COLORADO OFFICE
10758 W. CENTENNIAL RD., STE. 200
LITTLETON, CO 80127
TEL: (866) 981-4588
FAX: (720) 981-5643

WYOMING OFFICE
5880 ENTERPRISE DR., STE. 200
CASPER, WY 82609
TEL: (307) 265-2373
FAX: (307) 265-2801

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February 8, 2018

Deputy Director, Decommissioning and Uranium Recovery Licensing Directorate
Division of Waste Management and Environmental Protection
Office of Federal and State Materials and Environmental Management Programs
Mailstop T8-F5
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Re: Docket No. 40-6622, License No. SUA-442
July-December 2017 Semi-Annual Groundwater Monitoring Report

Dear Deputy Director,

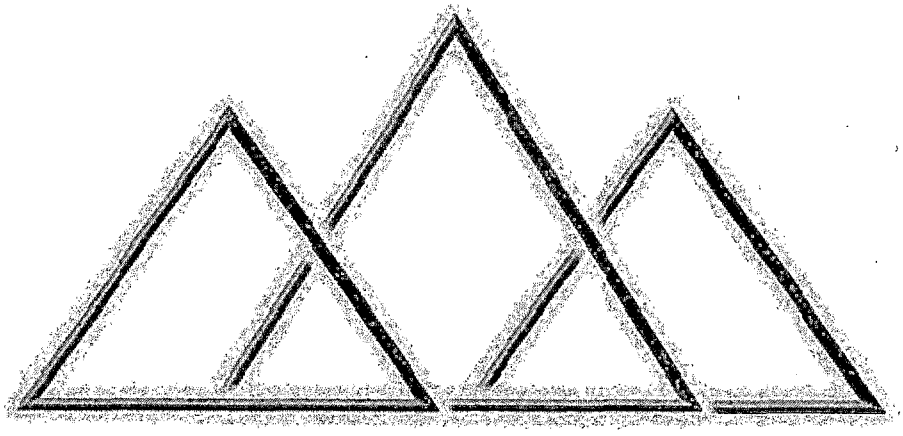
Please find behind this cover the Semi-Annual Groundwater Monitoring Report for the Shirley Basin Tailings.

If you have any questions, please feel free to call me at our Casper office.

Regards,

Mr. John Cash
President

CC: Mr. Dominick Orlando U.S. NRC Project Manager, via email
Mrs. Theresa Horne, Ur-Energy



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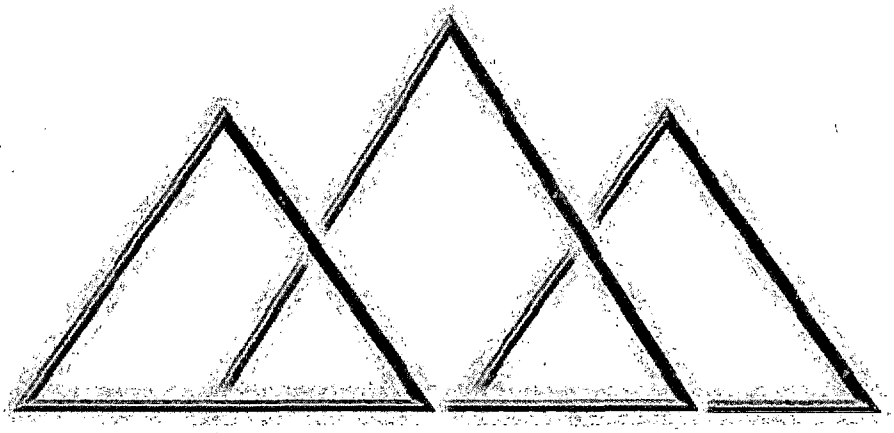
SEMI-ANNUAL
GROUNDWATER MONITORING COMPLIANCE REPORT
FOR THE
SHIRLEY BASIN TAILINGS

PREPARED BY:

PATHFINDER MINES CORPORATION
SHIRLEY BASIN MINE

February 2018



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SHIRLEY BASIN MINE

February 2018

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Executive Summary

This semi-annual report presents the results and conclusions of the groundwater and surface water monitoring program through December 2017 for Pathfinder Mines Corporation's Shirley Basin mill and tailings facility.

- None of the 16 "Site Standards" were exceeded at either of the two Point-of-Compliance (POC) wells (NP01 and RPI-19B) during the October 2017 sampling event. Additionally, none of the other 12 non-compliance monitor wells exceeded any of the "Site Standards" either. Hence, PMC's groundwater monitoring program is compliant with all monitor well Point-of-Compliance "Site Standards".
- The fourth quarter 2017 surface water quality was little changed from that measured in the third quarter. The surface water quality continues to indicate that there is no deleterious groundwater impact at the downstream "Point-of-Exposure" monitoring site (POE-DS).
- The fourth quarter 2017 water levels generally declined in comparison to water levels measured in the third quarter. Nevertheless, the groundwater flow regime remains the same.

1.0 Introduction

This report is the twenty-fourth in the series of semi-annual reports required by NRC License SUA-442 under License Condition 47.C. License Condition 47.A requires monitoring of water quality from two Point-of-Compliance wells, other selected wells, and from surface-water sites for the constituents presented in **Table 1**.

Table 1 also lists the "Site Standards" per License Condition 47.B that are in effect for POC wells NP01 and RPI-19B, which are located east of the Shirley Basin tailings facility (see **Figure 1**). Additionally, **Table 1** also presents the October 2017 analytical results for the two POC wells. Data analysis and conclusions are presented in **Sections 4** and **5**, respectively.

2.0 Piezometric Data

The water-level data collected for all of 2017 are presented in **Table 2** along with field measurement of pH and conductivity. **Figure 1** shows the current piezometric surface of the surficial aquifer in the area between the tailings impoundment and Spring Creek. The piezometric contours clearly indicate that subsurface flow is toward Spring Creek. **Figure 2** presents a time-series plot of water-level elevation versus time for monitor wells MC-14, NP01, RPI-14, RPI-18A and RPI-19B. The corresponding October 2017 water-level elevation is posted adjacent to the well location on the plan view map (**Figure 1**).

Water-level elevations in background monitor well MC-14 post 2003 show a slow but continuous decline, which is attributed to the decay of the groundwater mound that was generated beneath the historic retention Pond 5 area (Pond 5 has been reclaimed and no longer exists). The other four monitor well water levels have remained fairly stable since 2005. Recent water-level elevation changes are more reflective of seasonal recharge, and the piezometric surface appears to be approaching a relatively steady state condition with a general gradient from the tailings impoundment area toward Spring Creek. There are two anomalous water-level elevations for well MC-14 (2002

and 2011) and one anomalous water-level elevation for wells NP01 (2005) and RPI-18A (2016) shown on **Figure 2** that are likely the result of a measurement or recording error.

The 2017 fourth quarter water level elevations shown in **Table 2** reveal that, exception for RPI-18A, all monitor well water levels declined 0.1 to 0.83 feet from levels recorded in the third quarter.

3.0 Groundwater and Surface Water Quality

All 2017 groundwater analytical results are compiled in **Table 3** and surface water results in **Table 4**. The 2016 water quality data is also presented on **Tables 3** and **4** for trend analysis purposes. Historical water quality data compiled before 2016 can be found in prior semi-annual report submittals.

Chloride

Figure 3 is the surficial aquifer October 2017 chloride iso-concentration contour map. The chloride concentration is greatest at well P-6, which is located approximately 750 feet east of the tailings impoundment in the southern portion of the monitored area. Chloride concentrations are also moderately elevated in some wells located closest to the reclaimed tailings dam. There was a general increasing chloride trend in the Mine Creek area (**Figure 4**) beginning in 2006, but the concentrations appear to have peaked and are now generally in a declining trend. However, RPI-18A showed an unexpected jump in concentration this quarter and will be closely monitored going forward. The chloride concentration in well MC-14 and in surface-water samples, is not significantly elevated over background levels.

Figure 4 presents the chloride concentration versus time plots for monitor wells MC-14, NP01, RPI-14, RPI-18A and RPI-19B. **Figure 5** shows that the chloride concentration in POC well NP01 began increasing in 2006 through 2015, but has trended lower since then. Likewise, **Figure 6** shows a similar chloride trend for POC well RPI-19B; however, the fluctuation has been more pronounced, which is attributed to the small well diameter, shallow depth and limited saturated thickness. A superimposed fourth-order polynomial trend line helps to clarify the historical trend. Chloride is relatively inert in the groundwater system, thus is a good indicator of seepage migration flow rate and path. Overall, there appears to be a decreasing chloride concentration trend in both POC wells, with the reported 2017 concentrations being significantly less than their respective "Site Standard".

The five Spring Creek surface-water sampling sites and the October 2017 chloride analytical concentrations in mg/L are shown on **Figure 3**. The chloride concentrations at the surface-water sampling sites are similar and significantly less than levels found in the underlying groundwater system. **Figure 7** presents the time-series plots of chloride concentration at surface-water sampling locations SW-1A, SC-2 and POE-DS. The fluctuation in concentration is attributed to the intermittent flow nature of Spring Creek. Note that the elevated May 2017 analytical results for all five sampling sites have returned to their historical norm during the past two sampling events.

Radium 226+228

Figure 8 is the surficial aquifer October 2017 Ra 226+228 iso-activity contour map. The highest radium values are typically concentrated in wells located along the toe of the tailings dam and

adjacent Mine Creek. **Figure 9** presents the plots of Ra 226+228 activity versus time for monitor wells MC-14, NP01, RPI-14, RPI-18A and RPI-19B. The graph shows significant variability in measured values. Measured radium, thorium, and gross alpha activity results are typically more erratic (less consistent) than other non-radionuclide constituents; therefore, the iso-activity contours are believed to be less reliable indicators of the extent of seepage or pathways.

Figures 10 and **11** present the time-series plot for Ra 226+228 activity for POC monitor wells NP01 and RPI-19B, respectively. The figures indicate that results vary significantly from year to year as would be expected for most radionuclides. Despite the variability in results, the measured 2017 Ra 226+228 activity levels at both POC wells are significantly less than their respective "Site Standard".

Spring Creek surface-water sampling sites along with the October 2017 radium analytical results are shown on **Figure 8**. **Figure 12** presents time-series plots of Ra 226+228 activities at surface-water sampling locations SW-1A, SC-2 and POE-DS. Up gradient sample site SW-1A has shown a wide range of Ra 226+228 activity readings in the past few years. However, the surface water radium results appear to be consistent with radiometric land-surface survey results in the area upstream of sampling site SW-1A, which is considered baseline. Although not directly applicable, the reported surface-water radium activity levels are significantly less than the groundwater radium "Site Standard".

Selenium

Figure 13 is the surficial aquifer October 2017 selenium iso-concentration contour map. In general, the wells with the higher selenium concentrations are typically the same wells with higher concentrations of sulfate, chloride and TDS. Selenium, being a metal, is not very mobile in normal pH groundwater environments. Accordingly, it is not necessarily a good indicator of seepage impacts.

Figure 14 presents the selenium concentration versus time plots for monitor wells MC-14, NP01, RPI-14, RPI-18A and RPI-19B. **Figure 14** indicates that there are no discernable selenium trends developing for monitor wells MC-14, RPI-14 or RPI-18A, and all analytical results are significantly less than the "Site Standard" applicable to the two POC wells. **Figure 15** shows that the selenium concentration in POC well NP01 began increasing in 2001, peaked in 2006, then declined to levels that are an order of magnitude lower than the "Site Standard". **Figure 16** shows the plot of selenium concentration versus time for POC well RPI-19B. For the past 22 years, the reported selenium concentration has been an order of magnitude lower than the applicable "Site Standard", with no developing trend noted.

Spring Creek surface-water sampling sites and the October 2017 selenium analytical results are shown on **Figure 13**. The analytical results for all five sampled locations were at or less that the method detection limit of 0.001 mg/L. **Figure 17** presents the time-series plots of selenium concentration at surface-water sampling locations SW-1A, SC-2 and POE-DS; no developing selenium trends were noted.

Sulfate

Figure 18 is the surficial aquifer October 2017 sulfate iso-concentration contour map. The sulfate concentration is greatest at well P-6, which is located approximately 750 feet east of the tailings impoundment in the southern portion of the monitored area. The sulfate concentration is also moderately elevated in wells MC-10, RPI-10, RPI-16A and RPI-18A, which are wells that consistently contain elevated levels of other constituents. The significance of the sulfate results is discussed in **Section 4.0, Observations**.

Figure 19 presents the time-series sulfate concentrations plots for monitor wells MC-14, NP01, RPI-14, RPI-18A and RPI-19B. **Figure 20** shows that the sulfate concentration in POC well NP01 began increasing in 2006, peaked in 2013, but has declined since then. Likewise, **Figure 21** shows a similar sulfate trend for POC well RPI-19B; however, the fluctuation has been more pronounced, which is likely attributable to the reasons discussed in the chloride section. Overall, there appears to be a decreasing sulfate concentration trend in both POC wells, with the reported October 2017 concentrations being seven to nine times *less* than their respective "Site Standard".

Spring Creek surface-water sampling sites and the October 2017 sulfate analytical results are shown on **Figure 18**. **Figure 22** presents the time-series plots of sulfate concentration at surface-water sampling locations SW-1A, SC-2 and POE-DS. The reported values fluctuate widely due to seasonal surface runoff, but no developing sulfate trends are observed.

Thorium-230

Figure 23 is the surficial aquifer October 2017 thorium-230 iso-activity contour map. Thorium-230 activities in groundwater samples are small except for the slightly higher values noted in wells at the dam toe and along Mine Creek, but even those are more than an order of magnitude lower than the POC Site Standards. **Figure 24** presents the thorium-230 activity versus time plots for monitor wells MC-14, RPI-14, NP01, RPI-18A and RPI-19B. Note that for the past 20 years, the thorium-230 results have shown little variability.

Figures 25 and **26** present the time-series plot for thorium-230 activity for POC monitor wells NP01 and RPI-19B, respectively. The reported 2017 thorium-230 activity levels in both wells are approximately one to two orders of magnitude lower than their respective "Site Standard".

Spring Creek surface-water sampling sites and the October 2017 thorium-230 analytical results are shown on **Figure 23**. **Figure 27** presents the thorium-230 activity time-series plots for surface-water sampling locations SW-1A, SC-2 and POE-DS. The reported thorium-230 values are extremely low and some are negative. Current analytical techniques for thorium-230 activity allow reporting of negative values that indicate levels less than the detection limit. No developing trend is observed.

Total Dissolved Solids

Figure 28 is the surficial aquifer October 2017 Total Dissolved Solids (TDS) iso-concentration contour map. Of all the analytes monitored, TDS best reveals the primary seepage flow paths

emanating from the tailings impoundment. A review of **Figure 28** shows that there are three primary flow paths, which are discussed in **Section 4**.

Figure 29 presents the plots of TDS concentration versus time for monitor wells MC-14, NP01, RPI-14, RPI-18A and RPI-19B. **Figure 30** shows the time-series TDS concentration in POC well NP01. Note that TDS concentrations began increasing in 2006, peaked in 2013/2014, and has been generally decreasing since then. Likewise, **Figure 31** shows a similar TDS trend for POC well RPI-19B; however, the fluctuation has been more pronounced, which is attributed to factors discussed in the chloride section. Overall, there appears to be a decreasing TDS concentration trend in both POC wells, with the reported 2017 concentrations being significantly less than their respective "Site Standard" (see **Table 1**).

Spring Creek surface-water sampling sites and the October 2017 TDS analytical results are shown on **Figure 28**. **Figure 32** presents the TDS concentration time-series plots at surface-water sampling locations SW-1A, SC-2 and POE-DS, which are all relatively low compared to groundwater values and typically less variable.

Uranium

Figure 33 is the surficial aquifer October 2017 uranium iso-concentration contour map. Uranium concentrations in monitor wells NP01, RPI-14 and RPI-19B started to increase in 2006 through 2013 (see **Figure 34**), but all monitor well concentrations are now stable or show declining trends.

Figure 35 shows that the uranium concentration in POC well NP01 began increasing in 2006, peaked in 2013, and has been declining since then. Likewise, **Figure 36** shows a similar trend for POC well RPI-19B. Overall, there appears to be a decreasing uranium concentration trend in both POC wells, with the reported 2017 concentrations being significantly less than their respective "Site Standard" (see **Table 1**).

Spring Creek surface-water sampling sites and the October 2017 uranium analytical results are shown on **Figure 33**. The results are essentially the same for all five sampling locations. **Figure 37** presents the time-series plots of uranium concentration at surface-water sampling locations SW-1A, SC-2 and POE-DS. All October 2017 uranium results are less than 0.023 mg/L.

Monitor Well P-6

Figure 38 is the time-series composite graph showing chloride, sulfate and TDS concentrations for monitor well P-6. The changes in water quality since 2005 reflects ongoing tailing seepage whereby these constituent concentrations have risen to their pre-corrective action levels. As seen on **Figure 38**, TDS and chloride concentrations increased dramatically beginning in 2006, peaking in late 2013, and have since been in downward trends. The TDS concentration fluctuation is more pronounced than either chloride or sulfate. Sulfate concentrations have fluctuated within a narrow range since 2009, and are now stable or in a slight downward trend. Although most of the major constituents show minor sample variability, present constituent concentrations are reminiscent of levels that existed prior to the commencement of Corrective Action (left side of **Figure 38**). However, the

concentrations are trending downward as the transient flow model predicted, and even the October 2017 TDS concentration has dropped below the POC "Site Standards".

Figure 39 shows the uranium time-series concentration plot for well P-6. Note that the uranium concentration have been slowly decreasing since 2006, and appears to be stabilizing at about 1.3 mg/L (notable exception is the July 2016 result, which is thought to be an outlier).

4.0 Observations

A review of **Table 3** analytical results reveals than none of the 16 "Site Standard" parameters listed on **Table 1** were exceeded by any of the 14 monitor wells in the fourth quarter of 2017.

The water quality data indicates that there are three primary seepage flow paths emanating from the tailings impoundment. **Figure 28** (TDS map) best depicts the approximate flow path locations. The northern most seepage flow path is centered around monitor well MC-10, the center flow path around NP01, RPI-16A and RPI-18A, and the southern flow path around P-6, RPI-10, RPI-8A and RPI-21B.

The northern seepage plume near MC-10 appears to be in the early to mid-stages based on chloride, sulfate and TDS concentration graphs that have not yet peaked. The center plume wells NP01, RPI-16A, and RPI-18A have TDS concentrates that appear to be peaking or beginning a declining trend; time will tell (**Table 3**). The southern seepage plume wells P-6, RPI-10, RPI-8A and RPI-21B all had TDS concentrations results that were lower this quarter than the prior quarter. Additional time is needed to determine if this is a developing trend.

In a letter dated May 10, 2017, NRC expressed their concern that monitor wells MC-10, MC-11, RPI-10 and RPI-21B had recent radionuclide activity levels (Ra 226+228 and Gross Alpha) that exceeded the ACLs established for Point-of-Compliance wells NP01 and RPI-19B. However, the 2017 radionuclide results presented on **Figures 40** through **43** clearly indicate decreasing activity levels for both Ra 226+228 and Gross Alpha that are significantly less that the POC ACLs.

In the same letter referenced above, NRC also expressed concern that the chloride, TDS and uranium concentrations measured in monitor well P-6 had historically exceeded the ACL criteria established for POC wells (see **Table 3** red labelled numbers). **Figure 38** shows that the chloride concentrations, for the past four quarters, are less than the ACL and appear to be trending down. A review of **Table 3** also shows that the uranium concentration only once exceeded the established ACL of 4.4 mg/L. PMC believes that the reported value of 14.1 mg/L is an outlier due to it being exactly an order of magnitude greater than any other P-6 result on the table. Nevertheless, the past five quarters have yielded consistent results that are about one-fourth the ACL site standard.

5.0 Conclusions

All **Table 1** constituent concentrations for both POC wells were reported at levels less than their respective method detection limits or at levels significantly less (sometimes by an order of magnitude) than the corresponding "Site Standard."

The water-quality data in some monitor wells seems to reflect significant seasonal recharge influences that appear to cause fairly-large swings in constituent concentrations. However, the **Table 3** constituent concentrations, in all 14 monitor wells, are all less than the highest corresponding "Site Standard".

As predicted by the 2000 transient flow computer model run (a component of the ACL application) and confirmed by the attached time-series plots, constituent concentrations in wells located at the tailings dam toe initially increased in 2006 after corrective action was discontinued in 2005. However, the observed peak increases were less than predicted, and their arrival time also lagged predictions. The lag is believed to be due, in part, to having extended the corrective action pumping program several years beyond the modeled time-frame, and in part to the effectiveness of the tailings dewatering activities that removed most of the interstitial, drainable tailings water thus causing lower peak concentrations in the residual tailing seepage.

The time-series versus constituent plots suggest that: 1) the center seepage flow path parameter concentrations appear to have peaked and may be starting a declining trend, 2) the north seepage flow path parameter concentrations have yet to peak, and 3) the south seepage flow path parameter concentrations appear to have mostly peaked, but show evidence of intermittent surges of tailings seepage.

In summary, PMC's groundwater monitoring program is compliant with all monitor well Point-of-Compliance "Site Standards". Additionally, surface water quality measured at the downstream "Point-of-Exposure" monitoring site indicates no deleterious effects from groundwater seepage.

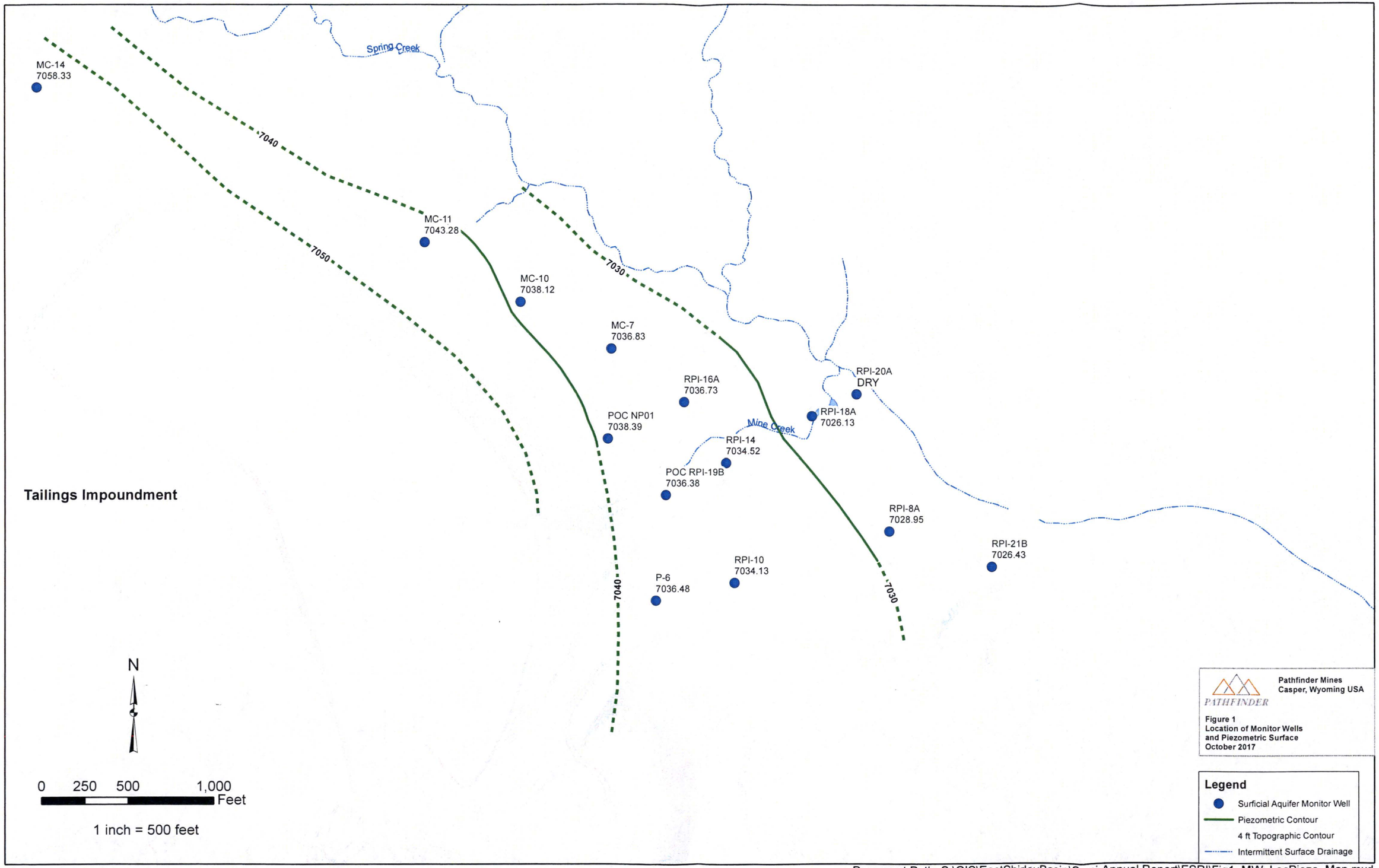

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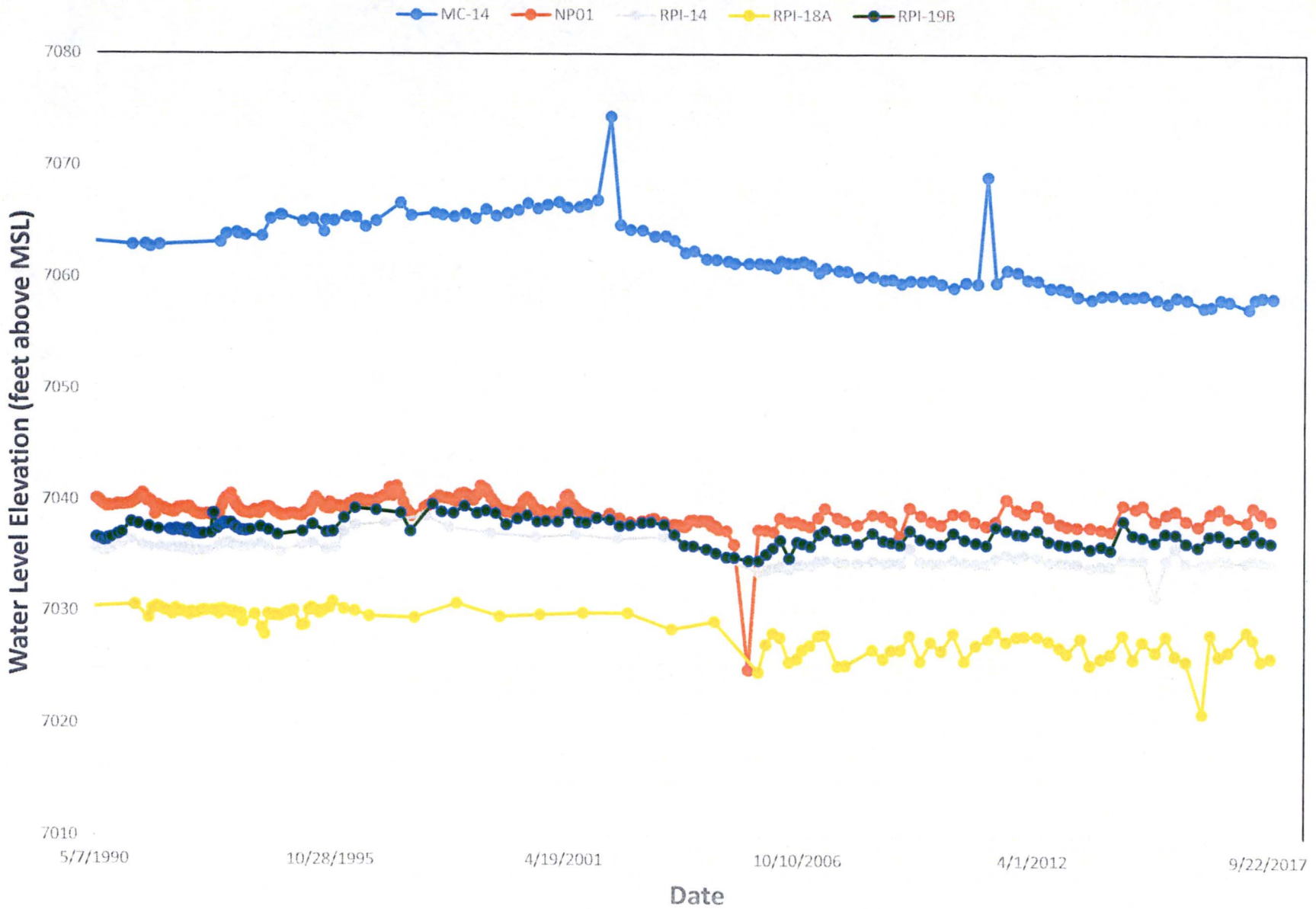
Figure 2 - Water Level Elevation vs. Time



