



DEPARTMENT OF CONSERVATION

DIVISION OF OIL, GAS AND GEOTHERMAL RESOURCES

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August 4, 2008

Ron Skinner
Huasna Valley Farms
Via Email

Re: Huasna Oil Field Drilling

Dear Mr. Skinner:

In an email received by this office on July 28, 2008, you had requested a response from this Division to the questions bolded below. The Division's response is listed below each question.

Is petroleum extraction and separation an allowed used on lands under Williamson Act Contract?

The Williamson Act doesn't specifically address the compatibility of oil or gas operations on contracted land. These uses are judged by the County for consistency under Government Code section 51238.1. They can be compatible only if they don't compromise the long term agricultural capability of the land, they don't significantly displace ag operations, and they don't result in significant removal of on-site or adjacent lands from agricultural production. These standards apply to prime agricultural lands. For non prime ag lands, if a CUP is needed for the use, the Board of Supervisors can approve the use if the impacts to agriculture are mitigated. The San Luis Obispo County Planning Department should be consulted with regard to the implication of petroleum extraction and agricultural preserve status and for further information.

How many wells have been drilled in the Huasna Oilfield? How many of those have been properly abandoned? How many are orphans?

Exploration for oil in the Tar Springs Ranch and Huasna region date back to the early 1900's. The Huasna oil field was first discovered in 1928. A total of 16 wells have been drilled within the designated field boundary. The field is divided into two areas, the Tar Springs Area and the La Voie-Hadley Area. Within the Tar Springs Area nine (9) wells were drilled and later plugged and abandoned. Within the La Voie-Hadley Area seven (7) wells were drilled, and two (2) were later plugged and abandoned. The remaining five (5) long term idle wells in the La Voie-Hadley Area are considered by the Division as orphan wells, since the last operator of record, Deuel Petroleum Co., Inc. has been non-responsive. A long term idle well is a well which has not been produced for more than five (5) years

Of the 11 wells plugged and abandoned within the Huasna field, they are all abandoned to the standards in place at the time of abandonment. Understandably the Division's plugging requirements have changed over time.

Do the orphaned wells pose a potential threat to contamination of soil, water, or air? Some have been left open for 22 years.

The oil in the Huasna field ranges from 9-11° in API gravity, which in laymen's terms means that the oil is very viscous, and does not flow very easily. The potential threat from the oil in the wellbore is minimal as far as a large spill at the surface. The thick oil would also not percolate down into the soil in the event of a spill.

The freshwater – saltwater interface is at approximately 500' in depth. The annulus created between the drilled hole and the casing is typically filled with cement. This cement required in the annulus limits the potential for upward migration of fluids behind the surface casing and production casing. Depending on the reservoir pressure, a column of fluid could extend from the total depth of the well to surface. If there is a hole in the casing then fluid could potentially leak out into the freshwaters.

Our last inspection of the wells did not show them open at the surface. Gas can accumulate in the well, but as long as there are valves in good working order the potential for air contamination is minimal.

What is the process required to abandon a well? Is it something we could reasonably ask of the project applicant, that they abandon the existing wells prior to drilling new wells?

An operator must file a Notice of Intention to Abandon form OG108. The Division reviews the notice to ensure that the California Code of Regulations for plugging and abandoning a well are met. The Division requires the isolation of the productive zone with a cement plug. The cement plug extends to at least 100 ft above the oil zone. The Division also requires the isolation of freshwaters with a cement plug, at least 100 linear feet in length. The Division requires a surface plug in the casing and in all open annuli, 25 ft in length. All portions of the well not plugged with cement are required to be filled with a drilling mud of specific mud weight and gel strength to hold back any subsurface pressure, and minimize any fluid entry into the wellbore. Once the notice is reviewed the Division responds to the operator's request with a Permit to Conduct Well Operations. In that permit the Division outlines any required changes to the proposed program, as well as identifying any operations that must be witnessed by a Division representative.

Required abandonment as part of the project application would need to be addressed by San Luis Obispo County, as the lead agency in the CEQA process.

