FORENSIC APPLICATIONS CONSULTING TECHNOLOGIES, INC.

January 7, 2015

Todd Franssen, President
ACT Bioremediation Products
P.O. Box 386
Dacono, Colorado 80514-0386

RE: Biodegradation of gasoline products in ground water

Dear Mr. Franssen:

Forensic Applications Consulting Technologies Inc. (FACTs) was asked to assess the degradation of gasoline range organic hydrocarbons (GROs) in the ground water associated with a commercial gasoline filling station.

Under chain of custody, FACTs received approximately 4 gallons of ground water effluent from an undisclosed gasoline filling station. The water sample was received in good condition and was iced upon receipt.

In a three-day bench-top exercise, FACTs prepared three identical samples for evaluation:

1) Sample ID: C011_2014-02 (hereafter called “Method Control”)
2) Sample ID: C011_2014-03 (hereafter called “Five Pound”)
3) Sample ID: C011_2014-04 (hereafter called “Ten Pound”)

Method Control
The Method Control sample was handled and treated in an identical manner to the other two samples, except no product was added to this sample.

Five Pound
The Five Pound sample was handled and treated in an identical manner to the Method Control sample, except to this sample, ACT Bioremediation Terra Firma was added at a concentration of five pounds of dry product per 10,000 gallons of water (0.06 g/l).

Ten Pound
The Ten Pound sample was handled and treated in an identical manner to the Method Control sample, except to this sample, ACT Bioremediation Terra Firma was added at a concentration of ten pounds of dry product per 10,000 gallons of water (0.12 g/l).

During the exercise all samples were otherwise treated and handled in an identical manner. All three samples were of equal volume and prepared in equally sized, open mouthed containers. During the exercise, all samples were

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maintained at a temperature of 20 °C to 22°C and station pressure during the exercise varied from 546 mmHg to 555 mmHg.

A baseline aliquot was harvested from the primary reservoir prior to distribution of the samples into their respective containers (Sample ID C011_2014-01; hereafter called “Raw Water). The aliquot was transferred into a 40 cc zero-headspace VOA phial preserved with one drop of nitric acid, and immediately placed in a freezer at -4 °C.

After three days, duplicate aliquots were harvested from all test samples into 40 cc zero-headspace VOA phials preserved with one drop of nitric acid, and immediately placed in a freezer cooler with ice for immediate hand-delivered transport to the laboratory under chain of custody.

Samples were submitted to Mountain States Accutest Laboratories, 4036 Youngfield Street, Wheat Ridge, CO 80033-3862. The laboratory was instructed to analyze GRO by GCMS using Method SW846 8015B.

The results indicated that the Five Pound sample had significantly reduced all GROs from the Raw Water with the exception of ethanol, which remained in the Five Pound and Method Control Sample.

We have provided the complete data set with this discussion, as an appendix. All samples were run in duplicate. The following chromatograms are the raw GC responses.

When looking at the following graphs, please keep in mind, as the concentration of analytes becomes lower and lower, the laboratory must “magnify” the chromatogram in order to properly see the profile. Thus none of the following chromatograms are all the same scale. To help identify the scale, a blue horizontal bar traverses each graph at a response of “10000” to help keep the scale in proportion.

