WESTERN NUCLEAR, INC.

2801 YOUNGFIELD, SUITE 340, GOLDEN, COLORADO 80401
TELEPHONE (303) 274-1767 FAX (303) 274-1762

August 29, 2008

Richard Chang
Project Manager
Special Projects Branch
Decommissioning and Uranium Recovery Licensing Directorate
Division of Waste Management and Environmental Protection
Office of Federal and State Materials and Environmental Management Programs
U.S. Nuclear Regulatory Commission
11545 Rockville Pike
Rockville, MD 20852

Re: Western Nuclear Inc., Split Rock Uranium Mill Tailings Facility, Source Materials License SUA-56, Proposed Amendments to License Condition 74.

Dear Mr. Chang:

On October 29, 1999 Western Nuclear Inc. submitted a Site Closure Plan which included a comprehensive groundwater evaluation and a request to change the groundwater monitoring and compliance standards for the Split Rock Uranium Mill Tailings Facility. The initial request was supplemented by numerous submittals, meetings and telephone conversations. Based on the information submitted, NRC prepared and published an Environmental Assessment for Groundwater Alternative Concentration Limits for the site on August 29, 2006. License Amendment 99 was issued on September 28, 2006 which incorporated changes evaluated in the Environmental Assessment for groundwater monitoring and compliance standards at the site. Groundwater monitoring and compliance requirements are included in License Condition 74.

A review of the license conditions indicates that the changes that were made in 2006 did not include all the items that were requested. As a result of not including all the requested changes, there are some discrepancies between the monitoring requirements and the compliance standards. In addition, the request to set limits for some of the hazardous constituents was not addressed. There also needs to be some clarification regarding the location of the points of exposure and modifications to the trigger levels at the points of exposure. This letter requests additional changes to the license to address those issues. It is believed that all the new requests are consistent with the original request and the Environmental Assessment.

To best describe the proposed changes to the license and the rationale for the change, each existing requirement from license condition 74 is presented followed by the proposed changes to the license. Supporting discussion for each proposed change is also presented.

74. The licensee shall implement a compliance monitoring program containing the following:

A. Sample wells JJ-1R, WN-39B, WN-41B, WN-42A, SWAB-1, SWAB-2, SWAB-4, SWAB-12, SWAB-22, SWAB-29, SWAB-31, and SWAB-32 semi-annually for uranium and sulfate and annually for aluminum, ammonia, antimony, arsenic, beryllium, cadmium, chloride, fluoride, lead, manganese, molybdenum, nickel, nitrate, pH, radium-226 and-228, selenium, sulfate, thallium, thorium-230,TDS, and uranium. Sample wells 1, 4R, 5, and 21 semi-annually for aluminum, ammonia, antimony, arsenic, beryllium, cadmium, chloride, fluoride, lead, manganese, molybdenum, nickel, nitrate, pH, radium-226 and-228, selenium, sulfate, thallium, thorium-230, TDS, and uranium. In addition, water levels shall be collected at all of the above wells for every sampling event.

This license condition is consistent with the 1999 Closure Plan and includes the list of hazardous constituents and indicator parameters that were identified in the groundwater study. The list of wells that

are to be sampled is consistent with the final list of wells that were discussed between 1999 and 2006. No changes are proposed for this condition

B. Comply with the following ground-water protection standards at point of compliance Wells 5 and 21, with background being recognized in Well 15:
beryllium = 0.05 mg/L, cadmium = 0.01 mg/L, chromium = 0.05 mg/L, lead = 0.05 mg/L, nickel =0.05 mg/L, selenium = 0.013 mg/L, and thorium-230 = 0.95 pCi/L.

C. Comply with the following alternate concentration limits in the northwest valley at point of compliance Well 5, with background being recognized in Well 15:
ammonia = 0.61 mg/L, manganese = 225 mg/L, molybdenum = 0.66 mg/L, nitrate = 317 mg/L, radium-226 and -228 = 7.2 pCi/L, and natural uranium = 4.8 mg/L.
Comply with the following alternate concentration limits in the southwest valley at point of compliance Well 21, with background being recognized in Well 15:
ammonia = 0.84 mg/L, manganese = 35 mg/L, molybdenum = 0.22 mg/L, nitrate = 70.7 mg/L, radium-226 and -228 = 19.9 pCi/L, and natural uranium = 3.4 mg/L. [Applicable Amendments: 25, 27, 36, 39, 40, 44, 48, 51, 56, 58, 61, 62, 67, 69A, 79, 89, 98, 99]

The proposed changes to this license condition are as follows:

Comply with the following groundwater protection standards at point of compliance Wells 5 and 21:

Table 1. Groundwater Protection Standards.

