



January 13, 2015

Office of Water Quality Water-Quality Information Note 2015.04

Subject: Low-level detections in high capacity capsule filters

The purpose of this WaQI-Note is to alert field and project staff to random low-level detections in blanks for high-capacity capsule filters (NFSS stock number Q398FLD).

History/Background:

- Some project chiefs have reported random low-level detections of cobalt and manganese in blank samples.
- These random detections have occurred since 2009.
- When contamination has been detected, it occurred at low-levels (Figures below) and all detections below may not be solely attributed to contamination of the filter.
- Between October 1, 2008 and September 30, 2014, more than 1,300 cobalt (by cICPMS) and 1,800 manganese (by ICPMS) blank samples were submitted to the National Water Quality Laboratory (NWQL).
- Concentrations were reported to be less than the reporting level to about 5 µg/l for cobalt and about 15 µg/l for manganese as shown in the figures 1 and 2 below.
- Results from quality assurance analyses that were provided on the Certificate of Analysis (COA) are average concentrations of analytes based on a limited number of filters.

Action by the Quality Assurance Section of the NWQL:

- Increased number and randomness of filters tested.
- The current COAs have been updated to include data for all filters tested and the range of results.

Action for field staff and project chiefs:

- Record all NWIS filter lot numbers (not manufacturer lot numbers) in NWIS, P99206.
- Review the COA for detections and analytes of interest.
- Determine relevance of environmental data to detections on COA.
- Evaluate environmental concentrations with respect to field blank data.
- If blank and environmental concentrations are difficult to discern:
 - Delete appropriate labcodes from analytical request, if not important to study

- o If important to study, use an alternate filter, Aquaprep disk filter (Q460FLD)
- Continue to rinse high-capacity filters with **2 liters** of deionized or inorganic blank water before processing samples as described in [WaQI-Note 2014.07](#).
- Quality-assurance tests have confirmed that, within a day of use, the capsule filter must be rinsed with a minimum of 2 L of IBW or quality-controlled DIW (NFM Chapter 2, p. 43). [Certificate of Analysis and NWIS lot numbers](#) can be found on the NWQL Quality-Assurance webpage under National Field Supply Service (NFSS).