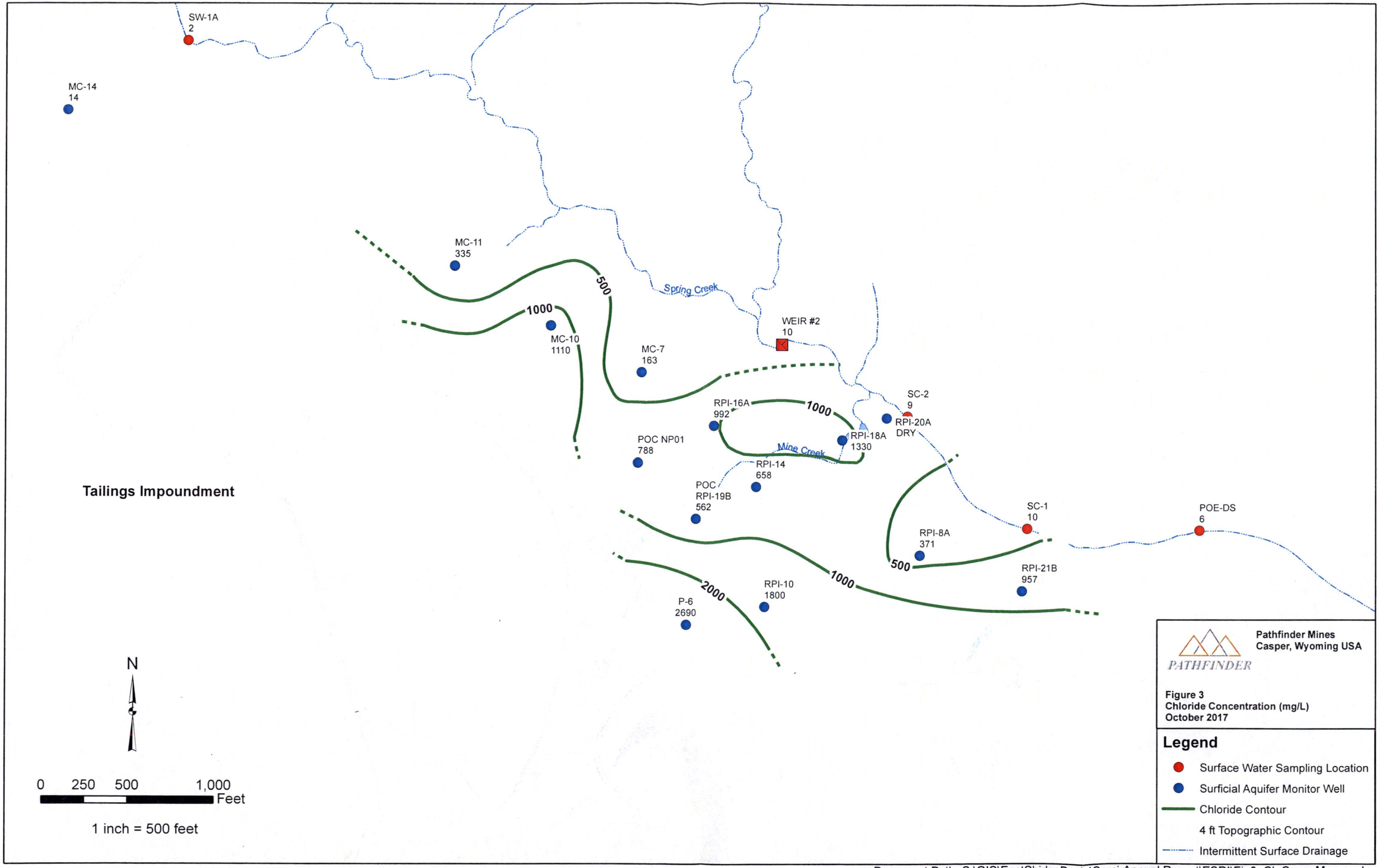


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Figure 4 - Chloride Concentration vs. Time

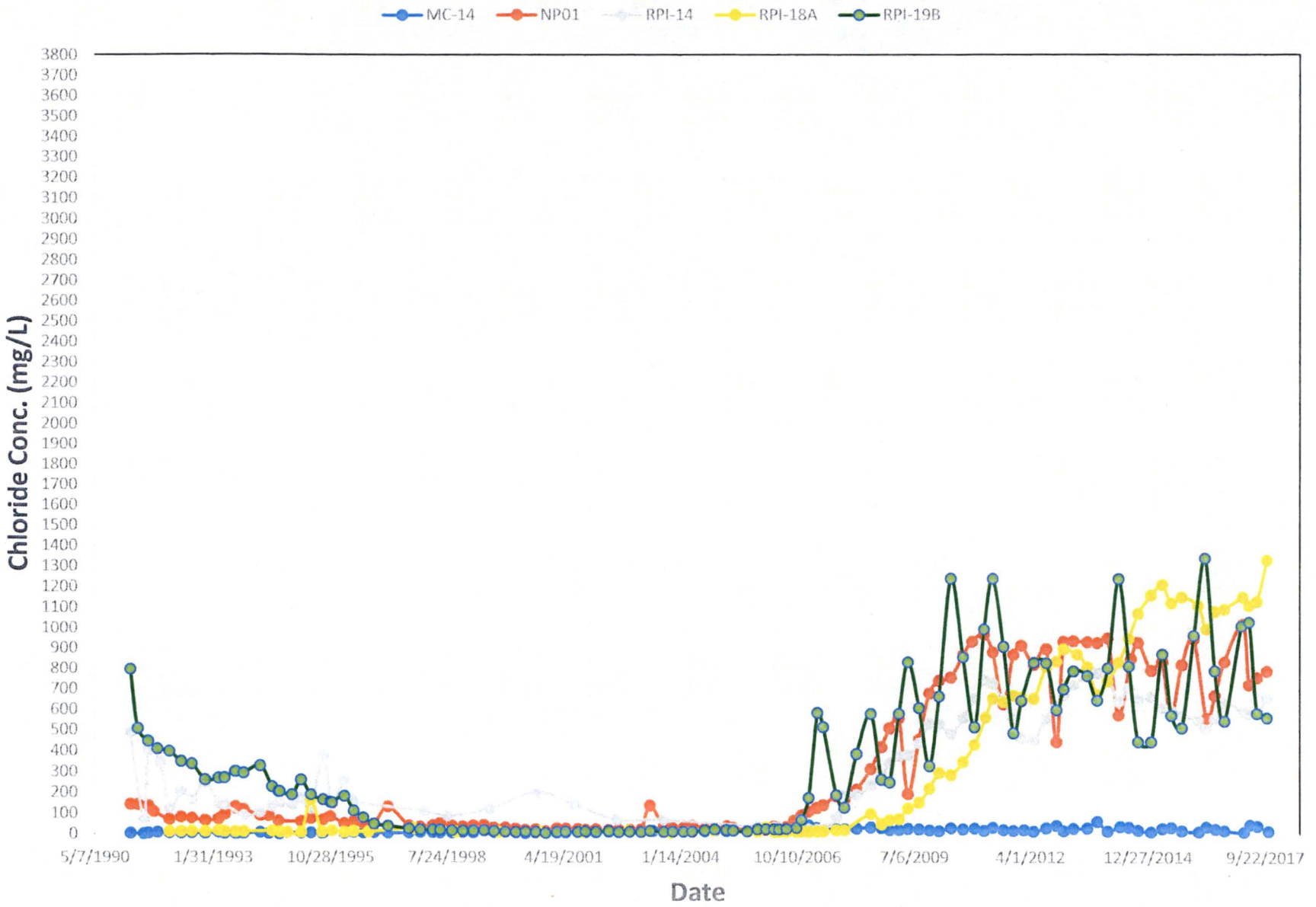


Figure 5 - Chloride Concentration vs. Time for Compliance Well NP01

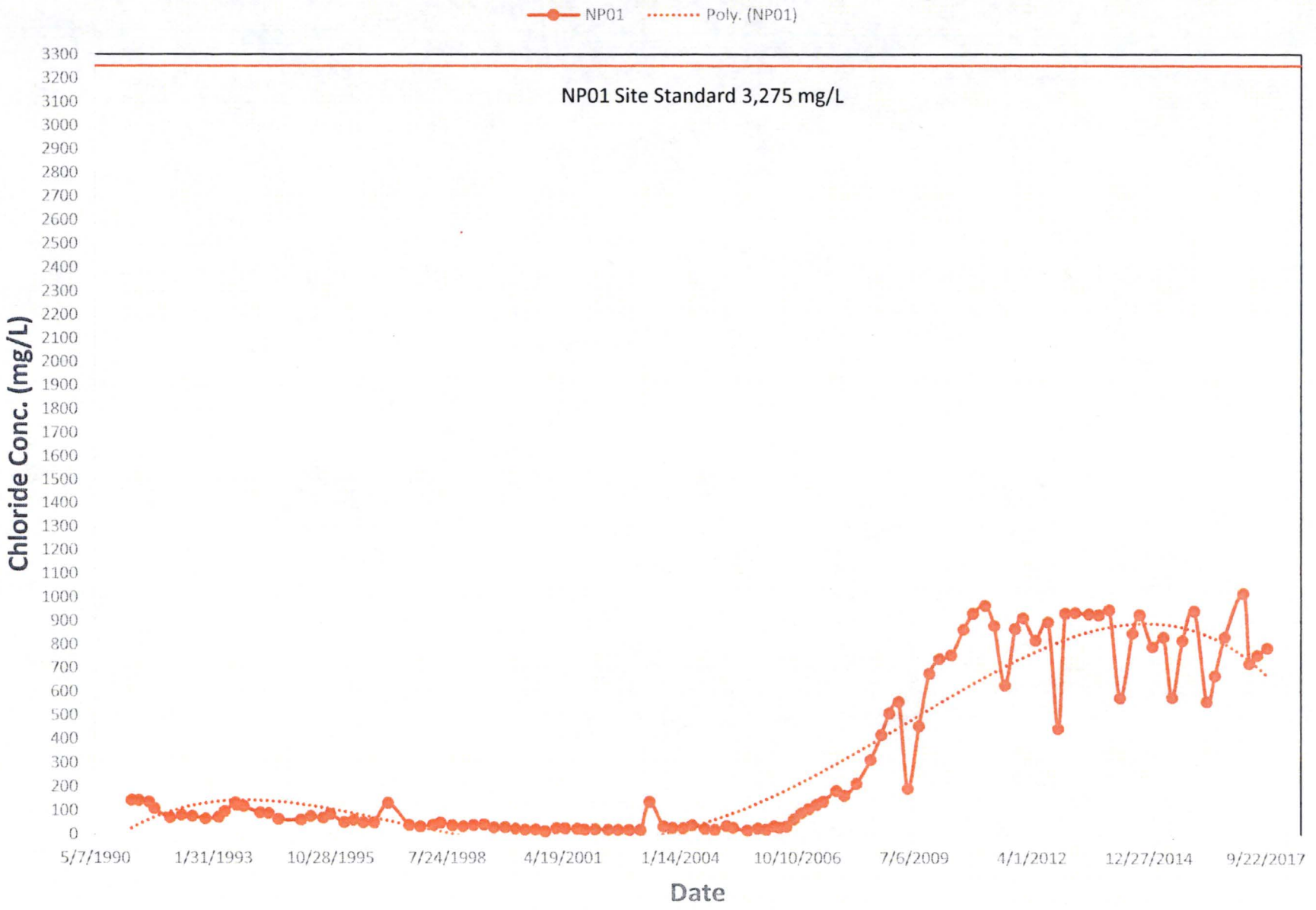


Figure 6 - Chloride Concentration vs. Time for Compliance Well RPI-19B

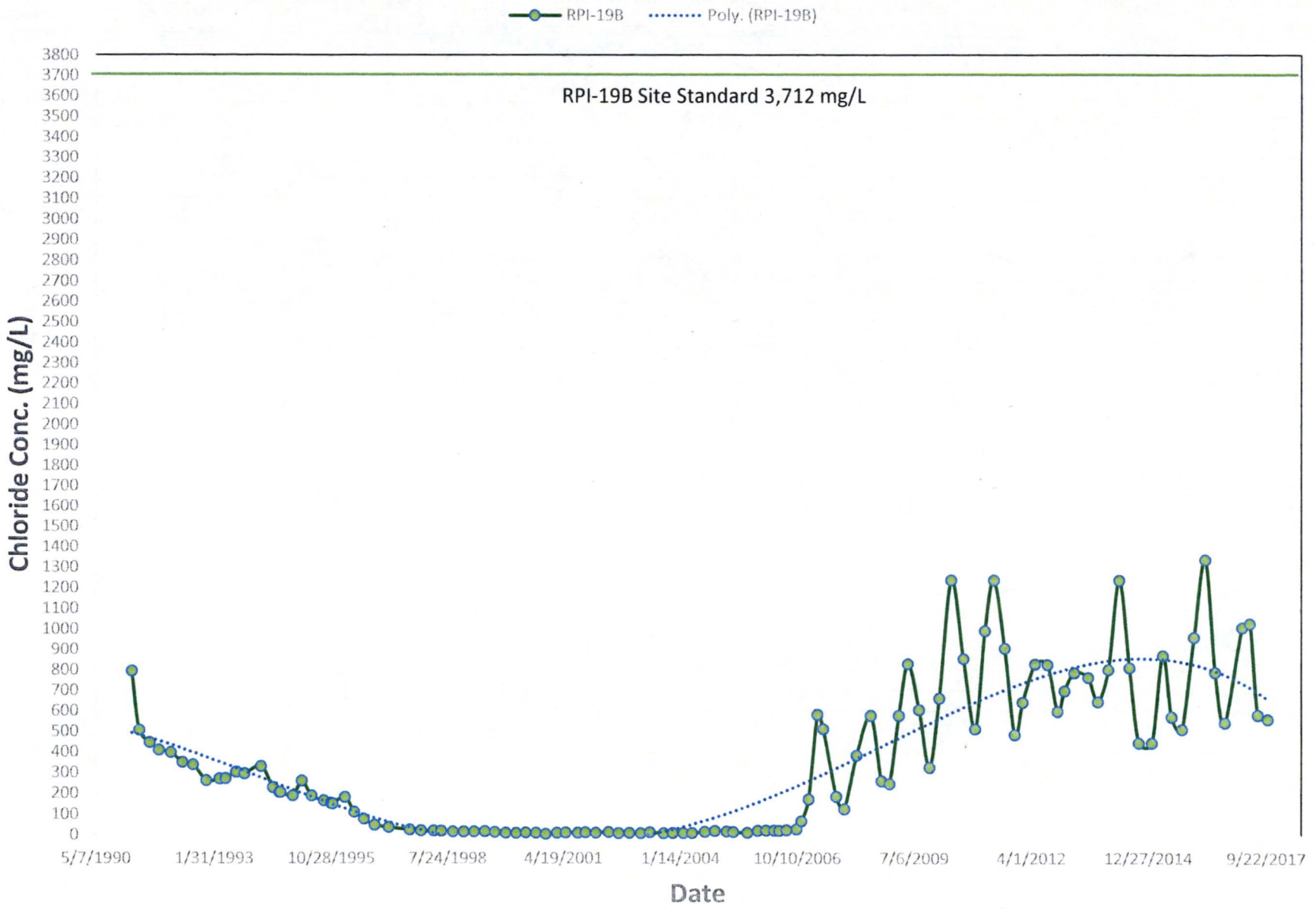
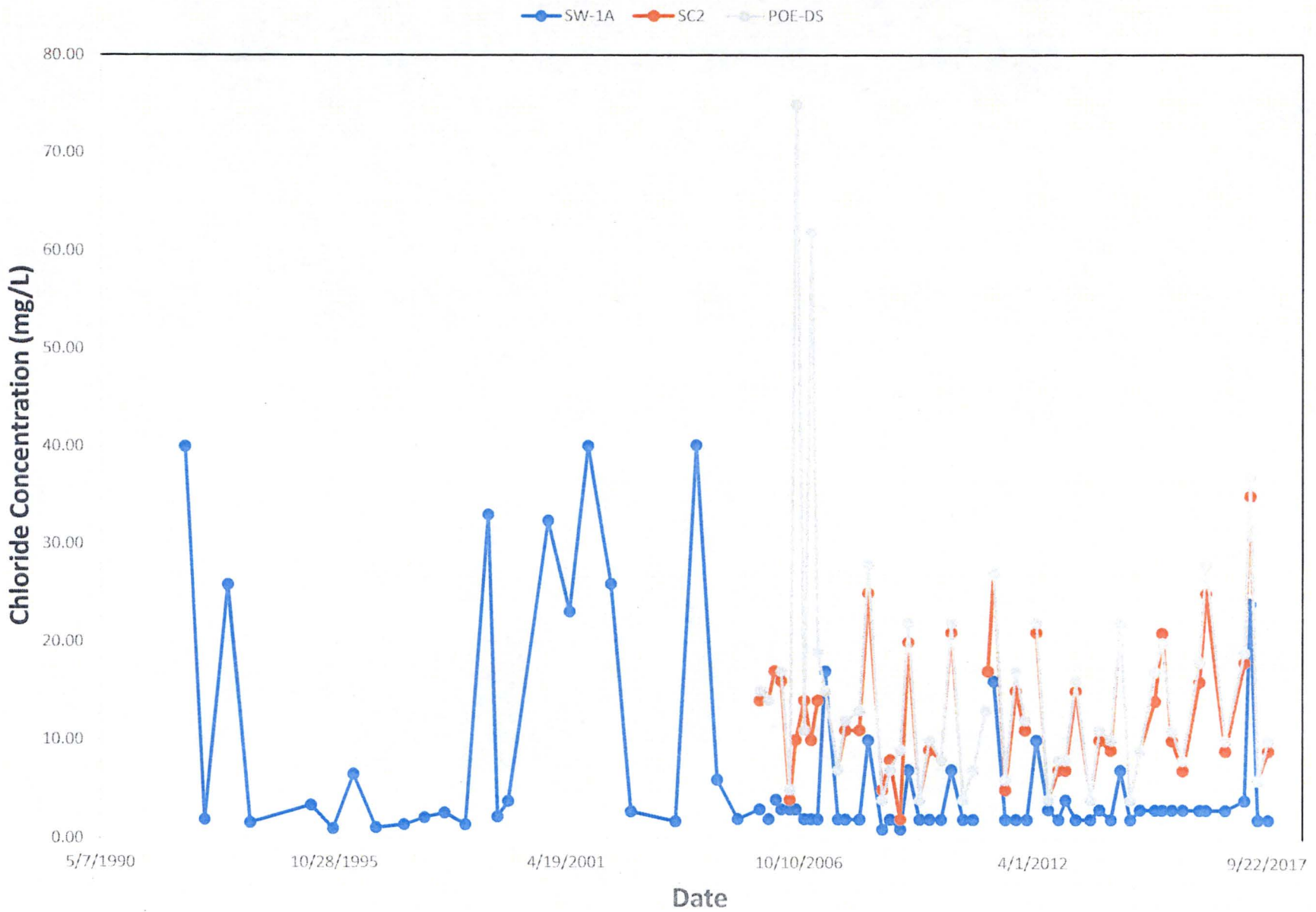


Figure 7 - Chloride Concentration vs. Time for Surface Water Sample Locations



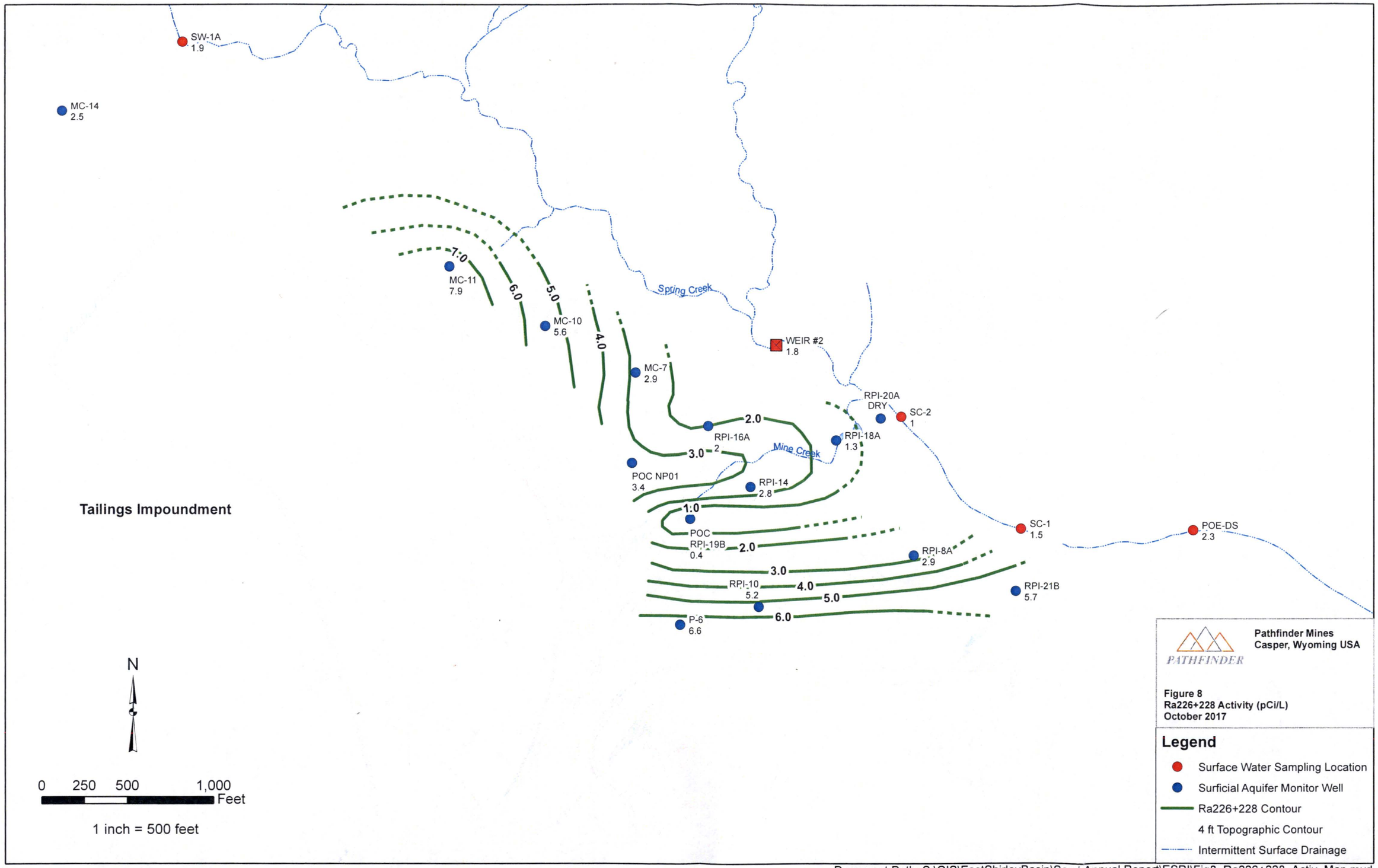


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Figure 9 - Radium 226+228 Activity vs. Time

