



November 2, 2010

Certified Mail Return Receipt Requested # 7007 3020 0001 6340 7095

Mr. Troy Rix
PO Box 162
Coal Creek, CO 81221-0162

RE: Complaint 200265825
Alleged impacts to soils from orphaned oil and gas well on property
05-071-40079 – United Oil #346
NWSE 29 19S 69W 6th PM

Dear Mr. Rix:

You requested that the Colorado Oil and Gas Conservation Commission remove several piles of soil that were removed from near the well casing of the orphaned oil and gas well found this year on your property. This soil material was excavated from around the casing of the United Oil #346 to allow access to the well bore during the plugging and abandonment of the orphaned well done by the COGCC this summer. The COGCC has tentatively identified the orphaned well on your property as the United Oil #346 based on old maps and publications that we obtained this year as part of a larger effort to identify orphaned and abandoned oil and gas wells drilled prior to the existence of the Colorado Oil and Gas Conservation Commission. More than 700 oil wells were drilled in the Florence field prior to 1909. We do not have detailed records of production or operation of the well near your home, but we believe the well was abandoned before 1909 and produced less than 25,000 barrels of oil. Abandonment of an oil well in early 1900's may have meant forcing wood down the well bore as a plug as indicated by some of the observations made during the plugging and abandonment operation done by the COGCC in June 2010 to current plugging standards. Sampling and analysis of soils on your property were done to assess concentrations of compounds possibly present as a result of operating practices in the early 20th century. COGCC 900 series rules allow materials to be left on site if certain criteria are met and sampling and analyses were performed to understand if early 1900 era operations had resulted in conditions which would require the removal of the soils you stockpiled on your property.

SAMPLING EVENTS AND FIELD INSPECTIONS

Angela Bellantoni (Environmental Alternatives) visited your property on May 27, 2010 on behalf of the Colorado Oil and Gas Commission. She collected samples of soils from around the orphaned oil and gas well located on your property. Those samples were submitted to Reservoirs Environmental Inc. Lab (Denver, CO) for analysis. You were present for this sampling event. Discussion of results will be included below. Results from the May 2010 sampling and analyses are included as Attachment 1.

Mike Leonard and I visited your property on August 4, 2010 to collect samples of soils from 7 piles of soil removed from around the well bore of the United Oil #346 during the plugging operation managed by the COGCC and stockpiled by you on your property. The soils samples were submitted to ALS Laboratories

which is located in Fort Collins, CO. Discussion of results will be included below. Results from the August 2010 sampling and analyses are included as Attachment 2.

Mike Leonard and I again visited your property (with Angela Bellantoni) on October 26, 2010. The purpose of this visit was to conduct any further sampling if needed and to make final arrangements for seven soil piles, removed from around the orphaned well casing to be removed and taken for disposal at a nearby landfill. Further sampling was not needed as the landfill had agreed to take the soils for disposal based on results of the May and August sampling events. During this visit you told COGCC staff that you did not want the earth moving contractor chosen by the state to come on your property. You also told us that only contractor you would allow on your property to move the soils offsite was a local oil and gas operator (Jim Javernick).

RESULTS AND DISCUSSION

Current COGCC rules require remediation of soils when the concentration of a contaminant exceeds the threshold concentrations in Table 910-1 of the rules. Sampling and analysis of soils stockpiled on your property indicate the concentrations of benzene, toluene, ethylbenzene and xylenes (called BTEX) were below the threshold concentrations as shown in the Table 910-1 comparison included as Attachment 3. Sampling and analysis for a many polynuclear aromatic hydrocarbons (PAHs) also show concentrations below the threshold concentrations established in the COGCC rules (Attachment 3). No liquid hydrocarbons were visible in the stockpiled soils.

Analytical results demonstrate that background concentrations of arsenic (As) exceed Table 910-1 concentration levels. Analytical results demonstrate that concentrations of As in the stockpiled soils also exceed Table 910-1 concentration levels; and the concentrations are less than or equal to the background concentration. The analytical results are summarized below:

METAL	BACKGROUND CONCENTRATION (MG/KG)	PIT CONTENTS, SOIL/BEDROCK BELOW PIT OR IMPACTED MEDIA (MG/KG)	TABLE 901-1 CONCENTRATION LEVELS (MG/KG)
Arsenic	3.8	2.8	0.39

COGCC and CDPHE have consulted and agree that operators do not need to request variances from CDPHE for instances where the concentrations of metals in impacted soils are equal to or less than background concentrations, but do not meet Table 910-1 concentration values. The As concentrations in the stockpiled soils are less than the background. The COGCC as the operator must ensure that remaining pit contents are covered with a minimum of 3 feet of backfill and soil. The concentrations of other metals tested are below the threshold concentrations established by Table 910-1. The stockpiled soils do not need to be removed based on all analytical data described above.

