

To: cr_board_clerk Clerk Recorder/ClerkRec/COSLO@Wings,
Cc:
Bcc:
Subject: Fw: EXCELARON, LLC - SUPPORT FOR REQUEST FOR CONTINUANCE
From: Vicki Shelby/BOS/COSLO - Monday 08/20/2012 08:05 AM

FYI

Vicki M. Shelby
Legislative Assistant
First District Supervisor Frank R. Mecham
1055 Monterey St., D430
San Luis Obispo CA 93408
(805) 781-4491/FAX (805) 781-1350

email: vshelby@co.slo.ca.us

"Thinking a smile all the time will keep your face youthful" - Frank G. Burgess
"Wrinkles should merely indicate where smiles have been" - Mark Twain

----- Forwarded by Vicki Shelby/BOS/COSLO on 08/20/2012 08:04 AM -----

From: Suzanne Shiffrrar <sshiffrrar@sbcglobal.net>
To: Frank Mecham <fmecham@co.slo.ca.us>
Cc: vshelby@co.slo.ca.us
Date: 08/19/2012 11:24 AM
Subject: EXCELARON, LLC - SUPPORT FOR REQUEST FOR CONTINUANCE

August 19, 2012

Supervisor Frank Mecham
San Luis Obispo County Board of Supervisors
1055 Monterey Street, 4th Floor
San Luis Obispo, CA 93408

RE: EXCELARON, LLC – HUASNA VALLEY OIL EXPOLORATION & PRODUCTION
PROJECT DRC2009-00002 – SUPPORT FOR REQUEST FOR CONTINUANCE

Dear Supervisor Mecham,

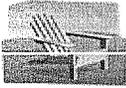
Thank you for the opportunity to once again express my support for the project and to request your support for Excelaron, LLC's request for a continuance. Excelaron, LLC is proposing an alternative that they anticipate will lessen the identified impacts in the Final Environmental Impact Report. This alternative deserves meaningful consideration. We encourage you to direct County staff and their environmental consultant to review this alternative and circulate their analysis for public review and comment.

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: RICHARD & SUZANNE SHIFFRRAR
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

Please seriously consider Excelaron's request for a continuance. Thank you for the consideration.

Sincerely,

Richard and Suzanne Shiffrar



Fw: Letters to Supervisor Mecham
Vicki Shelby to: cr_board_clerk Clerk Recorder

08/20/2012 08:09 AM

Vicki M. Shelby
Legislative Assistant
First District Supervisor Frank R. Mecham
1055 Monterey St., D430
San Luis Obispo CA 93408
(805) 781-4491/FAX (805) 781-1350

email: vshelby@co.slo.ca.us

"Thinking a smile all the time will keep your face youthful" - Frank G. Burgess
"Wrinkles should merely indicate where smiles have been" - Mark Twain

----- Forwarded by Vicki Shelby/BOS/COSLO on 08/20/2012 08:08 AM -----

From: Lori Lawson <lorilawson357@yahoo.com>
To: "vshelby@co.slo.ca.us" <vshelby@co.slo.ca.us>
Date: 08/17/2012 03:16 PM
Subject: Letters to Supervisor Mecham

HelloVicky:

Can you please print and forward the attached 3 letters to Supervisor Mecham? I am forwarding letters for my brother (Bruce Parsons) and my father (Gerard Parsons) and myself. The letters are regarding the Excelaron project that will be reviewed for possible continuance on August 21, 2012. Thank you so much. -- Lori Lawson



B Parsons to Sup Mecham.doc G Parsons to Sup Mecham.doc L Lawson to Sup Mecham.doc

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: LORI LAWSON
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

August 17, 2012

SAN LUIS OBISPO COUNTY BOARD OF SUPERVISORS
1055 Monterey Street, 4th Floor
San Luis Obispo, CA 93408

RE: EXCELARON, LLC – HUASNA VALLEY OIL EXPLORATION & PRODUCTION
PROJECT DRC2009-00002 – SUPPORT FOR REQUEST FOR CONTINUANCE

Dear Supervisor Mecham:

As a mineral rights owner, and a third-generation San Luis Obispo resident, I have an intimate connection to Excelaron's proposed oil evaluation effort in the Huasna Valley.

This already developed oil field has seen exploration for the past 100 hundred years. My grandmother and her children first obtained our mineral rights back in 1936; therefore, I have had an interest in the Huasna Valley for a very long time.

Over the last several years, Excelaron has been working with San Luis Obispo County in an effort to relieve the concerns of the current residents in the Huasna Valley. I would like to express my support for the project and to request your support for Excelaron, LLC's request for a continuance. Excelaron, LLC is proposing an alternative that they anticipate will lessen the identified impacts in the Final Environmental Impact Report. This alternative deserves meaningful consideration.

As a mineral rights owner, I have a legal right to explore the land in a safe manner. Excelaron has gone above and beyond to address every concern that local residents have with the proposed project.

This project could potentially bring many community-wide benefits including the creation of jobs and tax revenue to the county. Our county and our nation needs to move forward to a more stable energy security. The United States must find ways to develop more domestic oil reserves.

I encourage you to direct County staff and their environmental consultant to review this alternative and circulate their analysis for public review and comment.

Please seriously consider Excelaron's request for a continuance. Thank you for the consideration.

Sincerely,

Bruce S. Parsons

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: LORI LAWSON
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

August 17, 2012

SAN LUIS OBISPO COUNTY BOARD OF SUPERVISORS
1055 Monterey Street, 4th Floor
San Luis Obispo, CA 93408

RE: EXCELARON, LLC – HUASNA VALLEY OIL EXPLORATION & PRODUCTION
PROJECT DRC2009-00002 – SUPPORT FOR REQUEST FOR CONTINUANCE

Dear Supervisor Mecham:

As a long-term resident in San Luis Obispo for the last 94 years, I am writing this letter to voice my support for the project and to request your support for Excelaron, LLC's request for a continuance.

I have paid close attention over the last several years, to Excelaron's commitment to work with San Luis Obispo County and the public to address every concern that local residents have with the proposed project. Excelaron, LLC is proposing an alternative that they anticipate will lessen the identified impacts in the Final Environmental Impact Report. This alternative deserves meaningful consideration.

This project could potentially bring many community-wide benefits including the creation of 100 jobs and upwards of \$350,000 per year in tax revenue to the county. In these tough economic times, with major budget deficits, high unemployment, and a nation that is acknowledging that we MUST become more energy independent, Excelaron will represent a step toward energy diversity. Our county and our nation needs to move forward to a more stable energy security.

Please seriously consider Excelaron's request for a continuance. Thank you for the consideration.

Sincerely,

Gerard L. Parsons

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: LORI LAWSON
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

August 17, 2012

SAN LUIS OBISPO COUNTY BOARD OF SUPERVISORS
1055 Monterey Street, 4th Floor
San Luis Obispo, CA 93408

RE: EXCELARON, LLC – HUASNA VALLEY OIL EXPLORATION & PRODUCTION
PROJECT DRC2009-00002 – SUPPORT FOR REQUEST FOR CONTINUANCE

Dear Supervisor Mecham:

Thank you for the opportunity to once again express my support for the project and to request your support for Excelaron, LLC's request for a continuance. Excelaron, LLC is proposing an alternative that they anticipate will lessen the identified impacts in the Final Environmental Impact Report.

As a mineral rights owner, and a third-generation San Luis Obispo resident, I have a great interest in Excelaron's proposed oil evaluation effort in the Huasna Valley. My grandmother (Bessie Sanford) and her children first obtained our mineral rights back in 1936; therefore, I have had an interest in the Huasna Valley for a very long time.

Over the last several years, Excelaron has been working with San Luis Obispo County in an effort to relieve the concerns of the current residents in the Huasna Valley. This alternative deserves meaningful consideration by the Board of Supervisors at the next meeting on August 21, 2012.

Excelaron has gone above and beyond to address every concern that local residents have with the proposed project. And this project could potentially bring the creation of jobs and tax revenue to the county. Our county and our nation NEEDS to move forward to a more stable energy security.

I encourage you to direct County staff and their environmental consultant to review this alternative and circulate their analysis for public review and comment.

Please seriously consider Excelaron's request for a continuance. Thank you for the consideration.

Sincerely,

Lori L. Lawson

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: LORI LAWSON
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012



Fw: Contact Us (response #2171)

Board of Supervisors to: BOS_Legislative Assistants
Sent by: Amber Wilson
Cc: cr_board_clerk Clerk Recorder

08/20/2012 08:43 AM

----- Forwarded by Amber Wilson/BOS/COSLO on 08/20/2012 08:43 AM -----

From: "Internet Webmaster" <webmaster@co.slo.ca.us>
To: "BoardOfSups@co.slo.ca.us" <BoardOfSups@co.slo.ca.us>
Date: 08/19/2012 11:26 AM
Subject: Contact Us (response #2171)

Contact Us (response #2171)

Survey Information

Site:	County of SLO
Page Title:	Contact Us
URL:	http://www.slocounty.ca.gov/bos/BOSContactUs.htm
Submission Time/Date:	8/19/2012 11:25:55 AM

Survey Response

Name:	
Telephone Number:	
Email address:	
Comments or questions (8,192 characters max):	<p>Dear Board of Supervisors, After reading several pieces about the oil exploration and extraction in Huasna Valley, it my fervent desire that a NO vote to postpone or give the go-ahead is a must. If postphoned, there is a good chance that Debbie Arnold will not be as green friendly and vote to help get the Exclaron project going. This would be a diasater for our county and the Huasna community. Please consider rejecting this project now. Thank you. Sincerely, Victoria Grostick San Luis Obispo</p>

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: VICTORIA GROSTICK
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012



Fw: Contact Us (response #2170)

Board of Supervisors to: BOS_Legislative Assistants
Sent by: Amber Wilson
Cc: cr_board_clerk Clerk Recorder

08/20/2012 08:46 AM

----- Forwarded by Amber Wilson/BOS/COSLO on 08/20/2012 08:46 AM -----

From: "Internet Webmaster" <webmaster@co.slo.ca.us>
To: "BoardOfSup@co.slo.ca.us" <BoardOfSup@co.slo.ca.us>
Date: 08/19/2012 08:17 AM
Subject: Contact Us (response #2170)

Contact Us (response #2170)

Survey Information

Site:	County of SLO
Page Title:	Contact Us
URL:	http://www.slocounty.ca.gov/bos/BOSContactUs.htm
Submission Time/Date:	8/19/2012 8:16:48 AM

Survey Response

Name:	sara west
Telephone Number:	8055440675
Email address:	hiho989@yahoo.com
Comments or questions (8,192 characters max):	In reference to your upcoming decision regarding the Excelaron Project: I want to support your previous decision that the project is "incompatible with the area's pastoral character". It is regrettable that Excelaron has invested so much to get this far, but the bottom line is that this is not the type of industry we want in San Luis Obispo County. Oil is not the future. Embracing sustainable energy is far more desirable. However, should you choose to accept it, be sure to include specific language prohibiting

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: SARA WEST
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

fracking which is entirely unacceptable.

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: SARA WEST
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012



Fw: EXCELARON CONDITIONAL USE PERMIT - HUASNA VALLEY OIL EXPLORATION & PRODUCTION PROJECT

Amy Gilman to: cr_board_clerk Clerk Recorder

08/20/2012 11:52 AM

a series of 4 so far...

----- Forwarded by Amy Gilman/BOS/COSLO on 08/20/2012 11:52 AM -----

From: Carol Florence <CMF@oasisassoc.com>
To: "Adam Hill " <ahill@co.slo.ca.us>, "Amy Gilman " <agilman@co.slo.ca.us>, Bruce Gibson <bgibson@co.slo.ca.us>, "Cherie Aispuro " <caispuro@co.slo.ca.us>, "Deb Geaslen " <dgeaslen@co.slo.ca.us>, "Frank Mecham " <fmecham@co.slo.ca.us>, Jim Patterson <jpatterson@co.slo.ca.us>, "Paul Teixeira " <pteixeira@co.slo.ca.us>, "Susan Devine " <sdevine@co.slo.ca.us>, "Vicki Shelby " <vshelby@co.slo.ca.us>
Cc: "Jason Giffen " <jgiffen@co.slo.ca.us>, "Whitney McDonald " <wmcdonald@co.slo.ca.us>
Date: 08/20/2012 10:31 AM
Subject: EXCELARON CONDITIONAL USE PERMIT - HUASNA VALLEY OIL EXPLORATION & PRODUCTION PROJECT

Dear Supervisors,

In advance of the upcoming Excelaron hearing, I am submitting the following information for the record. The attached documents are available on the DOGGR website, and provide some background information on oil production in California. Attached for your consideration are:

1. ***Oil And Gas Production History In California*** —this document provides a brief overview of the industry's beginnings in California and how far it has come.
2. ***Producing Wells And Production By County*** —this chart provides some perspective on the number of producing oil wells in California and location(s).

Although we hope that the upcoming hearing will be brief, given our recent request for a continuance, we will be submitting a number of additional documents today that should help inform your ultimate decision on the project. In other words, this is the first email of several! We have attempted to separate everything into "bite-size" pieces and include a cover email for each explaining the significance of the material being submitted.

In the event your Board sees fit to grant the continuance to allow study and public review of our alternative, the documents we are submitting will prove interesting and informative reading during the continuance period, and will remain relevant when the project is heard again. Thank you in advance for your continued consideration.

Respectfully,
C.M. Florence, AICP
Principal Planner

OASIS ASSOCIATES, INC.
LANDSCAPE ARCHITECTURE + PLANNING
3427 Miguelito Ct., San Luis Obispo, CA 93401
P: 805.541.4509 | F: 805.546.0525 | C: 805.459.9972
www.OASISASSOC.com



Oil & Gas Production History in CA.pdf Production of Oil by County.pdf

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: C.M FLORENCE
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

OIL AND GAS PRODUCTION *History in California*

OIL

California oil was always a valued commodity. When the Spanish explorers landed in California in the 1500s, they found Indians gathering asphaltum (very thick oil) from natural seeps. The asphaltum was used for many purposes, including waterproofing baskets, making wooden canoes, called "tomols," fastening arrowheads to shafts, and decorating objects—usually with shells affixed to the asphaltum. The explorers, in turn, used asphaltum to seal seams in their ships. Later settlers also used the thick asphaltum in many ways, including sealing the roofs of their houses.

As pioneers continued to arrive and settle, the number of oil seeps they discovered in California naturally increased. In Northern California, people were interested in the oil seeps in Humboldt, Colusa, Santa Clara, and San Mateo Counties, and in the asphaltum seeps and bituminous residues in Mendocino, Marin, Contra Costa, Santa Clara, and Santa Cruz Counties. Oil from a Humboldt County seep was sold in 1855, four years before Colonel Drake drilled America's first oil well in Pennsylvania.⁴

In Southern California, large seeps in Ventura, Santa Barbara, Kern, and Los Angeles Counties received the most attention. Interest in oil and gas seeps was stirred in the 1850s and 1860s, in part because one of California's oldest and most-used roads passed along nearly all the seep areas on the western side of the San Joaquin Valley. As early as 1849, travelers moving along the route used the seeps, pausing to lubricate their wagon wheels with oil.

Interest in oil seeps became widespread after the 1859 discovery of oil in Pennsylvania, when the value of kerosene as an illuminant became generally known. However, prior to the Pennsylvania activity,



A natural tar seep in Ventura County. Seeps are ephemeral, transitory features appearing and disappearing through the years on no apparent schedule. Over 500 onshore seeps are documented in the division publication *Onshore Oil and Gas Seeps in California*. Additional information is on the Internet at <http://seeps.wr.usgs.gov/>

a number of California settlers probably collected oil from seeps and distilled it into lamp oil. The first person so recorded was Andreas Pico. In 1850, Pico took oil from seeps found in Pico Canyon, near Newhall, and distilled it for use as an illuminant at the San Fernando Mission.⁸

In 1854, oil was collected from seeps and excavations at Sulphur Mountain, in Ventura County, and refined in stills for home use. Complete records of the operations are not available, but it is reported that as early as 1856, a company organized in San Francisco began working the tar pits at La Brea Ranch, near Los Angeles, distilling some oil.²

⁴Superior figures refer to references at the end of the essay.

Other sources state that a G. S. Gilbert was refining oil on a commercial basis as early as 1857, if not before. In 1861, Gilbert set up a larger plant near Ventura to refine asphaltum gathered from seeps on the Ojai Ranch. That plant produced about 300 to 400 gallons of refined oil each week for several years.

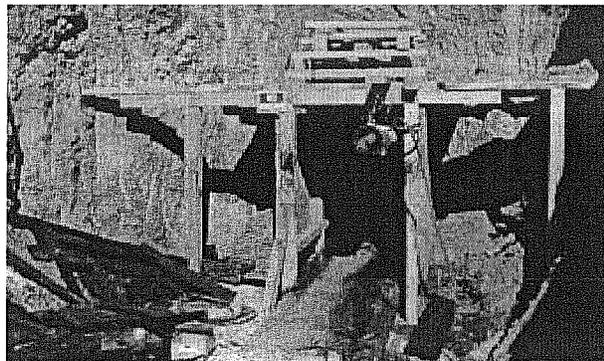
Shortly thereafter, oil was obtained from pits dug in seep areas throughout California. Among the most important were those at McKittrick, in Kern County, which were worked from 1864 to 1867, and seeps at Sargent Ranch, in Santa Clara County, worked in 1864 and 1865.

In the early 1860s, oil tunnels were dug in Sulphur Mountain near Santa Paula in Ventura County. Josiah Stanford, a mining engineer, dug about 30 tunnels into the mountain, slanting them upwards so oil flowed down to the entrances. Some tunnels reportedly produced up to 20 barrels of oil per day. The oil flowing steadily from the tunnels made Stanford one of the top oil producers of the 1860s and the tunnels produced more oil in California than any other production method. In the early 1990s, a few tunnels were still producing oil, but by 1997 the last one had been plugged and abandoned.



The Boardinghouse Tunnel in the Adams Canyon area of Santa Paula oil field, dug over 100 years ago, as photographed in February 1980. The tunnel is one of 26 Adams Canyon oil tunnels dug by Union Oil Company (or by companies that eventually merged to form a part of Union Oil).

Such tunnels took advantage of natural oil seepage in the area. When the photo was taken, water and a little oil still flowed from the tunnel through a pipeline buried in the slumped-in dirt and rock at the entrance. The water and oil were collected in tanks by Union Oil Company. *Photo by J. Hardoin.*



Mouth of the Boardinghouse tunnel as it was plugged and abandoned in 1997. The oil tunnels slanted slightly upward as deep as 400 feet into the sharply tilted strata of Sulphur Mountain, which rises abruptly north of the present City of Santa Paula. In the 1860s the tunnels produced more oil in California than any other production method. *Photo by P. Kinnear.*



Inside the Boardinghouse tunnel during plugging and abandonment procedures in 1997. Completed tunnels generally were about five feet high and no more than four feet wide. Miners who made the tunnels chiseled out a gutter on the tunnel floor, lining it with redwood planks. Because of the steep grade, oil and water flowed easily down the gutters, out of the tunnels, and into the holding tanks. The airpipe was installed temporarily during abandonment operations. *Photo by P. Kinnear.*

Often, distances from markets and relatively high operating costs limited seep operations to occasional short periods when circumstances made the work profitable. Seep operations became more sporadic as more oil wells were drilled.

In 1861 in Humboldt County, the first well was drilled in California for oil production.¹⁰ The well was unsuccessful, like numerous other Humboldt County wells drilled between 1861 and 1864.

However, drilling activity soon began in earnest, and in 1865 and 1866 wells were drilled from Humboldt County southward to Ventura. H.G. Hanks¹⁰ writes that 65 companies were drilling for oil in California in 1865.



Remnants of the activity of California's early oil pioneers still dot the landscape. Natural oil seeps abound in this region of central Ventura County.

Another California oil well, the Union Mattole Oil Company well in Humboldt County, was completed in the summer of 1865. The well was not commercial, although it produced some oil for a time. No records are available of its initial production. Reports conflict as to the exact month of completion and the amount of the first oil shipment, but Hanks¹⁰ writes, "Thirty barrels of oil were shipped to San Francisco. 'Six, 20 gallon casks of crude oil,' by another statement, was the first shipment of oil received from the north."

Walter Stalder¹⁰ records that the Stanford Brothers refined and sold the first shipment of oil from the Mattole well, the first oil produced and refined from a California well. Reportedly, the refined "burning oil" sold for \$1.40 per gallon.

In 1866, Thomas R. Bard drilled several wells on the Rancho Ojai, near Ventura. The most successful of these was "Ojai" 6, which produced from 15 to 20 barrels of oil per day from a depth of 550 feet. This well was the best to date and would be considered the first California oil well commercially productive,

except for the lack of a record of whether the well produced continually or intermittently.

Also in 1866, according to Hanks,¹⁰ a number of stills were built to refine oil: the Charles Stott still on Santa Paula Creek in Ventura County; the Hayward and Coleman still and the Stanford Brothers' still, both in San Francisco; the Buena Vista Petroleum Company still near the present town of McKittrick; and the Polhemus still in Los Angeles.

By 1867, drilling activity had declined. Many California wells capable of producing oil were idled because over-production in Pennsylvania brought Pennsylvania oil to San Francisco at a price lower than California operators could meet. However some development continued, the most important in Pico Canyon near Newhall. Here in 1876, well "Pico" 4 was completed, producing 30 barrels of oil a day from a depth of 300 feet. The well, the first truly commercial oil well in the state, is so designated by the placement of a state historical monument. The site is California Registered Landmark 516.

The same year, the first true oil refinery in the state was built at Newhall to take care of the new production. The refinery had a daily capacity of 20 barrels. About this time in California history, the change was made from candles to kerosene lamps.

In 1878, well "Pico" 4 was deepened to 610 feet and produced up to 150 barrels of oil per day for a short period—spectacular for the time. In the same year, the Newhall refinery was dismantled and the equipment moved to a new location 1/2 mile east of Newhall near the Southern Pacific Railroad. The refinery, called the Pioneer Oil Refinery, is still standing and open to the public as California Registered Landmark 172. In 1879, the first oil pipeline in California—a 2-inch line—was laid from Pico Canyon to this new refinery, a distance of about five miles.

By 1880, although a number of wells had been drilled in Pico and Wiley Canyons near Newhall, the greatest interest focused at Moody Gulch in Santa Clara County. Moody Gulch wells were from 800 to 1,600 feet deep, and some initially produced up to 100 barrels of oil a day. However the production from these wells declined rapidly. Soon, prospects at Moody Gulch looked poor and interest returned to canyons near Newhall, where increased drilling raised the area's oil production to about 500 barrels a day.

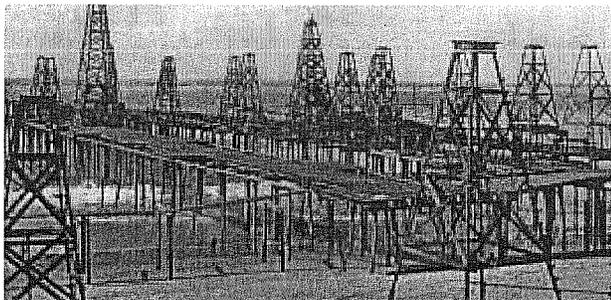
In 1885, development began in Adams Canyon near Santa Paula, greatly increasing the production in the Ventura area and boosting the total state oil production—which was almost entirely from the Ventura County and Newhall fields—to 325,000 barrels for the year.

Most of the oil from the Ventura County and Newhall fields was shipped to the San Francisco area, the most populous region in the state. Railroad rates were high, so the companies sought cheaper ways to ship the oil. To this end, a pipeline was laid from Newhall to the waterfront at Ventura in 1886. In 1888, two wooden steamers equipped with steel tanks were constructed in San Francisco and were soon transporting oil from Ventura to San Francisco at greatly reduced costs.

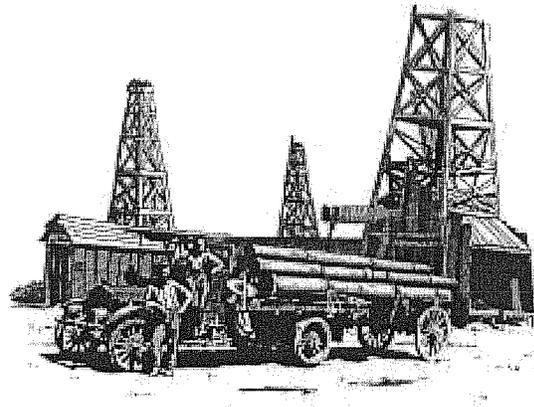
In 1890, the discoveries of the Sunset Area of Midway-Sunset field in Kern County and the Coalinga field in Fresno County opened large, potentially productive areas for exploration. However, since the



Summerland oil field, Santa Barbara County, around 1900. Onshore drilling started here in 1886. As field development continued, operators realized the oil sands extended under the ocean. To reach the offshore sands, piers were built over the water to support drilling and production machinery. The piers, though faint, are seen in this photo.



Close-up of piers around 1900, Summerland oil field. Today the piers and derricks are gone.



A truck hauling well casing to a Kern County well site in the early 1900s. From a Kern County Museum photo.

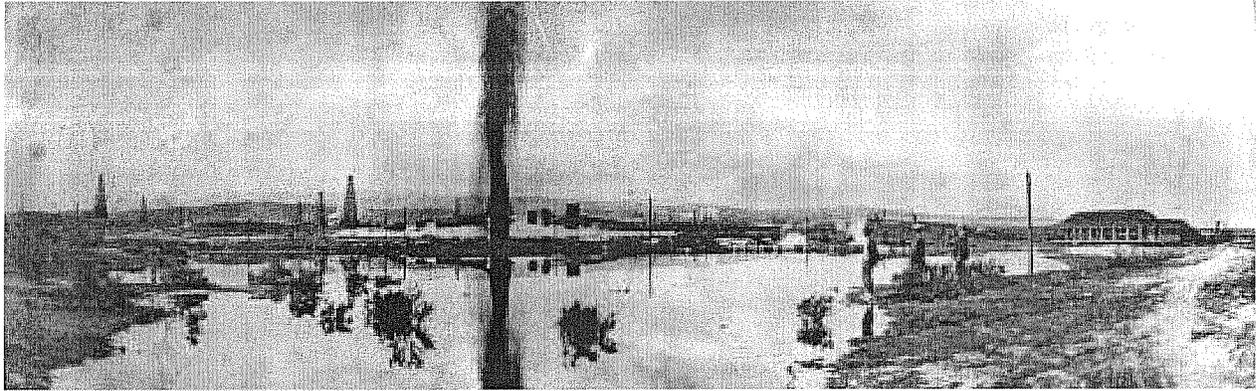
discovery wells were small producers, no large-scale development of these fields occurred at that time and statewide production for the year dropped to 307,000 barrels of oil.

Then in February 1892, California saw its first oil gusher. While being drilled in Adams Canyon near Santa Paula, Union Oil Company's well No. 28 hit oil and blew out of control, flowing an estimated 1,500 barrels of oil per day. This was the first truly big well in the state. Unfortunately, no storage facilities were available to contain such amounts of oil. The oil ran down Adams Canyon into the Santa Clara River, and on to the ocean. The well produced about 40,000 barrels of oil before the flow was controlled, but no lasting damage occurred.

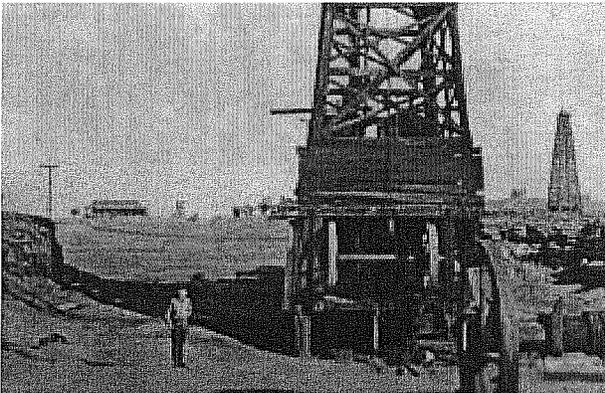
In 1893, Los Angeles City field was discovered and soon led the state in production. Shortly thereafter, overproduction became so acute that the price of oil dropped to 25 cents a barrel. In 1895, Los Angeles City field produced about 750,000 barrels, over half of the 1.2 million barrels produced in the state.

In 1896, the first offshore wells in the United States were drilled in the Pacific Ocean as an offshore extension to Summerland oil field in Santa Barbara County. The wells were drilled from piers built over the water.

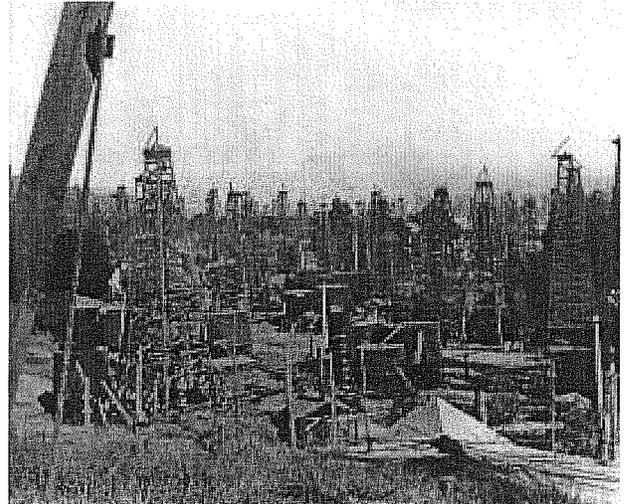
After a few relatively quiet years, excitement returned when large gushers began to flow in the Oil City Area of Coalinga oil field. One famous gusher, Home Oil Company well No. 3, sometimes known as the "Blue Goose," was completed at a depth of 1,400 feet in 1898. The well first flowed over 1,000 barrels of oil per day.



This was the greatest gusher of them all, the famed "Lakeview Gusher" near Maricopa, Kern County, in 1910. The well, "Lakeview" 1, spewed oil and sand for 18 months before it finally quit, producing over 8 million barrels of oil, an amount equaling about 10 days of California oil production in 2001.



E. H. Musser, California State Oil and Gas Supervisor from 1954 to 1962, standing next to well "Lakeview" 1. By the early 1920s when this picture was taken, the oil had been cleaned up and the well itself redrilled and placed on production. You can see where Mr. Musser is standing on the site by using as reference the building in this photo and in the one above. *Photo courtesy of E. H. Musser.*



Panorama of oil fields, Los Angeles, California, around 1906. Old wooden derricks were a common sight in the Los Angeles area up through the 1930s. *One-half of a stereopticon view by E. W. Kelley, The Library of Congress.*

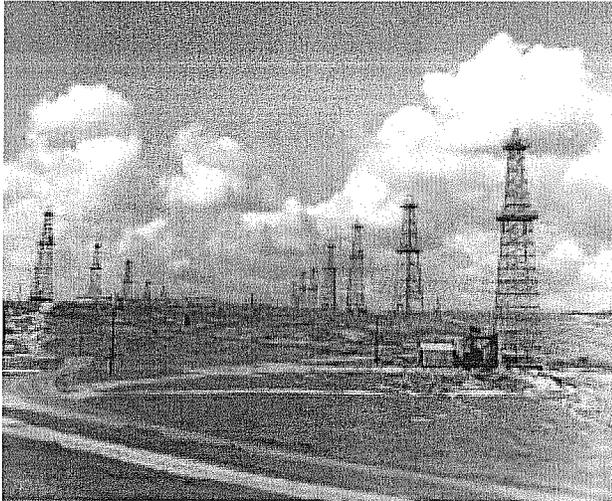
With the discoveries of McKittrick oil field in 1898, Kern River oil field in 1899, and the Midway Area of Midway-Sunset oil field in 1900, another oil boom was on. By 1900, wells in Los Angeles, Coalinga, and Kern River oil fields were the leading producers, and the annual state oil production had reached 4.3 million barrels.

Production continued to rise and by 1905 the annual state oil production reached 34 million barrels, with Kern River, the largest field, producing 15 million barrels.

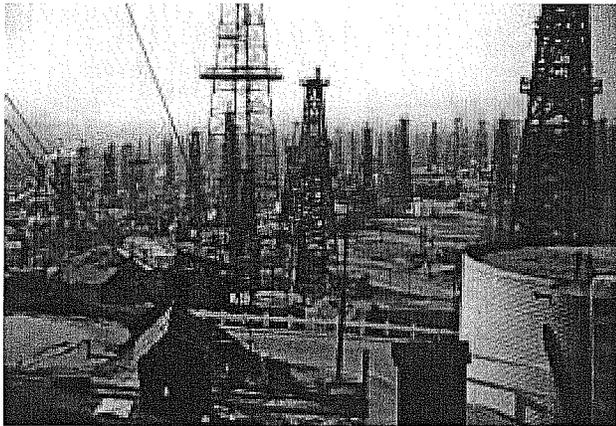
New fields were discovered and new gushers occurred with surprising regularity. Finally in March 1910, well "Lakeview" 1 came in, the greatest gusher of them all. Lakeview Oil Company started drilling on January 1, 1909, in Midway-Sunset oil field, about 2 miles north of the City of Maricopa. The company

had completely exhausted its finances when the well reached a depth of 1,655 feet. At that time Union Oil Company of California acquired the controlling interest and drilling continued intermittently until a depth of 2,225 feet was reached.

Suddenly around dawn on March 15, 1910, the well started flowing and soon was completely out of control. Oil production estimates for the first 24 hours varied from 15,000 to 125,000 barrels, and two months later the well's production was estimated between 68,000 to 90,000 barrels of oil each day. The well continued to flow out of control for 18 months, finally stopping on September 9, 1911, after producing an estimated 8.2 million barrels of oil. No well comparable to the Lakeview Gusher ever has been drilled in the United States to this day.



Kern Front oil field, Kern County, discovered in 1914.



Signal Hill, a part of the Long Beach oil field, was a prolific oil producer. Long Beach oil field reached its production peak of 68 million barrels just two years after its discovery in 1921.

By 1910, California oil production had reached 77.7 million barrels. The years 1910 and 1911 also saw the discovery of three very important oil fields: Elk Hills, Lost Hills, and South Belridge, all in Kern County. However, because the U. S. Government withdrew the Elk Hills land to form the Naval Petroleum Reserve No. 1, the field was not produced until 1919.

The development of existing fields and the continued search for new fields greatly increased oil production for the next 10 years. Of the many new oil fields discovered during this period, the most important were North Belridge in 1912 in Kern County; Ventura and South Mountain in 1916 in Ventura County; and Montebello in 1917 in Los Angeles County. California oil production for 1920 reached 103.4 million barrels.

With the exception of Wilmington oil field, all of the large oil fields in the Los Angeles area were discovered between 1920 and 1930. These include Huntington Beach in 1920, Long Beach and Santa Fe Springs in 1921, and Dominguez in 1923. Another important discovery during the decade was Kettleman Hills oil field in Kings County in 1928. The development of these fields caused a flood of oil to reach the market, reducing the price.

Production was low and discoveries, except for Wilmington oil field (Los Angeles County) in 1932, were few during the early Depression years of the 1930s; however, during the latter part of the decade, many large oilfield discoveries were made. However, the 223.3 million barrels of oil produced in 1940 was less than the 227.3 million barrels produced a decade earlier—because of depressed oil prices.

From 1960 to 1970, the only large oil discoveries occurred in Santa Barbara County offshore fields. Carpinteria Offshore oil field, lying in both federal waters and state tidelands, was discovered in 1966; and Dos Cuadras, Offshore oil field, lying in federal waters, was found in 1968.

A blowout in the federally-regulated Dos Cuadras field occurred in January 1969 during the drilling of the field's fifth well. This historic blowout caused a large spill and an outcry against offshore drilling. Shortly thereafter, the state placed a moratorium on offshore drilling on lands under state control until tighter and better controls could be instigated.

Between 1970 and 1980, onshore oil production never again reached the 1968, peak-year production levels. In 1974, Yowlumne oil field was discovered in Kern County and by 1979 was the 9th largest producer in the state. By 1980, although no longer on the list of the 10 largest oil producers, Yowlumne field was the third largest California producer of associated (oil zone) natural gas.

The Arab oil embargo of 1973 led the federal government to open Elk Hills oil field (Naval Petroleum Reserve No. 1) to full development and production in 1976. By 1977, Elk Hills field had jumped to second place in the amount of oil produced from a California field. By 1979 (and again in 1980), Elk Hills production had moved to first place for both oil and associated gas production.

During the 1970s, other fields moved up into the ranks of the leading California oil producers. Refined steam-injection techniques, expanded steam-injec-

ITEM # 32

MEETING DATE: AUGUST 21, 2012

PRESENTED BY: C.M FLORENCE

RECEIVED PRIOR TO MEETING

OIL & GAS HISTORY SOCIETY

tion projects, and increased oil prices together led to record amounts of heavy-oil production. (*Heavy oil* is very thick, viscous oil.) One barrel of crude oil from Kern River field selling for \$2.15 in 1970, sold for \$24.30 in 1980.

The 1980s proved a pivotal time. In the middle of the decade in 1985, California's oil production reached an all-time high. In 1986 oil production began a decline that continued (barring minor upswings) through 2002 and into 2003. Most of the fall was due to an early 1986 worldwide collapse of oil prices, which never rebounded. Compounding the problem, California crude oil is generally of a lower quality than many other oils, bringing a lower price because of higher transportation and refining costs. In addition, as new wells and drilling declined in the state, the percentage of oil produced by secondary recovery methods increased, reaching 62 percent in 2001. This oil often is more expensive to produce, adding to the likelihood that it will be left in the ground, thus lowering state production totals.

By the end of the 1980s, pundits still forecasted the return of substantial oil-production increases, but the 1990s never saw them. Operation Desert Shield, when United States forces defended Saudi Arabia in August 1990, brought temporary upswings in oil prices and oil and gas production. From 1995 to 2001, although oil production dropped (with one small upswing), associated gas production (gas produced with oil) rose due to increased sales of natural gas from Elk Hills oil field in Kern County. Non-associated gas production (gas produced without oil) fluctuated during this period until the last three years, when it dropped steadily.

GAS

A water well, drilled in the City of Stockton (San Joaquin County) between 1854 and 1858, reached a depth of 1,002 feet and produced natural gas with the water. The gas was burned at the Stockton courthouse for many years, even before Drake drilled his Pennsylvania oil well.

Many other water wells drilled in San Joaquin County also produced gas; however, little use was made of the natural gas until 1885 when Standard Gaslight and Fuel Company was incorporated to develop natural gas in the San Joaquin Valley. In 1886, the California Well Company was organized in Stockton for the same purpose.

In 1887, the City of Stockton granted the California Well Company the right to lay natural gas pipelines

throughout the city; thus, Stockton became the first California city supplied with natural gas. However, the first utility company with an adequate supply of natural gas was the Santa Maria Gas Company, which began service to its customers in 1907. The importance of natural gas was realized during this era.

In 1910, the City of Bakersfield in Kern County was supplied with natural gas delivered through a pipeline laid from the Midway-Sunset oil field, 40 miles away. In 1913, another pipeline from the same source was laid to supply the Los Angeles area. By 1915 gas from local fields was available in the Los Angeles area, and by 1927 most of the communities in Southern California had gas service. In 1929, the San Francisco Bay region was supplied with gas through a pipeline laid from Kettleman Hills oil field.

Most of the gas originated as associated gas (gas produced with oil). However, some nonassociated gas (gas produced without oil) reached the market as early as 1910, the year after the first gas zone in the state was found in the Buena Vista Hills Area of Midway-Sunset field (now called Buena Vista field).

During the 1920s, the supply of natural gas in Southern California greatly exceeded the demand. Many large oil fields were discovered in the Los Angeles area during the decade, and the large quantities of gas that accompanied the prolific oil production from these fields caused a great gas surplus, which was blown to air and wasted. As the gas pressures in the reservoirs declined, oil production fell as well. In response, conservation laws prohibiting the waste of natural gas were enacted in 1929. The Division of Oil, Gas, and Geothermal Resources, mandated to enforce these laws, obtained injunctions to reduce gas wastage in several oil and gas fields over the years.

The first important nonassociated gas zone found outside an oil field was discovered in 1926 near Buttonwillow, in Kern County. Gas was not in great demand at that time; thus, the discovery did not stimulate new activity. The first intensive effort to find nonassociated gas accumulations occurred in the last half of the 1930s. In 1936, McDonald Island Gas field was discovered in San Joaquin County and Rio Vista Gas field (the largest in the state) in Sacramento, Solano, and Contra Costa Counties. These large fields are near the San Francisco Bay area where additional gas was sorely needed. Now enthusiasm grew to find additional gas fields.

Gas exploration increased appreciably during the 1940s and even more in the 1950s. In the 1950s, more than 30 gas fields were found, most in the Sacramento Valley. Also, Gaviota Offshore, the first gas field discovered in offshore waters, was found in Santa Barbara County.

The search for gas continued throughout the 1970s, and 44 gas fields were found from 1970 to 1980. As in the 1950s, most of the new fields were in the Sacramento Valley. Except for the decade of the 1930s, the 1960s proved the most successful for finding nonassociated gas reserves in the state.

Before the 1940s, California enjoyed a gas surplus. Since then, the situation has changed to one of

inadequate supply because of the tremendous growth in population and industry. Thus, California must import gas every year. Since 1947, when gas was first brought into California through pipelines from Texas and New Mexico, more gas has been needed. In 1999, California imported 86 percent of the natural gas it used from other states and Canada.

Although fields in Texas and New Mexico remain major California suppliers, large amounts of natural gas are shipped to the state from fields in Oklahoma, Kansas, Utah, and Colorado. Since late 1961, large quantities of gas have been transported through pipelines from fields in Canada.

SELECTED REFERENCES

1. American Petroleum Institute, 1948, California's oil: New York, American Petroleum Institute.
2. Hanks, Henry G., 1884, Minerals of California, in Fourth annual report of the State Mineralogist: San Francisco, California. State Mining Bureau.
3. Heizer, Robert F., 1940, Aboriginal use of bitumen by the California Indians, *in* Geologic formations and economic development of the oil and gas fields of California: State Division of Mines, Bull. 118, p. 74.
4. Hodgson, Susan F., 1980, Onshore oil and gas seeps in California: Sacramento, California Division of Oil and Gas.
5. Huguenin, E., 1945, History of gas conservation in California, *in* Summary of operations, California oil fields, Vol. 31, No. 1: Sacramento, California Division of Oil and Gas.
6. Miller, Thelma B., 1929, History of Kern County, Vol. 1: Chicago, S.J. Clarke.
7. Orcutt, W.W., 1924, Early oil development in California, *in* American Assoc. of Petroleum Geologists, Bull. 8: Tulsa, Oklahoma, American Assoc. of Petroleum Geologists.
8. Prutzman, Paul W., 1912, Petroleum in Southern California: Sacramento, California State Mining Bureau, Bull. 63.
9. Rintoul, William, 1990, Drilling through time, 75 years with California's Division of Oil and Gas: Sacramento, California Depart. of Conservation, Division of Oil, Gas, and Geothermal Resources.
10. Stalder, Walter A., November 12, 1941, Contribution to California oil and gas history: California Oil World.
11. Walling, R.W., 1934, Report on Newhall Oil Field, *in* Summary of operations, California oil fields, Vol. 20. No. 2: Sacramento, California Division of Oil and Gas.

**PRODUCING WELLS AND PRODUCTION
OF OIL, GAS, AND WATER BY COUNTY - 2010***

COUNTY NAME	NUMBER OF WELLS				OIL PRODUCTION (bbl)	NET GAS PRODUCTION (Mcf)			WATER PRODUCTION (bbl)
	OIL		GAS			ASSOCIATED (from oil zones)	NONASSOCIATED (from gas zones)	TOTAL	
	P R O D	S H T N	P R O D	S H T N					
Alameda	6	1	0	0	16,035	0	0	0	49,038
Butte	0	0	9	2	0	0	46,611	46,611	143
Colusa	0	0	233	115	0	0	9,110,310	9,110,310	109,171
Contra Costa	0	0	26	19	a/ 0	0	1,955,277	1,955,277	19,750
Fresno	1,950	1,489	2	3	6,169,987	981,192	7,122	988,314	76,824,000
Glenn	0	0	270	62	0	0	11,773,101	11,773,101	106,458
Humboldt	0	3	32	20	0	0	786,279	786,279	9,657
Kern	41,537	15,198	181	119	b/ 148,097,816	159,958,314	3,197,072	163,155,386	1,716,027,843
Kings	159	167	1	1	101,382	134,132	129,342	263,474	282,870
Lassen	0	0	0	6	0	0	0	0	0
Los Angeles	3,276	1,506	9	19	c/ 23,894,597	16,567,498	100,959	16,668,457	768,783,059
Madera	0	0	12	20	0	0	1,742,035	1,742,035	9,213
Merced	0	0	2	1	0	0	252,940	252,940	26
Monterey	535	645	0	0	6,209,878	1,584,539	0	1,584,539	113,725,858
Orange	1,036	515	0	0	4,401,871	1,818,847	0	1,818,847	73,371,602
Riverside	0	3	0	1	0	0	0	0	0
Sacramento	0	0	128	82	d/ 0	0	11,464,339	11,464,339	128,552
San Benito	21	14	2	4	8,536	8,176	12,201	20,377	121,563
San Bernardino	18	20	0	0	8,413	60	0	60	1,316
San Joaquin	0	0	62	83	0	0	4,155,836	4,155,836	90,591
San Luis Obispo	135	218	0	0	486,200	-1,954	0	-1,954	7,779,480
San Mateo	14	9	0	0	2,551	0	0	0	4,528
Santa Barbara	935	1,192	2	2	e/ 3,407,854	2,616,555	79,828	2,696,383	83,738,141
Santa Clara	10	3	0	0	22,844	5,760	0	5,760	18,473
Solano	0	0	140	134	f/ 0	0	9,896,949	9,896,949	221,543
Stanislaus	0	0	2	0	0	0	518,738	518,738	0
Sutter	0	0	307	120	0	0	12,996,685	12,996,685	137,277
Tehama	0	0	120	39	0	0	2,150,715	2,150,715	112,647
Tulare	70	9	0	13	48,717	0	0	0	4,082,952
Ventura	1,692	1,277	0	4	7,944,456	7,951,650	0	7,951,650	60,711,045
Yolo	0	0	26	65	0	0	881,359	881,359	15,806
Yuba	0	0	1	0	0	0	2,334	2,334	0
STATE TOTALS	51,394	22,269	1,567	936	200,821,137	191,624,769	71,260,032	262,884,801	2,906,482,602

* Does not include federal OCS figures.
a/ Produced 1,402 barrels of condensate from gas fields or zones.
b/ Produced 30,936 barrels of condensate from gas fields or zones.
c/ Produced 5,004 barrels of condensate from gas fields or zones.
d/ Produced 18,837 barrels of condensate from gas fields or zones.
e/ Produced 1,916 barrels of condensate from gas fields or zones.
f/ Produced 13,936 barrels of condensate from gas fields or zones.



**Fw: EXCELARON CONDITIONAL USE PERMIT - HUASNA VALLEY OIL
EXPLORATION & PRODUCTION PROJECT - No. 2**

Amy Gilman to: cr_board_clerk Clerk Recorder

08/20/2012 11:53 AM

#2

----- Forwarded by Amy Gilman/BOS/COSLO on 08/20/2012 11:53 AM -----

From: Carol Florence <CMF@oasisassoc.com>
To: "Adam Hill " <ahill@co.slo.ca.us>, "Amy Gilman " <agilman@co.slo.ca.us>, Bruce Gibson <bgibson@co.slo.ca.us>, "Cherie Aispuro " <caispuro@co.slo.ca.us>, "Deb Geaslen " <dgeaslen@co.slo.ca.us>, "Frank Mecham " <fmecham@co.slo.ca.us>, Jim Patterson <jpatterson@co.slo.ca.us>, "Paul Teixeira " <pteixeira@co.slo.ca.us>, "Susan Devine " <sdevine@co.slo.ca.us>, "Vicki Shelby " <vshelby@co.slo.ca.us>
Cc: "Jason Giffen " <jgiffen@co.slo.ca.us>, "Whitney McDonald " <wmcdonald@co.slo.ca.us>
Date: 08/20/2012 10:53 AM
Subject: EXCELARON CONDITIONAL USE PERMIT - HUASNA VALLEY OIL EXPLORATION & PRODUCTION PROJECT - No. 2

Dear Supervisors,

We thought the attached DOGGR article on *Heavy Oil In California* would help you better understand the type of oil found in Huasna, which we expect will have an American Petroleum Institute (API) gravity of between 8 and 12 degrees (this estimate can be found in the EIR at Section 2.2.1).

Heavy oil of this API range is extremely viscous and thick, which is part of the reason we believe that the risk of a catastrophic spill would not be significant. As we noted in our written comments on the Draft EIR, Excelaron tested a sample of oil from the site obtained during the DOGGR well closure, and found that, at 68°F, the oil has a viscosity greater than peanut butter and similar to Crisco shortening.

