UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
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Reply to: OEA-095
Attn of: grepo-grove.gina@epa.gov

MEMORANDUM

Subject: QA Narrative Report for the Trace Organic Compound Analysis of Water, Waste Water and Lagoon Samples Collected from the Phase 3 Yakima Valley Nitrates Study

From: Ginna Grepo-Grove, R10 QA Manager
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To: Michael Cox, Project Officer, OEA
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CC: Stephen R Hutchins, TOPO, USEPA, NRMRL

The quality assurance (QA) review of the analytical data generated from the analysis of 54 samples collected from the above referenced site has been completed. These samples were analyzed for waste organics following the Standard Operating Procedure for the "*Analysis of Waste Water Samples by Gas Chromatography/Mass Spectroscopy*" – USGS SOPs 1433 and 4433. The analyses were performed by the USGS National Water Quality Laboratory located in Denver CO.

The following samples were evaluated in this validation report:

Station ID	Location ID	Location	Date Sample Collection
10154201	WW-01	Up gradient- Haak	04/13/2010
10152402	WW-02	Supply Well-Haak	04/13/2010
10154203	WW-03	Down gradient-Haak	04/13/2010
10152404	WW-04	Down gradient-Haak	04/13/2010
10154205	WW-05	Down gradient-Haak	04/13/2010
10152406	WW-06	Up gradient- Haak	04/15/2010
10154207	WW-07	Supply Well-De Ruyter	04/16/2010
10152408	WW-08	Supply Well- D&A	04/16/2010
10164209	WW-09	Supply Well-Cow Palace	04/20/2010
10162410	WW-10	Supply Well-Bosma	04/21/2010
10154211	WW-11	Down gradient-Cluster	04/15/2010
10152412	WW-12	Down gradient-Cluster	04/15/2010
10154213	WW-13	Down gradient-Cluster	04/16/2010
10152414	WW-14	Down gradient-Cluster	04/16/2010

Station ID	Location ID	Location	Date Sample Collection
10154215	WW-15	Down gradient-Cluster	04/14/2010
10152416	WW-16	Down gradient-Cluster	04/15/2010
10154217	WW-17	Down gradient-Cluster	04/15/2010
10152418	WW-18	Owner Request	04/17/2010
10154219	WW-19	Down gradient - Septic	04/18/2010
10152420	WW-20	Down gradient – Septic	04/15/2010
10154221	WW-21	Down gradient – Septic	04/17/2010
10162422	WW-22	Down gradient – Septic	04/19/2010
10154223	WW-23	Down gradient - Mint	04/14/2010
10152424	WW-24	Down gradient – Mint	04/14/2010
10154225	WW-25	Down gradient – Mint	04/15/2010
10152426	WW-26	Down gradient – Hops	04/17/2010
10154227	WW-27	Down gradient – Hops	04/14/2010
10152428	WW-28	Down gradient – Corn	04/14/2010
10154229	WW-29	Down gradient –Control	04/16/2010
10162430	WW-30	Down gradient Control	04/20/2010
10154251	LG-01	Haak	04/13/2010
10154252	LG-02	Haak	04/13/2010
10154253	LG-03	Haak	04/13/2010
10154254	LG-04	De Ruyter	04/16/2010
10154255	LG-05	De Ruyter	04/16/2010
10154256	LG-06	De Ruyter	04/16/2010
10154257	LG-07	D & A	04/16/2010
10154258	LG-08	D & A	04/16/2010
10154259	LG-09	D & A	04/16/2010
10164260	LG-10	Cow Palace	04/20/2010
10164261	LG-11	Cow Palace	04/20/2010
10164262	LG-12	Cow Palace	04/20/2010
10164263	LG-13	Bosma	04/20/2010
10164264	LG-14	Bosma	04/20/2010
10164265	LG-15	Bosma	04/20/2010
10154271	SP-01	Zillah	04/12/2010
10154272	SP-02	Mabton	04/15/2010
10154273	SP-03	Toppenish	04/14/2010

DATA QUALIFICATIONS

All sample analyses were evaluated following the EPA's Stage 2B Manual Data Validation Process (S2VM). The analyses were evaluated and laboratory qualifiers were mapped to R10 EPA validation qualifiers following the technical acceptance criteria and Quality Control Specifications outlined in the SOP 1433, SOP 4433 and the Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use (EPA-540-R08-005). The conclusions presented herein are based on the information provided for the review.

Overall Data Assessment:

Samples were analyzed following the technical specifications of the analytical method. The data, as qualified, are usable for all purposes except for approximately 6% of the total data points which were qualified unusable due to extremely low surrogate recoveries. Approximately 32% of the total data points were qualified estimated due to chromatographic interference and QC results that did not method specified meet criteria as listed below:

- Surrogate recoveries for bis-phenol-a-d3 were <10% for samples LG02, LG03, LAG04, LG05, LG06, LG07, LG12, SP02, SP03 AND WW21. Associated sample results were qualified unusable, "R".

- Surrogate recoveries for caffeine-c13 were <10% for samples LG04, LG07, WW10 and WW21. Associated sample results were qualified unusable, "R".

- Surrogate recoveries for fluoranthene-d10 were <10% for samples LG02, LG03, LG04, LG05, LG06, LG07, LG09, LG10, LG11, LG12, LG15, WW21. Associated sample results were qualified unusable, "R".

- The surrogate recoveries for the following samples are <40%. Associated results were flagged estimated with a low bias, "J":

    - Bisphenol A-d3 – LG11, WW07, WW08, WW09, WW11, WW12, WW14, WW18, WW22, WW28
    - Caffeine-c13 – LG02, LG06, LG10, LG11, WW09, WW12, WW28
    - Fluoranthene-d10 – LG01, LG08, LG13, LG14, SP01, SP02, SP03

- Trace levels of 4-tert-octylphenol, diethyl phthalate, menthol, p-cresol, tri (dichloroisopropyl) phosphate, tri(2-butoxyethyl) phosphate, tri(2-chloroethyl) phosphate, tributyl phosphate and triphenyl phosphate were detected in the field blank (WW29). Only the diethyl phthalate in the associated sample WW06 detected at concentration <5x the value in the blank was qualified as non-detects, "U", due to blank contamination.

Data Qualifiers

The following is a list of validation qualifiers applied to the sample result(s) when needed to indicate an associated out-of-control QA/QC results.

Data Qualifiers		
	U	The analyte was not detected at or above the reported result.
	J	The analyte was positively identified. The associated numerical result is an estimate.
	UJ	The analyte was not detected at or above the reported estimated result. The associated numerical value is an estimate of the quantitation limit of the analyte in this sample.
	R	The data are unusable for all purposes.
	N	There is evidence the analyte is present in this sample.
	JN	There is evidence that the analyte is present. The associated numerical result is an estimate.