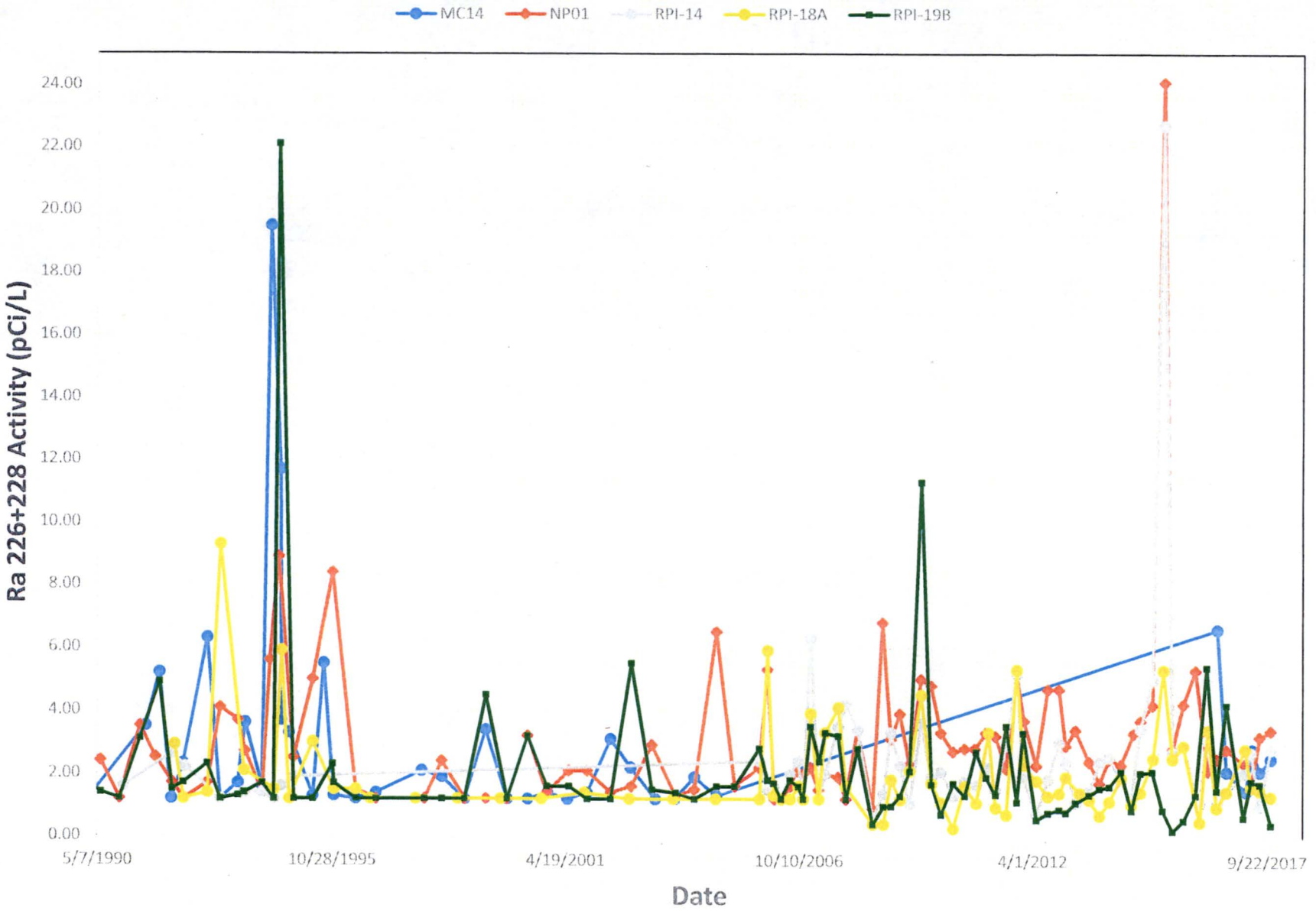


Figure 10 - Radium 226+228 Activity vs. Time for Compliance Well NP-01

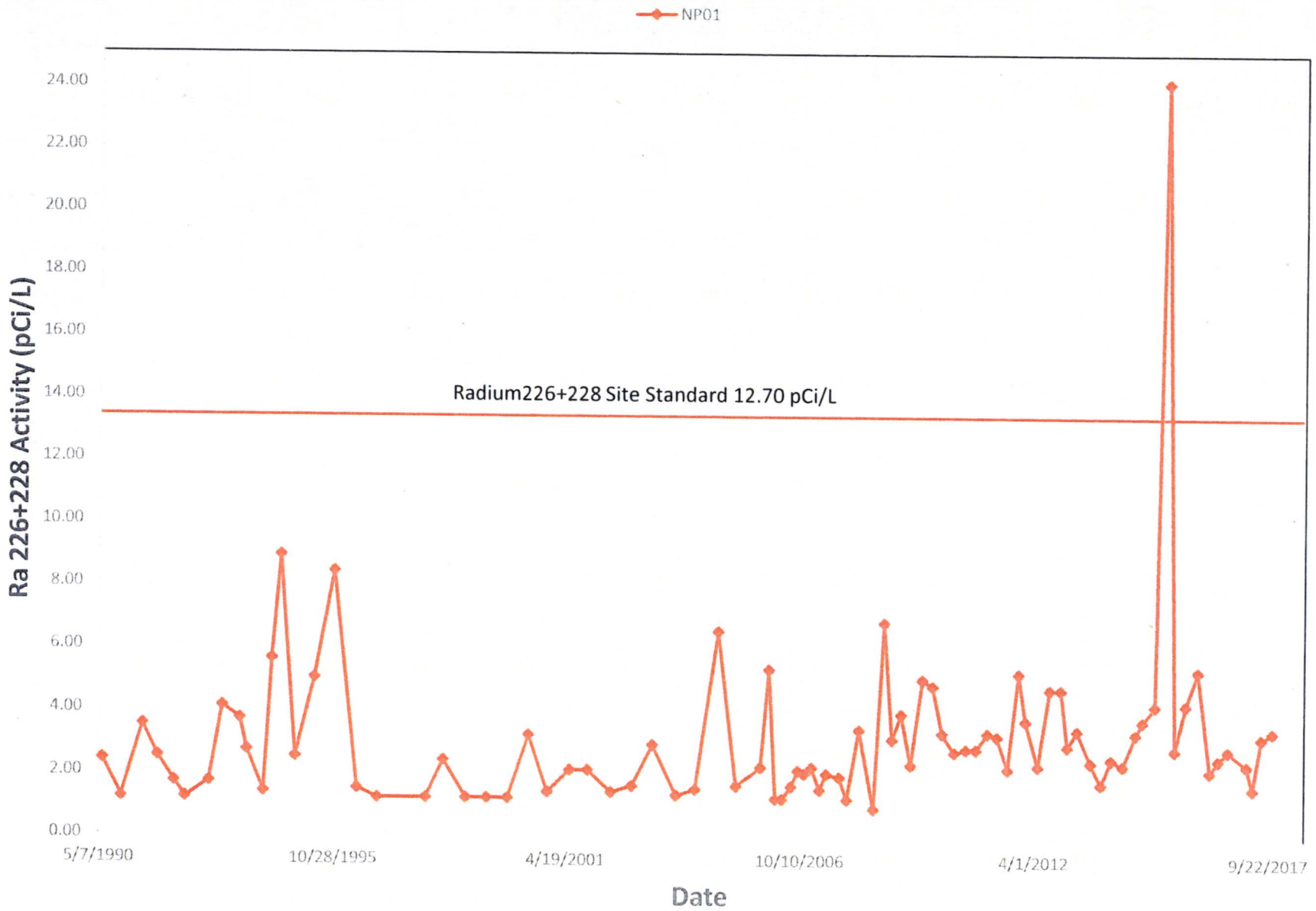


Figure 11 - Radium 226+228 Activity vs. Time for Compliance Well RPI-19B

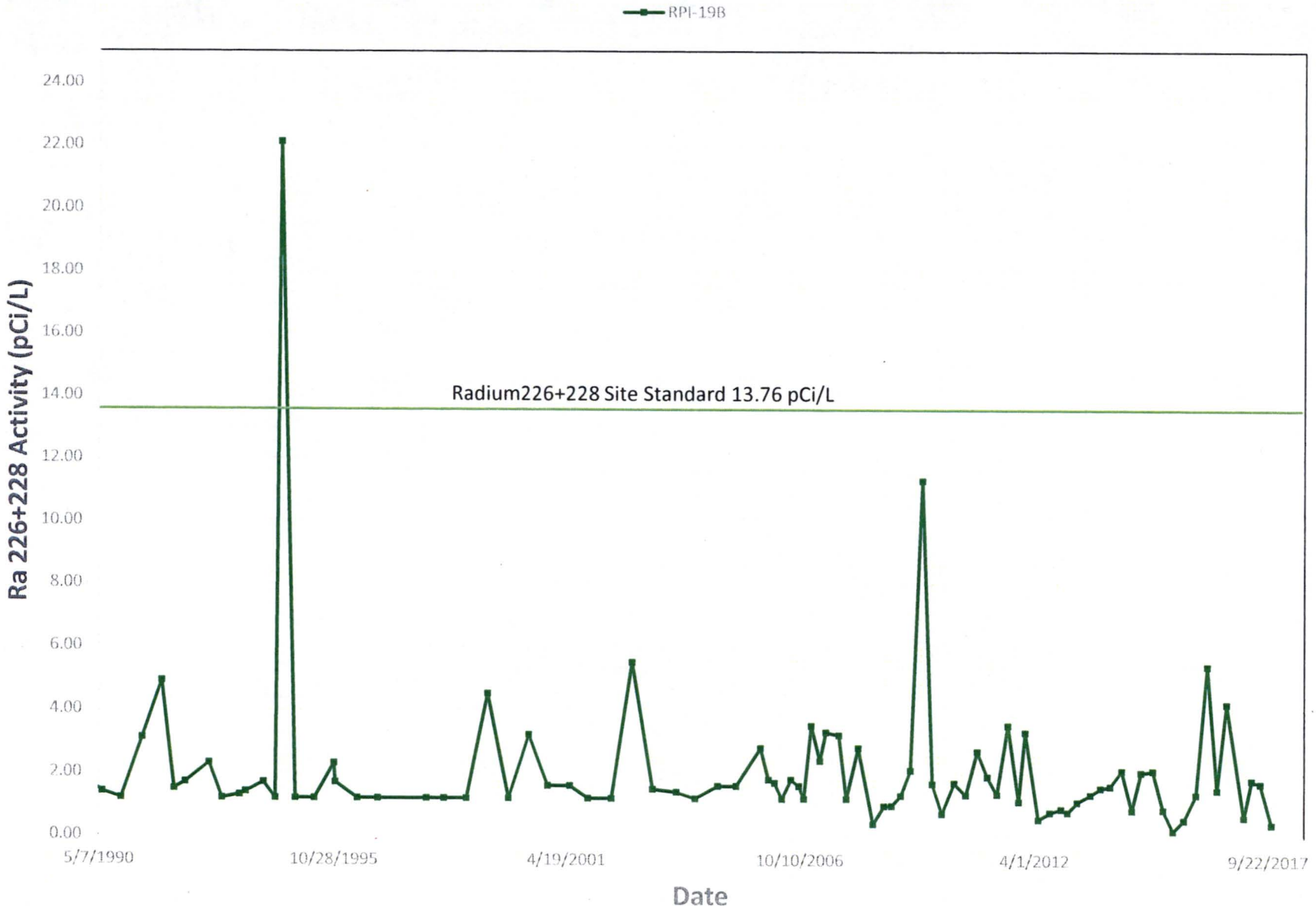
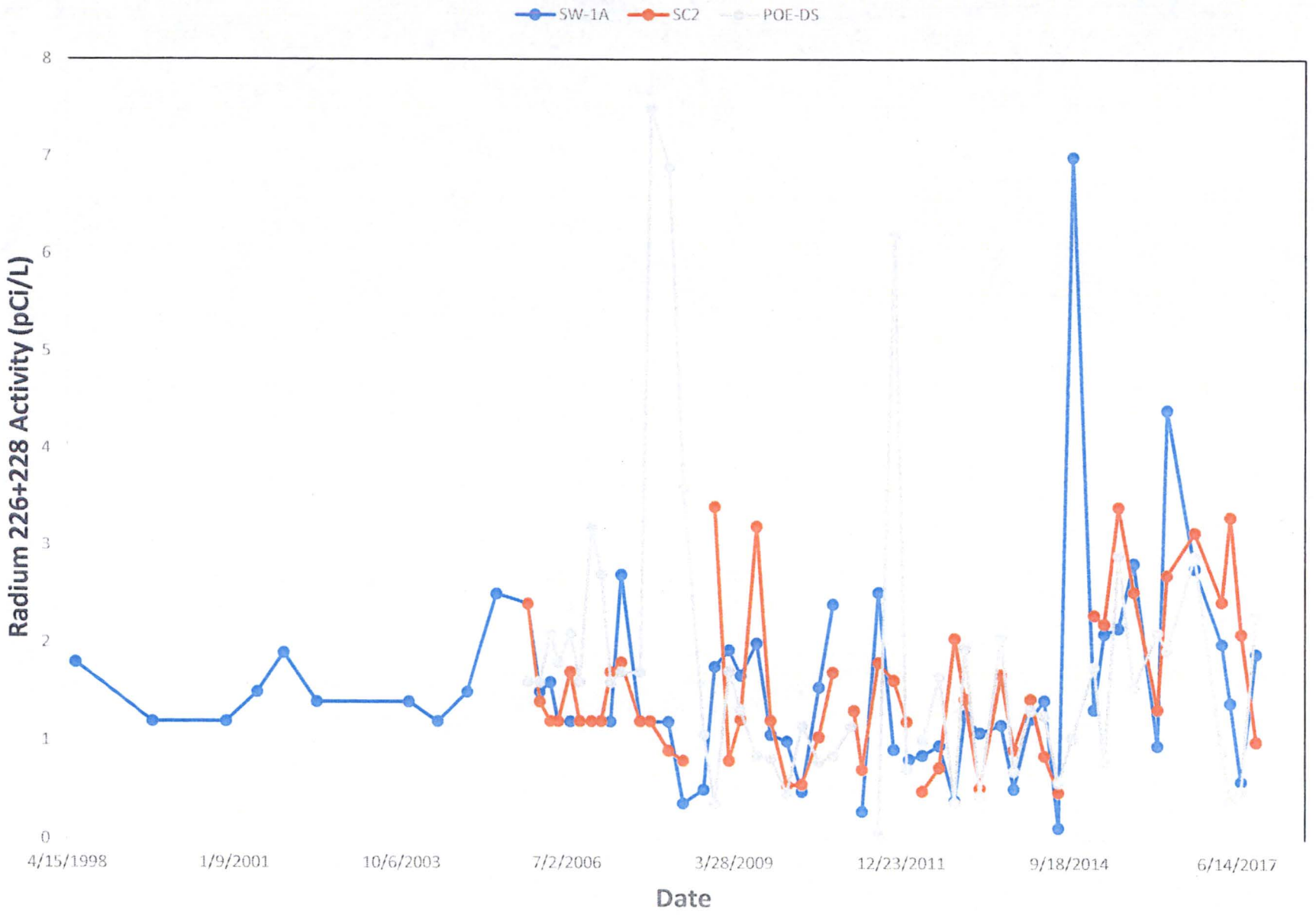


Figure 12 - Radium 226+228 Activity vs. Time for Surface Water Sample Locations



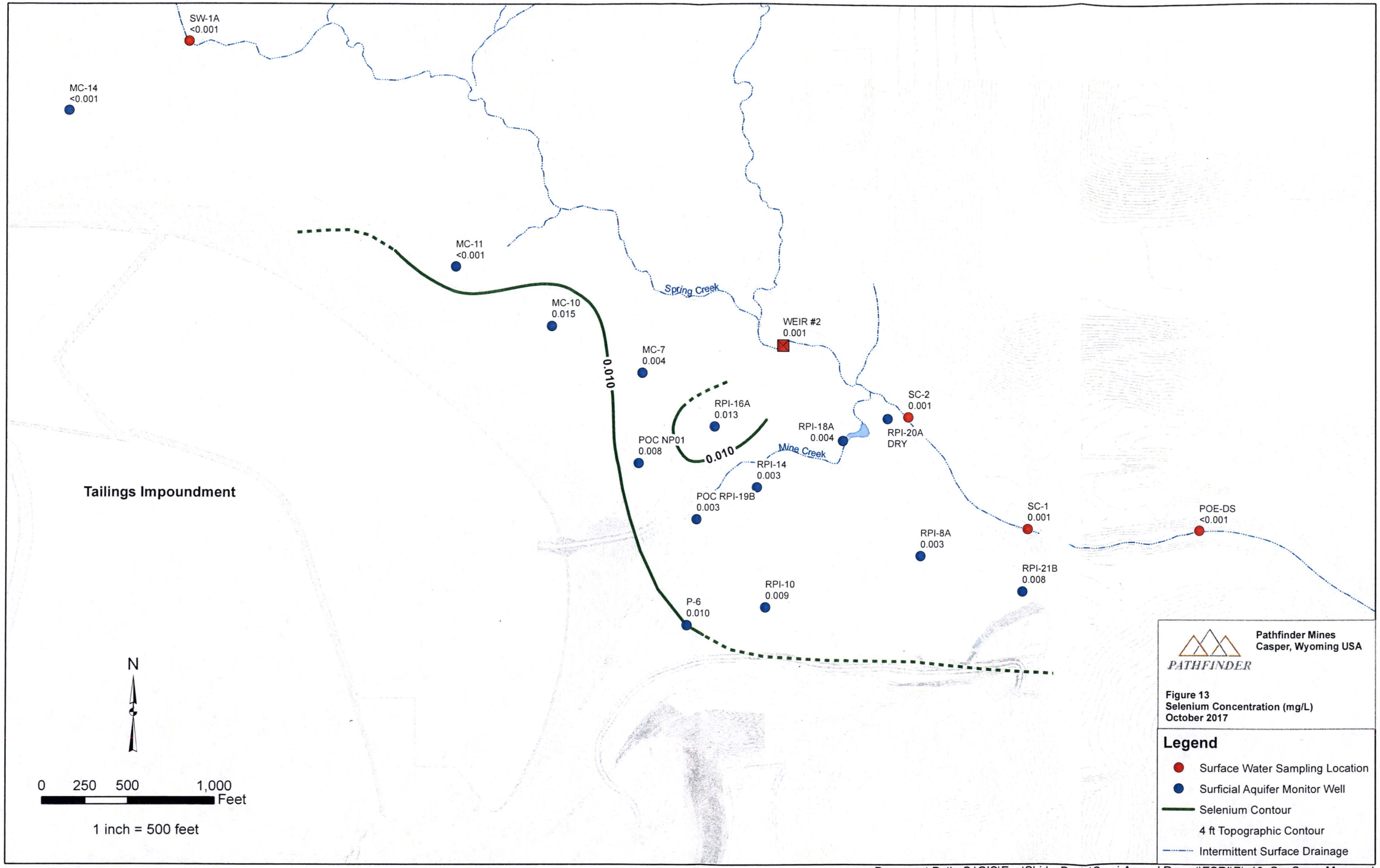


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Figure 14 - Selenium Concentration vs. Time

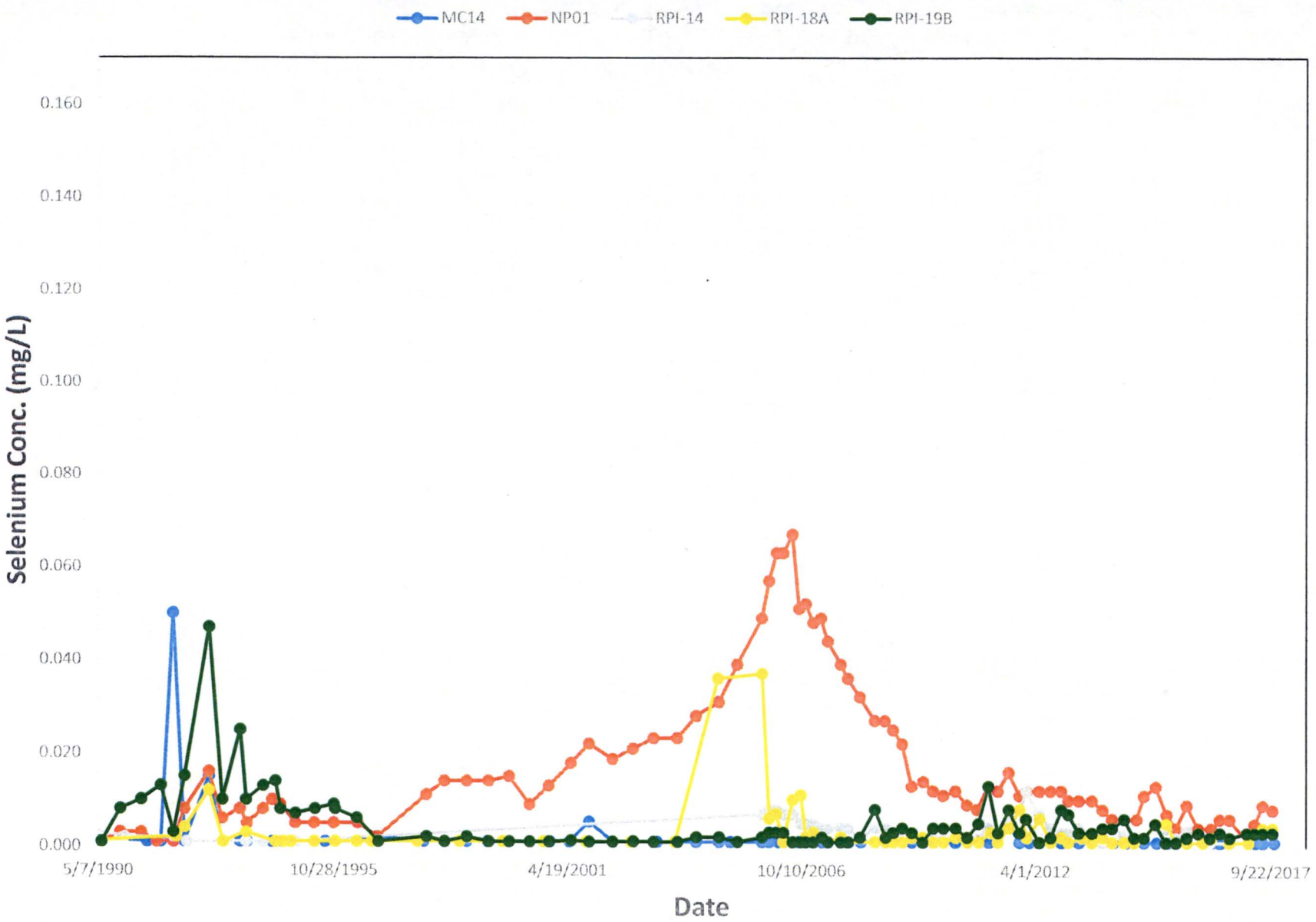


Figure 15 - Selenium Concentration vs. Time for Compliance Well NP-01

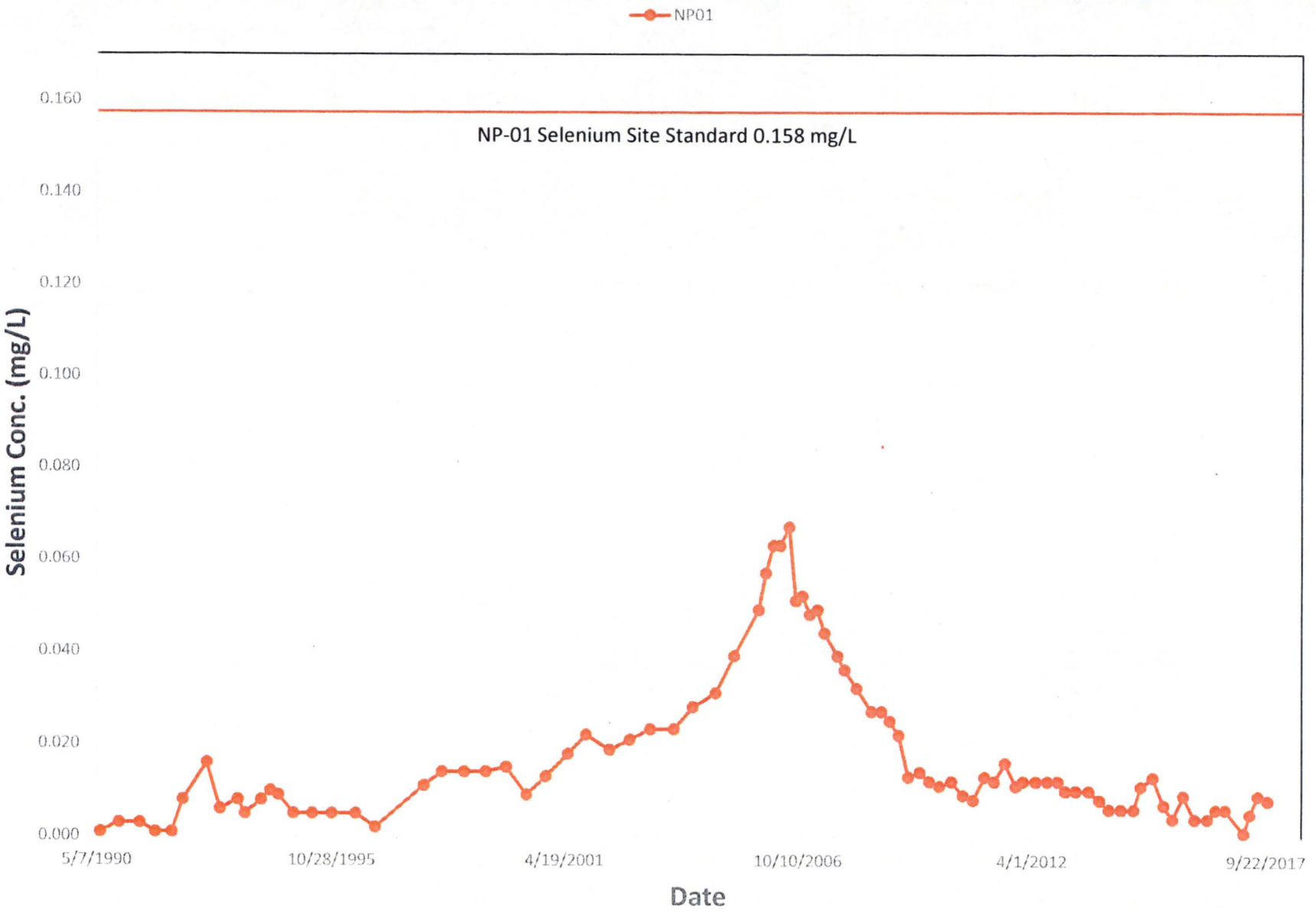


Figure 16 - Selenium Concentration vs. Time for Compliance Well RPI-19B

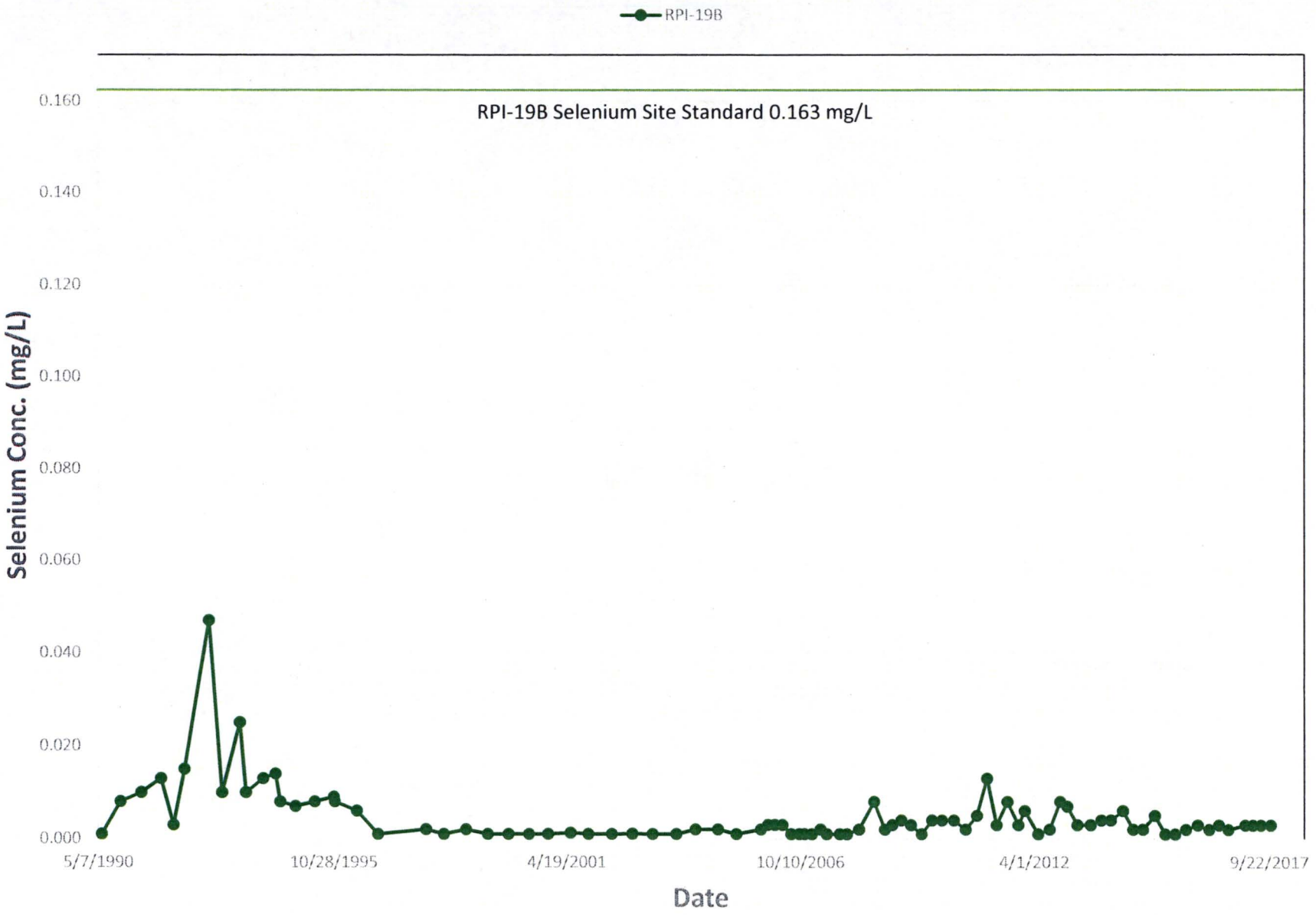
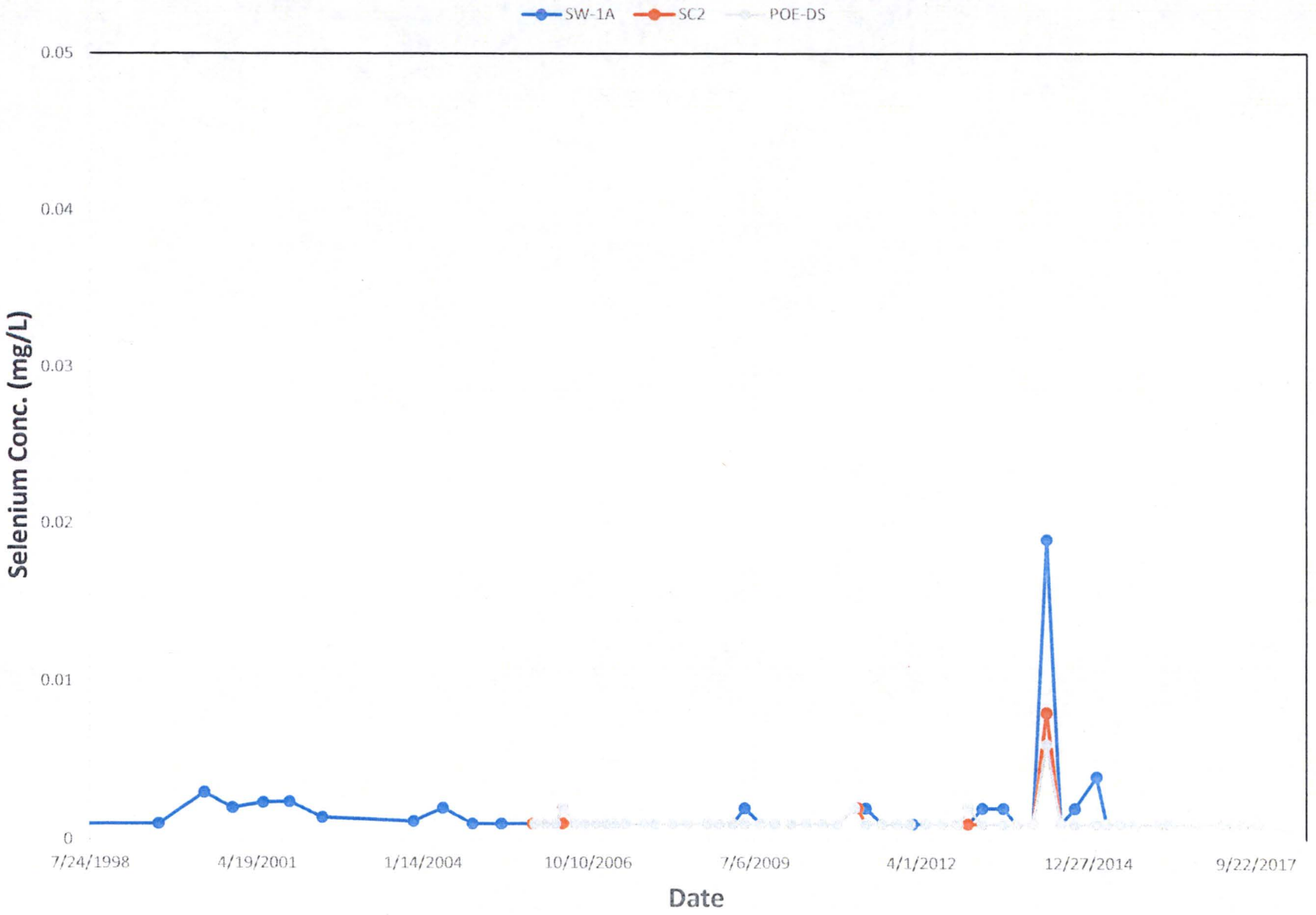