At 86° F, its consistency would fall somewhere between peanut butter and Heinz ketchup. Heated to 104° F, as it may be for transport, it would have the same viscosity that Hershey's Chocolate Syrup has at 70°F. Although the Huasna crude will be blended with a small amount of lower viscosity oil to facilitate handling of the oil during tanker loading and transportation, this blending should not significantly alter the viscosity of the crude such that it would push the viscosity out of the above-cited ranges. Please see the attached excerpt from our Draft EIR Comment Letter for a helpful chart and more information on the oil's viscosity. (The full text of our Draft EIR comments can be found on the Planning Department's website or in the Final EIR.)

Respectfully submitted,
C.M. Florence, AICP
Principal Planner

OASIS ASSOCIATES, INC.
LANDSCAPE ARCHITECTURE + PLANNING
3427 Miguelito Ct., San Luis Obispo, CA 93401
P: 805.541.4509 | F: 805.546.0525 | C: 805.459.9972

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: C.M. FLORENCE
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

www.OASISASSOC.com



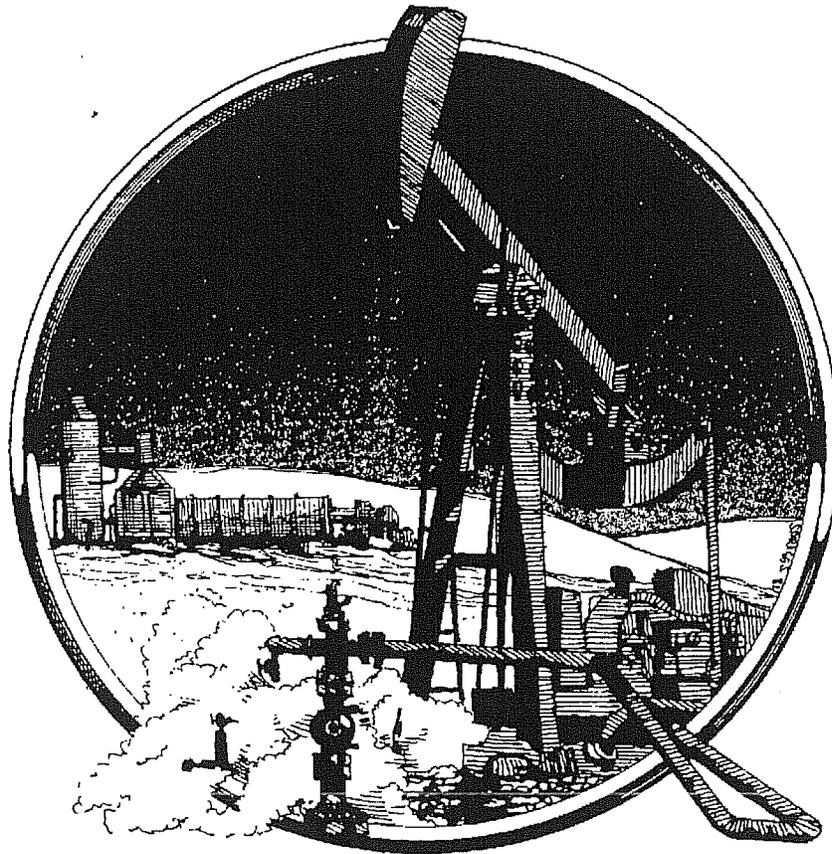
Heavy Oil in California.pdf Pages from Excelaron's EIR Comments.pdf

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: C.M. FLORENCE
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

HEAVY OIL IN CALIFORNIA

by

WILLIAM F. GUERARD, JR.



C A L I F O R N I A
DEPARTMENT OF CONSERVATION · DIVISION OF OIL & GAS

ITEM # 32
MEETING DATE: AUGUST 13, 2012
PRESENTED BY: CIVIL ENGINE
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

HEAVY·OIL IN·CALIFORNIA

by

WILLIAM F. GUERARD, JR.

California Division of Oil, Gas, and Geothermal Resources

Sacramento

Fourth Edition 1998
Third Edition 1984
Second Edition 1983
First Edition 1982

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: C.M. FLORENCE
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

Contents

OCCURRENCE	1
PRODUCTION	1
PUMPING	8
TREATING & SHIPPING	8
REFINING	9
FUTURE RECOVERY	9
FOOTNOTES	11
SELECTED REFERENCES	12

Figures

Figure 1. Analyses of three California crude oils.....	2
Figure 2. California's heavy oil, 1980.....	3
Figure 3. Viscosity of four oils at various temperatures.....	4
Figure 4. Heavy crude oil production in California in thousands of barrels per day and percentage of state total.....	4
Figure 5. Heat content of boiling water and saturated steam at various pressures.....	4
Figure 6. Properties of steam.....	5
Figure 7. Mechanisms of the steamflood process.....	6
Figure 8. Typical heat losses from the producing (steamed) formation to the adjacent formation.....	7
Figure 9. Mechanisms of the in-situ combustion process.....	7
Figure 10. Diagram of a pumping well with a rod pump.....	8

HEAVY OIL IN CALIFORNIA^a

by

William F. Guerard, Jr.

Crude oil is a nonuniform, highly complex mixture of hydrocarbon compounds (combinations of carbon and hydrogen atoms) with varying amounts of sulfur, nitrogen, oxygen, and other impurities. The compositions of crude oils can vary considerably, even in nearby oil fields.

From a nontechnical viewpoint, heavy oil can be described as crude oil with a consistency similar to that of cold molasses. However, a technical description indicates that heavy oil has a lower hydrogen-to-carbon ratio than lighter crudes. Because carbon atoms are about 12 times heavier than hydrogen atoms, the density (weight per unit volume) of heavy crudes is greater than that of lighter oils—hence the name, *heavy oil*.

High specific gravity (which is related to density) and viscosity^{f1} are the properties of heavy oil that cause major production and handling problems such as: (1) getting oil to flow from the formation into the well bore, (2) pumping, (3) treating, and (4) shipping.

A major difference between heavy and light crudes is the composition of the refined petroleum products that a given quantity of crude oil will yield. Generally, light oil will yield larger quantities of desirable products such as gasoline, kerosene, and naphtha. Without special refining equipment, heavy oil will yield more less-valuable products such as residual fuel oil and asphalt (Fig. 1).

Although there was no precise definition of heavy crude oil in the past, the definition adopted by the U.S. Department of Energy for its former pricing regulations (and the definition most often used by the petroleum industry) was any crude oil with an API gravity^{f2} of 20° or less.

Recently, a more precise definition has been adopted. Heavy oil is any crude oil with an API gravity ranging from 10° to 20° (inclusive) at standard conditions and with a gas-free viscosity ranging from 100 to 10,000 centipoises (inclusive) at original reservoir temperature. Tar sand oil, also known as bitumen or ultraheavy oil, is any crude oil with an API gravity less than 10° and a gas-free viscosity greater than 10,000 centipoises.

OCCURRENCE

Interest in heavy oil production was limited before the 1973 oil embargo and the ensuing jump in petroleum prices. At that time, much of the heavy oil was left in the ground because of the considerable energy required to produce it and the difficulty of refining it into useful products. However, now that economic and world oil-supply conditions have changed, greater emphasis is placed on the large reserves of domestic heavy crude oil.

On August 17, 1979, a Presidential order that exempted most heavy crude oil from federal price controls was signed to stimulate the nation's declining oil production. Although heavy oil is found in many states, the Presidential order had an immediate effect on California's oil future because most of the nation's proved and potential reserves^{f3} of heavy oil lie within this state.

As of the end of 1982, the amount of heavy oil remaining in the ground in California was estimated to be between 31 and 41 billion barrels*, compared with about 61 to 66 billion barrels of total oil remaining in place (Fig. 2).^{f4} A conservative 1982 estimate of proved heavy-oil reserves indicated 3.1 billion barrels; however, with increasing prices (in real dollars), it is reasonable to expect an eventual recovery of at least 9 billion barrels.

Most of California's heavy oil is in the San Joaquin Valley and the central and southern coastal regions. Kern County, alone, accounts for about 72 percent of the proved heavy-oil reserves in the state. Also, of the 669,000 barrels per day of heavy crude produced in California in January 1983, Kern County accounted for about 404,000 barrels per day.

PRODUCTION

Getting the Oil to Flow

Although California's potential heavy oil reserves are enormous, the figures are tempered by the fact that only a fraction of the reserves can be recovered with conven-

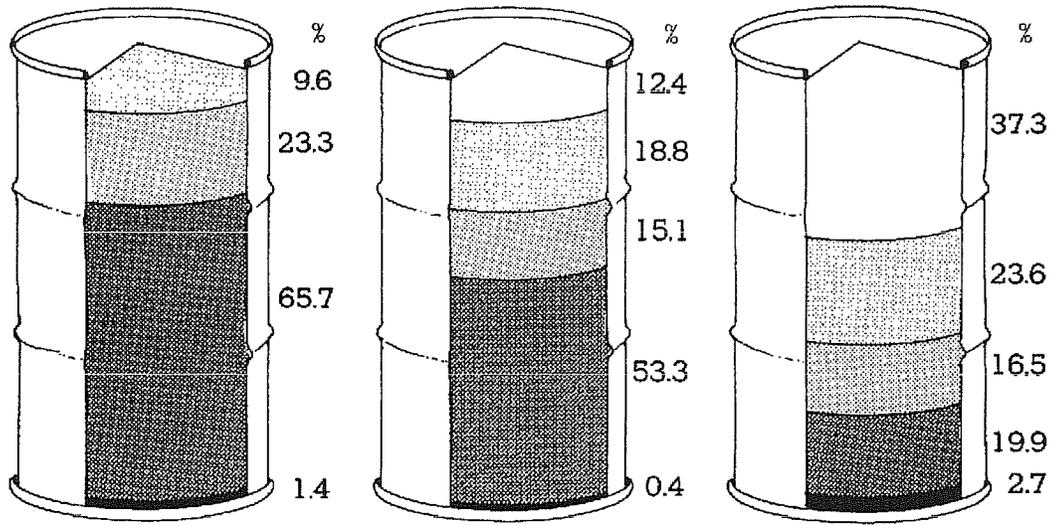
^a Manuscript submitted September 1981.

^{f1} Refers to the footnote section immediately following the report.

*One barrel equals 42 gallons.

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: C.M. FLORENCE
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

	KERN RIVER (Kern Co.)	WILMINGTON (Los Angeles Co.)	GREELEY (Kern Co.)
API Gravity ($^{\circ}$ API):	12.6	19.4	37.2
Sulphur (% by weight):	1.19	1.59	0.31
Specific Gravity:	0.982	0.938	0.839
Depth (feet):	1,099-1,183	2,500-3,000 \pm	11,260-11,500
Viscosity (SU at 100 $^{\circ}$):	6,000 sec.	470 sec.	41 sec.



DISTILLATION PRODUCTS:

- Gasoline & Naptha
- Kerosene & Gas Oil
- Distillates
- Resid
- Miscellaneous

From: Analysis of 800 Crude Oils from United States Oilfields. Coleman, H. J., et al. National Technical Information Service, U. S. Dept. of Commerce, November 1978.

Figure 1. Analyses of three California crude oils.

tional (primary) production methods. (Contrary to popular belief, oil and gas do not lie in easily accessible pools, but rather in pores of compressed rock.) The low production and recovery rates made heavy oil operations economically unattractive in the past. Around the turn of the century, one producer said, with pardonable exaggeration, "...that a barrel of Kern River crude would take a week to ooze down a flight of stairs, and that a fly could trot over the surface without wetting its feet"³⁰ (Photo 1).

Most of the heavy-oil deposits in California (and elsewhere) are found at relatively shallow depths where reservoir temperatures are low, and little, if any, natural driving force exists to cause the oil to flow to the producing wells. Therefore, the high viscosity of heavy crudes at

low reservoir temperatures is the most restrictive flow factor. Just as heating cold molasses increases its ability to flow, the application of heat to the reservoir to reduce the viscosity of the oil (thereby improving its mobility³⁵) is one of the best methods of promoting the flow of heavy crude.

It is possible, with reasonable temperature increases, to reduce the viscosity of some crudes to one-hundredth or one-thousandth of their former values, making them excellent candidates for thermal stimulation (Fig. 3). In addition, heat can aid oil production through 1) thermal expansion or swelling of the crude (depending on its composition, crude oil may expand by 10 to 20 percent during thermal stimulation); 2) high-temperature distillation (which separates the lighter hydrocarbon compounds that provide a solvent effect by reducing or altering the adhesion between rock and oil); 3)

³⁰ Superior figures refer to a list of Selected References at the end of this report.



Photo 1. Kern River crude oil, 12.6° API gravity, photo right; and 25° API gravity crude oil, photo left.

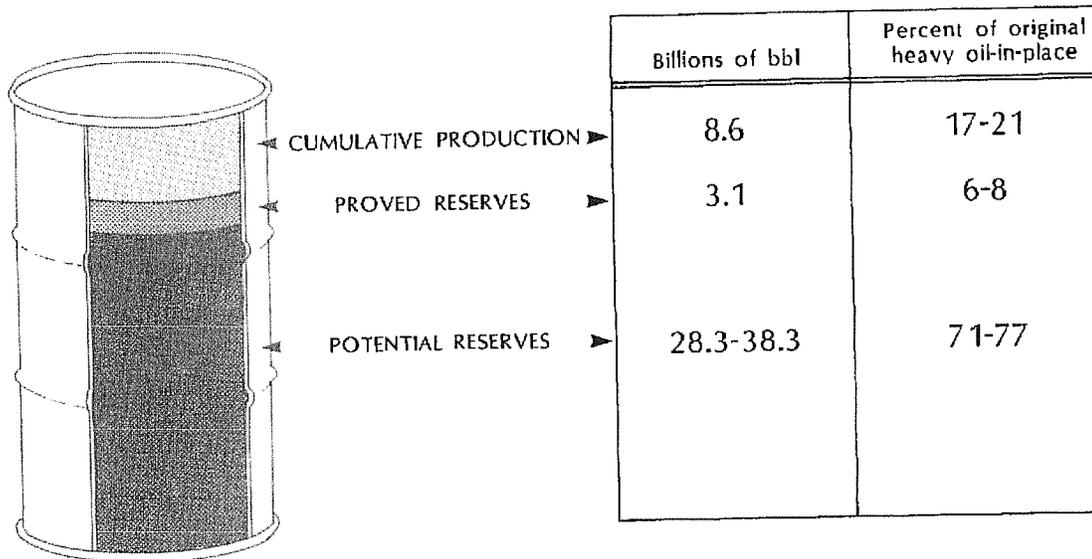


Figure 2. California's heavy oil, 1982. (Federal OCS areas excluded.)

solution-gas expansion effects; and 4) formation pressure increases due to the introduction of extraneous fluids into the reservoir.

Following the technological refinement of thermal recovery methods in the late 1960's and early 1970's, the recovery potential of heavy oil reservoirs has increased dramatically (Fig. 4). The recovery potential from heavy oil reservoirs now operating with steam injection projects increased from a pre-steam value of about 6 to 10 percent of the original oil-in-place to current values as high as 50 to 70 percent. For example, during the last 23 years, more oil has been produced from Kern River oil field than in the first 60 years of its productive history (617 million barrels vs. 347 million barrels.)

Steam Stimulation

Heat energy can be applied to petroleum reservoirs by two principal methods: steam injection and in situ combustion. Steam is the ideal fluid for heat application because, when steam condenses, the same amount of heat is given up as was required to produce the steam. As water is heated beyond the boiling point, more and more water is converted to steam. The additional energy required to convert boiling water to steam is called latent heat and is represented in Figure 5 by the distance from the water to the dry, saturated steam curve.¹⁵ As shown in Figure 6, a steam-water system may gain or lose its latent heat without varying the temperature or pressure. (Unlike

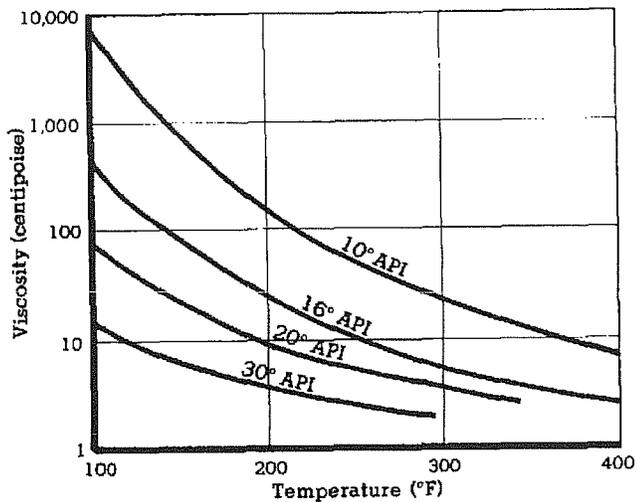


Figure 3. Viscosity of four oils at various temperatures (adapted from reference 15).

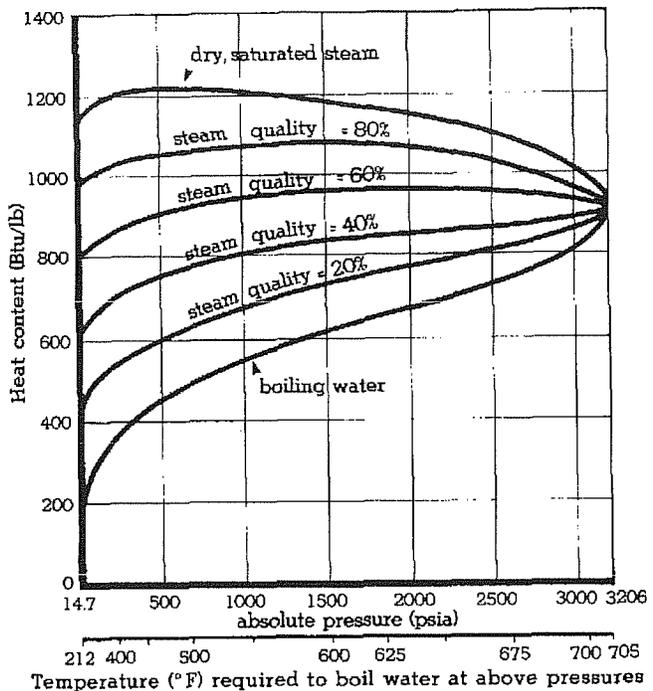


Figure 5. Heat content of boiling water and saturated steam at various pressures (adapted from reference 15).

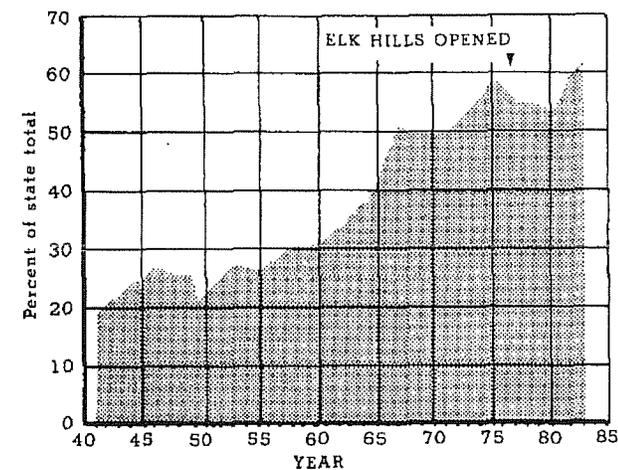
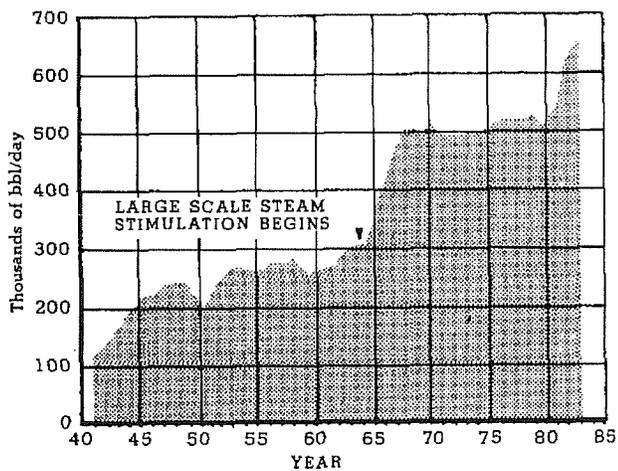


Figure 4. Heavy crude oil production in California in thousands of barrels per day and percentage of state total.

a steam-water system, hot water cools when it loses heat energy.) It is the latent heat that makes steam the best heat-transfer medium available.

These unique properties allow steam to carry considerably more heat in the operating pressure range of most steam-injection projects (100 to 1,500 psi) than does hot water. For example, a barrel of water converted to 80 percent quality steam (at atmospheric pressure and 212°F) carries about 272,000 Btu's more than boiling water under the same conditions. [The percentage of total fluid converted to the vapor phase (steam) is called *steam quality*.]

Steam is produced in steam generators and injected under pressure into an oil reservoir. Steam can be injected on a cyclic (intermittent) or on a continuous basis.

Cyclic Steam

Cyclic stimulation, also known as steam soak and huff-and-puff, is carried out by injecting a predetermined amount of steam into a producing well for a short period every few months. After injection, the well is shut in for a brief period to allow the steam to condense and the heat to penetrate the surrounding formation, thereby lowering the viscosity of the surrounding oil. When the steam-soak period is completed, the well is returned to production for a number of months.

Once the production rate declines to an unacceptable level, the well may be stimulated again and the cycle repeated. Usually, each cycle is less efficient than the prior cycle because the effective reservoir volume increases with each cycle, and more steam is needed to heat a larger portion of the reservoir.

ITEM # 32

MEETING DATE: AUGUST 21, 2012

PRESENTED BY: C.M. FLORENCE

CALIFORNIA DIVISION OF OIL AND GAS

POSTED ON: AUGUST 20, 2012

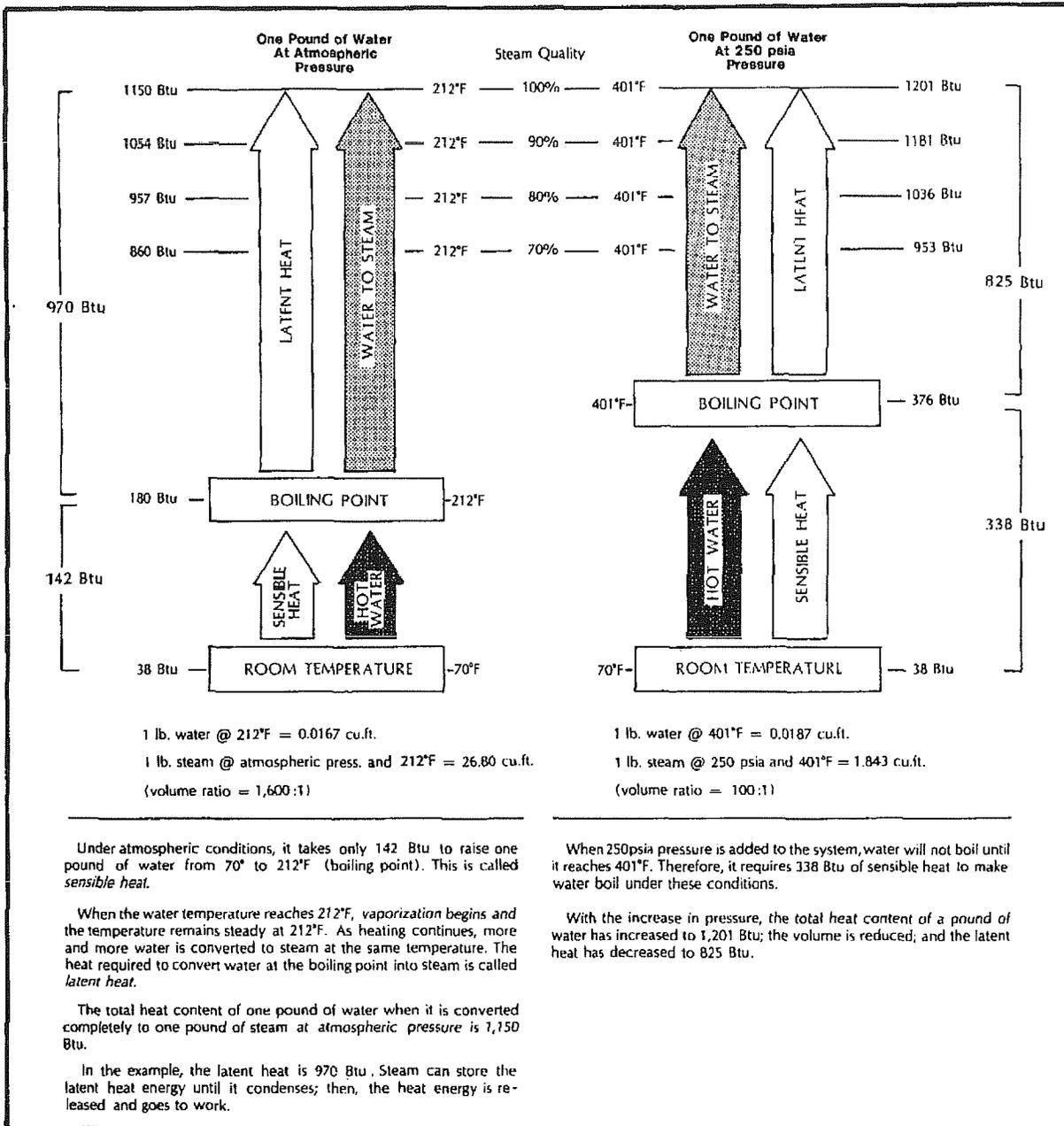


Figure 6. Properties of steam.

Steamflooding

Steamflooding (continuous displacement) projects are designed to heat the entire formation between wells to produce large volumes of oil that could not be heated and produced with cyclic injection. Although steamflooding can usually provide recovery efficiencies far greater than cyclic steam operations, it does so at significantly higher costs.

A steamflood project includes both injection and production wells. Steam is injected continuously into the reservoir through injection wells and travels through the reservoir, with the heated oil, to producing wells. Once

produced, the steam and oil are separated, and the water is usually recycled to make additional steam (Fig. 7).

Usually, cyclic steaming is used initially on the production wells to help establish or improve fluid communication between injection and production wells. After this initial heating, steamflooding is begun. A long period of steaming may be followed by water injection (waterflooding). The water is heated when it comes in contact with the hot reservoir rock and continues to recover more oil as a hot-water flood.

The effectiveness of steam stimulation depends on the amount of heat received by and retained in a reservoir. Therefore, effective, economic reservoir heating requires

ITEM # 32
 MEETING DATE: AUGUST 21, 2012
 PRESENTED BY: C.M. FLORENCE
 RECEIVED PRIOR TO MEETING
 POSTED ON: AUGUST 20, 2012

minimum heat losses through surface lines (from steam generators to injection wells), through injection well bores, and through adjacent, nonproductive formations (Fig. 7).

Surface line heat losses can be minimized with insulation or by burying the surface lines. The amount of well bore heat loss depends on the type of well completion (size and type of tubing and casing) and the length of the well bore. Obviously, the further the steam must travel to reach the formation, the greater the heat loss. Experience has shown that 3,000 to 4,000 feet is the approximate depth limitation of conventional steam injection.

In addition, deeper reservoirs usually have higher formation pressures than do shallow reservoirs, requiring greater injection pressures. The higher injection pressures require more heat energy to convert water to steam; therefore, shallow reservoirs are more desirable from an efficiency standpoint. Also, shallow reservoirs generally have greater permeability than deeper reservoirs. Greater permeability allows increased steam-injection rates, which reduce well bore heat loss in proportion to the total heat input from a given quality and volume of injected steam.⁴

The largest source of heat loss is the producing formation itself. Heat is lost by conduction to the overlying and underlying nonproductive rock (Fig. 8). Less heat is

lost from thick, oil-bearing sands, which are common in California.

In Situ Combustion

Rather than using steam to transfer heat to an oil reservoir, in situ combustion, commonly known as fireflooding, is a method of generating the necessary heat in the reservoir itself. The combustion process is effective in many reservoirs where steam stimulation would be applicable; however, depth is not a limiting factor for in situ combustion because the heat is not generated at the surface.

With the in situ combustion process, some reservoir oil is ignited, usually with a down-hole heating device, and the burn is sustained with air that is pumped through injection wells. The burning front moves slowly from the air-injection wells towards the producing wells (Fig. 9). The migration rate of the burning front is governed principally by the type and amount of crude burned and the air-injection rate.

As the burning front moves away from the injection wells, various mechanisms take effect, and several, distinct zones develop. The lighter fractions of the crude oil immediately ahead of the high-temperature burning front

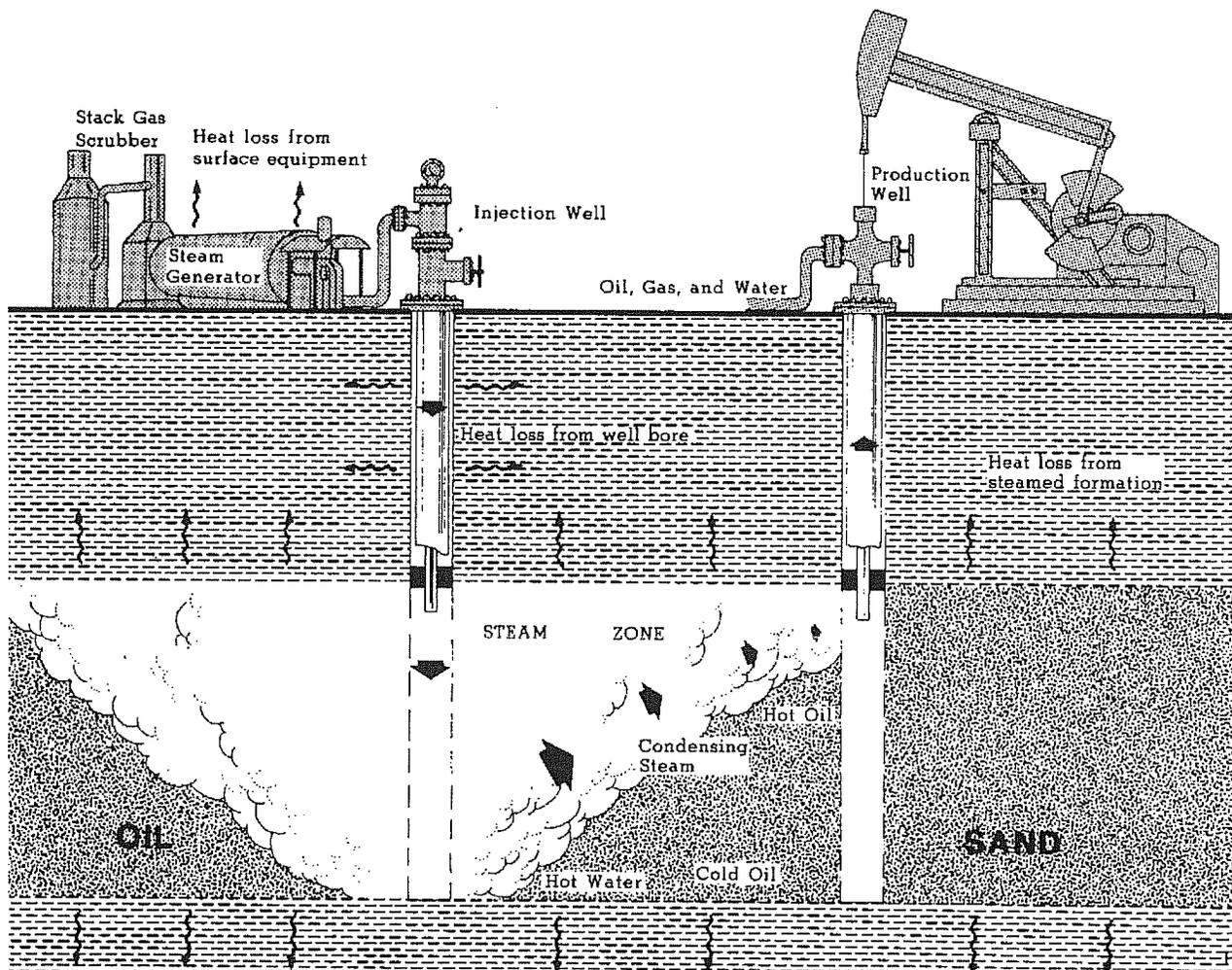


Figure 7. Mechanisms of the steamflood process.

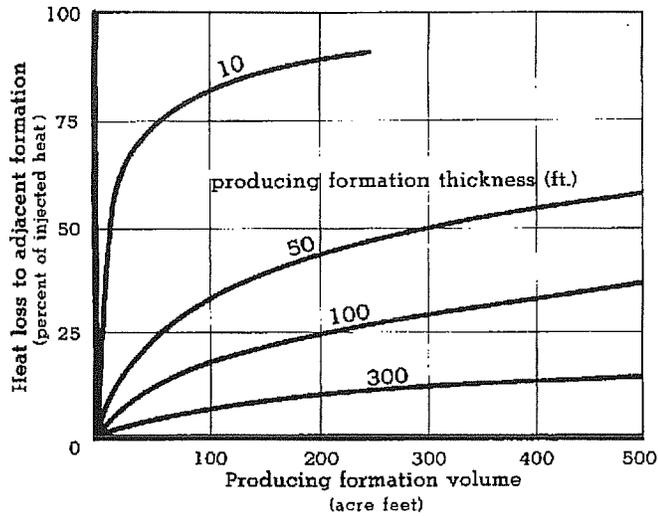


Figure 8. Typical heat losses from the producing (steamed) formation to the adjacent formation (adapted from reference 15).

are vaporized, leaving a coke-like deposit that constitutes the principal fuel for the process. The vaporizing zone contains combustion products (principally nitrogen, carbon dioxide, and carbon monoxide) and steam, which is produced from water in the injected air and the interstitial (formation) water.

As the components of the vaporizing zone advance, contacting the cooler sands ahead of the burning front, they condense. The condensed, light hydrocarbons mix with the oil and dilute it with a solvent effect. The combustion gases provide a pressure drive, and the condensing steam loses its latent heat, producing a steam-type drive.

Although the combustion gases generated at the burning front transfer some heat to the oil ahead of the burn, gases have a very poor heat-carrying capacity. Only about 20 percent of the generated heat is carried ahead of the burning front by the combustion gases.¹⁶ Therefore, water may be injected simultaneously or alternately with air to better utilize the produced heat by converting it to steam. The addition of water to an in situ combustion project can result in better heat distribution, reducing air-injection requirements.

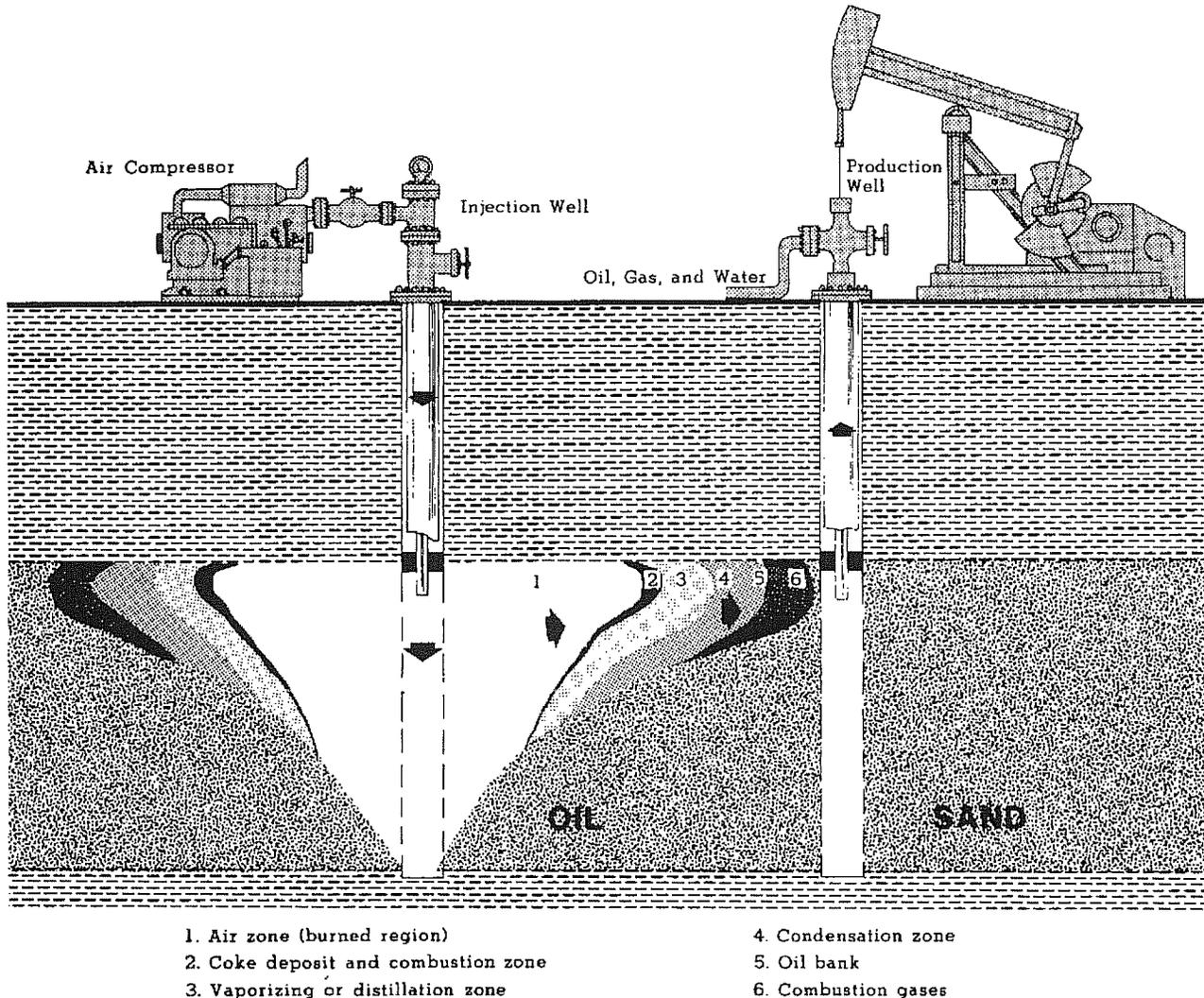


Figure 9. Mechanisms of the in-situ combustion process.

ITEM # 32
 MEETING DATE: AUGUST 21, 2012
 PRESENTED BY: C.M. FLORENCE
 RECEIVED PRIOR TO MEETING
 POSTED ON: AUGUST 20, 2012

Another variation of the combustion drive process is to reverse the direction of the burn (reverse combustion). Air injection is started in a well that will later be a producer. After the burn is started, the initial injection wells are put on production and the initial production wells are used as injectors, reversing the direction of air flow. This method can make it possible to produce oil that is too viscous to be produced with a conventional fireflood; however, reverse combustion is less efficient than the forward combustion process.¹⁶

Other Enhanced Recovery Methods

Thermal methods have proven to be the most effective means of recovering the heavier crudes predominant in California, although other enhanced recovery methods, such as chemical flooding (augmented waterflooding) and miscible and immiscible gas injection (using inert or hydrocarbon gases) can be used in many heavy-oil reservoirs where the API gravity ranges from about 16° to 20°. Such methods are now being applied on a trial basis, and some may prove to be economically and technically feasible.

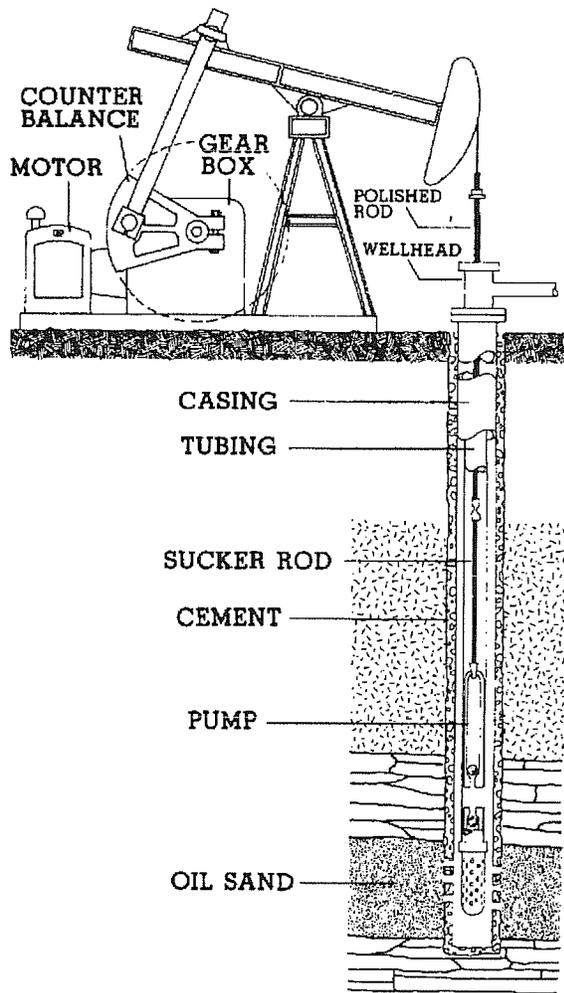


Figure 10. Diagram of a pumping well with a rod pump.

PUMPING

Although some heavy-oil wells will flow during their early life, most need some sort of artificial lift, usually provided by conventional rod pumps (Fig.10). However, *without* additional reservoir heat from thermal enhanced recovery projects, the high viscosity of heavy crude oil causes many pumping problems: 1) The sucker and polished rods on a rod pump are subject to increased loads due to friction and high pumping pressures (which mean frequent mechanical failures); 2) The sucker rods do not return easily to the bottom of the pump stroke (rod floating); and 3) There is poor valve action in the pump. Also, the more viscous crudes carry a lot of formation sand with them as they are produced, causing rapid wearing of pump parts.

One method of dealing with the pumping problems caused by viscous oil is to reduce the viscosity through dilution. High-gravity crudes or refined hydrocarbon compounds can be used as diluents.

A diluent may be injected directly into the pump where it is blended simultaneously with the native crude oil as it is pumped.²⁸ This method bathes the pump plunger in diluent, which provides lubrication and washes away sand particles. A diluent may also be injected directly into the well bore below the pump, where it mixes with the native crude oil before it reaches the pump. Dilution not only provides an ideal solution to viscous-crude production, but also reduces all future handling problems.

Under certain conditions, the pumping problems caused by heavy crude oils can be alleviated by using a progressing cavity pump that has a rotating, steel helix in a moulded rubber stator as a pumping mechanism. The screwing action of the rotor moves the well fluids up and out of the well. This type of mechanism is not subject to the same high-viscosity problems encountered with conventional rod pumps. Also, recent modifications to rod pumps and gas lift systems (where natural gas is used to supply the lifting energy) may eliminate some of the lifting problems.

TREATING & SHIPPING

Special problems arise in removing sand, water, and gas from heavy crudes because the specific-gravity difference between heavy crudes and water is very small. Natural separation of the impurities becomes more difficult as the specific-gravity difference lessens, because solids remain suspended rather than settling out. Therefore, most heavy oil must be treated with methods that tend to increase the specific-gravity difference and reduce viscosity.

Heating heavy crudes in treating equipment (e.g., separator tanks and heater-treaters) will reduce both the viscosity and the oil density. As the temperature increases and the oil density decreases, the water density remains practically unchanged, aiding gravity separation.

Low temperature and the resulting high viscosity are also problems that must be dealt with when shipping heavy oil, because viscosity offers the principal resistance to pipeline transportation. If a shipping line is buried and insulated, a heating station at the beginning of the line may add enough heat to the oil to maintain an absolute viscosity

ITEM # 32
 RECEIVED PRIORITY MEETING
 CALIFORNIA DIVISION OF OIL AND GAS
 POSTED ON: AUGUST 20, 2012

namic) viscosity low enough to allow the oil to be pumped through the entire pipeline without further heating. In other cases, crude-burning heater stations are used to heat the crude as it flows along its route. (Around the turn of the century, fires in trenches under pipelines were sometimes used to heat California heavy crude during shipping; however, this practice proved to be costly, dangerous, and inefficient.)^{26, 30} If not added during the production phase, diluent may be mixed with heavy crude prior to pipeline shipping to reduce the viscosity.

REFINING

Crude oil is a *mixture* of many different chemical compounds rather than a single compound such as water. Each compound has its own boiling point; therefore, each compound can be separated from the mixture through distillation. The distillation technique is the basic process of petroleum refining.

Although any conventional refinery can change heavy crude into petroleum products, about half of every barrel of untreated heavy oil is turned into low-quality, low-priced products such as high-sulfur residual fuel oil, asphalt, and other unfinished oils. Getting more gasoline from a barrel of heavy oil requires multimillion-dollar investments in new, complex refining equipment to upgrade these crudes. Also, heavy-oil refining problems are compounded by high concentrations of sulfur and metals. The sulfur content of heavy oil may be as high as 6 percent by weight and the metals concentration may vary from 100 to 500 parts-per-million.

Residual fuel oil, also called resid or No. 6 fuel oil, is the most abundant by-product of heavy-oil refining. Resid can be used directly in oil-fired boilers for electric power plants, as bunker fuel for ships, or as asphalt. If used in boilers, resid must have a low metals content to minimize boiler corrosion during combustion, and the sulfur content must be kept low to reduce air pollution from oxides of sulfur (high-sulfur resid is difficult to market in California because of air-quality restrictions).

To upgrade resid, refiners must increase the hydrogen-to-carbon ratio. This can be accomplished by either removing carbon or by adding hydrogen. Carbon is removed by coking, solvent deasphalting, or catalytic cracking. Hydrogen is added by hydrotreating or hydrocracking. Also, hydrodesulfurization processes reduce the sulfur, nitrogen, and metals content of residual fuel oils.

A discussion of all such heavy-oil refining processes is beyond the scope of this report; however, a brief discussion of the basic hydroprocessing technique, called hydrocracking, follows. (The reader is referred to references 19 and 22 for a discussion of other refining processes.)

Hydrocracking was developed in Germany in 1927. Although it is one of the oldest refining processes, it still remains one of the most versatile. Rather than reforming gas oil⁶ and light distillates into gasoline, as is done in the more common catalytic cracking process, hydrocracking uses a catalyst in a hydrogen environment to convert heavy distillates into gasoline or jet fuels. The sulfur compounds are broken away from the petroleum molecules when the oil is combined with the hydrogen in the presence of a catalyst. The hydrogen combines with the sulfur

atoms to form hydrogen sulfide (H₂S), some nitrogen compounds are converted to ammonia, and any metals entrained in the oil are deposited on the catalyst.¹⁹ The hydrogen sulfide is passed on to other facilities at the refinery where it is converted to elemental sulfur.

Unfortunately, heavy-oil feedstocks with relatively high metals content (100 parts per million or higher) limit the application of hydrocracking because the metals contaminate the catalyst.* The free metals or metal sulfides form solid deposits on the catalyst surface, blocking the pores, thereby "poisoning" the catalyst in the sense that active catalyst sites are made inaccessible to the oil and hydrogen.⁷ Refining costs are increased significantly by such rapid catalyst consumption. Also, problems with metals are magnified because it is usually easier to crack a bond between a carbon and a heavy metal than a carbon-sulfur bond. Consequently, organometals are converted to metals at a faster rate than organosulfur is converted to hydrogen sulfide, causing more rapid catalyst poisoning.

Development and commercialization of improved processes for hydroprocessing resid and heavy crudes occurred in the 1960's and 1970's. These new processes not only improve the gravity and viscosity of heavy crudes, but also lower the sulfur and metals content while reducing the resid content.²³ After such treatment, the processed oil can be handled in a conventional refinery. Using hydroprocessing techniques near heavy-oil production facilities could solve the viscosity problem in transportation and upgrade the crude to an oil with some attractive characteristics before it is shipped to a refinery.

FUTURE RECOVERY

California's huge, potential reserves of heavy crude oil assure the state of a major role in the energy future of the nation. However, developing those heavy-oil resources to recover the greatest volume possible will be a continuing challenge. Ultimate recovery is sensitive to oil prices and the economic return required by operators of enhanced recovery projects. The economic considerations are magnified when the risks of investing in new and unproved recovery processes are considered. The recent decontrol of crude-oil prices should stimulate all forms of enhanced-recovery activity; however, steam injection will undoubtedly continue to be the dominant enhanced-recovery process used in California.

Constraints

Further expansion of existing steam-injection projects will continue, although certain restrictions will moderate full-scale development.

● Most of California's heavy-oil reservoirs are in areas already in violation or near the limits of federal and/or state air-quality standards, and sufficient supplies of clean-burning fuels for steam generators, such as natural gas, are limited. Therefore, one-quarter to one-third of the produced, high-sulfur crude oil is burned as generator fuel in many projects. Unfortunately, this practice results in emissions of sulfur dioxide (SO₂), nitrous oxides (NO_x), and

* Nickel and vanadium organo compounds are the most troublesome. ITEM # 32

particulate matter.

Although the emissions are minimized by using stack gas scrubbers with the steam generators, emissions from new steam-injection projects must be offset by emission reductions (tradeoffs) in the surrounding area. This requirement can limit future projects if the availability of new tradeoffs is limited. Also, the residue from steam generator scrubbing systems must be disposed of in water-disposal wells (often a costly and complex procedure) or approved waste-disposal sites. Finding future disposal sites with adequate capacity and obtaining permits for a sufficient number of injection wells could be a major problem.

