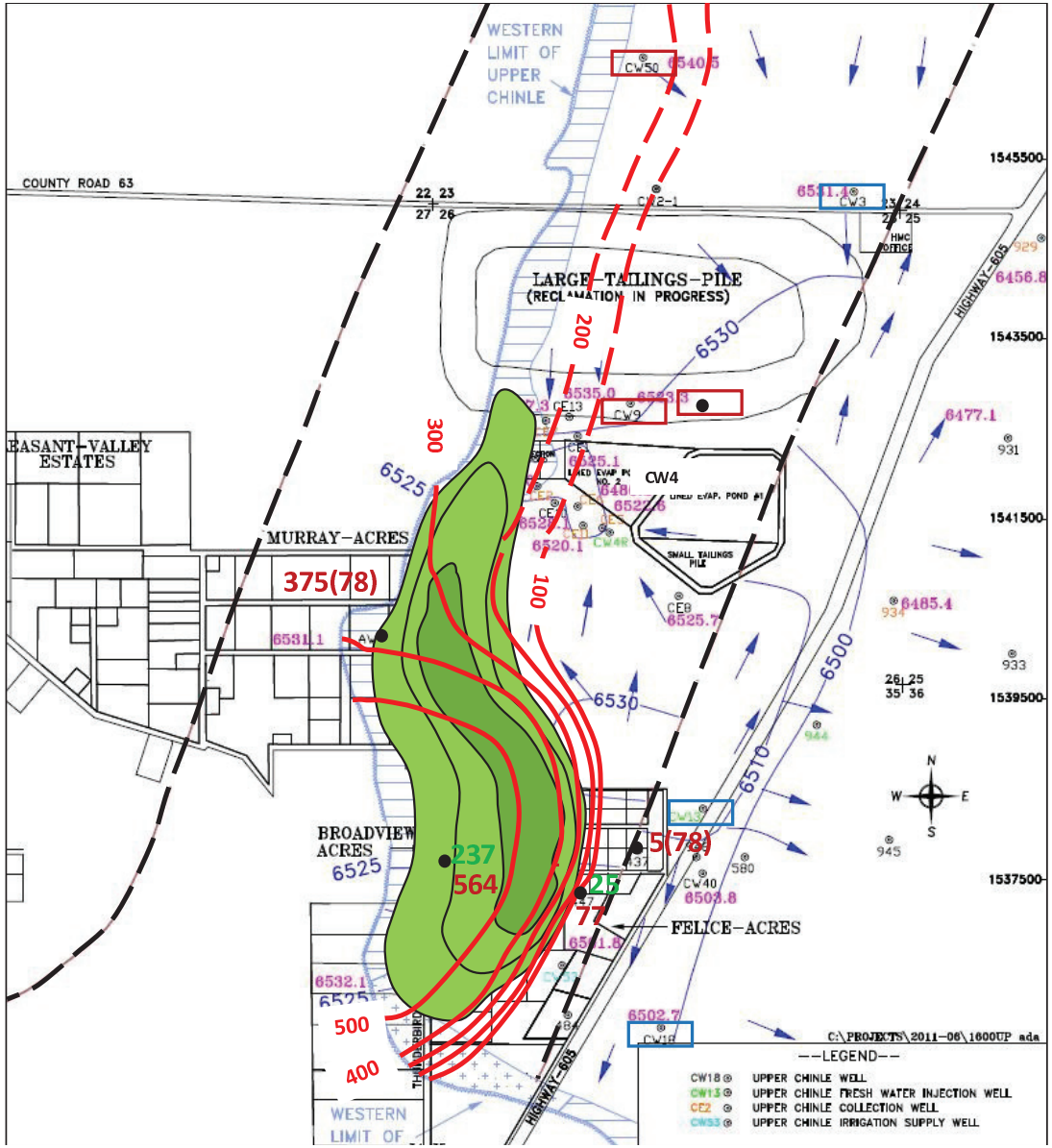

CALCIUM ISOCONCENTRATION CONTOUR MAP

Upper Chinle Aquifer

1976

508 Uranium (ppb)

564 Calcium (ppb)

5(78) Calcium (ppb) - 1978

Uranium >100 ppb

Uranium >250 ppb

Uranium >500 ppb

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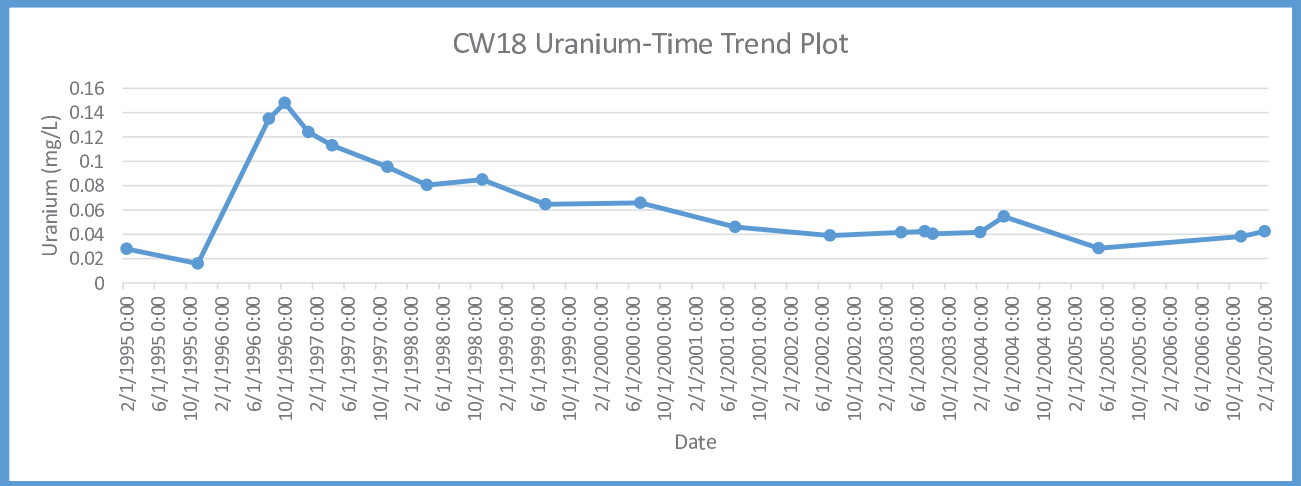
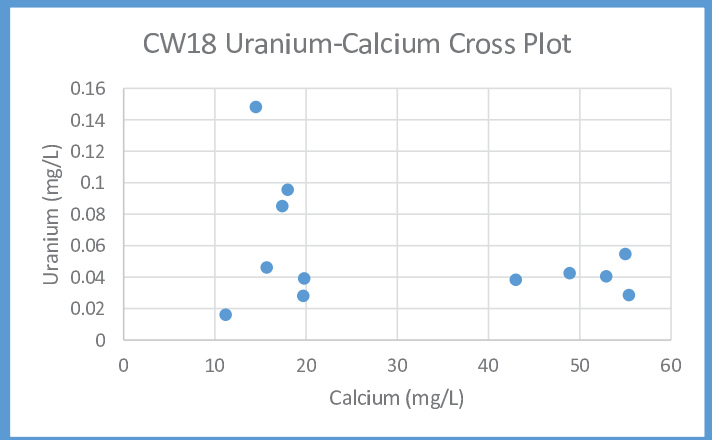
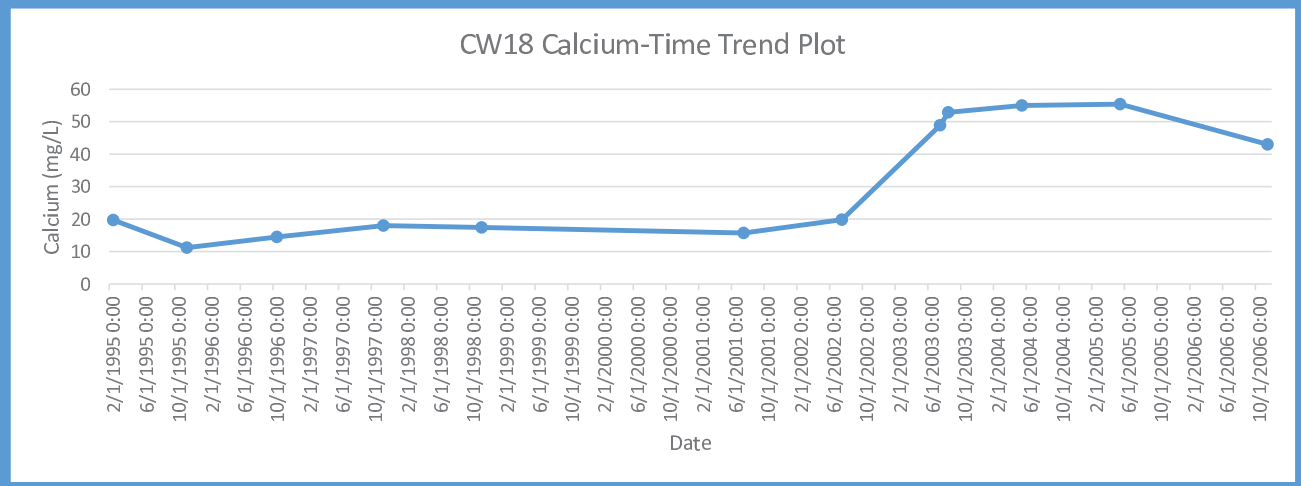
CW18 Uranium and Calcium Trends