Constituent	Well 5	Well 21
Aluminum	37(1)	37(1)
Ammonia	0.61(2)	0.84(2)
Antimony	0.006(3)	0.006(3)
Arsenic	0.1(4)	0.1(4)
Beryllium	0.01(4)	0.01(4)
Cadmium	0.014(4)	0.014(4)
Fluoride	4(3)	4(3)
Lead	0.05(4)	0.05(4)
Manganese	225(2)	35(2)
Molybdenum	0.66(2)	0.22(2)
Nickel	0.73(1)	0.73(1)
Nitrate	317(2)	70.7(2)
Radium 226+228	7.2(2)	19.9(2)
Selenium	0.05(5)	0.05(5)
Thallium	0.003(4)	0.003(4)
Thorium 230	10(6)	10(6)
Uranium - Nat	4.8(2)	3.4(2)

Note: all values in mg/l
(1) Risk-based standard
(2) ACL
(3) MCL
(4) Background
(5) Current EPA MCL – note – 10 CFR 40 App A, Table 5C limit is 0.01 mg/L, therefore standard for Selenium is an ACL

(6) Calculated MCL – Gross Alpha MCL = 15 pCi/L (excluding uranium and radon). Gross Alpha includes Thorium 230 and Radium 226+228. If Radium 226+228 at 5 pCi/L then Thorium 230 limit is 10 pCi/L.

The point of compliance wells in the existing license are consistent with the 1999 plan, however, the statement that well 15 is the background well is not consistent with the current understanding. Well 15 was historically designated as the background well but was found to be within the contaminate plume during the groundwater studies that were reported in 1999.

The constituents included in license condition 74B are not consistent with the 1999 Closure Plan or with License Condition 74A. The list of hazardous constituents that are required to be sampled under license condition 74A include several constituents that do not have compliance limits and one constituent (chromium) has a compliance standard but is not included in the list of constituents to be monitored. Chromium was determined to not be a hazardous constituent for the site.

The limits included in the proposed license condition Groundwater Protection Standards table are the greater of background or maximum concentration limits (MCLs). For constituents where background or MCLs could not be achieved, alternative concentration limits (ACLs) were requested and approved. Background values for all constituents were developed and discussed in the 1999 Closure Plan.

The Groundwater Protection Standards Table includes notation which designates the rationale for each proposed standard. The ACLs included in the table are consistent with the ACLs in the current license condition 74C. All of the limits in the proposed Groundwater Protection Standards Table were originally proposed and discussed in detail in Section 4.1 and Table 17 of the 1999 Closure Plan.

In the 1999 report, the proposed standard for selenium was set at the current MCL promulgated by the US EPA. Recent discussions with NRC staff have indicated that the position of the NRC is that the standards listed in Table 5C of Appendix A to 10 CFR 40 supersede the current EPA MCLs at uranium mill tailings sites. The current EPA MCL for selenium is 0.05 mg/l while the limit listed in Table 5C is 0.01 mg/l.

It was originally proposed in 1999 that the compliance limit for selenium be set at 0.05 mg/l. That request is reiterated now. It has been suggested that the appropriate framework for setting the selenium standard at the current EPA MCL is to request an ACL for selenium at the EPA MCL. Regardless of the category for the standard, setting the limit for selenium at the current EPA MCL of 0.05 mg/l will be protective as the EPA has determine this level to be protective.

Groundwater monitoring indicates that selenium concentrations at POC well 5 is greater than the Table 5C limit of 0.01 mg/l but less than the EPA MCL of 0.05 mg/l. The current values are approximately 0.02 mg/l. The other POC well (well 21) has concentrations less than 0.01 mg/l. Groundwater modeling indicates that concentrations will continue to decline over time and therefore it is anticipated that future concentrations for selenium will remain less than 0.05 mg/l in POC well 5. Therefore, it is not anticipated that concentrations measured at the POC wells will exceed the proposed standard for selenium.

Concern has been raised about the concentration of selenium in well WN 42A which is a monitoring well down-gradient from POC well 5. Values in WN 42A have been as high as 0.042 mg/l. Recent samples taken in April 21, 2008 had a selenium concentration of 0.028 mg/l. Given the recent sample value it is believed that well WN 42A and all other wells will continue to have selenium values less than the proposed standard of 0.05 mg/l.