● Another problem for the expansion of steam-injection projects in California is the availability of water suitable for use in steam generators and scrubbers to prevent scale and corrosion. Most steam injection projects are in agricultural areas with large demands on freshwater supplies. In view of these circumstances, the California Division of Oil and Gas conducted a study in early 1980 to assess the freshwater supply-demand situation of the thermal oil fields in Kern County. The study indicated that about 82 percent of the water used to generate steam is produced, recycled water, most of which has been treated, and 18 percent is fresh water from water wells and/or water-supply companies and agencies.

Although a large volume of the produced water in some oil fields is fresh water that can be recycled for steam generation with minimum treatment, rapid development is taking place in oil fields without that advantage on the west side of the San Joaquin Valley. Many of these fields produce water with high concentrations of salts. Consequently, the water is generally unsuitable as feedwater for steam generators and scrubbers. However, recent progress in water-softening techniques and steam generator technology has made it economically possible to reuse water with a relatively high salt content.⁹ If these methods prove applicable on a wide scale, water-supply constraints may be reduced significantly. If produced water cannot be used in production operations, the disposal requirements for the excess water could also restrain future development.

● The best reservoirs for steam injection have been or are being developed. The remaining, less desirable, undeveloped reservoirs will not achieve the same level of performance as the large, existing projects.

In addition, the overall energy efficiency of steam-injection projects in California has declined during the past 13 years. The cumulative steam/oil ratio (the number of barrels of steam required to produce a barrel of oil) has increased during this period from 2.81 in 1970 to 3.96 in 1983 (Table 1).

● The greatest potential for increasing the net production of heavy oil lies in reducing the amount of crude used to fuel steam generators. Residual fuel oil can be burned in steam generators in lieu of crude oil, resulting in a more energy-efficient operation. Resid yields more heat per barrel than crude oil, and the lighter hydrocarbons (e.g., gasoline, diesel, and naphtha) in crude oil would not be wasted on steam generation. Until the recent passage of the Windfall Profit Tax Act, burning resid was common

Table 1. Performance of Steam-Injection Projects in California.

Year	Steam/Oil Ratio (bbl/bbl)		Oil/Steam Ratio (bbl/bbl)	
	Average	Cumulative	Average	Cumulative
1963	3.67	3.66	0.272	0.273
1964	4.10	3.91	0.244	0.256
1965	3.28	3.54	0.305	0.282
1966	3.20	3.36	0.313	0.298
1967	2.81	3.15	0.356	0.317
1968	2.72	3.01	0.368	0.332
1969	2.40	2.86	0.417	0.350
1970	2.64	2.81	0.379	0.356
1971	2.96	2.84	0.338	0.352
1972	3.40	2.93	0.294	0.341
1973	3.43	3.01	0.292	0.332
1974	3.34	3.06	0.299	0.327
1975	3.72	3.14	0.269	0.318
1976	3.64	3.20	0.275	0.313
1977	4.02	3.30	0.249	0.303
1978	4.66	3.43	0.215	0.292
1979*	4.09	3.49	0.244	0.287
1980	4.88	3.63	0.205	0.275
1981	5.14	3.78	0.195	0.265
1982	4.85	3.89	0.206	0.257
1983	4.62	3.96	0.216	0.253

* The equivalent of 62 large steam generators (50 million Btu's per hour each) were shut down in 1979 because of air-emission violations.

practice. Now, however, the tax makes such practices economically prohibitive.

New steam generators have been designed to burn cheaper solid fuels such as coal, lignite, and petroleum coke. By eliminating crude oil and substituting solid fuels in steam generators, it has been estimated that net oil production would increase 40 to 50 percent without additional heat input, and fuel costs would be reduced about 60 percent. For example, resid selling for about \$24 per barrel delivers about one million Btu's for \$3.75, while coal selling at about \$32 per ton, delivered, yields the same amount of energy for only \$1.40. A coal-burning generator began operation in Kern County in 1983. An economic evaluation is underway and tests with alternate fuels may begin soon.

● One of the most challenging problems related to steam injection is increasing the energy efficiency by improving the vertical and areal sweep of steam in the producing zones. Such an improvement means that more reservoir rock is heated without additional steam input. In fields with good vertical permeability, injected steam can rise rapidly to the sealing silt or shale at the top of the injection interval, and then travel in a thin layer to a production well. This phenomenon, known as gravity override, results in a very low pressure differential between the injector and producer, and oil is produced by a drag effect rather than by drive.

Careful planning of production and injection points is necessary to improve the vertical distribution of steam. For example, discontinuous silt layers in a producing sand can be used to restrict vertical movement of steam and promote the horizontal distribution of steam. Also, foam

additives and inert gases are being tried to enhance sweep efficiency.
 MEM # 32
 RECEIVED PRIORITY MEETING
 CALIFORNIA DIVISION OF OIL AND GAS
 POSTED ON: AUGUST 20, 2012

mobility control of steam.

● Although surface heat loss can be minimized, well bore heat loss is still the limiting factor in recovering heavy oil from formations deeper than 3,000 to 4,000 feet. Such heat loss could be eliminated if adequate downhole steam generators can be developed. Also, most of the air-emission problems might be eliminated if the combustion products of a downhole generator are scrubbed by the reservoir. Prototype downhole steam generators are being developed and tested. Only time will

tell whether or not they will be successful. Meanwhile, improved, insulated tubing is a more immediate solution to well bore heat loss.

If solutions to these major problems are found, the continued development of conventional thermal-recovery methods, the application of other enhanced recovery methods to heavy-oil reservoirs, and the future application of unconventional methods should keep California's heavy-oil production in the limelight for many years.

Footnotes

F1 Viscosity is the resistance of fluid to flow (shearing action). The most common unit of viscosity is the centipoise (cp), which is equal to 1/100 poise (one poise = gram/centimeter per second). Saybolt Universal (SU) viscosity, which is the time (measured in seconds) required for 60 cc of liquid to flow through a calibrated orifice, is commonly used in refining.

F2 API (American Petroleum Institute) gravity is an arbitrary density-measurement system based on the following relationship to specific gravity: $(141.5 / \text{specific gravity}) - 131.5$. The formula is such that a gallon of fresh water, which has a specific gravity of 1.0, will weigh the same as a gallon of crude oil having an API gravity of 10. It should be noted that liquids of *greater* density and specific gravity, have a *lower* API gravity and vice versa.

F3 *Proved reserves* are the estimated quantities of crude oil (or natural gas) that can be recovered from known reservoirs under existing economic and operating conditions.

Potential reserves are those quantities of crude oil (or natural gas) that are known, with reasonable certainty, to exist and are recoverable under more favorable economic and operating conditions than presently exist.

F4 These estimates are for conventional petroleum resources only (i.e., those that can be produced with well-drilling technology). There are large deposits of unconventional petroleum resources (e.g., tar sands and oil-saturated diatomite) that will have to be mined to be recovered; however, the total resource base has never been completely identified because of past economic and technologic considerations. Also, federal OCS areas are excluded.

F5 Mobility is the ratio of permeability (the fluid-transmitting measure of a rock) to viscosity. Where one fluid displaces another, the mobility ratio is the mobility of the displacing fluid (e.g., water) to that of the displaced fluid (e.g., oil). Therefore, either oil viscosity must be decreased or water viscosity must be increased to obtain a favorable mobility ratio and force as much oil as possible from a reservoir.

F6 A petroleum distillate with a viscosity and boiling range between those of kerosene and lubricating oil.

Selected References

1. Allen, John R., and Bursley, Joseph A., 1941, Heat engines: New York, McGraw-Hill, 576 p.
2. Armstrong, Ted A., 1966, Where steam pays off: Oil and Gas Journal, v. 64, no. 14, p. 127-138B.
3. Baker, P.E., 1972, Effect of pressure and rate on steam zone development in steam flooding: SPE paper 4141 presented at the SPE-AIME 47th Annual Fall Meeting, San Antonio, October 8-11, 1972.
4. Bleakly, W.B., 1965, Well-bore heat loss: Oil and Gas Journal, v. 63, no. 10, p. 162-164.
5. Boberg, T.C., 1965, What's the score on thermal recovery and thermal stimulation?: Oil and Gas Journal, v. 63, no. 34, p. 78-83.
6. Clark, Norman J., 1969, Elements of petroleum reservoirs: Dallas, Texas, Society of Petroleum Engineers of the AIME, 250 p.
7. Considine, Douglas M., editor-in-chief, 1977, Energy technology handbook: New York, McGraw-Hill, 1,857 p.
8. Davis, James A., Young, William W., and Lyons, Carl J., 1981, Use of solid fuel possible for field stream injection: Oil and Gas Journal, v. 79, no. 23, p. 129-134.
9. Elias, R., Jr., Johnstone, J.R., Krause, J.D., Scanlon, J.C., and Young, W.W., 1980, Steam generation with high TDS feedwater: SPE paper 8819 presented at the SPE-AIME 50th Annual California Regional Meeting, Los Angeles, April 9-11, 1980.
10. Farouq Ali, S.M., and Meldau, R.F., 1979, Current steamflood technology: Journal of Petroleum Technology, v. 31, no. 10, p. 1332-1342.
11. Furnoff, L.L., Van Driesen, R.P., and Viens, C.H., 1980, Recovery and upgrading of heavy oil analyzed: Oil and Gas Journal, v. 78, no. 41, p. 156-158.
12. Gates, Charles F., and Ramey, Henry J., Jr., 1980, A method for engineering in-situ combustion oil recovery projects: Journal of Petroleum Technology, v. 32, no. 2, p. 285-294.
13. Ibid., 1964, Better technology opens way for more thermal projects: Oil and Gas Journal, v. 62, no. 28, p. 72-80.
14. Gurel, D.O., 1979, How Husky makes a profit in heavy oil production: World Oil, v. 189, no. 4, p. 63-67.
15. Herbeck, E.F., Heintz, R.C., and Hastings, J.R., 1976, Thermal recovery by hot fluid injection: Petroleum Engineer, v. 48, no. 10, p. 24-34.
16. Ibid., 1977, Thermal recovery by in-situ combustion: Petroleum Engineer, v. 49, no. 2, p. 46-56.
17. Howard, John V., 1965, Thermal recovery comes of age: World Oil, v. 160, no. 1, p. 95-104.
18. Interstate Oil Compact Commission, 1978, Secondary and tertiary oil recovery processes: Oklahoma City, Interstate Oil Compact Commission, 187 p.
19. Leffler, William L., 1979, Petroleum refining for the non-technical person: Tulsa, Oklahoma, Petroleum Publishing Company, 159 p.
20. McDonald, James, 1981, Refiners should forward-fit not retrofit: Pacific Oil World, v. 74, no. 1, p. 71-73.
21. McNeil, J.S., Jr., and Moss, J.T., 1958, In-situ combustion: Oil and Gas Journal, v. 56, no. 38, p. 232-242.
22. Nelson, W.L., 1969, Petroleum refinery engineering: New York, McGraw-Hill, 960 p.
23. Oil and Gas Journal, 1980, Heavy crudes seen as target for resid processes: v. 78, no. 1, p. 75-77.
24. Oil and Gas Journal Staff Report, 1964, Thermal recovery: Oil and Gas Journal, v. 62, no. 42, p. 75-90.
25. Owens, W.D. and Suter, Vane E., 1965, Steam stimulation for secondary recovery: Petroleum Engineer, v. 160, no. 4, p. 67-73.
26. Rintoul, William, 1976, Spudding in: San Francisco, California Historical Society, 240 p.
27. Scott, Robert M., Zwicker, Stanley L. and Jonker, Peter E., 1978, Environmental aspects of enhanced recovery: SPE paper 7127 presented at the SPE-AIME 48th Annual California Regional Meeting, San Francisco, April 12-24, 1978.
28. Vonde, T.R., 1980, Specialized pumping techniques applied to a very low gravity, sand laden crude: Cat Canyon field, California: SPE paper 8900 presented at the SPE-AIME 50th Annual California Regional Meeting, Los Angeles, April 9-11, 1980.
29. Walker, E.W., 1959, Heavy crude is more attractive now: Oil and Gas Journal, v. 57, no. 40, p. 105-110.
30. White, Gerald T., 1962, Formative years in the far west: New York Appleton-Crofts, 694 p.

ITEM # 32

MEETING DATE: AUGUST 21, 2012

RECEIVED BY: C.M. FLORENCE

RECEIVED PRIOR TO MEETING

POSTED ON: AUGUST 20, 2012

CALIFORNIA DIVISION OF OIL AND GAS

Page 18 of 20

B. Additional Comments to Geological Resources

Excelaron has the following additional specific comments and suggestions regarding this chapter.

Page 4.8-17, 2nd ¶: Revise the paragraph to eliminate reference to the Applicant's proposed mitigation measures to address air quality and modify to read mitigation measures to address impacts to geologic resources.

Page 4.8-18, 4th ¶: The paragraph references "La Canada Verde Creek" that is located in Los Angeles County. Would the comments regarding liquefaction, lateral spreading and seismic settlement change with reference to the actual project site?

4.9 HAZARDS & HAZARDOUS MATERIALS

This is a generally good section that just needs some clarification.

Page 4.9-1, 5th ¶: This paragraph is a little misleading regarding the baseline acute risk associated with oil releases at the Project site and in the surrounding area. As seen in Figure 2-2, the Project is in a designated DOGGR Oil Field and numerous historic wells exist in the area, some of which may not even be identified on the map or known to DOGGR. Moreover, it is the natural presence of oil and seeps that made this area attractive for oil prospecting in the first place over a century ago. On the following page, Section 4.9.1.1 contains an accurate overview of historic operations and existing contamination on the Project site that seems to inherently conflict with the brief summary on Page 4.9-1. The discussion of baseline on Page 4.9-1 should be revised accordingly.

Page 4.9-4: Excelaron believes that a discussion of the heavy and viscous nature of this particular oil would be helpful and relevant here. Excelaron recently tested a sample of the oil taken during the DOGGR cleanup process and tested its viscosity (in Centi Stokes) at different temperatures. Accordingly, Excelaron suggests adding the following paragraph to this discussion:

Tests run on a sample of the onsite oil taken during the recent DOGGR cleanup efforts showed that the oil at this site has the following viscosity (in Centi Stokes or Cst) at certain temperatures (in Fahrenheit or F):

68° F = 719,008 Cst

86° F = 108,637 Cst

104° F = 22,465 Cst

To put those results in a context that the lay person could understand, at 70° F, the following common substances have the below viscosities:

<u>Household Substance</u>	<u>Viscosity in Centi Stokes (Cst)</u>
<u>Motor Oil SAE 40</u>	<u>250 - 500</u>
<u>Honey</u>	<u>2,000 - 3,000</u>
<u>Blackstrap Molasses</u>	<u>5,000 - 10,000</u>
<u>Hershey's Chocolate Syrup</u>	<u>10,000 - 25,000</u>
<u>Heinz Ketchup</u>	<u>50,000 - 70,000</u>
<u>Peanut Butter</u>	<u>150,000 - 200,000</u>
<u>Crisco Shortening or Lard</u>	<u>1,000,000 - 2,000,000</u>

Source: The Composite Store, Inc.

At 68° F, the Huasna Valley crude would have a viscosity greater than peanut butter and close to that of Crisco shortening. At 86° F, the crude will have a viscosity somewhere between Heinz Ketchup and peanut butter. Heated to 104° F, as it might be in the storage tanks prior to loading, it will have the same viscosity as Hershey's Chocolate Syrup has at 70°. Although the crude will be blended with a small amount of lower viscosity oil to facilitate handling of the oil during tanker loading and transportation, this blending should not significantly alter the viscosity of the crude such that it would push the viscosity out of the above-cited ranges. The viscosities illustrated above show that the oil is unlikely to migrate far in the event of a spill, even when it contacts surface water or runoff. The viscosity, particularly at ambient air temperatures, would also significantly simplify and aid the effectiveness of cleanup operations in the event of a release or spill.

Page 4.9-7: The DEIR should clarify whether raw crude oil and propane are hazardous substances for purposes of RCRA and CERCLA.

Page 4.9-24, MM H.2-1: This mitigation measure makes reference to a 20 mph speed limit for trucks; however, MM AG.6-1(a) makes reference to a 25 mph speed limit. These conflicting measures should be reconciled.

Page 4.9-26, Section 4.9.4.3: On page 4.9-22, the DEIR states that the risks associated with an oil spill will be addressed in this Section. However, as currently written, this section contains no quantification of the risks. In fact, the Section contains no conclusions at all. If rewritten, this Section should include information regarding the design and construction of



Fw: EXCELARON CONDITIONAL USE PERMIT - HUASNA VALLEY OIL EXPLORATION & PRODUCTION PROJECT - No. 3

Amy Gilman to: cr_board_clerk Clerk Recorder

08/20/2012 11:53 AM

#3

----- Forwarded by Amy Gilman/BOS/COSLO on 08/20/2012 11:53 AM -----

From: Carol Florence <CMF@oasisassoc.com>
 To: "Adam Hill " <ahill@co.slo.ca.us>, "Amy Gilman " <agilman@co.slo.ca.us>, Bruce Gibson <bgibson@co.slo.ca.us>, "Cherie Aispuro " <caispuro@co.slo.ca.us>, "Deb Geaslen " <dgeaslen@co.slo.ca.us>, "Frank Mecham " <fmecham@co.slo.ca.us>, Jim Patterson <jpatterson@co.slo.ca.us>, "Paul Teixeira " <pteixeira@co.slo.ca.us>, "Susan Devine " <sdevine@co.slo.ca.us>, "Vicki Shelby " <vshelby@co.slo.ca.us>
 Cc: "Jason Giffen " <jgiffen@co.slo.ca.us>, "Whitney McDonald " <wmcdonald@co.slo.ca.us>
 Date: 08/20/2012 11:13 AM
 Subject: EXCELARON CONDITIONAL USE PERMIT - HUASNA VALLEY OIL EXPLORATION & PRODUCTION PROJECT - No. 3

Dear Supervisors,

Enclosed is some additional information that might help address any lingering water quality concerns. Although the EIR concluded that there would be no unmitigable impacts to groundwater, some residents of Huasna remain concerned and have continued to raise this issue at previous hearings.

The following documents should serve to assuage some of those concerns:

1. A comment letter on the project from the Central Coast Regional Water Quality Control Board explaining that the project may actually *benefit* water quality in the area.
2. A copy of the Memorandum of Agreement between DOGGR and the State Water Resources Control Board (SWRCB), obligating DOGGR to coordinate with the SWRCB and impose certain requirements when granting drilling permits to ensure that “construction or operation of oil, gas, and geothermal injection wells and surface disposal of waste water from oil and gas and geothermal production does not cause degradation of waters of the State of California.”
3. For specific concerns about Excelaron’s proposed Class II injection well, the attached Frequently Asked Questions from DOGGR’s website is a helpful resource that details how common these wells are and their “outstanding record for environmental protection” under DOGGR’s oversight.

Respectfully submitted,
 C.M. Florence, AICP
 Principal Planner

OASIS ASSOCIATES, INC.
 LANDSCAPE ARCHITECTURE + PLANNING

ITEM # 32
 MEETING DATE: AUGUST 21, 2012
 PRESENTED BY: C.M. FLORENCE
 RECEIVED PRIOR TO MEETING
 POSTED ON: AUGUST 20, 2012

3427 Miguelito Ct., San Luis Obispo, CA 93401
P: 805.541.4509 | F: 805.546.0525 | C: 805.459.9972
www.OASISASSOC.com



RWQCB.pdf DOGGR SWRCB MOA.pdf Oil, Gas & Geothermal - Injection Wells.pdf

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: C.M. FLORENCE
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012



Linda S. Adams
Acting Secretary for
Environmental Protection

California Regional Water Quality Control Board Central Coast Region

895 Aerovista Place, Suite 101, San Luis Obispo, California 93401-7906
(805) 549-3147 • FAX (805) 543-0397
<http://www.waterboards.ca.gov/centralcoast>



Edmund G. Brown Jr.
Governor

July 25, 2011

Mr. John McKenzie, Project Manager
County of San Luis Obispo
County Planning & Building Department
976 Osos Street, Room 300
San Luis Obispo, CA 93408-2040

Dear Mr. McKenzie

DRAFT ENVIRONMENTAL IMPACT REPORT (DRC2009-00002; ED09-039), EXCELARON HUASNA VALLEY OIL EXPLORATION AND PRODUCTION PROJECT, SAN LUIS OBISPO COUNTY

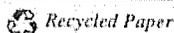
Central Coast Regional Water Quality Control Board (Water Board) staff reviewed the June 2011 Public Draft Environmental Impact Report (DEIR) for the Excelaron Huasna Valley Oil Exploration and Production Project (the Excelaron project). Based on our review, there is a minimal potential for impacts to groundwater or surface water in the project area provided that the mitigation measures discussed in the DEIR are appropriately implemented. The Water Board has received comments from concerned Hausna Valley residents about the proposed project and has prepared this correspondence to address water quality related concerns.

Potential water quality issues brought to the attention of Water Board staff from Huasna Valley residents include: impacts to area water wells caused by migration of crude oil due to ground disturbance, by reinjection of produced water, and/or by hydraulic fracturing (better known as "fracking"); and impacts to surface water due to spills.

Impacts to area water wells caused by migration of crude oil due to ground disturbance are not likely because the removal of crude oil from the subsurface will lower the petroleum reservoir pressure, decreasing the potential for crude oil migration from the reservoir. This is because crude oil will move from high pressure to low pressure zones. Additionally, the project site is located outside of the Huasna Valley Groundwater Basin and separated from the basin by impermeable strata, meaning that Huasna Valley residents' wells extract groundwater from a different area geologically than where Excelaron will drill their oil wells.

The reinjection of produced water is unlikely to impact area water wells for some of the same reasons described above. Reinjection of produced water in oilfields is by far the

California Environmental Protection Agency



ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: C.M. FLORENCE
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

most common method of disposal. For example, approximately 95 percent of all oil field-produced water in the United States is reinjected. The produced water from this project will be reinjected back into the same formation from which it was derived and although this is done in part to maintain reservoir pressure, the net effect of crude oil removal will result in a gradual overall lowering of reservoir pressure. The California Division of Oil, Gas, and Geothermal Resources (DOGGR) is responsible for approving and overseeing the installation of proposed reinjection facilities and performs inspections of operational facilities to assure that these facilities are operated in compliance with State and Federal regulations. The public may contact DOGGR at (805) 937-7246 with concerns about the well construction or reinjection facilities.

It appears that concerns about fracking are unwarranted as fracking techniques will not be used in this project. Dr. Art Halleran of Excelaron sent an email to Water Board staff on July 15, 2011 stating "1) The reservoir is naturally fractured, 2) Oil production will be from natural fractures, 3) therefore there will be no fracking chemicals put into the reservoir."

In regard to potential impacts to groundwater quality, the DEIR proposes that Excelaron will install a network of three groundwater monitoring wells at the edge of the Huasna Valley Groundwater Basin closest to the project site. Excelaron will submit the plan for the well installation to the Water Board for review and approval. After Excelaron installs the monitoring wells, Excelaron will sample the wells on a quarterly basis and submit the results to the Water Board. Monitoring and sampling of the wells will continue for three years after the termination of oil production activities. Excelaron will terminate production of crude oil if the monitoring wells are impacted by Excelaron's project activities. Water Board staff is not aware of any other oil producer that has voluntarily proposed such a groundwater monitoring program in the Central Coast region. The groundwater monitoring reports will be available to the public through the internet and a link to the website will be provided upon request.

In regard to potential impacts to surface water quality, the DEIR indicates that Excelaron will comply with all regulations including submittal of a Storm Water Pollution Prevention Plan (SWPPP); a Spill Prevention, Control, and Countermeasure Plan; and an Oil Spill Contingency Plan. In addition, CAL Fire must approve a plan for detecting any tank bottom leaks at the project site. Compliance with these plans, including best management practices to be included in the SWPPP, will minimize the potential for surface water impacts. The DEIR also indicates that oil wells and other production facilities left by previous operators at the project location will be removed by Excelaron which will further reduce the potential for both groundwater and surface water impacts in the future.

Based on our review of the DEIR for the Excelaron project, there is a minimal potential for impacts to groundwater or surface water in the project area provided that the

mitigation measures discussed in the DEIR are appropriately implemented. As discussed above, Water Board staff will evaluate groundwater quality monitoring results in the project area and if the Excelaron operations negatively impact water quality, Water Board staff will notify affected parties and require Excelaron to implement cleanup actions.

If you have any questions about the content of this letter, please call **Rich Chandler at (805) 542-4627** or Thea Tryon at (805) 542-4776.

Sincerely,



for Roger W. Briggs
Executive Officer

S:\Site Cleanup Program\Unregulated Sites\Excelaron\Excelaron DEIR comments_07-2011.doc

cc via email:

Roger Briggs, Central Coast Water Board rbriggs@waterboards.ca.gov

John Robertson, Central Coast Water Board jrobertson@waterboards.ca.gov

RECEIVED
AUG 21 2012
SLO CO PLAN & BLDG DEPT

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: C.M. FLORENCE
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

MEMORANDUM OF AGREEMENT
BETWEEN THE
STATE WATER RESOURCES CONTROL BOARD
AND THE
DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS

Purpose

The purpose of this Memorandum of Agreement (MOA) is to outline the procedures for reporting proposed oil, gas, and geothermal field discharges and for prescribing permit requirements. These procedures are intended to provide a coordinated approach resulting in a single permit satisfying the statutory obligations of both parties to this MOA. These procedures will ensure that construction or operation of oil, gas, and geothermal injection wells and surface disposal of waste water from oil and gas and geothermal production does not cause degradation of waters of the State of California.

General

Responsibilities of the Agencies

The Department of Conservation, Division of Oil and Gas (CDOG) has the statutory responsibility to prevent, as far as possible, damage to underground and surface waters suitable for irrigation or domestic purposes resulting from the drilling, operation, maintenance, or abandonment of oil, gas, and geothermal wells (Public Resources Code Sections 3106 and 3714). In March 1983, CDOG received primacy from the Environmental Protection Agency (EPA) pursuant to the provisions of Section 1425(a) of the federal Safe Drinking Water Act that gives CDOG additional authority and responsibility to regulate Class II wells in the State. Class II wells are used to inject fluids into the subsurface that are related to oil and gas production.

The State Water Resources Control Board (SWRCB) and the nine California Regional Water Quality Control Boards (collectively RWQCB) have statutory responsibility to protect the waters of the State and to preserve all present and anticipated beneficial uses of those waters (Water Code, Division 7, Chapters 1 through 7).

Scope of Agreement

The following procedures have been formulated and adopted by the CDOG and SWRCB to: (1) simplify reporting of proposed waste discharges by the oil, gas, and geothermal operators; (2) achieve coordination of activity; and, (3) eliminate duplication of effort among the State agencies. As far as these agencies are concerned, the method of reporting proposed oil, gas, and geothermal underground injection and surface discharges will be uniform throughout the State. The attached maps show district and regional boundaries and office addresses.

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: C.M. FLORENCE
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

The following procedures will not generally be applicable to injection wells or surface disposal methods used by operators to dispose of wastes other than produced water and fluids defined by the EPA as Class II. Other discharges (e.g., refinery wastes) must be issued waste discharge requirements or waivers through the appropriate Regional Water Quality Control Board (Water Code, Division 7, Chapter 4). Such discharges will not be subject to regulation by CDOG unless the subject disposal well is within the administrative limits of an oil, gas, or geothermal field. In such case, the CDOG must also issue a permit for the well construction (Public Resources Code Sections 3008 and 3203). The conditions of this permit should be in agreement with the waste discharge requirements for this well.

The CDOG personnel shall report all pollution problems, including spills to the ground surface or surface streams, to the appropriate Regional Board.

Procedures

Underground Injection

1. Application: Oil, gas, or geothermal operators must file an application for all proposed injection projects with the appropriate CDOG District office. The District office will forward a copy of the application to the appropriate Regional Board for its review and comment. Data to be included with the application shall include: (1) a chemical analysis, as appropriate, to characterize the proposed injection fluid considering the source of the fluid and/or the exposures the fluid has or will undergo before disposal; (2) a chemical analysis, as appropriate, from the proposed zone of injection considering the characteristics of the zone (to include name, location, depth and formation for well from which zone fluid was sampled); and, (3) depth, location, and injection formation of the proposed well. If the Regional Board wishes to comment prior to the issuance of a draft permit for review, comments shall be received by CDOG within 14 days.
2. Review and Consultation: During the review of the application, the CDOG, the Regional Board and the State Board shall consult with one another and local agencies, as necessary, and may require the applicant to submit additional data, as necessary, to demonstrate that the proposed injection will not cause a water quality problem. Additional data required by the RWQCB, if reasonably available, shall be forwarded upon request. Data regarded as confidential by CDOG, or the applicant, will be identified and kept confidential by the RWQCB.

3. Permit Preparation and Issuance:

- a. CDOG will prepare a draft permit, including monitoring requirements, for the injection in accordance with statutory obligations, furnishing a copy of the draft document to the appropriate Regional Board.
- b. The Regional Board will have the opportunity to comment on the draft requirements during the public review period established pursuant to the Memorandum of Agreement (MOA) between the CDOG and the Environmental Protection Agency (EPA).
- c. The Regional Board shall determine whether or not the draft requirements provide protection to ground and surface waters having present or anticipated beneficial uses. If the draft requirements are not adequate, the Regional Board shall, within 30 days, propose conditions or revisions which would satisfy Regional Board concerns. CDOG will not issue final requirements until Regional Board concerns have been satisfied.

If no response is received from the Regional Board by the end of the public comment period, the requirements will be presumed to be acceptable to the Regional Board.

CDOG will furnish a copy of the final requirements to the Regional Board.

Surface Discharge

1. Application: The oil, gas, or geothermal operator shall file a Report of Waste Discharge with the appropriate Regional Board. The Regional Board will review the Report of Waste Discharge in accordance with applicable state and federal requirements, including 40 CFR Part 435. No report need be filed when such a requirement is waived by the Regional Board pursuant to Water Code Section 13269.

When a Report of Waste Discharge is not adequate in the judgment of the Regional Board, the Board may require the applicant to supply additional information as it deems necessary. If a surface disposal site is within the administrative limits of an oil, gas, or geothermal field, the Regional Board shall send a copy of the Report of Waste Discharge to the CDOG for review and comment when the report is complete. If CDOG wishes to comment, the Regional Board should receive comments within 14 days to ensure consideration of these comments during the drafting of waste discharge requirements.

2. Preparation and Adoption of Waste Discharge Requirements:

- a. The Regional Board will prepare draft waste discharge requirements for the disposal of production waters by surface discharge. If a surface disposal site is within the administrative limits of an oil, gas, or geothermal field, a copy of the draft document shall be furnished to the appropriate CDOG District office.
- b. The CDOG shall determine whether or not the draft requirements fulfill CDOG's statutory obligations related to water quality. If the draft requirements are not adequate, the CDOG shall, within 30 days, propose conditions to the Regional Board which would meet these statutory obligations. The Regional Board will not issue final requirements until CDOG concerns have been satisfied.

If no response is received from CDOG by the end of the public comment period, the requirements will be presumed to be acceptable to CDOG. The Regional Board will furnish a copy of the final requirements to CDOG.

Enforcement Coordination

After construction, CDOG will notify the appropriate Regional Board of any pollution problems noticed during its inspection activities. The Regional Boards will notify CDOG of any suspected violations of CDOG requirements uncovered during the Regional Boards' inspection activities.

If a determination is made by CDOG, or by the Regional Board, or the SWRCB, that an injection or surface disposal operation is violating the terms of its permit or is causing an unacceptable water quality problem, the permitting agency shall take any necessary actions to assure that compliance is achieved, or that the practice causing water pollution is abated forthwith. If necessary, the permitting agency shall order work to be done and/or order operation to be halted. Enforcement actions involving both statutory authorities should be coordinated among the parties involved in this MOA, but neither agency is precluded from taking independent enforcement action.

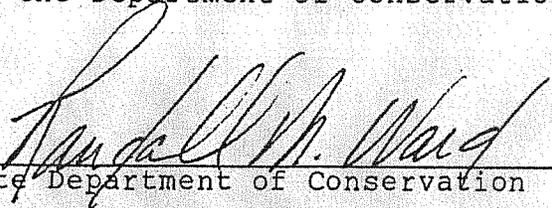
Modification of this Agreement

This agreement will be effective upon signature by the designated parties. The agreement may be modified upon the initiative of either party for the purpose of ensuring consistency with State or Federal statutes or regulations, or for any other purpose mutually agreed upon. Any such modifications must be in writing and must be signed by the Director of the Department of Conservation, the State Oil and Gas Supervisor, and the Chairman of the SWRCB.

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: C.M. FLORENCE
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

Page 5

Memorandum of Agreement Between the State Water Resources Control Board
and the Department of Conservation Division of Oil and Gas



State Department of Conservation

3-9-88
Date



State Oil and Gas Supervisor

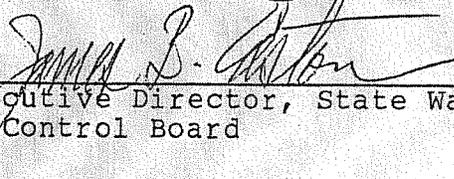
3-4-1988
Date



Chairman, State Water Resources Control Board

MAY 19 1988

Date



Executive Director, State Water Resources
Control Board

MAY 19 1988

Date

0895A/0028A

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: C.M. FLORENCE
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

STATE WATER RESOURCES CONTROL BOARD
P. O. Box 100, Sacramento, CA 95801

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARDS

NORTH COAST REGION (1)

1440 Guerneville Road
 Santa Rosa, CA 95403
 (707) 576-2220

SAN FRANCISCO BAY REGION (2)

1111 Jackson Street, Rm. 6040
 Oakland, CA 94607
 (415) 464-1255

CENTRAL COAST REGION (3)

1102-A Laurel Lane
 San Luis Obispo, CA 93401
 (805) 549-3147

LOS ANGELES REGION (4)

107 South Broadway, Rm. 4027
 Los Angeles, CA 90012
 (213) 620-4460

CENTRAL VALLEY REGION (5)

3443 Roubier Road
 Sacramento, CA 95827-3098
 (916) 361-5600

Fresno Branch Office

3614 East Ashlan Ave.
 Fresno, CA 93726
 (209) 445-5116

Redding Branch Office

100 East Cypress Avenue
 Redding, CA 96002
 (916) 225-2045

LAHONTAN REGION (6)

2092 Lake Tahoe Boulevard
 P. O. Box 9428
 South Lake Tahoe, CA 95731
 (916) 544-3481

Victorville Branch Office

15371 Bonanza Road
 Victorville, CA 92392
 (619) 241-6583

COLORADO RIVER BASIN REGION (7)

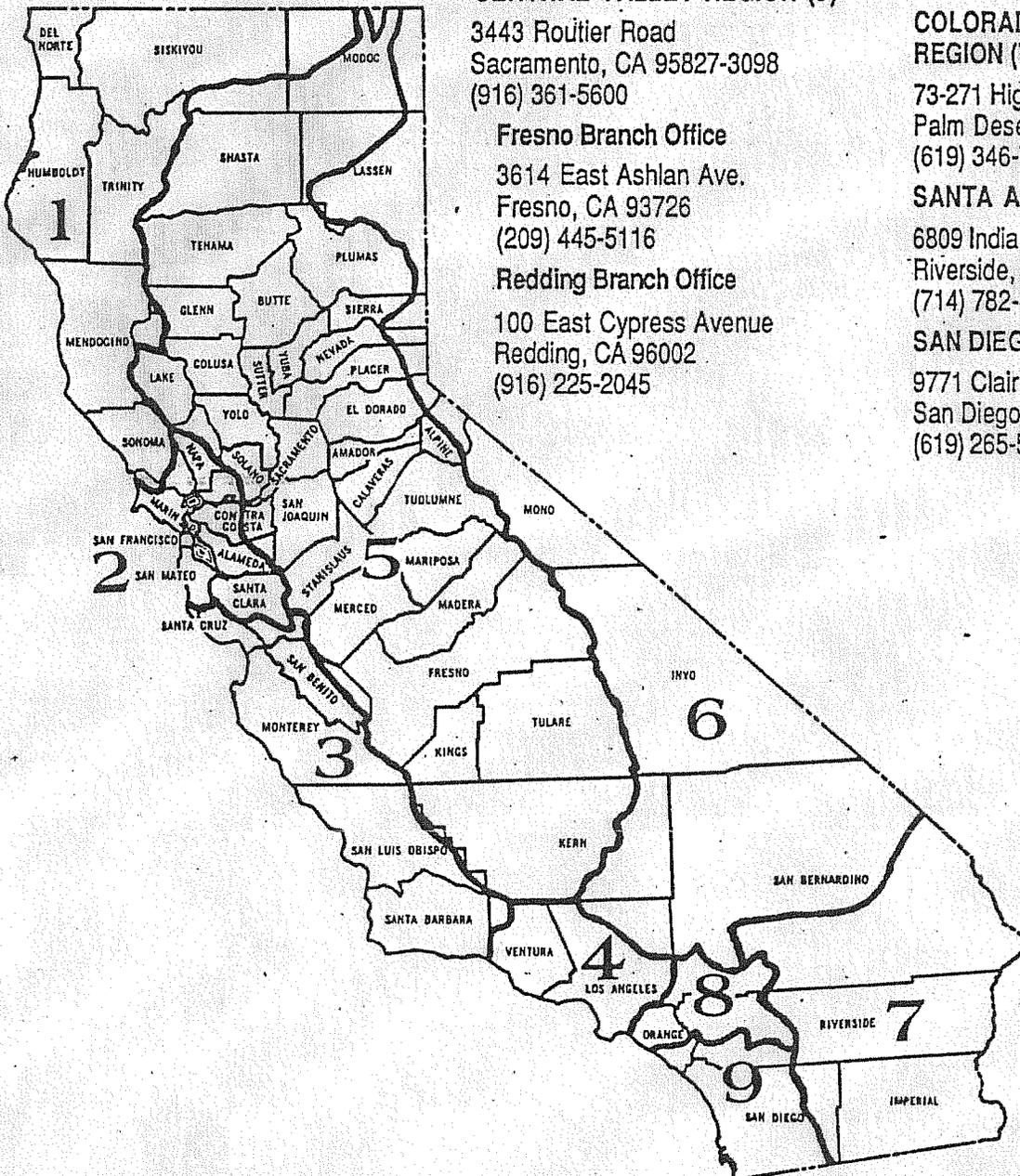
73-271 Highway 111, Ste. 21
 Palm Desert, CA 92260
 (619) 346-7491

SANTA ANA REGION (8)

6809 Indiana Avenue, Ste. 200
 Riverside, CA 92506
 (714) 782-4130

SAN DIEGO REGION (9)

9771 Clairemont Mesa Blvd. Ste. B
 San Diego, CA 92124
 (619) 265-5114

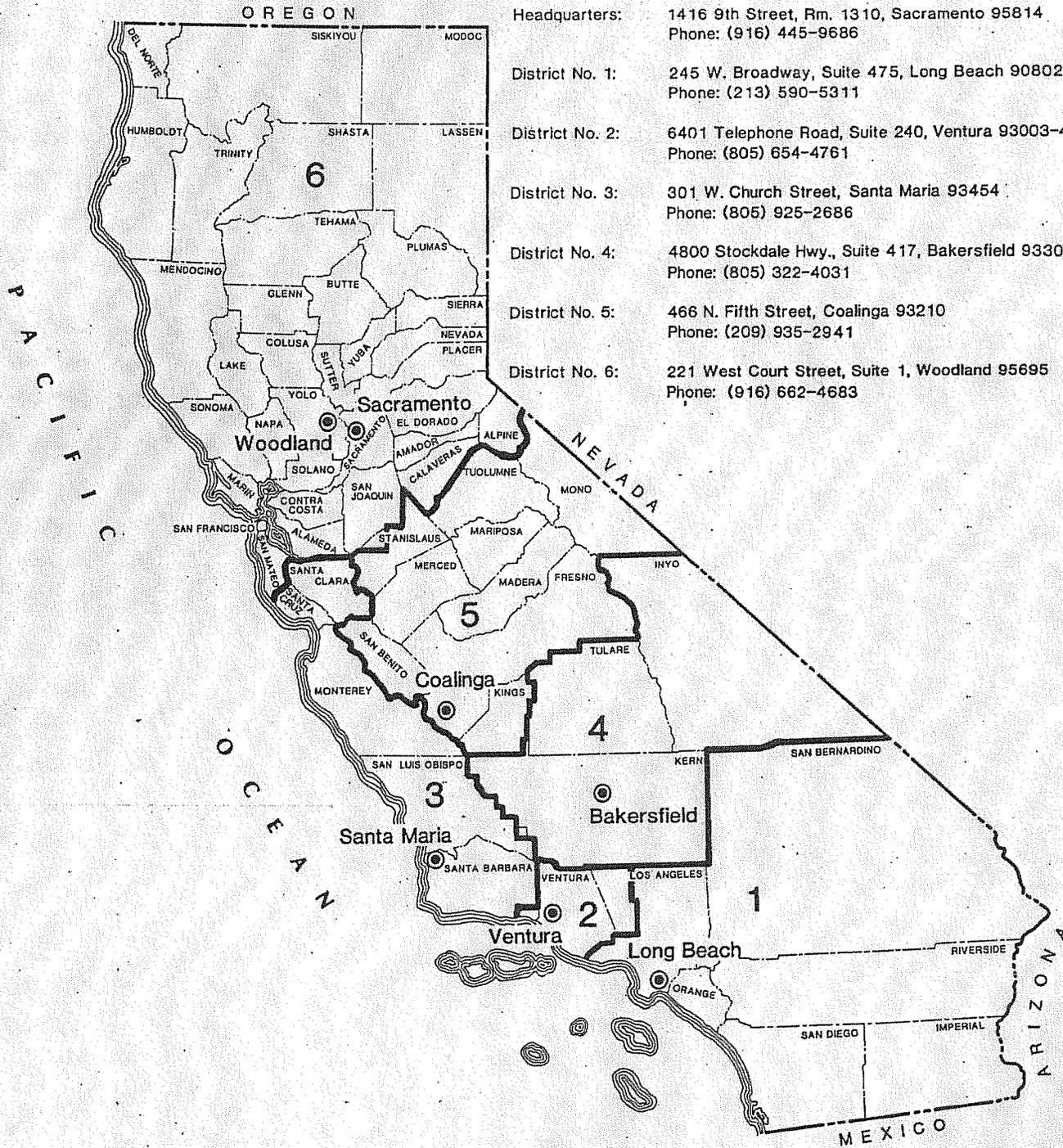


ITEM # 32
 MEETING DATE: AUGUST 21, 2012
 PRESENTED BY: C.M. FLORENCE
 RECEIVED PRIOR TO MEETING
 POSTED ON: AUGUST 20, 2012

OIL AND GAS DISTRICT BOUNDARIES of the Division of Oil and Gas

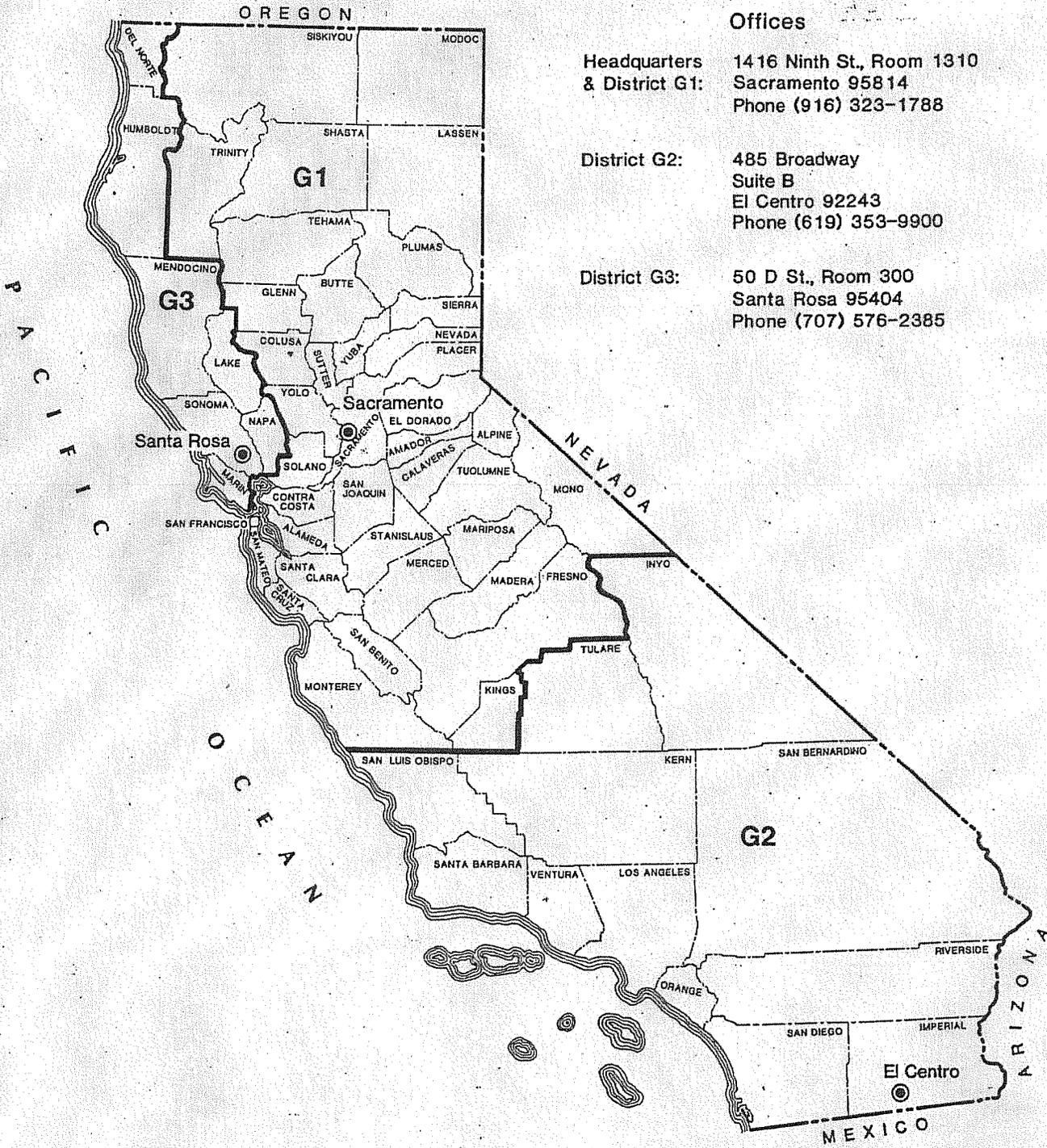
Offices

- Headquarters: 1416 9th Street, Rm. 1310, Sacramento 95814
Phone: (916) 445-9686
- District No. 1: 245 W. Broadway, Suite 475, Long Beach 90802
Phone: (213) 590-5311
- District No. 2: 6401 Telephone Road, Suite 240, Ventura 93003-4458
Phone: (805) 654-4761
- District No. 3: 301 W. Church Street, Santa Maria 93454
Phone: (805) 925-2686
- District No. 4: 4800 Stockdale Hwy., Suite 417, Bakersfield 93309
Phone: (805) 322-4031
- District No. 5: 466 N. Fifth Street, Coalinga 93210
Phone: (209) 935-2941
- District No. 6: 221 West Court Street, Suite 1, Woodland 95695
Phone: (916) 662-4683



ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: C.M. FLORENCE
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

GEOTHERMAL DISTRICT BOUNDARIES of the Division of Oil and Gas



Offices

Headquarters & District G1: 1416 Ninth St., Room 1310
Sacramento 95814
Phone (916) 323-1788

District G2: 485 Broadway
Suite B
El Centro 92243
Phone (619) 353-9900

District G3: 50 D St., Room 300
Santa Rosa 95404
Phone (707) 576-2385

STATE WATER RESOURCES CONTROL BOARD
RESOLUTION 88- 61

APPROVAL OF AMENDMENTS TO THE MEMORANDUM OF AGREEMENT
BETWEEN THE STATE WATER RESOURCES CONTROL BOARD AND
THE DEPARTMENT OF CONSERVATION, DIVISION OF OIL AND GAS
REGARDING CLASS II INJECTION WELLS

WHEREAS:

1. The State Water Resources Control Board (State Board) and the Department of Conservation, Division of Oil and Gas executed a Memorandum of Agreement (MOA) in August 1982 that outlined the procedures for reporting proposed oil, gas, and geothermal field discharges and the procedures for prescribing permit requirements for said discharges.
2. The CDOG received primacy to administer the federal Underground Injection Control Program for Class II wells in California from the U.S. Environmental Protection Agency (EPA) in March 1983.
3. The EPA revised its classification of materials that are considered Class II fluids in July 1987.
4. The EPA revised classification requires revisions to the MOA for consistency.
5. Additional revisions to the MOA are necessary to clarify procedures.

THEREFORE BE IT RESOLVED:

That the State Board approves the revised MOA with CDOG and directs the Chairman and Executive Director to sign said agreement.