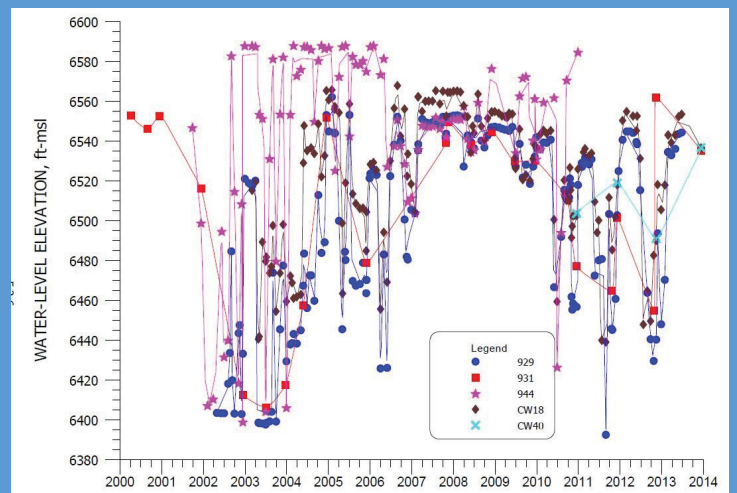
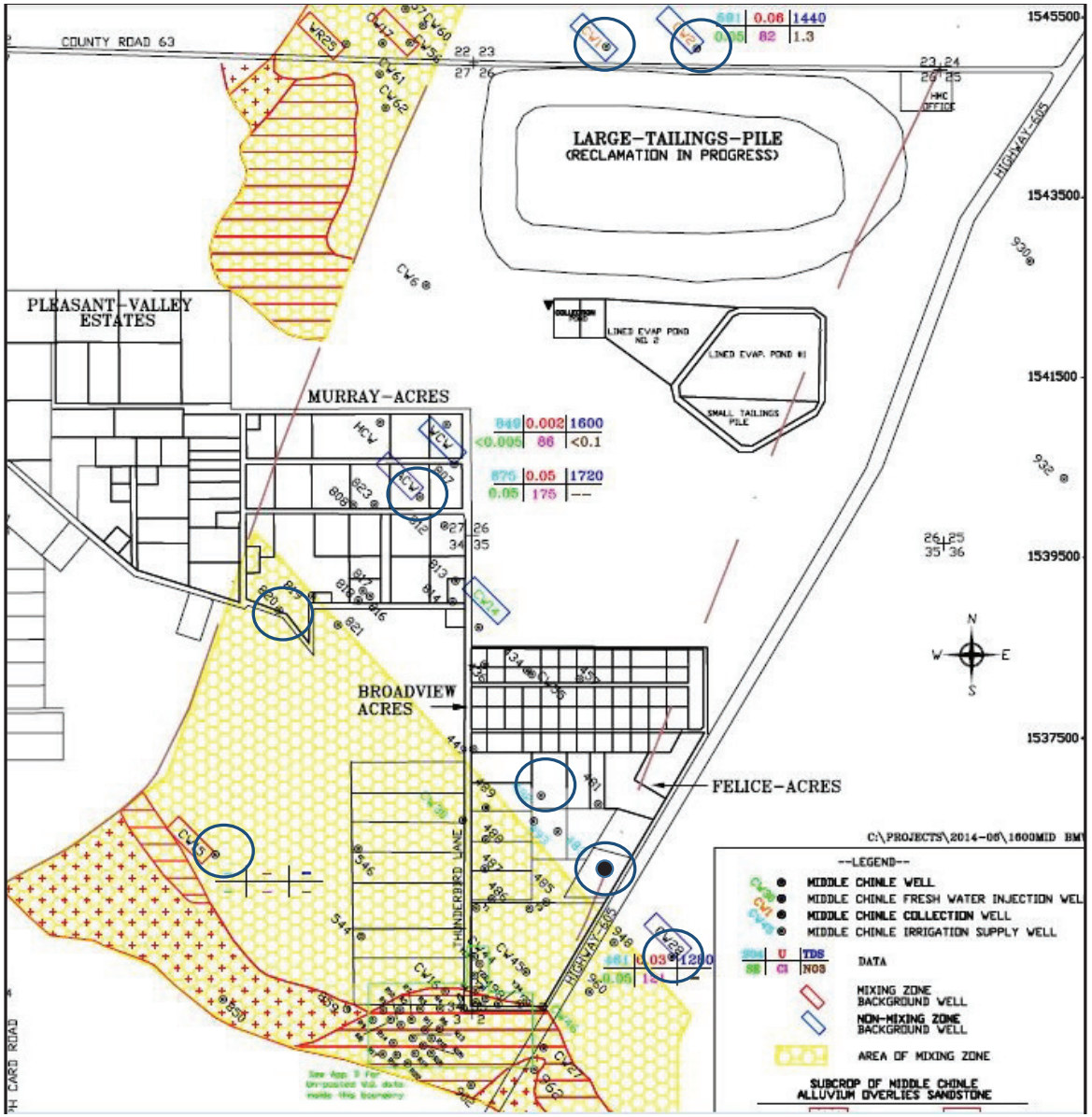


FIGURE 5.2-4. WATER-LEVEL ELEVATION FOR WELLS 929, 931, 944, CW18, AND CW40

WELLS CONSIDERED FOR ADDITIONAL TESTING UPPER CHINLE

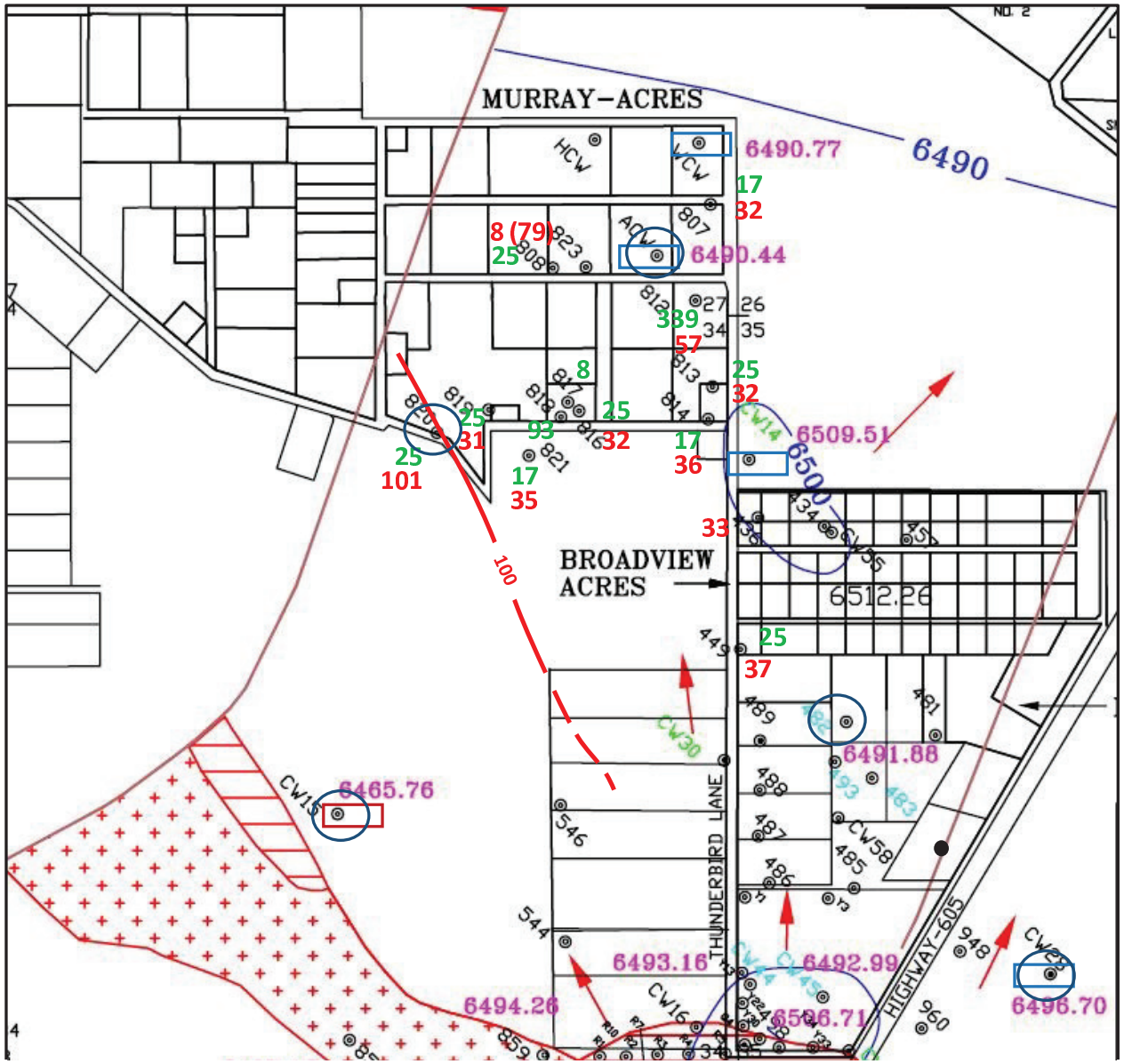
- High Calcium – Low Uranium
  - CW50 – Mixing Zone
    - Uranium level increased to about 300 ppb in 2013
- High Calcium – High Uranium
  - CE7 – Mixing Zone, Impacted
    - Extraction Well
- Low Calcium – Low Uranium
  - CW18 – Non Mixing Zone
    - Uranium levels increased in 1996, but Calcium levels did not until 2003
    - Water levels varied over 100 feet between 2003 and 2014
- Low Calcium – High Uranium



