



January 27, 2015

Contra Costa County Public Works Department
Attn: David Kramer
255 Glacier Dr.
Martinez, CA 94553

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RE: Additional Potential Impacts of Sunset Explorations Inc. Subsurface Lease of Upper Sand Creek Basin

Dear Contra Costa County Public Works Department,

Thank you for continuing to discuss our concerns related to the potential Sunset Explorations Inc. subsurface lease of the Upper Sand Creek Basin, owned by Contra Costa County.

As we have previously stated, we don't have an opinion about whether this is a good or bad project, or if it has significant impacts. There isn't enough information being provided to the public to tell.

We believe that, at a minimum, the County should provide the public with a summary of existing permits and CEQA review that has already been completed related to this project in the area of Sand Creek/ the Brentwood Oil Field (including County, Antioch and Brentwood lands) to determine what environmental review, if any, would be necessary for this proposal.

We suspect that this overall 1,000+ acre project has been piecemealed and segmented, and has either avoided CEQA review or been given exemptions that, while perhaps appropriate for individual parts of the project, cannot be justified cumulatively.

Even though the applicant claims this current lease proposal includes no potential for significant impacts because it would not include surface rights, the documents provided to the public cloud those suggestions by referring to surface activities.

Since we're not experts about oil and gas, we consulted with retired Chevron Senior Petrophysicist Bruce Bilodeau and retired Senior Geophysicist Deborah Wechsler. They reviewed the county documents, online production records, and a Contra Costa Times article about Sunset and the project, which discusses the scope of the project (Appendix A).

They identified and described additional potential impacts of this project, regardless of whether it included surface drilling on this particular parcel, and agree that cumulatively the project could include significant impacts.



This area in southern Antioch and northeast Brentwood was actively drilled from the 1970s to the early 1990s. There is a capped well that appears to be on the County parcel in question (see <http://maps.conservation.ca.gov/doggr/index.html#close> for a California Department of Conservation online well mapping tool, and http://opi.consrv.ca.gov/opi/opi.dll/Search?UsrP_ID=100100100&WMtr_APINumber=01300073 for specific well information; screenshot Figure 1 below), and found that from 1977 to 1993 the well produced 168,071 barrels of oil, 167,577 cubic feet of natural gas and more than 1.3 million barrels of likely saline, toxic wastewater.