CERTIFICATION

The undersigned, Administrative Assistant to the Board, does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Resources Control Board held on

MAY 19 1988


Maureen Marche
Administrative Assistant to the Board

File: MOU-200

MAY 11 1988

STATE WATER RESOURCES CONTROL BOARD MEETING
SACRAMENTO, CALIFORNIA
MAY 19, 1988

ITEM: 5

SUBJECT: CONSIDERATION OF AMENDMENTS TO THE MEMORANDUM OF AGREEMENT BETWEEN THE STATE WATER RESOURCES CONTROL BOARD AND THE DEPARTMENT OF CONSERVATION, DIVISION OF OIL AND GAS REGARDING CLASS II INJECTION WELLS

DISCUSSION: In August 1982, the State Water Resources Control Board (State Board) and the Department of Conservation, Division of Oil and Gas (CDOG) signed a Memorandum of Agreement that outlined the procedures for reporting proposed oil, gas, and geothermal field discharges and the procedures for prescribing permit requirements to ensure coordination and cooperation between the State and Regional Boards and CDOG. In March 1983, CDOG received primacy from the U.S. Environmental Protection Agency (EPA) to administer the federal Underground Injection Control Program for Class II wells in California. In July 1987, EPA revised its classification of materials that are considered Class II fluids to include air scrubber blowdown, water softener regeneration brine, and those fluids that are an integral part of oil and gas production operations that do not constitute a hazardous waste under 40 CFR Part 261. This change by EPA necessitates minor revisions in the State Board/CDOG Memorandum of Agreement. Staff has worked closely with CDOG and the Regional Board staffs in the development of proposed revisions to the Memorandum of Agreement that address EPAs changes in the classification of materials. The proposed revisions also include language believed necessary to clarify procedures between the Regional Boards and the CDOG Districts. The revised Memorandum of Agreement has already been signed by CDOG.

POLICY ISSUES: Should the State Board approve the revised Memorandum of Agreement with CDOG.

FISCAL IMPACT: Staff work associated with or resulting from this action is not expected to materially change and can be accommodated within budgeted resources.

REGIONAL BOARD IMPACT: Yes, all Regional Boards.

STAFF RECOMMENDATION: That the State Board approve the revised Memorandum of Agreement with CDOG and direct the Chairman and Executive Director to sign said agreement.

Policy
Fiscal
Legal

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: C.M. FLORENCE
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012



DIVISION OF OIL, GAS & GEOTHERMAL RESOURCES

- » [Construction Site Review](#)
- » [Division Contacts](#)
- » [Forms](#)
- » [In Case of Emergency](#)
- » [Laws/Regs](#)
- » [GIS/Maps](#)
- » [Online Mapping System](#)
- » [Online Production and Injection](#)
- » [Online Well Record Search](#)
- » [Publications](#)
- » [FTP Site](#)

RELATED LINKS

- » [Governmental](#)
- » [Industry](#)
- » [Miscellaneous](#)



[DOGGR](#) » [General Information](#) » [Oil, Gas & Geothermal - Injection Wells](#)

Oil, Gas & Geothermal - Injection Wells

Injection wells have been an integral part of California's oil and gas operations for over 50 years. Currently, over 25,000 oilfield injection wells are operating in the state. Injection wells are used to increase oil recovery and to safely dispose of the salt and fresh water produced with oil and natural gas.

Injection wells are classified by the U.S. Environmental Protection Agency into six classes according to the type of fluid they inject and where the fluid is injected, as follows:

- » Class I wells - inject hazardous and non-hazardous wastes below the lowermost underground source of drinking water (USDW). Injection occurs into deep, isolated rock formations that are separated from the lowermost USDW by layers of impermeable clay and rock.
- » Class II wells - inject fluids associated with oil and natural gas production operations. Most of the injected fluid is brine that is produced when oil and gas are extracted from the earth.
- » Class III wells - inject super-heated steam, water, or other fluids into formations to extract minerals. The injected fluids are then pumped to the surface and the minerals in solution are extracted. Generally, the fluid is treated and re-injected into the same formation.
- » Class IV wells - inject hazardous or radioactive wastes into underground sources of drinking water. These wells are banned under the Underground Injection Control (UIC) program because they directly threaten public health.
- » Class V wells - are injection wells that are not included in the other 4 classes. Some Class V wells are wastewater disposal wells used by the geothermal industry, but most are wells such as septic systems and cesspools. Generally, they are shallow and depend upon gravity to drain or "inject" liquid waste into the ground.
- » Class VI wells - inject carbon dioxide (CO₂) into deep underground subsurface rock formations for long-term storage, or geologic sequestration. The Division does not have primacy to regulate Class VI wells. Class VI wells are permitted and regulated though the US EPA.

In California, all Class II injection wells are regulated by the Department of Conservation, Division of Oil, Gas, and Geothermal Resources, under provisions of the state Public Resources Code and the federal Safe Drinking Water Act. Class II injection wells fall under the Division's UIC program, which is monitored and audited by the U.S. Environmental Protection Agency. In 1983, the Division received EPA primary authority, *primacy*, to regulate Class II wells. The main features of the UIC program include permitting, inspection, enforcement, mechanical integrity testing, plugging and abandonment oversight, data management, and public outreach.

ITEM # 32
 MEETING DATE: AUGUST 21, 2012
 PRESENTED BY: C.M. FLORENCE
 RECEIVED PRIOR TO MEETING
 POSTED ON: AUGUST 20, 2012

FREQUENTLY ASKED QUESTIONS

How Many Injection Wells Are Used in Oil and Gas Operations In California?

About 25,000 injection wells are used for waterflood, steamflood, cyclic steam, and water disposal. These wells are referred to as Class II injection wells in the Underground Injection Control (UIC) program.

Where Are They?

Injection wells are found in many oil and gas fields located in the counties where oil and gas are produced.

What Are They For?

Class II injection wells are used to safely dispose of the salt and fresh water produced with oil and gas. Injection is often accomplished in a manner that will increase oil and gas production. About 6 times more water than oil is produced from California's oil and gas fields.

Does Injected Water Serve a Useful Purpose?

Yes. In about 90 percent of the Class II injection wells, water is injected into petroleum reservoirs to increase oil production. About 60 percent of California's oil production is a result of Class II injection wells.

Is Anything Besides Water Injected?

Current state and federal regulations allow nonhazardous fluids produced from oil or gas wells and several other nonhazardous fluids associated with the production process to be injected into a Class II well. These other fluids include diatomaceous earth-filter backwash, thermally enhanced oil recovery cogeneration plant fluid, water-softener regeneration brine, air scrubber waste, drilling mud filtrate, naturally occurring radioactive materials (NORM), slurrified crude-oil, saturated soils, and tank bottoms.

What Is An Injection Well Like?

After a well is drilled, often to depths over 5,000 feet, steel pipe called casing is cemented in the hole. The casing and cement prevent fluids in different zones from mixing with each other or with injected fluids. The casing and cement are perforated opposite the injection zone. To provide an extra layer of protection, tubing is placed in the well to a point just above the perforations and a packer is used near the bottom of the tubing to seal it against the casing. The packer prevents water from entering the space between the tubing and casing when water is injected down the tubing. Several tests are run to make sure the well is operating properly and the injected fluids are confined to the intended injection zone.

What Is An Injection Zone Like?

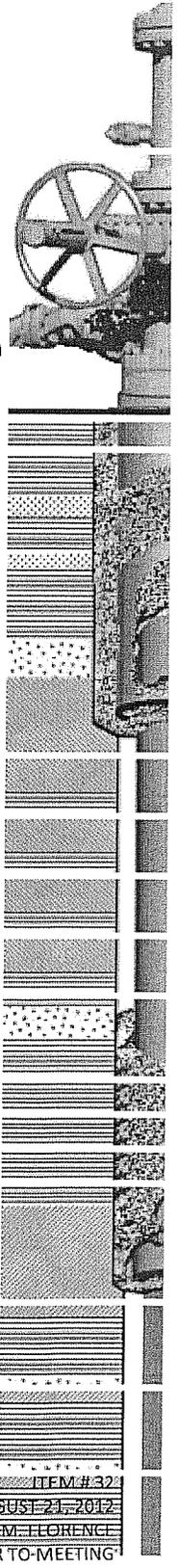
An injection zone is usually sandstone, a rock porous and permeable enough to accept injected fluids. Rock beds chosen for injection zones are covered by impermeable beds, like shale, that act as cap rocks, confining injected liquids in the porous beds.

How Is Produced Water Handled?

After oil and gas are separated from the produced water at the producing well, the water is piped or trucked to the injection site. There, the water is transferred to holding tanks and pumped down a Class II injection well.

How Often Are Injection Wells Checked?

All injection wells are monitored by Division engineers to ensure the wells are operated properly and have mechanical integrity. Monitoring includes reviewing operational data and running tests like Mechanical Integrity Tests (i.e., spinner temperature, and pressure tests and tracer surveys). In addition, most well sites are



inspected annually by Division engineers. Samples of the injected fluids may be taken at any time to confirm compliance.

How Are Injection Wells Permitted?

Operators of Class II injection wells must file for a permit with the Division. Before a permit is issued, the proposed injection project is studied by Division engineers and reviewed by the appropriate Regional Water Quality Control Board. Division engineers evaluate the geologic and engineering information, solicit public comments, and hold a public hearing, if necessary. Injection project permits include many conditions, such as approved injection zones, allowable injection pressures, and testing requirements.

Are Injection Wells Safe?

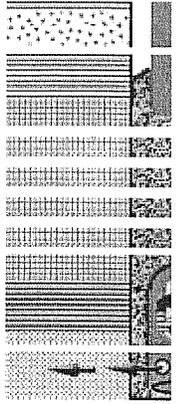
Yes. Class II injection wells provide a viable and safe method to enhance oil and gas production and dispose of produced fluids and other fluids associated with oil- and gas-production operations. In California, Class II injection wells have an outstanding record for environmental protection. A peer review conducted by a national organization, the Ground Water Protection Council, found the Division has an excellent program that effectively protects underground sources of drinking water.

Related Links:

[US Environmental Protection Agency](#)

[EPA - Protection of Environment and Water](#)

[Ground Water Protection Council](#)



A Typical

The average
5,000 ft. d

About 25,000
(

60% of the oil
is a re:

[Back to Top](#) [Help](#) [Contact Us](#) [Site Map](#)

[Conditions of Use](#) | [Privacy Policy](#)
Copyright © 2007 State of California

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: C.M. FLORENCE
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012



**Fw: EXCELARON CONDITIONAL USE PERMIT - HUASNA VALLEY OIL
EXPLORATION & PRODUCTION PROJECT - No. 4**

Amy Gilman to: cr_board_clerk Clerk Recorder

08/20/2012 11:53 AM

#4

----- Forwarded by Amy Gilman/BOS/COSLO on 08/20/2012 11:53 AM -----

From: Carol Florence <CMF@oasisassoc.com>
To: "Adam Hill " <ahill@co.slo.ca.us>, "Amy Gilman " <agilman@co.slo.ca.us>, Bruce Gibson <bgibson@co.slo.ca.us>, "Cherie Aispuro " <caispuro@co.slo.ca.us>, "Deb Geaslen " <dgeaslen@co.slo.ca.us>, "Frank Mecham " <fmecham@co.slo.ca.us>, Jim Patterson <jpatterson@co.slo.ca.us>, "Paul Teixeira " <pteixeira@co.slo.ca.us>, "Susan Devine " <sdevine@co.slo.ca.us>, "Vicki Shelby " <vshelby@co.slo.ca.us>
Cc: "Jason Giffen " <jgiffen@co.slo.ca.us>, "Whitney McDonald " <wmcDonald@co.slo.ca.us>
Date: 08/20/2012 11:46 AM
Subject: EXCELARON CONDITIONAL USE PERMIT - HUASNA VALLEY OIL EXPLORATION & PRODUCTION PROJECT - No. 4

Dear Supervisors,

Throughout this permitting process, one of the broader issues that has consistently been raised is the compatibility of oil extraction with surrounding land uses. This is not a new issue in California, and many local governments, such as the City of Beverly Hills and the County of Los Angeles, are regularly faced with having to balance these competing interests because, as they say, "oil is where you find it" (and that often happens to be in areas that are also desirable places to live).

The City of Huntington Beach has perhaps more experience in balancing mineral rights with surface rights-- and incorporating the two types of interests into its land use planning-- than just about any municipality in California. Oil was first discovered there in 1920, and it has been produced there in significant quantities ever since. At the same time (specifically throughout the 1960s and 1970s) it was one of the fastest growing cities in the country, and it developed an iconic cultural reputation as "Surf City U.S.A." making it a hugely popular tourist destination.

In 1982, the City of Huntington Beach hosted a workshop in conjunction with DOGGR entitled "Land Use Planning In Urban Oil-Producing Areas." The workshop was attended by planning professionals from around the state, including Ellen Carroll (née Rognas). Actually, I worked with Ellen's predecessor, Dr. David Harrow and have been working with Ellen prior to her becoming the County's Environmental Coordinator! Sorry, I digress.© The notes from this workshop are highly detailed and educational, have been made available on the DOGGR website, and a copy is attached for your review.

Apart from the insightful notes and comments, which are still relevant after 30 years, this document shows that planning for and reconciling these competing interests has been on the minds of local governments—including the County of San Luis Obispo—for a great many years. The fact that many of California's leading producing oilfields continue to be located in densely populated urban areas (see [this DOGGR map](#)) is a testament to the measure of success that has been achieved on this score. In short, these are not new issues, but the solutions are not new, either, and the best ones have been time-tested.

On a related note, it is worth observing that San Luis Obispo County first adopted its current comprehensive petroleum extraction ordinance in 1989 (SLO Land Use Ordinance Chapter 22.34), several years after its Environmental Coordinator had the benefit of attending this workshop. One can see

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: C.M. FLORENCE
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

many of the concepts from the workshop embodied in the Ordinance, and even in the current (and previous) Land Use Element of the General Plan. The Excelaron project complies with all of the County's guidelines for petroleum extraction, and insomuch as they represent the collective wisdom of many years of study and land use planning for such projects, and coupled with the project specific body of information and analysis, we hope that you will ultimately see fit to approve the Excelaron project. As always, thank you for the consideration.

Respectfully submitted,
C.M. Florence, AICP
Principal Planner

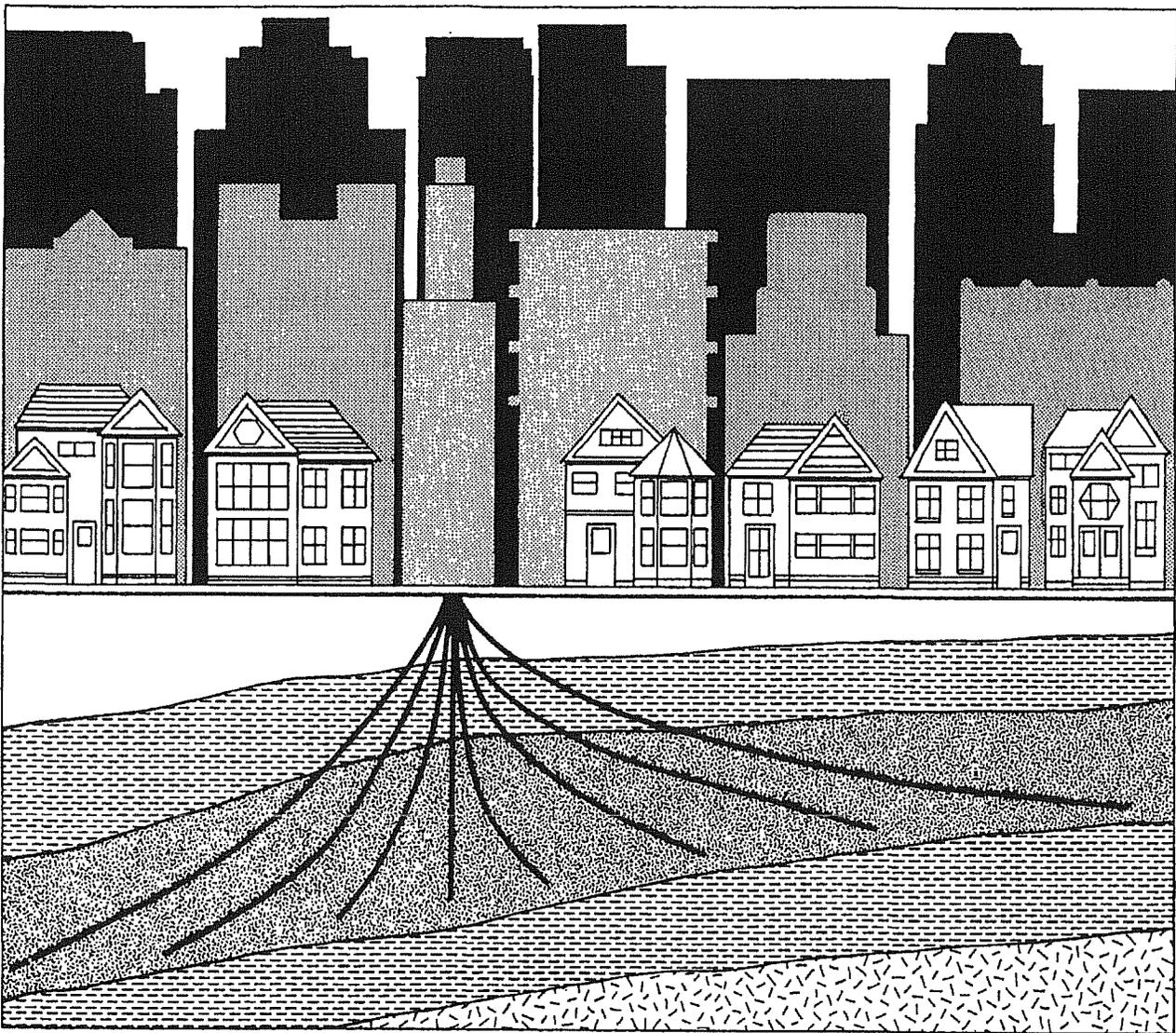
OASIS ASSOCIATES, INC.
LANDSCAPE ARCHITECTURE + PLANNING
3427 Miguelito Ct., San Luis Obispo, CA 93401
P: 805.541.4509 | F: 805.546.0525 | C: 805.459.9972
www.OASISASSOC.com



Land Use Planning in Urban Oil Producing Areas.pdf

LAND USE PLANNING IN URBAN OIL-PRODUCING AREAS

PROCEEDINGS OF THE WORKSHOP HELD ON FEBRUARY 25, 1982 IN HUNTINGTON BEACH, CALIFORNIA



CITY OF HUNTINGTON BEACH, DEPARTMENT OF DEVELOPMENT SERVICES, PLANNING DIVISION
STATE OF CALIFORNIA, DEPARTMENT OF CONSERVATION, DIVISION OF OIL AND GAS

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: GAIL FLORENCE
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

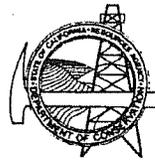


CITY OF HUNTINGTON BEACH (1982)

City Council

RUTH FINLEY *Mayor*
RON PATTINSON *Mayor Pro Tem*
RUTH BAILEY
JACK KELLY
DON MAC ALLISTER
ROBERT MANDIC
JOHN THOMAS

CHARLES W. THOMPSON *City Administrator*
JAMES W. PALIN *Director of Development Services*



STATE OF CALIFORNIA
GEORGE DEUKMEJIAN, Governor

RESOURCES AGENCY
GORDON K. VAN VLECK, Secretary

DEPARTMENT OF CONSERVATION
RANDALL M. WARD, Director

DIVISION OF OIL AND GAS
M. G. MEFFERD, State Oil and Gas Supervisor

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: C.M. FLORENCE
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

LAND USE PLANNING IN URBAN OIL-PRODUCING AREAS

Proceedings of the Workshop Held on
February 25, 1982 in Huntington Beach, California

City of Huntington Beach, Department of Development Services, Planning Division
State of California, Department of Conservation, Division of Oil and Gas

1988
1983
Sacramento



ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: C.M. FLORENCE
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

SUMMARY

This workshop on Land Use Planning in Urban Oil-Producing Areas, co-sponsored by the California Division of Oil and Gas and the City of Huntington Beach, was held in Huntington Beach on February 25, 1982. The issues addressed by the workshop included the increasing encroachment of urban development into oil-field areas, the importance of preserving access to urban oil fields, the advantages to be realized from oil-field unitization and the consolidation of surface operations. It was recognized that urban oil production poses unique land use issues, but that careful planning can increase land use compatibility and help ensure that adverse impacts are mitigated to the greatest degree possible. The workshop brought together people from throughout the State who are interested in developing better land use planning and regulatory practices for urban oil-production areas.

FINDINGS AND RECOMMENDATIONS

Preserving Surface Access to Petroleum Resources

FINDINGS:

The escalation of urban encroachment into oil fields is occurring not only in larger metropolitan areas but in some rural and suburban communities as well. It was generally agreed that local government planning departments have a principal role in determining how access will be retained and preserved through development of land use policies.

It was also apparent that where subsurface mineral rights are severed from surface ownership, the surface owner, unless receiving some benefit, has little incentive to cooperate with either the oil operator or local government planners to preserve access.

At the present time, neither State nor local laws adequately address the issue of preserving surface access to the subsurface petroleum resource.

RECOMMENDATIONS:

Oil fields within areas of urban encroachment should be examined geologically to determine their suitability and potential for consolidating surface operations.

Geologic studies, as well as planning considerations, should be taken into account in determining the surface location of areas to be preserved for access to the subsurface petroleum resource.

In planning for oilfield areas, local governments should employ land use regulations to preserve surface access to the subsurface resource. Among the planning and regulatory techniques discussed were conditional use permits, transfer of development rights, zoning, and general plan designations. If possible, these measures should be undertaken before urbanization of an oil field takes place.

There is a need for legislation that would require local governments to take petroleum resources and access preservation into consideration when planning for land use in their jurisdictional areas. The State, without mandating what methods local governments must use, should enact legislation to ensure that this important issue is addressed by local governments.

Owners of surface land areas designated as "oil islands" should not have to bear unreasonable costs or hardships as a result of the planning or regulatory process. Where the surface landowner has no financial interest in the mineral resource, some incentive, possibly in the form of a fractional interest in the oil produced or a transfer of development rights by local government, might be provided.

Consolidation of Oilfield Operations

FINDINGS:

Consolidating surface operations frees land areas for other uses, and increases compatibility between oil operations and other urban land uses.

Older oil fields have become increasingly important candidates for some form of enhanced recovery, which may extend the life of the field considerably. Consolidation of new operations in older fields would allow continued production of the field, and also provide local government with assurance that the oil activities will be more compatible with the surrounding area.

RECOMMENDATION:

Where oilfield conditions permit, consolidation of surface operations should be encouraged by local governments.

Compulsory Unitization

FINDINGS:

The mineral rights of oil fields are generally divided among several owners. Consolidation of surface operations is dependent upon combining the individually owned portions of the subsurface oil-producing reservoir into one unit under one operator.

Unitization may be voluntary or compulsory; however, the State's compulsory unitization law is unwieldy and provides so many disincentives that it has never been used to unitize an oil field and is not an effective tool to induce unitization.

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: C.M. FLORENCE
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

RECOMMENDATIONS:

Where oilfield surface operations cannot remain separated from other land uses, provision should be made by local and State regulatory agencies to encourage unitization of the mineral leases involved and the consolidation of surface operations.

Consolidation of older, existing primary operations may not be justified economically. Generally, consolidation of secondary or enhanced recovery operations is warranted and feasible; therefore, such operations should be encouraged as vehicles to eventual consolidation of all surface operations throughout the oil field.

Where voluntary unitization has failed, the State's compulsory unitization law may be invoked; however, because it has proved to be virtually unusable in its present form, that portion of the Public Resources Code should be amended to correct the deficiencies of the law as soon as possible. An effective State unitization law would enable local government to develop land use guidelines that would permit continued development and recovery of the petroleum resource through enhanced recovery methods.

Compatibility of Operations

FINDINGS:

In most cases, modern drilling techniques and producing methods now enable operators to drill wells and produce oil in ways that can be compatible with other land uses and the environment.

Noise, odors, and vibration from oil operations can usually be mitigated to a large degree, and are generally not objectionable under most circumstances.

RECOMMENDATIONS:

Local government should review any local codes or regulations pertaining to oil operations, or conditions that have been imposed on such operations in the past, to ensure that these statutes do not unreasonably preclude or restrict oil operations that may be conducted with new or improved technology and that they reflect the best practical impact mitigation measures.

Consideration should be given to developing performance zoning standards for oil operations in areas where compatibility is a significant issue.

ACKNOWLEDGMENTS

Jan Denton
Director, California Department of Conservation

M.G. Mefferd
State Oil and Gas Supervisor, California Division of
Oil and Gas

Ruth Finley
Mayor, City of Huntington Beach

Charles W. Thompson
City Administrator, City of Huntington Beach

James W. Palin
Director, Development Services, City of Huntington
Beach

Project Directors

Michael J. Multari
Associate Planner, City of Huntington Beach

E.R. Wilkinson
Special Representative, California Division of Oil
and Gas

Workshop Coordinators

H. Diane Border
Planner, City of Huntington Beach

Ed Brannon
Energy and Mineral Resources Engineer,
California Division of Oil and Gas

Proceedings Editors

H. Diane Border
City of Huntington Beach

Michael J. Multari
City of Huntington Beach

E.R. Wilkinson
California Division of Oil and Gas

Special Assistance

Alan V. Hager
Deputy Attorney General,
California Department of Justice

TABLE OF CONTENTS

	PAGE
PREFACE	xi
INTRODUCTORY REMARKS.....	1
OIL PRODUCTION IN URBAN ENVIRONMENTS, <i>E.R. Wilkinson</i>	5
PLANNING GOALS AND APPROACHES, <i>Michael Multari</i>	15
CASE STUDIES	
#1 OIL FACILITIES IN A DEVELOPED AREA	17
#2 PLANNING FOR OIL AREAS ON THE URBAN EDGE	29
#3 RELOCATING INAPPROPRIATELY SITED OIL FACILITIES	37
WORKSHOP PARTICIPANTS.....	41
SELECTED REFERENCES	43

PREFACE

A workshop on Land Use Planning in Urban Oil-Producing Areas, co-sponsored by the City of Huntington Beach and the California Department of Conservation, Division of Oil and Gas, was held in Huntington Beach on February 25, 1982. The principal goals of the workshop were: 1) to recognize present problems associated with oil production in urban areas; and 2) to discuss the importance of surface access preservation in oil fields and how oil production activities can occur more compatibly with urban activities through unitization and consolidation.

As the City of Huntington Beach was working with the Division of Oil and Gas to solve these problems in a practical manner, it became apparent that other jurisdictions in the State were having similar experiences with urban encroachment into oil fields. Growing concern over the future of oil production in ur-

ban areas prompted the Division of Oil and Gas and the City of Huntington Beach to co-sponsor this workshop, which brought together people from throughout the State to begin to develop better land use planning and regulatory practices for urban oil production areas based on current technology and the best available information.

The City of Huntington Beach has long been an area of significant oil production. It was also among the fastest growing cities in the country during the 1960's and 1970's. This rapid growth brought new houses and commerce into once-open oil fields. Urban development of this type not only creates land use compatibility problems, but also covers so much of the surface of some oil fields that their potential for future oil extraction may be jeopardized.

INTRODUCTORY REMARKS

James W. Palin, Director, Department of Development Services, City of Huntington Beach:

"Several factors have contributed to the urgency of planning now for continued oil production in urban areas: the rising price of oil and the development of new extraction technologies have made the residual oil found in oil fields underlying many urban areas an important source for future production of domestic petroleum products. Consequently, we are seeing the life of existing fields lengthening, and some areas that were once considered to be near depletion are now being eyed as long term producers. In several places there is a new interest in drilling and production.

"At the same time, the value of land—especially in and near urban areas— has increased too, in a large part in response to housing demands. In many places, older oil fields constitute the only remaining open space within an urban area. The urban and suburban uses are expanding into oil producing areas. This results in situations where oil facilities are in proximity to other uses, especially residential ones, which in turn can produce problems and conflicts for both uses. Ways to reduce these conflicts while accommodating mixed use and protection of the valuable natural resource are the concerns of this workshop."

Michael Multari, Associate Planner, City of Huntington Beach:

"The following is a summary of the format for today's workshop. First of all, I want to emphasize that this is a 'workshop'. We who work on oil activities in Huntington Beach and the people with the Division of Oil and Gas do not presume to have the definitive answers for these kinds of problems. Rather, we have tried to create an opportunity for people to talk about and share their experiences. We hope to get insights from each other's work on how to solve problems related to oil production in urban contexts.

"Today's agenda calls for some opening remarks by Ruth Finley, our Mayor, and then some introductory comments by Jan Denton, the Director of the California Department of Conservation, and by Marty Mefferd who is the State Oil and Gas Supervisor. Then, 'Wilky' Wilkinson from the Division of Oil and Gas is going to discuss some of the technologies related to oil production in an urban context and some of the

constraints these technologies put on the production process, as well as some of the opportunities they afford. Next, we will discuss case studies of situations in Huntington Beach which we think will illustrate some of the problems—and some of the approaches to solving those problems— that we have experienced here."

Ruth Finley, Mayor, Huntington Beach:

"I want to thank you for coming to this workshop and for joining with us to discuss these important planning issues. The Department of Conservation has co-sponsored this workshop with our City and has provided both technical and financial support in helping to make this session possible. We appreciate the State's interest in these planning problems and its support in working with us toward acceptable solutions. I hope that today will provide a much needed opportunity for State and local planners to share their experiences, and to develop strategies for effective land use planning in urban oil areas.

"We in Huntington Beach are clearly interested in land use planning for oil areas. The City's early history was tied to oilfield development. The field here currently ranks seventh in the state in annual oil production and is the third largest California field in terms of cumulative production, having recently topped the one billion barrel mark. During much of this time, the oil wells were in open and undeveloped areas and there were few conflicts between oil and urban uses. However, during the 1960's and 70's, Huntington Beach was among the fastest growing cities in the United States and now has a population of over 170,000. The fact that such a large and quickly growing community developed in the midst of widespread oil operations has forced us to deal with many of the problems that you will be discussing today, and some of our experiences, both good and bad, will be used as case studies in today's session. I hope that the dialogue afforded by this workshop will help all of us in developing sound land use planning and regulatory approaches for better accommodating oil and other urban activities."

Jan Denton, Director, California Department of Conservation:

"As community planners and participants in today's workshop, I hope you realize the importance of the individual contributions you make to the public. As

REM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: C.M. FLORENCE
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

creative solutions as well. The Department of Conservation and the City of Huntington Beach hope that today's workshop can provide some guidance and assistance to enable you to better cope with the conflicts between urban demands and efficient recovery of our oil and gas resources."

**M.G. Mefferd, State Oil and Gas Supervisor,
California Division of Oil and Gas:**

"Petroleum is the principal source of energy for both the State and the Nation. In 1980, oil supplied 65 percent of California's total energy. Daily demand for oil in California is approximately 1.84 million barrels, of which a little over 1 million barrels is produced in the State. So, California's domestic oil production makes a significant contribution to our total energy supply.

"The Los Angeles Basin, besides being a huge metropolitan area, is also one of California's major petroleum producing provinces. Oil production began in the downtown Los Angeles area in 1893, almost 90 years ago, and since that time oil fields have been discovered throughout the Basin. Today, there are over 50 active fields in the greater Los Angeles area. These fields contain 8,300 wells that produced in excess of 83 million barrels of oil in 1980. That represents about 25 percent of the State's total production.

"Now the mere fact that all of this is taking place in a huge urban complex is in itself a credit to local planners

and administrators. But as urban development continues and available open space decreases, the pressures for that space become more and more intense, a fact of which I am sure you are all aware. However, it is important that all of us—planners, administrators and regulators alike—be aware of the existence of our valuable resources and of the fact that there is a significant amount of oil left in the ground to be recovered.

"One of the major responsibilities of the Division of Oil and Gas is to make reserve estimates for all of the fields in California. By a 'reserve', I mean that amount of oil that we expect to be recovered under current economic and technological conditions. As of December 31, 1981, we estimated the recoverable reserve for California to be 5.2 billion barrels. If you were to give this oil a price of, say, \$25 a barrel—putting aside for a moment the cost associated with getting it out of the ground—it would represent a resource valued at approximately \$130 billion.

"To focus in on an urban area — the Los Angeles Basin has a recoverable reserve of 854 million barrels. Figure 1 shows the productive limits of many of the fields in the Basin along with their estimated reserves. I think you will find this figure interesting, for it shows that the magnitude and the value of the resource is significant. But, more importantly, I think it highlights the need for all of us to be aware of petroleum's potential and its value in the State's urban areas."

OIL PRODUCTION IN URBAN ENVIRONMENTS

E.R. Wilkinson, California Division of Oil and Gas:

"Today, I am going to talk about petroleum geology, basic engineering principles and their application as related to oil, as well as how oil occurs, and how it is removed from the earth. I will also discuss oil sites that have been designed to blend with the surrounding community, and, finally, I'll talk about one of the project areas here in Huntington Beach.

"You may ask: 'Why do we have oil in our community?' There are three conditions necessary to create an oil field: (1) a source bed, (2) a reservoir bed, and (3) a geologic trap. The currently accepted theory among geologists is that oil originates in a shale stratum, the source bed, and migrates out of the shale through capillary action into a reservoir which, in California, is generally a sandstone. These beds originated as flat sedimentary deposits on a sea floor. Layers of very fine sediment became shales, and alternated with coarser granular sediments, which became sandstones. This is a fortunate series of sediments because the shales not only provide the source beds for the oil, but also serve as an impervious cap or seal which is necessary for the entrapment of oil in the sandstone reservoir.

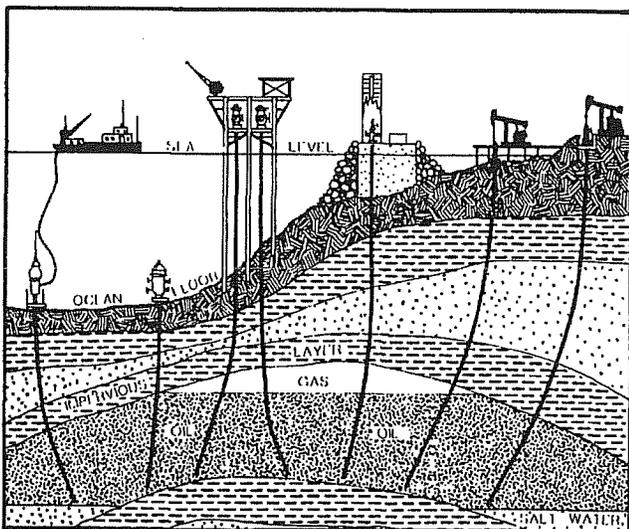


Figure 2. Cross-sectional view of an anticline with an oil-saturated reservoir.

"Figure 2 shows a cutaway cross section of a geological feature called an 'anticline'. An anticline is one of several different types of geologic traps. As oil migrates into a sandstone bed, it will tend to separate from the saltwater which is also present in the sandstone, and 'float' upward. If there is an impervious layer of rock over the reservoir, the oil will probably be dispersed throughout a porous and permeable sandstone bed, but if a geologic trap is formed, oil will collect in one portion of the bed and form a pool. Thus, the three basic requirements for entrapment are: (1) a source bed for the oil; (2) a granular rock in which the oil can collect and move; and (3) a trap.

"Figure 3 depicts an enlargement of the reservoir rock showing individual grains of sand. This rock satisfies the requirement for a reservoir rock because there are spaces between the grains where oil can accumulate. This property is called 'porosity'. To obtain oil or gas from a reservoir, the rock must have both porosity and permeability.

"Figure 3 also illustrates a typical situation where gas is present with oil that overlies salt water. The pumping unit shown here is the most common mechanical device used for removing oil from the reservoir. Each

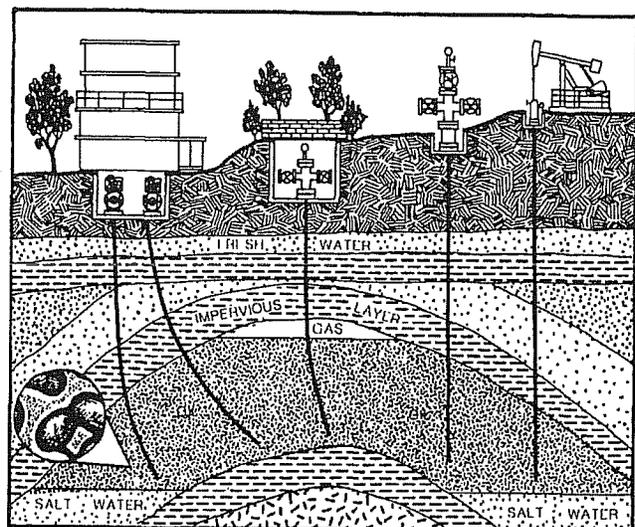


Figure 3. Cross-sectional view of an anticlinal geologic structure with magnified view of the sandstone reservoir. Note various types of producing methods.

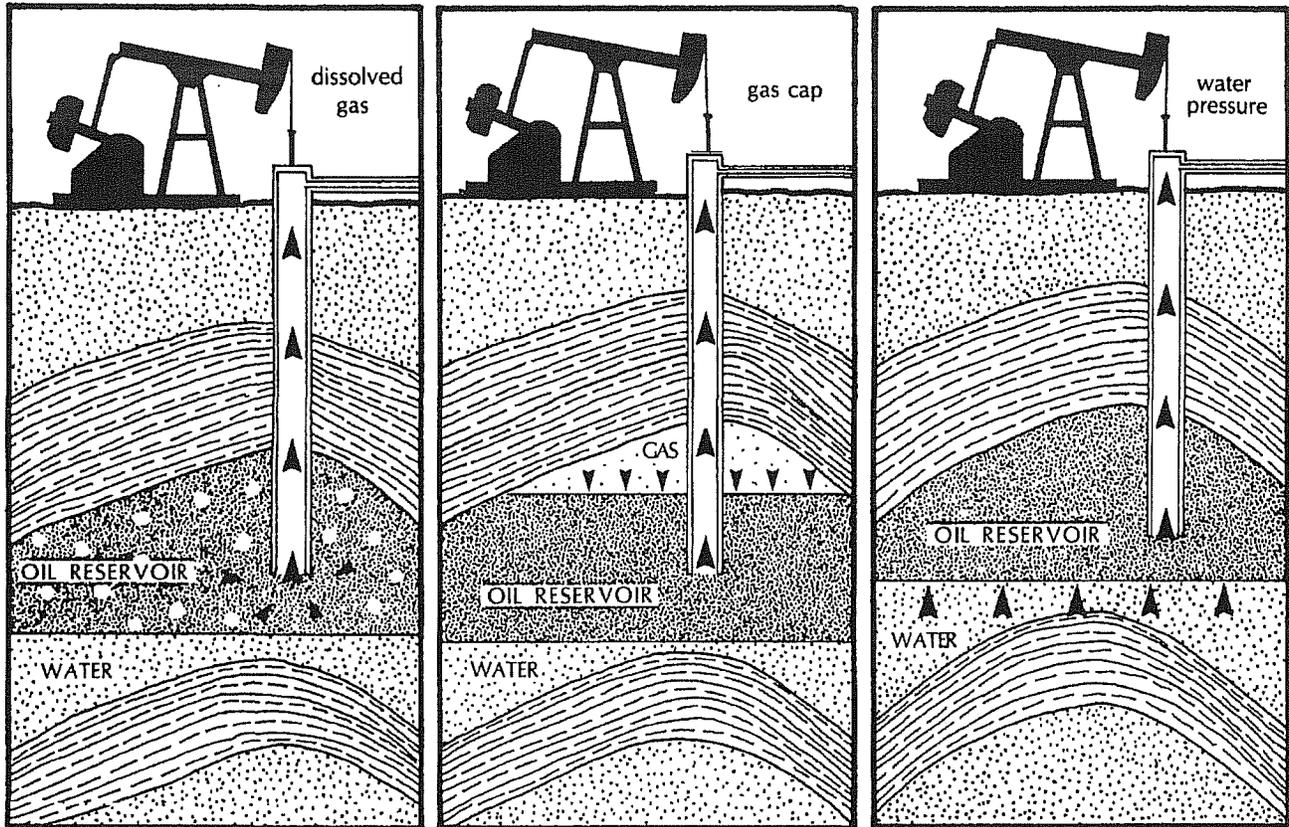


Figure 4. Natural forces that move oil through a reservoir to wells.

stroke of the pump literally lifts a few feet of oil up the pipe. In some instances, where the natural pressure in the reservoir is high enough, pumps are not necessary. Instead, a completion head called a 'Christmas Tree' is placed on the top of the well. The fluids simply flow to the surface as a result of the natural pressure within the reservoir.

"Even if the wells will not flow by natural pressure, surface pumping units are not always necessary. Sometimes down-hole pumps are used which are driven by electricity or hydraulic power. This is more expensive, but if the economics justify it, high volumes of oil can be pumped while maintaining a relatively low surface profile.

"What makes the oil in the reservoir move into the well? Figure 4 shows the three basic reservoir 'drives'. The first one is the 'solution gas drive' where gas is dissolved in the oil under great pressure, perhaps several thousand pounds per square inch. As soon as a well penetrates the sandstone reservoir, the pressure is lowered in the area immediately around the well. This provides an area of relief from the extremely high subsurface pressure, and the gas begins to expand, driving the oil into and up the well. This is known as a 'flowing well'.

"The second method of moving oil to the well occurs when gas has already separated from the oil and a 'gas cap' has formed above the oil in the reservoir (Fig. 4). Gas caps help push oil out of the reservoir in a way that

is similar to the high pressure solution gas situation. When reservoir pressure is lowered, the gas cap expands and forces the oil into and up the well.

"In California, the Division of Oil and Gas is required to monitor the amount of gas and oil produced from each well to ensure that oil wells are not produced with too high a ratio of gas to oil. In other words, we don't want the pressure reduced in that gas cap too quickly because such action reduces the natural driving force in the reservoir, which in turn reduces the amount of oil that might ultimately be recovered from that reservoir. If anything, we prefer that operators repressure the gas cap with produced gas and maintain the drive in the reservoir.

"Finally, Figure 4 illustrates 'water drive', which is a relatively common drive mechanism in many fields, especially older ones. There are many oil fields that do not have enough gas to create a gas drive situation. However, the natural pressure of the underlying salt water pushes against the oil and moves it toward the well, which is the area of low pressure. Formation water pressure is usually the result of the weight of overlying rocks. However, it could also be caused by a hydrostatic change in pressure, which may occur as a result of gravity in instances where the reservoir beds, or strata, slope downward from a higher elevation. The pressure that results from water in the reservoir rocks flowing 'downslope' in turn applies pressure to the formation water underlying the oil and causes it to move to the low pressure area in the well.

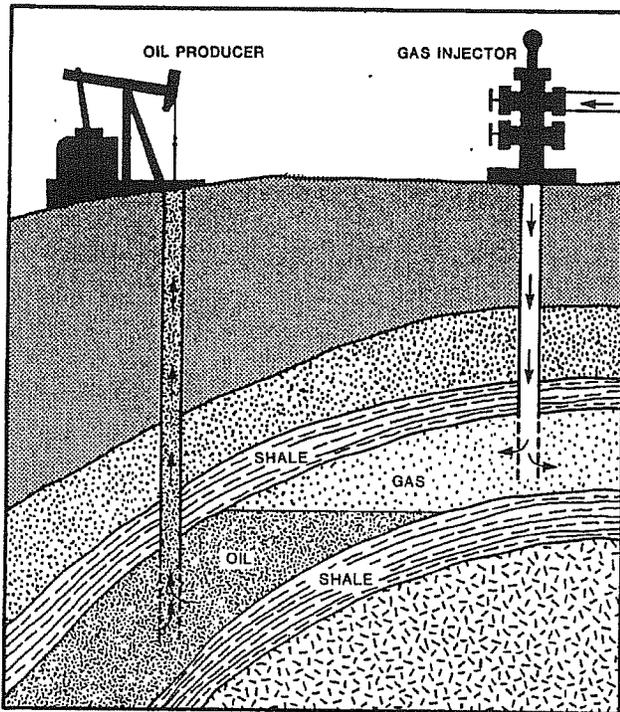


Figure 5. Injecting gas into an oil reservoir to maintain reservoir pressure and increase the production of oil.

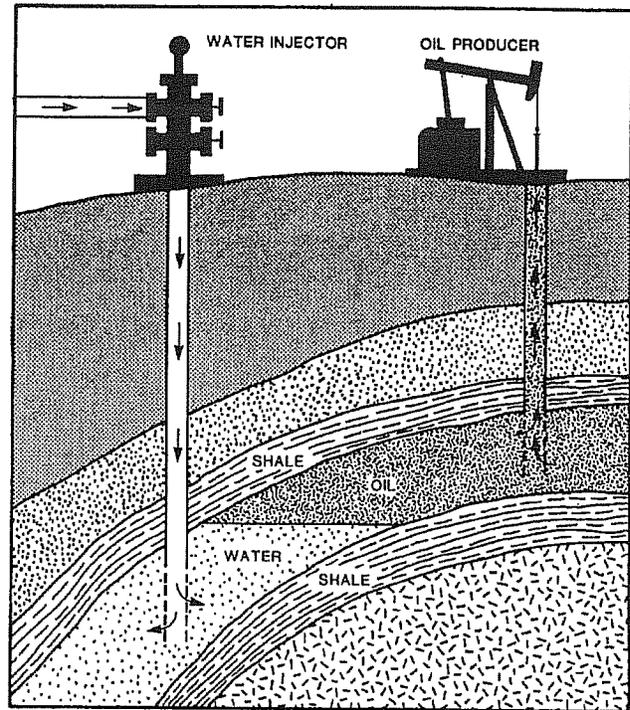


Figure 6. Injecting water into a reservoir to enhance the natural water drive and improve the recovery of oil.

"These, then, are the three natural phenomena that move oil into a well. Anything we can do to duplicate or enhance these systems will increase the life of the well and the field. One such method is a pressure maintenance operation where gas is injected into the top of the zone, duplicating a natural gas cap condition and helping to drive the oil to the well (Fig. 5). California has a long history of gas conservation, established by the legislature many years ago through the Gas Wastage Act. If a field produces gas with the oil, the gas can be separated from the oil and sold. Some of the gas may be used on the lease to operate equipment, or it can be reinjected to increase subsurface pressure. However, State law will not allow an operator to blow or flare gas except during temporary and very special conditions.

"Another method of increasing the life of the field is 'water injection' (Fig. 6). This is a procedure where large amounts of water are forced into the oil zone under pressure. This process duplicates and, to varying degrees, enhances the natural water drive system. Water injection projects serve several purposes. First, they help an operator get rid of produced water in an acceptable way. Furthermore, injected water increases pressure in the zone to flush more oil out of the reservoir and into the well. Water injection also reduces the possibility of land subsidence that, under certain circumstances, might be caused by extracting large volumes of fluid from the reservoir without replacement.

"Another form of stimulation for oil fields is achieved through the use of heat. Much of the oil in California

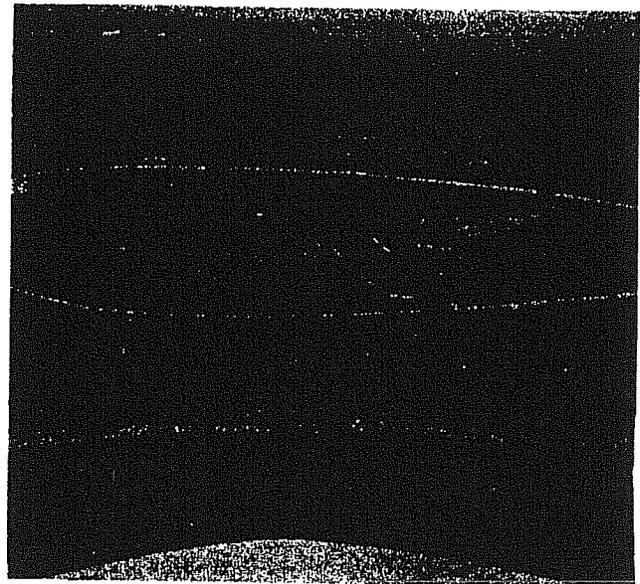


Figure 7. Contour lines showing amount and extent of land subsidence over the Wilmington oil field.

tends to be rather viscous. By reducing the viscosity, oil flows more easily, making it possible for more oil to move from the reservoir into the well. The industry has tried various ways of heating oil in the reservoir to reduce its viscosity.