MIDDLE CHINLE MIXING ZONE AND BACKGROUND WELL LOCATION

HMC 2013 ANNUAL REPORT

Well Proposed for Additional Testing



CALCIUM ISOCONCENTRATION CONTOUR MAP

Middle Chinle Aquifer

1976

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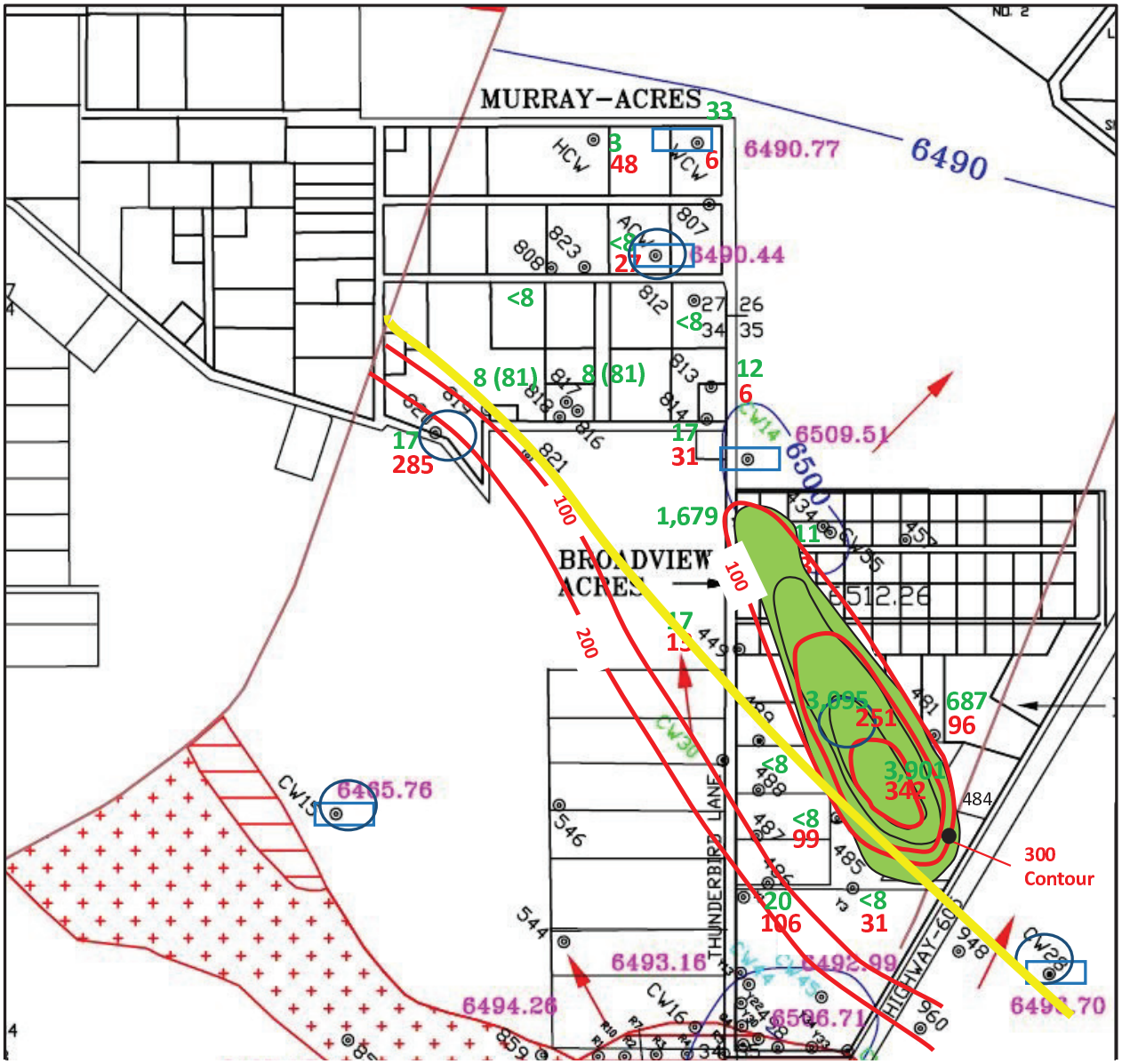