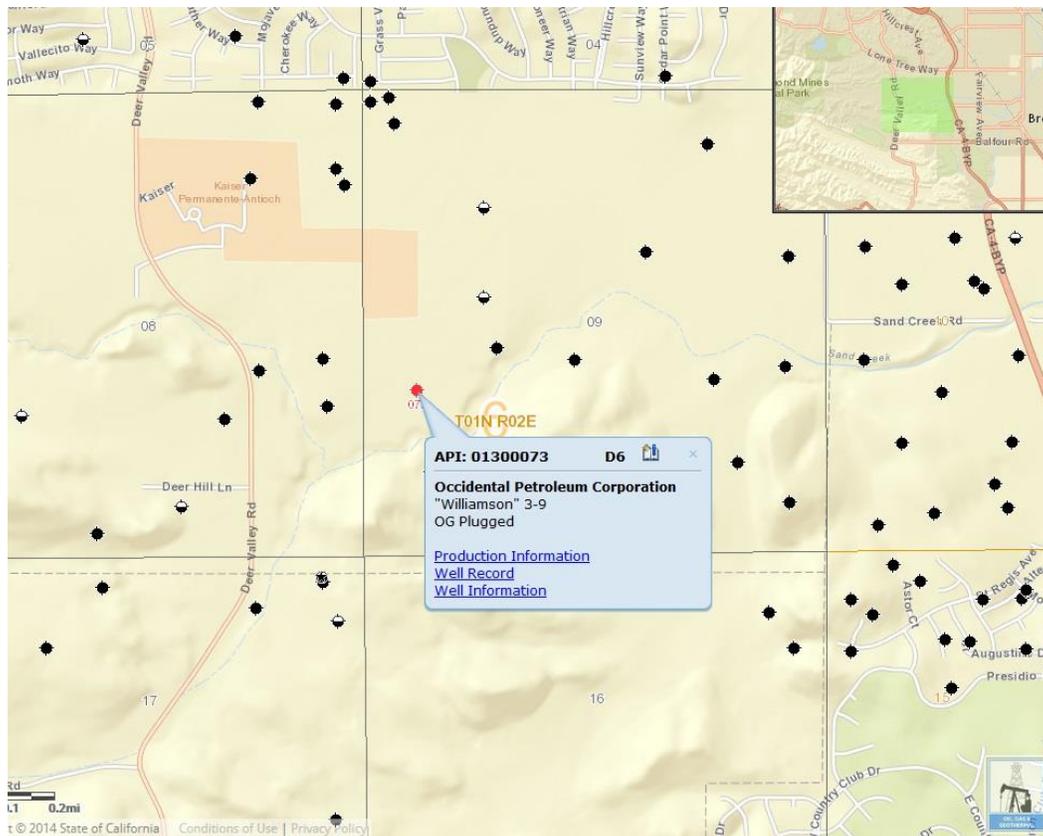


Figure 1. Location of plugged well likely on County-owned Upper Sand Creek Basin. Black dots are other plugged or abandoned wells in the area.

It appears that the wells were not actually dropping in production when operations ceased, but when oil prices began to drop in 1992, the wells became less profitable. They were capped or abandoned - possibly because of an unusually high amount of wastewater that needs to be disposed of somewhere.

Aside from four notable dips that have typically lasted about five months each, oil prices have generally been rising for the past 15 years. Higher oil prices may have made drilling profitable again (note that prices have been falling since June 2014).

In addition to the list of items that could potentially cause impacts to the environment that was discussed during our meeting on Thursday December 11th, 2014 and our letter to you dated December 19th, 2014, with the help of Mr. Bilodeau and Ms. Wechsler we have identified some additional potential impacts that could result from allowing oil and gas drilling in the area. These include, but are not limited to:

- 1) A significant volume of drilled material which has to be disposed of somewhere for wells of this depth.
- 2) A large amount of toxic, salty wastewater which has to be piped somewhere to be disposed of or re-injected into the aquifer or geologic strata. Mr. Bilodeau and Ms. Wechsler could see from the production records that old wells in the area include a very high amount of toxic, salty wastewater produced by each well. For the well on the County property, an average of 77,427 barrels of wastewater every year. A barrel is 42 gallons (US liquid), which is more than 3.25 million gallons of wastewater per well per year. That's about 10 acre feet, or enough water to cover an acre ten feet deep. It may be that this site is for reinjection/disposal of the wastewater from other wells.
- 3) Fracking, which may be used, presents another unknown set of potentially significant impacts
- 4) If newer horizontal drilling techniques are used, amounts of petrochemicals and wastewater could increase dramatically.
- 5) Spills and leaks are often associated with pipelines and drilling, including the collection of pipes that would run from production wells to a separator, storage tanks and injection wells. Materials of concern include petroleum substances and saltwater that could leak from pipes. If existing pipelines are to be used, what is the age and condition of these pipelines?
- 6) Subsidence could change the hydrology of Sand Creek. Even if the amount of subsidence potentially caused by drilling or production is limited to a few inches, would this be enough to change local hydrology?
- 7) The potential use of water for operations beyond the wastewater that would be pumped from the ground and re-injected into disposal wells. Where would this water come from and would its use change local hydrology, or deplete local aquifers?

In summary, currently there is not enough information being provided to the public to determine if this project has significant impacts, though the potential for them to occur seems to be there. At a minimum, the County should provide the public with a summary of existing permits and CEQA review that has already been completed related to this project in the area of Sand Creek and the Brentwood Oil Field.

Regards,

Juan Pablo Galván
Land Use Planner

CC:

John Kopchick, Interim Director of Contra Costa County Department of
Conservation and Development
Julia R. Bueren, Director of Contra Costa County Public Works Department
Seth Adams, Land Conservation Director of Save Mount Diablo

Appendix A

http://www.contracostatimes.com/ci_23218607/pipe-dreams-developer-tapping-into-antioch-hills-quest

Pipe dreams: Developer tapping into Antioch hills on quest for oil

By Paul Bugarino Contra Costa Times

POSTED: 05/10/2013 04:12:51 PM

ANTIOCH -- This struggling city once envisioned a seemingly endless row of homes dotting its southeast hills that would fuel its continued growth and prosperity. But with the housing boom gone bust, a new vision for the landscape has emerged: oil rigs.

Antioch, which long ago abandoned its petroleum roots as its population boomed, is once again looking for a little Texas Tea to pump up its finances.

Sunset Exploration drilled an exploratory well deep into the ground the past two weeks hoping to find pockets of oil hundreds of feet below the surface. While it's still too early to tell whether significant oil reserves will be found, optimism is growing that Antioch could soon become one of the few Bay Area cities pulling petroleum out of the ground.

The property that Sunset is leasing from Shea Homes and Dividend Homes is about a half-mile west of Kaiser Permanente's medical center and is on the fringe of what was known as the Brentwood Oil Field. Once drilled by Shell Oil Co. and Occidental Petroleum Corp., the site boomed in the 1960s and produced 9.8 million barrels of oil, the most of any field in Northern California.