D. Comply with the following ground water trigger levels at the point of exposure: Trigger Levels for the Split Rock aquifer: ammonia = 0.5 mg/l, manganese = 0.73 mg/L, molybdenum = 0.18 mg/L, nitrate = 10 mg/L, radium-226 and -228 = 5.0 pCi/L, and natural uranium = 0.03 mg/L or 0.3 for SWAB-32.

Trigger Levels for floodplain aquifer: ammonia = 0.5 mg/L, manganese = 2.39 mg/L, molybdenum = 0.18 mg/L, nitrate = 10 mg/L, radium-226 and -228 = 5.0 pCi/L, and natural uranium = 0.03 mg/L.

It is proposed that this license condition be changed to the following:

Comply with the following ground water trigger levels at the point of exposure wells which are defined as wells JJ-1R, SWAB-12, SWAB-22, SWAB 31 and SWAB-32:

Table 2. Trigger Level Values for Point of Exposure Wells

Well	Sulfate	Uranium
JJ-1R	100 mg/l	0.03 mg/l
SWAB 12	150 mg/l	0.1 mg/l
SWAB 22	150 mg/l	0.05 mg/l
SWAB 31	50 mg/l	0.05 mg/l
SWAB 32	100 mg/l	0.3 mg/l

The wells listed in the table have been discussed and delineated at the POE wells. It is proposed that the POE wells be included in the license to avoid any future confusion regarding which wells are POE wells.

The existing license condition has trigger levels for the constituents for which ACLs have been established. Not all of the ACL constituents are mobile and therefore do not make good candidates for early indication of seepage. It has been shown that the best indicators of seepage at the site are uranium and sulfate. Further, uranium and sulfate are the two constituents that are measured on a semi-annual basis for these wells. Therefore these two constituents are proposed for trigger level values.

It is also proposed that the trigger limits be changed to be consistent with background concentrations. For example, the existing trigger limit for uranium is set at the MCL for uranium at 0.03 mg/l (except for well SWAB-32 which has been shown to have naturally occurring uranium at concentrations greater than the rest of the site). Site wide background values for uranium in the Split Rock Aquifer is 0.13 mg/l as documented in Table 3 of the 2006 NRC Environmental Assessment. However, it is recognized that the concentrations in some of the POE wells are less than the statistically derived background values and setting the trigger levels at the statistical background values might not be appropriate. Therefore it is proposed that the trigger levels be based on historic values measured in each of the POE wells.

Figures 1 and 2 show the historic uranium and sulfate values for the POE wells. Although there are limited data, a visual upper limit can be estimated that would be an appropriate trigger levels to indicate if conditions are different and further evaluation would be warranted. These visual limits for each well are proposed for trigger levels in Table 2. It is possible, when additional data are available, that a statistically based intra-well trigger value could be calculated for each well. In the interim, the proposed trigger levels will provide the necessary early indication of changing conditions.

E. Comply with the following surface water trigger levels at the point of exposure: ammonia = 0.5 mg/L, manganese = 0.05 mg/L, molybdenum = 0.18 mg/L, nitrate = 10 mg/L, radium-226 and -228 = 5.0 pCi/L, and natural uranium = 0.03 mg/L.

It is proposed that the license condition be changed to the following:

Comply with the following surface water trigger levels at surface water monitoring locations SW-2, and SW-5: natural uranium = 0.03 mg/l and sulfate = 100 mg/l.

As with the groundwater POE locations, sulfate and uranium are the best indicators of seepage and these parameters are monitored semi-annually. The trigger levels were also determined in the same manner as they were for the groundwater POE wells. Figures 3 and 4 show the historic uranium and sulfate values

for the surface water sampling locations. It is proposed that the uranium trigger level remain at 0.03 mg/l and the sulfate trigger level be set at 100 mg/l. As with the groundwater trigger levels, it might be possible to change the trigger levels in the future to a more statistically based value once more data have been collected.
License condition 24 requires that surface water be sampled at five locations. SW-1 is an up-gradient from the site and SW-2 through SW-5 are down-gradient from the site. Sample locations SW-2 and SW-5 are selected as POE locations to be consistent with the draft DOE LTSP.

