October 14, 2016

Ventura County Board of Supervisors
Ventura County Government Center
800 S. Victoria Avenue
Ventura, CA 93009

Delivered via email

Re:  Inquiry into potential water contamination from oil and gas activities including sumps and wastewater injection wells in Ventura County. Related to Board agenda item #30 on Tuesday, October 18, 2016 10:30 am.

Dear Supervisors,

Unfortunately, CFROG was not provided ample advance notice of the updated staff report on this topic as promised, and thus our report may not address all issues in the staff report on which we may have pertinent information.

This Report establishes three things:

1. Recent test results provide cause for concern that oil and gas exploration and production activities have contaminated groundwater aquifers within Ventura County as confirmed by Dr. Brad Newton, Newton Geo-Hydrology Consulting. (Attachment A)
2. The potential for such pollution is ongoing (current known examples - sump pit in Oxnard and unlined sumps in Timber Canyon).
3. Wastewater injection wells have and are continuing to inject wastewater into protected aquifers in Ventura County.
Groundwater Contamination in Ventura County from Sumps

Produced water is brought to the surface of an oil well with the oil. It is typically separated from the oil through gravity in large above ground storage tanks. The produced water is then sent to another tank, either above ground or in a depression in the ground. Any depression in the ground for this purpose, or for any oil and gas collection use, is defined by the LA Regional Water Quality Control Board (LARWQCB) as a sump. Sometimes these sumps are lined with cement and covered to contain air emissions. Sometimes they are fully contained metal containers. In rare instances there is no liner at all. In all cases, the sumps are permitted as part of the oil and gas facility by the Ventura County Air Pollution Control District (VCAPCD). The problem is that the VCAPCD has only a limited interest in the sumps – air pollution. The condition of the sump liner, whether metal or cement, is up to the operator to maintain. No agency monitors the condition of the sump liners. According to retired California Division of Oil, Gas and Geothermal Resources (DOGGR) Field Supervisor, Anneliese Anderle, DOGGR inspections do not include sumps.

A Ventura County Resource Management Agency letter dated August 11, 2015 to the Board of Supervisors stated (Page 3) –

“The only permitted authorized means of disposing produced water in the unincorporated areas of Ventura County is through injection wells.”

The above statement is untrue because there are at least two active, permitted, unlined sumps in Timber Canyon in Ventura County. Both of these sumps are permitted by VCAPCD as “emergency sumps.” Remember that VCAPCD is only interested in the air emissions from covered or uncovered sumps, thus their review of the potential environmental impacts of the sumps to groundwater or surface run-off is non-existent. These two sumps are unlined depressions in the ground built to contain produced water or excessive run-off. The owner/operator stated that the sumps are hardly used as he trucks all of the produced water from his oil wells. However, he has had truck access problems and last October, 2015, he used one of the sumps to dispose of some quantity of produced brine water. The Water Board has instructed the operator that if he wants to continue use of the sumps, he will need to submit a Report of Waste Discharge, Form 200, and pay appropriate fees. Otherwise, he will need to explain how he will discharge wastewater from these oil wells ongoing.

Thus, in Ventura County there are at least two unlined, permitted sumps, one of which was used to dispose of produced brine water just one year ago. We don’t know if this old sump has contaminated the underlying aquifer.
The statement from staff above is also misleading because it does not include the historical use of sumps, both lined and unlined in Ventura County. For example, a Water Board review of DOGGR historical records of a Conditional Use Permit (C.U.P) currently operated by California Resources Corporation revealed that it contained over 40 historical sumps. That location is adjacent to the Santa Clara River in Santa Paula. Each one of those sumps is now decommissioned, but for decades, sumps like these were used to dispose of produced water through percolation into the ground and potentially the groundwater. We do not know if the groundwater was polluted in this location because CRC reported that there are no water wells on the CUP, thus testing for fresh water contamination could not be done. The investigation is ongoing.

There are at least two other types of sumps under permit by the APCD in Ventura County. One of these types is a concrete lined sump used to contain wastewater until a sufficient quantity is collected and then removed by vacuum truck and sent to a commercial disposal well. CFROG has read files containing reports of anything from one to four-inch concrete linings for these sumps. One thing anyone familiar with concrete knows for sure is that it cracks over time. These sumps are decades old. This type of sump can leak and has been documented to leak in the case of the Ojai Oil Company sump. Remember, there is currently no agency – nor has there ever been - at local, state or federal level that is responsible for inspecting the integrity of a lining of a sump.

The second type of commonly used sump is a metal container placed in a depression in the ground. These are also permitted by the APCD because the APCD is interested in assuring that the cover and inlet opening are properly sealed and emissions are not escaping into the atmosphere. As mentioned above, there is no agency responsible for inspecting the integrity of the metal linings in these sumps.