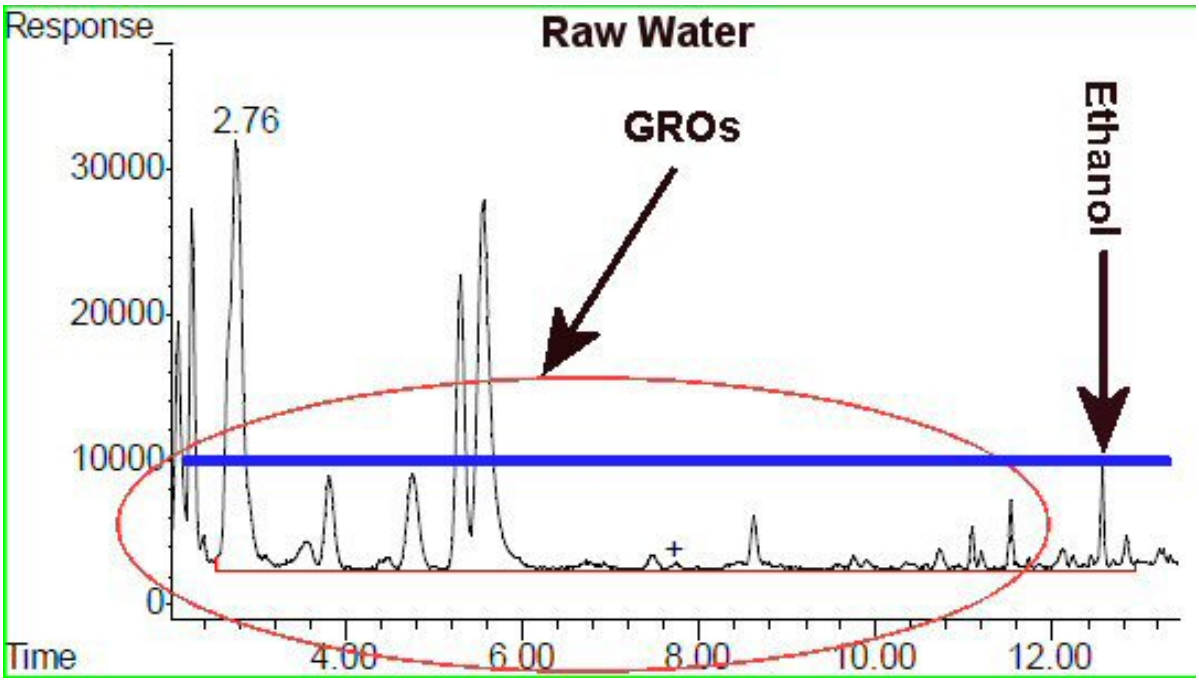

Figure 1
Chromatogram for Raw Effluent

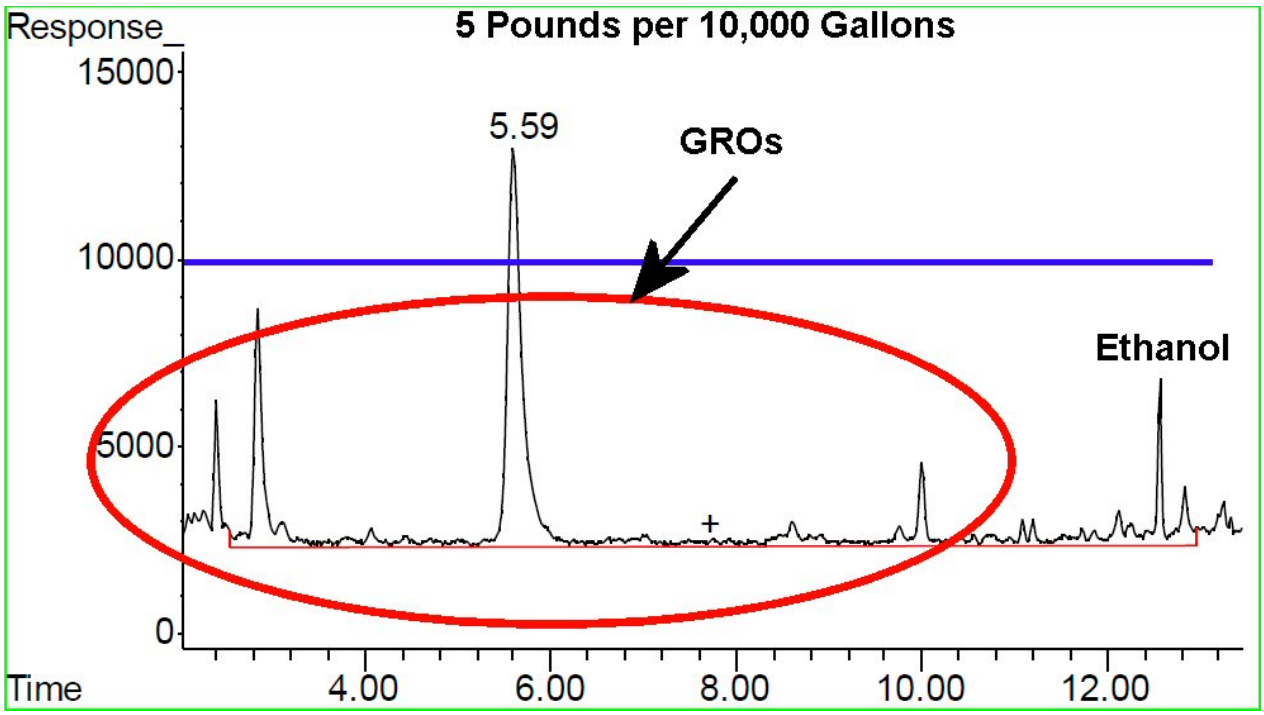

Figure 2
Chromatogram for Five Pound Addition

By contrast, the ethanol in the Ten Pound sample was virtually eliminated, and the contaminants coming off at approximately 5.6 minutes (benzene) was also significantly reduced:

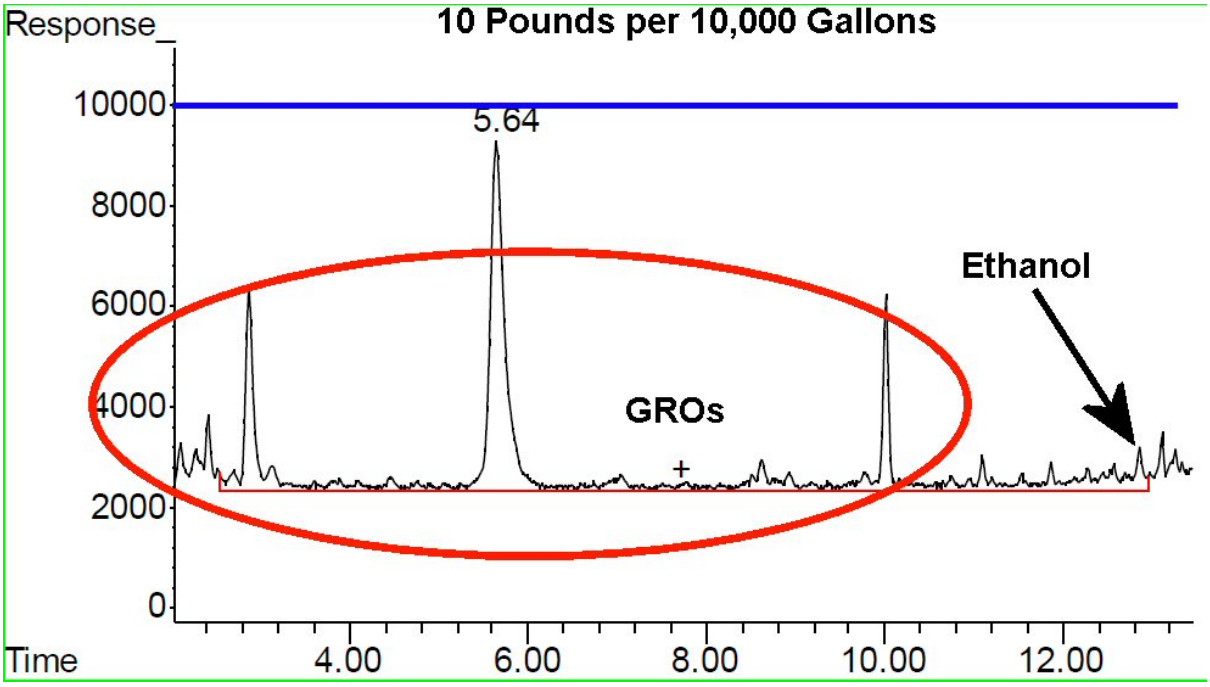

Figure 3
Chromatogram for Ten Pound Addition

Based on the information available, the Ten Pound application of ACT Bioremediation Terra Firma at a concentration of 0.12 g/l significantly reduced the GROs in the ground water, including benzene and virtually eliminated the ethanol contaminant.

I hope this information helps you better evaluate the efficacy of the ACT Bioremediation product.

Kind regards,

Caoimhín P. Connell
Forensic Industrial Hygienist