One addition minor modification is proposed to the license relative to surface water sampling. Current license condition 24 describes the location of the surface water sampling points. It is proposed that the license condition be modified in its description of the location of SW-5. The current language states that SW-5 is located in section 5. It is proposed that this be changed to the boundary between sections 5 and 6. This will allow the sample to be taken from property that will be transferred to the DOE. Moving this sample point slightly up-stream will have no influence on the sampling results.

F. The licensee shall submit by December 15 of each year, a review of the corrective action program and its effect on the aquifer.
[Applicable Amendments: 25, 27, 36, 39, 40, 44, 48, 51, 56, 58, 61, 62, 67, 69A, 79, 99]

The corrective action program was discontinued in 2006. Therefore this license condition should be deleted.

G. The licensee shall repair all erosion protection thin spots on the groundwater corrective action ponds cover and the area between the corrective action ponds and the reclaimed tailings impoundment.

Previous correspondence and a site visit by NRC staff indicate that the appropriate repair has been completed. This license condition should therefore be deleted.

Please contact me if you have any questions or need clarification.
We appreciate your timely review of this request as we are committed to resolving the remaining few issues before license termination.

Sincerely

L. J. Corte by LM

Lawrence J. Corte
President
Western Nuclear, Inc.

cc: Brad DeWaard, Western Nuclear, Inc.
Anne Thomas, Western Nuclear, Inc.
Harley Shaver, Esq.
Steve Hall, Stoller – Grand Junction
Scott Surovchak, DOE