"One type of thermal stimulation is accomplished when oil in the reservoir is ignited by pumping air under high pressure into the reservoir until the oil itself begins to

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: C.M. FLORENCE
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

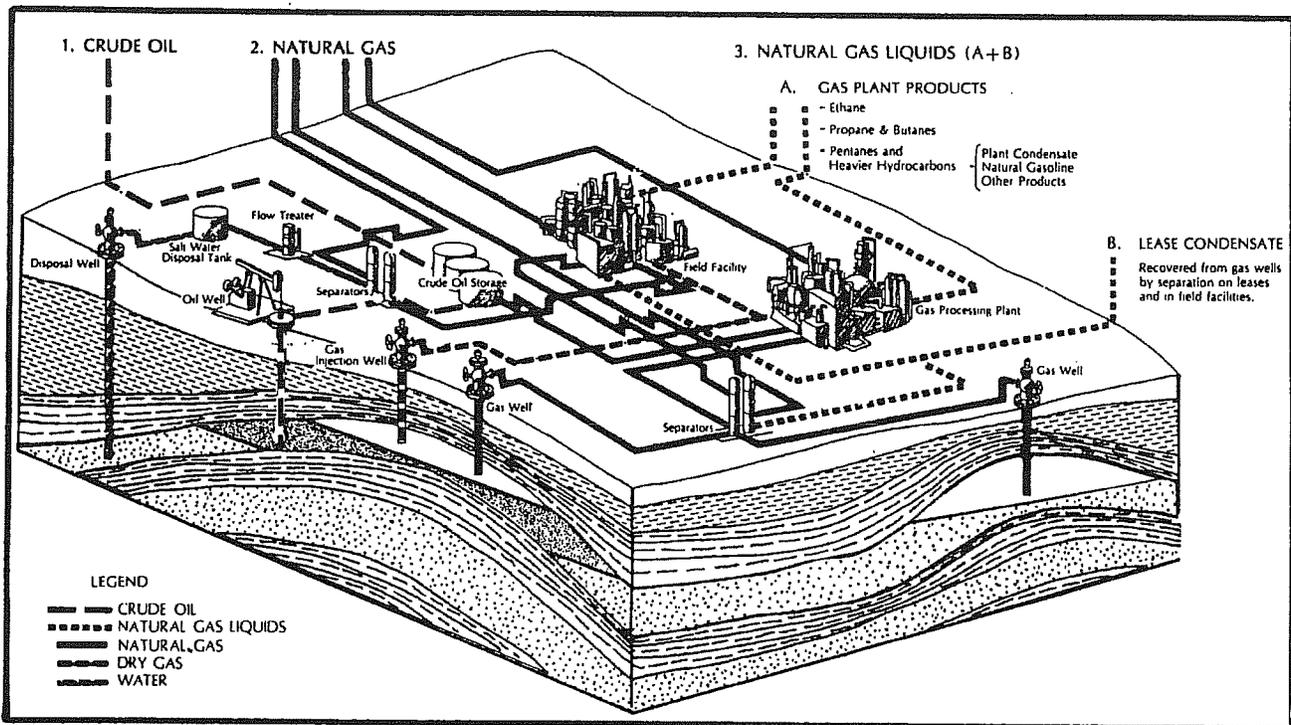


Figure 8. Oilfield production and processing facility with typical layout and equipment.

burn. This method is called 'in situ combustion', a procedure that increases the pressure and heats the zone, thereby lowering viscosity and helping to move the oil. As soon as the injection air is shut off, the fire goes out. However, this technique sometimes creates mechanical problems and, as a result, is not used extensively.

"Steam injection is much more common and effective. Steam is injected under high temperature and high pressure down the well. The superheated steam goes out into the reservoir in all directions, heating the oil and making it flow more easily. In some cases, this method has increased production over 300 percent. This technique is costly though, because the process requires large amounts of energy to create steam, which is then used to extract another energy source. An engineer has to examine each project closely to ensure that more energy is produced than expended. One important point to consider when evaluating steam injection projects from a land use planning perspective is that high-pressure, high-temperature steam lines should be separated from other land uses that might place people in close proximity to these potentially hazardous steam lines.

"Land subsidence is a potential problem that might occur in areas overlying an oil field. Figure 7 shows the Wilmington oil field where, over a period of years, the land slowly subsided until the epicenter finally reached a depth of almost 30 feet below its original elevation. You can imagine the problems this caused in the Long Beach Harbor area. During high tide, wharves and piers were awash or actually submerged. To mitigate this situation, the State legislature enacted the Subsidence Abatement Act which is administered by our Division.

Many prominent scientists, in addition to the Division's geologists and engineers, were brought in to find a way to halt the subsidence, which was finally accomplished by selectively injecting the producing zones with water and then carefully monitoring the operation. However, before the repressurization program could be implemented, a problem was encountered. There were many different landowners and oil operators, and the State had to bring all of them into a single operation. This is called 'unitization' or forming a 'unit'. The legal problems of getting the different parties to join this unit and to decide on what their fair share of the produced oil would be became very complicated. However, the field was finally unitized using the compulsory unitization law set forth in the Subsidence Abatement Act. The Wilmington unit is the world's largest water injection program and was probably the world's most difficult operation to unitize, but subsidence has been halted.

"Incidentally, I should tell you that we have not noted subsidence of the magnitude that occurred at Wilmington in any other oil field in the State, and most fields have no subsidence at all. I don't want you to think that simply because there is an oil field in your area, subsidence will necessarily occur. One reason subsidence has not been a problem elsewhere is because most operators are injecting water back into the reservoirs. Also, rock strata in the Wilmington field include what geologists call 'incompetent' bedding or formations. The beds form a relatively low, somewhat flexible arch, and do not really support themselves very well. When fluid was removed from the reservoir, compaction occurred, allowing the overlying beds to subside. Fields comprised of strongly arched



Photo 1. Urban oil production site on a golf course. Note covered well cellars with wellheads below ground level.

firmly bedded strata tend to resist the effects of compaction and downwarping.

"Figure 8 shows the types of equipment that may be required at an oil production site. This includes not only wells and pumps, but storage and treatment tanks, as well as equipment to separate the water, oil, and gas. In addition, the water produced in association with the oil must be either injected back into the reservoir or transported elsewhere for disposal. Temporary storage of the oil must be provided unless both oil and produced gas are transported to a central facility, usually by pipeline. The following photos of existing oil operation sites in urban areas illustrate how facilities can be concentrated, and also how they can be made to blend compatibly with their surroundings.

"Photo 1 is a site on a golf course in West Los Angeles which shows the concentrated nature of a production operation. The wells are drilled six feet apart, and the wellheads are below the surface of the ground. This allows the site to be well landscaped and hidden. People on the golf course are generally unaware of the operation. Note the large amount of equipment that can be concentrated into a small area. Photo 2 is a site on a City golf course in Long Beach. From three sides the site appears to be a gently sloping hill or landscaped berm, but behind that berm is a well-hidden oil operation.

Photo 3 shows a different treatment. This is Occidental's site on West Pico Boulevard in West Los Angeles. The structure is not as well designed from a camouflage standpoint as it might have been, partly because of the exposed guy wires. However, people passing by are totally unaware of the oil operation. This is a very quiet and unobtrusive type of operation. Photo 4 is a street view of Chevron's Packard drill site in Los Angeles. Besides being well designed for visual compatibility with the surrounding area, it is virtually soundproof. Even when two workover rigs are operating inside the building at the same time, none of the sounds of the operation can be heard outside of the building.

LAND USE PLANNING IN URBAN OIL-PRODUCING AREAS



Photo 2. Urban drill site on Long Beach Recreation Park golf course, hidden on three sides by landscaped terrain.

"Photo 5 shows one of the four offshore oil islands near Long Beach. This is an example of a large, consolidated oilfield operation. One island can accommodate as many as 200 wells and four drilling rigs. All of the production facilities and processing equipment are on the island. A great deal has been learned about centralized drilling locations from this type of operation. The area is also a good example of multiple land use. In the immediate vicinity, there is a recreational beach, and a harbor that includes recreational, industrial, and commercial uses, as well as the oil drilling and producing operations. This, of course, is the result of extensive planning by the City, the State, and the oil industry.

"Photo 6 shows one of the latest urban oil sites, which is located in the Torrance area. The site has been graded about 15 feet below ground level and is surrounded by an earthen berm with a block wall on top. The net effect is to lower the entire operation several feet, thereby

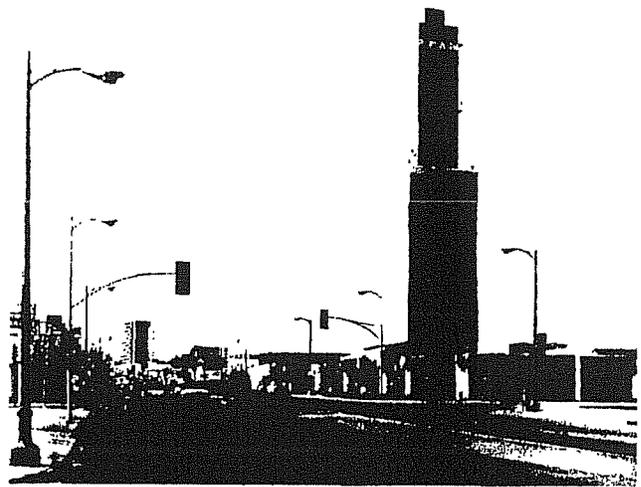


Photo 3. Occidental Petroleum's urban drill site in West Los Angeles. The single derrick is housed in the tall, building-like structure.

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: C.M. FLORENCE
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

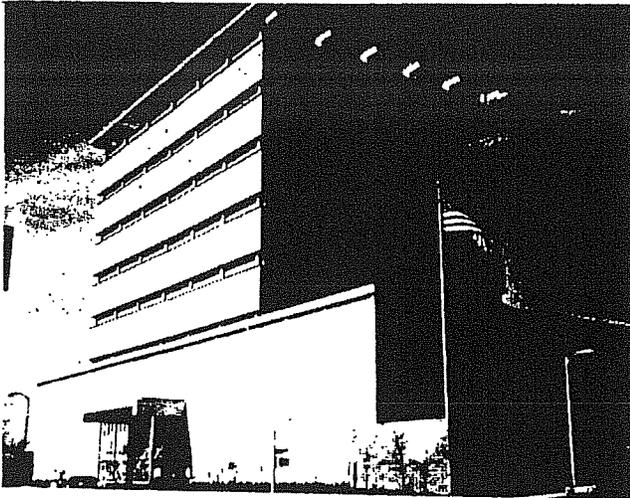


Photo 4. Chevron Oil Company's drill site in West Los Angeles. The Packard drill site can accommodate two drilling units at the same time.

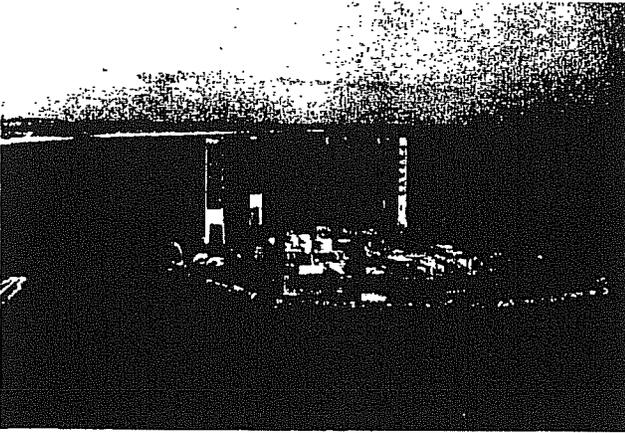


Photo 5. THUMS drilling island "Grissom" is one of four such islands in Long Beach Harbor. More than 200 wells have been drilled from this site. Landscaping and beautification costs exceeded \$1,000,000.



Photo 6. Urban drill site in City of Torrance. The location was designed for simultaneous drilling by two rigs. The site is 15 feet below ground level and surrounded by a high landscaped earthen berm topped by a wall.

providing sound deadening as well as creating an attractively landscaped barrier around the site.

"Although it has been demonstrated that oil drilling and production operations can be conducted in a safe and compatible manner, local government must be aware of the potential for problems when other types of surface development are proposed for areas within the boundaries of oil fields. Until comparatively recent times, oil fields were either in rural areas or, in urban areas, were isolated from other forms of development. However, during the last several years, many urban oil fields have been subjected to intense residential and industrial encroachment. The possibility of placing a permanent structure over an abandoned or inadequately abandoned well increases as the density of development increases.

"Earlier wells were abandoned to specifications established for oil fields located in rural areas. The possibility that any form of urban development would occur in an oil field was considered highly unlikely. In addition, many wells in our older fields, drilled prior to 1915, were not regulated by State law. As a result, records of exact well location or mechanical condition may be sketchy or inaccurate. On the other hand, records of wells drilled since 1915 are maintained by our Division, and should provide sufficient information to evaluate the current condition of any well that may be in an area proposed for surface development.

"We urgently request that any planning or building permit issuing department contact the nearest district office of the Division of Oil and Gas whenever a land use other than oil or gas operations is proposed within the boundaries of an oil field. Our Division also encourages local government to place well locations on their land use and zoning maps so that permit issuing personnel will be alerted to the presence of a well, or wells, within a proposed development.

"Under present law, an oil operator who abandoned a well under archaic standards cannot be required to reabandon that well unless it is leaking or presents an obvious hazard. However, through the building permit process, local governments can, if recommended by the Division of Oil and Gas, require that a well be reabandoned to the current State standard before any permanent structure is placed over or near it. As an example, the City of Signal Hill works closely with the Division to ensure that old wells are plugged to current Division standards. When buildings will be placed over a well, a cellar around the wellhead is excavated and gravel is placed in the cellar and covered by an impervious membrane which is then covered by cement. A perforated section of polyvinyl chloride (P.V.C.) pipe is placed in the gravel to vent any gases that may leak from the well beneath the building to a point outside. Ideally, no building should be constructed over any well. City and county planning and building departments must be aware of such situations, because our Division has no way of knowing when a building may be placed over a well unless it is brought to our attention.

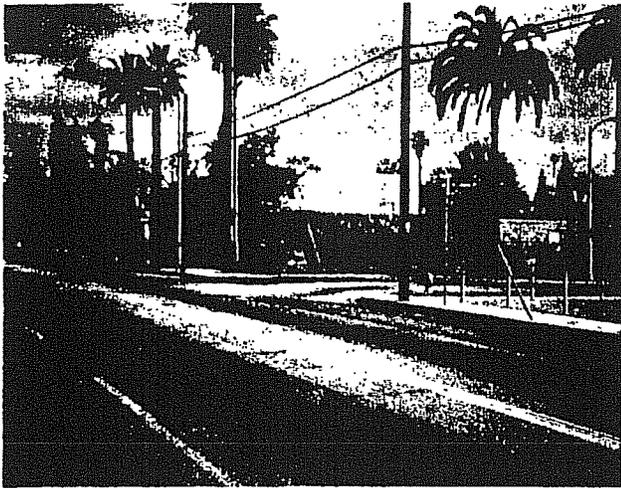


Photo 7. Street view of ARCO Oil Company's St. James production site within a residential area in Los Angeles.

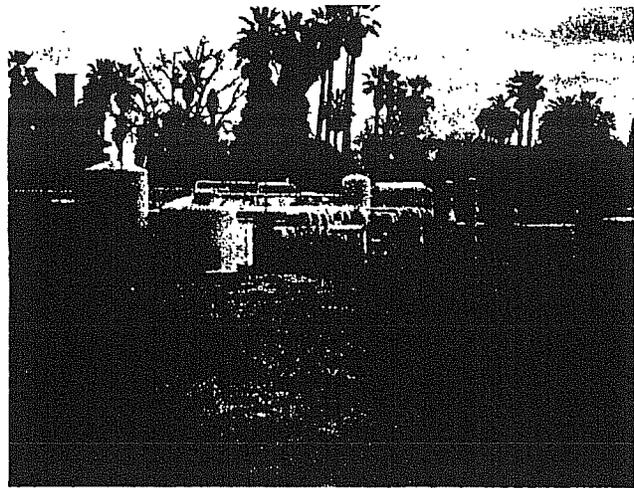


Photo 8. Interior view of the St. James production site. All wellheads are below ground level, and covered.

"In addition to proper well abandonment, correct oil sump abandonment is important and of concern to the State. Today, chances of improper sump abandonment are slight. There was a time, however, when an oilfield sump was abandoned by simply throwing two or three

feet of dirt over whatever was in the sump. If the oil is buried too deeply, the bacteria stop working and further alteration of the oil is halted. However, if the oil can be exposed to oxygen, bacteria will consume it and clean, nitrogen-rich soil will be left.

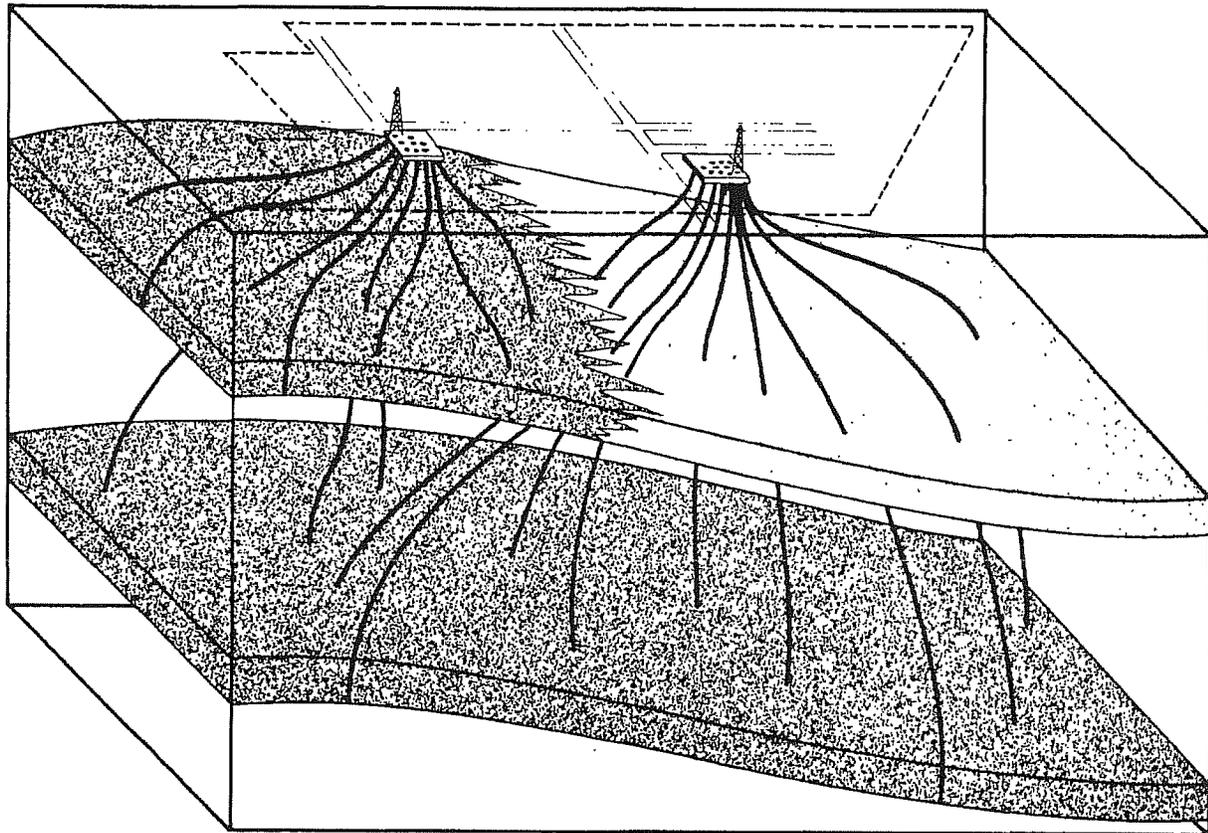


Figure 9. Three-dimensional view of a directional drilling operation from two centralized drill sites within the Huntington Beach project area. The area overlies two productive oil zones.

"There is an example of good sump abandonment in the City of Santa Fe Springs. The sump was large—probably a couple of hundred feet square—and quite deep. The contaminated material was excavated, spread out, and dehydrated. After bacteria reduced the oil, the material was put back into the sump and compacted to engineering standards. It was an excellent job, and also resulted in restoring the site to a usable land area. The alternative is to remove the material, take it to a Class I dump site, and bring in clean fill. However, this is expensive and can be a very messy operation if the sump is large.

"Figure 9 depicts a simplified underground view of an area that will be discussed later in more detail in Case Study #2. This is a large parcel in central Huntington Beach, currently the site of scattered oil operations. The area will soon be developed for residential use, but the City wants to preserve access to the underlying petroleum resource. The most logical way to do this is to consolidate operations into oil 'islands' from which directional drilling can take place. The term 'islands' refers to relatively small areas, usually one to five acres, that are screened, landscaped, and buffered from other surrounding uses and that are used for consolidating a large number of wells and related facilities.

"Before access sites or islands can be established, it is necessary to study the underlying geology and the oil reservoirs, in particular, so that sites will be made

available at locations that will provide access to all subsurface areas capable of producing oil. In this project area example, there are two oil zones underlying the property. Unfortunately, the upper zone is shallow, and one of the problems encountered with shallow zones is that the areal, or horizontal, reach of directional drilling from one site is limited. The deeper the zone, the greater the distance around a drill site that can be reached. In this case, if it were not for that shallow zone, access to oil under the entire project area could possibly have been preserved with one drilling island. As it is, at least two centralized drill sites are needed to reach all of the oil. The surface locations of the islands in the project area are flexible to some degree, which allows planners to take other land use and planning constraints into consideration.

"It is absolutely essential that surface access to urban oil fields be retained. Oil is one of our most valuable resources. Other types of development that would be incompatible with continued oilfield operations should not be allowed to occur within existing oilfield boundaries. It is essential that the State, local government, and the oil industry work together to solve these problems. With the drilling and producing technology available today, innovative planning by local government, and the cooperation of all parties involved, the production of oil can indeed be continued compatibly with other land uses."

DISCUSSION

QUESTION:

What would you say is a safe distance between steam operations and a residential development project?

COMMENTS:

Jose Osuna, City of Long Beach: The Uniform Fire Code states that a residential structure cannot be built within 100 feet, or a meeting hall or school within 300 feet, of an existing well. These distances are recommended whether the well is involved with steam operations or not.

Wilkinson: Steam does not pose the same threat that fire does, so we look at the safety factor from another viewpoint. Even though steam lines are insulated, they are hot and under pressure. There is always the possibility that a steam leak could occur, and at those pressures it could be quite dangerous. Therefore, all access should be controlled. However, a steam generator can be installed so that the steam plant and all high-temperature, high-pressure lines are enclosed within a central production site.

Multari: I'd like to reiterate that point. In cases where an open field exists with steam lines on the surface, other kinds of development should, of course, be prohibited until the lines are deeply buried, enclosed, or fenced. In Huntington Beach, the steam operations are consolidated and enclosed in islands and separated from all other uses by walls and buffer areas. Because

all the high-pressure lines are contained inside a walled enclosure, residential uses can be safely located nearby. Steam operations can occur safely even in an urban context with proper planning and mitigations. We are currently working with an oil company on this type of project for downtown Huntington Beach.

QUESTION:

Is steam injection something that is going to be more common in the future?

COMMENTS:

Wilkinson: Generally, yes. Unfortunately, however, it doesn't work for every field. As a rule of thumb, steam injection works best in a zone that is less than 4,000 feet deep with a 15 or 20 foot thickness of oil sand and a gravity of around 14 degrees, although higher gravity oil is now being steamed with considerable success. Steaming works well in places with characteristics like these. However, because conditions differ in each zone, different methods will have to be applied for different situations. As a result, a variety of enhanced recovery processes will become increasingly popular.

As it is now, we're lucky if primary pumping recovers 30 percent of the oil in place. This means that a very large percentage of the oil is still in the reservoirs of all our fields, and this is a tempting target. Each enhanced recovery method retrieves a little more oil. For

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: C.M. LORENCE
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

instance, waterflooding might pick up another ten percent, and then a more sophisticated method would need to be applied. This fact is keeping a lot of research departments busy trying to develop systems that will flush out a greater percentage of the oil.

Bud Tippens, American Petrofina: I would like to say that Aminoil USA and Chevron USA are putting a tremendous amount of money into testing a down-hole steam generator. For steam operations in urban areas, this is the true answer. At American Petrofina, this is what we are looking at down the road. Once all the bugs are out of the system, it will be the best way to steamflood the fields in urban environments.

Wilkinson: The underlying factor, of course, is economics. Down-hole generators are expensive, but you have to spend money to make money. A down-hole steam generator could make a big difference in the development of oil resources in urban areas.

Bill Sheffield, Aminoil USA: I would like to make one comment: you shouldn't expect the development of a commercial down-hole steam generator next week! Downhole generators are still a long way off, but the idea is a good one.

QUESTION:

Are injection wells normally former producing wells and, if so, are there either regulatory or practical limitations to converting them back to producing wells?

COMMENT:

Wilkinson: Normally, injection wells are former producing wells. Occasionally, a well is drilled for injection purposes only, but in most cases it is a relatively minor mechanical change to convert a

producing well to an injection well. Although you can return an injection well to production, the injected zone would be saturated with injection water. The Division of Oil and Gas must review all proposals in considerable geologic and mechanical detail prior to approving injection, and extensive requirements and conditions are established at that time.

QUESTION:

You showed several pictures of different kinds of drilling rig enclosures. Could you give me a price range for this type of equipment?

COMMENT:

Hilman Walker, Chevron USA: Chevron USA is building a rig enclosure on the Paxton drill site off the Golden State Freeway in the San Fernando Valley. Our cost to date—and we haven't even spudded yet—is 30 million dollars. We anticipate drilling 26 wells, and we have a block wall around the perimeter of the site. I don't know what the final cost will be—with inflation it could skyrocket. The drilling rigs will look like mission-style bell towers. As drilling occurs, they will be moved from drillsite to drillsite. Furthermore, the rigs are triple insulated, so nothing will be heard.

QUESTION:

What kind of sound-deadening equipment can be put on a portable drilling rig?

COMMENT:

Multari: In some cases in Huntington Beach, soundproofing is not put on the rig itself. Instead, wooden poles are placed around the site and beams are strung between them on which acoustical material is hung.

PLANNING GOALS AND APPROACHES

Michael Multari, Planner, City of Huntington Beach:

"I would like to discuss the principal goals that the City of Huntington Beach is trying to achieve through its land planning efforts for oil production areas, and some of the approaches we have used to implement those goals.

"Most of the City's planning goals are articulated through policies in the General Plan and our Coastal Plan. First of all we are trying to accommodate mixed uses in the City. We want to continue to accommodate oil as well as other urban uses, particularly residential and commercial development. We feel, of course, that this is a fuller and more efficient use of our land. But we are always careful in ordinances, codes, and planning to make sure that public health and safety are protected before permitting such mixed use development. Further, as our oil fields are recycling to new uses, we are trying to encourage comprehensive planning of large parcels of land rather than piecemeal development. This is sometimes difficult to do when ownership is fragmented.

"We are also trying to consolidate oil facilities to reduce the land area used for oil production. Consolidation is a theme that is going to recur through all the case studies. The advantages of consolidation are: 1) the freeing of more land for other uses; 2) reduction of the interface between oil activities and other land uses, thereby making the potentially adverse impacts from oil easier to mitigate; and 3) the opportunity for greater buffers and separations between oil and other uses. This last benefit is best achieved in cases where the oil facilities are consolidated into small islands and the residential uses are concentrated through techniques like clustering. This leaves more open space for buffer zones and transition areas between the two uses.

"Another thing we are trying to achieve is increased compatibility between oil and other uses. There are many ways to do this, such as requiring screening, landscaping, and soundproofing of operations. Wilky discussed several of these techniques earlier, and others will be illustrated in the case studies.

"We are also trying to preserve surface access to underground oil reserves. Oil is an important natural resource, and we feel it is important to preserve adequate surface areas so that residual oil can be

extracted once the economics and technology make it feasible. We will be analyzing this further in the case studies. Related to protecting access, we are also trying to allow for new and expanded oil facilities, as necessary, in appropriate locations. This requires careful advance planning.

"We are trying to promote the unitization of oil fields where ownership of the mineral rights is highly fragmented. This means parties with an interest in the field have to join together as a unit before consolidation strategies can effectively be implemented. Again, we will discuss this issue in the case studies.

"Finally, another goal of the City is to increase the fiscal benefits it receives from continued oil production. Although the City does provide some costly services for oil operations, just as it does for any business or industry, it also derives significant revenues from various taxes and fees on these activities.

"I would also like to list the planning and regulatory tools that we are using in Huntington Beach to achieve these goals. I don't think this list of approaches is exhaustive; these are simply the ones with which we are most familiar.

"First is the General Plan, which sets out the general policies and land uses for the City. Included in our land use element is a resource production designation which sets aside certain parts of the City for oil extraction.

"Of course, we use zoning, too. In Huntington Beach we have two zoning suffixes that allow oil facilities. The first suffix district allows existing wells and attendant facilities, such as tanks, as well as the reworking or redrilling of existing wells. This suffix is applied to most of the old oilfield areas, and allows the existing operations to continue while they gradually 'recycle' as production declines and the surface value increases. New wells, however, are only allowed in the second suffix district. This district includes a much smaller portion of City; it is applied primarily to relatively small sites of one to three acres, which are distributed approximately one for every 20 to 40 acres over the oilfield surface. This has the effect of concentrating new wells into these smaller sites, freeing the areas in between for new uses, and still affording access to the subsurface resource.

"Huntington Beach is a coastal city, so we have a Local Coastal Plan in addition to our General Plan and

zoning. Because the California Coastal Act puts a high priority on continued energy production, our Local Coastal Plan has been an important medium through which goals and policies related to oilfield planning have been articulated.

"Another approach that we are using increasingly in Huntington Beach is the specific plan. Through traditional zoning, a class of uses is identified and designated as appropriate to various locations. For example, certain kinds of commercial uses are typically found to be appropriate along all larger arterials. But a specific plan uses a site-by-site, block-by-block analysis of the peculiarities of a particular area. Regulations are written especially for each individual area.

"Besides planning and zoning, we also require special permits for oil operations. For example, no well in the City can be drilled, redrilled, or reworked without a special permit. The permit application is reviewed by our Fire, Public Works, and Planning Departments. Each of these departments has certain responsibilities in regard to land use, noise, and safety. With input from the Division of Oil and Gas and industry representatives, we have developed an oil code and noise ordinance which state the performance standards

the City has set with regard to oil operations. These standards are used for evaluating permit applications.

"Finally, as an alternative to regulatory solutions, we have tried to solve some of the incompatibility problems that we face in a voluntary manner by implementing cooperative strategies with the private sector. We have had encouraging, if somewhat mixed, results with this method that will be discussed again later.

"As I said before, there are numerous other strategies which could be useful in planning or regulating oil production in urban contexts. Transfer of development rights strategies and redevelopment law come to mind. We are always looking for better and more creative ways to promote equitable and efficient land planning. Maybe some of these approaches will be explored further today.

"What we would like to do for the rest of the day is present three case studies of situations here in Huntington Beach, which we think illustrate issues that other jurisdictions are facing or may soon face. As I said earlier, solutions to every problem encountered have not yet been found."

CASE STUDY #1 OIL FACILITIES IN A DEVELOPED AREA

Michael Multari: Huntington Beach is a city of about 170,000 people in the Los Angeles/Orange County metropolitan region. Although its early history was that of oilfield development, it was among the fastest growing cities in the United States during the 1960's. The rapid residential and commercial growth during the last two decades encroached into the open oil fields, resulting in numerous conflicts between the oil operations and the newer urban uses.

Let me describe our downtown area. Main Street, which is the focal point of the downtown, extends perpendicularly to the shoreline and ends at the foot of a long municipal pier. Commercial uses flank both sides of the street, which are in turn surrounded by medium-density residential areas. There are large parcels of land very close to Main Street that are not developed because they are within an active oil field. Mixed uses have occurred in the area, often with undesirable consequences. For example, there are pumping units in backyards and next to commercial establishments, and tank farms in alleys.

We know, however, that these problems can be avoided, and that compatibility between oil and other activities can be increased if we do careful, advance planning. Figure 10 is an example of how oil and residential uses can exist compatibly. This is a map of an actual residential development here in the City, not very far from the ocean. Oil islands are surrounded by a pleasant residential area, which includes a country club and a golf course. At street level, the oil islands are relatively unobtrusive. It is interesting to note, as shown in Figure 10, that this development is adjacent to a resource production area that is the most highly concentrated oil site in the City. About 300 wells are located on this strip, along with tanks, steam generators, water injection pumps, separation plants, and drilling rigs. The residential area is buffered from these highly concentrated operations by a wide street, setbacks, a small berm, and some vegetation. While this area still has some problems due to the proximity of oil, it is a useful model of how both uses can be accommodated.

One of the major goals we have for our downtown area is to try to improve the compatibility between existing oil operations and existing and proposed residential

and commercial uses. We are also concerned about the effects existing oil operations may have on reinvestment strategies for revitalizing the downtown area. The oil operations, as they now exist, have two adverse effects on revitalization. First, because oil operations can be unattractive, noisy, and odoriferous, the area is under-valued, thus discouraging investment. Secondly, because many of the lots are encumbered by oil and often have different lessors and lessees, they have become highly fragmented, making it very hard to consolidate a piece of land large enough to allow for construction of a high quality development. In many cases, an oil encumbrance on a small lot has kept a full block or half block from being consolidated for new development.

In the short term, our approach to solving the problem of incompatibility was to revise our oil code and our zoning ordinances to reduce noise and odor problems and to mitigate adverse visual impacts. For example, our oil code was changed to require that all oil facilities in the City be landscaped and screened within two years. We also revised our noise ordinance, making the hours of operation more restrictive and giving our oil inspectors more latitude in requiring soundproofing. Further, we changed our zoning districts so that there would be a minimum lot size required before a new well could be drilled. This should prevent the creation of more situations like those that presently exist in the downtown area with oil and residential uses being too near each other.

In the long term, our approach is to encourage unitization and consolidation, while preserving access to the underground reserves. I would like to spend some time discussing this long term approach, beginning with the question of preserving access. Why should planners worry about access? The reason is that there is a lot of oil still existing in the fields. Primary production—the oil extracted using only natural reservoir pressure and simple pumping—typically accounts for only about 20 or 30 percent of the oil in a reservoir. Application of secondary recovery techniques—waterflooding or steam injection, for example—allows production of perhaps another 15 percent of the potential resource. There are now other technologies that are being applied after the waterflooding, such as chemical floods, to get

MEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: C.M. FLORENCE
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

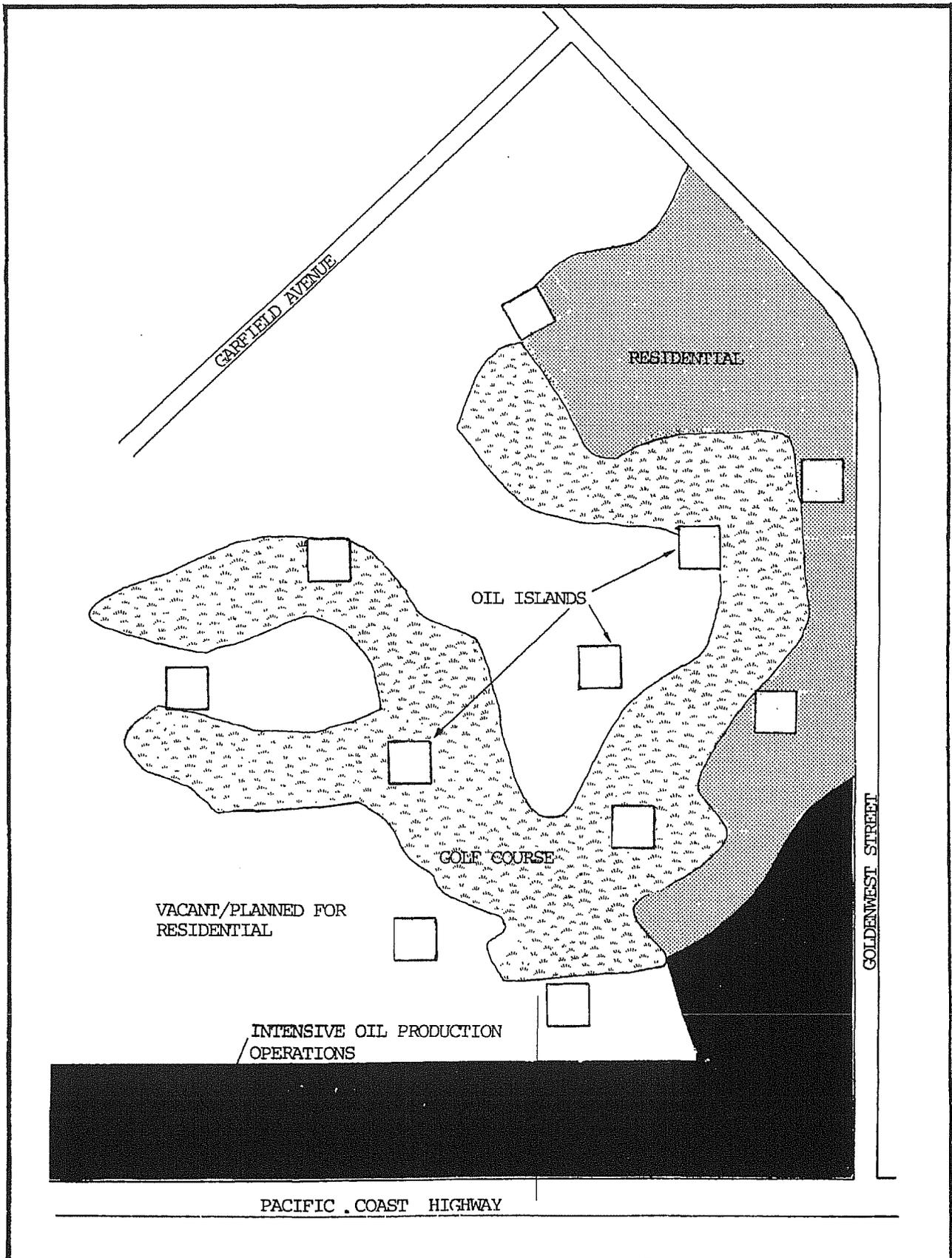


Figure 10. A schematic depiction of a residential area in proximity to oil operations. Oil islands are surrounded by houses and a golf course. Adjacent to the south is the most highly concentrated oil-operation site in Huntington Beach.

ITEM # 32
 AUGUST 21, 2012
 PRESENTED BY: C.M. FLORENCE
 RECEIVED PRIOR TO MEETING
 POSTED ON: AUGUST 20, 2012

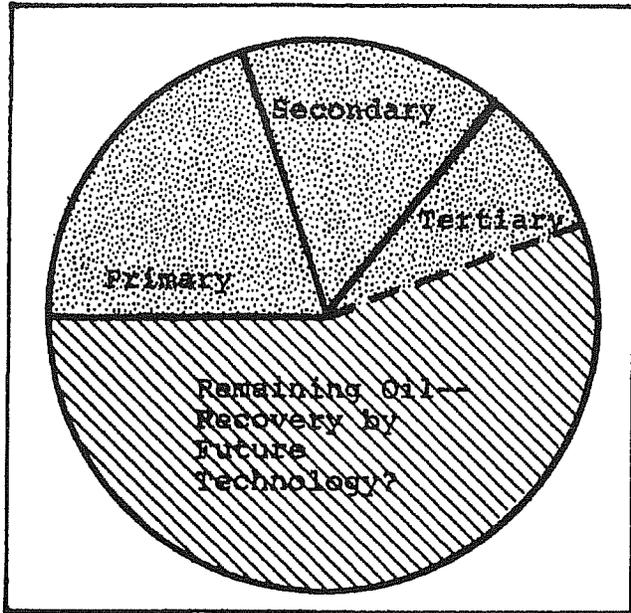


Figure 11. More than half the oil in the reservoir remains untapped even after all presently known technologies are employed. This oil may one day be recoverable with technologies yet to be developed.

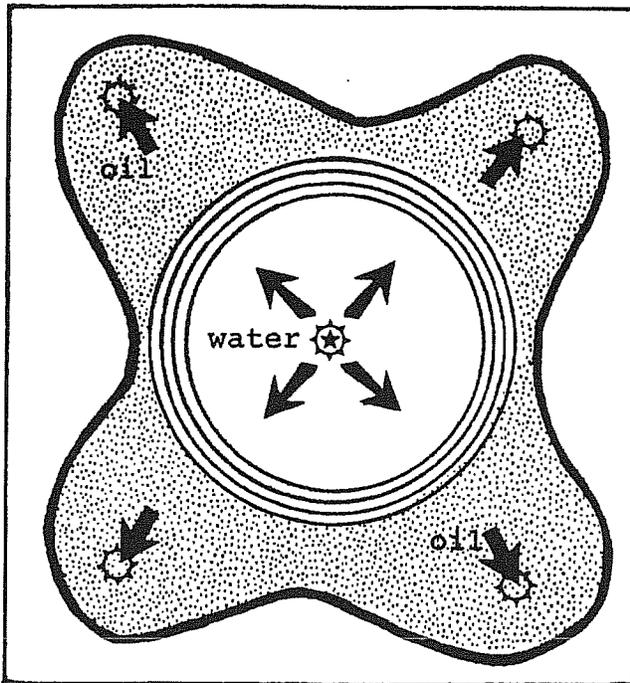


Figure 12. Pressurized water from the injection well  forces oil toward the producing wells .

still more oil out. Research continues on development of new technologies. Figure 11 illustrates that more than half the oil remains in the ground even after all practical known technologies are employed. What we are concerned about is preserving access to a significant reservoir of domestic oil that will someday be recoverable with technologies that have yet to be developed.

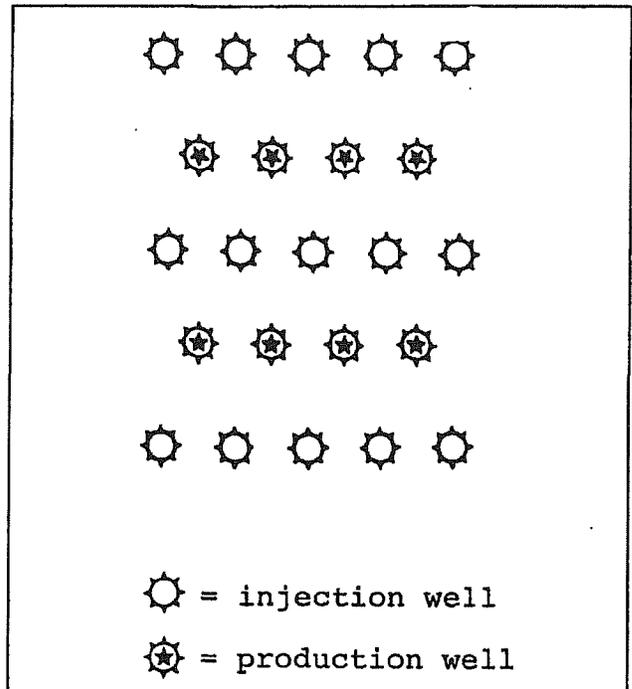


Figure 13. Top view of a typical pattern of production and injection wells.

I should note that this is hardly only a local concern—it is of state-wide and perhaps even national importance. We are worried about the possibility that in places like our downtown, there will be rapid recycling of the oil sites and in-filling of the remaining vacant land with new development to the point that there will be so much of the surface area covered that it will be impractical for an oil company to come in and extract the resource when it becomes technologically possible to do so.

If the land is built over, access to the underlying oil reserves could only be gained by razing houses or commercial establishments. Clearly, this would add enormously to the price of extracting that oil. You can also imagine, I am sure, the kind of tumult that would result in an established residential area if an oil company came in and wanted a block of houses torn down so that an oil island could be created. We are trying to do some advance planning so that people will know oil exists in the area, that it is likely to be extracted in the future, and that access is going to be preserved now for that possibility.

One of the ways to preserve access might be to designate a few carefully located areas as "islands" on which the necessary oil facilities could be concentrated. This approach would have the added benefit of siting the wells and equipment in a few locations, thereby realizing the advantages of consolidation discussed earlier.

If the application of enhanced recovery technologies and the consolidation of oil operations into islands is so beneficial, why hasn't it happened yet in downtown

Huntington Beach? Figures 12 and 13 are helpful in answering this question. Figure 12 is an example of a typical waterflood pattern, and it applies to many other enhanced recovery technologies, too. A pattern of wells is established and water is forced through the injection wells to drive the oil toward the producing wells which pump out the oil-water mixture. Figure 13 shows a top view of what this subsurface pattern of injection and producing wells looks like. Obviously, these techniques cannot be implemented on a well-by-well basis; they must be done on a pool-wide basis. The problem in our downtown area is that the oil pool is not under the ownership of just one company or person. Ownership of the pool is fragmented among many parties. For enhanced recovery to occur, all parties must get together and agree to participate so that these methods can be employed. This is called "unitization".

There are a lot of difficulties associated with putting a unit together; chief among them is the "free rider problem". This occurs when one party tries to enjoy the benefits of unitization without actually joining the unit. For example, suppose the owner of a well realizes that if everybody else will bear the costs of drilling injection wells and putting fluid down into the pool, oil will be pushed out in the direction of his well regardless of whether he joins the unit. Production from this well may increase, but the operator has not paid for any of the new equipment or wells.

Sometimes so many people hold out as free riders that the unit cannot be put together. This makes it risky for a company to try to start a unit project. It is costly to initiate a unitization project, lease the required mineral rights, promote interested investment companies, and do the necessary geologic studies. In an area like our downtown, there are about 30 oil companies that operate roughly 100 wells, and the actual mineral interests are owned by about 2,000 different parties. So to put together a unit, you would have to unitize those 2,000 leases plus those 30 working companies. Clearly, this is a substantial task.

Also, many people may want to hold out just because they think they will get a better deal. Their thinking will be, "There are 30 of us here who have to join the unit to make the project work, and maybe if I wait to be the 30th party, compensation for my participation will be a little bit greater." Obviously, if everyone is thinking this way, a unit cannot be put together.

Another situation might involve a small oil company that feels it may not get a good deal out of unitization. Sometimes the reason for not joining is the pride of ownership in having an independent oil company that is not subsumed into a unit with a major oil corporation.

Clearly, there are a lot of reasons why units can be difficult to assemble. Yet, there are several benefits that can come from a unit project. I have already mentioned that production can be increased by implementation of enhanced recovery technologies, and that oil facilities can be consolidated. Reference back to Figure 10 will remind you of this. It is the area we were talking about before—the residential oil islands and the golf course

and the large area of concentrated oil operations. The new wells and related facilities of the unit can be concentrated into a few locations. Thus, the interface between oil operations and other uses is minimized, which makes it easier to mitigate problems. Also, it is a lot less expensive to landscape, berm, and soundproof one oil island that holds perhaps 20 or 30 wells than it would be to similarly treat 20 or 30 individual well sites.

Another important factor is related to the fact that the application of secondary and tertiary recovery techniques from concentrated facilities produces a lot more oil. The resulting increases in profits mean that some of the more expensive mitigation measures that might be out of the question for a small operator can be implemented. For example, our recent code revisions require operators to screen and landscape their facilities at a cost of roughly \$2,000 per site, and several small operators thought this was a severe economic hardship. But if you have one unit working on an entire pool, this kind of expense is certainly not going to be an economic hardship and could be done quickly. The same is true of soundproofing; sometimes the soundproofing that might be required on an individual site is too expensive for a single operator to install. With a unit, such soundproofing would be economically possible.

Another advantage of unitization, and one that is of particular interest to local government, is that significant fiscal benefits are recognized from this kind of situation. We have done a fiscal impact analysis of oil operations in Huntington Beach.* The City receives revenues

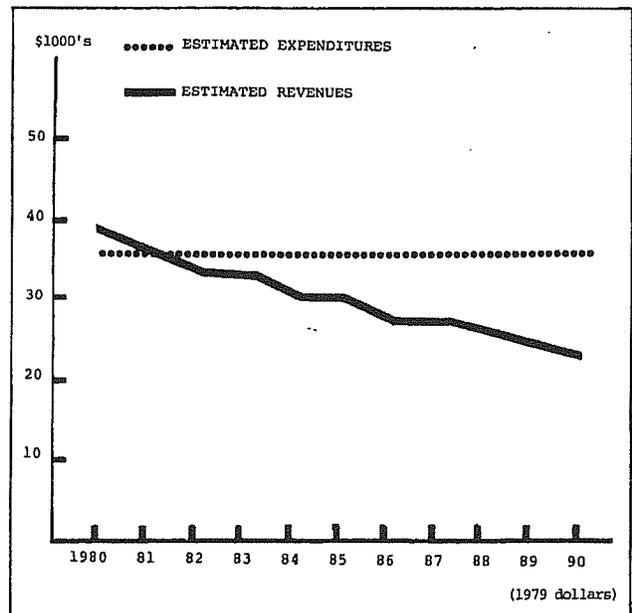


Figure 14. Relationship between net City expenditures and revenues from non-unitized oil operations. Revenues, which are tied to production, are decreasing while costs are rising slightly above inflation. (Expenditures were estimated using a weighted average model).

*"Energy Series Report #2: Fiscal Impacts of Oil Operations in Huntington Beach". Huntington Beach Planning Division, 1981. ITEM # 32 DATE: AUGUST 21, 2012

from an oil production fee, property taxes, drilling fees, and utility taxes. We looked at the revenues and expenditures that we are incurring now and projected them out over the next decade. It was important to note the significant difference in revenues generated by oil operations with and without unitization. Figure 14 shows the fiscal picture in the downtown area if unitization does not occur. The expenditure line reflects the amount of money the City is spending for the provision of services to these operations. You can see that costs are going up slightly above inflation while revenues, which are tied to production, are slowing down and dropping in constant dollars.