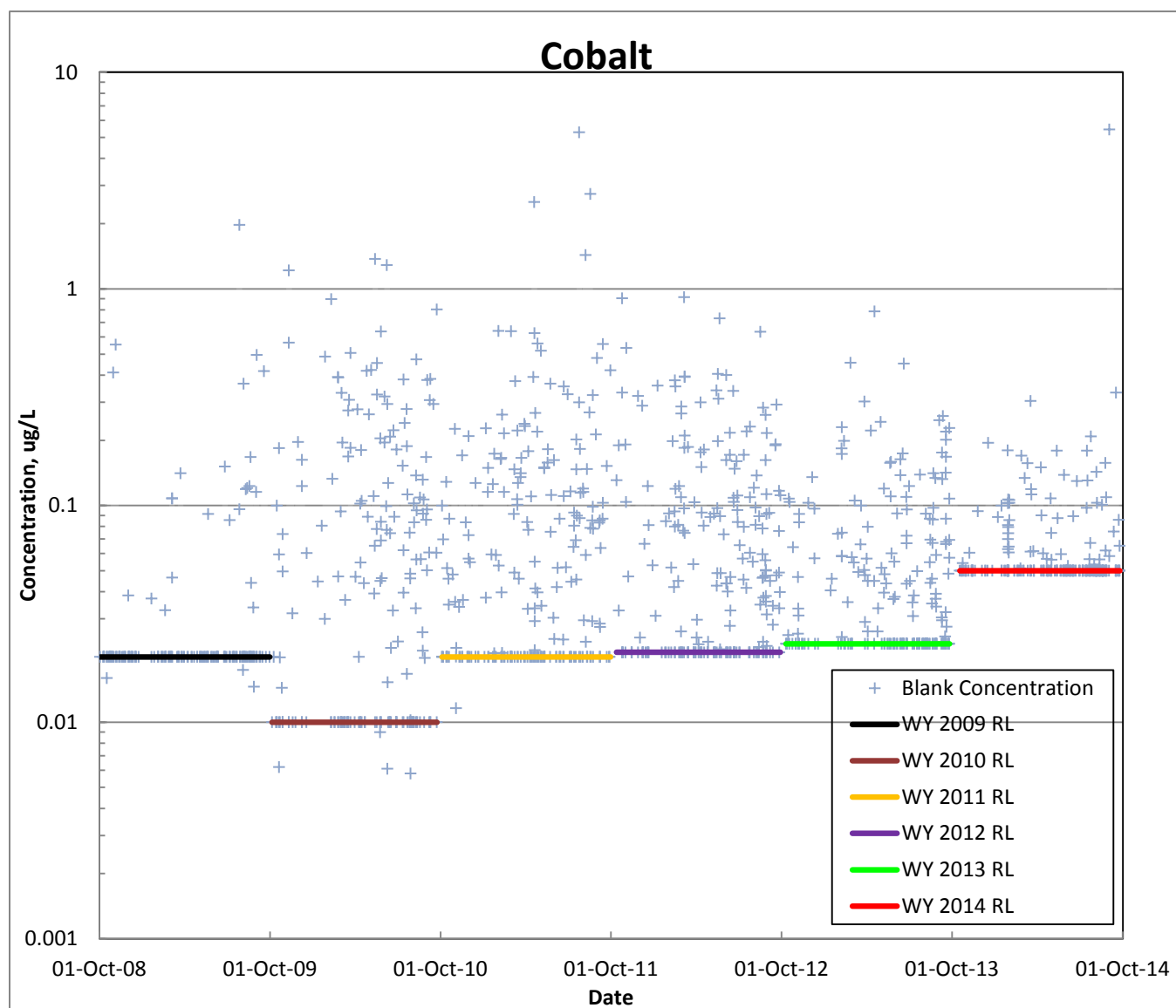


Figure 1. Cobalt concentrations in blank samples and reporting levels 2009 – 2014.

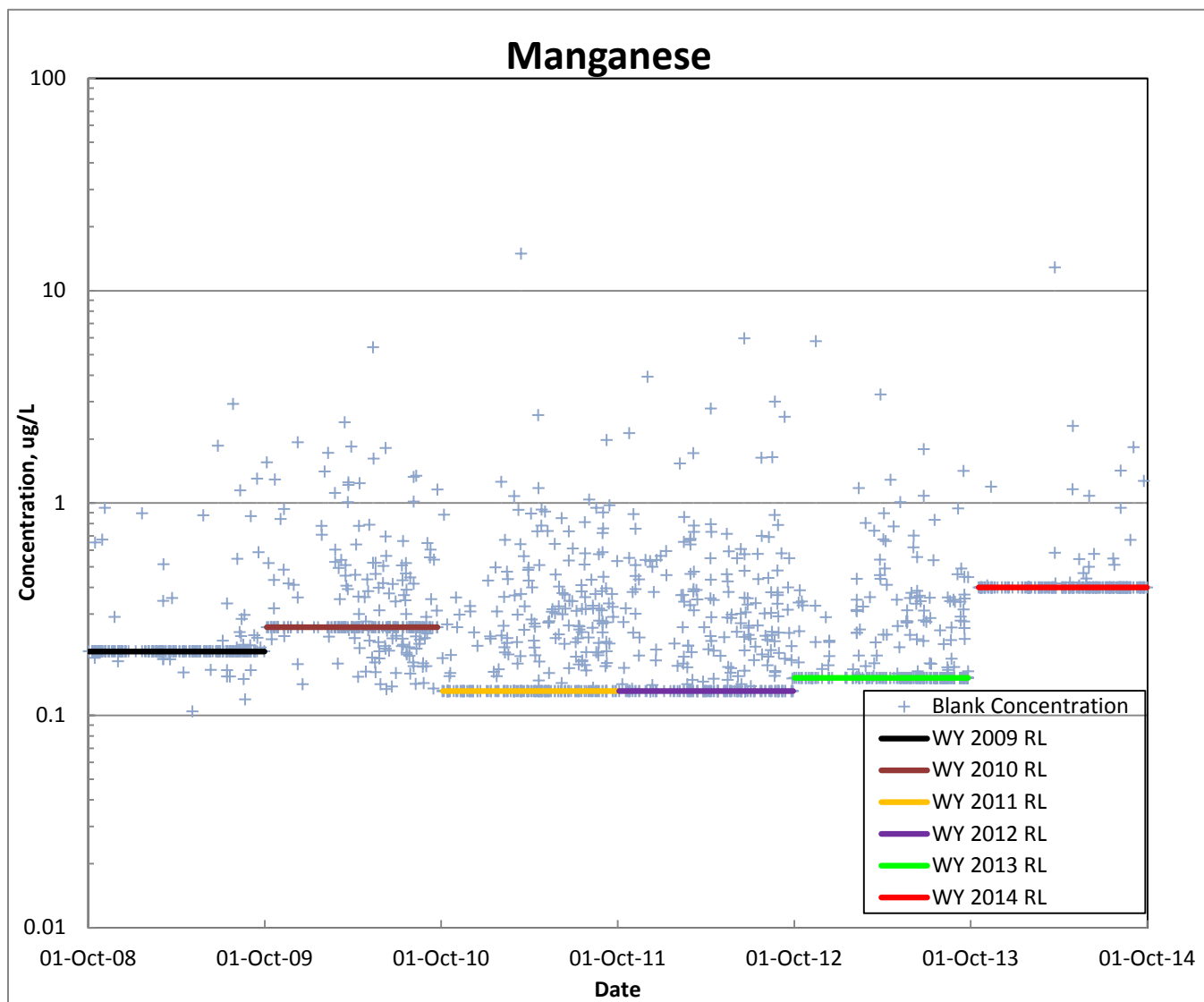


Figure 2. Manganese concentrations in blank samples and reporting levels 2009 – 2014.

Please send questions, comments, and recommendations for additions/updates to Stan Skrobialowski, sski@usgs.gov.

WaQI Notes are archived on the Office of Water Quality web site,
<http://water.usgs.gov/usgs/owq/WaQI/index.html>

Signed,

The Office of Water Quality 1/13/15

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