CALCIUM ISOCONCENTRATION CONTOUR MAP

Middle Chinle Aquifer

1981-83

- Uranium >1,000 ppb
- Uranium >2,000 ppb
- Uranium >3,000 ppb

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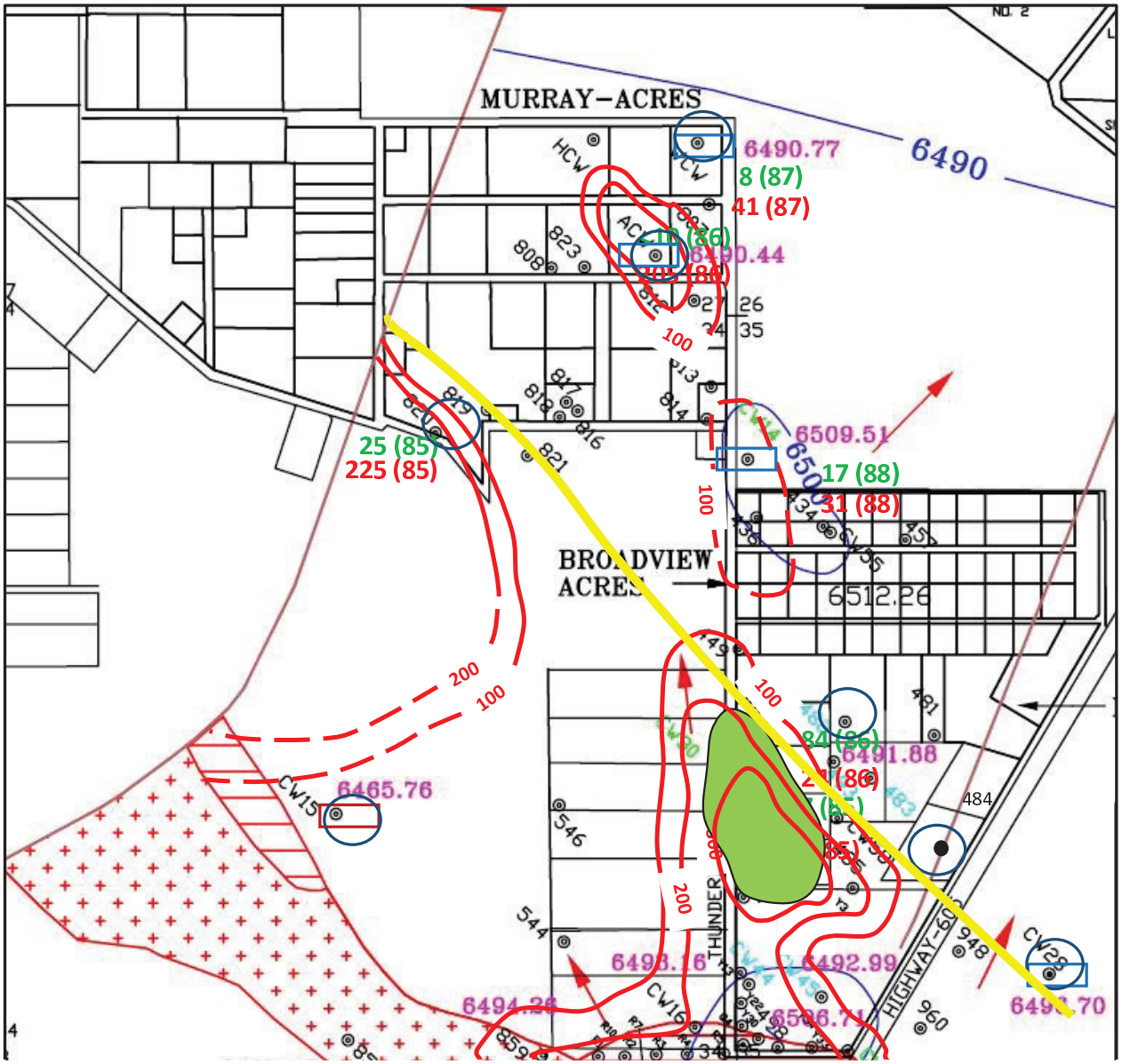