Figure 15 illustrates the fiscal picture for the same area under a unit operation. The revenues have gone up dramatically and the costs have declined slightly. Revenues are largely tied to production: as more oil is produced, more revenue is generated. Costs are tied largely to the number of operators and sites, and the land area occupied. For example, if you have 100 companies, you have to bill them for certain services. That's 100 bills that must be prepared. But if you had one unit, you would only have to write one bill. So your cost of providing services is less, yet revenues have gone up.

When we began considering ways to promote a unitization and consolidation program for our downtown area,

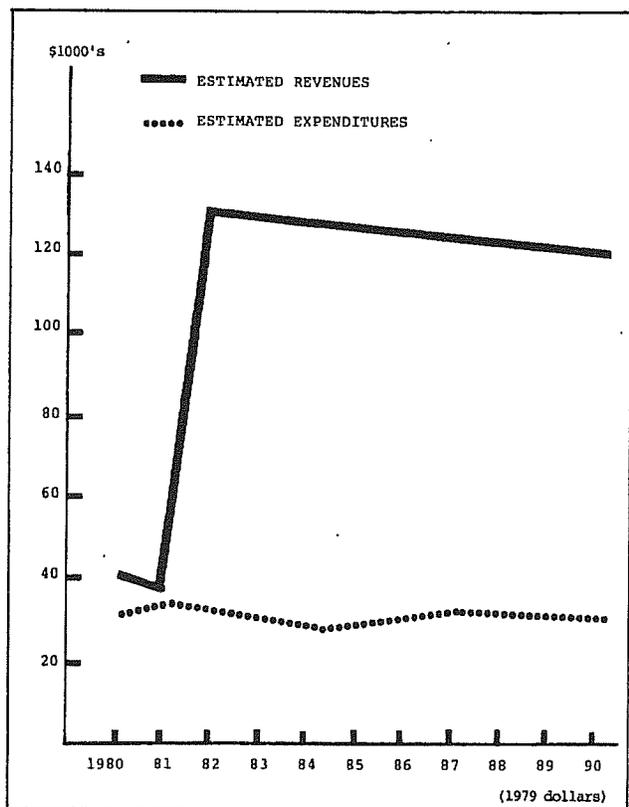


Figure 15. Estimated fiscal impact from unitization of downtown Huntington Beach oil field. Revenues to the City rise dramatically because oil production is greatly increased under a unit project. (Expenditures were estimated using a weighted average model).

we first asked the question, "Is there enough oil to worry about?" Using data from the Division of Oil and Gas and from some of the oil companies in the City, we estimated that about 25 million additional barrels of oil could be recovered from the area. This is a significant amount of oil. We then asked, "If we are really concerned about preserving access to oil in the downtown, how many sites will we need to do this, how big will they have to be, and where should they be located?" Figure 16 shows the existing drill sites in the area. We consulted with a drilling company and, using their information and other data regarding the depth of the various oil pools, estimated the areal extent, or reach, of directionally drilled wells from these existing sites. This is illustrated in Figure 17. It shows that most of the oil zone could be covered from the existing drill sites if they were available and if all the wells could fit on them. Using data on typical waterfloods and steam projects, we also estimated the number of wells that would be needed. With a little more research, we learned that many wells can be drilled in a small area—on the order of 20 to 50 on a two-acre site. Therefore, only a very few sites would be needed to accommodate all the wells involved in a unit project.

We concluded that if we could preserve the existing drill sites, we could accommodate a future unit project. Our City Council then appointed an Oil Committee to deal with this issue. The kinds of options that the Committee looked at were zoning, General Plan designations, and conditional use permits. For example, drill sites could be zoned so that no other uses except oil operations would be allowed there. A General Plan designation could be applied to the islands, making them resource production areas. Before other uses would be allowed, a General Plan amendment would have to be filed and an assessment of the site for future access could be a condition of approval. If the site were important to future access, the amendment would be denied. The option to require a conditional use permit would likewise involve a permit review before other uses could be introduced.

The Committee also looked at City-owned property in the area, thinking that if no other method effectively preserved access, the City could lease its own land for future oil production. The Committee even considered the feasibility of creating offshore islands like those in Long Beach to directionally drill back into the onshore pool.

While we were analyzing these options and the Oil Committee was wrestling with what it would recommend to the City Council, an oil company indicated that it wanted to put a unit together in the downtown area. Suddenly, the problem changed from the theoretical issue of preserving access for the future to the reality of trying to find sites for this particular oil company. The City is presently working with the oil company in question, trying to determine whether existing sites or other additional sites are going to be suitable for the project. We are also working on refinement of our zoning to allow the unit to take place, and mitigation requirements regarding noise, design, land use, and odors.

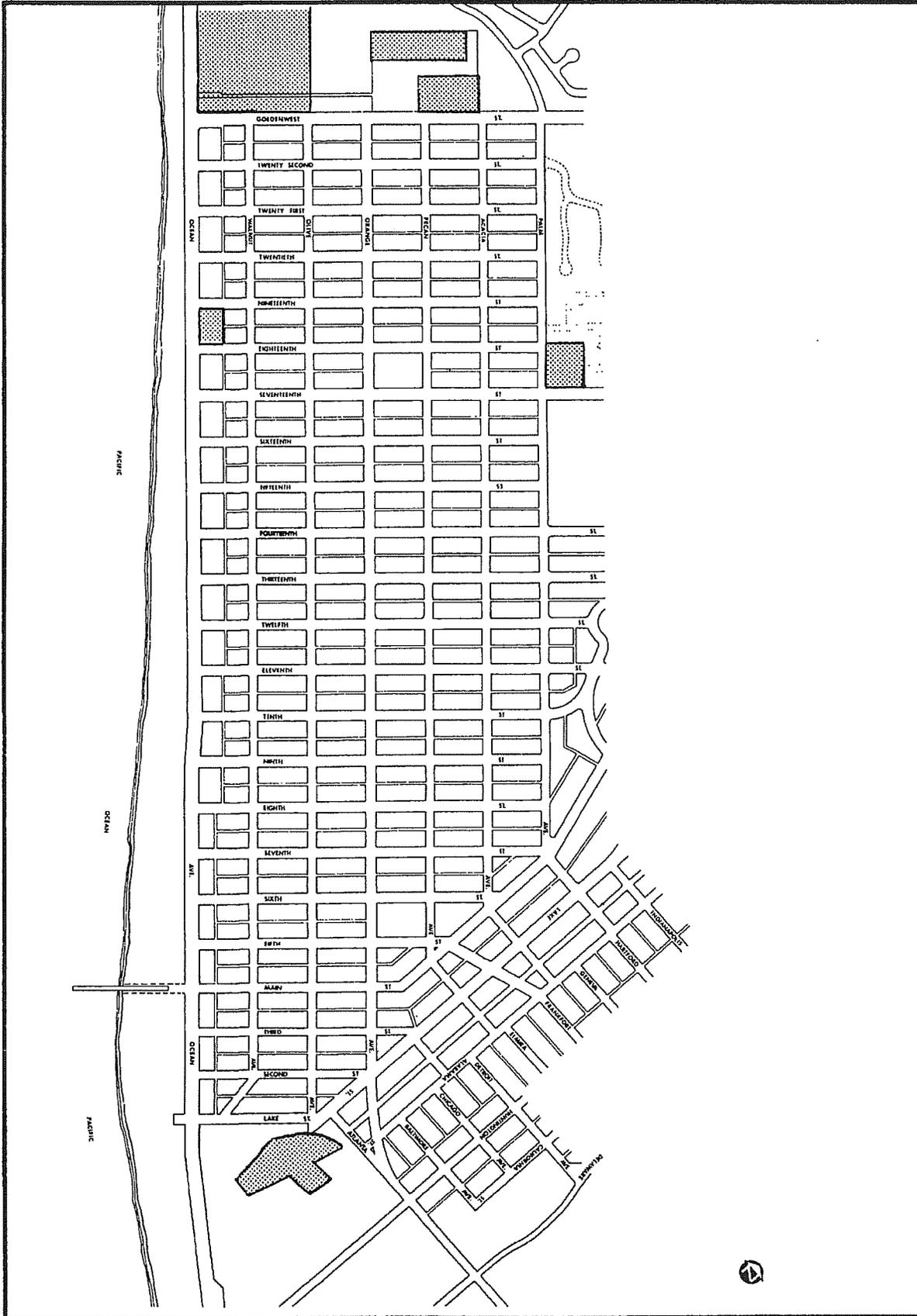


Figure 16. Location of existing drill sites in the downtown Huntington Beach area.

ITEM # 32
 MEETING DATE: AUGUST 21, 2012
 PRESENTED BY: C.M. FLORENCE
 RECEIVED PRIOR TO MEETING
 POSTED ON: AUGUST 20, 2012

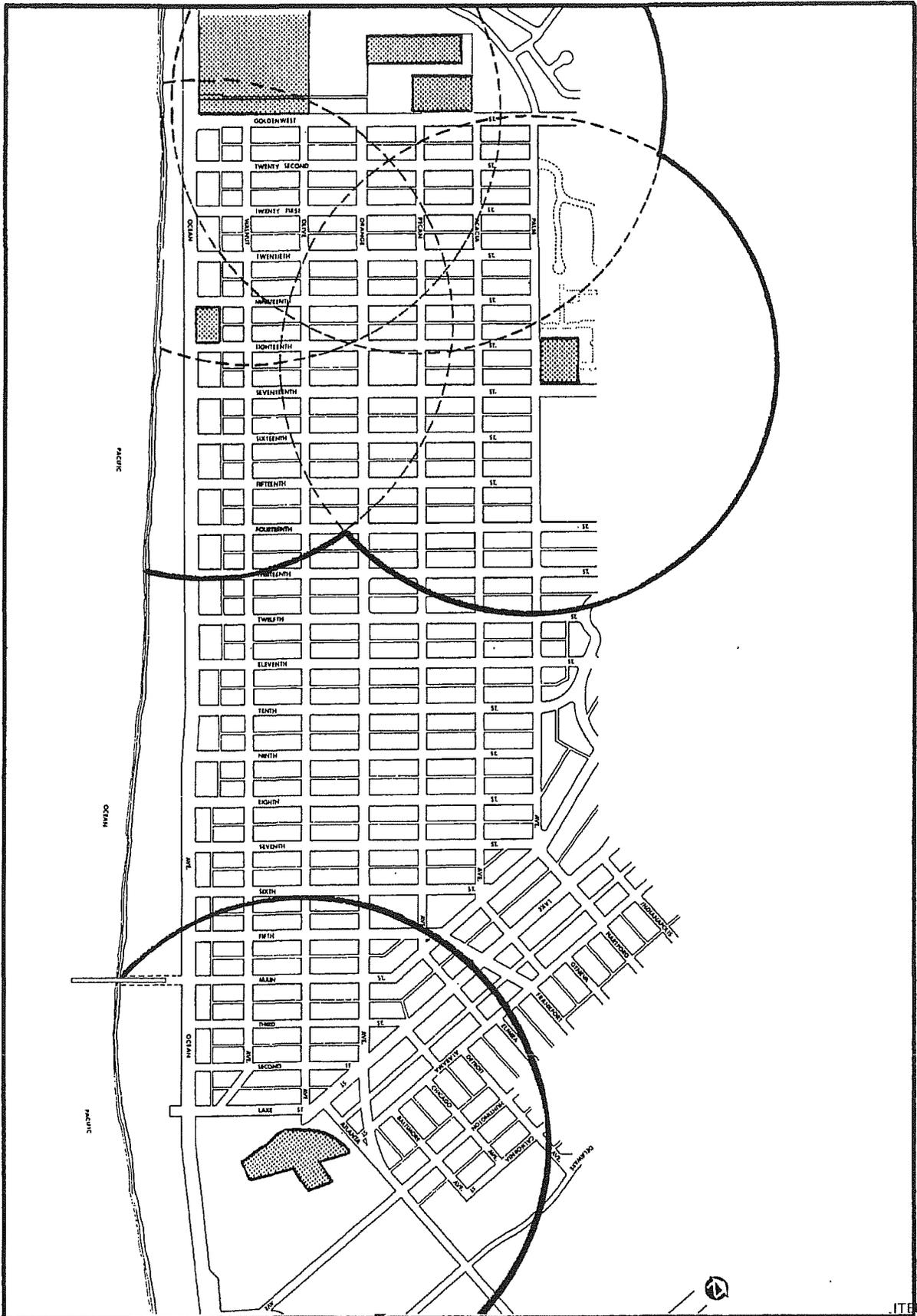


Figure 17. Directional drilling allows a large subsurface area to be tapped from a central site. This figure depicts the approximate areal extent of directional drilling from existing drill sites in downtown Huntington Beach.

An interesting footnote to this story is that the City itself owns the mineral rights on about 125 lots in the downtown. When the oil company proposed the unit project, the City's position changed from that of looking at a long term solution to consolidation and access problems, to that of being a potential mineral rights lessor trying to get the best deal for its properties. People were looking to the City for guidance as to whether they should join the unit, and some members of the

City Council felt that this put the City in the driver's seat in terms of demanding a royalty interest higher than that of other parties. This was resolved after several months of negotiation, but the point is that even the City, which ostensibly takes a broader view of the community interest, saw the money that was involved and was tempted to hold out. As I mentioned earlier, hold outs are a problem that can block the formation of unit projects.

DISCUSSION

QUESTION:

Do existing wells in the area where the consolidated oil sites are located have a different status after consolidation?

COMMENT:

Multari: They could, but in our approach they do not. The drill sites are especially zoned to allow new wells. If a company wants to drill a new well, it must locate it in one of the designated drill sites or change the zoning to allow new wells on other properties. Most of the existing wells are in a different zoning district in which existing wells can remain and be redrilled but in which no new wells are permitted. The same zoning and related regulations that are placed on these wells now would apply to them after a consolidation project. However, in most unit projects, many of the existing wells and tanks are abandoned because they are no longer needed.

QUESTION:

Do you intend to protect the right of mineral owners to derive an economic benefit from their subsurface property, even while you restrict new drilling on the surface?

COMMENTS:

Multari: If a person who owns mineral interests wanted to drill a new well, he would go to the owners of the closest islands and negotiate a lease to drill from one of them. Let me introduce Alan Hager from the State Attorney General's office. He may be able to help us with some legal questions.

Alan Hager, State Attorney General's Office: A legal question that is raised by this kind of approach regards owners of mineral rights that cannot be reached by directional drilling from the centralized oil islands. Can you deprive a person of the right to recover that oil? Perhaps we have denied the owner the right to the mineral and, at the same time, allowed it to be drained by other people. I question whether that would be legal.

Jose Osuna, City of Long Beach: It is justified under the police powers of a city to provide different zones that allow residential uses in one area, commercial uses in another, and oil extraction elsewhere. I think in the case study that was just presented, the real problem is not that the oil could not be recovered from the available sites, but that hold outs would be a real impediment to the formation of a unit.

QUESTION:

Is it fair to say that existing State law focuses more on new wells and their distances to structures than the proximity of new structures to existing wells?

COMMENTS:

Wilkinson: The Division of Oil and Gas does not specify such requirements. That is an issue normally dealt with through local ordinances.

Michael McKay, Huntington Beach Fire Department: The 1976 Uniform Fire Code addressed only the proximity of new wells to existing buildings. The 1979 Uniform Fire Code now has a provision that if you have an existing well, a new structure cannot be built within a certain distance of that well. I realize, however, that the Code is a model—it is not really State law and cities have the option of adopting it. I'd like to know if any cities have been challenged on issues of inverse condemnation that could occur in cases where the suggested 100 foot distance is imposed around existing wells in an area where there are small lots. Would these regulations amount to inverse condemnation if they prevented people from building on surrounding lots?

Multari: I think that the fear of just such a situation in Huntington Beach accounts for a footnote in the version of the Uniform Fire Code which was adopted by the City. Under certain circumstances, such as the development of fireproof walls and sprinkler systems, the City permits the 100 foot minimum separation between new structures and existing wells to be waived. This is not a very satisfactory solution in some respects, because it has allowed some buildings to get very close to oil facilities. This can result in noise, vibrations, or odor problems, but it does avoid the potential inverse condemnation situation.

QUESTION:

Do you have any problems with odors from oil facilities in close proximity to houses? If you do have these problems, how do you solve them?

COMMENTS:

Multari: We have high sulphur content oil in some of the zones, and when the wind conditions are right we have a lot of problems with odors. I can say from my experience that odor is the hardest problem to mitigate. It is even worse than noise problems. Noise mitigation is

ITEM # 32
AUGUST 21, 2012
PRESENTED BY: C.M. FLORENCE
RECEIVED PRIOR TO MEETING
OF OIL AND GAS
POSTED ON: AUGUST 20, 2012

expensive, but it is possible. Odor mitigation is very difficult to achieve.

Some of the kinds of things that have been done here regarding odors are not entirely satisfactory, but they are improvements. In one instance, we found that the most severe odor problems were occurring when certain steam-related gases were vented into the air. If the wind conditions are right, odor can become very concentrated. In some cases, loud complaints were registered, and some people actually got ill. What we have been able to work out with the company involved—actually, they did it more on their own initiative—was a system whereby the gases could be held in condensation tanks if they were so severe as to cause complaints.

One oil company in the City is putting up hydrogen sulfide, H₂S, monitors around the periphery of its lease. After H₂S concentrations in the atmosphere reach a certain point, this device will signal some kind of a warning. This would allow the location of the gas source to be pinpointed, and the operation shut down until the wind conditions change or the H₂S content of gases on the lease change. I don't know exactly how this system is being implemented at this time or how practical it is.

Terry Dressler, Air Pollution Control District, San Luis Obispo County: If you have installed the best available control technology for the mitigation of odors and gases and you still have odor complaints coming in, the Air Pollution Control District must enter into things. The District will have no other choice but to shut the operation down, or to cite it and issue a violation for being a public nuisance. Odor seems to be an almost unmitigable problem in some areas.

Multari: In some places and under certain conditions, I think you are right. We also have a provision in our code that allows the oil inspector to shut down an operation for excessive odor problems.

Randall Abbott, Kern County: We had a situation in Kern County where difficulties in locating the source of odors caused problems in our mitigating them. We knew the odors were most likely coming from an oilfield waste disposal site, but because there were other possible sources in the area, we could not specify the offending source. We lacked the capability of pinpointing the culprit, and were therefore unable to bring action against that party. Another advantage of unitization is that instead of several different operators of potentially offensive operations pointing their fingers at each other, there is only one party responsible for the problem.

Multari: A related point is that through consolidation and unitization, you are concentrating the facilities to a few locations, rather than having several wells scattered throughout another kind of district. Putting oil facilities in just a few locations makes problems easier to solve than when the facilities are spread out over numerous sites.

Michael McKay, Huntington Beach Fire Department: Earlier, you mentioned a sulphur compound monitor-

ing system at the leeward side of one of the leases. The monitors will detect hydrogen sulfide gas in offensive or dangerous concentrations so that the oil operator can contact City officials and let them know whether or not there is a problem.

The detectors will do two things. One, of course, is to notify the operator that there is a problem. The operator can then look for the source and correct it. Also, when we call an operator about an odor problem we think is coming from his lease, he can say, "Sorry, go knock on someone else's door because our detectors have not picked anything up from our operations." So it helps the operators and it helps us, too.

Dressler: Does the Air Quality Management District, AQMD, get involved with this? Do the citizens call the AQMD? And what is its policy?

Bill Sheffield, Aminoil USA: The AQMD has been out to our lease on several occasions for odor problems that it suspected were emanating from our lease. The AQMD will cite us if we create a public nuisance.

QUESTION:

Are you saying that the sulphur detectors will actually detect the presence of these gases before the human nose will? We have been told by the air pollution people that there is no such detector.

COMMENTS:

Bill Sheffield, Aminoil USA: The devices will detect the sulphur and mercaptan content of gases before they become toxic, but not before they become odoriferous. The odors are too strong.

Wilkinson: It is practically impossible to build an instrument more sensitive than the human nose. We have a very sensitive hydrogen sulfide detection instrument that will measure less than one part per million of H₂S gas, but although that concentration is very noxious, it barely registers on the meter. Detection equipment is designed to indicate toxic concentrations rather than the odor or noxious level of the gas. I do not think there is an instrument that can detect small concentrations of H₂S more sensitively than the human nose.

Sheffield: We are investigating the usefulness of ambient air monitors. There are ambient air monitors that will sense down to a few parts per million successfully. We are investigating these monitors and will probably put several of them on our lease to see if they will be beneficial to us and if we can get them at a reasonable cost. As soon as we get any kind of information, we will be glad to share it with the rest of you.

QUESTION:

At what stage of production or drilling of the well are these odors most likely to occur?

COMMENTS:

Wilkinson: Normally, noxious odors are not produced when a well is being drilled. If a diesel engine is used

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTS: S. W. P. C.
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

some exhaust odors may come from the engine, but other than that there are no particular odors that come from a well until a point is reached where gas is encountered. If it is pure methane, it will be odorless, but there are other compounds that may be mixed with zone gas that have a characteristic "oilfield smell"—particularly sulphur compounds. However, this would normally be of short duration.

Unfortunately, a lot of California crude oil has sulphur in it, which causes the rotten egg smell. In the producing phase—if you are producing oil with a sulphur content—hydrogen sulfide gas usually comes out along with the oil and water. This is not only smelly, but can, at certain concentrations, be toxic. Hydrogen sulfide is extremely poisonous, even in fairly small quantities, if it is trapped in a confined area.

In an open area, H₂S gas diffuses rapidly so it is not harmful, although it is still quite odoriferous. Typically, the well and the production system are designed so that they can be closed to avoid leaking gases in hazardous quantities. It is usually only when something malfunctions that a leak occurs in the system and H₂S odors are noticeable.

Normally, the strongest smells are either sulphur dioxide or hydrogen sulfide gases in combination with some of the other normal petroleum smells—what we call "oily smells"—that occur in oil fields. If wells are being steamed, some strong odors can be produced from sulfides. As I mentioned, however, the systems today are usually closed, and tanks generally have some type of vapor recovery system. Hence, there is really no reason for excessively noxious odors around an oil lease. Most severe smells should be transient events.

Michael McKay, Huntington Beach Fire Department: I would just like to draw from some of the expertise in the room regarding noise problems related to drilling and re-drilling. Our problem is that if we allow development close to wells, those wells are eventually reworked or re-drilled and the owner of the residence will come to the City and say, "Stop that guy, he's interrupting my sleep". Do we just tell this guy to live with it, or do we tell the oil people to do something about the noise? The oil operator says, "I've been here for 40 years. That building has been there for a year".

Jose Osuna, City of Long Beach: We had a case that involved a marina that surrounds an area with six existing wells. The company is going to drill about four more wells, but the operations can be shut down if there is excessive noise.

Wilkinson: In regard to your sound problem, that oil company has an obligation to meet the noise ordinance. Certain operations can be curtailed during nighttime hours if necessary. However, there has to be a reasonable distance between the public area and the oil operations, and a reasonable noise limit.

McKay: A problem, though, is that the developers say, "Look at all the land not being used around this little pumping unit. It is very quiet, so we want to build within

25 feet of it. We'll build a six-foot wall so that the people who will be living in these condos will not see the oilfield facilities". Until they built those homes, that oil operator could drill and make all the noise he wanted to because there was nobody nearby. If allowed by the City, a developer will come in and build on this land.

Bill Sheffield, Aminoil USA: This is really just evidence of what you planners can do: plan so that you do not have residential encroachment right next to heavy oil uses. As I understand it, the purpose of this meeting is to help you solve these kinds of problems in your community ahead of time.

Bud Tippens, American Petrofina: As I see it, the City of Huntington Beach is starting to take care of noise problems. It has a noise ordinance that limits the noise permitted at the property line to 50 decibels for residential, 55 decibels for commercial, and 60 decibels for industrial. These are decibel readings from the property line, and it is up to the operator to find the best way to meet those standards.

Linda Melton, Aminoil USA: I think our problems in Huntington Beach are exacerbated by the fact that we have people surrounding us who do not close their windows at night and put on their air conditioning. They want to open all their windows on a nice, clear night and feel the breeze from the ocean. This is a problem because they can then hear absolutely every sound. The escalation of residential encroachment is definitely a problem that is going to take a lot of compromise and a lot of understanding. I expect that, things being what they are, most of the compromise is going to have to be on the part of the oil companies and we will just have to include it in our cost estimates for operation.

Wilkinson: We have two types of situations. We have the urban situation in which we have less room to work, and we have the more open, rural areas that have not yet been encroached upon. You planners have some important decisions to make. Are you going to keep the area intact as an oil field, but allow development within some reasonable distance of the oil operations? Or are you going to preserve some access areas to the subsurface as the field is infiltrated with urban development? Decisions must be made as to how the oil operator can continue operating without being penalized excessively.

QUESTION:

Does the City have ways to encourage unitization?

COMMENT:

Multari: That is a good question and one that we wanted to ask everybody here. What attracts an oil company to an area to form a unit? One of the ways to encourage unitization that occurred to us was to try to preserve some access sites so that in the future an oil company would not be scared away by the prospect of having to tear down houses or commercial establishments to start drilling operations. We thought that the most important thing the City could do was to set aside districts that could be used for oil and to set

up a policy to make it clear that we are concerned about preserving access for any unit projects that could occur sometime in the future. I believe, however, that the State must play an important role in encouraging unitization. The State does have a compulsory unitization law which could require hold outs to join a unit or be bought out by the majority if a certain percentage of the owners decide to participate. However, this law is quite restrictive and has not been very effective.

QUESTION:

What percentage of the participants do you have to have before unitization can be forced on the whole?

COMMENTS:

Bud Tippens, American Petrofina: I am with the company that is trying to unitize the City's downtown area. There is a statute in California that provides for forced unitization if 75 percent of the leasable lots, 75 percent of the independent operators, and 75 percent of the royalty owners who are receiving royalties from those independent operators all agree to the unit. No one has ever tried to force-pool into a unit in California, and we at American Petrofina really don't want to be the first to try that. So what we are trying to do is put together a voluntary unit. This means getting 100 percent cooperation out of the 30-odd independent operators producing in the downtown. Voluntary unitization can be difficult; it took Texaco seven years of negotiations before it put its Signal Hill West unit together.

Would any of the independents try to block us by saying it is unconstitutional and that the State does not have the power to force units? I think the State does have the power to do it, because it is in the best interests of the owners and the public. In all the other oil-producing states there are force-pooling statutes. As a matter of fact, they are even more stringent than those here in California.

Jose Osuna, City of Long Beach: I don't see State courts ruling force-pooling unconstitutional; that's not the problem. The California force-pooling statute was instituted in 1972. It was billed as something great, but its success, I think, can be measured by the number of times it has been used—zero. There are also limits on where it can be applied, based on the age of the field and its location relative to incorporated cities. There are not many fields to which the mandatory unitization law applies.

Another thing we have that most other states do not have is a provision that the owners who agree to unitize have to be willing to buy out the people who don't go along. Our law has an arbitration mechanism to settle on the fair value of the land to be bought out. In other states, hold outs are forced into the unit, and they don't get any money from the oil produced until their share of the expense has been captured by the unit par-

ticipants who are putting up the money. Often times, too, there is a penalty placed against the hold outs because of their unwillingness to put up the money. Really, there are statutes in other states that are far better than ours. The California law as it exists now might as well not be there. I think it is that bad.

I would also like to clarify something about subsidence and unitization. The subsidence and unitization laws are different statutes. There is a special Subsidence Act that was designed for the Wilmington field to deal with the subsidence problem there. The State can force unitization to provide for a repressuring operation or waterflood to prevent subsidence, but the law can be applied only in areas subject to inundation by the sea that are already subsiding.

Multari: Is the State doing anything about compulsory unitization? There are certain things that cities cannot do. Matters regarding the subsurface are generally the State's responsibility.

Richard Weaver, City of Santa Fe Springs: The unit in Santa Fe Springs is completely within City limits. The compulsory unit law could have been applied—they had the required 75 percent of all the various necessary parties. But they chose not to apply it, and they are currently operating the unit without the participation of the other 25 percent. There were apparently enough problems that they figured it would have been more expensive to try to force everyone in than to operate without them. So they are operating without 25 percent of the production being in the unit, and some of the holdout blocks are right in the middle of the field! There is a lot of free riding, but apparently it is not significant.

Multari: It is possible, for example, that a hold out's wells could begin producing more water than his equipment can handle after unitization has occurred. In a situation where the hold out's wells are not so fortuitously located and their oil production decreases as a result of unitization, would this operator be able to sue the unit for damages?

Alan Hager, State Attorney General's Office: They can always sue, but the question is are they going to win? In California, there is no recent law on it. The perspective of California law in the past has been that this would constitute trespass and that it was actionable in court. Trespassing occurs if you are injecting water and that injected water moves onto somebody else's land. However, I think Texas and some other states have declared that if there is such a trespass caused by a unit operation, it is not actionable and you cannot recover damages. The policy is that the imposition of liability discourages the same unit operations that the State wants to encourage. I think the equitable and rational approach is to not impose liability. Again, I don't know what the answer is in California, because there just isn't any law on it.

CASE STUDY #2 PLANNING FOR OIL AREAS ON THE URBAN EDGE

Multari: This second case study focuses on an oil field in another part of the City that, unlike our downtown area, is not yet developed. In this case, we have the chance to do some advance planning before urban development starts to encroach upon the field.

The area is largely vacant, except for oil wells, associated tanks, and a few horse stables. The site is about 300 acres in size, surrounded by "suburbia", with mostly residential and some light industrial uses nearby. Recently, a developer came to the City wanting to subdivide 20 acres within the 300 acre area. The Planning Commission and the City Council decided that this was a good time to start doing some detailed, comprehensive planning for the area. Figure 18 illustrates the draft plan that our staff has put together. It is still in a preliminary stage. The Planning Commission directed staff to develop a concept for low-density "estate" residential with equestrian uses. From an oilfield planning perspective, we were most concerned with incorporating the following into the concept plan: 1) trying to concentrate the existing and future facilities into a few locations so that the oil pool can continue to be tapped; 2) freeing most of the land for other uses; and 3) trying to provide adequate buffers between new uses and the remaining oil operations.

In this case study, we would like to focus especially on the problem of preserving surface access so that certain areas in the future will be reserved for oil operations. Three basic questions need to be answered: 1) how many future sites are needed; 2) how large do they have to be; and 3) where do they have to be located? The Division of Oil and Gas provided help in answering these questions.

Based on typical well spacing, there are some rules of thumb for estimating how many wells will be needed for application of secondary or enhanced recovery techniques in a particular area. For example, in other parts of the Huntington Beach field employing similar technologies, the wells are spaced about one every ten acres. So this 300 acre site would require about 30 wells. If steam techniques are to be used, the spacing is typically closer, perhaps a well every five acres. In that case, 60 wells may be needed for this area.

Next, we wanted to know how many sites would be needed and where they should be located. By analyzing the depth of the oil zones and the typical reach of directionally drilled

wells, the Division of Oil and Gas suggested that all the necessary wells could be located on two sites of about one or two acres each. The Division of Oil and Gas advised us as to the general areas where each of these sites should be placed. They suggested that one site be located on the west side of the area and another toward the east, as was seen in Figure 9. We were then able to apply surface planning constraints to determine the best specific locations for the islands.

The method we used to do this is a basic planning technique: a composite constraints map. We first analyzed geologic hazards; however, these proved to be mitigable problems. Secondly, we reviewed our topographic constraints. We wanted to take advantage of the little bit of topography afforded in this area by preserving the drainage swales, the bluff area which overlooks the wetlands and the ocean to west, and the other higher points. Third, we looked at the proposed public facility systems: roads, sewers, trails, drainage, public open space, and recreation areas. We wanted to pick sites for the oil operations that had access to one of the major collector streets, and we did not want to put them directly on a proposed equestrian trail or sewer line. Fourth, we analyzed ownership patterns and property lines. We did not want our site in a location where three or more properties intersect, for example. Finally, we were concerned about the location of the existing oil facilities. We did not want to choose a site where there are currently no oil wells, but rather a location where some of the existing facilities could be included in an island.

By taking all these things into consideration, we came up with the composite constraints map shown in Figure 19. Using the general locations suggested by Division of Oil and Gas engineers, we picked the two locations shown in Figure 20 for the specific oil island sites. These sites are outside all the important topographical and open space areas that we felt needed to be preserved. They are adjacent to collector streets that we have planned for the area. We tried to get a corner location for both islands so that we would have buffers on two sides of the site, but we were unable to find a location for the west site at an intersection that would not jeopardize other goals.

After we determined where these sites should be, we had to devise ways to effectively preserve them in a manner that

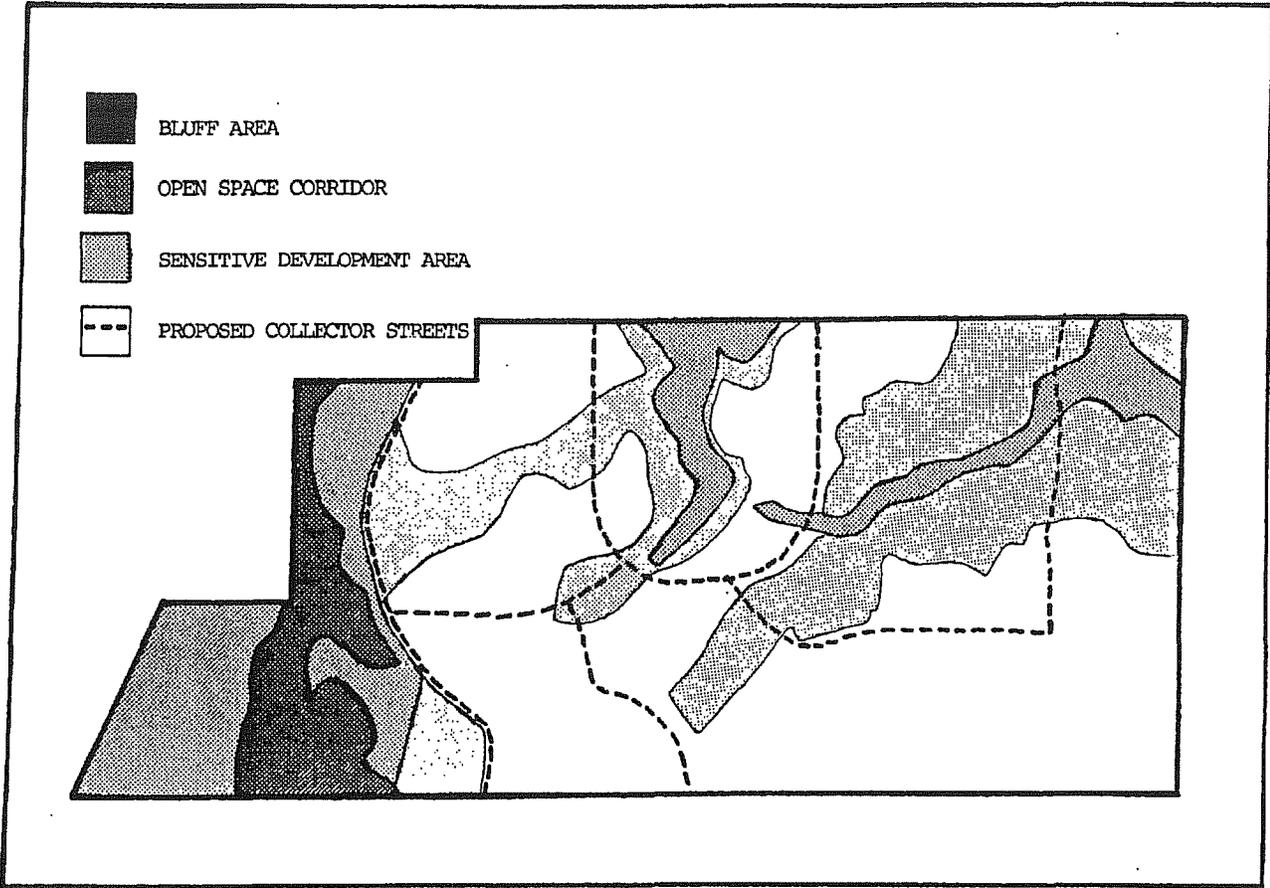


Figure 18. A portion of the draft land-use plan for a 300-acre undeveloped oil field on the urban edge. Planning goals for the area include preserving access to oil resources by consolidating existing operations and providing adequate buffers between new land uses and remaining oil operations.

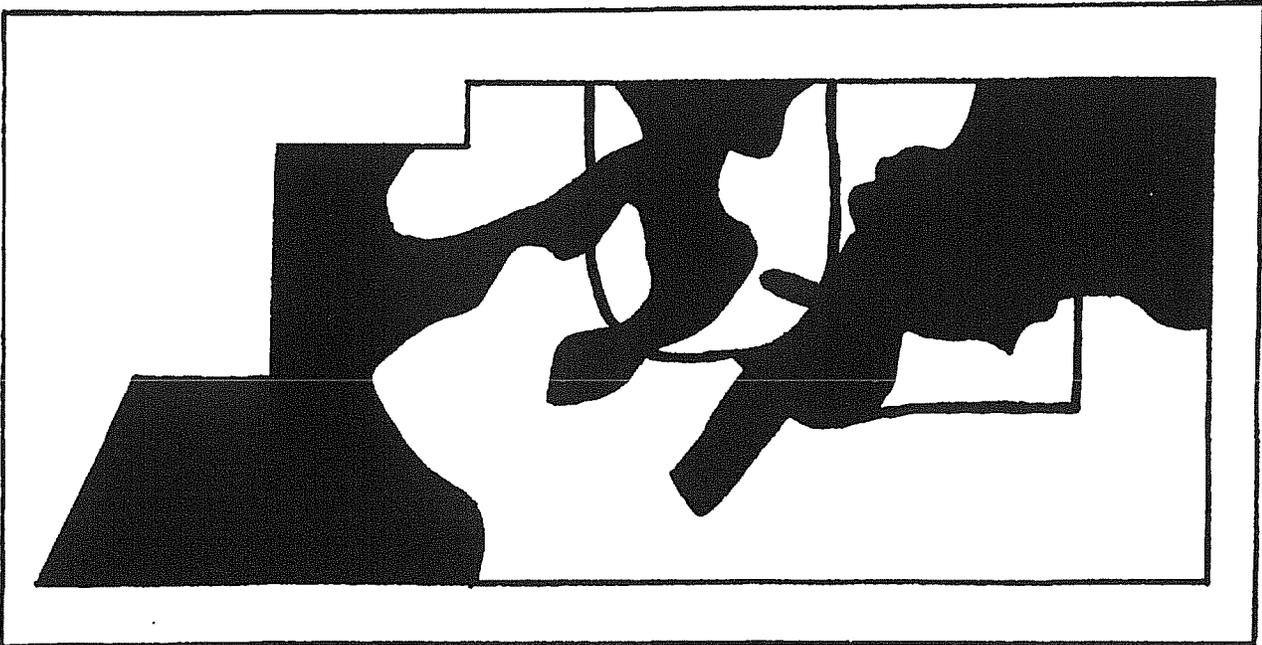


Figure 19. This composite constraints map, resulting from the consideration of surface planning constraints, was used to determine the best specific locations for oil islands. Areas with one or more constraints were shaded. Considered were geologic hazards, topography, proposed public facilities, property lines, and the location of existing oil facilities.

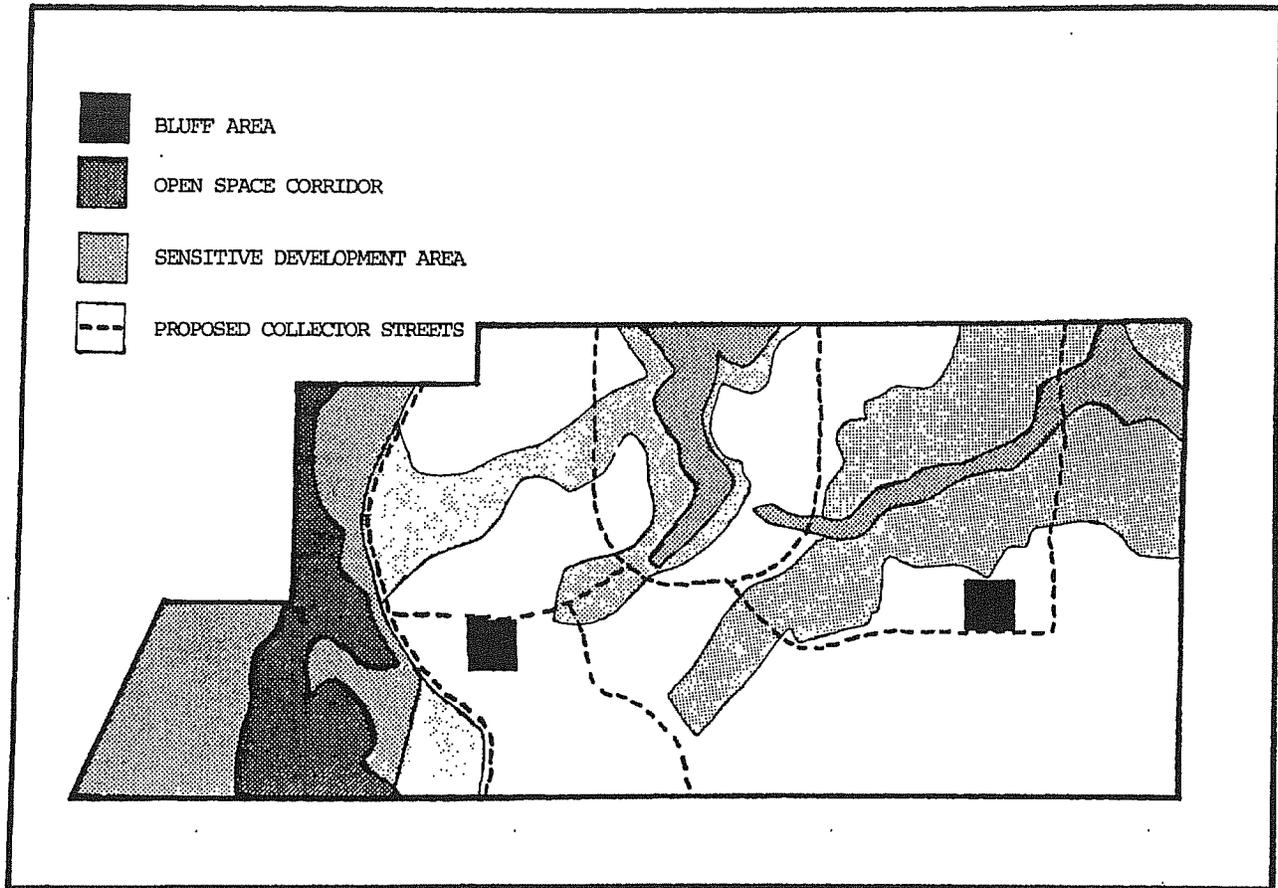


Figure 20. The two locations chosen as sites for oil islands based upon the composite constraints map and the general locations suggested by the Division of Oil and Gas.

was fair to the property owners. Diane Border, another planner working on this project, will outline some of the options the City explored.

Diane Border, Planner, City of Huntington Beach: You have seen how we took a number of surface constraints, as well as the geology of the area, into consideration. Next, we had to decide what mechanism we could use to create and maintain access on the chosen islands. I would like to briefly discuss some of the options we examined for doing this. No one solution will work in all situations, but these options should give you an idea of the range of alternatives available to you in preserving oil access.

To start at one extreme, we looked at the exercise of eminent domain for maintaining oil sites. Clearly, condemnation has a number of drawbacks, not the least of which is political sensitivity. Perhaps the use of eminent domain should be looked upon as a method of last resort for use in areas where only a few existing wells or access points remain. In these cases, however, it would likely be difficult to make a convincing argument that there is an overriding local public good in condemning the site for oil.

Moving into the realm of the more likely, we identified three traditional types of land use controls that can be used for preserving oil access. These are: 1) the General Plan designation; 2) zoning; and 3) overlay districts requiring conditional use permits.

Let me begin with the General Plan designation because, of the three, it is probably the most stringent and may be useful in areas where there are only a few existing wells left. Designating an area "resource production", a land use category we use in Huntington Beach, would make oil extraction the principal permitted use. A General Plan amendment would then be necessary before new uses could be introduced. One condition for approving the amendment could be the submission of an engineering report explaining why the site is not important to future access. Because a General Plan amendment requires a much more extensive review by policymakers than a zone change or conditional use permit, drill sites may be more effectively preserved. A possible drawback to this method, however, is the fact that General Plans usually do not differentiate land uses on parcels smaller than 20 acres. So, depending on the extent and configuration of the oil zone in your area, this option may be cumbersome to work with.

Base zoning, too, can be an effective way of preserving oil sites and may afford more flexibility than the General Plan designation. As we discussed earlier, Huntington Beach currently allows oil uses under a zoning suffix which is attached to the base zoning designation. Both uses are allowable, but because oil is permitted under a suffix only, oil operations can at any time be abandoned in favor of the base zoning use. Greater control can be exercised by making oil itself the base zone. This would then require a zone

change before other uses could be permitted on the site. Again, consideration of access preservation can be made a condition of granting a zone change.

A third method is an overlay district with a conditional use permit. Under this option, oil districts would be defined by a general overlay designation which would require that a conditional use permit be obtained for all uses other than oil. The granting of a conditional use permit is contingent upon the applicant agreeing to certain conditions. For our purposes, these conditions could be preservation of existing oil uses or not permanently encumbering the land so as to allow for future oil access. When considering this option, keep in mind that it almost literally creates a whole new layer of regulation in the affected area.

Another option that should be mentioned is using land owned by the city or county for oil access islands. On property that it owns or acquires, a jurisdiction can restrict surface uses to preserve access for future oil facilities. The surface, or parts of the surface, can be kept free of permanent encumbrances until such time as drilling or an enhanced recovery project is proposed for the site—or is determined to be impractical. At that time, the parcel can be sold or leased to the parties proposing the project. Remember, though, that most enhanced recovery projects will require more than one site, and the cost of acquiring a number of usable parcels for this purpose is likely to be prohibitively expensive for most jurisdictions. Another drawback to using parcels that are already owned by the city is that they may simply not be in an oil zone or be of the correct configuration for enhanced recovery projects.

We then looked at some nonregulatory, incentive-based approaches to access preservation. First, some types of tax abatement strategies may produce enough incentive to keep sites open for future oil operations or to keep existing operations in production. Depending on your jurisdiction's tax structure, there are a number of taxes or fees that could be reduced. Property taxes, severance taxes, fees for a number of services like well inspections, drilling and re-drilling permits, and wastewater permits could all be subject to abatement, either singly or as a package.

A concept that we found particularly interesting in this case was transfer of development rights, or TDR. Under this method, development rights can be severed from one parcel and transferred to another. For example, if the proposed island, which is to be kept undeveloped, would otherwise have accommodated three residential units, the owner would be able to transfer his right to build three units to another property, thereby increasing the allowable density, and value, of that other property. Normally, total restriction of development on a parcel would constitute a taking, but with TDR the severed development rights are marketed and transferred to another parcel. Proceeds from the sale compensate the owner of the restricted parcel. Generally, a transfer zone must be defined into which transferred rights can be accepted. The result will be somewhat higher densities in some parts of the area in exchange for keeping a portion or portions of it open. The overall density of the area is not increased—just the density in some parts of it. Care must be used in setting up a TDR scheme so that densities greatly out of character with the planning goals for that area are not created.

A related form of TDR is "averaging". This is used when the entire parcel has one owner. The surface area necessary for access is kept open and the development that could otherwise have occurred there is distributed or "averaged" throughout the rest of the site so that the owner bears no penalty for maintaining access on one portion of the property.

Multari: Our Planning Commission is considering a requirement, for reasons unrelated to access preservation, that new development projects be at least ten acres in size before they can be approved. We decided that, in light of this approach, an acceptable strategy for preserving future access would be to take the suggested oil sites and allow them to be part of a minimum ten acre project. The overall density of the ten acres would not be changed, and the area designated for oil could be part of the open space requirements for the overall project so that developers would not lose anything by keeping the sites open. However, we had some concern about allowing oil islands to count toward open space. An alternative would be to not let the oil site count towards open space, and instead to increase the overall allowable density on the rest of the site. This would create a density bonus for keeping the oil site open.

We also proposed that, in addition to the two mandatory oil sites required to be kept open for future use, there also be three other optional oil sites created by suffix zoning on a base district. The property owners of the optional sites could then decide whether to use the property for oil operations or for the base district use; both would be permitted. We are worried about creating an artificial monopoly. If we limit drilling to the two mandatory sites, that means there are only two parties to go to for a new well from now on. The two parties could possibly hold out for a pretty steep price, and the City, by its zoning, will have artificially created a near-monopoly condition. This is one of the reasons we've considered expansion to five islands—three of them optional—instead of just two mandatory ones.