"The easiest place to find acorns is under an oak tree, so we're hoping that the easiest place to find oil is where it's been found before," Sunset President Bob Nunn said. "(The area) used to be pretty prolific."

While oil drilling is common in Southern California and the San Joaquin Valley, it is almost unheard of in the Bay Area.

"From a historic perspective, it's fairly rare," said Tim Kustic, the state's supervisor of the Oil, Gas and Geothermal Resources, a division of the Department of Conservation.

With the exception of some wells in outlying parts of the Bay Area -- including Brentwood and far east Contra Costa County, Rio Vista, the hills east of Livermore and along the coast

near Half Moon Bay -- the region is relatively untapped. The likely reason is the area's geology and subsurface foundation, Kustic said.

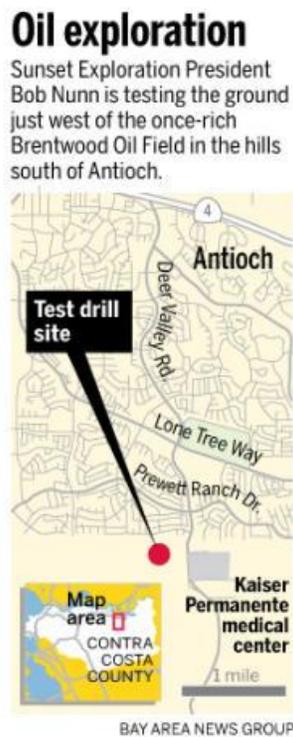
Further, Kustic said, petroleum excavation tends to occur in Southern California, whereas Northern California wells primarily produce natural gas.

"(Northern California) has never been a major oil-producing province," Kustic said.

The first crack at finding black gold didn't hit pay dirt. But Nunn says there are "some encouraging signs" that oil could be there.

After digging a 4,000-foot-deep hole at a 30-degree angle (to keep machinery far away from a nearby subdivision), the sand below the layers of shale was thicker than anticipated. It had some "minor hydrocarbon shows," or traces of oil, Nunn said.

"We think we found something worth pursuing," he said.



The next step, Nunn said, is to further study the geology of the area based on information gathered from the dig and come back in a couple months to drill another bore nearby.

When Antioch annexed part of the field in 1994, the wells were defunct. The city banned mineral extraction in anticipation of residential and commercial growth.

City leaders repealed the ban in 2005 when development plans stalled.

"It's an interesting opportunity," Councilman Gary Agopian said. "Here's an example of where the community has been challenging us to find ways to improve economic development, and maybe this could help generate a little revenue for the city. There might not be anything there, but then again, hopefully, there might."

"It's not going to be a budget maker," adds City Manager Jim Jakel, "but it could bring in some money, no doubt about it."

Antioch's zoning administrator granted a temporary permit in March for Sunset to drill on 157 acres west of where oil companies once tapped the ground, renewing a 2008 city approval.

Arne Simonsen, Antioch's city clerk and a city councilman from 2000 to 2008, says he supported the drilling as a way to reduce foreign dependence on oil and natural gas.

Simonsen said the hills between Antioch and Brentwood, now covered with homes, were full of oil derricks when he moved to Antioch in the 1970s.

"They may as well take advantage of the open space to extract minerals while they can, before the housing boom comes back eventually," Simonsen said.

Sunset did not move right away on the previous approval because other projects in Southern California took priority, Nunn said.

Sunset is hoping to take advantage of an increase in California crude oil prices, which now top \$100 a barrel, especially given that it costs the same to drill for less-lucrative natural gas. That spike has led many companies in the state to invest in more wells, particularly at or near sites that have paid off in the past.

Nunn says the western area of the field has yet to be tapped, which he hopes means there's still oil far below the surface.

"It's an exciting play," he said.

If oil is found, it would be stored in a tank on-site, with the liquid inside drained and taken off-site by trucks once a day. The gas would be funneled through existing underground lines that run under Deer Valley Road.

Before starting to dig, a public meeting was held to vet concerns, particularly those from residents who live about 1,500 feet away in homes on Mammoth Way. In the past, residents there have expressed concern about noise and soil contamination. Only one person attended the meeting.

A recent visit to the site found that the 100-foot-high rig and other heavy machinery were relatively loud on the site but cannot be heard from Mammoth or Deer Valley.

"We're trying to be good neighbors," Nunn said.

Contact Paul Bugarino at 925-779-7164. Follow him at [Twitter.com/paulbugarino](https://twitter.com/paulbugarino).