CALCIUM ISOCONCENTRATION CONTOUR MAP

Middle Chinle Aquifer

1985-87

Uranium >200 ppb

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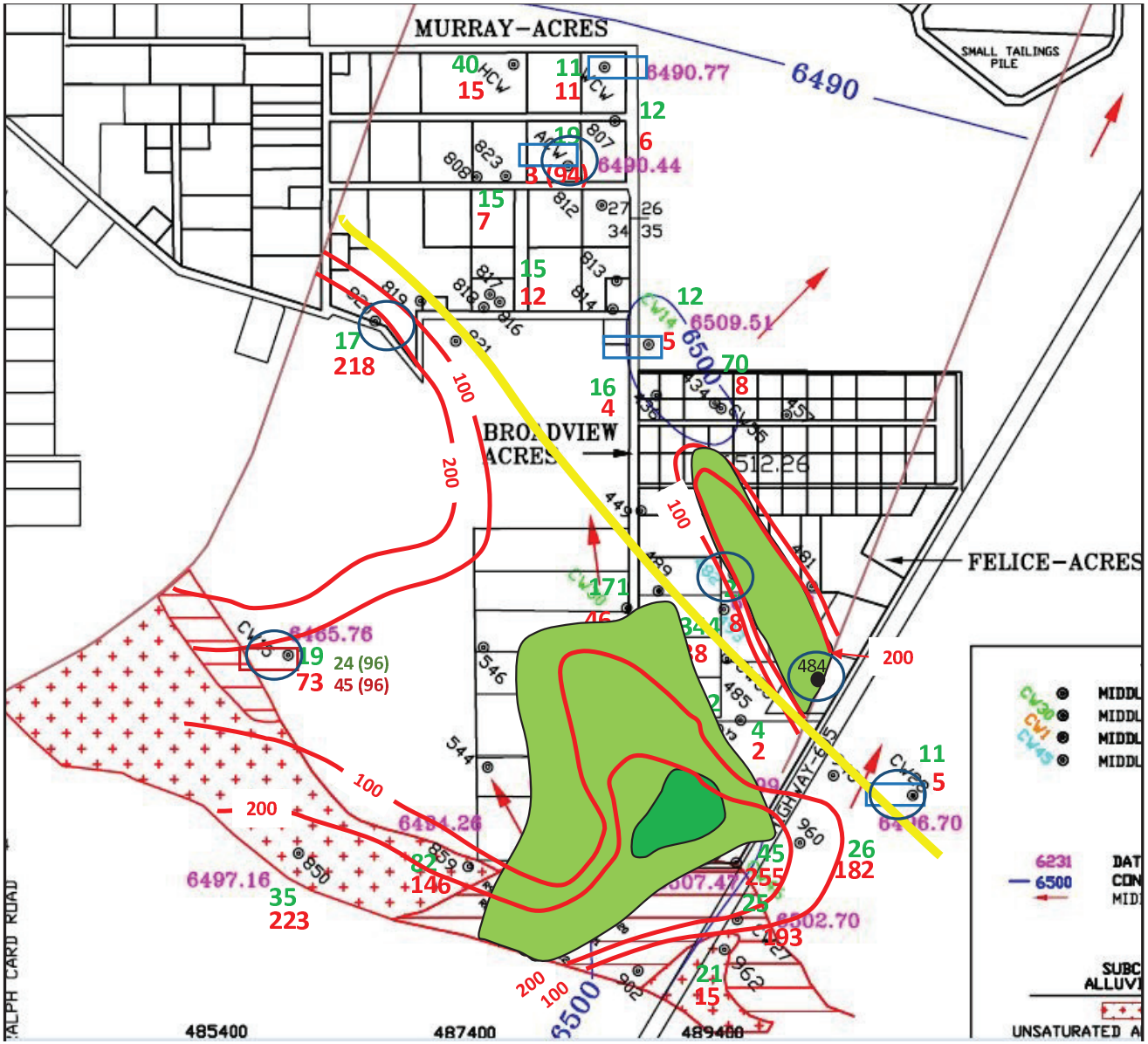

CALCIUM AND URANIUM ISOCONCENTRATION CONTOUR MAP

Middle Chinle Aquifer

1995-96

- Uranium >200 ppb
- Uranium >500 ppb
- Uranium >1,000 ppb
- Uranium >1,500 ppb

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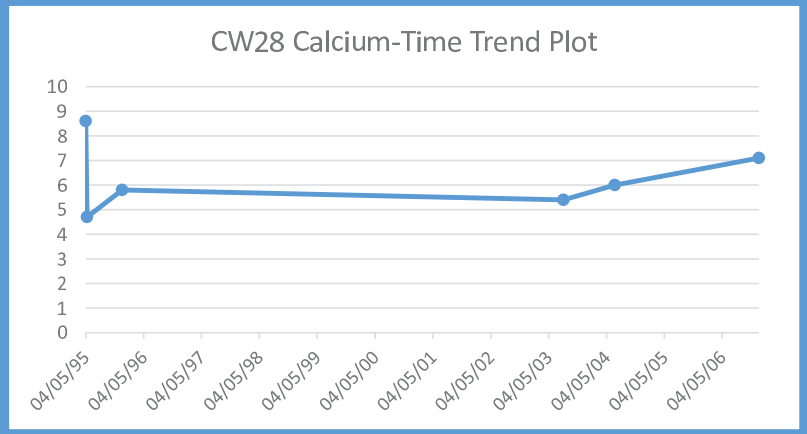
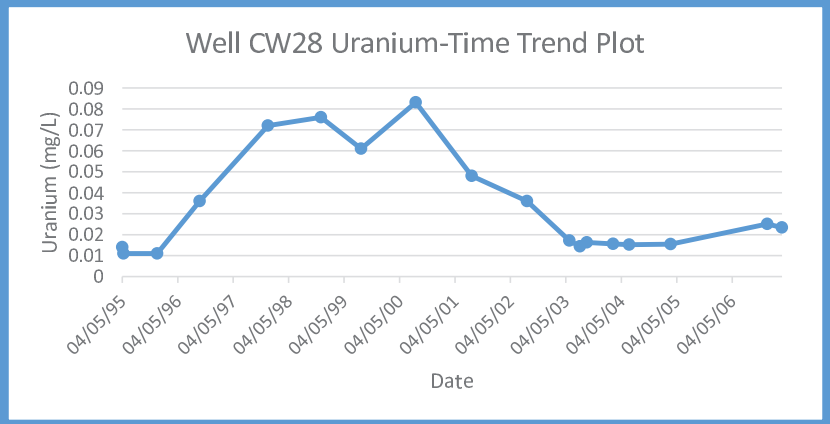
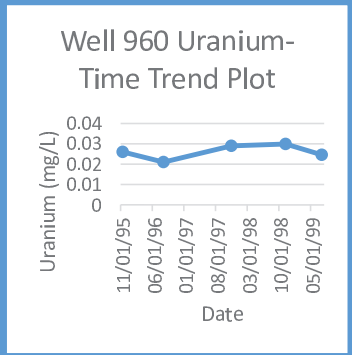
WELLS CONSIDERED FOR ADDITIONAL TESTING MIDDLE CHINLE?