Before we begin the general discussion, let me backtrack just a little bit to tell you about another problem that we tried to address while planning for this area. As I have already mentioned, there are a lot of existing wells scattered throughout the area. We were worried about problems arising from new development near these wells. To help ameliorate such problems, the City revised its municipal code to require that the developer prepare a plan which addresses compatibility concerns and the future disposition of oil facilities before any development. The concerns the plan must address include the size of the site set aside for oil activities to make sure that it is large enough to accommodate the existing facilities and any expansion that would be allowed under the existing zoning, accessibility to oil sites from public roads, and access for emergency vehicles and oil equipment. The plan must also identify the type of soundproofing treatment that is going to be used to ensure minimal potential noise

conflicts between the oil area and the residential area.

Any type of spacing requirements that the Fire Department would require with regard to access or public safety would have to be incorporated into the plan. A landscaping plan must also be submitted which describes setbacks and buffer areas, and how they are going to be incorporated into the overall project design. The developer must have the oil operator approve the plan before it is submitted to the City. This way, we feel that this forces both par-

ties to get together to prepare a satisfactory plan so that these kinds of concerns will have been considered before houses are built and people move into them. If an oil operator decides not to approve the plan, it can be submitted to the Planning Commission with a report explaining why the operator would not approve it. If the Commission can make findings that all the considerations have been adequately addressed by the developer, it may grant the development or subdivision entitlement without the oil operator's approval. The decision of the Planning Commission could be appealed to the City Council.

DISCUSSION

QUESTION:

Are you talking about relocating existing wells, or just the siting of new wells?

COMMENT:

Multari: Only the siting of new wells. The next case we are going to present does address relocating existing wells and the problems that we are having with that. In this case, we know there is a lot of oil under the area in question and that it is going to be valuable in the future. The pool has never been waterflooded; enhanced recovery techniques have never been employed. We are concerned about allowing future operations to get that oil out, but at the same time concentrating the oil facilities into a few locations.

QUESTION:

Are you proposing to prohibit new oil wells outside the islands?

COMMENT:

Multari: Yes. New wells would be prohibited outside those five islands, and we would not allow new wells elsewhere without a zone change.

QUESTION:

Do the oil companies or the developers pay for the abandonment of non-unitized wells and the consolidation of new wells?

COMMENT:

Multari: In the case of a unitization project, the oil company — the unit operator — typically pays for abandonment and consolidation. In a case where new development is planned around existing facilities, the developer would probably be required to make the necessary changes.

QUESTION:

Can you explain your suffix zoning to me? I don't understand how it works.

COMMENT:

Multari: First, there is an underlying base zone district. Then a "suffix" is applied which allows another kind of use. For example, if the base zone is residential, and there is an oil district suffix, either oil wells or new residential uses are permitted. It is up to the property owner to decide what to use the land for.

QUESTION:

In a new situation like this, would you put conditions on the new well sites that are not applied on existing wells?

COMMENT:

Multari: Yes. Our standards for new facilities are much stricter than for existing ones. The City just reviewed its oil ordinance and zoning districts this past year. From now on, new wells in Huntington Beach are going to have to conform with these stricter standards. Oil operators are going to have to weigh the costs of meeting these standards in deciding whether or not to go ahead with the project.

Another problem, however, has been to find ways to get operators who have been conducting business here for 30 or 40 years to make improvements to their facilities or their property. We did establish landscaping and screening requirements which are not very expensive to meet, and for which there is a two year timeline for compliance. We will be much more strict with new operations, especially if they are in proximity to residential areas. Our standards differentiate between wells that are going to be drilled in residential areas and those that are going to be drilled in industrial zones.

QUESTION:

Did you mention that the Division of Oil and Gas helped you determine how many more wells were needed to extract the resource?

FEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: C.M. FLORENCE
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

COMMENTS:

Multari: The Division of Oil and Gas advised us on the following: 1) how many wells can be accommodated per site; 2) how many sites are necessary; 3) how big they have to be; and 4) where they should be located.

Wilkinson: I would like to point out that although we made the study for this project area, we cannot provide that level of detail for all cities due to the amount of time and effort involved. Normally, you would bring in a consultant to assist you. However, we will provide all the assistance we possibly can.

Multari: One can get an idea of the number of wells needed by looking at similar operations close to the area in question. For example, we went to another area close to this one that was used in a waterflood by a major company. We asked this company what their spacing was for water and steam injection. We were then able to calculate the number of wells necessary in our planning area, and this gave us a pretty close, usable estimate. Similarly, you can estimate the number of sites and their locations using data from other fields with similar projects. For detailed analysis of a particular area, however, a petroleum engineer should probably be consulted.

QUESTION:

Are you saying that the existing wells would be allowed to remain?

COMMENT:

Multari: Existing wells would be allowed to remain. No new wells would be allowed unless they are drilled from islands. Relocating existing wells is very expensive, and for many of these wells, the value of the oil they can recover would not justify drilling a new well. The next case study is about a situation where we tried to encourage the relocation of existing wells.

QUESTION:

Are the new wells more productive than the old ones?

COMMENT:

Multari: Yes, if they are part of a secondary recovery project. If they are primary production wells, they would likely extract no more oil than the other existing primary production wells, and therefore would probably never be drilled. That highlights the underlying problem with relocating these existing primary production wells, which average only five barrels of oil per day. It may cost hundreds of thousands of dollars to drill a replacement well in a new location, and the low production of these primary wells simply cannot justify the expense of a new well. Only in secondary or other enhanced oil recovery projects, through which production will substantially increase, are new wells likely to be economically viable in this area.

QUESTION:

Can you run into problems in an older oil field that is going into secondary recovery? Is it possible that the old wells would not withstand the steam and pressure? Could steam escape through the casing of old wells or through small fissures in the ground?

COMMENTS:

Wilkinson: When steaming operations were first tried several years ago, things like that sometimes occurred, particularly when steaming very shallow zones. Today, not only does the Division of Oil and Gas require that injection be confined to the approved zone, but the economics of the project prohibit such an inefficient and costly waste of the heat energy.

Multari: I was under the impression that when a company wants to do a secondary project requiring some injection, they have to submit their plan to the Division of Oil and Gas first. Wouldn't your Division check to make sure the integrity of the casings were such that they could withstand the kind of project that was being submitted to you?

Wilkinson: All secondary recovery and water injection stimulation projects must be submitted to the Division for approval by the State Oil and Gas Supervisor. Cyclic steaming, because of its temporary and periodic nature, is considered as a heat treatment rather than a waterflood operation. However, steamflooding projects are treated as full-fledged secondary recovery projects and, as such, are subject to a full-scale review by the geologists and engineers of the Division. Following the Division's review, which is extensive, the proposal may be approved subject to a number of conditions, which include regular monitoring of the project to ensure that no damage to natural resources or the environment is occurring.

Jose Osuna, City of Long Beach: You are supposed to submit your plan to the Oil and Gas Supervisor. The question is: What does he do with it? Does he approve it, or does he acknowledge that it is appropriate? He should say: "This is an appropriate recovery method, and I accept it."

Wilkinson: The State Oil and Gas Supervisor is required by law to determine whether or not any proposed secondary recovery project will result in damage to life, health, property, or natural resources, including freshwater aquifers. Our Division engineers make every effort to determine whether or not a proposed project might have an adverse effect upon oil- or gas-producing reservoirs. When a project meets established requirements and otherwise complies with our regulations, the Supervisor then approves the project. It is not within the scope of the Supervisor's authority to determine or designate which secondary recovery method would be the most effective or successful.

QUESTION:

Has the City ever worked out the cost/benefit ratio of purchasing those one- and two- acre oil islands, simply holding them as the last two available places to drill from, and waiting for industry to come around to that point?

COMMENT:

Multari: No, we did not analyze the possibility of the City purchasing those sites, but I think such a study would be useful.

QUESTION:

Is the City primarily concerned with access for a secondary recovery project?

COMMENTS:

Multari: Yes. The existing wells in primary production are really not benefiting the City much. As we saw in the fiscal analysis, they are not going to produce enough revenue over the long term to cover the service costs to them. They detract from the property values of adjacent lots, and they also inhibit the consolidation of parcels for new kinds of development. So the primary production wells are not the ones we are really worried about preserving access for. It is the wells in a secondary recovery or enhanced oil recovery project that we are concerned about. This is where all the benefits occur—increasing production, cleaner operations, improved fiscal benefits. Nevertheless, somebody has made an investment in those primary production wells and they are private property. The City is sensitive to that and tries to protect the operators' interests.

As times change and the land gets more valuable, someone may come in and start buying those wells because it will be more valuable to build condominiums, for example, than to pump five barrels of oil a day. In some places in the City this has already occurred and wells have been abandoned.

Alan Hager, State Attorney General's Office: Would all the surface owners be in favor of removing the oil operations in the case study area?

Multari: Most of them. The surface owners are saying, "I get little or no royalty from the oil operator who is producing five barrels a day, so who cares? If I can get the oil operations off my lot, I can build a million dollar housing project on it." That is why we are concerned about this entire area being built over and never being able to implement a secondary recovery program.

Then too, this is an old field that has been in production for a long time, and it will cost a couple of hundred thousand dollars to drill a new well. If you are producing five barrels a day, it is going to take a pretty long time to recoup that kind of capital investment, especially with the current interest rates. So we don't see very many new wells being drilled

out there, unless a unit is put together and secondary or tertiary recovery techniques are applied.

Wilkinson: I'd like to mention some things about making an operation like this a little more palatable. When surface rights are separated from the mineral rights and the surface owner gets little or no compensation, regardless of how much oil is produced, that surface owner has no interest in whether or not the operation lives or dies. The oil company could sweeten the pot in some way, bring the surface owner into the picture to a degree by offering a fractional share of the oil income. I think that would increase cooperation.

Richard Weaver, City of Santa Fe Springs: In a situation wherein the owner of the property has no interest in the minerals any more, he may have nothing coming in from the oil operation. But the old lease has tied up the surface, and development cannot occur due to the oil encumbrance. This is very crucial to encouraging new development. The oil companies are becoming much more cooperative—although we think they could be a little more cooperative—in releasing superfluous surface rights that they no longer need for their operations. We have, on some occasions, even used eminent domain to condemn the surface where there seems to be no other way to achieve its release in Santa Fe Springs.

QUESTION:

What is the State's interest in preserving access and what are they doing? Is there any role that they can take to help local government? If the State can take a role in unitization by drafting legislation, what can it do about access?

COMMENTS:

Wilkinson: Well, it would be easy if we had a State law saying that surface access must be retained over every oil field. This would be like a resource preserve. But before we would even attempt to get legislation like that, we would be around to all local governments affected by such a law to see how they are going to feel about having the State pre-empt some of their authority. It would certainly make our job easier if we could just come to a city and say, "We have got to have two acres here and two acres over here zoned for oil". It would, in a sense, make the city's job easier because it would take some of the pressure off local officials. But the realities of such a law are not so simple, unfortunately.

Alan Hager, State Attorney General's Office: There are several possibilities for preserving access. Maybe the most intrusive into local government authority and development interests is the resource preserve. There are precedents to this, such as the Williamson Act, where local governments can contract with property owners so communities can keep land in agricultural use. As a consequence, the owner gets a property tax benefit from agricultural use, although this is not

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: C.M. FLORENCE
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

necessarily the highest and best use of the land. The owner's property tax is lost for the local government, and made up by subvention from the State.

Another option is to mandate, through the general state zoning law, that oil access be taken into consideration when zoning any area overlying an oil field. The mandate would be that the city or county must make some provision for retaining surface access. The local government would determine exactly how and where that is to be done. The Division of Oil and Gas could provide information on where the oil fields are, how much space for access is needed, and where.

Multari: That points out something that we have been worried about in terms of zoning—choosing the sites for future access to oil resources. When we are talking about most resources to be protected—sand and gravel resources or prime agricultural land, for example—they are on or close to the surface and there is really little doubt about what area has to be retained to protect them or to preserve them. With oil and gas, however, there is significant flexibility in choosing where the access sites can be located, and this raises the question of being arbitrary and capricious in zoning certain properties as oil access preserves. We should be establishing criteria, related both to the surface and the subsurface, for evaluating potential access sites.

Todd Collart, Ventura County: There hasn't been pressure on local government to look at these issues. Nobody is looking far enough ahead to these problems. We all agree that the problem will come about over time, but we are not getting the initiative from the State saying we should address the issue now.

Wilkinson: You've put your finger right on the issue. This is the principal reason for our meeting today. We feel the same way—there are a lot of areas where access problems are not yet as pressing as those here in Huntington Beach, but they are coming. The Bakersfield area has experienced these problems recently. Kern County prepared a new General Plan that involved several oil fields and, all at once, it was a potentially serious situation for future oil operations. In the more rural areas such as San Luis Obispo and Monterey Counties, new development and expanding towns are moving out into oil fields. You people have a chance to do something now that perhaps the City of Huntington Beach wishes it had done 20 or 30 years ago. It is an opportunity to address a potential problem while you still have time to plan properly and carefully. If the State did enact legislation that would require local governments to provide areas of surface access to the subsurface oil resource, how do you think your jurisdictions would respond?

Celia Weaver, California Coastal Commission: I don't think we would be in favor of requiring access in an

area with a multitude of small ownerships and independent wells. You would really be tying up so much land that you would not be achieving a local good as far as land use is concerned. I feel access preservation should be tied to unitization and secondary recovery. You don't have as much of a problem providing access if you have a unitized field.

Multari: You can provide access for the future and it does not have to be on all the individual sites. Just as we have proposed, a few sites can be set aside to provide enough space so that it is technically possible to reach those oil pools in the future. I think Celia is right: access and unitization must eventually go hand in hand. By analogy, redevelopment law says that if you have to consolidate surface areas to promote the public good in revitalizing an area, you can use eminent domain to acquire the holdouts. It seems that the State should strengthen its compulsory unitization law to force hold outs to join a unit for the public benefit.

James Lopes, San Luis Obispo County: I don't think our Board of Supervisors would look favorably on the State totally pre-empting the County, but they would probably support a requirement that oil resources be considered in planning and zoning. It would be up to the local jurisdiction to address the problem of providing access, yet there would be an element of compulsion in addressing the issue.

Collart: At a recent meeting in our County with citizens in an anti-oil committee and with representatives of the oil companies, both parties apparently saw the value of having this kind of access requirement as part of the General Plan, but for just the opposite reasons: one group saw it as a way to preserve oil, and the other to eliminate or reduce it. I think that having such a requirement will mandate that the issue be addressed, and force local government and all interested parties to sit down and resolve it, instead of allowing it to exacerbate over time until there is no good answer. Hopefully, in the rural counties, we can get a head start on this.

Wilkinson: That's the point I was making. Somewhere down the line you are going to have to face up to this. The main thing is that you cannot wait until it is too late. You have got to do it while the space is there.

Collart: Rural areas not only have more time, they've also got more ways to innovate because they have more available space. The situations we've been discussing in Huntington Beach today are much more constrained. So let's sit down now and plan . . . not 20 years from now when it is all built over. We are suggesting that there be a law simply requiring that counties and cities address the oil access problem, not how they must address it.

ITEM # 32

MEETING DATE: AUGUST 21, 2012

PRESENTED BY: C.M. FLORENCE

RECEIVED PRIOR TO MEETING

AUGUST 20, 2012

CASE STUDY #3 RELOCATING INAPPROPRIATELY SITED OIL FACILITIES

Multari: This last case involves a situation in which wells and related facilities were located on a site that the City Council decided was inappropriate for such uses. The City developed policies encouraging the removal of those facilities from that location, while providing alternate locations for them.

The area in question is part of Bolsa Chica State Beach, across from the City's downtown area on the ocean side of Pacific Coast Highway. Several wells are "strung-out" along the bluffline between the highway and the ocean, with numerous exposed pipelines lying along the bluffs. It is not an attractive sight. This area is located near one of our prime residential areas, and is a heavily used public beach.

On a half block—about 1.5 acres—on the inland side of Pacific Coast Highway is an oil island owned by one of the principal oil companies in the City. There are about 20 wells in this island, directionally drilled under the bluff area into offshore oil pools. The same company also owns some of the wells on the beach that are also directionally drilled under the shoreline into offshore pools. Another company owns the remainder of the wells on the beach, and those wells are generally drilled straight down, tapping the oil right under the beach.

This bluff area is State property, but the oil companies have surface leases which allow them to continue their activities there for as long as they can produce oil. The pumping units are all visually exposed to the public. There is no screening or landscaping, nor is there safe public access from the bluff down to the sand. People who want to go to this beach must cross Pacific Coast Highway, climb over exposed pipelines, slide down the bluff between the pumping units, and jump down the seawall before they finally get to the sand. So unless you are a nimble teenager, it is pretty hard to get to that sand. Old or handicapped people, and families with small children were excluded from this beach, and they were unhappy about it.

During the public participation process related to the preparation of our Local Coastal Program, there were numerous complaints that the community had a beach adjacent to its most populous residential area, yet peo-

ple were having a hard time getting to it, and the area was also ugly and dangerous. The City Council adopted policies to: a) phase out existing wells on the ocean side of Pacific Coast Highway; b) pursue strategies with the oil companies and the State Parks Department to improve the recreational value and visual quality of the site; and c) to approve new wells or redrilling of existing wells on the ocean side of Pacific Coast Highway only if all of the following conditions are met: that the resources are not recoverable from any other onshore location or offshore platform; that the site is improved to become compatible with the recreational uses of the beach; that public health, safety, and welfare are not jeopardized; that all adverse environmental impacts are mitigated to the maximum extent feasible; that the net overall impact of oil production facilities on visual resources is improved; that safe access to the beach is provided.

In summary, the goals that we were trying to implement were: 1) to remove and bury the pipelines; 2) to improve the appearance of the site; 3) to provide safe access—not only by removing the pipelines, but also by trying to get some stairways and ramps down to the sand; 4) to restrict new oil facilities unless there is absolutely no other feasible location; and 5) to encourage relocation of the existing wells by phasing them out through some kind of an incentive program.

The first step was to meet with the two oil companies and the State Parks and Recreation Department. We were able to develop a concept plan that all parties agreed to. The concept plan called for the eventual creation of a bike trail along the bluffs, an accessway system, a landscaped blufftop park, and some kind of screening of the remaining oil facilities. Although we had an approval in concept for the plan at that time, we did not get any commitment for action. No funds from any party were yet available.

The City contended that some of these improvements, especially the burial of the exposed pipelines and the landscaping of the oil facility sites, were clearly the responsibility of the oil companies. Rather than simply require these improvements by ordinance, the City

MEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: C.M. FLORENCE
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

tried to get the companies to comply on a voluntary basis through a Memorandum of Understanding whereby the companies would make improvements to the beach in exchange for some benefits from the City, such as rezoning other inland sites for oil operations or the relaxation of deadlines for compliance with other requirements.

We were able to find the necessary incentives for the company with wells directionally drilled offshore. This company wanted to use steaming in an offshore pool, and new wells were needed to do this. What we proposed was to create, through rezoning, an inland location which would allow the new wells to be drilled if the company met certain standards regarding soundproofing and landscaping at the new site and also submitted a schedule for the eventual phase-out of the wells on the beach while burying their exposed pipelines there. What we were really saying to them was, "You can put more wells in this inland area for your project, but you have to take your wells off the beach over some reasonable time frame, and bury the exposed pipelines now."

We were not able to find any incentive to induce the other company to relocate its beach wells or make other improvements on a voluntary basis. Part of the problem was that the pools tapped by this company's wells were so marginal that, in the company's opinion, drilling or redrilling from inland locations would never be profitable. Consequently, the City continues to allow these existing wells to remain on the beach; however,

no redrilling of these wells is allowed unless the company submits some kind of documentation proving that no other location for drilling is feasible. The City eventually passed new ordinances requiring burial of the lines and landscaping of the sites. After these became mandatory, the company complied in a cooperative manner.

Another positive event occurred as a result of these efforts. The City unsuccessfully applied for an Urban Forestry Grant to help landscape the blufftop. When funds from this source were denied, one of the oil companies decided to put up a "matching grant" of its own, contributing one dollar for every dollar donated by local businesses and citizens. Fund raising went on for four months, and more than \$80,000 was raised. Once this community response was elicited, there was a snowball effect. The City itself contributed an additional \$50,000, and the County will add another sizable contribution. There are now substantial funds available to help transform parts of this once unsightly area into an attractive blufftop park.

Thus, some positive results did occur from our efforts, but the overall picture is mixed. Where one of the companies was willing, we were able to find an alternate drill location and an accelerated phase-out of that company's wells on the beach. With the other company, we were not so fortunate. We will allow their existing beach wells to remain, of course, but no expansion on the beach will be allowed unless very strict policies are followed.

DISCUSSION

QUESTION:

Multari: One question I would like to discuss is why a city would want to enter into voluntary agreement when it can just pass a law and force compliance? Our experience was that of spending a year working on a voluntary agreement which was never accepted. We thought we would cooperate with the oil companies and provide incentives for them to make improvements, without forcing them to do it. In the end, though, a law was passed anyway.

Putting myself in their place, I know that I would not want to tell my boss, "Let's do a project costing one and a half million dollars, that we don't really have to do." But if I say, "We've got to do it or the City is going to pull our permits and shut our wells down", I would probably carry my case to corporate management a little better. So is there any reason then why a city should not adopt this attitude from the beginning and just lay the law down?

COMMENTS:

Linda Melton, Aminoil USA: I think there could be a number of good results from instigating voluntary, cooperative projects. One thing we have to realize is

that we are forging a lot of new ground here. In 1960, the population of Huntington Beach was about 11,000. Since then, there has been tremendous growth in an area where oil operators had been working on their leases for 30 or 35 years. When they started, there wasn't anybody around. A lot of them are still not used to dealing with the restrictions and regulations placed on oil operations in an urban environment. I think the process—and I know it was a lengthy one and that you ended up passing regulations anyway—did result in some benefits. There was better understanding of strengths and goals. I think we have established some good working relationships, not only with the City and some of the major oil companies, but with some of the smaller companies as well. For instance, on the blufftop park fund raising, everybody pitched in and worked together. I think there is going to be a lot more of this type of cooperation. It has started the ball rolling for public sector/private sector cooperation here in Huntington Beach, and I think the end result will benefit everybody.

Bud Tippens, American Petrofina: I think one of the things you can do is combine the rulemaking process and cooperative agreements. It is important to get the oil companies in on the ground floor of the rulemaking

process. That way, even if some governing body is ultimately going to pass a law, it will have been formulated with information on the technological and economic constraints facing the companies.

Vic Byers, Chevron USA: I think that's a good point because in the course of our discussions with the City valuable information was shared that was used in making up the ordinance—what we could live with, what we couldn't live with. In this case, the City then knew what was workable and feasible when the time came to formulate regulations.

Terry Dressler, Air Pollution Control District, San Luis Obispo County: The Air Resources Board has a new program to remodel rules. The local district will spearhead it, and representatives from both industry and the Board will sit down and hash out issues. We hope that by the time a rule gets to the Board for a vote, everybody will agree. Now, that doesn't always happen, but it's a lot better than a regulatory agency sitting down and writing the rule with no communication. In Huntington Beach's case, did the City Council make the oil companies aware at the outset that staff had a mandate to get results, if not by voluntary means, then later through an ordinance?

Multari: The Local Coastal Plan policies had been adopted, and they included policies regarding the provision of safe beach access and pursuing strategies with State Parks and Recreation and the oil companies. These were explicit policies. Also, the companies were aware, through informal channels, that this was important to the community.

I think, overall, the process produced beneficial results

because we, the staff, ended up knowing a lot more about oilfield problems than we previously had. We certainly have a much better relationship with the operators than we did before. I agree with Linda Melton's comment about how increased cooperation for other projects has resulted from our earlier efforts.

James Lopes, San Luis Obispo County: In San Luis Obispo County, we have an application for 200 new oil wells which will double the size of an existing field. The existing field is old, and was inherited by a company that is making great strides in cleaning it up. But there are still a number of older wells along a commuter road through the area. The road is not designated a scenic highway by the County, but it is what we call a "scenic road" in one of our plans. The County's policy is to try to have the appearance of that road improved, just as the beachfront here in Huntington Beach was improved. Could a requirement that the operator relocate some of the wells immediately adjacent to the road be tied to approving the request for new wells?

Alan Hager, State Attorney General's Office: It is probably a question of degree. Keep in mind that in abandoning a well, you are asking the operator to give up something that is still producing money. The economic tradeoff must be worthwhile for the operator before it will be done.

Multari: This concludes our workshop. I hope that the issues we have discussed today will be useful in your planning efforts. I think we have seen that although urban oil production creates some unique land use issues, careful planning can mitigate impacts and increase compatibility to a great degree. Thank you for your interest and participation.

WORKSHOP PARTICIPANTS

- Mr. Randall Abbott
Planning Director, Kern County
- Mr. Charles Antos
Associate Planner, City of Seal Beach
- Mr. Glen Barnhill
Principal Planner, Kern County
- Mr. Randy Bissell
Planner, City of Montebello
- Ms. Diane Border
Planner, City of Huntington Beach
- Mr. Ed Brannon
Energy and Mineral Resources Engineer,
California Division of Oil and Gas
- Mr. Mike Burnham
Planner, City of Whittier
- Mr. Vic Byers
Land Development, Chevron USA, Inc.
- Ms. June Catalano
Director of Community Development,
City of Laguna Beach
- Mr. David Cleveland
Planner, City of Torrance
- Mr. Todd Collart
Associate Planner, Ventura County
- Ms. Jan Denton
Director, California Department of Conservation
- Mr. Dave Doerner
Environmental Geologist, Santa Barbara County
- Mr. Terry Dressler
Air Pollution Control District, San Luis Obispo
County
- Ms. Claudette Dupuy
Planner, City of Huntington Beach
- Mr. Barry Eaton
Chief Planner, City of Fullerton
- Ms. Kathleen Faubion
Senior Planner, Santa Barbara County
- Ms. Jeanine Frank
Planner, City of Huntington Beach
- Mr. Herb Glasgow
Planner, City of Los Angeles
- Mr. Alan Hager
Deputy Attorney General, California Department
of Justice
- Mr. Dennis Hawkins
Associate Planner, Ventura County
- Mr. Luis Hernandez
Assistant Planner, City of Inglewood
- Mr. Richard Hoffman
Building and Safety Bureau, City of Long Beach
- Ms. Carol Inge
Planner, City of Huntington Beach
- Mr. James Lopes
Associate Planner, San Luis Obispo County
- Ms. Lorena Margoles
Planner, City of Los Angeles
- Mr. William Master
Senior Planner, Santa Barbara County
- Mr. Michael McKay
Fire Prevention Specialist, City of
Huntington Beach
- Mr. M.G. Mefferd
State Oil and Gas Supervisor, California Division
of Oil and Gas
- Ms. Linda Melton
Manager, Community Affairs, Aminoil USA, Inc.
- Mr. Dick Morton
Director of Development Services,
City of Fullerton
- Mr. Michael Multari
Planner, City of Huntington Beach
- Mr. Jim Orr
Administrative Assistant to State Assemblyman
Nolan Frizzelle
- Mr. Jose Osuna
Building and Safety Bureau, City of Long Beach
- Mr. Robert Poteet
Associate Planner, City of Montebello
- Ms. Ellen Rognas
Environmental Coordinator, San Luis
Obispo County
- Mr. Bill Sheffield
Environmental Compliance Officer, Aminoil
USA, Inc.

Ms. Christine Shingleton
Director of Planning and Community
Development, City of Signal Hill

Ms. Dana Stoic
Planner, City of Hermosa Beach

Mr. Bud Tippens
American Petrofina, Inc.

Mr. Ron Tippets
Project Planner, Orange County

Mr. James Tucker
Planner, City of Santa Fe Springs

Mr. Hilman Walker
District Land Supervisor, Chevron USA, Inc.

Ms. Celia Weaver
Energy Analyst, California Coastal Commission

Mr. Richard Weaver
Planner, City of Santa Fe Springs

Mr. E.R. Wilkinson
Special Representative, California Division of Oil
and Gas

SELECTED REFERENCES

1. California Oil, Gas, and Geothermal Resources: An Introduction, California Division of Oil and Gas, 1983.
2. Coastal Energy Development: The California Experience, California Coastal Commission, September 1981.
3. Coastal Energy Impact Program, City of Huntington Beach, February, 1980.
4. Huntington Beach Energy Series Report #1: Preserving Surface Access to Underground Oil Reserves in Developed Areas, City of Huntington Beach, February 1981.
5. Huntington Beach Energy Series Report #2: Fiscal Impacts of Oil Operations in Huntington Beach, City of Huntington Beach, March 1981.
6. Huntington Beach Energy Series Report #4: Enhanced Oil Recovery in Huntington Beach, City of Huntington Beach, September 1981.

Richard Shiffar

P. O. Box 31

Nipomo, California 93444

August 20, 2012

S.L.O. County Board of Supervisor

1055 Monterey Street, D-430

San Luis Obispo, California 93408

RE: Excelaron Hausna Project

Dear Supervisor Patterson,

There is one thing for sure this project isn't easy to determine but there are too many good ideas involved with it to not let it continue.

Local jobs for our citizens is a good start. A good tax base sure isn't going to hurt S.L.O County. The solar for schools aspect is a major donation to our educational system.

The need to produce our own energy and not depend on impacts from OPEC Nations certainly wouldn't hurt my feelings.

Concerns about wildlife is real, but the likelihood is greatly reduced simply with control burns. This should be a part of our control methods with or without this project.

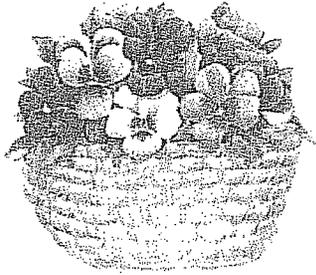
The new word these days is sustainable, everything needs to be sustainable. What about property rights, land ownership and mineral rights. These working ranches need to be sustained if you are truly concerned about the beauty of the Hausna Valley. It is nearly impossible to keep large landholdings together through generations considering numerous owners, various needs, and the value of their property.

Thank you for your approval of project.

Sincerely,

Richard Shiffar





Carolyn
Downey

August 16, 2012

Mr. Patterson,

Please vote on the issue of
Oil Exploration in Huasna Valley
on Aug 21st.

Are you going to literally throw
away this small microcosm of
the best of California or
let it remain as a jewel in
the County of San Luis Obispo?

Sincerely,

Carolyn Marie Downey
411 Park Ave. #206
San Jose
CA 95110-2650

SAN JOSE CALIF

AUG 20 2012



Board of Supervisors
San Luis Obispo County

AUG 20 2012

RECEIVED

Mr. James R. Patterson
Board of Supervisors
c/o 1055 Monterey Street
San Luis Obispo
CA 93408

93408



ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: CAROLYN MARIE DOWNEY
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012



Fw: Excelaron (Mankins) Conditional Use Permit Application ; from Davis Law

James Patterson to: cr_board_clerk Clerk Recorder, Jason Giffen

08/20/2012 12:24 PM

Sent by: Amy Gilman

Cc: Ellen Carroll, John McKenzie

----- Forwarded by Amy Gilman/BOS/COSLO on 08/20/2012 12:24 PM -----

From: Vanessa Guzman <vanessa@tpdavislaw.com>
To: "fmecham@co.slo.ca.us" <fmecham@co.slo.ca.us>, "bgibson@co.slo.ca.us" <bgibson@co.slo.ca.us>, "ahill@co.slo.ca.us" <ahill@co.slo.ca.us>, "pteixeira@co.slo.ca.us" <pteixeira@co.slo.ca.us>, "jpatterson@co.slo.ca.us" <jpatterson@co.slo.ca.us>
Cc: Thomas Davis <tom@tpdavislaw.com>
Date: 08/20/2012 10:43 AM
Subject: Excelaron (Mankins) Conditional Use Permit Application

Gentlemen:

Attached please find correspondence of this date from Mr. Davis regarding the Excelaron Conditional Use Permit application.

Should you have any questions, please feel free to contact Mr. Davis.

Thank you,

Vanessa Aguirre
Legal Secretary
DAVIS LAW APC
580 Broadway, Suite 204
Laguna Beach, California 92651
phone: 949.376.2828
fax: 949.376.3875
email: vanessa@tpdavislaw.com
web: www.tpdavislaw.com

This communication, including any attachments, may be confidential and protected by privilege. If you are not the intended recipient, any use, dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please immediately notify the sender by telephone or e-mail, and permanently delete all copies, electronic or other, that you may have. The foregoing applies even if this notice is embedded in a message that is forwarded or attached.



Supervisors 08-20-12.pdf

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: VANESSA AQUIRRE
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

August 20, 2012

D246.2

VIA EMAIL ONLY

Honorable Frank R. Mecham
Honorable Bruce S. Gibson
Honorable Paul Teixeira
Honorable James R. Patterson
Honorable Adam Hill
San Luis Obispo County Board of Supervisors
County of San Luis Obispo
1055 Monterey St., 4th Floor
San Luis Obispo, California 93408

Re: *Excelaron (Mankins) Conditional Use Permit Application
Huasna Valley Oil Exploration and Production Project*

Dear Honorable Board of Supervisors:

As I explained in my previous letter to the Board, I have worked with In-N-Out Burgers, Inc. since mid-2011 in analyzing and preparing opposition to the Excelaron project in the Huasna Valley. In-N-Out Burger owns a 4,834-acre ranch in the Huasna Valley and also operates two restaurants in the County and employs dozens of people in those operations.

This letter is intended to address two related issues brought up in the last public meeting before the Board of Supervisors. Specifically, I hope to provide some clarification of the issues regarding 1) the County's authority in permitting mineral extraction operations, and 2) the jurisdictional consequences of granting the Conditional Use Permit sought by Exceleron.

1. County Authority in Permitting Mineral Extraction Operations

The California Constitution endows cities and counties with broad powers to "make and enforce within its limits all local, police, sanitary, and other ordinances and regulations" that do not conflict with state law.¹ These expansive "police powers" extend to the regulation of "land use, maintaining public safety, preventing fires, explosions, excessive noises, unwholesome and noxious odors and other threats to life, health and property as well as environmental protection and preservation of aesthetic property values."²

¹ (Cal. Const. art. XI, § 7.)

² 8 Witkin, Summary 10th (2005) Const Law, § 985, p. 549

Among those activities subject to the County's police powers is the drilling operation and abandonment of oil and gas wells. As explained in an official opinion on the subject by the Office of the California Attorney General, such activities are "fraught with danger to persons, property livestock, wild animals, natural resources and the environment. As such they are fit subjects for regulation by counties and cities under the police power" provided these matters are not exclusively regulated, or "preempted," by general state or federal law.³

This issue of preemption by state law presents important limitations on the County's ability to regulate oil and gas drilling operations. Many important aspects of oil and gas operations are regulated by state statute such that, once these operations are permitted and under way, they are no longer subject to local control.

However, it is well settled that *cities and counties may unquestionably prohibit oil and gas drilling operations at the outset* through zoning and other land use restrictions.⁴ As a matter of law, this much is crystal clear. A decision by the Board of Supervisors to deny the Conditional Use Permit ("CUP") sought by Exceleron falls squarely within those broad police powers retained by the Board in regulating such activities.

On the other hand, if the Board were to grant the CUP, important powers previously enjoyed by the Board are relinquished to state control.

2. Diminished County Jurisdiction if the Condition Use Permit is Granted

Because the nature of drilling and production of oil and gas transcends local boundaries and interests and represents a commercial endeavor of statewide concern, these activities are properly the subject of state regulation.⁵ Not surprisingly, state law in this area is comprehensive and complex.

The Public Resources Code sets out the state's regulatory scheme governing oil and gas drilling operations and designates a State Supervisor of Oil and Gas ("Supervisor") who must approve most or all subsurface phases of oil and gas drilling with respect to the materials to be used and the methods to be followed.⁶ In order to accomplish the legislature's stated goals, the Public Resources Code sets out elaborate, detailed provisions requiring the Supervisor's approval or involvement in authorizing commencement of drilling, protection of underground and surface irrigation from contamination, adequacy of safety devices to prevent blow-outs, remedial work to

³ *Regulations on Drilling, Operation, Maintenance, Abandonment of Oil, Gas, and Geothermal Wells*; Cal. Atty. Gen. Op. 76-32, 5 (1976), available at <ftp://ftp.consrv.ca.gov/pub/oil/publications/prc03.pdf>

⁴ *Id.*; *Beverly Oil Co. v. City of Los Angeles*, (1953) 40 Cal. 2d 552, 558.

⁵ *California Water and Telephone Co. v. County of Los Angeles*, *supra*, 253 Cal App. 2d 16 at 31.)

⁶ Pub. Res. Code §3000 et seq.; Cal.Atty.Gen. Op., *supra*, at 8.)

address undesirable conditions, and the cessation of drilling and abandonment of wells, to name only a few.⁷

Because state regulation of certain central aspects of oil and gas drilling is so thorough, county jurisdiction over these aspects is necessarily preempted. Indeed, an official opinion on this very question issued by the Office of the California Attorney General concluded:

“The statutory and administrative regulatory scheme outlined above reveal to us a comprehensive purpose and scope broad enough to *exclude local regulation in each instance* where the Supervisor or his regulatory program approves or specifies plans of operation, methods, materials, procedures or equipment to be used by the operator or where activities are to be carried out under the direction of the Supervisor as a part of the Supervisor’s regulation for purposes of conservation or protection of resources.”⁸

Thus, the breadth and detail of the Public Resources Code provisions as to those aspects of oil and gas drilling leave “no room for local regulation.”⁹ Applying these principals to the oil and gas drilling operations proposed for the Huasna Valley, the County necessarily forfeits substantial control of the operations once drilling begins.

Of particular concern is the fact that, once drilling begins, subsurface drilling activities would likely fall outside local control and the Board of Supervisors could be powerless in regulating testing for and remedying events where any “detrimental substances” are contaminating “underground or surface water suitable for irrigation or domestic purposes.”¹⁰ Given the agricultural nature of the Huasna Valley and the domestic uses of groundwater there, this element of preemption would represent a substantial abdication of the Board of Supervisor’s police power and jurisdiction.

Importantly, any requirements the County might attach to the CUP sought by Exceleron would be subject to the same conflict/preemption analysis as local direct legislation.¹¹ In issuing a CUP, the County could not be certain of the effect and validity of the conditions placed on the permit because their effectiveness also turns on the degree to which the Public Resources Code addresses those matters. Each such condition must therefore be individually examined.

⁷ *Id.*

⁸ Cal.Atty.Gen. Op., *supra*, at 14.

⁹ *Id.*

¹⁰ *Id.* at 16.

¹¹ *Id.* at 16.

The Board of Supervisors,
County of San Luis Obispo
August 20, 2012
Page 4 of 4

To summarize, it is well settled that the Board of Supervisors can, as an exercise of its broad police powers, prohibit Exceleron's proposed oil and gas drilling operations at the outset. However, the Board's powers will be severely limited or entirely forfeited as to certain important aspects of the drilling operation once drilling has begun. Put differently, the Board of Supervisors' full regulatory power and jurisdiction ends with the power to prohibit the drilling operation at the outset.

Very truly yours,

DAVIS LAW
a professional corporation



THOMAS P. DAVIS

TPD/vg

cc: Arnold Wensinger, Esq.
Mr. Ron Skinner



Fw: Excelaron Request for Continuance

Board of Supervisors to: BOS_Legislative Assistants

08/20/2012 01:16 PM

Sent by: Amber Wilson

Cc: cr_board_clerk Clerk Recorder

----- Forwarded by Amber Wilson/BOS/COSLO on 08/20/2012 01:16 PM -----

From: "John Evans" <JohnE@CannonCorp.us>
To: <BoardofSup@co.slo.ca.us>
Date: 08/20/2012 12:32 PM
Subject: Excelaron Request for Continuance

August 20, 2012

San Luis Obispo County Board of Supervisors
1055 Monterey Street, 4th Floor
San Luis Obispo, CA 93408

RE: EXCELARON, LLC – HUASNA VALLEY OIL EXPOLORATION & PRODUCTION PROJECT
DRC2009-00002 – SUPPORT FOR REQUEST FOR CONTINUANCE

Dear Supervisor,

Thank you for the opportunity to once again express my support for the project and to request your support for Excelaron, LLC's request for a continuance. Excelaron, LLC is proposing an alternative that they anticipate will lessen the identified impacts in the Final Environmental Impact Report. This alternative deserves meaningful consideration. We encourage you to direct County staff and their environmental consultant to review this alternative and circulate their analysis for public review and comment.

Please seriously consider Excelaron's request for a continuance. Thank you for the consideration.

Sincerely,

John W. Evans, PE, LEED AP

Director, Civil Engineering

Cannon

1050 Southwood Drive, San Luis Obispo, CA 93401

T 805.544.7407

F 805.544.3863 E johnw@CannonCorp.us

CannonCorp.us

This transmission is confidential and intended solely for the person or organization to whom it is addressed. It may contain privileged and confidential information. If you are not the intended recipient, you should not copy, distribute or take any action in reliance on it. If you have received this transmission in error, please notify me immediately by email or call 805.544.7407.

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: JOHN EVANS
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012



Re: AAB Application for APN 052412004
David Anton
to:
scurrens
08/20/2012 04:48 PM
Hide Details
From: David Anton <antonlaw@sbcglobal.net>

To: scurrens@co.slo.ca.us

Sandy:

You have permission. Please let me know the appeal application number this appeal will be given.

Thank you

David Anton

--- On Mon, 8/20/12, scurrens@co.slo.ca.us <scurrens@co.slo.ca.us> wrote:

From: scurrens@co.slo.ca.us <scurrens@co.slo.ca.us>
Subject: AAB Application for APN 052412004
To: antonlaw@sbcglobal.net
Date: Monday, August 20, 2012, 3:31 PM

Dear Mr. David Anton; I am in receipt of your appeal application for Joan Anton and in order for me to complete the process I need the box checked for Owner-Occupied Single-Family Dwelling. If I have your permission, I can check the box with the appropriate answer.

Sincerely,
Sandy Currens
Deputy Clerk
County Clerk Recorder
1055 Monterey St, D120

San Luis Obispo CA 93408

(See attached file: Anton, Joan AAB Application.pdf)

[Scanned @co.slo.ca.us]



Excelaron

Debbie Geaslen to: Frank Mecham, Bruce Gibson, Adam Hill,
James Patterson
Cc: Vicki Shelby, Cherie Aispuro, Susan Devine, Amy Gilman
Bcc: cr_board_clerk Clerk Recorder

08/20/2012 01:21 PM

FYI

Deb Geaslen
Legislative Assistant
District Four Supervisor Paul Teixeira
(805) 781-4337
Fax (805) 781-1350
E-mail: dgeaslen@co.slo.ca.us

----- Forwarded by Debbie Geaslen/BOS/COSLO on 08/20/2012 01:19 PM -----

From: Sbslobtc@aol.com
To: pteixeira@co.slo.ca.us, dgeaslen@co.slo.ca.us
Date: 08/17/2012 01:54 PM
Subject: Excelaron Project

Attached is a Support for Request for Continuance Excelaron, LLC. Huasna Valley Oil Expoloration & Production Production Project.

Steven M. Weiner

Executive Secretary-Treasurer
Tri-Counties Building and Construction Trades Council
411 East Canon Perdido Street, Suite 13
Santa Barbara, CA. 9310
805.683.0410 (O) 805.683.0415 (F) 805..896.8763 (M)



website: www.buildingtradesCouncil.org Supervisor Texixeira Excelaron letter.pdf

----- Forwarded by Debbie Geaslen/BOS/COSLO on 08/20/2012 01:19 PM -----

From: Steve Yarbrough <sbYarbrough@verizon.net>
To: pteixeira@co.slo.ca.us
Cc: dgeaslen@co.slo.ca.us
Date: 08/17/2012 02:09 PM
Subject: Continuance for Excelaron

Mr. Paul Teixeira
Board of Supervisors
San Luis Obispo County

Dear Supervisor Teixeira:

As a supporter of the Excelaron project, I urge you to grant their request for a continuance. This extended time is needed for all to review and understand Excelaron's modified site plans in their effort to have the least impact on the beautiful Huasna Valley.

Thank you for giving this matter your full consideration.

Sincerely,

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: STEVEN WEINER
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

Barbara Yarbrough

----- Forwarded by Debbie Geaslen/BOS/COSLO on 08/20/2012 01:19 PM -----

From: Lori Lawson <lorilawson357@yahoo.com>
To: "dgeaslen@co.slo.ca.us" <dgeaslen@co.slo.ca.us>
Date: 08/17/2012 03:39 PM
Subject: Letters to Supervisor Teixeira

Hello Deb:

Can you please print and forward the attached 3 letters to Supervisor Teixeira? I am forwarding letters for my brother (Bruce Parsons) and my father (Gerard Parsons) and myself. The letters are regarding the Excelaron project that will be reviewed for possible continuance on August 21,



2012. Thank you so much. -- Lori Lawson B Parsons to Sup Teixeira.doc



G Parsons to Sup Teixeira.doc



L Lawson to Sup Teixeira.doc

----- Forwarded by Debbie Geaslen/BOS/COSLO on 08/20/2012 01:19 PM -----

From: "David Dubbink" <dubbink@noisemanagement.org>
To: <fmecham@co.slo.ca.us>, <vshelby@co.slo.ca.us>, <bgibson@co.slo.ca.us>, <saispuro@co.slo.ca.us>, <ahill@co.slo.ca.us>, <sdevine@co.slo.ca.us>, <pteixeira@co.slo.ca.us>, <dgeaslen@co.slo.ca.us>, <jpatterson@co.slo.ca.us>, <aguknab@co.slo.ca.us>
Cc: "Carol Florence" <CMF@oasisassoc.com>
Date: 08/17/2012 04:43 PM
Subject: Excelaron: Noise Impacts of Revised Plan

Members of the Board

A review of noise impacts associated with Excelaron's revised plans for the Huasna Valley project is attached.

David Dubbink, Ph.D., AICP

David Dubbink Associates

864 Osos Street, Suite D
San Luis Obispo, California 93401 USA
Tel: 01 805 541 5325
Fax: 01 805 541 5326
dubbink@noisemanagement.com



Letter to Board on revised plan.pdf

----- Forwarded by Debbie Geaslen/BOS/COSLO on 08/20/2012 01:19 PM -----

From: Suzanne Shiffrar <sshiffrar@sbcglobal.net>
To: Paul Teixeira <pteixeira@co.slo.ca.us>
Cc: dgeaslen@co.slo.ca.us

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: STEVEN WEINER
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

Date: 08/19/2012 11:24 AM
Subject: EXCELARON, LLC - SUPPORT FOR REQUEST FOR CONTINUANCE

August 19, 2012

Supervisor Paul Teixeira
San Luis Obispo County Board of Supervisors
1055 Monterey Street, 4th Floor
San Luis Obispo, CA 93408

RE: EXCELARON, LLC – HUASNA VALLEY OIL EXPLORATION & PRODUCTION PROJECT
DRC2009-00002 – SUPPORT FOR REQUEST FOR CONTINUANCE

Dear Supervisor Teixeira,

Thank you for the opportunity to once again express my support for the project and to request your support for Excelaron, LLC's request for a continuance. Excelaron, LLC is proposing an alternative that they anticipate will lessen the identified impacts in the Final Environmental Impact Report. This alternative deserves meaningful consideration. We encourage you to direct County staff and their environmental consultant to review this alternative and circulate their analysis for public review and comment.

Please seriously consider Excelaron's request for a continuance. Thank you for the consideration.

Sincerely,

Richard and Suzanne Shiffrar

----- Forwarded by Debbie Geaslen/BOS/COSLO on 08/20/2012 01:19 PM -----

From: Hank and Lil Chalkley <hchalkley@earthlink.net>
To: pteixeira@co.slo.ca.us, dgeaslen@co.slo.ca.us
Cc: richardasa@yahoo.com
Date: 08/19/2012 01:00 PM
Subject: Excelaron Huasna Valley Oil Exploration & Production Project Support For Continuance

Dear Supervisor Teixeira,

I am writing this message as a member of the Porter family with a 5% partnership of the Porter Ranch Company. I want to express my support for Excelaron's Huasna Valley Oil Exploration & Production Project and to request your support for Excelaron, LLC's request for a continuance. Excelaron is

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: STEVEN WEINER
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

proposing an alternative that they anticipate will lessen the identified impacts in the Final Environmental Impact Report. This alternative deserves meaningful consideration. We encourage you to direct County staff and their environmental consultant to review this alternative and circulate their analysis for public review and comment.

This project has the potential to provide a significant number of jobs for San Luis Obispo County without destroying the natural beauty of the Huasna Valley. Escelaron's alternative to address the concerns in the FEIR warrants appropriate review. Please seriously consider Escelaron's request. Thank you for the consideration.

Sincerely,
Lillian Porter Chalkley
10812 Stanhope Place
Fairfax, VA 22032
Ph: 703 278-9209



*Tri-Counties Building and Construction
Trades Council, AFL-CIO*

Ventura • Santa Barbara • San Luis Obispo Counties

Steven M. Weiner, Executive Secretary-Treasurer



August 16, 2012

Supervisor Adam Hill
SAN LUIS OBISPO COUNTY BOARD OF SUPERVISORS
1055 Monterey Street, 4th Floor
San Luis Obispo, CA 93408

RE: SUPPORT FOR REQUEST FOR CONTINUANCE
EXCELARON, LLC - HUASNA VALLEY OIL EXPLORATION & PRODUCTION PROJECT

Dear Supervisor Hill,

As you may know, I represent the Tri-Counties Building & Construction Trades Council/AFL-CIO. On behalf of its members, we have previously expressed our support for the Excelaron project and most importantly, the jobs that the project will generate for so many of our members living in the County of San Luis Obispo.