Figure 17 - Selenium Concentration vs. Time for Surface Water Sample Locations



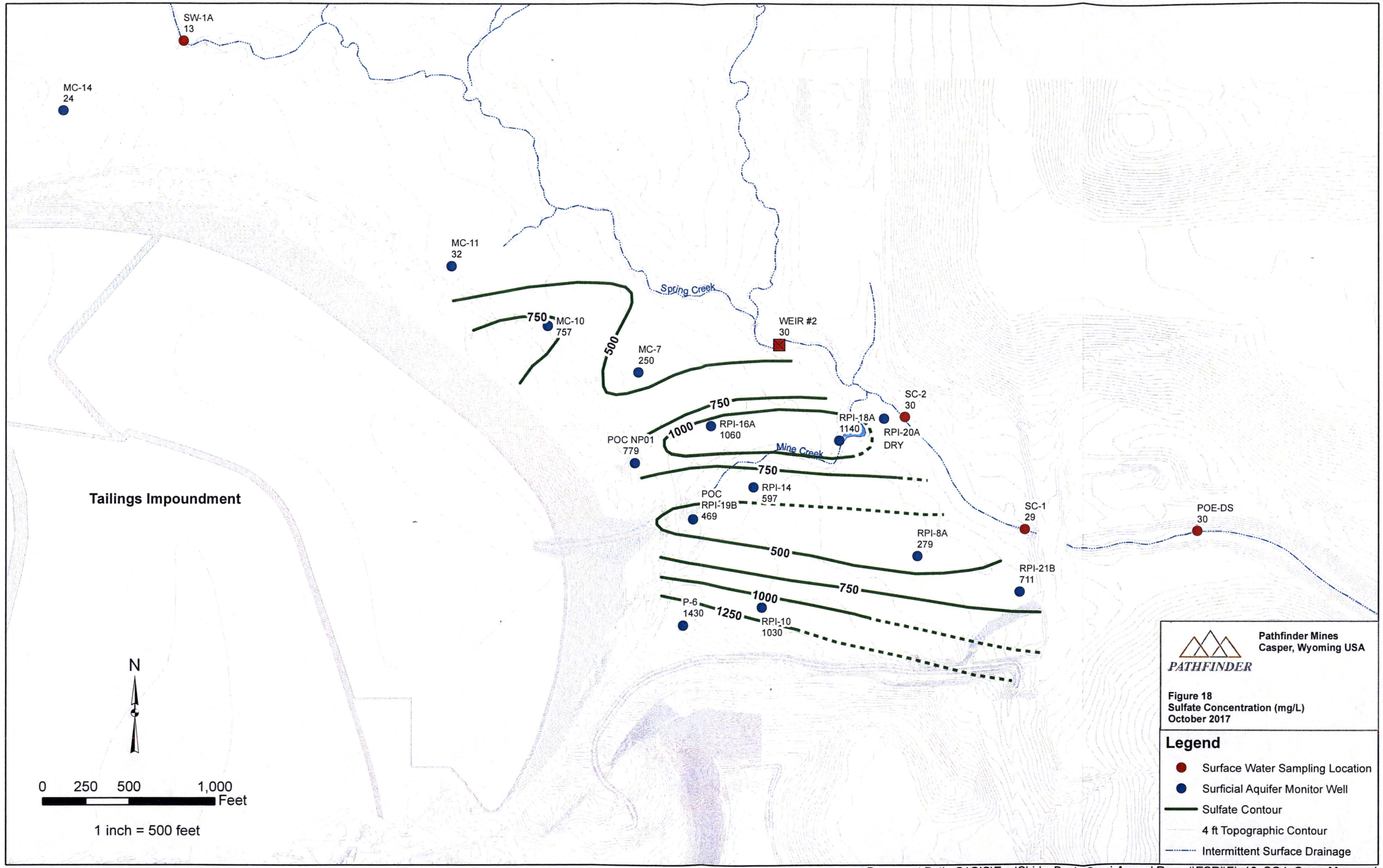


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Figure 19 - Sulfate Concentration vs. Time

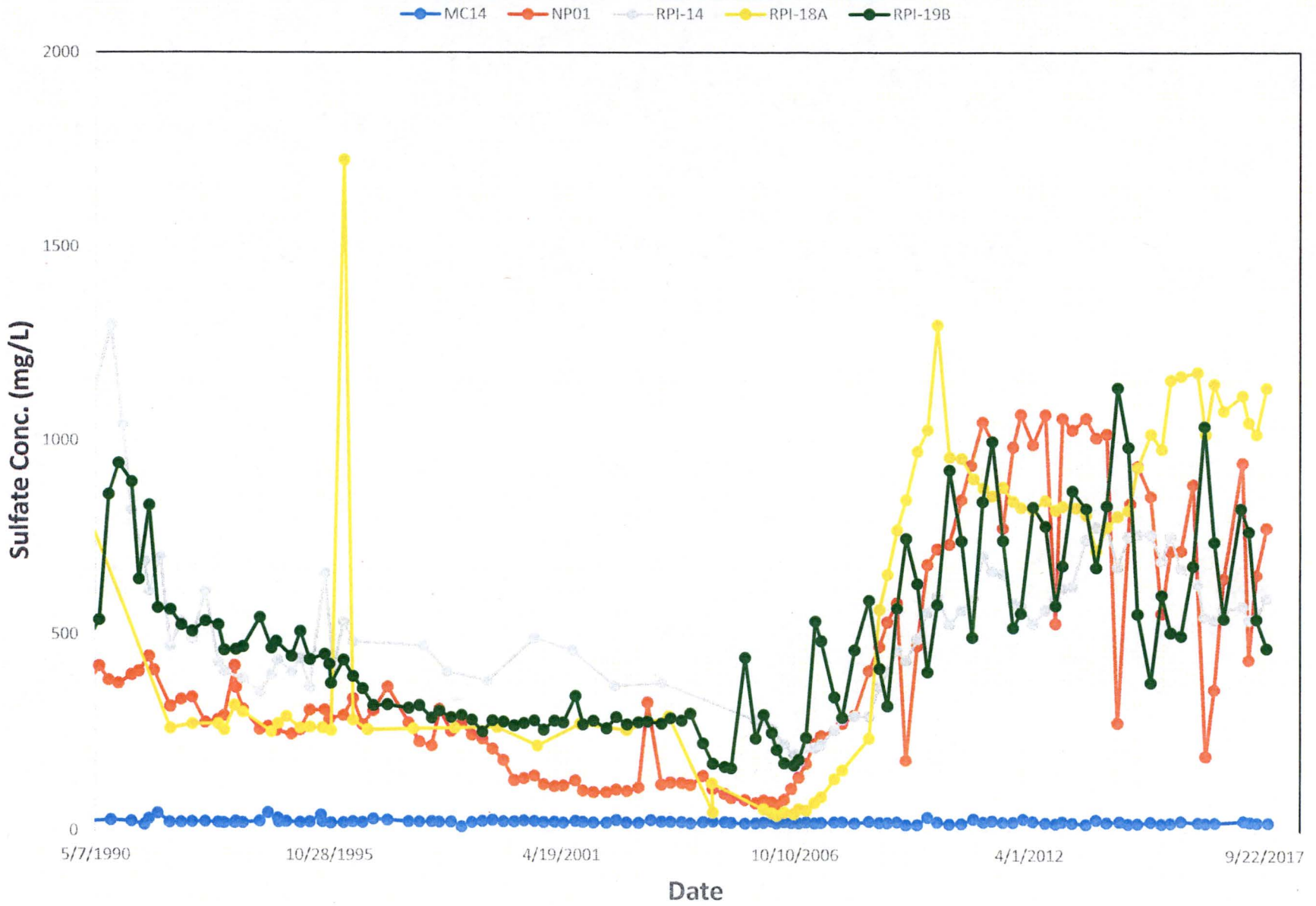


Figure 20 - Sulfate Concentration vs. Time for Compliance Well NP-01

Figure 21 - Sulfate Concentration vs. Time for Compliance Well RPI-19B

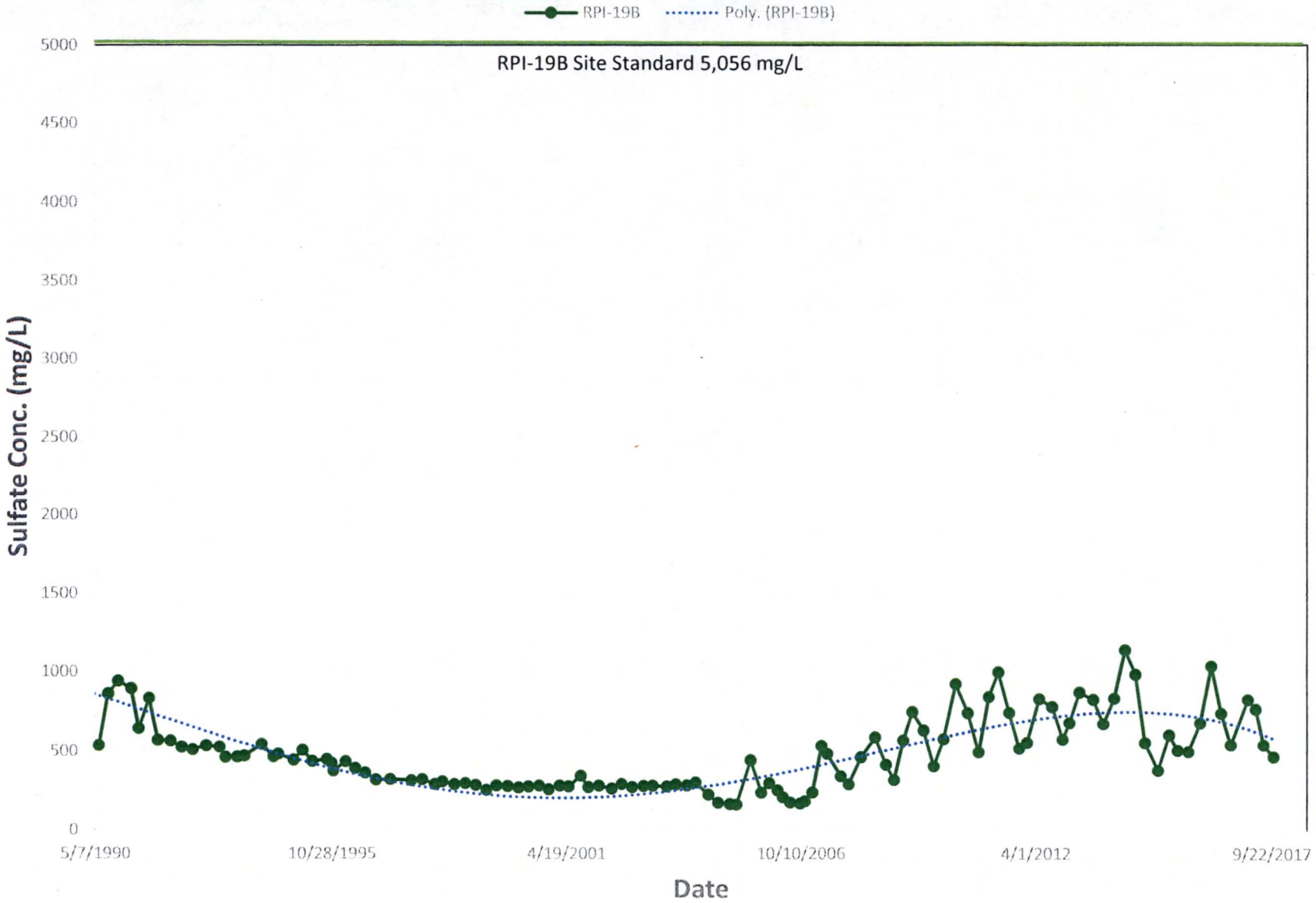
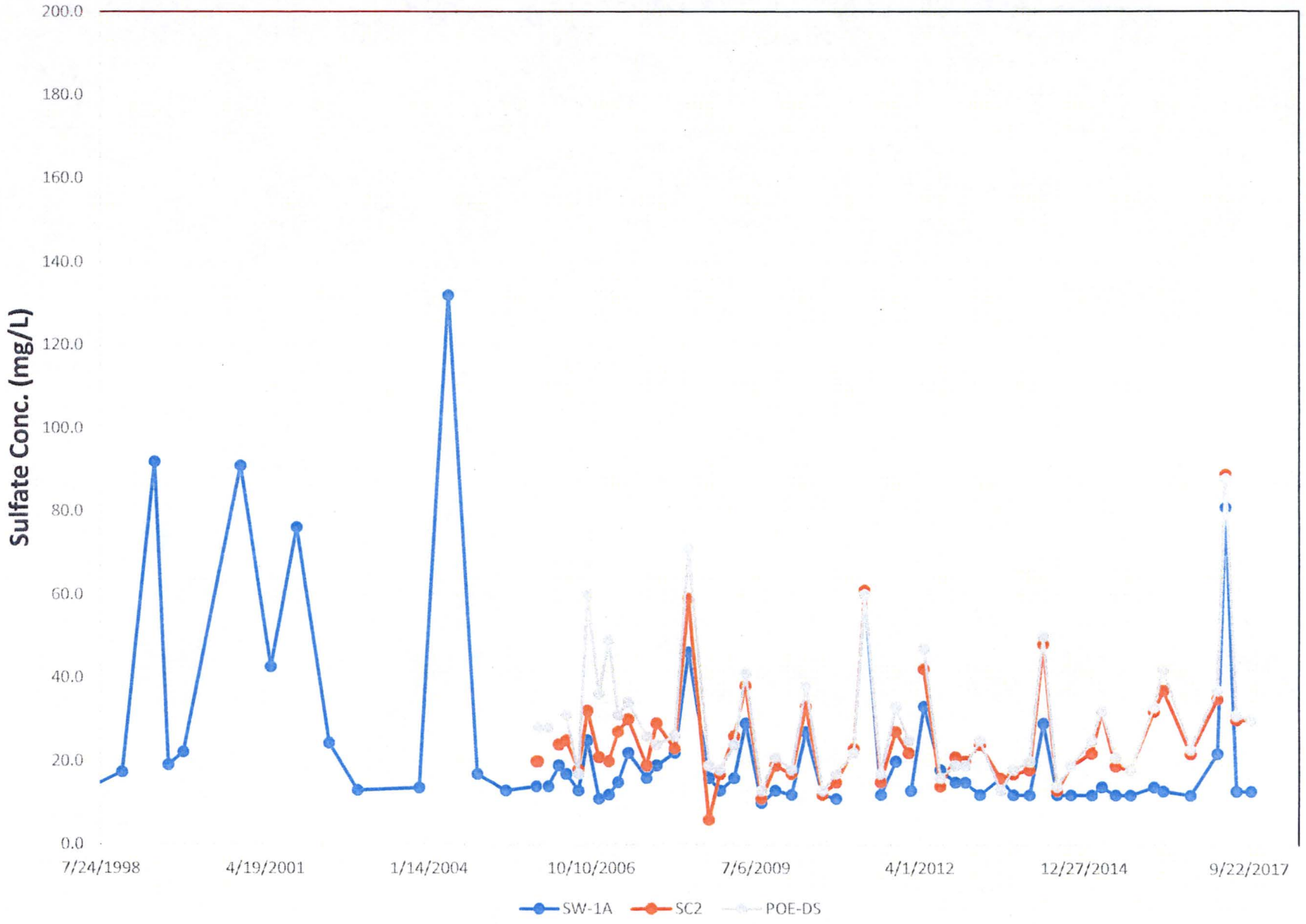


Figure 22 - Sulfate Concentration vs. Time for Surface Water Sample Locations



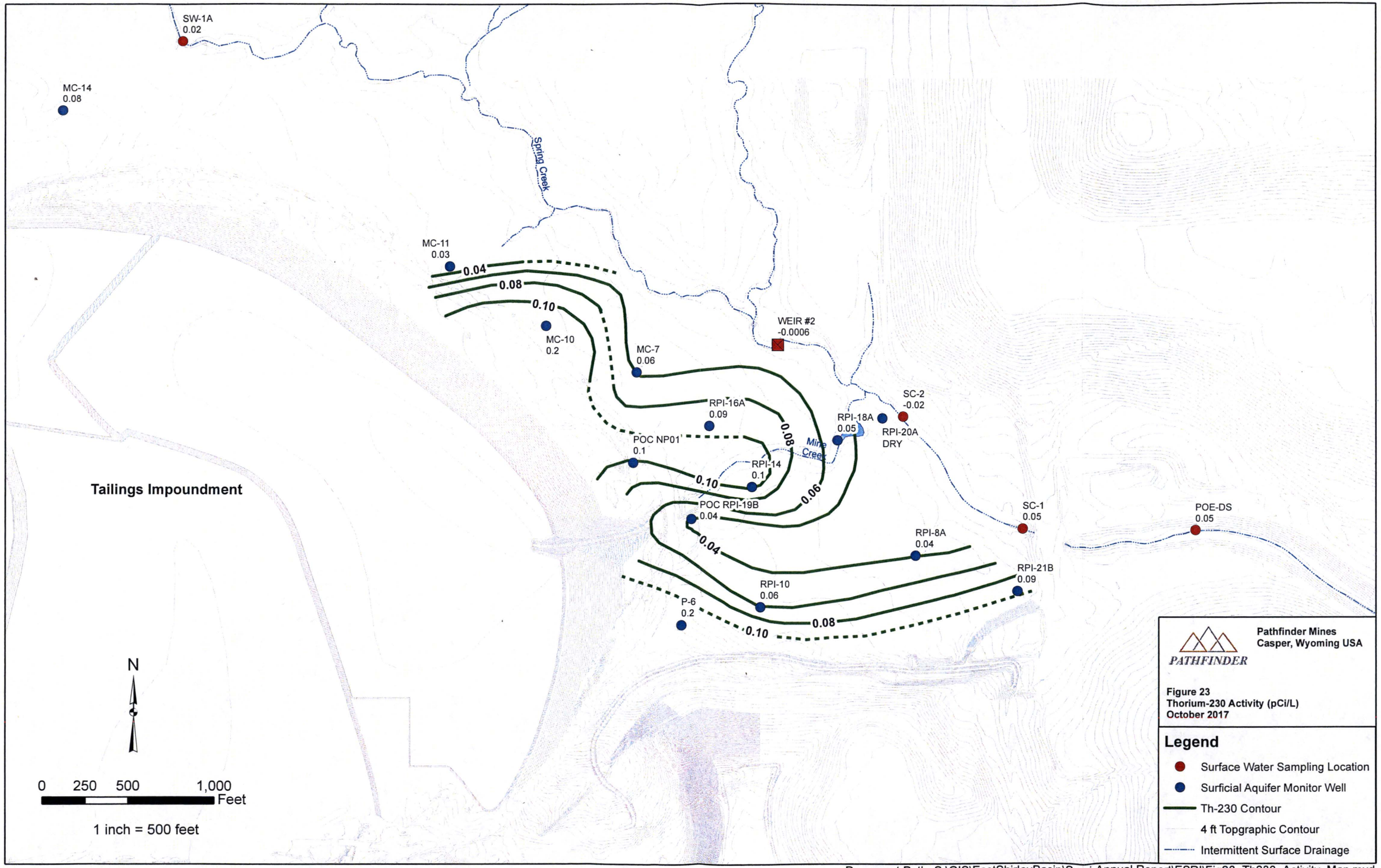


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Figure 24 - Thorium-230 Activity vs. Time