- High Calcium – Low Uranium
  - CW15 – Mixing Zone
  - 820 – Mixing Zone
- Low Calcium – Low Uranium
  - AWC – Non Mixing Zone
  - CW28 – Non Mixing Zone
    - Uranium levels increase from <20 ppm to 80 ppb from 1996 to 2003;
- High Calcium – High Uranium
  - CW45 – Mixing Zone
    - Irrigation Supply Well
- Low Calcium – High Uranium
  - 484 – Mixing Zone
    - Along East Fault

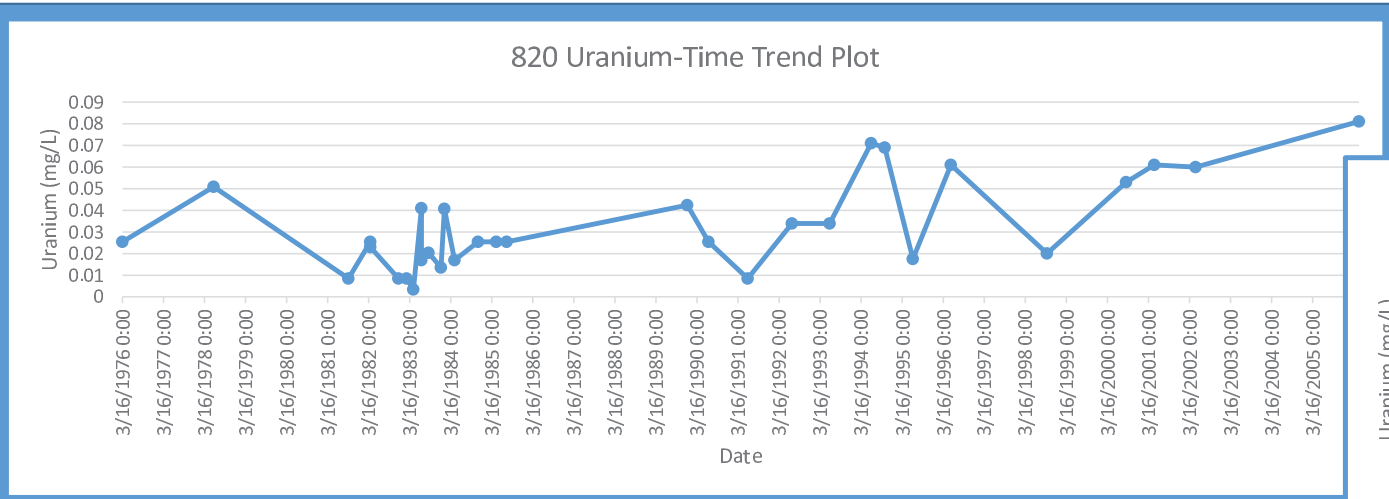
CW28 Uranium and Calcium Trends

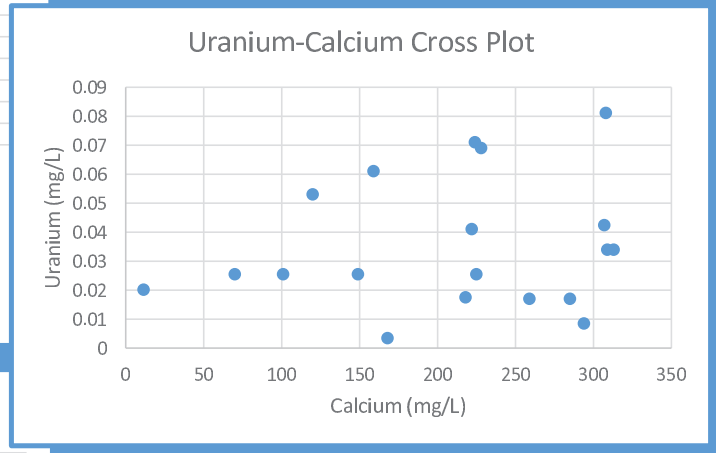


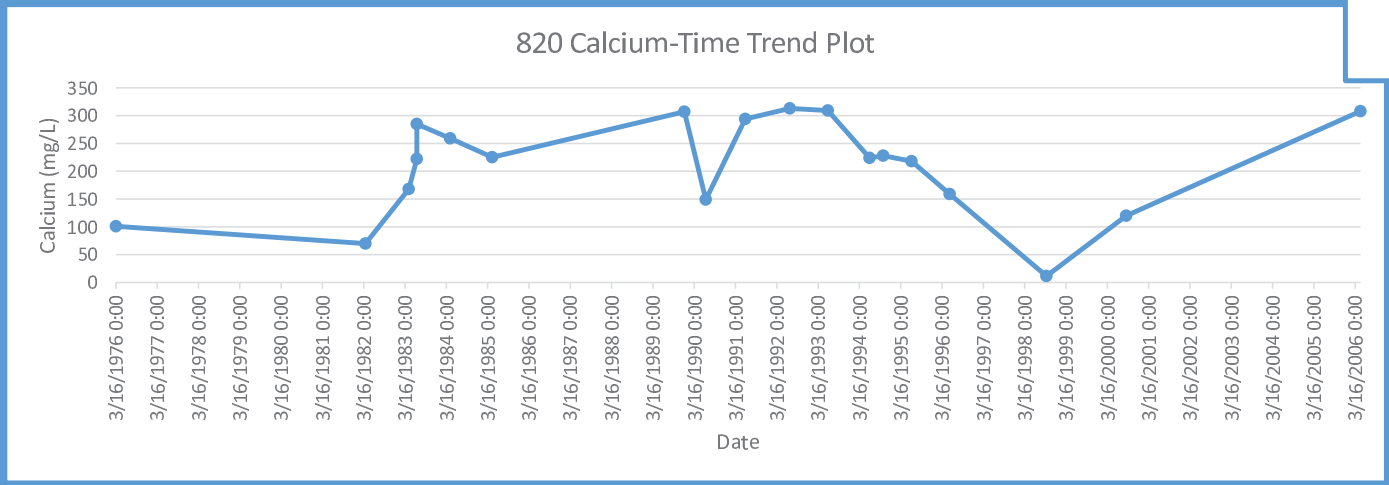
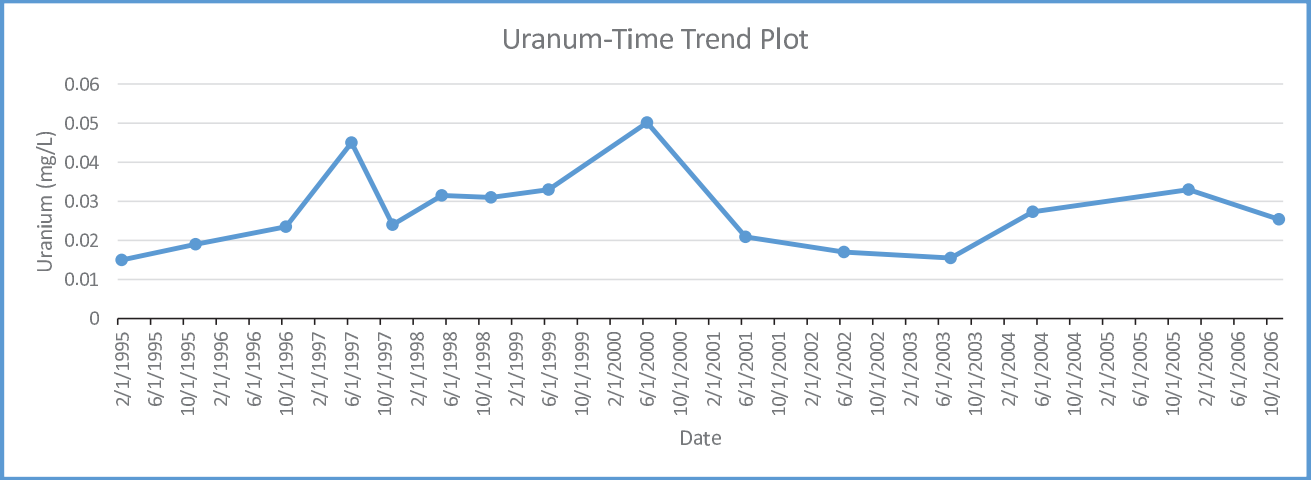
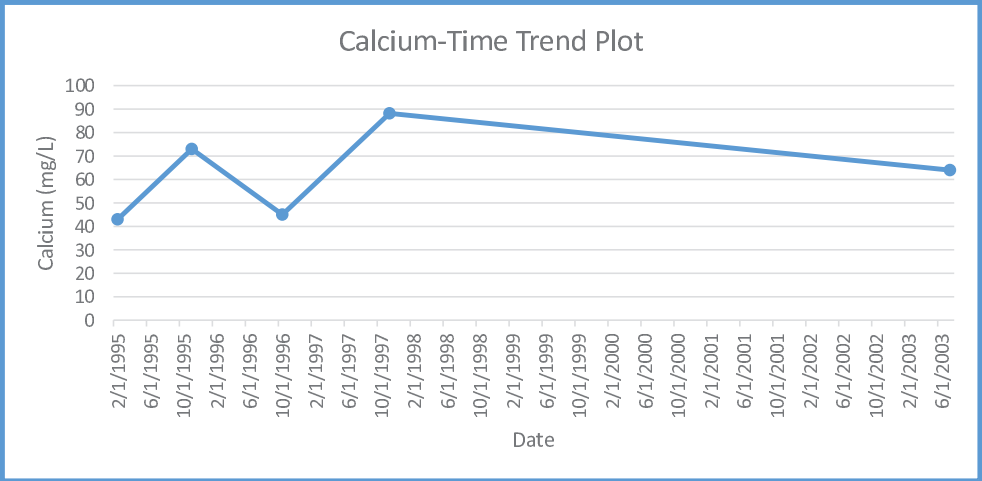
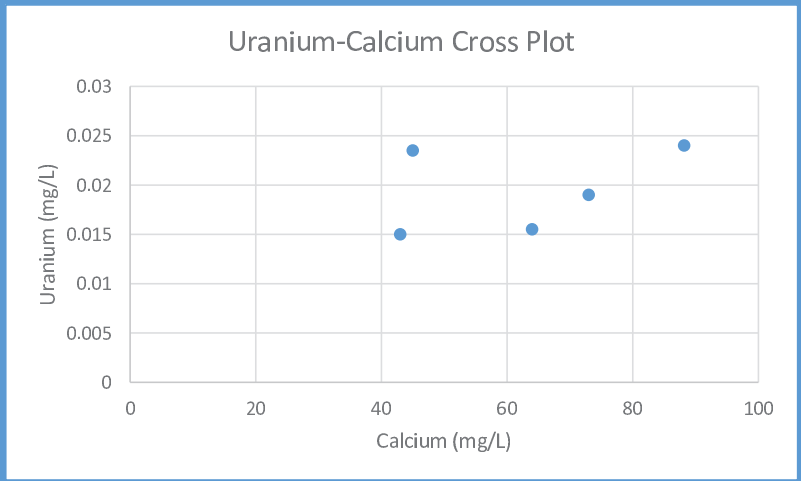




820 Uranium and Calcium Trends







CW15 Uranium and Calcium Trends