For example, on February 4th, 2016, two inspectors from the LARWQCB inspected a facility known as the J.D. McGrath Lease located in the Oxnard plain. It is operated by Vaca Energy. According to VCAPCD, Vaca has a permit to operate two surface pits exempt from cover for emergency purposes only. These two inspectors reported -

“Surface pits were explained to be lined with metal with unknown thickness and installation date. The surface pits were filled with a visibly dark liquid, appearing to be crude oil. The top metal guard and cover appeared to be corroded; the condition of the metal liner was unknown. Staff inquired on the usage of the surface pits, Mr. DeLeon explained that the surface pits are used for collecting water from rain events, but stated ‘some other operators dispose the crude oil in them, but they aren’t supposed to.’”
The inspectors noted that according to a Leaking Underground Fuel Tank (LUFT) report, a water well 1.3 miles away demonstrates groundwater can be found 9-20 feet below ground surface in this area of the Oxnard Plain. “Pyramid Flowers well 01 (State Well No.5602513-001) is approximately 200 feet southeast from the Facility.” (LARWQCB inspection notes, 2/4/16.)

This investigation is open with no conclusions as to the condition of the groundwater or any indication of what action might be taken to stop the unpermitted practice by operators of disposing crude oil waste into this sump.

Historical sumps may have caused an unknown amount of damage to our ground water quality since oil operations have been ongoing in our County for over a century.

In order to determine the extent of the damage, in December of 2015, the LARWQCB issued an investigative Order pursuant to Section 13267. The Order was sent to all oil and gas operators in Los Angeles and Ventura Counties. Operators were ordered to disclose the location of all sumps, current and historical and to submit water quality tests of any water well within a ½ mile radius of a sump (Contained as Att. 1 in Attachment A).

For the most part, operators who have responded to the letter with sworn responses have said as little as possible. For example, if the CUP had changed ownership, operators often claimed a complete lack of knowledge as to any historical sumps prior to their ownership. However, in most cases, DOGGR had mapped the locations of historical sumps, so the Water Board inspectors are currently, one by one, inspecting each and every old sump location in Ventura County. In all but two files containing operator responses in Ventura County that CFROG has obtained, operators who were asked follow-up questions by inspectors have claimed that there are no fresh water wells within a ½ mile of old sump locations, thus no water quality tests could be performed.

One of these files, however, is very thorough and complete. The CUP in this file is in Upper Ojai, near the Summit and is operated by Ojai Oil Company. Ojai Oil Company responded promptly and completely to the Water Board’s order. The submitted report includes a map and description of a cement sump in use intermittently for 85 years. In 1997, the sump was properly abandoned by a licensed environmental rehabilitation company. According to the environmental report, the cement lining was badly cracked and had been leaking. The operator of the CUP disclosed the locations of four fresh water wells near the historical sump. In compliance with the Investigative Order, the operator had all four water wells tested for contamination.
“Ojai Oil Company discharged these fluids [well drilling fluids, well completion fluids and production fluids] to a sump and the presence of toluene and high concentrations of inorganic compounds in exceedance of the MCL for drinking water are present in adjacent water wells. Based on these findings there is cause for concern that oil and gas exploration and production activities have contaminated groundwater aquifers within the County of Ventura. Further investigation would be necessary to understand the extent of groundwater contamination/impacts from oil and gas operations throughout the county.” (Conclusion of Dr. Brad Newton, Attachment A)

In summary, we have information from one oil and gas production operator with a historical sump in Ventura County who complied fully with the Order to date and the fresh water on that CUP in Upper Ojai appears to be contaminated by oil and gas production activities. According to Bulletin 118, the major groundwater information source for this region, the Summit is the top of the substantial Upper Ojai groundwater basin which runs towards Ojai to the west, and towards Santa Paula to the east.

We don’t know the breadth and depth of this contamination. We don’t know how many other wells in the area might be contaminated.

WASTEWATER INJECTION WELLS  www.geotracker.waterboards.ca.gov

Today there are at least 15 wastewater injection wells in Ventura County under investigation by the Water Board for injection of wastewater into non-exempt aquifers. One wastewater injection well in the Topa Topa Mountains above Fillmore was voluntarily shut down by Seneca as soon as it was placed under investigation. Three more wastewater wells operated by Seneca in the same general location are currently under orders to shut down by February 15, 2017, but are still injecting wastewater into a non-exempt aquifer today.

Three of the wells currently under investigation are operated by Mirada Petroleum. They are located on South Mountain and in Upper Ojai. Mirada has responded to the Water Board regarding the South Mountain wells with information questioning the mapped location of the oil production zone as it relates to their current injection zone. The file remains open and the wastewater wells are still being used for injection purposes. The investigation order letter on the Upper Ojai well, Nesbitt 2, just off Koenigstein Road, was just issued September 15, 2016 and the public file does not yet contain an operator response. (Attachment C)

Several other wells under investigation are in and around Piru and Fillmore. The issues raised are similar to those discussed above.
Two more injection wells under investigation are in Timber Canyon, located above Santa Paula. These wells have been idled since the 1990’s but are not yet properly plugged and abandoned. Adjacent to these two wells is another injection well that was buried in a landslide in the ‘90’s. Records on that injection well contain notes from the operator’s geologist stating that the well, while in use for wastewater injection was producing large quantities of fresh water. The geologist concluded that the well must be making contact with a fresh water aquifer through a fault fissure.

