UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

September 13, 2011

Reply to: Donald M. Brown
Attn of: OEA-095

MEMORANDUM

Subject: Data Validation Report for the Anions Analysis of the Water Samples Collected from the Yakima Basin Nitrate Study Phase 2

From: Donald M. Brown, QA Chemist DMB
USEPA Region 10, Office of Environmental Assessment, Environmental Services Unit

To: Ginna Grepo-Grove, Regional Quality Assurance Manager
USEPA Region 10, OEA

The quality assurance (QA) review of the analytical data generated from the analysis of forty-three (43) water samples collected from the Yakima Basin Nitrate Study Phase 2 has been completed. These samples were analyzed for Chloride and Nitrate in accordance with EPA Method 300.0 by the USEPA Region 10 Laboratory located in Port Orchard, Washington.

This review was conducted for the following samples from the Phase 2 Study:

10096324	10096325	10096329	10096330	10096331	10096336
10096354	10096362	10096363	10096364	10096368	10096428
10096429	10096433	10096434	10096435	10096450	10096451
10096455	10096456	10096459	10096461	10096465	10096513
10096514	10096515	10096517	10096518	10096520	10096522
10096523	10096524	10096527	10096529	10096530	10096531
10096533	10096534	10096594	10096595	10096596	10096597
10096599					

All sample analyses were evaluated following EPA's Stage 4 Data Validation Manual Process (S4VM). The validation was conducted according to the Quality Control Specifications outlined in the Quality Assurance Project Plans for the Yakima Basin Nitrate Study Phase 2 (January 2010) and Phase 3 (April 2010) as well as the laboratory's current Quality Assurance Manual and Standard Operating Procedures (SOPs). The conclusions presented herein are based on the information provided for the review.

Holding Time

Sample holding times were evaluated from the dates of sample collection to the dates of sample analysis. All samples were analyzed within the 48 hour holding time for nitrate and the 28 day holding time for chloride.

Sample Results & Reporting Limits

All sample results that fall below the Method Reporting Limit (MRL) were assigned the value of the MRL and the "U" qualifier is attached.

Quality Control Results Summary

The assessment of instrument specific quality control results included instrument calibration, verification standards, and blanks. Sample quality control results were assessed for matrix spike and matrix spike duplicate (MS/MSD) recoveries as well as laboratory duplicate analyses. The following table is a list of these quality control indicators, the relevant evaluation criteria, and an indication of compliance.

Quality Control Test	Outliers?	Evaluation Criteria
Instrument and Method Blanks	N	± MRL
Method Reporting Limit Verification Stds.	N	70 – 130%
Low Range Instrument Performance Checks	N	90 – 110%
High Range Instrument Performance Checks	N	90 – 110%
Laboratory Control Samples	N	90 – 110%
Laboratory Fortified Blanks	N	90 – 110%
Matrix Spike / Matrix Spike Duplicate	N	80 – 120 %
Laboratory Duplicates	N	< 20% RPD

A comparison of the reported analyte values was conducted against the instrument data and the results were verified. Data qualification was appropriately conducted at the laboratory where data quality indicator exceedances required. Data qualifiers applied during the laboratory's data reduction processes are as follows:

Data Qualifiers

Below are the definitions for the codes used qualifying data from these analyses. When more than one quality issue was involved, the most restrictive qualifier has been attached to the data.

U - The analyte was not detected at or above the reported value.