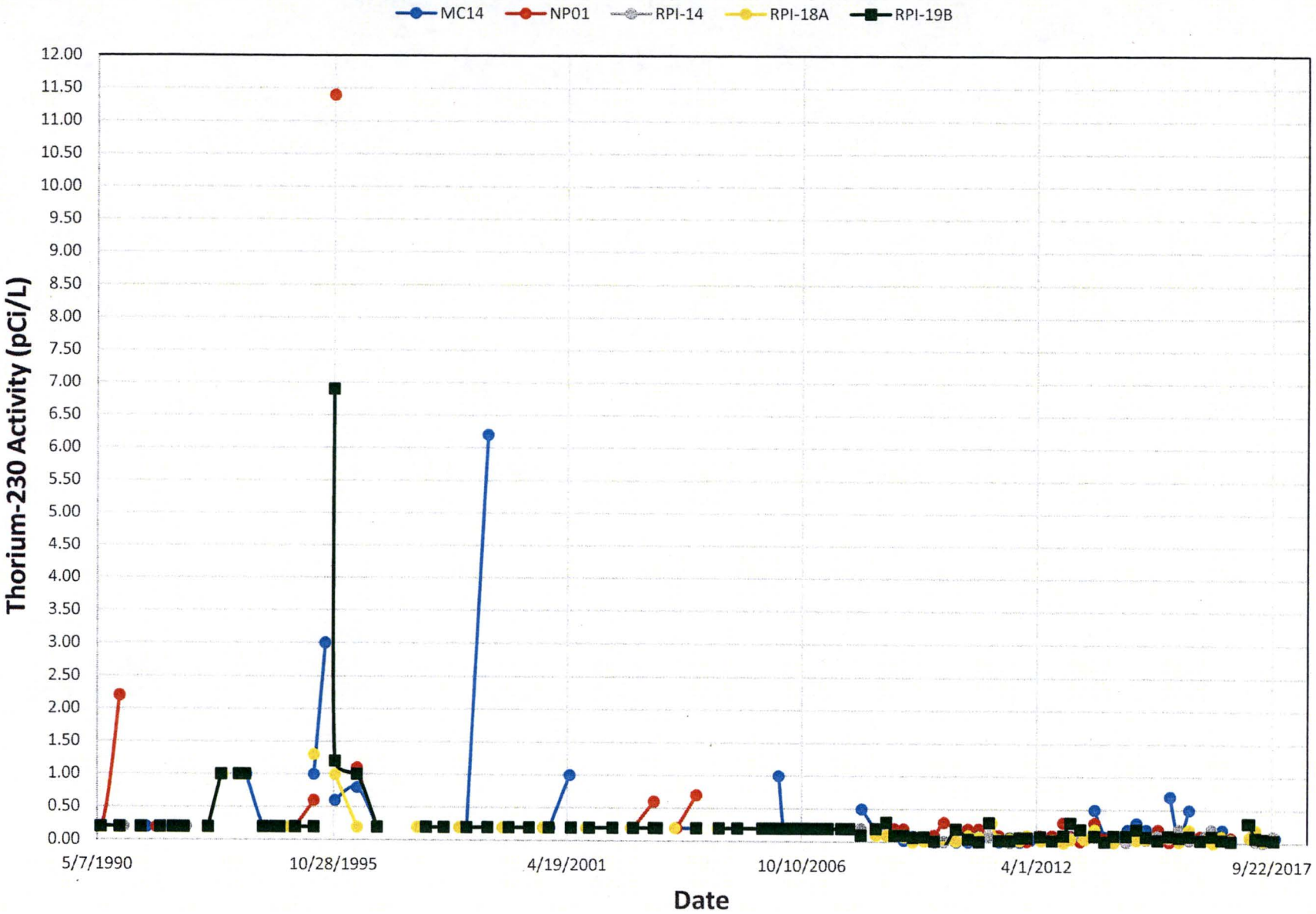


Figure 25 - Thorium-230 Activity vs. Time for Compliance Well NP-01

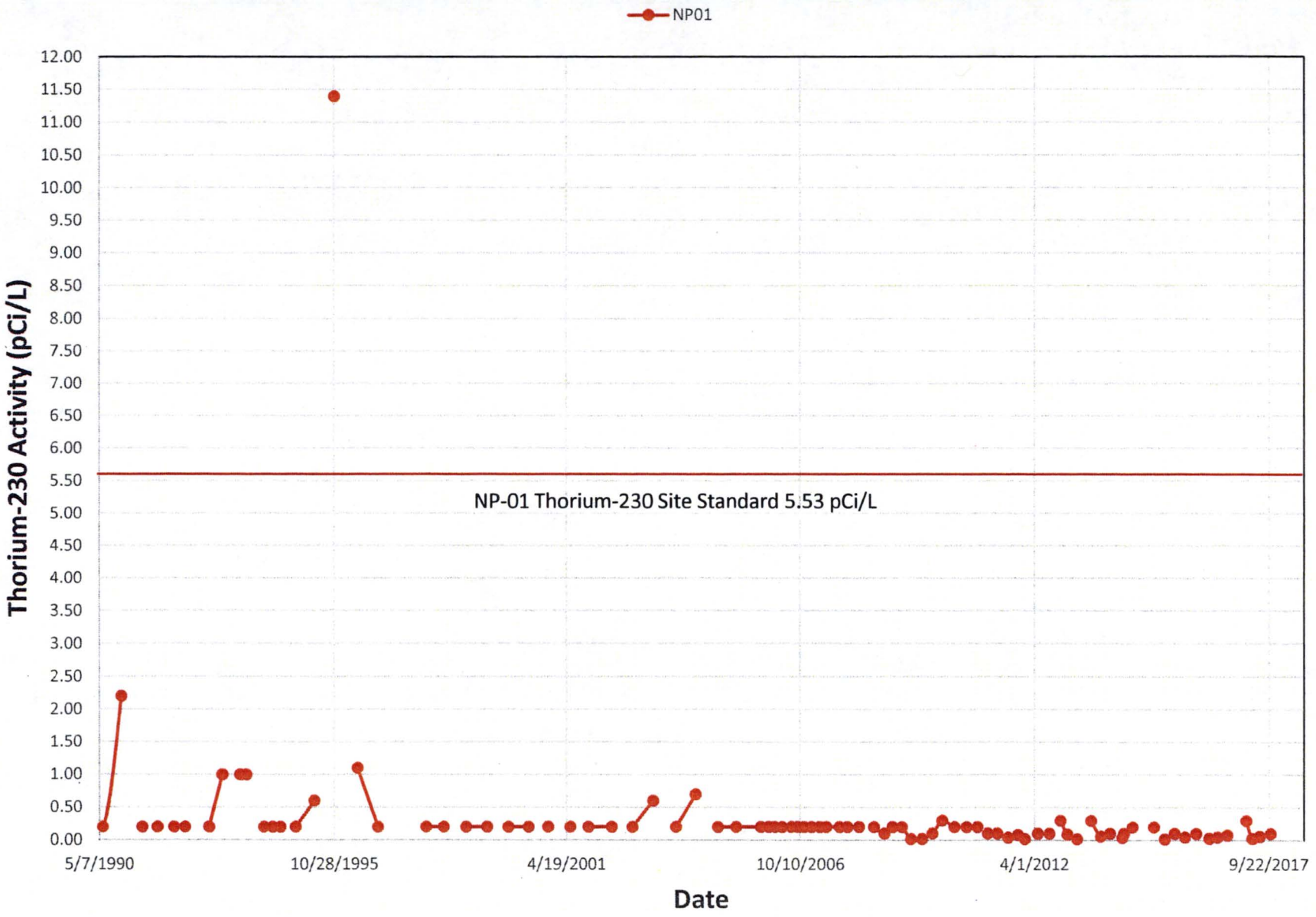


Figure 26 - Thorium-230 Activity vs. Time for Compliance Well RPI-19B

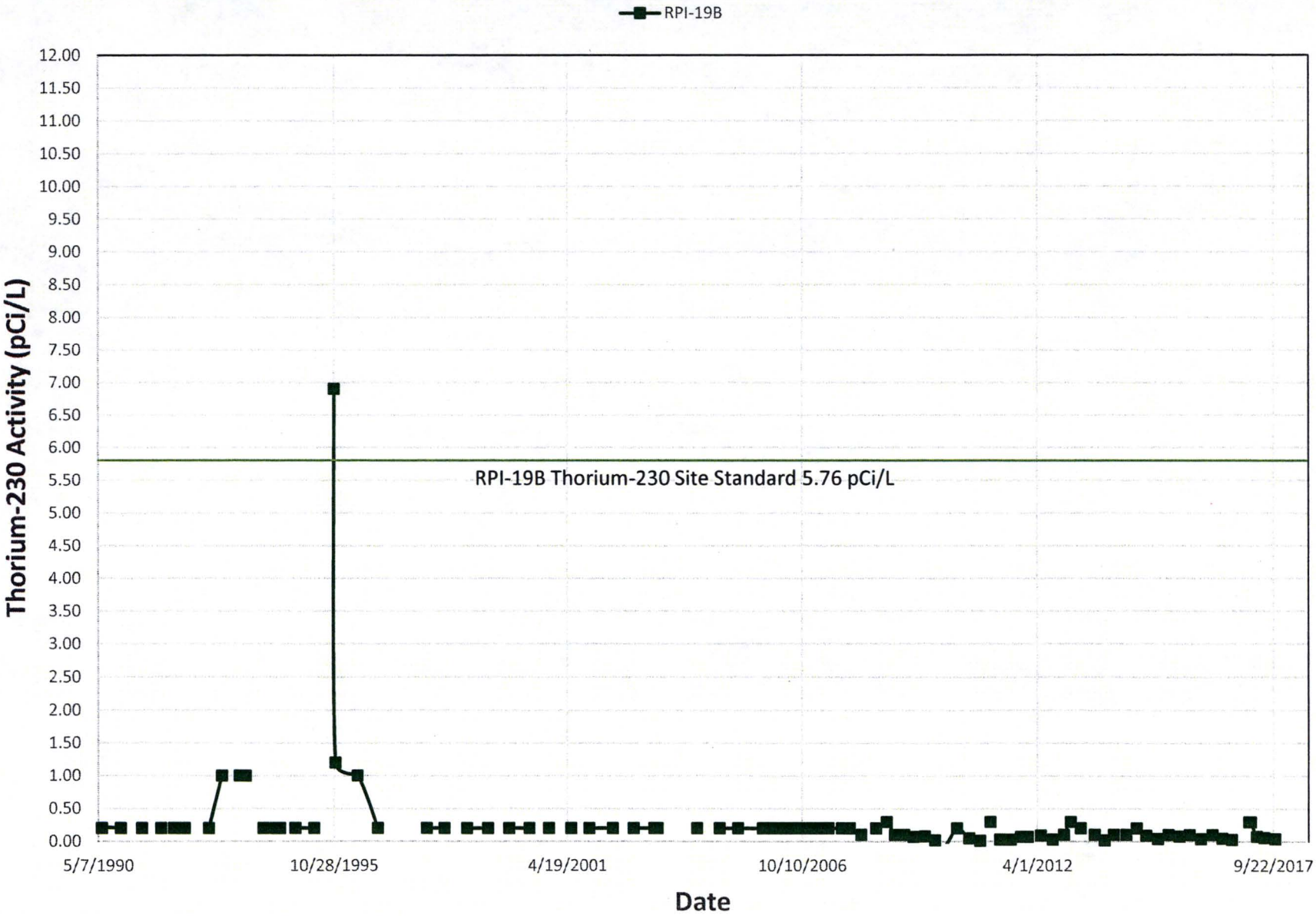
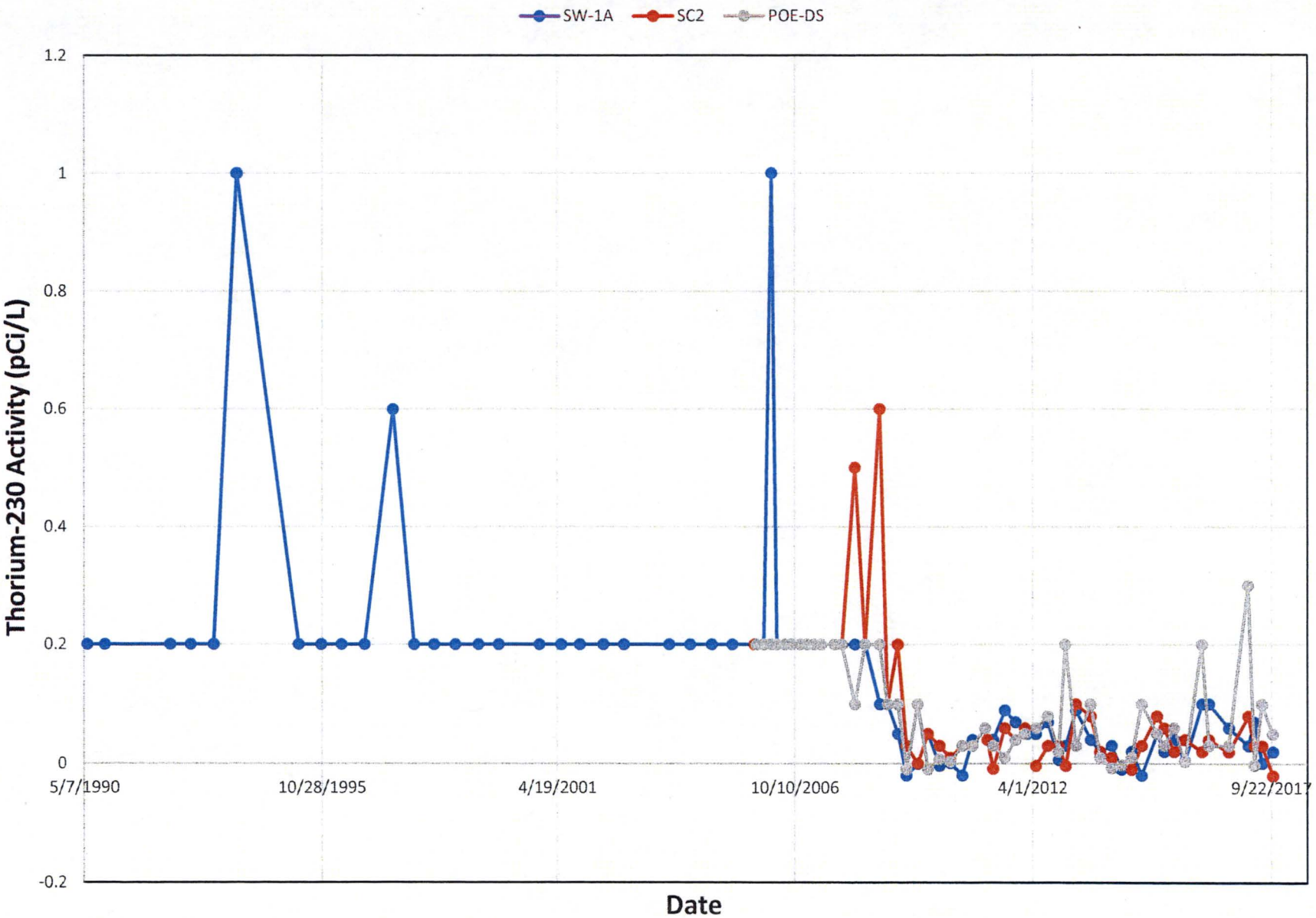


Figure 27 - Thorium-230 Activity vs. Time for Surface Water Sample Locations



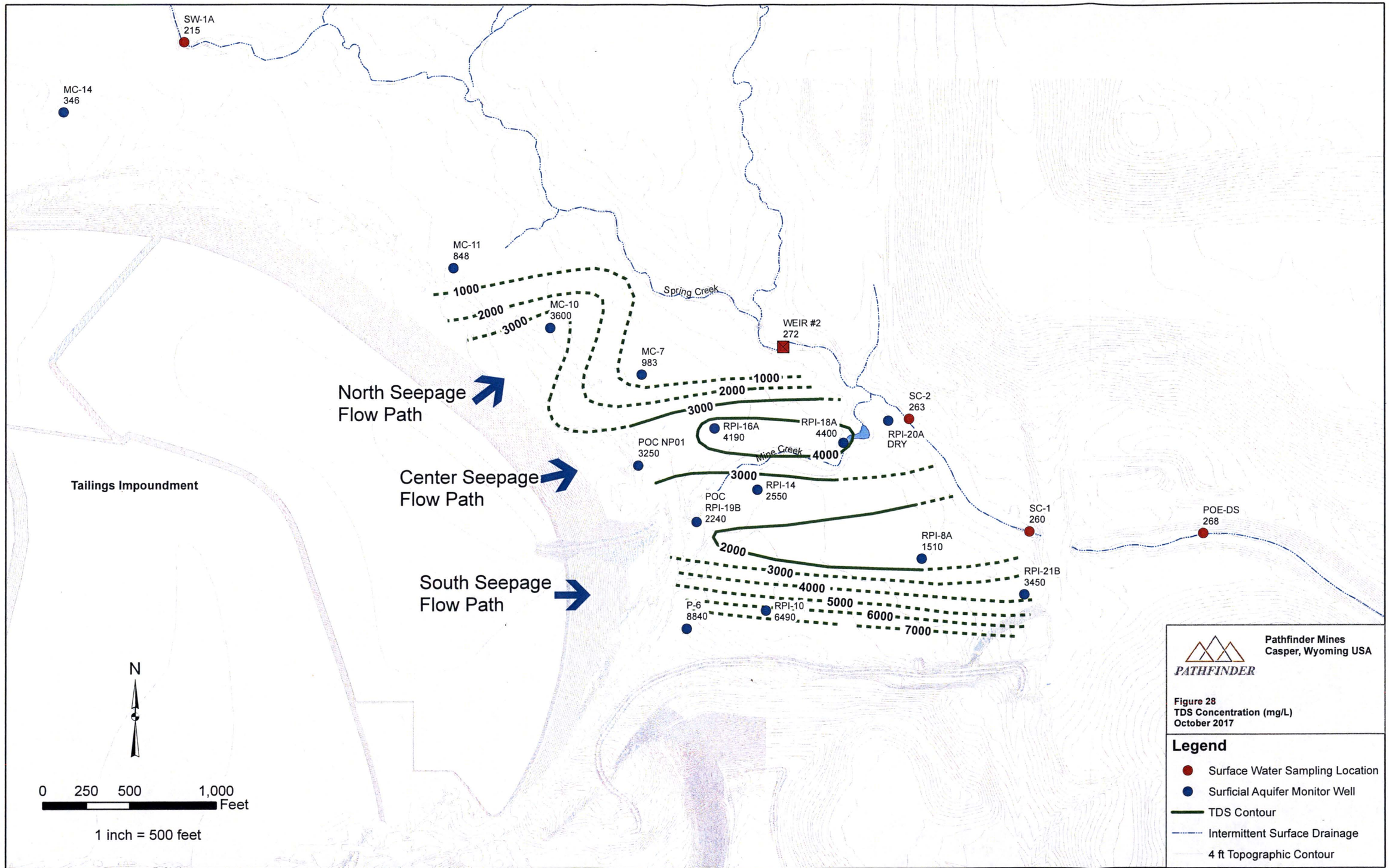


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Figure 29 - Total Dissolved Solids Concentration vs. Time

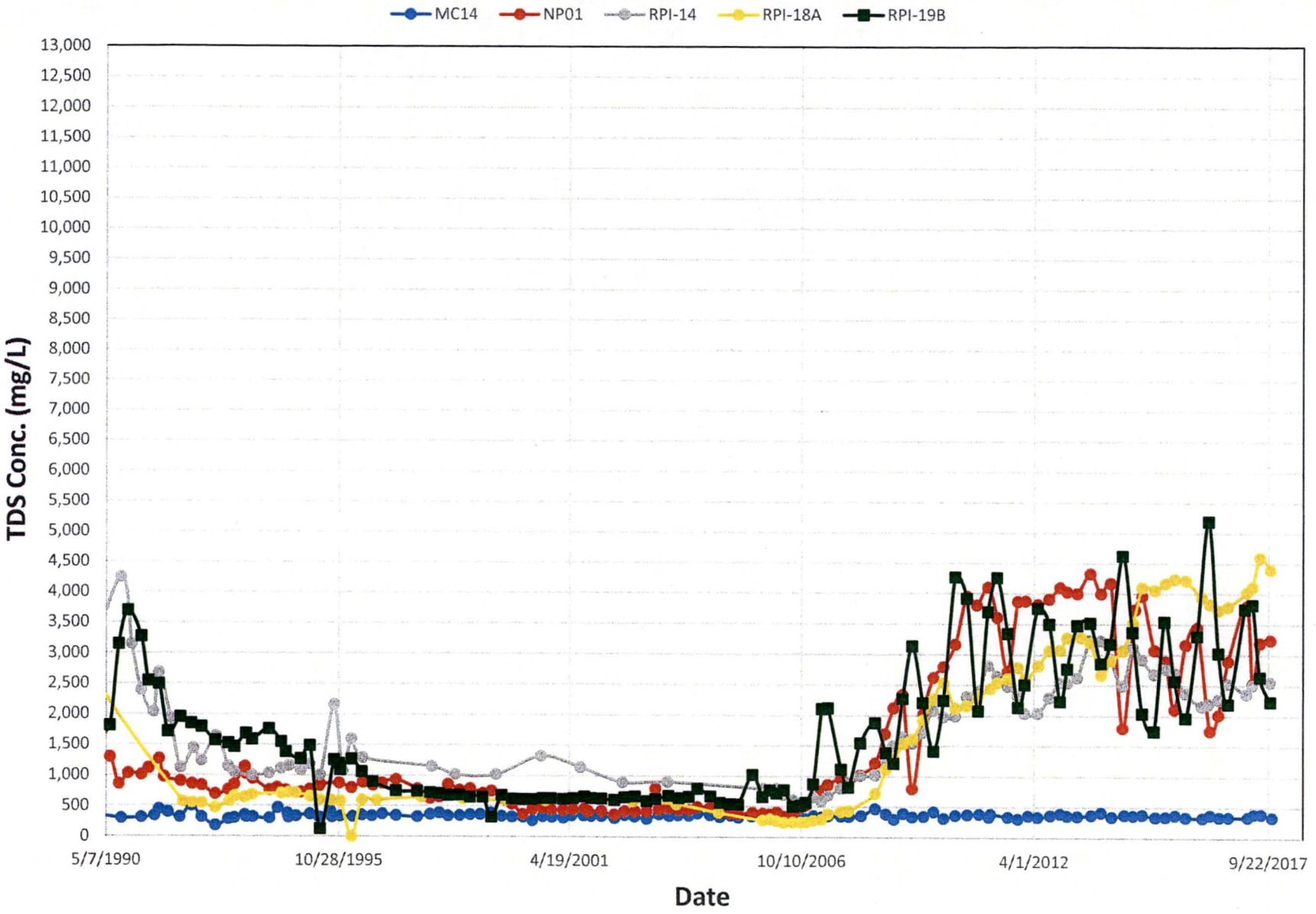


Figure 30 - Total Dissolved Solids Conc. vs. Time for Compliance Well NP-01

Figure 31 - Total Dissolved Solids Conc. vs. Time for Compliance Well RPI-19B

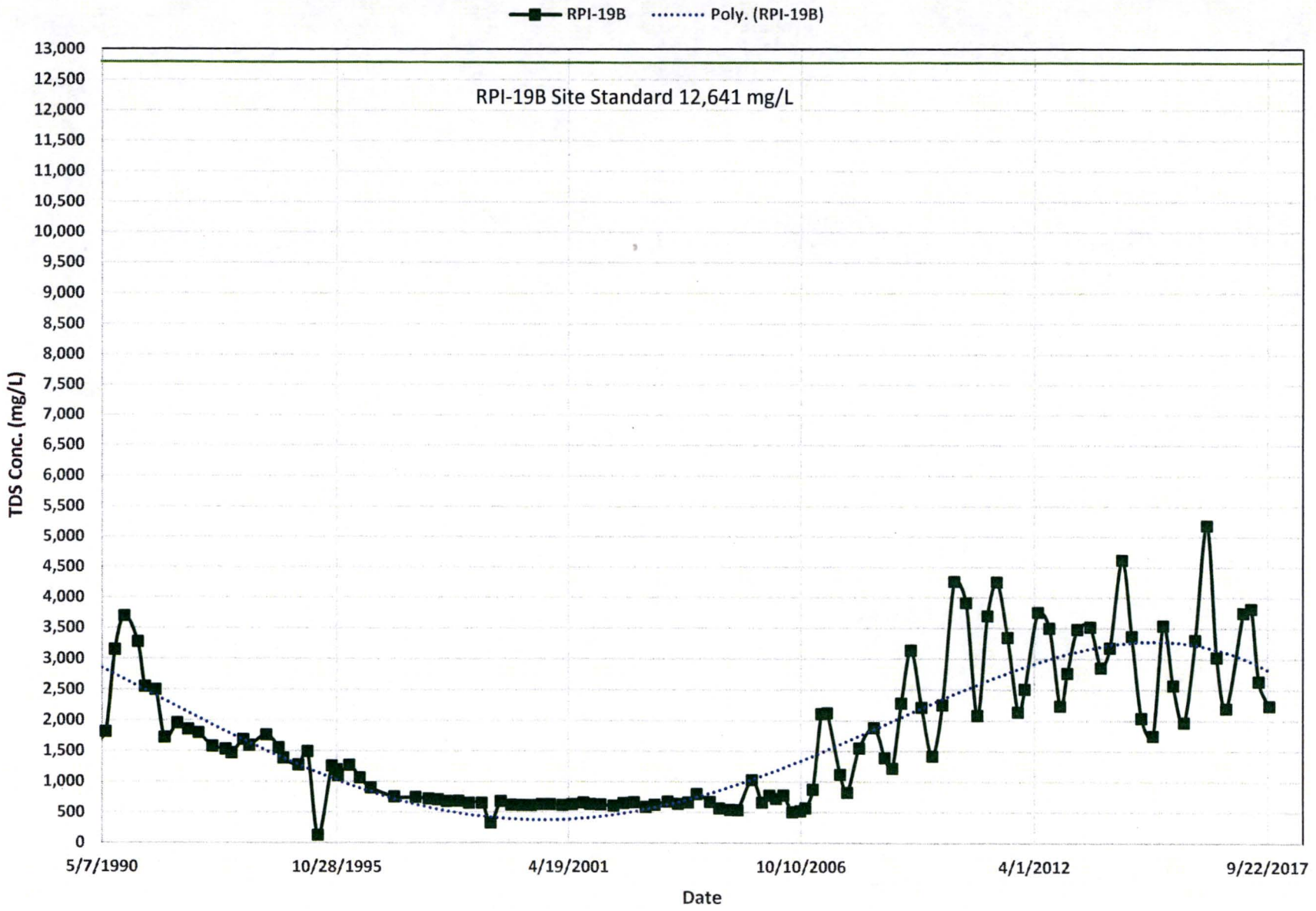
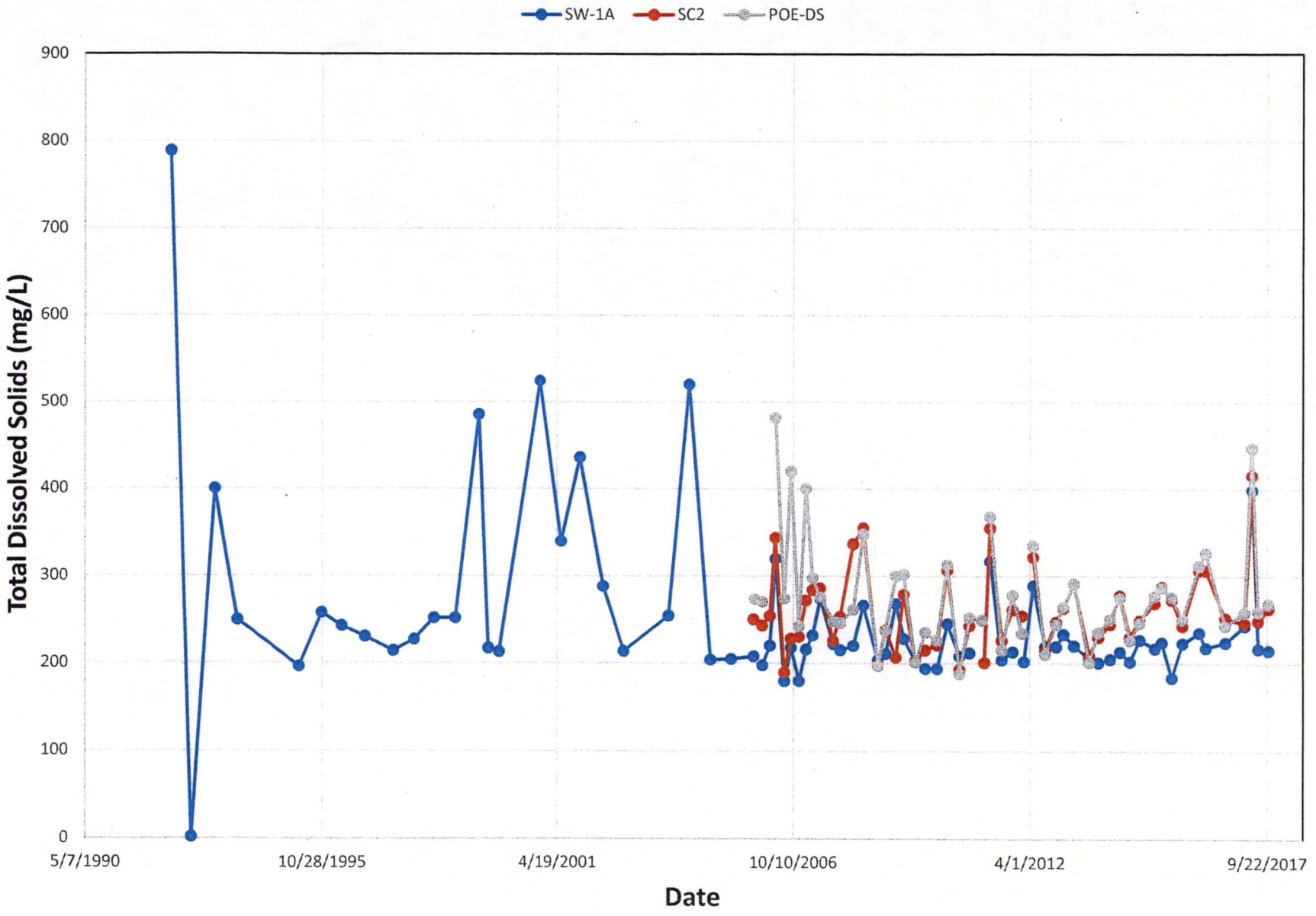