CFROG has long questioned whether wastewater injected in a highly fractured fault zone could find a route to fresh water through a fissure. This well file provides evidence that it occurred right here in Ventura County. There has never been an investigation of this instance.

Page 4 of 8 from the Staff Letter 8/11/15 states –

“Over 90% of the injection wells in Ventura County are located outside the boundaries of potable water aquifers.”

There is simply nothing in DOGGR data nor in the County data to support this statement. Aquifers are water bearing formations. Water bearing formations occur throughout Ventura County almost everywhere whether they are mapped or not. CalEPA has defined freshwater aquifers as those with a Total Dissolved Solids (TDS) limit of 3000 ppm or below. However, protected aquifers are potential sources of fresh water and may have a TDS of 10,000 or below such that they might have a beneficial use in the future. Ventura County has barely begun to investigate protected aquifers.

Page 4 of 8 from the Staff Letter 8/11/15 states –

“There is a substantial difference between the depth of our drinking water aquifers and the depth of the oil bearing formations where the produced water is injected.”

Exceptions to this conclusion are found in Upper Ojai in the Silverthread oilfield. Three wastewater wells, all dug between 1880-1890 are currently used as wastewater gravity fed injection wells. All three of these wells have no casings and no packers. The wells were permitted as wastewater disposal wells in the 1980’s despite the fact that they are all 100 years old. According to DOGGR well records, the depth of the wells is unknown, but it is estimated that they are 600-900 feet deep. The well record includes the operator claim that there is no freshwater in the area. However, there are at least two strong springs located within a mile of those wells that both run into Sisar Creek year round. Bulletin 118, states that the groundwater depth near Sisar Creek in Upper Ojai is 300 feet. Silverthread oil field well records indicate
fresh water throughout the area, including at least one oil well that was converted to a water well because it produced over 100 barrels of fresh water per day.

Why were these three wastewater wells permitted by DOGGR? CFROG consultant, Anneliese Anderle, retired DOGGR field supervisor, told CFROG that “these wells would never be permitted today.” So, why are they permitted and operating today? If the wells are not in compliance with current standards for injection wells and if groundwater in the area may be in peril - action should be taken.

Page 4 of 8 Staff Report 8/11/15 states –

“In summary, there is no documented adverse effect on public health from the current practice of injecting produced water into oil bearing formations within Ventura County.”

This summary conclusion is overly broad and completely void of supporting evidence. It is difficult to provide a credible comment. What studies on public health from the current practices of injecting produced water into oil bearing formations within Ventura County have been conducted? Of course, the answer is none. Therefore, the appropriate summary conclusion must be, “We don’t know if there have been any adverse effects to public health from the current practices of injecting produced water.”

Well Stimulation in Ventura County -- Fracking

In July of 2014, the oil and gas operator DCOR submitted a request to frac a well in Hopper Canyon. The application was approved by the LARWQCB after test results from both a fresh water well and the nearby stream were submitted to the so that water quality could be monitored.

Seneca submitted a request to stimulate 14 wells in the Los Padres National Forest which was denied in March of 2016. The request was denied because Seneca requested a groundwater monitoring exemption which was not granted.

Therefore, oil companies in Ventura County have submitted proposals to frac 15 wells in Ventura County during the years 2014-2016. While CFROG is grateful that the Water Board did not grant the exemption for groundwater monitoring in the Sespe, it must be understood that the business of fracking is ongoing.

In this time of extreme drought when Casitas Lake is going dry and climate change threatens our water security for the foreseeable future, we cannot afford to continue business as usual. If
there is a source of fresh water or protected water, it must be preserved at all costs. We can’t afford to continue making mistakes.

It is the responsibility and obligation of our county leaders
to protect our natural resources against all threats.
The time has come for action on the part of our leaders.

Therefore, to protect the public health and safety, CFROG requests the Board of Supervisors to:

1. Develop and implement a plan to test and monitor the quality of the ground water in
   reasonable proximity of all Conditional Use Permits for oil and gas operations within
   Ventura County; and
2. Develop and implement a plan to remediate any ground water contamination that
   exceeds MCL standards for drinking water quality.

Sincerely,

Kimberly Rivers,
Executive Director of CFROG
Signed on behalf of the Board of CFROG

cc:
Chris Stephens, Director, Ventura County Resource Management Agency
Bill Stratton, Director, Ventura County Environmental Health Department
Michael Powers, Ventura County Executive Officer
Tully Clifford, Director Ventura County Watershed Protection District
Chuck Thomas, Manager, Ventura County Air Pollution Control District
Ventura County District Attorney
Ventura County Grand Jury
LARWQCB
California Attorney General
CALEPA

Attachments:
A: Newton Geo-Hydrology Consulting Technical Memo and Attachments
B: Investigative site evaluation by LARWQCB of Vaca Energy CUP in Oxnard
C: LARWQCB dated Sept 15, 2016 – Investigative order regarding wastewater injection into a
   non-exempt aquifer
D: LARWQCB Letter Dated April 8, 2016 to Ridgeway Corp. – Water Board Findings