While a seemingly simple project, the process is quite complicated. Nonetheless, we understand that Excelaron has offered a project alternative that will decrease environmental impacts. Why not allow that information to be analyzed if it makes the project better? We support Excelaron's request for a continuance, we continue to support the project.

Thank you for the consideration.

Sincerely,

Steven M. Weiner
Executive Secretary - Treasurer

cc: Board of Supervisors

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: STEVEN WEINER
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

August 17, 2012

SAN LUIS OBISPO COUNTY BOARD OF SUPERVISORS
1055 Monterey Street, 4th Floor
San Luis Obispo, CA 93408

RE: EXCELARON, LLC – HUASNA VALLEY OIL EXPLORATION & PRODUCTION
PROJECT DRC2009-00002 – SUPPORT FOR REQUEST FOR CONTINUANCE

Dear Supervisor Teixeira:

As a mineral rights owner, and a third-generation San Luis Obispo resident, I have an intimate connection to Excelaron's proposed oil evaluation effort in the Huasna Valley.

This already developed oil field has seen exploration for the past 100 hundred years. My grandmother and her children first obtained our mineral rights back in 1936; therefore, I have had an interest in the Huasna Valley for a very long time.

Over the last several years, Excelaron has been working with San Luis Obispo County in an effort to relieve the concerns of the current residents in the Huasna Valley. I would like to express my support for the project and to request your support for Excelaron, LLC's request for a continuance. Excelaron, LLC is proposing an alternative that they anticipate will lessen the identified impacts in the Final Environmental Impact Report. This alternative deserves meaningful consideration.

As a mineral rights owner, I have a legal right to explore the land in a safe manner. Excelaron has gone above and beyond to address every concern that local residents have with the proposed project.

This project could potentially bring many community-wide benefits including the creation of jobs and tax revenue to the county. Our county and our nation needs to move forward to a more stable energy security. The United States must find ways to develop more domestic oil reserves.

I encourage you to direct County staff and their environmental consultant to review this alternative and circulate their analysis for public review and comment.

Please seriously consider Excelaron's request for a continuance. Thank you for the consideration.

Sincerely,

Bruce S. Parsons

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: STEVEN WEINER
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

August 17, 2012

SAN LUIS OBISPO COUNTY BOARD OF SUPERVISORS
1055 Monterey Street, 4th Floor
San Luis Obispo, CA 93408

RE: EXCELARON, LLC – HUASNA VALLEY OIL EXPLORATION & PRODUCTION
PROJECT DRC2009-00002 – SUPPORT FOR REQUEST FOR CONTINUANCE

Dear Supervisor Teixeira:

As a long-term resident in San Luis Obispo for the last 94 years, I am writing this letter to voice my support for the project and to request your support for Excelaron, LLC's request for a continuance.

I have paid close attention over the last several years, to Excelaron's commitment to work with San Luis Obispo County and the public to address every concern that local residents have with the proposed project. Excelaron, LLC is proposing an alternative that they anticipate will lessen the identified impacts in the Final Environmental Impact Report. This alternative deserves meaningful consideration.

This project could potentially bring many community-wide benefits including the creation of 100 jobs and upwards of \$350,000 per year in tax revenue to the county. In these tough economic times, with major budget deficits, high unemployment, and a nation that is acknowledging that we MUST become more energy independent, Excelaron will represent a step toward energy diversity. Our county and our nation needs to move forward to a more stable energy security.

Please seriously consider Excelaron's request for a continuance. Thank you for the consideration.

Sincerely,

Gerard L. Parsons

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: STEVEN WEINER
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

August 17, 2012

SAN LUIS OBISPO COUNTY BOARD OF SUPERVISORS
1055 Monterey Street, 4th Floor
San Luis Obispo, CA 93408

RE: EXCELARON, LLC – HUASNA VALLEY OIL EXPLORATION & PRODUCTION
PROJECT DRC2009-00002 – SUPPORT FOR REQUEST FOR CONTINUANCE

Dear Supervisor Teixeira:

Thank you for the opportunity to once again express my support for the project and to request your support for Excelaron, LLC's request for a continuance. Excelaron, LLC is proposing an alternative that they anticipate will lessen the identified impacts in the Final Environmental Impact Report.

As a mineral rights owner, and a third-generation San Luis Obispo resident, I have a great interest in Excelaron's proposed oil evaluation effort in the Huasna Valley. My grandmother (Bessie Sanford) and her children first obtained our mineral rights back in 1936; therefore, I have had an interest in the Huasna Valley for a very long time.

Over the last several years, Excelaron has been working with San Luis Obispo County in an effort to relieve the concerns of the current residents in the Huasna Valley. This alternative deserves meaningful consideration by the Board of Supervisors at the next meeting on August 21, 2012.

Excelaron has gone above and beyond to address every concern that local residents have with the proposed project. And this project could potentially bring the creation of jobs and tax revenue to the county. Our county and our nation NEEDS to move forward to a more stable energy security.

I encourage you to direct County staff and their environmental consultant to review this alternative and circulate their analysis for public review and comment.

Please seriously consider Excelaron's request for a continuance. Thank you for the consideration.

Sincerely,

Lori L. Lawson

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: STEVEN WEINER
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

August 17, 2012

Topic: Noise Impact of the Changes to Excelaron Drilling Proposal

Members of the Board:

As you know, Excelaron has revised its plans for exploratory drilling at Huasna Well Site 2. They have moved the well locations and will not drill during nighttime hours. Carol Florence asked me to review the revised plans and determine if the changes eliminate the Class I noise impacts. I was asked to use the same analysis methodology in making my determination as was used by the County's consultant. .

The staff response to Board Questions prepared for your coming meeting addresses the revised plan. It includes a table showing that, with the proposed changes, there is no exceedence of County noise standards (Board Attachment 1, Page 6, 8/21/12). The revisions put the project 10 dB under the nighttime standard for hourly noise and 20 dB below the standard for the maximum noise level.

The staff analysis does not state that these revisions will eliminate the Class I Noise and associated Land Use impacts described in the Planning Commission's findings (5/15/12). However, the Board transmittal letter includes a "summary of the main issue areas" that includes no reference to noise impacts. The non-inclusion of noise impacts suggests the Excelaron revisions have been successful in reducing impacts to levels that conform to County regulations.

It is impossible to verify the numbers in Table 2 using the same analysis technology as used by the County's consultants in preparing the EIR studies. The later studies do not provide sufficient information on how computations were made. Appendix F of the EIR described the noise analysis methodology in considerable detail but more recent work has moved several iterations beyond the original forecasts.

There are issues here. The original studies examined impacts on residential structures but the later studies shifted noise measurements to property lines. The problem is that, with the huge parcels and the rugged terrain, property line locations aren't clearly defined. At short distances, mapping differences strongly influence outcomes. My distance estimates differ from the ones made by the County's/consultant and it is not possible to resolve the disparity without a field survey.

There has also been a shift in noise measurement metrics. The EIR's noise analysis used an approach that is standard for construction noise studies. The noise production of individual pieces of equipment is defined along with the time duration of each operation. The noise contribution of all activities is blended into an overall hourly estimate of noise exposure. But this analysis was superseded by "Supplemental Noise Data" produced after

the Final EIR text was completed. The emphasis shifted from hourly levels (the LEQ metric) to the maximum noise production of individual construction activities (the Lmax metric). The EIR didn't include this metric in the computations but the analysts "tweaked" the original numbers by assuming that all pieces of equipment would operate continuously and simultaneously. The potential problem here is that "pipe clanging", which is the noisiest event, occurs intermittently at several locations in the drill rig. It would be unlikely that "clangs" would occur simultaneously in three locations and the consultant's quandary about how to make the acoustic summation is not documented,

The numbers in Table 2, showing the effects of Excelaron's proposed changes in the design and operation of Drill Site 2, are provided without supporting information. It is unknown if the consultant performed a new analysis or, alternately, based the numbers on their original work, applying some distance attenuation factor.

The Planning Commission's findings determined that project produced Class I Noise and Land Use impacts based on a project design and technical analysis that has been superseded. There have been significant changes to the project since the completion of the EIR work and there is a need to document these and the subsequent analysis. One central point of the environmental impact reporting process is to have decision making bodies "show their work". I request that the Board, working with staff and the applicant, find a way to evaluate the significance of the project revisions and modify the project "Findings" to reflect the changes.

Sincerely,

A handwritten signature in black ink, appearing to read 'David Dubbink', with a long horizontal stroke extending to the right.

David Dubbink, Ph.D., AICP

responsible manner. While attending the meeting last Friday with the Hausna Valley representatives and fellow mineral rights holders I had the feeling that we are not so far apart as it has seemed. I believe that Excelaron's proposed changes to the project and the careful oversight of the project can and will be a viable answer to this exploration. This plan will reduce most of the impacts hindering the project and deserves the review and input from staff, the EIR consultant and the public following the complete and due process of SLO County. As a mineral rights owner, I want to see the project approved, but also believe it is important that no shortcuts be taken in the review process. I encourage you to have County staff and the EIR consultant review this alternative and provide their analysis for public review and comment. A great deal of



Excelaron

Paul Teixeira to: Frank Mecham, Bruce Gibson, Adam Hill,
James Patterson

08/20/2012 01:31 PM

Sent by: Debbie Geaslen

Cc: Vicki Shelby, Cherie Aispuro, Susan Devine, Amy Gilman

Bcc: cr_board_clerk Clerk Recorder

FYI

Paul Teixeira
Supervisor District Four
(805) 781-5450
Fax (805) 781-1350

Email: pteixeira@co.slo.ca.us

----- Forwarded by Debbie Geaslen/BOS/COSLO on 08/20/2012 01:30 PM -----

From: Timothy Cleath <timothycleath@sbcglobal.net>
To: Paul Teixeira <pteixeira@co.slo.ca.us>
Date: 08/17/2012 12:40 PM
Subject: continuance of excelaron project

Paul

Attached is a letter of support for the continuance of the Excelaron project.



Tim Cleath Letter of Support BOS Continuance teixeira.pdf

----- Forwarded by Debbie Geaslen/BOS/COSLO on 08/20/2012 01:30 PM -----

From: Betty Tolson <liz317@gotsky.com>
To: pteixeira@co.slo.ca.us, ahill@co.slo.ca.us, jpatterson@co.slo.ca.us, bgibson@co.slo.ca.us,
fmecham@co.slo.ca.us
Date: 08/17/2012 01:28 PM
Subject: Tuesday Final Vote on Excelaron Proposal

The efforts by all for the past four years should be more than adequate to advance a decision by the Board of Supervisors next Tuesday. Prolonging the discussions, chart creations, number crunching, neighborhood meetings, web searches, letters to the editors, letters to the Supervisors and speeches/presentations on the floor of the County Government Center would not be of any benefit to the pragmatists. Granting a continuance would only benefit Excelaron; would they have anything significantly new to offer? Would it be prudent to impose 'more of the same' on the rest of us as Excelaron waits for perhaps more favorable times to pursue their Conditional Use Permit? Does Excelaron have a proven track record to back up all their proposed mitigations? Please honor the denial request by the Planning Commission next Tuesday and put this project to rest!

Thank you for your consideration.

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: TIM CLEATH
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

Elizabeth M. Tolson
Richard M. Tolson

----- Forwarded by Debbie Geaslen/BOS/COSLO on 08/20/2012 01:30 PM -----

From: Istar and Doc Holliday <istardoc@verizon.net>
To: B Gibson <bgibson@co.slo.ca.us>, Paul Teixeira <pteixeira@co.slo.ca.us>, James Patterson <jpatterson@co.slo.ca.us>, Adam Hill <ahill@co.slo.ca.us>, fmecham@co.slo.ca.us
Date: 08/17/2012 02:45 PM
Subject: Excelaron Project Appeal Hearing

Dear Supervisors,

I had hoped to be at the hearing on August 21, but the change of schedule, placing the hearing after lunch, creates a conflict with another meeting.

The Huasna Valley Association has brought your attention to the questions of specific , cumulative, negative impact on the environment, roads, property values, and the very quality of their lives.

However, there are two other concerns I would like to bring to your attention:

1. According to the rules governing the industry, ownership of fuel is passed to the transporter immediately upon loading. Therefore, any "assurances" made to you by Excelaron as to responsibility for accidents during transport over local roads are empty and unenforceable. Just as BP, Halliburton, and TransOceanic pointed the fingers at each other as responsible for the cleanup after the Great Gulf Oil platform disaster, so will Excelaron seek to legally avoid responsibility for spills, fires, accidents, etc. Remember it was the taxpayers who paid for the cleanup of the mess Howard Mankins left after his last drilling attempt on this property. Think of the cost to the County, legal and otherwise, when Excelaron leaves !

2. Excelaron's plan projects at least a dozen loaded trucks daily attempting to maneuver the inclined entrance ramps to Highway 101 at Highway 166. The continuing tie-up at this juncture is inevitable. Have you forgotten this is a major escape route should there be an "event" at Diablo Power Plant? Since it is my escape route, I cannot forget.

Please respect your Planning Department and Planning Commission's careful consideration of this project before they recommended denial. Respect also your neighbors, who look to you to protect them from conscienceless corporations whose only consideration is their bottom lines, and deny this project outright. No additional time will change any of the facts or the consequences.

Sincerely,
Istar Holliday

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: TIM CLEATH
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

577 Sheridan Road
Arroyo Grande, CA 93420
(805) 33-2581

----- Forwarded by Debbie Geaslen/BOS/COSLO on 08/20/2012 01:30 PM -----

From: Tim Palmer <tpalmer@bomusd.org>
To: "pteixeira@co.slo.ca.us" <pteixeira@co.slo.ca.us>
Date: 08/17/2012 08:07 PM
Subject: Excelaron Continuance

August 17, 2012

Supervisor Paul Teixeira

RE: EXCELARON, LLC – HUASNA VALLEY OIL EXPLORATION & PRODUCTION
SUPPORTING REQUEST FOR CONTINUANCE

Dear Supervisor Teixeira,

Thank you for the time you have taken reviewing the Excelaron project. I would like to ask you to support a continuance.

When we met in May we discussed our family's desire to see the project approved in an environmentally responsible manner. While attending the meeting last Friday with the Hausna Valley representatives and fellow mineral rights holders I had the feeling that we are not so far apart as it has seemed. I believe that Excelaron's proposed changes to the project and the careful oversight of the project can and will be a viable answer to this exploration.

This plan will reduce most of the impacts hindering the project and deserves the review and input from staff, the EIR consultant and the public following the complete and due process of SLO County. As a mineral rights owner, I want to see the project approved, but also believe it is important that no shortcuts be taken in the review process.

I encourage you to have County staff and the EIR consultant review this alternative and provide their analysis for public review and comment. A great deal of many peoples' time and money have gone into this project and it should be allowed a complete review. Thank you again,

Sincerely,

Tim Palmer

----- Forwarded by Debbie Geaslen/BOS/COSLO on 08/20/2012 01:30 PM -----

From: Tim Palmer <tpalmer@bomusd.org>
To: "pteixeira@co.slo.ca.us" <pteixeira@co.slo.ca.us>
Date: 08/17/2012 08:15 PM
Subject: SUPPORTING REQUEST FOR CONTINUANCE

August 17, 2012

Supervisor Paul Teixeira

RE: EXCELARON, LLC – HUASNA VALLEY OIL EXPLORATION & PRODUCTION
SUPPORTING REQUEST FOR CONTINUANCE

Dear Supervisor Teixeira,

Thank you for the time you have taken reviewing the Excelaron project. I would like to ask you to support a continuance.

When we met in May we discussed our family's desire to see the project approved in an environmentally

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: TIM CLEATH
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

responsible manner. While attendending the meeting last Friday with the Hausna VALley representatives and fellow mineral rights holders I had the feeling that we are not so far apart as it has seemed. I believe that Excelaron's proposed changes to the project and the careful oversight of the project can and will be a viable answer to this exploration.

This plan will reduce most of the impacts hindering the project and deserves the review and input from staff, the EIR consultant and the public following the complete and due process of SLO County. As a mineral rights owner, I want to see the project approved, but also believe it is important that no shortcuts be taken in the review process.

I encourage you to have County staff and the EIR consultant review this alternative and provide their analysis for public review and comment. A great deal of many peoples' time and money have gone into this project and it should be allowed a complete review. Thank you again,

Sincerely,
Tim Palmer

----- Forwarded by Debbie Geaslen/BOS/COSLO on 08/20/2012 01:30 PM -----

From: Ken Torres <ktorres@charter.net>
To: pteixeira@co.slo.ca.us
Date: 08/17/2012 09:52 PM
Subject: Excelaron continuance

Dear Paul,

I am emailing to ask you to please give Excelaron a continuance, as more time is needed.

Thank you,
Bobbi Porter, Ken Torres, Jacob Porter Torres, Cheyne Porter Torres,
Trevor Porter Torres

----- Forwarded by Debbie Geaslen/BOS/COSLO on 08/20/2012 01:30 PM -----

From: "John Porter" <johndporter@charter.net>
To: <pteixeira@co.slo.ca.us>
Cc: "Cindy Kneeland" <Oasis@oasisassoc.com>
Date: 08/19/2012 01:37 PM

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: TIM CLEATH
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

Subject: Excelaron's Request for a Continuance

Dear Supervisor Teixeira,

Thank you again for the chance to express my support for Excelaron's project in the Huasna Valley, and to ask you to accept Excelaron's request for a continuance.

As you know, Excelaron has proposed an alternative that it believes will lessen the identified impacts in the Environmental Impact Report. I believe that this alternative deserves to be carefully considered. And I encourage you to direct the county staff and their environmental consultant to review the alternative and circulate their analysis for public review and comment.

Once more, I respectfully ask you to grant Excelaron's request for a continuance.

Thank you, sir, for your consideration.

Sincerely,
John Porter

----- Forwarded by Debbie Geaslen/BOS/COSLO on 08/20/2012 01:30 PM -----

From: R W <homeranch@gmail.com>
To: jpatterson@co.slo.ca.us, pteixeira@co.slo.ca.us, ahill@co.slo.ca.us, bgibson@co.slo.ca.us, fmecham@co.slo.ca.us
Date: 08/19/2012 06:17 PM
Subject: Exelaron Oil

Dear Supervisors; It is apparent that Excelaron wants a continuance until the new members of the board are seated in the hopes of getting approval from them.

It is also apparent that they are willing to promise anything, to say anything, to agree to any restrictions, as they don't need to make a penny off this project. If it is approved, then the big shiny golden ring, is the ability to get approval for drilling on the thousands of acres of mineral leases they currently hold.

Excelaron is essentially a shell company, the true companies behind this project are United Hunter of Canada, current share price \$0.025, 2.5 cents a share!
and Australian National Oil Company, current share price \$0.18, 18 cents a share, which is actually looking good, it is double that of last year at this time.

How sound would you judge a corporation to be with shares at these prices?

I get the feeling they thought they could ride into town and fool us rubes.

They want the nose in the camel's tent, they want the foot in the door. Please do not give that to them, please put this project out to permanent pasture. Otherwise we will see far more than 2 or 12 oil wells on our pastoral landscape. We do not need that.

On a personal note, I personally resent these carpet baggers coming into our area, as a member of what could be termed one of the "old families" we have relationships with local families going back generations, and today we find ourselves on opposite sides of this issue, I am sure this has divided other friendships and even families, "it ain't right".

We own farmland in San Luis Obispo County and Santa Barbara County. My 85 year old mother has gotten calls from oil development companies wishing to lease our mineral rights, she gives

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: TIM CLEATH
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

them a resounding "No!, oil wrecks farmland"

She is right, I hope you agree.

Sincerely,

Richard G. Waller

----- Forwarded by Debbie Geaslen/BOS/COSLO on 08/20/2012 01:30 PM -----

From: Paul Scheibe <pos@ixzar.com>
To: pteixeira@co.slo.ca.us
Date: 08/19/2012 06:17 PM
Subject: Excelaron Appeal in Continuation

Dear Supervisor Teixeira:

Please find a letter attached containing comment about consideration of the appeal in continuation by Excelaron LLC of the decision of the Planning Commission to deny its application for Conditional Use Permit DRC2009-00002. The original of the letter has been mailed to you.

Thank you for your time and attention.

Sincerely,

Marlene C. and Paul O. Scheibe
6605 Cat Canyon Road
Arroyo Grande CA 93420-9711



Teixeira03S.pdf

----- Forwarded by Debbie Geaslen/BOS/COSLO on 08/20/2012 01:30 PM -----

From: Therese Skillin <tjskillin@gmail.com>
To: jpatterson@ca.slo.ca.us, pteixeira@co.slo.ca.us, ahill@co.slo.ca.us, bgibson@co.slo.ca.us, fmecham@co.slo.ca.us
Date: 08/19/2012 06:40 PM
Subject: Huasna

Dear Supervisors,

Once again the conversation regarding Huasna Valley and it's future will be addressed at this Tuesday's County Board meeting. Please continue to heed the concerns of the residents of the area, as well as the citizens of San Luis Obispo County and reject a continuance by putting an end to this conversation. As our local paper, the Tribune agrees, Oil in Huasna is a very poor fit.

As an oil wife, with a petroleum geologist as my spouse, we fail to see the advantage of trying to produce the type of tar-oil available in this area that would benefit either the investors nor the inhabitants of the area and of this county. That fact and the additional amount of traffic on our already stressed road both lead to only one logical conclusion: Please stop this project NOW.

Thank you,

Therese J. Skillin
473-0788

----- Forwarded by Debbie Geaslen/BOS/COSLO on 08/20/2012 01:30 PM -----

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: TIM CLEATH
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

From: jack sturges <waterman19@earthlink.net>
To: pteixeira@co.slo.ca.us
Date: 08/19/2012 07:57 PM
Subject: Excelaron in Huasna Valley

Supv. Teixeira,

I'm going to urge you to vote NO for the Excelaron project; but not for the usual reasons, as you will hear.

First of all, my wife & I have lived at 3621 huasna rd for 36 years and of course we have observed increasing traffic & change in driving habits over that period of time. I am asking you to take a short virtual ride with me!

Let's start at old town and head toward Lopez lake. You will observe a speed limit of 45 MPH prior to leaving the city limits of AG. Also, please note that both sides of Huasna Rd have bike lanes. Now, as you leave Huasna/Lopez and turn right over the white bridge on Huasna rd, you will certainly note the change in the width of the roadway-no more bike lanes & no more speed limit signs, NONE! If you drive just a little over two miles you will be approaching Alisos ln on your left & another bridge on Huasna. Look closely at the right shoulder in this area. You will see that several feet of roadway has already slid down into tarsprings waterway. Can you imagine what the daily addition of petrol tankers will do the the deteriorating condition of this road? It won't matter whether they are empty or full going into Huasna Valley(over 10 miles ahead). You are now on the straitaway where we reside, look to your left at the turn & you will see our 1850's adobe which sits almost on the road. Cars coming around this corner accelerate to 50-60 mph for the straitaway. It's not fun trying to exit our driveway! I f you go another quarter mile, you will see another section where the roadway was so badly eroded that concrete barriers have been positioned on the rode edge & the rode moved 4 feet to the left of its original location.

In summary, this is already a dangerous & inadequate roadway for EXISTING traffic let alone the expected increase that will result if this project goes forward. Without a speed limit posting, certain people think it's ok to go at any speed they choose-please help.

Thank you for your indulgence.

Respectfully,

Jack R Sturges

----- Forwarded by Debbie Geaslen/BOS/COSLO on 08/20/2012 01:30 PM -----

From: Diane Moody <mscapriccio@yahoo.com>
To: "pteixeira@co.slo.ca.us" <pteixeira@co.slo.ca.us>
Date: 08/19/2012 09:48 PM
Subject: Excelaron Project

Dear Supervisor Teixeira,

I am writing this letter about the Board of Supervisors meeting that will be held on Tuesday, August 21st. At that meeting you will be discussing the issue of the Excelaron Oil Project. Although I have attended most every meeting and workshop in the past five years, I will be

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: TIM CLEATH
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

unable to attend this most important meeting.

After five years of waiting, I feel that it is time for the Board of Supervisors to finally come to a decision. I am in total agreement with Supervisor Patterson as he stated, "the Board of Supervisors has heard substantial testimony on a heavily reviewed project". I also agree with Supervisor Hill as he stated, "a decision should be made sooner than later..." I feel that Excelaron is trying to manipulate the Board of Supervisors by asking for a continuance.

Based on all of the facts and figures over the past five years I respectfully ask that you deny a continuance to Excelaron and do not allow them into one of our most beautiful areas in the county. PLEASE uphold the Planning Commission's decision and deny Excelaron access into our area. It will dramatically change the Huasna Valley with the risk of wild fire, air and ground pollution, traffic, landscape, noise, and the entire lifestyle of the Huasna residents. Excelaron is not appropriate for the Huasna Valley!

Thank you so very much for your time and concern in this matter.
We trust that you will make the right decision for the safety and health of our community.

Respectfully,

Diane Moody
10990 Bobcat Lane
Arroyo Grande, CA
805-481-7425

(Huasna resident for 26 years)

----- Forwarded by Debbie Geaslen/BOS/COSLO on 08/20/2012 01:30 PM -----

From: "Diann Stow" <distow@roadrunner.com>
To: "Paul Teixeira" <pteixeira@co.slo.ca.us>
Date: 08/20/2012 06:57 AM
Subject: Please approve Excelaron's request for continuance

Dear Supervisor Teixeira,

Excelaron has requested a continuance to allow for adequate time to analyze the alternative site plans for Pad I and Pad II created to minimize significant impacts identified in the Final Environmental Impact Report (FEIR).

As a mineral rights owner in the area of the Huasna Valley Excelaron's proposed oil evaluation effort, I urge you to approve this request for continuance considering:

1. Mineral rights owners should be allowed to develop their rights just as surface rights owners can develop their property.
2. Mineral rights have been owned in the area of the Huasna Valley of the proposed oil evaluation effort for many years preceding purchase of surface rights for building residences.
3. Mineral rights ownership was well known and documented when surface rights were purchased.
4. Considerable effort has been expended by Excelaron to plan an oil evaluation effort that satisfies all the safety and environmental requirements established by county, state, and federal agencies.
5. If all the requirements are satisfied, there should be no reason to deny the conditional use permit requested by Excelaron.

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: TIM CLEATH
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

Thank you.

Diann Stow

----- Forwarded by Debbie Geaslen/BOS/COSLO on 08/20/2012 01:30 PM -----

From: "S.W. Ela" <stephenwela@gmail.com>
To: Jim Patterson <jpatterson@co.slo.ca.us>, Bruce Gibson <bgibson@co.slo.ca.us>, Adam Hill <ahill@co.slo.ca.us>, Frank Mecham <fmecham@co.slo.ca.us>, Paul Teixeira <pteixeira@co.slo.ca.us>
Cc: Susan Baker <sbaker@co.slo.ca.us>
Date: 08/20/2012 08:05 AM
Subject: Comments on Excelaron Appeal - August 21 hearing

Dear Chairman Patterson and fellow Supervisors:

Please find attached my comments Excelaron's appeal of your Planning Commission's denial of its Conditional Use Permit. These pertain to item 32 on your agenda on Tuesday.

The name of the attached file is: "Ela - Comments to the Board of Supervisors 21 August re Excelaron Appeal.pdf"

Sincerely,

Steve Ela
Paso Robles

805 226 8806 landline
805 423 6669 cell

"Our atmosphere is shared by all; everyone is downstream of everyone else. And because the earth is round, we're actually downstream from ourselves." Benjamin Brown-Steiner, Graduate Student, as cited in the NY Times on 6 March 2012.



Ela - Comments to the Board of Supervisors 21 August re Excelaron Appeal.pdf

----- Forwarded by Debbie Geaslen/BOS/COSLO on 08/20/2012 01:30 PM -----

From: Pamela Dunlap <pamdunlap@charter.net>
To: Paul Teixeira <pteixeira@co.slo.ca.us>
Date: 08/20/2012 08:17 AM
Subject: Dunes noise

Debbie:

Can you direct me to the person in the county who is in charge of noise issues?

The noise emanating from the Oceano Dunes SVRA on Saturday was unbelievable. It went from early morning until sundown.

Sunday was fine - about what we expect from a busy weekend.

I hope all is well. Thank you for your help.

Pam Dunlap

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: TIM CLEATH
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

----- Forwarded by Debbie Geaslen/BOS/COSLO on 08/20/2012 01:30 PM -----

From: Vanessa Guzman <vanessa@tpdavislaw.com>
To: "fmecham@co.slo.ca.us" <fmecham@co.slo.ca.us>, "bgibson@co.slo.ca.us" <bgibson@co.slo.ca.us>, "ahill@co.slo.ca.us" <ahill@co.slo.ca.us>, "pteixeira@co.slo.ca.us" <pteixeira@co.slo.ca.us>, "jpatterson@co.slo.ca.us" <jpatterson@co.slo.ca.us>
Cc: Thomas Davis <tom@tpdavislaw.com>
Date: 08/20/2012 10:43 AM
Subject: Excelaron (Mankins) Conditional Use Permit Application

Gentlemen:

Attached please find correspondence of this date from Mr. Davis regarding the Excelaron Conditional Use Permit application.

Should you have any questions, please feel free to contact Mr. Davis.

Thank you,

Vanessa Aguirre
Legal Secretary
DAVIS LAW APC
580 Broadway, Suite 204
Laguna Beach, California 92651
phone: 949.376.2828
fax: 949.376.3875
email: vanessa@tpdavislaw.com
web: www.tpdavislaw.com

This communication, including any attachments, may be confidential and protected by privilege. If you are not the intended recipient, any use, dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please immediately notify the sender by telephone or e-mail, and permanently delete all copies, electronic or other, that you may have. The foregoing applies even if this notice is embedded in a message that is forwarded or attached.



Supervisors 08-20-12.pdf

----- Forwarded by Debbie Geaslen/BOS/COSLO on 08/20/2012 01:30 PM -----

From: Norris Palmer <norris.palmer@sbcglobal.net>
To: pteixeira@co.slo.ca.us, dgeaslen@co.slo.ca.us
Cc: jgiffen@co.slo.ca.us
Date: 08/20/2012 12:38 PM
Subject: Letter of Support for Excelaron Continuation

August 18, 2012

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: TIM CLEATH
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

Supervisor Paul Teixeira

San Luis Obispo County Board of Supervisors

1055 Monterey Street, 4th Floor

San Luis Obispo, CA 93408

RE: EXCELARON, LLC – HUASNA VALLEY OIL EXPLORATION & PRODUCTION
PROJECT DRC2009-00002 – SUPPORT FOR REQUEST FOR CONTINUANCE

Dear Supervisor Teixeira,

I would like to once again express my support for the project and to request your support for Excelaron, LLC's request for a continuance.

As I've mentioned at recent public meetings, our family desires to see the project approved in an environmentally responsible manner. We believe that Excelaron's proposed changes will reduce impacts and deserve the review and input from staff, the EIR consultant, and the public. As a mineral rights owner, I want to see the project approved, but also believe it is important that no shortcuts be taken in the review process.

I encourage you to have County staff and the EIR consultant review this alternative and provide their analysis for public review and comment.

Please approve Excelaron's request for a continuance. I believe this is best for everyone involved – proponents, opponents, as well as the County.

Sincerely,

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: TIM CLEATH
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

Norris W. Palmer

Cc: Deb Geaslen, Legislative Aide

Jason Giffen –San Luis Obispo County Planning and Building Department Director



SLO BOS Teixeira August 18, 2012.pdf

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: TIM CLEATH
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

August 17, 2012

Supervisor Paul Teixeira
San Luis Obispo County Board of Supervisors
1055 Monterey Street, 4th Floor
San Luis Obispo, CA 93408

Subject: Support of Request for continuance
Huasna Valley Oil Exploration and Production Project DRC 2009-00002
Excelaron, LLC

Dear Supervisor Teixeira,

Thank you for your work on reviewing the Excelaron project and its environmental impacts. As a 28 year long resident of San Luis Obispo County, I support projects that utilize the County's natural resources in a responsible manner.

I understand that Excelaron, LLC is proposing an alternative that they anticipate will lessen the identified impacts in the Final Environmental Impact Report. This alternative deserves meaningful consideration.

I encourage you to direct County staff and their environmental consultant to review this alternative and circulate their analysis for public review and comment.

Please seriously consider Excelaron's request for a continuance. Thank you for the consideration.

Sincerely,

Timothy S. Cleath
1390 Oceanaire Drive
San Luis Obispo, California 93405

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: TIM CLEATH
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

6605 Cat Canyon Road
Arroyo Grande, California 93420-9711

17 August 2012

Mr. Paul Teixeira
District 4 Supervisor
County Government Center
Room D-430
San Luis Obispo, California 93408

Re: Excelaron, LLC Conditional Use Permit DRC2009-00002

Dear Supervisor Teixeira:

Our family, residents and owners of three separate parcels and a business in Huasna Valley, is aware of the appeal with continuation by Excelaron, LLC of the decision of the Planning Commission to deny its application for Conditional Use Permit DRC2009-00002. Since you and your office represent our District, we know that you have the potential for considerable influence on decisions in this matter.

We believe that our present and subsequent county management will lose control of the mechanics, chemistry and other physical characteristics of the operations if the CUP application is approved. We fear both predicted and unforeseen consequences of this happening; our natural and fiscal environment will drastically change for the worse if drilling for and production of petroleum products is permitted in our community.

Please use all means at your disposal to prevent approvals to drill for and produce oil in our neighborhood — including denial of the Excelaron application for Conditional Use Permit DRC2009-00002.

We look forward to being able to thank you for your effort.

Sincerely,

Paul O. Scheibe
Marlene C. Scheibe

Paul O. Scheibe
Marlene C. Scheibe

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: TIM CLEATH
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

COMMENTS TO THE BOARD OF SUPERVISORS RE
EXCELARON'S APPEAL OF DENIAL OF ITS CUP

21 August 2012

STEPHEN ELA

[I regret that I will be unable to attend the continuation of the May 15 hearing of Excelaron's appeal of the denial of its CUP. Please accept these comments in lieu of my oral comments.]

Dear Chairman Patterson and fellow Supervisors:

My name is Stephen Ela. I've lived in unincorporated Paso Robles for fourteen years. I commented to your Planning Commission on February 20 on the Excelaron CUP. My comments concluded, as did those of your Department of Planning and Building (DPB), and your Planning Commission, that the Excelaron Conditional Use Permit – CUP – be denied.

I have one theme today. Those supporting the Excelaron CUP are on the wrong side of history. They are mired in the twentieth century, stuck in the second industrial revolution and the dirty fossil fuels that drove that revolution.

Those who have consistently opposed the Excelaron CUP are living in the twenty-first century. They are members of the third and final industrial revolution, that being driven by clean renewable energies largely derived from the sun.

Those favoring the Excelaron CUP are not only stuck in the twentieth century but – knowingly or not – they have already lost. They have lost their battles with local governments in our county

and in the courts of public opinion. They are struggling to win some battles but they have lost the war.

In general we can expect this result for those who look back instead of forward in time. That is, those living and working in the past have lost all their wars. This is true about the great issues of economic and social injustice as well as about the issue of energies fueling industrial revolutions.

So why are we even here today, attending the continuation of Excelaron's appeal of its CUP? The answer is obvious to most of us. Those supporting Excelaron's appeal are members of – or doing the bidding of – the one percent of the people who currently hold global economic and political sway.

These folks fancy that they have not lost the war. Indeed, they continue to expend great effort to ensure that their proxies win major and minor battles in the active and ongoing war for which of the two energy revolutions we and other citizens of world will occupy.

But the result the one percent's struggles will certainly lead to a collapse of human civilization as we now know it. Fossil fuels are dirty because the chemical result of using them to drive an industrial revolution is carbon dioxide. And carbon dioxide – CO₂ – is the major greenhouse gas, the increasing production of which is already leading to the extraordinary weather events expected to occur with man-made climate change.

Many of us in San Luis Obispo county – particularly in the North County – are on the extreme edge of the extraordinary weather event that much of our county is experiencing. This extreme heat and drought spreads east throughout much of California and the States west of the Mississippi River.

Ela – Comments to the Board re Excelaron CUP – 21 August 2012

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: TIM CLEATH
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

For the people in this huge area the drought is more important than the heat. And that's true for us as well. Continued long-term drought threatens our County's major industries — agriculture and tourism.

Indeed, very recent predictions expect the whole northern hemisphere to remain under conditions of extreme drought until at least 2100. These predictions have been summarized in the New York Times, the Washington Post, and the influential Australian climate blog Climate Code Red.

Your Board has been much involved with the perils of drought in the issues you, members of your DPB, and your Planning Commissions have addressed in the past few years. Further, there is no reason to expect that all of you, and many attendees at this continuation, will become less involved in the future.

Drought is crucially relevant to this continuation. As water becomes ever more precious in this county, the huge amounts of water that Excelaron proposes to use — regardless of its technology or whenever it might exploit that technology — will be relevant to all of us in the county.

We cannot afford that water, now or in the future. If Excelaron is serious about requesting a delay, it needs to tell all concerned today how much water it plans to use and from where it plans to get it.

CONCLUSION

In conclusion, I trust that this afternoon this Board will unanimously deny Excelaron its appeal. To not do so, even to

Ela – Comments to the Board re Excelaron CUP – 21 August 2012

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: TIM CLEATH
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

approve a delay, as David Sneed in Sunday's Tribune reported Excelaron plans to ask for – will only make our long term problems worse.



A PROFESSIONAL CORPORATION

August 20, 2012

D246.2

VIA EMAIL ONLY

Honorable Frank R. Mecham
Honorable Bruce S. Gibson
Honorable Paul Teixeira
Honorable James R. Patterson
Honorable Adam Hill
San Luis Obispo County Board of Supervisors
County of San Luis Obispo
1055 Monterey St., 4th Floor
San Luis Obispo, California 93408

Re: *Excelaron (Mankins) Conditional Use Permit Application
Huasna Valley Oil Exploration and Production Project*

Dear Honorable Board of Supervisors:

As I explained in my previous letter to the Board, I have worked with In-N-Out Burgers, Inc. since mid-2011 in analyzing and preparing opposition to the Excelaron project in the Huasna Valley. In-N-Out Burger owns a 4,834-acre ranch in the Huasna Valley and also operates two restaurants in the County and employs dozens of people in those operations.

This letter is intended to address two related issues brought up in the last public meeting before the Board of Supervisors. Specifically, I hope to provide some clarification of the issues regarding 1) the County’s authority in permitting mineral extraction operations, and 2) the jurisdictional consequences of granting the Conditional Use Permit sought by Excelaron.

1. County Authority in Permitting Mineral Extraction Operations

The California Constitution endows cities and counties with broad powers to “make and enforce within its limits all local, police, sanitary, and other ordinances and regulations” that do not conflict with state law.¹ These expansive “police powers” extend to the regulation of “land use, maintaining public safety, preventing fires, explosions, excessive noises, unwholesome and noxious odors and other threats to life, health and property as well as environmental protection and preservation of aesthetic property values.”²

¹ (Cal. Const. art. XI, § 7.)

² 8 Witkin, Summary 10th (2005) Const Law, § 985, p. 549

Among those activities subject to the County's police powers is the drilling operation and abandonment of oil and gas wells. As explained in an official opinion on the subject by the Office of the California Attorney General, such activities are "fraught with danger to persons, property livestock, wild animals, natural resources and the environment. As such they are fit subjects for regulation by counties and cities under the police power" provided these matters are not exclusively regulated, or "preempted," by general state or federal law.³

This issue of preemption by state law presents important limitations on the County's ability to regulate oil and gas drilling operations. Many important aspects of oil and gas operations are regulated by state statute such that, once these operations are permitted and under way, they are no longer subject to local control.

However, it is well settled that *cities and counties may unquestionably prohibit oil and gas drilling operations at the outset* through zoning and other land use restrictions.⁴ As a matter of law, this much is crystal clear. A decision by the Board of Supervisors to deny the Conditional Use Permit ("CUP") sought by Exceleron falls squarely within those broad police powers retained by the Board in regulating such activities.

On the other hand, if the Board were to grant the CUP, important powers previously enjoyed by the Board are relinquished to state control.

2. Diminished County Jurisdiction if the Condition Use Permit is Granted

Because the nature of drilling and production of oil and gas transcends local boundaries and interests and represents a commercial endeavor of statewide concern, these activities are properly the subject of state regulation.⁵ Not surprisingly, state law in this area is comprehensive and complex.

The Public Resources Code sets out the state's regulatory scheme governing oil and gas drilling operations and designates a State Supervisor of Oil and Gas ("Supervisor") who must approve most or all subsurface phases of oil and gas drilling with respect to the materials to be used and the methods to be followed.⁶ In order to accomplish the legislature's stated goals, the Public Resources Code sets out elaborate, detailed provisions requiring the Supervisor's approval or involvement in authorizing commencement of drilling, protection of underground and surface irrigation from contamination, adequacy of safety devices to prevent blow-outs, remedial work to

³ *Regulations on Drilling, Operation, Maintenance, Abandonment of Oil, Gas, and Geothermal Wells*; Cal. Atty. Gen. Op. 76-32, 5 (1976), available at <ftp://ftp.consrv.ca.gov/pub/oil/publications/prc03.pdf>

⁴ *Id.*; *Beverly Oil Co. v. City of Los Angeles*, (1953) 40 Cal. 2d 552, 558.

⁵ *California Water and Telephone Co. v. County of Los Angeles*, *supra*, 253 Cal App. 2d 16 at 31.)

⁶ Pub. Res. Code §3000 et seq.; Cal. Atty. Gen. Op., *supra*, at 8.)

address undesirable conditions, and the cessation of drilling and abandonment of wells, to name only a few.⁷

Because state regulation of certain central aspects of oil and gas drilling is so thorough, county jurisdiction over these aspects is necessarily preempted. Indeed, an official opinion on this very question issued by the Office of the California Attorney General concluded:

“The statutory and administrative regulatory scheme outlined above reveal to us a comprehensive purpose and scope broad enough to exclude local regulation in each instance where the Supervisor or his regulatory program approves or specifies plans of operation, methods, materials, procedures or equipment to be used by the operator or where activities are to be carried out under the direction of the Supervisor as a part of the Supervisor’s regulation for purposes of conservation or protection of resources.”⁸

Thus, the breadth and detail of the Public Resources Code provisions as to those aspects of oil and gas drilling leave “no room for local regulation.”⁹ Applying these principals to the oil and gas drilling operations proposed for the Huasna Valley, the County necessarily forfeits substantial control of the operations once drilling begins.

Of particular concern is the fact that, once drilling begins, subsurface drilling activities would likely fall outside local control and the Board of Supervisors could be powerless in regulating testing for and remedying events where any “detrimental substances” are contaminating “underground or surface water suitable for irrigation or domestic purposes.”¹⁰ Given the agricultural nature of the Huasna Valley and the domestic uses of groundwater there, this element of preemption would represent a substantial abdication of the Board of Supervisor’s police power and jurisdiction.

Importantly, any requirements the County might attach to the CUP sought by Exceleron would be subject to the same conflict/preemption analysis as local direct legislation.¹¹ In issuing a CUP, the County could not be certain of the effect and validity of the conditions placed on the permit because their effectiveness also turns on the degree to which the Public Resources Code addresses those matters. Each such condition must therefore be individually examined.

⁷ *Id.*

⁸ Cal. Atty. Gen. Op., *supra*, at 14.

⁹ *Id.*

¹⁰ *Id.* at 16.

¹¹ *Id.* at 16.

The Board of Supervisors,
County of San Luis Obispo
August 20, 2012
Page 4 of 4

To summarize, it is well settled that the Board of Supervisors can, as an exercise of its broad police powers, prohibit Exceleron's proposed oil and gas drilling operations at the outset. However, the Board's powers will be severely limited or entirely forfeited as to certain important aspects of the drilling operation once drilling has begun. Put differently, the Board of Supervisors' full regulatory power and jurisdiction ends with the power to prohibit the drilling operation at the outset.

Very truly yours,

DAVIS LAW
a professional corporation



THOMAS P. DAVIS

TPD/vg

cc: Arnold Wensinger, Esq.
Mr. Ron Skinner

August 18, 2012

Supervisor Paul Teixeira
San Luis Obispo County Board of Supervisors
1055 Monterey Street, 4th Floor
San Luis Obispo, CA 93408

RE: EXCELARON, LLC – HUASNA VALLEY OIL EXPLORATION & PRODUCTION
PROJECT DRC2009-00002 – SUPPORT FOR REQUEST FOR CONTINUANCE

Dear Supervisor Teixeira,

I would like to once again express my support for the project and to request your support for Excelaron, LLC's request for a continuance.

As I've mentioned at recent public meetings, our family desires to see the project approved in an environmentally responsible manner. We believe that Excelaron's proposed changes will reduce impacts and deserve the review and input from staff, the EIR consultant, and the public. As a mineral rights owner, I want to see the project approved, but also believe it is important that no shortcuts be taken in the review process.

I encourage you to have County staff and the EIR consultant review this alternative and provide their analysis for public review and comment.

Please approve Excelaron's request for a continuance. I believe this is best for everyone involved – proponents, opponents, as well as the County.

Sincerely,

Norris W. Palmer

Cc: Deb Geaslen, Legislative Aide

Jason Giffen –San Luis Obispo County Planning and Building Department Director

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: TIM CLEATH
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012



Fw: Letter of Support for Excelaron Continuation
Debbie Geaslen to: cr_board_clerk Clerk Recorder

08/20/2012 04:29 PM

Deb Geaslen
Legislative Assistant
District Four Supervisor Paul Teixeira
(805) 781-4337
Fax (805) 781-1350
E-mail: dgeaslen@co.slo.ca.us

----- Forwarded by Debbie Geaslen/BOS/COSLO on 08/20/2012 04:29 PM -----

From: Norris Palmer <norris.palmer@sbcglobal.net>
To: pteixeira@co.slo.ca.us, dgeaslen@co.slo.ca.us
Cc: jgiffen@co.slo.ca.us
Date: 08/20/2012 12:38 PM
Subject: Letter of Support for Excelaron Continuation

August 18, 2012

Supervisor Paul Teixeira

San Luis Obispo County Board of Supervisors

1055 Monterey Street, 4th Floor

San Luis Obispo, CA 93408

RE: EXCELARON, LLC – HUASNA VALLEY OIL EXPLORATION & PRODUCTION
PROJECT DRC2009-00002 – SUPPORT FOR REQUEST FOR CONTINUANCE

Dear Supervisor Teixeira,

I would like to once again express my support for the project and to request your support for Excelaron, LLC's request for a continuance.

As I've mentioned at recent public meetings, our family desires to see the project approved in an environmentally responsible manner. We believe that Excelaron's proposed changes will reduce impacts and deserve the review and input from staff, the

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: NORRIS PALMER
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

EIR consultant, and the public. As a mineral rights owner, I want to see the project approved, but also believe it is important that no shortcuts be taken in the review process.

I encourage you to have County staff and the EIR consultant review this alternative and provide their analysis for public review and comment.

Please approve Excelaron's request for a continuance. I believe this is best for everyone involved – proponents, opponents, as well as the County.

Sincerely,

Norris W. Palmer

Cc: Deb Geaslen, Legislative Aide

Jason Giffen –San Luis Obispo County Planning and Building Department Director



SLO BOS Teixeira August 18, 2012.pdf

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: NORRIS PALMER
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012

August 18, 2012

Supervisor Paul Teixeira
San Luis Obispo County Board of Supervisors
1055 Monterey Street, 4th Floor
San Luis Obispo, CA 93408

RE: EXCELARON, LLC – HUASNA VALLEY OIL EXPOLORATION & PRODUCTION
PROJECT DRC2009-00002 – SUPPORT FOR REQUEST FOR CONTINUANCE

Dear Supervisor Teixeira,

I would like to once again express my support for the project and to request your support for Excelaron, LLC's request for a continuance.

As I've mentioned at recent public meetings, our family desires to see the project approved in an environmentally responsible manner. We believe that Excelaron's proposed changes will reduce impacts and deserve the review and input from staff, the EIR consultant, and the public. As a mineral rights owner, I want to see the project approved, but also believe it is important that no shortcuts be taken in the review process.

I encourage you to have County staff and the EIR consultant review this alternative and provide their analysis for public review and comment.

Please approve Excelaron's request for a continuance. I believe this is best for everyone involved – proponents, opponents, as well as the County.

Sincerely,

Norris W. Palmer

Cc: Deb Geaslen, Legislative Aide

Jason Giffen –San Luis Obispo County Planning and Building Department Director

ITEM # 32
MEETING DATE: AUGUST 21, 2012
PRESENTED BY: NORRIS PALMER
RECEIVED PRIOR TO MEETING
POSTED ON: AUGUST 20, 2012