Figure 1 - Sulfate in POE Wells

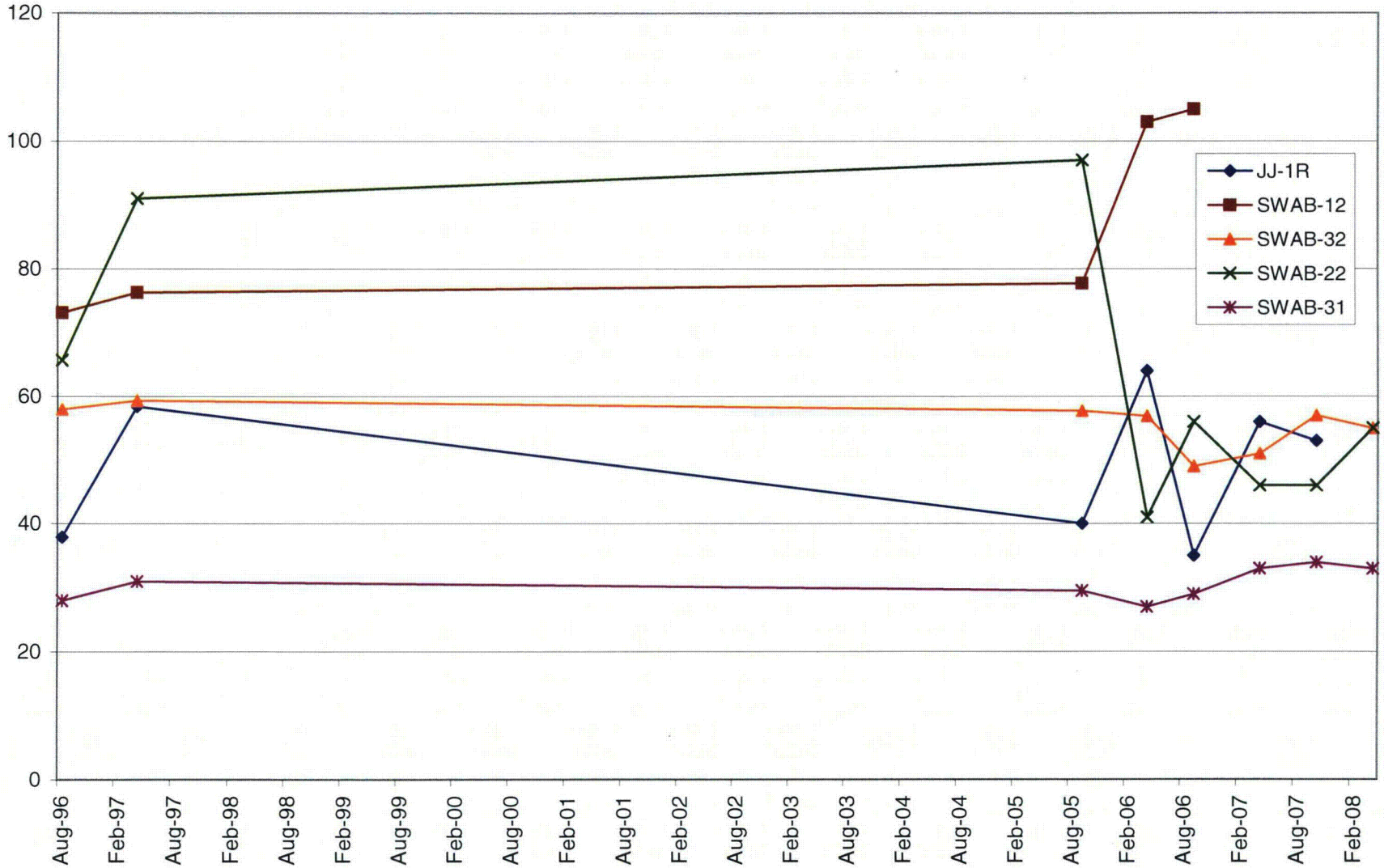

Figure 2 - Uranium in POE Wells

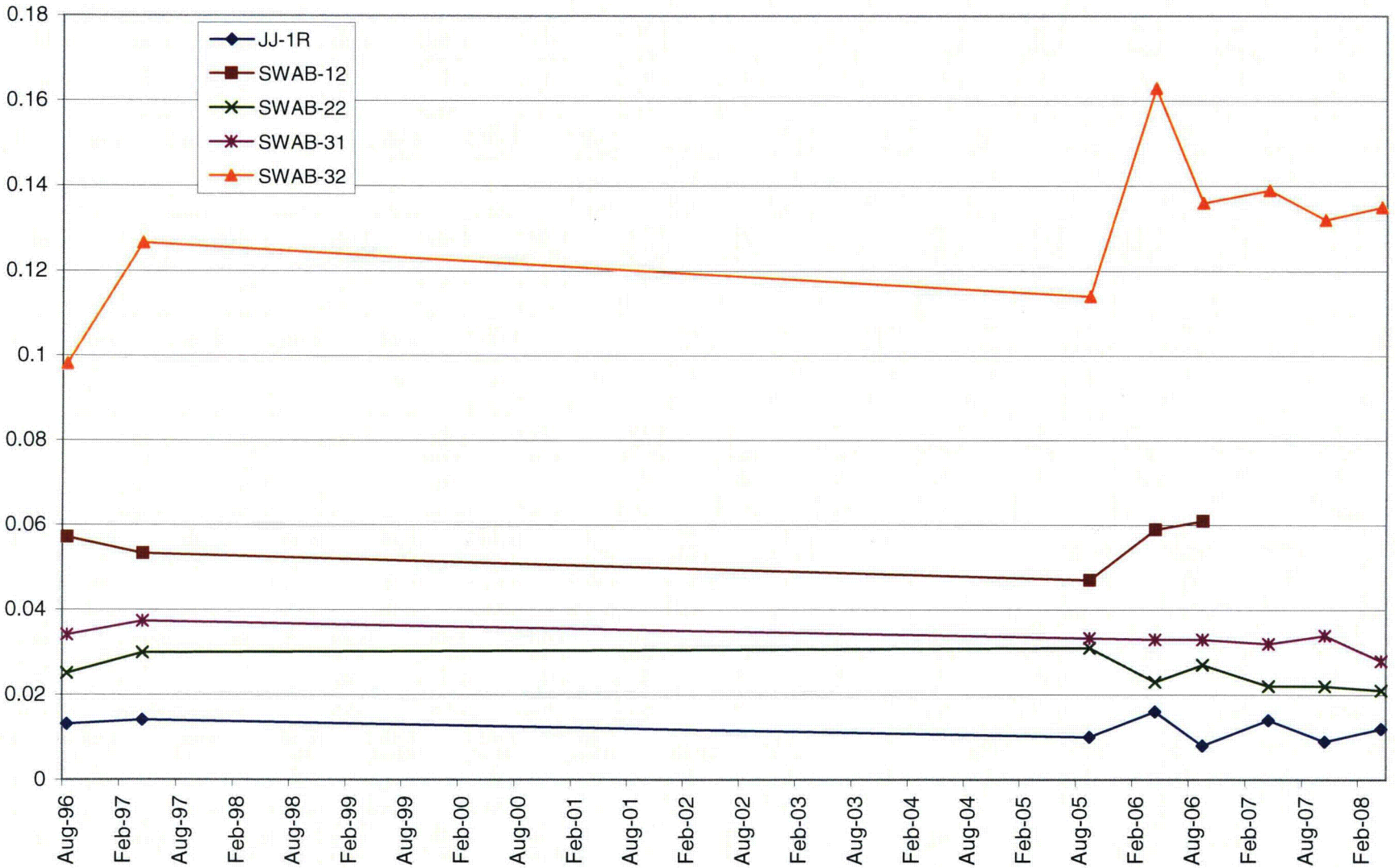