Figure 32 - Total Dissolved Solids vs. Time for Surface Water Sample Locations



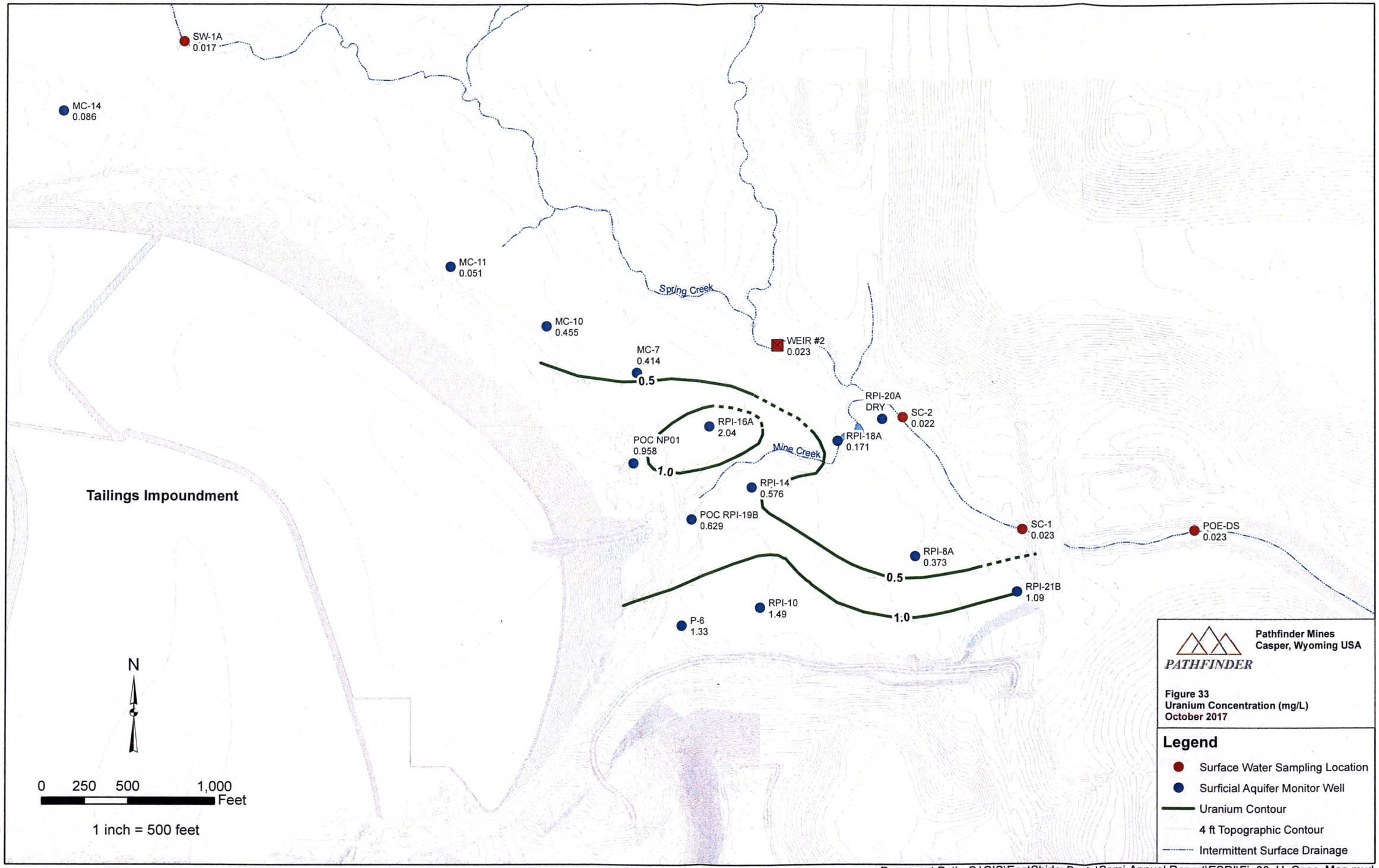


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Figure 34 - Uranium Concentration vs. Time

