

TECHNICAL MEMORANDUM-ATTACHMENT A

To: John Hamrick, Jim Cain, Cotter Corporation
From: Errol Lawrence, HydroSolutions
Date: February 21, 2012
Subject: Sampling Frequency Reduction for Dam to Ditch Area Monitor Locations

Cotter Corporation conducted a groundwater investigation to evaluate elevated levels of uranium and molybdenum in the Dam to Ditch Area north of the Cañon City Milling Facility and the Soil Conservation Service (SCS Dam). As part of the investigation, Cotter installed two monitor wells within the Restricted Area (051 and 052) and two monitor wells north of the Restricted Area within Lincoln Park (048 and 049) (Figure 1). Each of the wells, with the exception of well 049, has been sampled for water quality on a monthly basis since shortly after installation in September 2010. Well 049 has been dry on each sampling attempt. The remaining wells have now been sampled at least 15 times, a sufficient number of events that the results can be considered to be statistically representative of conditions at those locations. Table 1 indicates the number of sampling episodes for each well and the average, minimum, maximum, and standard deviation of the uranium and molybdenum values for each well.

Table 1. Sampling Statistics for Dam to Ditch Monitor Locations Installed in September 2010.

Sample ID	Analyte	Date of First Sampling	Number of Samples	Average (mg/L)	Minimum (mg/L)	Maximum (mg/L)	Standard deviation (mg/L)
048	U	9/16/10	15	0.0136	0.0083	0.0171	0.0028
	Mo	9/16/10	15	0.0427	0.0200	0.0660	0.0148
049	U	9/8/10*	0	-	-	-	-
	Mo	9/8/10*	0	-	-	-	-
051	U	9/8/10	16	0.7538	0.6400	0.9000	0.0751
	Mo	9/8/10	16	3.6910	2.3600	4.2400	0.4887
052	U	9/9/10	16	0.0042	0.0027	0.0086	0.0013
	Mo	9/9/10	16	0.0488	0.0300	0.1041	0.0186

*Attempted to sample but well was dry during initial attempt and has remained dry or had insufficient water for sampling in all subsequent sampling efforts.

Two of the wells have remained below the Colorado Groundwater Quality Standard (CGWQS) for uranium (0.035 mg/L) in all sampling events (048 and 052). Well 051 has exceeded the uranium CGWQS on each sampling event. The average Mo concentration for each of the three wells is above the CGWQS of 0.035 mg/L.

It is recommended that the monitor wells installed in September 2010 continue to be monitored and sampled, as conditions allow, but at a quarterly rather than monthly frequency. Sufficient data has been collected to warrant a decrease to quarterly sampling. There is no added benefit to continuing sampling on a monthly basis.

Additional monitor wells are being added to the current groundwater monitoring program as a result of an ongoing investigations and pilot remedial studies in the Dam to Ditch Area, the Old Ponds Area and the Former Milling Area. In the interest of conserving resources to address upcoming increases in analytical efforts, it would be practical and sensible to reduce the frequency of sampling and analysis of the recently installed Dam to Ditch Area investigation monitor wells to quarterly events.