Three tests related to agricultural use of soils were also performed. The results of these tests for electrical conductivity (EC), pH and sodium absorption ratio (SAR) indicate the possibility of produced water disposal on the soils around the well bore. These results are also shown in the summary of Table 910-1 threshold values and parameters. SAR and EC both exceed the thresholds. The inclusion of SAR and EC in the table is based on the use of these as indicators of agricultural suitability of the soils and not based on human health concerns. COGCC policies allow material with elevated SAR and EC measurements to be left on site but generally these soils would need to be buried at a minimum of 3 feet below surface to minimize the impacts on plant growth in the area. The COGCC offered to remove the stockpiled soils from your property based on the elevated SAR and EC measurements and to minimize the disturbance to your property if we were to

bury the material on site as the rules allow based on the analyses we have available to us. An excerpt of the rule this decision is based on is included below. COGCC rule 909. b(5) **Remediation.** *“Remediation shall be performed in a manner to mitigate, remove, or reduce contamination that exceeds the concentrations in Table 910-1 in order to ensure protection of public health, safety, and welfare, and to prevent and mitigate significant adverse environmental impacts. Soil that does not meet concentrations in Table 910-1 shall be remediated.”* The remediation suggested because of the high SAR and EC was removal of the soil from your property. Another suggested remediation as allowed by our policies is to bury soils with high EC and SAR at depths of 3 feet or greater.

As you were told on October 26th, the State of Colorado reserves the right to choose the remediation mechanism and the contractor who will perform the work. The mechanism chosen is to remove the stockpile soils. If you prefer the soils can be left on site but this process will require more disturbance to your property and in either case the contractor performing the work will be chosen by the state based on our practices and will not be chosen by you. You told us verbally on that day that you would not allow access to the contractor chosen by the state to perform the work. You stated on October 26th that the only contractor you would allow on your property was Jim Javernick. Mr. Javernick has told me he chooses to not perform the work and at this point we do not think he is the best contractor available to the state to perform the work. One purpose of this letter is to provide you with notice that the COGCC does intend to remove the stockpiled soils from your property at in the near future and this letter constitutes notice of that intent. The removal will occur no sooner than 7 days from today or on or after November 9, 2010. We will contact you by phone at least 24 hours prior to the proposed time and date.

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.

Sincerely,
Colorado Oil and Gas Conservation Commission

Peter Gintautas
Environmental Protection Specialist

Attachments: Attachment 1 - Reservoirs Environmental, Inc. Analytical Report
 Attachment 2 - ALS (and Olsen) Analytical Reports
 Attachment 3 - Summary Table

cc: David Neslin, COGCC Director w/o attachments
 Debbie Baldwin, COGCC Environmental Protection Manager w/o attachments
 Steve Lindblom, COGCC Environmental Protection Supervisor w/o attachments
 Mike Leonard, COGCC Field inspection Supervisor, w/o attachments
 Stuart Ellsworth, COGCC Engineering Manager, w/o attachments

Table 910-1			
CONCENTRATION LEVELS			
Contaminant of Concern	Threshold		
	Concentrations	composite of piles	background
Organic Compounds in Soil			
TPH (total volatile & extractable petroleum hydrocarbons)	500mg/kg	5	
Benzene	0.17 mg/kg	<0.005	
Toluene	85 mg/kg	<0.005	
Ethylbenzene	100mg/kg	<0.005	
Xylenes (total)	175 mg/kg	<0.005	
Acenaphthene	1000 mg/kg	0.0015	
Anthracene	1000 mg/kg	0.0024	
Benzo(A)anthracene	0.22 mg/kg	0.0024	
Benzo(B)fluoranthene	0.22 mg/kg	0.0031	
Benzo(K)fluoranthene	2.2 mg/kg	0.0029	
Benzo(A)pyrene	0.022 mg/kg	0.0026	
Chrysene	22 mg/kg	0.002	
Dibenzo(A,H)anthracene	0.022 mg/kg	0.0018	
Fluoranthene	1000 mg/kg	0.0032	
Fluorene	1000 mg/kg	0.0026	
Indeno(1,2,3,C,D)pyrene	0.22 mg/kg	0.0021	
Napthalene	23 mg/kg	0.0025	
Pyrene	1000 mg/kg	0.0035	
Inorganics in Soils			
Electrical Conductivity (EC)	<4000 umhos/cm or 2x backgrou	8920	
Sodium Adsorption Ratio (SAR)	<12	67.05	
pH	6.0-9.0	8.70	
Metals in Soils			
Arsenic	0.39 mg/kg	2.8	3.8
Barium Total	15,000 mg/kg	120	
Boron (Hot Water Soluble)	2 mg/l	1.7	
Cadmium	70 mg/kg	<0.52	
Chromium (III)	120,000 mg/kg	7	
Chromium (VI)	23 mg/kg	7	
Copper	3,100 mg/kg	10	
Lead (inorganic)	400 mg/kg	6.3	
Mercury	23 mg/kg	<0.034	
Nickel (soluble salts)	1,600 mg/kg	6.7	
Selenium	390 mg/kg	<0.52	
Silver	390 mg/kg	<1	
Zinc	23,000 mg/kg	27	
Liquid Hydrocarbons in Soils and Ground Water			
Liquid hydrocarbons including condensate and oil	Below detection level	not detected	