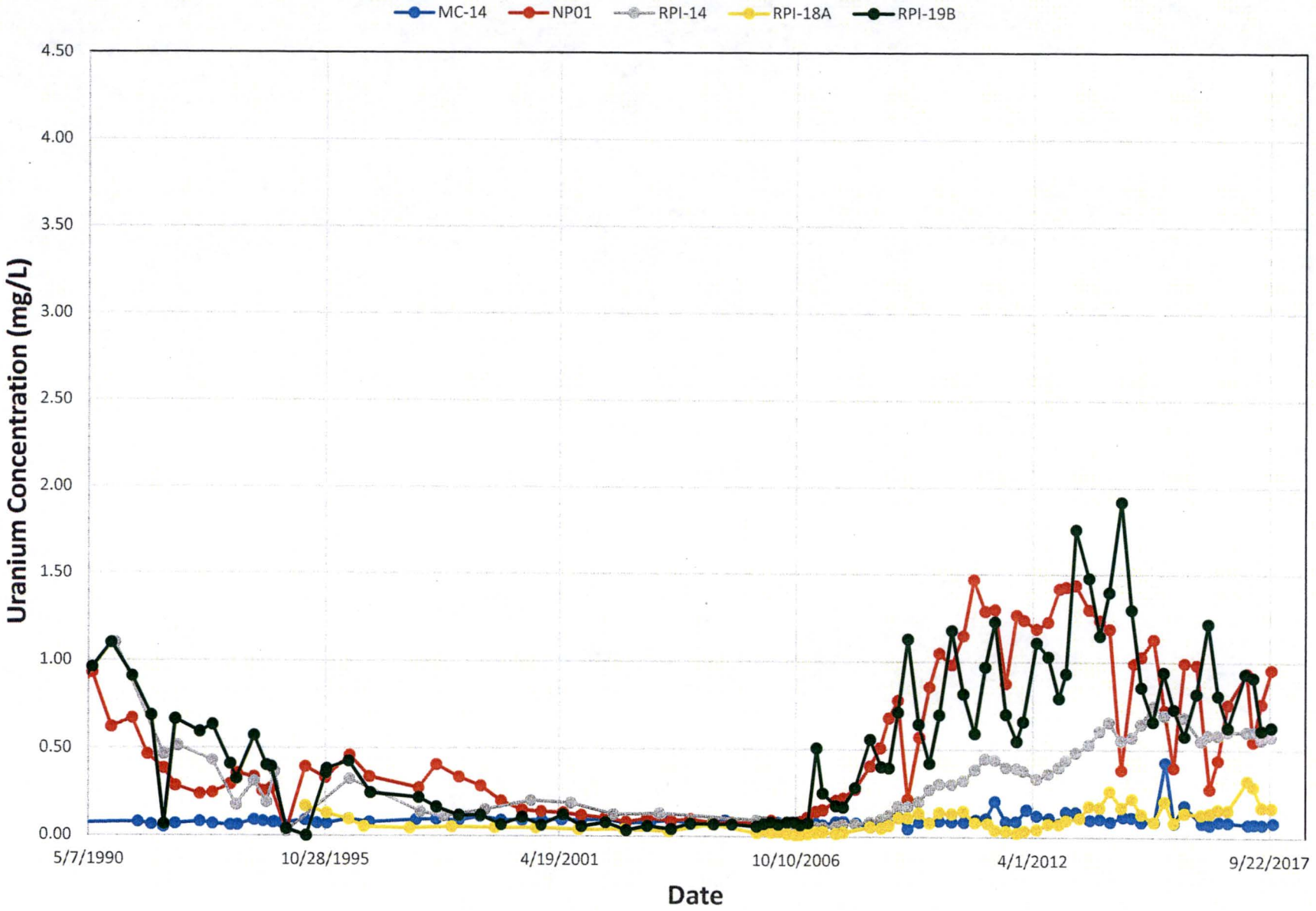

Figure 35 - Uranium Concentration vs. Time for Compliance Well NP-01

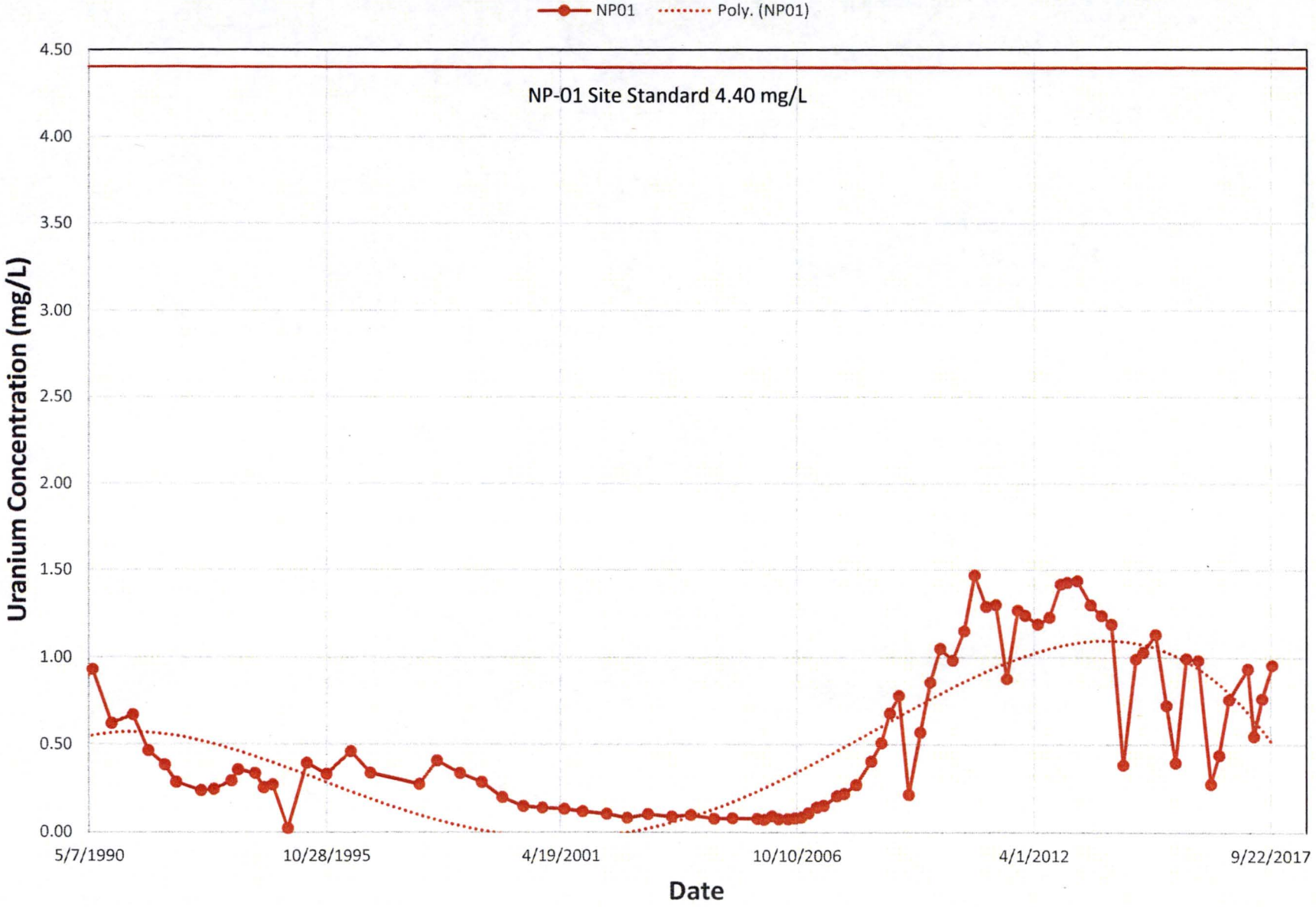

Figure 36 - Uranium Concentration vs. Time for Compliance Well RPI-19B

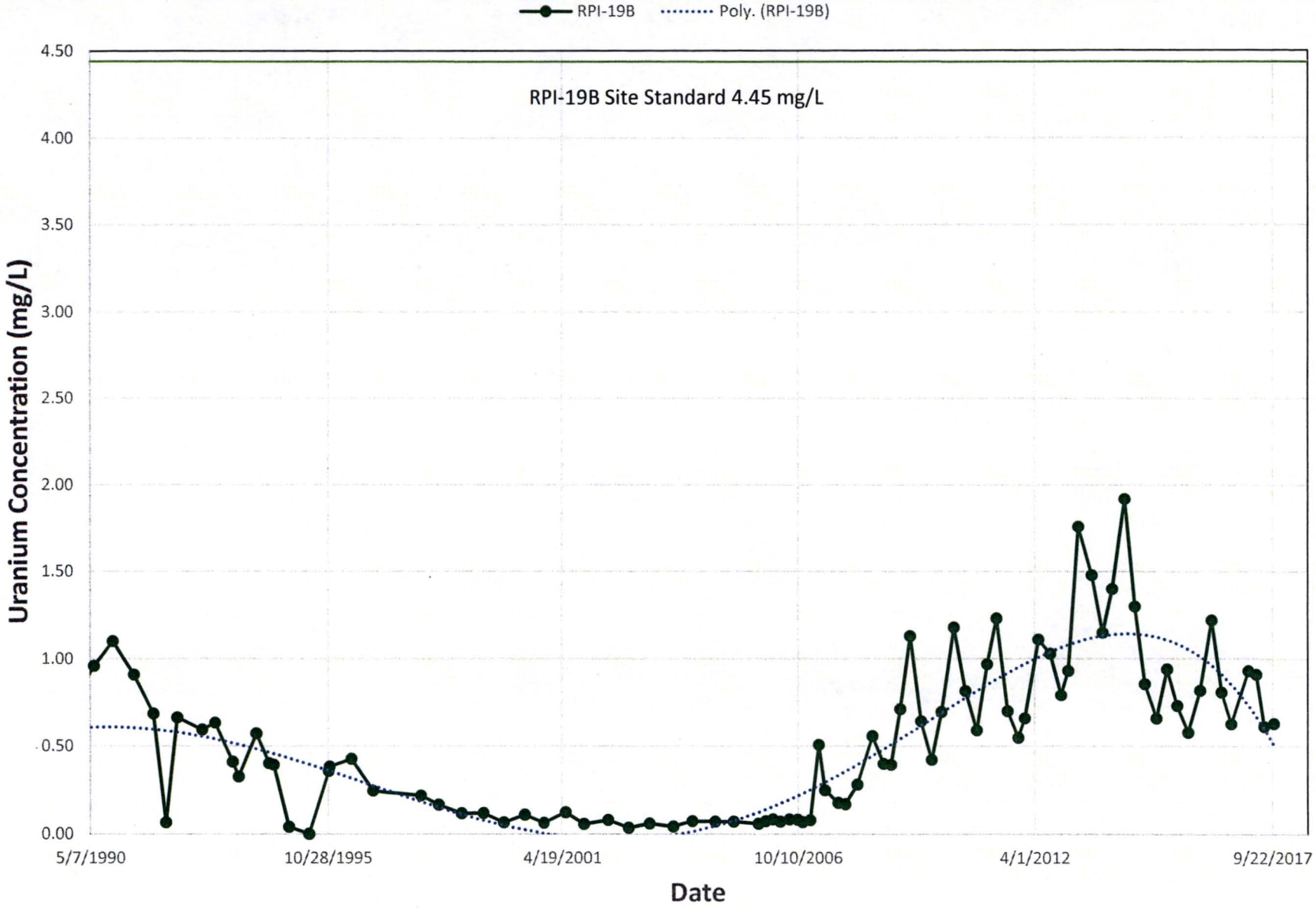

Figure 37 - Uranium Concentration vs. Time for Surface Water Sample Locations

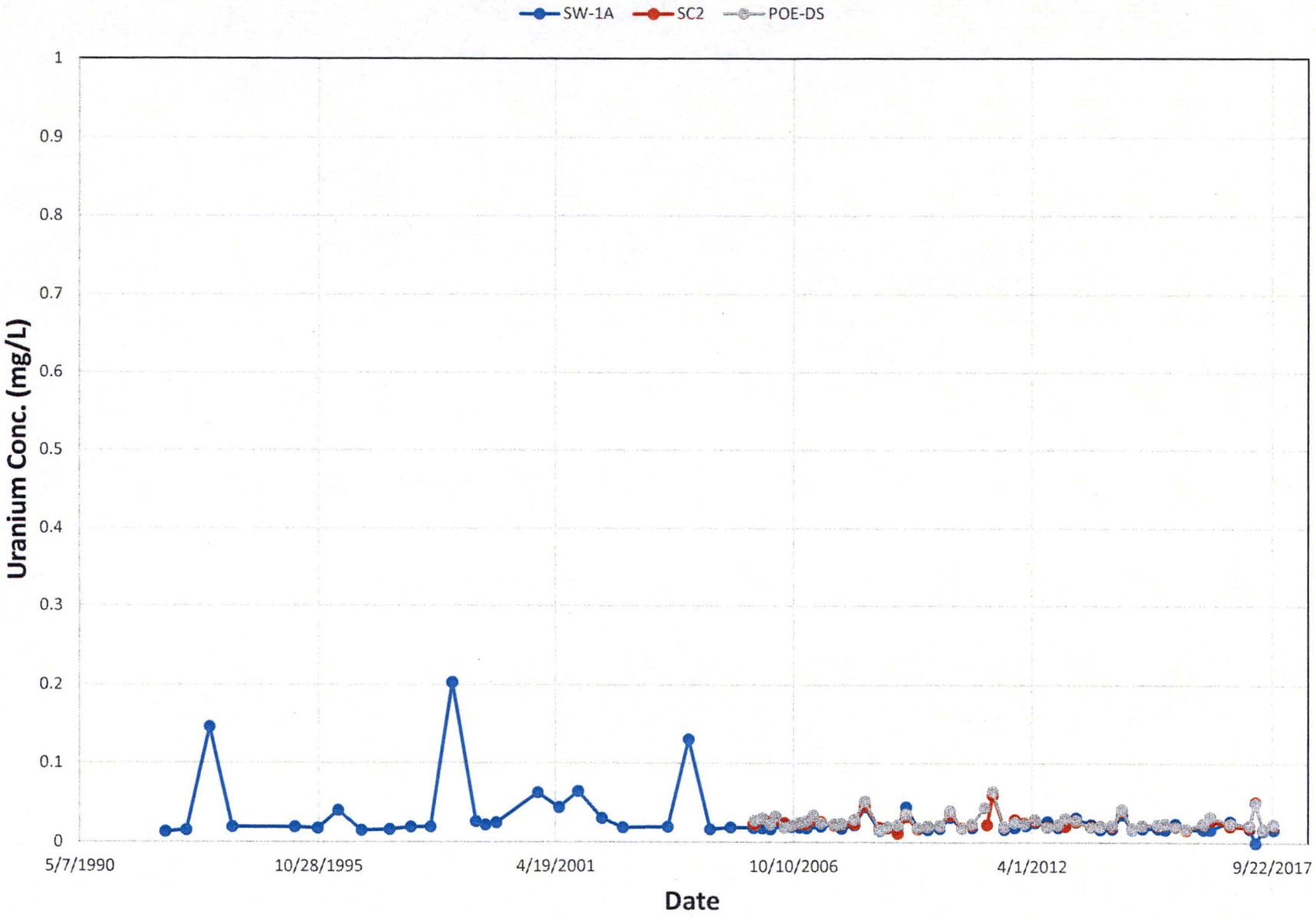

Figure 38 - Chloride, Sulfate and TDS Concentrations vs. Time for Well P-6

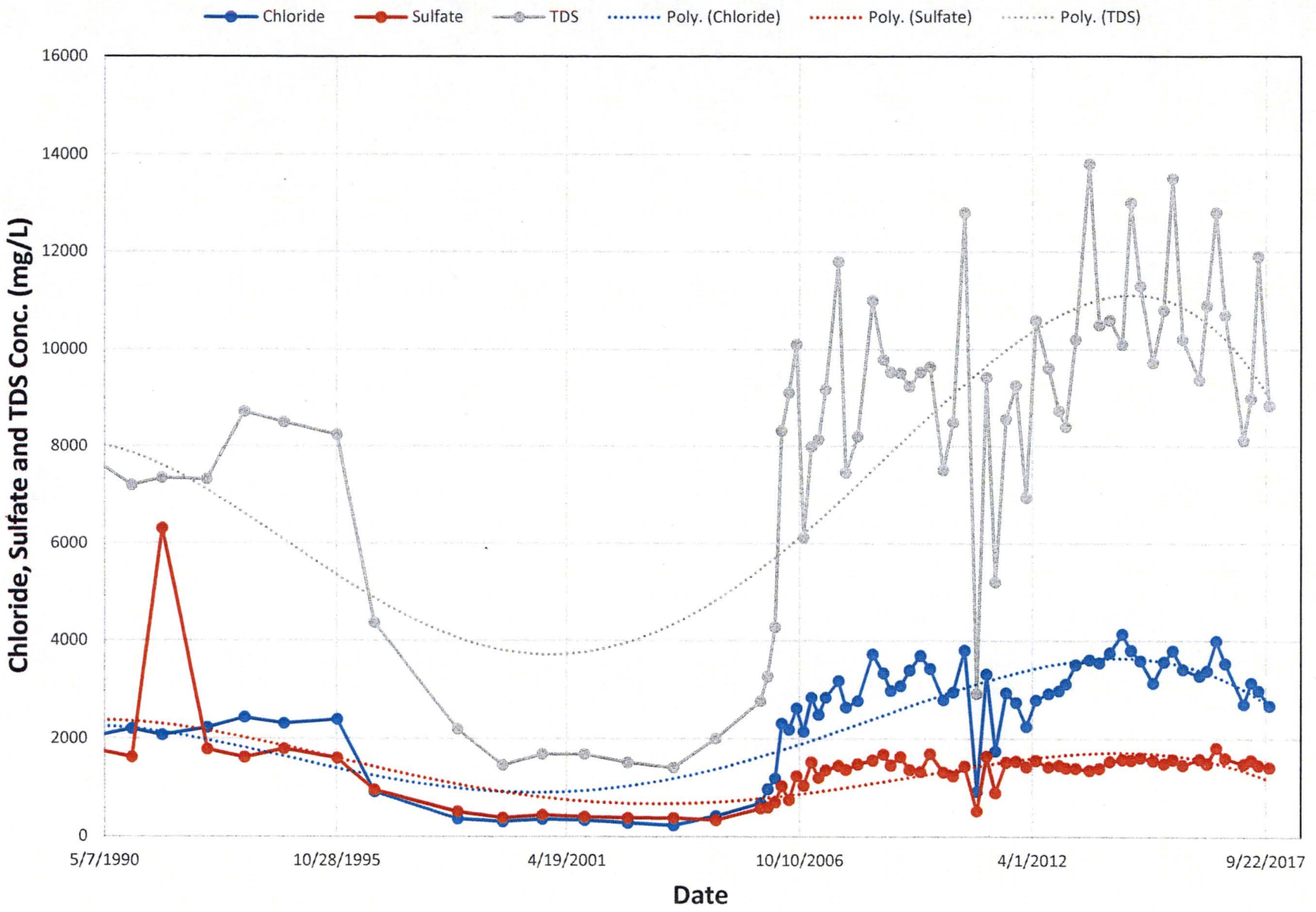

Figure 39 - Uranium Concentration vs. Time for Well P-6

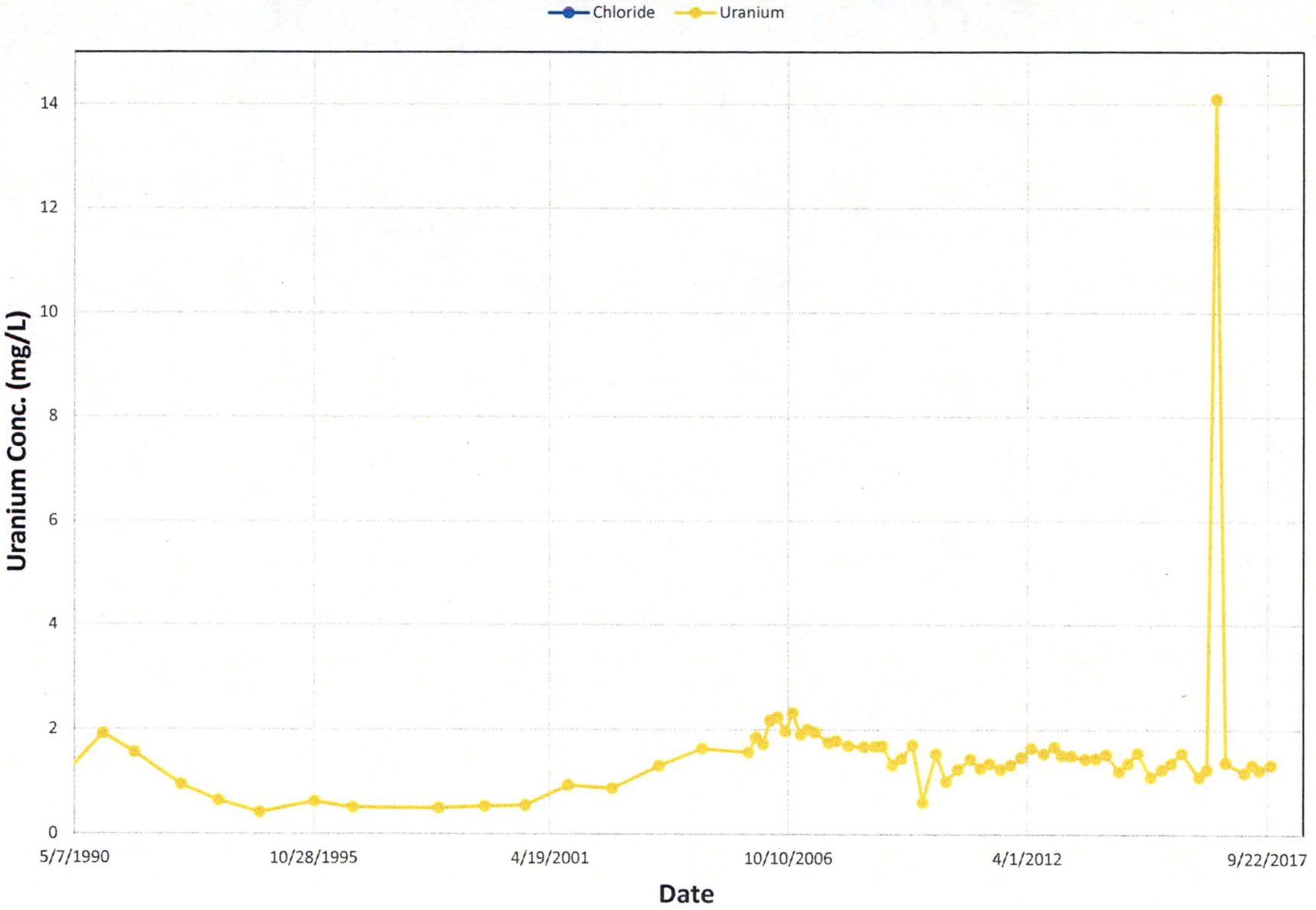

Figure 40 - Monitor Well MC-10 - Ra 226+228 Activity vs. Time

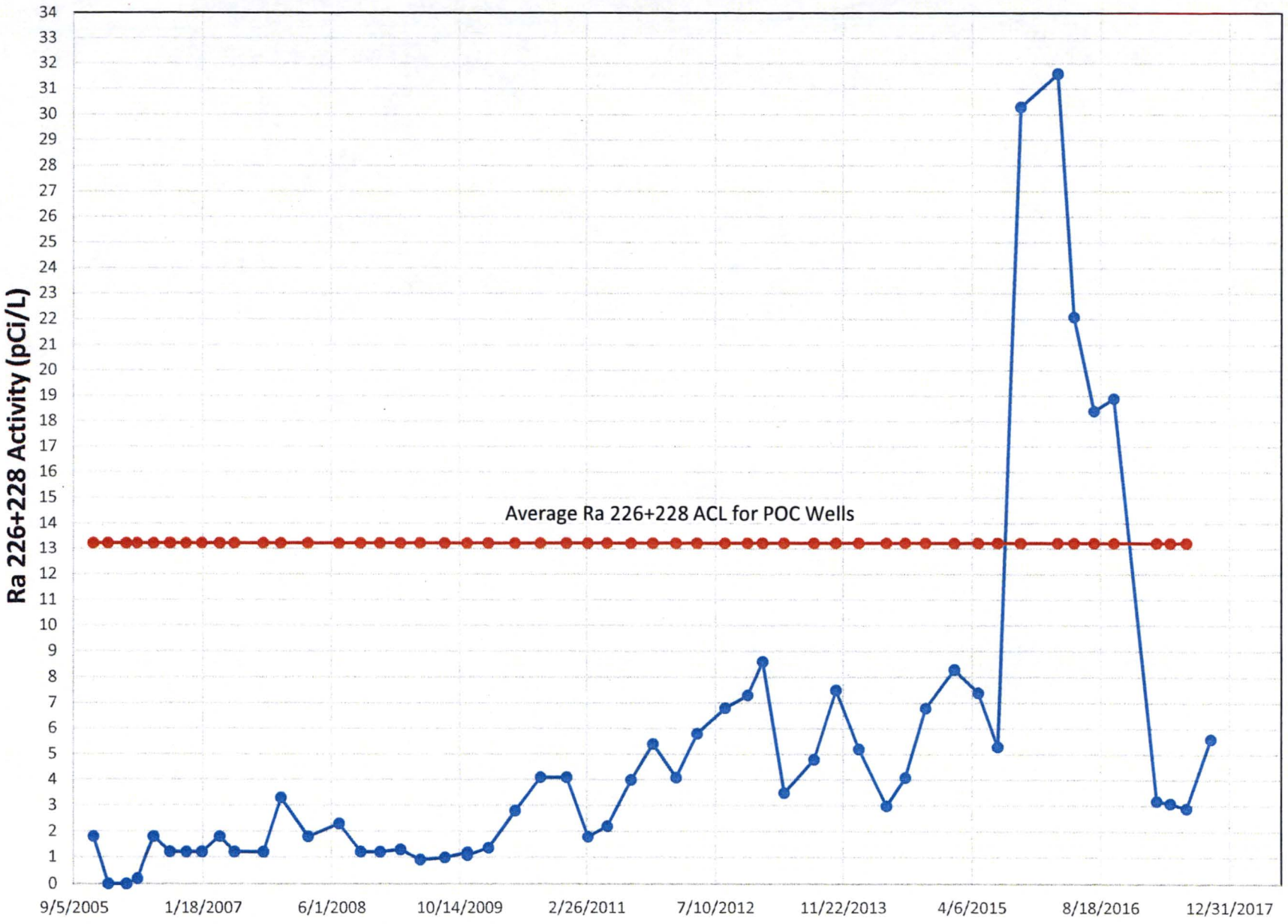

Figure 41 - Monitor Well MC-10 - Gross Alpha Activity vs. Time

Figure 42 - Monitor Well MC-11 - Ra 226+228 Activity vs. Time

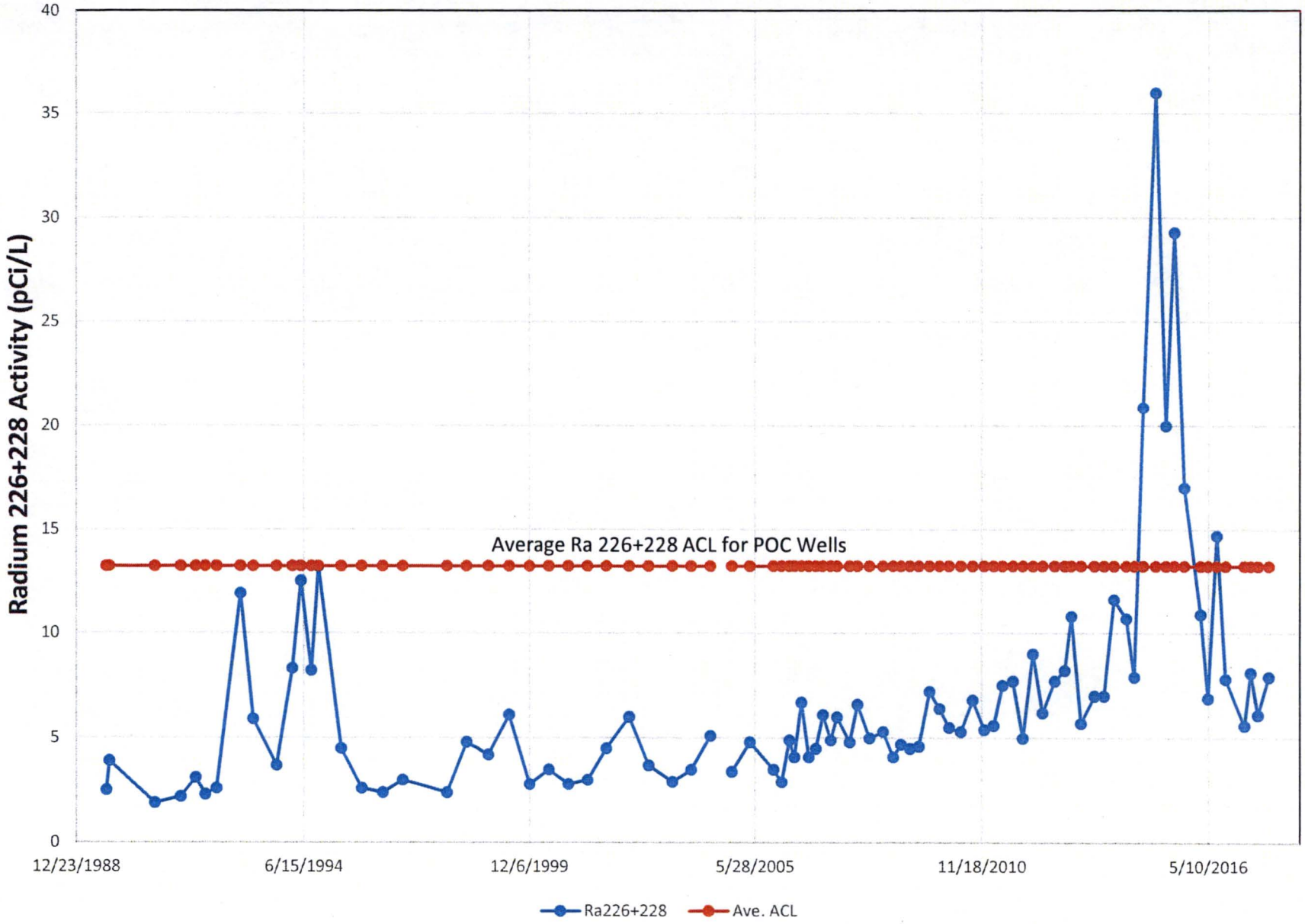

Figure 43 - Monitor Well MC-11 - Gross Alpha Activity vs. Time

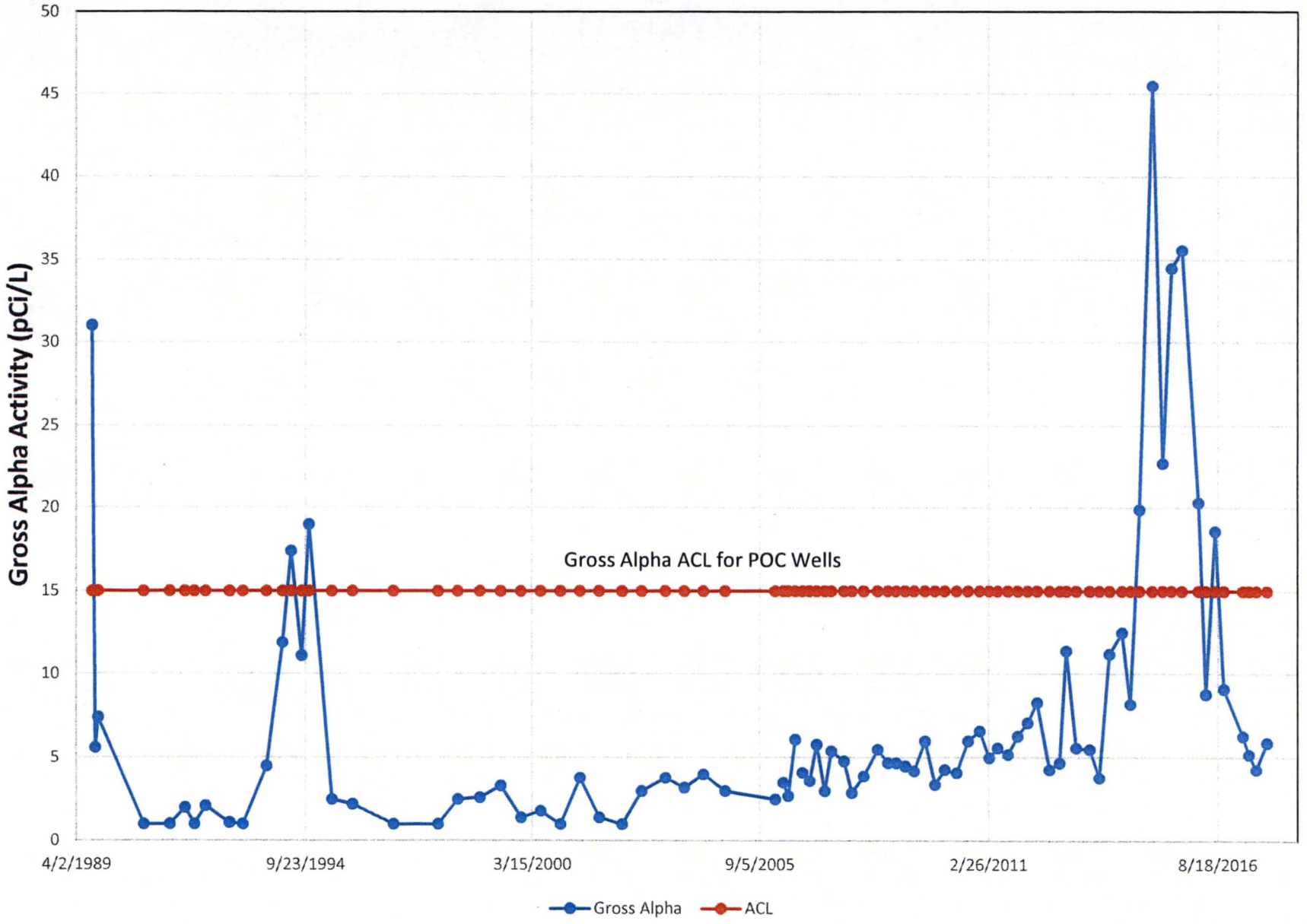

Table 1 - Groundwater Protection Standards for Point-of-Compliance Monitor Wells

Constituent	Units	POC Well NP01 Site Standard	*Well NP01 Analytical Results	POC Well RPI-19B Site Standard	*Well RPI-19B Analytical Results
Arsenic	mg/L	0.05	0.003	0.05	0.001
Barium	mg/L	1.00	0.07	1.00	0.06
Beryllium	mg/L	0.02	<0.001	0.02	<0.001
Cadmium	mg/L	0.01	<0.001	0.01	<0.001
Chromium	mg/L	0.05	<0.005	0.05	<0.005
Gross Alpha	pCi/L	15.0	0.60	15.0	0.90
Lead	mg/L	0.05	<0.001	0.05	<0.001
Molybdenum	mg/L	0.10	0.001	0.10	0.002
Nickel	mg/L	0.05	0.015	0.05	0.008
Radium 226+228	pCi/L	12.70	3.40	13.76	0.40
Selenium	mg/L	0.158	0.008	0.163	0.003
Thorium-230	pCi/L	5.53	0.10	5.76	0.04
Uranium	mg/L	4.40	0.958	4.45	0.629
Chloride	mg/L	3,275	788	3,712	562
TDS	mg/L	11,529	3,250	12,641	2,240
Sulfate	mg/L	4,612	779	5,056	469

* = Analytical Results for October 2017 sampling period.

POC = Point-of-Compliance

Table 2 - Field Measurements (Page 1 of 2)

Sample Location	Date	Well Depth (ft.)	Depth to Water (ft.)	Water Level Elevation (ft. amsl)	pH	Conductivity uS/cm
Groundwater						
MC-7	3/23/2017	39.6	12.28	7,037.33	7.87	1,038
MC-7	5/15/2017	39.6	11.92	7,037.69	7.66	1,851
MC-7	7/17/2017	39.6	12.13	7,037.48	7.52	1,947
MC-7	10/19/2017	39.6	12.78	7,036.83	7.57	1,517
MC-10	3/23/2017	33.5	14.52	7,038.08	7.28	3,890
MC-10	5/15/2017	33.5	13.40	7,039.20	6.84	5,960
MC-10	7/17/2017	33.5	13.65	7,038.95	6.95	6,090
MC-10	10/19/2017	33.5	14.48	7,038.12	6.83	5,380
MC-11	3/23/2017	56.5	14.20	7,042.31	7.94	1,229
MC-11	5/15/2017	56.5	12.93	7,043.58	7.79	1,626
MC-11	7/17/2017	56.5	12.62	7,043.89	7.79	1,527
MC-11	10/19/2017	56.5	13.23	7,043.28	7.97	1,466
MC-14	3/23/2017	60.2	27.28	7,057.43	8.14	574
MC-14	5/15/2017	60.2	26.43	7,058.28	8.18	793
MC-14	7/17/2017	60.2	26.28	7,058.43	8.11	702
MC-14	10/19/2017	60.2	26.38	7,058.33	8.43	654
NP01	3/14/2017	26.9	13.56	7,038.25	7.03	4,150
NP01	5/5/2017	26.9	12.23	7,039.58	7.08	3,890
NP01	7/12/2017	26.9	12.76	7,039.05	7.02	4,320
NP01	10/5/2017	26.9	13.42	7,038.39	7.06	4,560
P-6	3/23/2017	29.72	21.25	7,036.95	6.71	7,590
P-6	5/15/2017	29.72	20.68	7,037.52	6.33	12,400
P-6	7/17/2017	29.72	21.04	7,037.16	6.34	11,770
P-6	10/19/2017	29.72	21.72	7,036.48	6.68	10,440
RPI-8A	2/28/2017	14.44	10.59	7,028.81	7.66	1,672
RPI-8A	5/4/2017	14.44	10.25	7,029.15	7.83	2,340
RPI-8A	7/11/2017	14.44	10.28	7,029.12	7.50	2,160
RPI-8A	10/4/2017	14.44	10.45	7,028.95	7.89	2,060
RPI-10	2/28/2017	25.39	15.53	7,033.88	7.24	5,810
RPI-10	5/4/2017	25.39	14.93	7,034.48	6.73	8,410
RPI-10	7/11/2017	25.39	14.89	7,034.52	7.16	7,580
RPI-10	10/4/2017	25.39	15.28	7,034.13	6.83	7,360
RPI-14	3/14/2017	11.83	7.34	7,034.56	7.62	2,880
RPI-14	5/5/2017	11.83	7.03	7,034.87	7.62	3,650
RPI-14	7/12/2017	11.83	7.24	7,034.66	7.55	3,650
RPI-14	10/5/2017	11.83	7.38	7,034.52	7.49	3,580
RPI-16A	3/14/2017	20.95	10.92	7,036.68	7.08	4,440
RPI-16A	5/5/2017	20.95	10.15	7,037.45	7.06	6,120
RPI-16A	7/12/2017	20.95	10.39	7,037.21	7.01	6,020
RPI-16A	10/5/2017	20.95	10.87	7,036.73	6.97	5,600
RPI-18A	3/14/2017	10.68	3.45	7,028.40	7.33	4,620
RPI-18A	5/5/2017	10.68	4.10	7,027.75	7.12	5,960
RPI-18A	7/12/2017	10.68	6.00	7,025.85	7.02	6,030
RPI-18A	10/5/2017	10.68	5.72	7,026.13	7.42	6,260
RPI-19B	2/28/2017	15.27	10.12	7,036.69	6.98	4,080
RPI-19B	5/5/2017	15.27	9.52	7,037.29	6.82	5,480
RPI-19B	7/12/2017	15.27	10.20	7,036.61	7.01	3,620
RPI-19B	10/4/2017	15.27	10.43	7,036.38	7.17	3,120

Table 2 - Field Measurements (Page 2 of 2)

Sample Location	Date	Well Depth (ft.)	Depth to Water (ft.)	Water Level Elevation (ft. amsl)	pH	Conductivity uS/cm
Groundwater (continued)						
RPI-20A	3/13/2017	7.83	5.80	7,025.81	7.71	3,930
RPI-20A	5/4/2017	7.83	5.77	7,025.84	7.32	5,150
RPI-20A	7/11/2017	7.83	7.40	7,024.21	7.51	4,290
RPI-20A	10/5/2017	7.83	Dry	---	---	---
RPI-21B	2/28/2017	16.11	10.46	7,026.18	7.57	3,780
RPI-21B	5/4/2017	16.11	9.90	7,026.74	7.27	5,420
RPI-21B	7/11/2017	16.11	10.07	7,026.57	7.16	4,930
RPI-21B	10/4/2017	16.11	10.21	7,026.43	7.50	4,690
Surface Water						
SC-1	3/13/2017				8.53	367
SC-1	5/2/2017				8.24	742
SC-1	7/6/2017				8.66	373
SC-1	10/2/2017				8.25	422
SC-2	3/13/2017				8.52	357
SC-2	5/2/2017				8.21	729
SC-2	7/6/2017				8.65	374
SC-2	10/2/2017				8.04	426
SW-1A	3/14/2017				8.52	338
SW-1A	5/2/2017				8.61	687
SW-1A	7/6/2017				8.56	332
SW-1A	10/2/2017				9.78	402
POE-DS	3/13/2017				8.43	364
POE-DS	5/2/2017				8.25	762
POE-DS	7/6/2017				8.65	391
POE-DS	10/2/2017				8.11	434
WEIR-2	3/13/2017				8.53	337
WEIR-2	5/2/2017				8.18	712
WEIR-2	7/6/2017				8.48	374
WEIR-2	10/2/2017				8.48	431

Table 3 - Monitor Well Analytical Results (Page 1 of 3)

Monitor Well	Collection Date	Cl (mg/L)	NO3-T (mg/L)	SO4 (mg/L)	TDS (mg/L)	As-D (mg/L)	Ba-D (mg/L)	Be-D (mg/L)	Cd-D (mg/L)	Cr-D (mg/L)	Pb-D (mg/L)	Mo-D (mg/L)	Ni-D (mg/L)	Se-D (mg/L)	U-D (mg/L)	Gross Alpha-D (pCi/L)	Gross Alpha (MDC)-D (pCi/L)	Ra226-D (pCi/L)	Ra226 (MDC)-D (pCi/L)	Ra228-D (pCi/L)	Ra228 (MDC)-D (pCi/L)	Ra226+228 (pCi/L)	Th230-D (pCi/L)	Th230 (MDC)-D (pCi/L)
MC-7	3/1/2016	175	2.2	233	901	0.001	0.07	<0.001	<0.001	<0.005	<0.001	0.002	<0.005	0.005	0.283	6.4	1.5	2.6	0.19	1.7	1.1	4.30	0.07	0.1
MC-7	5/4/2016	213	2.4	302	1130	0.001	0.09	<0.001	<0.001	<0.005	<0.001	0.002	<0.005	0.005	0.360	3.5	1.6	0.89	0.17	1.8	1.0	2.69	0.2	0.2
MC-7	7/22/2016	347	2.6	370	1480	<0.001	0.09	<0.001		<0.001	<0.005	<0.001	0.001	<0.005	0.008	0.462	4.9	1.4	3.0	0.24	0.8	1.64	1.5	0.1
MC-7	10/7/2016	224	2.4	323	1100	0.002	0.08	<0.001	<0.001	<0.005	<0.001	0.002	<0.005	0.005	0.419	3.7	1.0	1.1	0.17	1.4	1.4	2.50	0.2	0.2
MC-7	3/23/2017	140	2.1	192	776	<0.001	<0.05	<0.001	<0.001	<0.005	<0.001	0.002	<0.005	0.004	0.265	2.3	1.7	0.59	0.18	2.4	1.8	2.99	0.4	0.3
MC-7	5/15/2017	253	1.89	288	1110	0.001	0.08	<0.001	<0.001	<0.005	<0.001	0.002	<0.005	0.004	0.344	0.5	1.2	0.6	0.2	0.9	1.9	1.5	-0.01	0.2
MC-7	7/17/2017	253	2.38	388	1420	0.002	0.11	<0.001	<0.001	<0.005	<0.001	0.002	<0.005	0.007	0.424	1.3	0.4	0.6	0.2	1.8	1.5	2.4	0.2	0.1
MC-7	10/19/2017	163	1.87	250	983	0.001	0.07	<0.001	<0.001	<0.005	<0.001	0.002	<0.005	0.004	0.414	1.1	0.6	0.8	0.3	2.1	1.8	2.9	0.06	0.1
MC-10	3/1/2016	937	0.5	446	2570	0.001	0.16	<0.001	<0.001	<0.005	<0.001	0.001	<0.005	0.014	0.180	**15.3**	1.5	6.4	0.19	2.6	1.1	9.00	0.1	0.1
MC-10	5/4/2016	1030	1.8	599	3070	<0.001	0.11	<0.001	<0.001	0.005	<0.001	<0.001	<0.005	0.015	0.256	11.4	1.6	3.8	0.17	1.7	1	5.50	0.2	0.1
MC-10	7/22/2016	1500	2.7	804	4190	<0.001	0.13	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	0.015	0.366	**19.4**	1.3	9.6	0.22	11.3	1.2	**20.90**	0.1	0.1
MC-10	10/7/2016	1380	2.5	833	3790	0.002	0.09	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	0.017	0.373	7.5	1.0	2.8	0.17	2.0	1.3	4.80	0.1	0.2
MC-10	3/23/2017	951	1.8	589	2840	0.001	0.07	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	0.011	0.258	4.7	1.7	1.6	0.17	1.6	1.7	3.2	0.2	0.2
MC-10	5/15/2017	1210	2.49	779	3530	0.001	0.07	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	0.016	0.356	1.7	1.1	1.5	0.2	1.6	1.8	3.1	0.06	0.1
MC-10	7/17/2017	1200	2.97	815	4010	0.003	0.07	<0.001	0.001	<0.005	<0.001	<0.001	0.012	0.021	0.415	1.6	0.4	1.1	0.2	1.8	1.5	2.9	0.03	0.1
MC-10	10/19/2017	1110	2.48	757	3600	0.001	0.06	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	0.015	0.455	3.4	0.7	1.8	0.3	3.8	1.7	5.6	0.2	0.1
MC-11	3/1/2016	334	<0.1	32	830	0.002	0.18	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	0.002	0.0470	**20.3**	1.5	8.8	0.20	2.1	1.1	10.90	0.08	0.2
MC-11	5/4/2016	320	<0.1	29	854	0.001	0.13	<0.001	<0.001	<0.005	<0.001	0.001	<0.005	0.001	0.0476	8.8	1.6	4.4	0.18	2.5	1.0	6.90	-0.001	0.2
MC-11	7/22/2016	349	<0.1	32	857	<0.001	0.12	<0.001	<0.001	<0.005	<0.001	0.001	<0.005	<0.001	0.0586	**18.6**	1.4	8.5	0.22	6.2	1.1	**14.70**	0.1	0.1
MC-11	10/7/2016	364	<0.1	33	864	0.001	0.13	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	0.001	0.0538	9.1	1.0	4.6	0.17	3.2	1.4	7.80	0.03	0.1
MC-11	3/23/2017	332	<0.05	33	870	0.001	0.11	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	<0.001	0.0423	6.3	1.7	3.9	0.17	1.7	1.8	5.6	0.08	0.2
MC-11	5/15/2017	347	<0.05	34	864	0.001	0.13	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	<0.001	0.0484	5.2	1.2	5.3	0.2	2.8	1.9	8.1	0.01	0.2
MC-11	7/17/2017	315	<0.05	31	898	0.002	0.13	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	0.002	0.0475	4.3	0.4	4.1	0.4	2.0	1.7	6.1	0.03	0.1
MC-11	10/19/2017	335	<0.05	32	848	0.001	0.13	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	<0.001	0.0512	5.9	0.6	4.6	0.3	3.3	1.8	7.9	0.03	0.1
MC-14	3/1/2016	12	0.1	25	339	0.003	0.08	<0.001	<0.001	<0.005	<0.001	0.002	<0.005	<0.001	0.0824	10.6	1.5	4.9	0.21	1.5	1.2	6.40	0.08	0.2
MC-14	5/4/2016	35	0.1	23	382	0.002	<0.05	<0.001	<0.001	<0.005	<0.001	0.002	<0.005	<0.001	0.0730	3.5	1.6	0.85	0.18	1.7	1.0	2.55	0.05	0.2
MC-14	7/22/2016	25	0.1	24	351	0.001	<0.05	<0.001	<0.001	<0.005	<0.001	0.002	<0.005	<0.001	0.0910	6.9	1.3	3.0	0.22	3.6	1.2	6.60	0.2	0.1
MC-14	10/7/2016	16	0.1	26	353	0.003	0.06	<0.001	<0.001	<0.005	<0.001	0.001	<0.005	<0.001	0.0888	4.3	1.0	1.0	0.18	1.1	1.4	2.10	0.04	0.2
MC-14	3/23/2017	11	0.1	29	350	0.003	<0.05	<0.001	<0.001	<0.005	<0.001	0.002	<0.005	<0.001	0.0755	1.8	1.7	0.87	0.18	0.6	1.9	1.47	0.1	0.2
MC-14	5/15/2017	45	0.12	26	401	0.003	0.06	<0.001	0.002	<0.005	<0.001	<0.001	<0.005	<0.001	0.0788	2.4	1.2	0.7	0.2	2.1	1.9	2.8	-0.007	0.1
MC-14	7/17/2017	39	0.12	24	402	0.003	0.06	<0.001	<0.001	<0.005	<0.001	0.002	<0.005	<0.001	0.0760	1.2	0.4	0.3	0.2	1.8	1.5	2.1	0.05	0.1
MC-14	10/19/2017	14	0.14	24	346	0.003	0.06	<0.001	<0.001	<0.005	<0.001	0.002	<0.005	<0.001	0.0856	1.7	0.6	0.9	0.3	1.6	1.8	2.5	0.08	0.2
NP01	1/18/2016	944	4.0	890	3450	0.003	0.07	<0.001	<0.001	<0.005	0.001	<0.001	0.007	0.004	0.984	7.0	1.6	3.7	0.16	1.6	1.2	5.30	0.1	0.1
NP01	5/3/2016	560	1.3	194	1760	0.002	0.05	<0.001	<0.001	<0.005	<0.001	0.002	<0.005	0.004	0.277	4.8	1.7	0.43	0.16	1.7	1	2.13	0.03	0.2
NP01	7/15/2016	670	2.5	363	2020	0.003	0.06	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	0.006	0.442	2.1	1.8	1.0	0.16	1.5	1.6	2.50	0.05	0.2
NP01	10/5/2016	834	3.7	648	2900	0.003	0.12	<0.001	<0.001	<0.005	<0.001	0.001	0.005	0.006	0.759	7.4	1.3	1.0	0.11	1.8	1.3	2.80	0.08	0.2
NP01	3/14/2017	1020	3.1	946	3800	0.002	0.07	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	0.003	0.936	7.2	3.2	0.93	0.13	1.4	1.9	0.3	0.2	
NP01	5/5/2017	722	2.02	439	2530	0.002	0.06	<0.001	<0.001	<0.005	<0.001	<0.001	0.005	0.005	0.549	3.5	1.7	0.6	0.2	1.0	1.0	1.6	0.03	0.10
NP01	7/12/2017	756	3.44	657	3200	0.003	0.07	<0.001	<0.001	<0.005	0.003	0.001	0.006	0.009	0.764	1.1	0.9	0.7	0.2	2.5	1.4	3.2	0.06	0.2
NP01	10/5/2017	788	3.84	779	3250	0.003	0.07	<0.001	<0.001	<0.005	<0.001	0.001	0.015	0.008	0.958	0.6	0.7	0.6	0.2	2.8	1.7	3.4	0.1	0.2

Table 3 - Monitor Well Analytical Results (Page 2 of 3)

