



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10 LABORATORY
7411 Beach Dr. East
Port Orchard, Washington 98366

QUALITY ASSURANCE MEMORANDUM
FOR MICROBIOLOGICAL ANALYSES

DATE: April 28, 2010

TO: Curt Black, Project Manager
Office of Environmental Assessment, Risk Evaluation Unit, US EPA Region 10

From: Stephanie Bailey, Microbiologist *SB*
Office of Environmental Assessment, Laboratory, US EPA Region 10

SUBJECT: Quality Assurance Review of the Yakima Nitrate Study, Phase 3

Project Code: ESD-163C
Account Code: 1011B10P201B53C

The following is a quality assurance review of the results for the bacterial analyses (total coliform, fecal coliform and *E. coli*) of samples from the Yakima Nitrate Study, Phase 3. The analyses were performed by EPA microbiologists following US EPA and Laboratory guidelines.

This review was conducted for the following samples, inclusive: 10154206- 4208, 4211- 4221, 4223- 4229 and 4281- 4282. Please note other results for this project (fecal coliform for primary effluent/dairy lagoons and microbial source tracking) will be provided at a later date.

1. Data Qualifications

Comments below refer to the quality control specifications outlined in the Laboratory's current Quality Assurance Manual, Standard Operating Procedures (SOPs) and the Quality Assurance Project Plan (QAPP). No excursions were required from the method's Standard Operating Procedure

All measures of quality control met Laboratory/QAPP criteria. All positive culture control measures demonstrated correct responses for this set of analyses. The sterility controls in this analytical batch showed no growth of organisms. The transfer blank did not contain coliform bacteria. No qualification was required based on sterility controls or blank analyses.

Duplicate analysis was performed on sample 10154214. No qualification was required based on duplicate analysis.

The Region 10 Laboratory's Quality System has been accredited to the standards of the National Environmental Laboratory Accreditation Conference (NELAC).

2. Sample Transport and Receipt

During transport and upon sample receipt, no conditions were noted that would impact data quality for this project.

3. Sample Holding Times

For drinking water samples, a holding time of 30 hours must be met. The holding time requirement was achieved for these water samples. No qualification was required based on holding time.

4. Laboratory Quality Control

All laboratory equipment and supplies used in this analytical procedure met the criteria as set forth in method SM9222B.

5. Reporting Limits

All sample results that fall below the detection limit are assigned the value of the detection limit with the "<" symbol attached. This means if the target organism is present in the sample, the level is below the minimum level at which the Laboratory is able to detect it.

6. Changes from Preliminary Data

No preliminary data was provided.

7. Data Qualifiers

No data qualifiers were necessary.

8. Definitions:

Negative controls - Sterility controls and transfer blanks prepared and analyzed with samples to assess whether there was any contamination introduced throughout the procedure. Results must show no bacterial growth.

Negative culture control - Test that demonstrates that the medium does not support the growth of a non-target organism or allow a reaction by a non-target organism which could be interpreted as a false positive result.

Positive culture controls - Tests that demonstrate that the medium can support the growth of the target organism and produces the expected reaction when the organism is present.