Figure 3 - Surface Water Sulfate

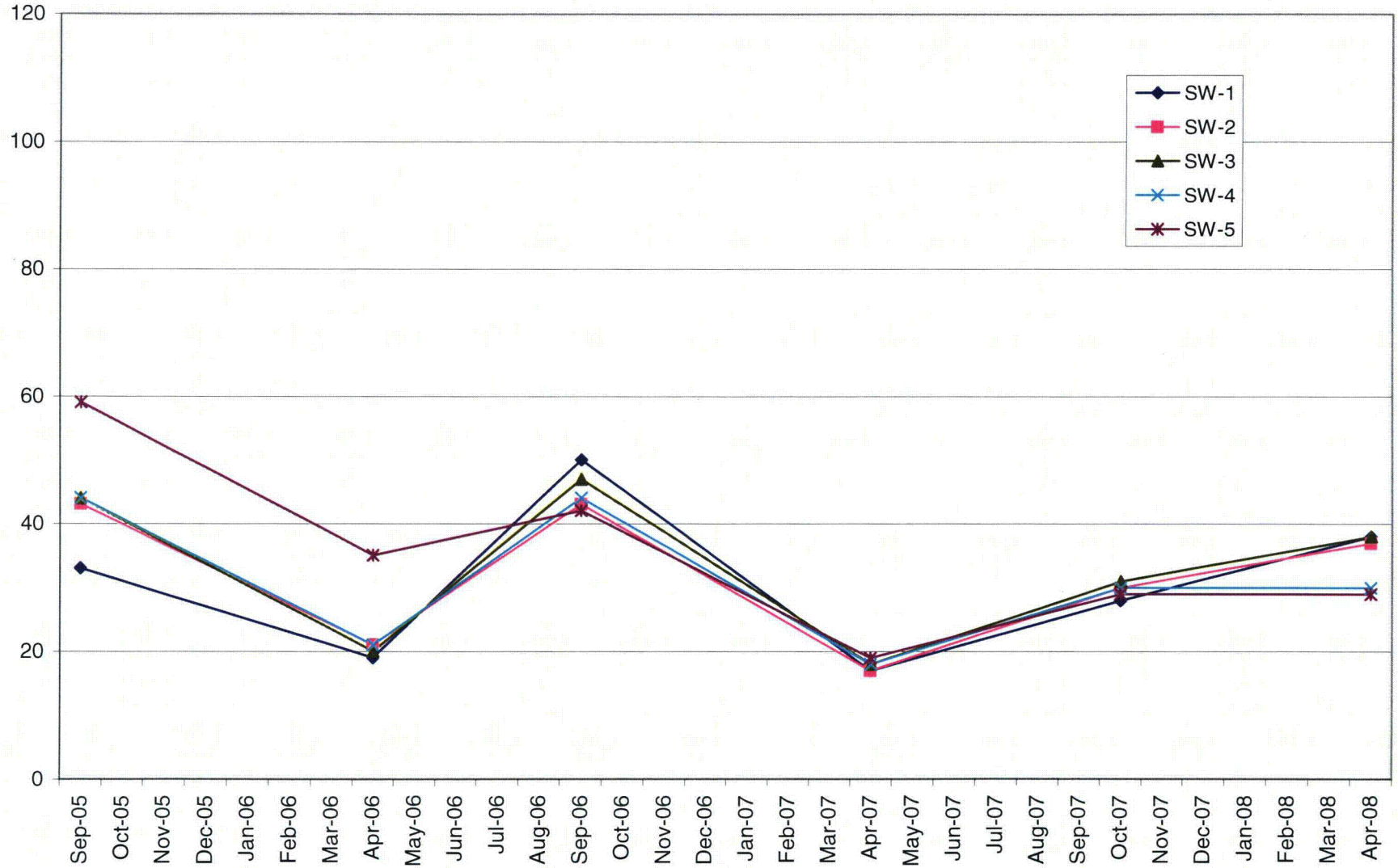

Figure 4 - Surface Water Uranium