Monitor Well	Collection Date	Cl (mg/L)	NO3-T (mg/L)	SO4 (mg/L)	TDS (mg/L)	As-D (mg/L)	Ba-D (mg/L)	Be-D (mg/L)	Cd-D (mg/L)	Cr-D (mg/L)	Pb-D (mg/L)	Mo-D (mg/L)	Ni-D (mg/L)	Se-D (mg/L)	U-D (mg/L)	Gross Alpha-D (pCi/L)	Gross Alpha (MDC)-D (pCi/L)	Ra226-D (pCi/L)	Ra226 (MDC)-D (pCi/L)	Ra228-D (pCi/L)	Ra228 (MDC)-D (pCi/L)	Ra226+228 (pCi/L)	Th230-D (pCi/L)	Th230 (MDC)-D (pCi/L)
P-6	3/1/2016	**3300**	0.8	1590	9370	0.006	0.13	<0.001	0.001	<0.005	<0.001	<0.001	0.015	0.007	1.10	13.6	1.5	5.0	0.18	2.9	1.0	7.90	0.8	0.2
P-6	5/4/2016	**3400**	2.0	1500	10900	0.004	0.09	<0.001	0.002	<0.005	<0.001	0.001	0.018	0.009	1.24	11.5	1.6	2.6	0.16	2.9	1	5.50	0.8	0.2
P-6	7/22/2016	**4000**	1.2	1820	**12800**	<0.001	0.10	<0.001	0.001	0.009	<0.001	<0.001	0.018	0.021	**14.1**	5.7	1.4	5.0	0.20	2.0	1.3	7.00	1	0.2
P-6	10/7/2016	**3550**	2.1	1610	10700	0.003	0.08	<0.001	0.001	0.010	<0.001	<0.001	0.017	0.016	1.38	9.8	1.0	1.9	0.15	2.9	1.2	4.80	0.3	0.2
P-6	3/23/2017	2720	2.6	1490	8120	0.003	0.05	<0.001	0.001	<0.005	<0.001	<0.001	<0.005	0.009	1.18	4.0	3.5	1.6	0.16	1.8	1.7	3.4	0.3	0.2
P-6	5/15/2017	3160	2.04	1570	8980	0.004	0.07	<0.001	0.002	<0.005	<0.001	<0.001	0.015	0.009	1.33	2.3	1.2	1.5	0.2	1.9	2.3	3.4	0.1	0.2
P-6	7/17/2017	3000	1.59	1470	**11900**	0.006	0.08	<0.001	0.003	<0.005	<0.001	<0.001	0.022	0.014	1.23	1.5	1.3	1.3	0.2	3.7	1.3	5.0	0.1	0.2
P-6	10/19/2017	2690	2.17	1430	8840	0.004	0.07	<0.001	0.002	<0.005	<0.001	<0.001	0.016	0.010	1.33	2.2	0.6	2.0	0.3	4.6	1.9	6.6	0.2	0.2
RPI-8A	1/18/2016	558	1.1	421	1890	0.002	0.09	<0.001	<0.001	<0.005	<0.001	0.003	0.006	0.003	0.369	6.9	1.6	4.7	0.17	0.3	1.3	5.00	0.07	0.1
RPI-8A	7/14/2016	537	1.3	389	1810	0.003	0.07	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	0.005	0.363	8.0	1.8	5.3	0.15	3.7	1.3	9.00		
RPI-8A	10/4/2016	472	1.2	377	1850	0.002	0.07	<0.001	<0.001	<0.005	<0.001	0.002	<0.005	0.007	0.400	8.6	1.3	0.56	0.11	3.2	1.1	3.76	0.01	0.1
RPI-8A	2/28/2017	396	1.2	335	1510	<0.001	0.05	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	0.002	0.315	1.9	1.3	0.50	0.24	1.0	1.9	0.1	0.1	
RPI-8A	5/4/2017	394	1.12	317	1640	0.001	0.06	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	0.004	0.374	3.9	1.6	0.5	0.1	1.7	1.9	2.2	0.05	0.2
RPI-8A	7/11/2017	362	1.08	284	1640	<0.001	0.06	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	0.004	0.361	1.0	0.4	0.3	0.2	0.4	1.9	0.7	0.007	0.1
RPI-8A	10/4/2017	371	1.07	279	1510	0.001	0.06	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	0.003	0.373	2.0	0.7	0.7	0.2	2.2	1.9	2.9	0.04	0.2
RPI-10	4/22/2016	1940	2.1	1040	7170	<0.001	<0.05	<0.001	<0.001	<0.005	<0.001	<0.001	0.012	0.006	1.50	**16.3**	1.8	12	0.18	2.0	0.9	**14.00**	0.03	0.2
RPI-10	7/14/2016	1970	2.5	1180	6240	0.002	<0.05	<0.001	<0.001	<0.005	<0.001	<0.001	0.009	0.011	1.37	5.0	1.8	2.1	0.15	1.7	1.5	3.80		
RPI-10	10/4/2016	1940	2.0	1060	6980	0.003	<0.05	<0.001	<0.001	<0.005	<0.001	<0.001	0.011	<0.005	1.38	12.2	1.3	0.43	0.11	2.9	1.4	3.33	0.03	0.1
RPI-10	2/28/2017	1920	2.1	1010	5900	<0.001	<0.05	<0.001	<0.001	<0.005	<0.001	<0.001	0.006	0.009	1.24	4.0	1.3	0.43	0.23	2.4	1.8	0.2	0.2	
RPI-10	5/4/2017	1920	2.04	1060	7240	0.002	<0.05	<0.001	<0.001	<0.005	0.001	<0.001	0.016	0.011	1.44	7.9	1.7	0.6	0.1	1.9	1.7	2.5	0.07	0.1
RPI-10	7/11/2017	1790	2.17	982	7070	<0.001	<0.05	<0.001	<0.001	<0.005	0.001	<0.001	0.008	0.012	1.38	1.4	0.4	0.5	0.2	2.0	1.8	2.5	0.03	0.1
RPI-10	10/4/2017	1800	1.87	1030	6490	<0.001	<0.05	<0.001	<0.001	<0.005	0.002	<0.001	0.011	0.009	1.49	1.5	0.7	0.7	0.2	4.5	1.8	5.2	0.06	0.2
RPI-14	2/24/2016	552	0.5	634	2160	<0.001	<0.05	<0.001	<0.001	<0.005	<0.001	0.001	0.006	0.002	0.551	3.1	1.1	0.18	0.13	0.9	1.1	1.08	0.1	0.2
RPI-14	4/22/2016	504	0.4	549	2200	<0.001	<0.05	<0.001	<0.001	<0.005	<0.001	0.001	<0.005	0.001	0.583	1.5	1.8	1.5	0.18	1.6	0.9	3.10	0.2	0.1
RPI-14	7/14/2016	558	0.4	541	2270	0.001	<0.05	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	<0.003	0.583	1.7	1.8	0.36	0.15	0.7	1.6	1.06		
RPI-14	10/4/2016	634	0.5	566	2530	<0.001	<0.05	<0.001	<0.001	<0.005	<0.001	0.001	0.005	<0.003	0.605	6.1	1.3	0.34	0.11	1.1	1.3	1.44	0.06	0.1
RPI-14	3/14/2017	594	0.7	575	2360	<0.001	<0.05	<0.001	<0.001	<0.005	<0.001	0.001	<0.005	0.001	0.601	5.4	1.6	0.25	0.13	1.8	2.0	0.08	0.2	
RPI-14	5/5/2017	580	0.57	541	2510	<0.001	<0.05	<0.001	<0.001	<0.005	<0.001	0.001	0.007	0.003	0.603	2.4	1.7	0.1	0.2	2.6	1.0	2.7	0.03	0.10
RPI-14	7/12/2017	586	0.42	546	2620	0.001	<0.05	<0.001	<0.001	<0.005	<0.001	0.001	0.006	0.003	0.559	1.2	0.9	0.2	0.2	0.8	1.8	1.0	0.01	0.2
RPI-14	10/5/2017	658	0.54	597	2550	0.002	<0.05	<0.001	<0.001	<0.005	<0.001	0.001	0.013	0.003	0.576	1.1	0.7	0.8	0.2	2.0	1.8	2.8	0.1	0.2
RPI-16A	2/22/2016	965	9.1	1140	3820	0.004	<0.05	<0.001	<0.001	<0.005	<0.001	<0.001	0.012	0.013	1.42	0.7	0.9	0.38	0.12	1.7	0.9	2.08	0.03	0.1
RPI-16A	5/3/2016	945	9.9	1040	4150	0.005	<0.05	<0.001	<0.001	<0.005	<0.001	<0.001	0.006	0.013	1.44	7.1	1.7	0.42	0.16	1.4	1	1.82	0.03	0.1
RPI-16A	7/15/2016	1060	9.8	1180	3990	0.004	<0.05	<0.001	<0.001	<0.005	<0.001	<0.001	0.006	0.015	1.61	1.8	1.8	0.92	0.16	1.5	1.6	2.42	0.04	0.2
RPI-16A	10/5/2016	1030	8.8	1120	4010	0.005	<0.05	<0.001	<0.001	<0.005	<0.001	<0.001	0.007	0.013	1.56	6.5	1.3	0.20	0.13	1.5	1.6	1.70	-0.01	0.1
RPI-16A	3/14/2017	1030	8.2	1140	4180	0.003	<0.05	<0.001	<0.001	<0.005	0.003	<0.001	<0.005	0.009	1.80	3.6	3.2	0.60	0.12	0.8	1.9	0.2	0.2	
RPI-16A	5/5/2017	1030	7.6	1110	4280	0.004	<0.05	<0.001	<0.001	<0.005	0.002	<0.001	0.011	0.013	1.85	2.9	1.7	0.5	0.2	1.6	1.1	2.1	1.3	0.10
RPI-16A	7/12/2017	1010	7.3	1080	4630	0.005	<0.05	<0.001	<0.001	<0.005	<0.001	<0.001	0.007	0.015	1.75	1.2	0.9	0.4	0.2	0.2	1.4	0.6	0.01	0.2
RPI-16A	10/5/2017	992	6.9	1060	4190	0.005	<0.05	<0.001	<0.001	<0.005	0.002	<0.001	0.019	0.013	2.04	1.3	0.7	0.3	0.2	1.7	1.7	2.0	0.09	0.2

Table 3 - Monitor Well Analytical Results (Page 3 of 3)

Monitor Well	Collection Date	Cl (mg/L)	NO3-T (mg/L)	SO4 (mg/L)	TDS (mg/L)	As-D (mg/L)	Ba-D (mg/L)	Be-D (mg/L)	Cd-D (mg/L)	Cr-D (mg/L)	Pb-D (mg/L)	Mo-D (mg/L)	Ni-D (mg/L)	Se-D (mg/L)	U-D (mg/L)	Gross Alpha-D (pCi/L)	Gross Alpha (MDC)-D (pCi/L)	Ra226-D (pCi/L)	Ra226 (MDC)-D (pCi/L)	Ra228-D (pCi/L)	Ra228 (MDC)-D (pCi/L)	Ra226+228 (pCi/L)	Th230-D (pCi/L)	Th230 (MDC)-D (pCi/L)
RPI-18A	2/24/2016	1110	<0.1	1180	3940	0.002	0.32	<0.001	<0.001	<0.005	<0.001	0.003	0.007	<0.001	0.131	2.0	1.1	0.28	0.12	0.2	1.1	0.48	0.05	0.2
RPI-18A	5/3/2016	995	<0.1	1020	3830	0.002	0.06	<0.001	<0.001	<0.005	<0.001	<0.001	0.016	0.002	0.138	6.1	1.7	1.9	0.16	1.5	1	3.40	0.005	0.2
RPI-18A	7/15/2016	1080	0.1	1150	3730	0.002	<0.05	<0.001	<0.001	<0.005	<0.001	<0.001	0.008	0.003	0.161	1	1.8	0.45	0.16	0.5	1.6	0.95	0.1	0.2
RPI-18A	10/5/2016	1090	0.2	1080	3790	0.002	<0.05	<0.001	<0.001	<0.005	<0.001	<0.001	0.013	0.001	0.156	3.4	1.3	0.65	0.12	0.8	1.4	1.45	0.04	0.2
RPI-18A	3/14/2017	1150	0.1	1120	4020	0.002	<0.05	<0.001	<0.001	<0.005	<0.001	0.003	0.009	<0.002	0.323	5.7	3.2	1.9	0.13	0.9	1.9	0.09	0.2	
RPI-18A	5/5/2017	1110	0.08	1050	4120	0.002	<0.05	<0.001	<0.001	<0.005	<0.001	0.002	0.017	0.003	0.290	3.4	1.7	0.4	0.2	1.2	1.1	1.6	0.2	0.20
RPI-18A	7/12/2017	1130	0.06	1020	4600	0.003	<0.05	<0.001	<0.001	<0.005	<0.001	<0.001	0.011	0.004	0.175	0.04	0.4	0.3	0.1	1.2	1.3	1.5	0.04	0.1
RPI-18A	10/5/2017	1330	0.26	1140	4400	0.003	<0.05	<0.001	<0.001	<0.005	<0.001	<0.001	0.019	0.004	0.171	0.3	0.7	0.6	0.2	0.7	1.7	1.3	0.05	0.09
RPI-19B	4/22/2016	1340	0.1	1040	5190	0.001	0.10	<0.001	0.001	<0.005	<0.001	0.001	0.015	0.002	1.22	5.8	1.7	4.7	0.18	0.7	0.9	5.40	0.1	0.2
RPI-19B	7/15/2016	790	<0.1	742	3030	<0.001	0.06	<0.001	<0.001	<0.005	<0.001	<0.001	0.011	0.003	0.809	2.0	1.8	1.0	0.15	0.5	1.6	1.50	0.05	0.2
RPI-19B	10/5/2016	545	0.3	544	2200	<0.001	0.05	<0.001	<0.001	<0.005	<0.001	0.002	0.009	0.002	0.627	9.7	1.3	2.9	0.11	1.3	1.3	4.20	0.03	0.2
RPI-19B	2/28/2017	1010	0.3	828	3750	<0.001	0.07	<0.001	<0.001	<0.005	<0.001	0.001	0.011	0.003	0.932	1.3	1.3	0.43	0.23	0.2	1.8	0.3	0.2	
RPI-19B	5/5/2017	1030	0.14	769	3820	0.001	0.07	<0.001	<0.001	<0.005	<0.001	0.002	0.017	0.003	0.912	2.1	1.7	0.4	0.2	1.4	1	1.8	0.08	0.20
RPI-19B	7/12/2017	583	0.09	543	2640	0.002	0.05	<0.001	<0.001	<0.005	<0.001	0.001	0.011	0.003	0.612	1.1	0.9	0.4	0.2	1.3	1.4	1.7	0.06	0.1
RPI-19B	10/4/2017	562	0.36	469	2240	0.001	0.06	<0.001	<0.001	<0.005	<0.001	0.002	0.008	0.003	0.629	0.9	0.7	0.4	0.2	-0.3	2.1	0.4	0.04	0.1
RPI-20A	2/22/2016	860	<0.1	1010	3140	0.007	<0.05	<0.001	<0.001	<0.005	<0.001	<0.001	0.007	<0.001	0.205	1.5	1	0.70	0.13	1.9	0.9	2.60	0.007	0.1
RPI-20A	4/22/2016	938	<0.1	1030	3680	0.006	0.05	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	0.002	0.212	8.3	1.8	6.9	0.19	1.7	0.9	8.60	0.2	0.2
RPI-20A	7/14/2016	781	<0.1	846	2960	0.006	<0.05	<0.001	<0.001	<0.005	<0.001	<0.001	0.005	<0.003	0.243	2.0	1.8	0.56	0.16	5.1	1.6	5.66		
RPI-20A	3/13/2017	978	0.02	1010	3430	0.006	<0.05	<0.001	<0.001	<0.005	<0.001	<0.001	0.006	0.003	0.265	7.5	1.6	0.47	0.13	2.7	1.6	0.2	0.2	
RPI-20A	5/4/2017	913	<0.05	1020	3580	0.006	<0.05	<0.001	<0.001	<0.005	<0.001	<0.001	0.006	0.007	0.434	3.2	1.7	0.4	0.1	0.9	1.8	1.3	0.09	0.2
RPI-20A	7/11/2017	793	<0.05	871	3300	0.009	<0.05	<0.001	<0.001	<0.005	<0.001	0.002	0.008	0.004	0.333	1.1	0.4	0.5	0.2	0.7	1.7	1.2	0.1	0.1
RPI-20A	10/4/2017	Dry																						
RPI-21B	7/14/2016	967	3.3	724	3160	0.003	0.05	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	0.018	0.840	7.7	1.8	6.6	0.16	5.3	1.3	11.90		
RPI-21B	10/4/2016	1050	3.0	687	3610	0.002	0.07	<0.001	<0.001	<0.005	<0.001	0.001	0.006	0.030	0.862	**16.4**	1.3	1.8	0.11	5.6	1.2	7.40	0.07	0.1
RPI-21B	2/28/2017	1040	3.2	701	3410	<0.001	0.06	<0.001	<0.001	<0.005	<0.001	<0.001	0.007	0.009	0.844	4.1	1.3	0.93	0.24	2.1	1.9	0.1	0.1	
RPI-21B	5/4/2017	1050	2.85	756	3860	0.002	0.06	<0.001	<0.001	<0.005	<0.001	0.001	0.008	0.011	1.00	8.3	1.6	0.8	0.1	1.2	1.8	2.0	0.09	0.1
RPI-21B	7/11/2017	914	2.86	677	3770	0.002	0.06	<0.001	<0.001	<0.005	<0.001	0.001	<0.005	0.012	0.930	1.9	0.4	0.9	0.2	3.2	1.8	4.1	0.07	0.1
RPI-21B	10/4/2017	957	2.92	711	3450	0.002	0.06	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	0.008	1.090	2.9	0.7	2.2	0.2	3.5	1.8	5.7	0.09	0.09
ACL		3,275		4,612	11,529	0.05	1.00	0.02	0.01	0.05	0.05	0.10	0.05	0.158	4.40	15.0						12.70	5.53	

Notes:
-D = Dissolved
-T = Total
Red = Value exceeds ACL

Table 4 - Surface Water Analytical Results

Monitor Well	Collection Date	Cl (mg/L)	NO3-T (mg/L)	SO4 (mg/L)	TDS (mg/L)	As-D (mg/L)	Ba-D (mg/L)	Be-D (mg/L)	Cd-D (mg/L)	Cr-D (mg/L)	Pb-D (mg/L)	Mo-D (mg/L)	Ni-D (mg/L)	Se-D (mg/L)	U-D (mg/L)	Gross Alpha-D (pCi/L)	Gross Alpha (MDC)-D (pCi/L)	Ra226-D (pCi/L)	Ra226 (MDC)-D (pCi/L)	Ra228-D (pCi/L)	Ra228 (MDC)-D (pCi/L)	Ra226+228 (pCi/L)	Th230-D (pCi/L)	Th230 (MDC)-D (pCi/L)
SC-1	2/25/2016	17	0.3	33	312	0.006	0.11	<0.001	<0.001	<0.005	<0.001	0.001	<0.005	0.001	0.0244	1.7	1.1	0.13	0.43	0.9	2.4	1.03	0.001	0.2
SC-1	4/21/2016	26	<0.1	39	307	0.006	0.1	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	0.001	0.0317	1.3	1.4	0.49	0.19	0.9	1.2	1.39	-0.02	0.2
SC-1	7/7/2016	15	<0.1	33	274	0.007	0.1	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	0.001	0.0200	0.7	1.5	0.31	0.18	1.8	1.3	2.11	0.02	0.1
SC-1	10/3/2016	9	<0.1	22	258	0.005	0.10	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	<0.001	0.0230	2.5	1.3	0.82	0.12	2.3	1.2	3.12	0.1	0.2
SC-1	3/13/2017	19	0.07	37	230	0.004	0.08	<0.001	<0.001	<0.005	<0.001	0.001	<0.005	<0.001	0.0205	2.7	3.2	1.8	0.13	0.1	1.9	1.9	0.1	0.3
SC-1	5/2/2017	35	<0.05	87	435	0.005	0.12	<0.001	<0.001	<0.005	<0.001	0.001	<0.005	<0.001	0.0543	1	1.7	0.5	0.2	-0.6	1.9	0.5	-0.006	0.2
SC-1	7/6/2017	6	<0.05	31	251	0.006	0.09	<0.001	<0.001	<0.005	<0.001	0.001	<0.005	<0.001	0.0160	0.6	1.5	0.4	0.2	0.7	1.7	1.1	0.03	0.2
SC-1	10/2/2017	10	0.13	29	260	0.005	0.11	<0.001	<0.001	<0.005	<0.001	0.001	<0.005	0.001	0.0226	0.6	0.7	0.5	0.2	1.0	2.0	1.5	0.05	0.2
SC-2	2/25/2016	16	0.3	32	307	0.006	0.10	<0.001	<0.001	<0.005	<0.001	0.001	<0.005	0.001	0.0229	0.7	1.1	0.03	0.23	1.3	1.3	1.33	0.02	0.2
SC-2	4/21/2016	25	<0.1	37	307	0.006	0.1	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	0.001	0.0275	2.2	1.4	1.1	0.19	1.6	1.2	2.7	0.04	0.1
SC-2	7/7/2016	15	<0.1	32	276	0.007	0.1	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	0.001	0.0183	1.1	1.5	0.35	0.18	6.7	1.3	7.05	0.07	0.2
SC-2	10/3/2016	9	<0.1	22	252	0.005	0.09	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	<0.001	0.0212	1.9	1.3	0.54	0.11	2.6	1.1	3.14	0.02	0.1
SC-2	3/13/2017	18	0.07	35	246	0.003	0.07	<0.001	<0.001	<0.005	<0.001	0.001	<0.005	<0.001	0.0192	2.7	3.2	0.63	0.12	1.8	1.9	2.43	0.08	0.2
SC-2	5/2/2017	35	<0.05	89	416	0.005	0.12	<0.001	<0.001	<0.005	<0.001	0.001	<0.005	<0.001	0.0512	1.3	1.7	0.5	0.2	2.8	2.0	3.3	0.03	0.2
SC-2	7/6/2017	6	<0.05	30	249	0.006	0.10	<0.001	<0.001	<0.005	<0.001	0.001	<0.005	<0.001	0.0171	2.0	1.5	0.3	0.2	1.8	1.8	2.1	0.03	0.2
SC-2	10/2/2017	9	0.13	30	263	0.005	0.11	<0.001	<0.001	<0.005	<0.001	0.001	<0.005	0.001	0.0220	0.8	0.7	0.4	0.2	0.6	1.9	1.0	-0.02	0.2
SW-1A	2/25/2016	3	0.5	14	235	0.005	0.08	<0.001	<0.001	<0.005	<0.001	0.001	<0.005	<0.001	0.0165	1.4	1.1	0.26	0.22	0.7	1.2	0.96	0.1	0.1
SW-1A	4/21/2016	3	0.4	13	218	0.005	0.08	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	0.001	0.0166	4	1.4	3.3	0.19	1.1	1.2	4.4	0.1	0.2
SW-1A	7/7/2016	2	<0.1	14	189	0.005	0.08	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	<0.001	0.0198	1.7	1.5	0.46	0.19	0.4	1.3	0.86	-0.01	0.2
SW-1A	10/3/2016	3	0.2	12	224	0.004	0.08	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	<0.001	0.0270	2.2	1.3	0.97	0.12	1.8	1.2	2.77	0.06	0.1
SW-1A	3/14/2017	4	0.2	22	243	0.004	0.07	<0.001	<0.001	<0.005	<0.001	0.001	<0.005	<0.001	0.0179	3.2	3.2	1.2	0.13	0.8	2.0	2.0	0.03	0.2
SW-1A	5/2/2017	24	<0.05	81	399	<0.001	<0.05	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	<0.001	<0.0003	1.2	1.7	0.3	0.2	1.1	1.6	1.4	0.07	0.2
SW-1A	7/6/2017	2	<0.05	13	217	0.006	0.09	<0.001	<0.001	<0.005	<0.001	0.001	<0.005	<0.001	0.0156	2.3	1.5	0.2	0.2	0.4	1.7	0.6	0.0008	0.2
SW-1A	10/2/2017	2	0.38	13	215	0.004	0.08	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	<0.001	0.0166	1.1	0.7	0.5	0.2	1.4	2.0	1.9	0.02	0.1
WEIR-2	2/24/2016	13	0.3	28	301	0.006	0.10	<0.001	<0.001	<0.005	<0.001	0.001	<0.005	<0.001	0.0196	2.0	1.1	0.23	0.13	0.2	1.1	0.43	0.03	0.2
WEIR-2	4/21/2016	19	<0.1	30	283	0.006	0.1	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	0.001	0.0212	6.2	1.4	0.52	0.19	1.1	1.1	1.62	0.007	0.1
WEIR-2	7/7/2016	13	<0.1	31	266	0.007	0.11	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	0.001	0.0194	-0.01	1.5	0.6	0.17	2.5	1.2	3.1	0.03	0.1
WEIR-2	10/3/2016	9	<0.1	22	268	0.005	0.09	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	0.001	0.0275	2.1	1.3	0.92	0.12	0.7	1.2	1.62	0.02	0.2
WEIR-2	3/13/2017	14	0.06	30	232	0.004	0.07	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	<0.001	0.0140	1.1	3.1	0.57	0.13	0.6	2.0	1.17	0.2	0.2
WEIR-2	5/2/2017	28	<0.05	80	408	0.005	0.11	<0.001	<0.001	<0.005	<0.001	0.001	<0.005	<0.001	0.0437	1.8	1.7	0.4	0.2	0.06	1.6	0.46	0.09	0.1
WEIR-2	7/6/2017	6	<0.05	30	250	0.004	0.08	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	<0.001	0.0159	2.2	1.5	0.3	0.2	-0.3	1.7	0.3	0.007	0.1
WEIR-2	10/2/2017	10	0.15	30	272	0.005	0.11	<0.001	<0.001	<0.005	<0.001	0.001	<0.005	0.001	0.0230	1.1	0.7	0.5	0.2	1.3	1.9	1.8	-0.0006	0.2
POE-DS	2/25/2016	18	0.2	33	312	0.006	0.10	<0.001	<0.001	<0.005	<0.001	0.001	<0.005	0.001	0.0235	1.6	1.6	0.21	0.31	1.9	1.7	2.11	0.2	0.2
POE-DS	4/21/2016	28	<0.1	42	327	0.006	0.11	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	0.001	0.0323	2.3	1.4	0.43	0.19	1.5	1.2	1.93	0.03	0.1
POE-DS	7/7/2016	16	<0.1	35	268	0.008	0.1	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	0.001	0.0202	0.8	1.5	0.47	0.18	1.4	1.3	1.87	0.08	0.2
POE-DS	10/3/2016	10	<0.1	23	243	0.005	0.09	<0.001	<0.001	<0.005	<0.001	0.001	<0.005	<0.001	0.0242	1.9	1.3	0.59	0.11	2.3	1.2	2.89	0.03	0.2
POE-DS	3/13/2017	19	0.06	37	258	0.004	0.07	<0.001	<0.001	<0.005	<0.001	0.001	<0.005	<0.001	0.0217	0.8	3.2	0.60	0.13	0.3	2.0	0.9	0.3	0.2
POE-DS	5/2/2017	37	<0.05	88	447	0.005	0.13	<0.001	<0.001	<0.005	<0.001	0.001	<0.005	<0.001	0.0496	2.7	1.7	0.4	0.2	-0.2	2	0.4	-0.003	0.2
POE-DS	7/6/2017	6	<0.05	31	259	0.006	0.10	<0.001	<0.001	<0.005	<0.001	0.001	<0.005	<0.001	0.0168	0.8	1.5	0.3	0.2	0.2	1.8	0.5	0.1	0.2
POE-DS	10/2/2017	10	0.11	30	268	0.005	0.11	<0.001	<0.001	<0.005	<0.001	0.001	<0.005	<0.001	0.0233	0.4	0.7	0.7	0.2	1.6	2.0	2.3	0.05	0.1

Notes:

-D = Dissolved

-T = Total