How much work has been done to determine the size and quality of the Huasna Oilfield? There were seismic sounding trucks out here in the 80's and I have found one DOGGR estimate of 10 mbbl and production logs about 8 degree api oil.

Seismic testing is just one of the preliminary tools used to better interpret geologic structures. The operator proposes to drill wells to better define formation depths and thicknesses. The Division calculates reserves by reviewing current production, the depth of the reservoir, and the economic limit projected for a field.

How does the viscosity of Huasna oil compare to the Arroyo Grande field (Price Canyon)? Is the oil found in similar geological structures?

The gravity in the La Voie Hadley Area of the Huasna field is 9-13°. Peak production for the field was in 1966 with 17,757 bbl. The gravity in the currently producing Tiber Area of the Arroyo Grande field is 13-15°. Peak production for the field was in 2002 with 721,425 bbl

No, the oil production is from different formations. The La Voie Hadley area extracted production from the Santa Margarita and Monterey Formations, while the Tar Springs Area produced solely from the Monterey Formation, both zones are Miocene in age and from anticline structures in the Huasna field. The Tiber Area of the Arroyo Grande field produces mainly from the Dollie Sands within the Pismo Formation, and is Pliocene in age from a homocline with the formation pinching out to the southwest.

The project is proposing to extract and separate oil using heated produced water re-injected into the wells. Is this feasible? All other production data I have seen for the old wells used steam. The Arroyo Grande field (Price Canyon) uses steam, and their produced water has increased drastically with production to the point that it has become a disposal problem.

Given the viscosity of the oil in the Huasna field, enhanced oil recovery techniques (EOR) must be used to increase production. Waterflood projects designate injection wells for fluid injection to improve production in producing wells. Produced water, without much treatment and processing may be classified as a Class II fluid. Any injection of Class II fluids is monitored under our Underground Injection Control Program. Any injection of water directly into producing wells would have little if any effect the further you go out from the wellbore.

The Arroyo Grande field currently has a water cut of 93%, which means that 93% of the fluid extracted is produced water. The operator of the Arroyo Grande field is challenged with removing produced water from the field, and has drilled and/or permitted additional water disposal wells to handle some of the additional produced water.

Is there a possibility for natural gas or hydrogen sulfide in the Huasna Oilfield. Who regulates emissions of h2s from wells? Shouldn't there be a plan for dealing with h2s? If there is any h2s in the oil, wouldn't that pose a greater risk for transportation by truck along a windy, dangerous road? Who regulates transportation of oil containing h2s?

There is no information available on the potential for H2S in the Huasna field. The Air Pollution Control Districts (APCD) regulate emissions from facilities and wells. The Division requires adequate safety precautions for H2S be taken during the well drilling phase. Equipment can be installed at the facilities to scrub the gas and extract the H2S from the product prior to shipping. The volume of H2S in a tanker load, if not scrubbed, would be minimal and dissipate fairly quickly if released. The Dept. of Transportation would be responsible for hauling regulations.

The traffic reports are all founded on numbers that Excelaron has provided the county as to the number and type of vehicle associated with drilling, testing, and production for each well drilled. I have no references to help determine whether or not these are accurate estimates. Is there an industry accepted standard for traffic generated from such a project? The numbers also were originally based on re-working three wells and drilling one new well. How might these numbers change now that the project is planning to drill four new wells?

The Division does not maintain any figures for vehicle and personnel traffic at a drilling operation.

What is the feasibility of building a pipeline from the Huasna Oilfield to a filling station for trucks near Hwy 166 (assuming easements, property acquisition, etc.. were in place). If there really is 10 mmbbl of extractable oil in the Huasna Oilfield, it seems a pipeline would be justifiable as a mitigation once production was proven.

The Division does not dictate the method of shipment, we do however have regulations that address sensitive pipelines.

The Division's laws and regulations can be downloaded from our web site at www.conservation.ca.gov, as well as production and injection figures, information of H2S, and maps of the area. Should you have any questions, please feel free to contact our office.

Sincerely,

Patricia A. Abel
Acting Deputy Supervisor