



October 23, 2008

Certified Mail Return Receipt Requested # 7007 1490 0001 8186 6448

Mr. and Mrs. Tracy and Amy Dahl  
PO Box 160  
Weston, CO 81091

RE: Complaint 200195430  
Spill from Wood 2-43V pit

Dear Amy and Tracy:

In response to the complaint you submitted on September 13, 2008, the Colorado Oil and Gas Conservation Commission (COGCC) conducted field inspections of the Wood 2-43V and Wood 2-43R and the pad and lease road accessing the pad. You left a message for me that you had observed what you thought was produced water overflowing from a pit on the well pad and flowing onto the subdivision/lease road to the well. The inspections confirmed the presence of a very recent spill of produced water from the Wood 2-43V pit.

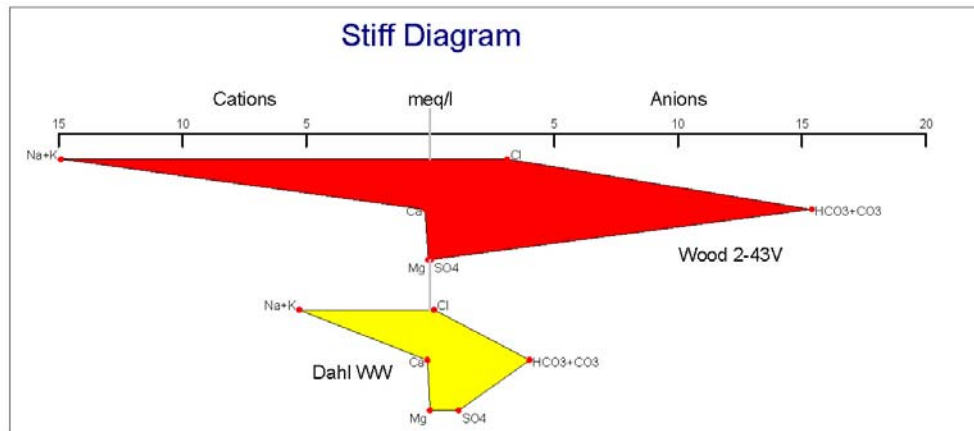
### **FIELD INSPECTION**

I visited the site on September 13, 2008 to inspect the Wood 2-43V well, pit and pad as well as areas along the lease road. I also inspected the permitted location of the Wood 2-43R including the pit constructed to be utilized as a reserve pit if and when that well is drilled. Field inspections 200196182 (2-43V) and 200196183 (2-43R) document the inspections I conducted on September 13, 2008. Copies of those inspection notices are included as Attachments 1 and 2.

I did observe that the pit at the Wood 2-43V had less than 2 feet freeboard when I arrived at the well. A photo of the pit is included as Attachment 3. The pit was not overflowing when I arrived but there were numerous puddles on the well pad. A contract water truck driver confirmed that a spill had occurred at the Wood 2-43V pit and that two truckloads of water had been removed from the well between the time the spill had been noticed by Pioneer or the contractor and when I arrived. The driver also told me that the spill had most likely occurred because the well had recently had a pump installed and made operational. The driver also stated that the well was not on the current list of wells/pits to have water hauled from as provided by Pioneer to the contractor. I did collect a sample of the produced water from the Wood 2-43V and submitted the sample for general water quality testing because of your concerns about possible impacts to the relatively shallow aquifer your water well draws its water from. The results of those analyses are included as Attachment 4. The water is of sodium-bicarbonate character which is typical of coal bed methane (CBM) produced water from the Raton Basin.

One means of examining major ion composition of water samples for similarities and/or differences is to plot them on a Stiff diagram. Sodium (Na), potassium (K), calcium (Ca) and magnesium (Mg) are positively charged and are the major cations in most waters. Chloride (Cl), bicarbonate + carbonate ( $\text{HCO}_3 + \text{CO}_3$ ) and sulfate ( $\text{SO}_4$ ) are negatively charged and are the major anions present in most waters. Figure 1 is a Stiff

diagram comparing the chemistry of water produced from your water well (sampled in June 2008) to the chemistry of water produced from the Wood 2-43V. The dominant ions in the CBM produced waters are sodium and bicarbonate. Sulfate is at very low concentrations in the CBM produced waters. The dominant ions in water from you well are also sodium and bicarbonate. Sulfate was a secondary anion in your well water and it was at a very low concentration in the Wood 2-43V water sample. Chloride is a secondary anion in the CBM produced water and is present at a much lower concentration in water from your well. The Raton and Vermejo Formations CBM produced water has several times greater levels of total dissolved solids (TDS) than water from your well which likely draws its water from the younger Poison Canyon Formation.



**Figure 1 - Wood 2-43V and Dahl Water Well Comparison**

I also observed inadequate sediment filtering best management practices along the lease road near the Wood well pad. The lack of proper filtering best management practices (BMP's) had allowed a pollutant (sediment) to be transported off the lease road and downhill away from the road. That sediment had accumulated in a small arroyo downhill of the road.

The staff of the COGCC issued a Notice of Alleged Violation (NOAV) to Pioneer Natural Resources regarding these matters on October 23, 2008. A copy of that document is enclosed (Attachment 6). This complaint will be closed with the issuance of the NOAV.

If you have any questions or would like to discuss these matters further, please contact me at 719-846-3091 or by email at [peter.gintautas@state.co.us](mailto:peter.gintautas@state.co.us) . Should you be unsatisfied with COGCC staff's handling and resolution of your complaint Rule 522.b. (4) allows you as the complainant to file with the Commission an application for an Order Finding Violation.

Sincerely,  
Colorado Oil and Gas Conservation Commission

Peter Gintautas  
Environmental Protection Specialist

Attachments:    Attachment 1 -    Field Inspection Notice 200196182 (Wood 2-43V)  
                         Attachment 2 -    Field Inspection Notice 200196183 (Wood 2-43R)  
                         Attachment 3 -    Photograph of Wood 2-43V Well, Pit and Pad  
                         Attachment 4 -    Analytical Data  
                         Attachment 5 -    Overwhelmed Erosion Control Structure  
                         Attachment 6 -    Notice of Alleged Violation

cc:                    David Neslin, Acting COGCC Director w/o attachments  
                         Debbie Baldwin, COGCC Environmental Protection Manager w/o attachments  
                         Margaret Ash, COGCC Environmental Protection Supervisor w/o attachments  
                         Jerry Jacob, Pioneer Natural Resources, w/o attachments