



RON GALPERIN
CONTROLLER

June 27, 2018

Honorable Eric Garcetti, Mayor
Honorable Michael Feuer, City Attorney
Honorable Members of the Los Angeles City Council

Re: Review of the City of Los Angeles' Oil and Gas Drilling Sites

The history of Los Angeles is linked to the discovery and rise of oil and gas drilling. As of April 2018, there were about 5,000 known wells within City borders - about one-fifth of which are active or idle. With so many active and idle wells, it is essential that we do everything possible (1) to protect the health and safety of Angelenos, (2) to collect associated revenues to which our City and its residents are entitled, and (3) to increase transparency and accountability.

Background: The discovery of oil near present-day Dodger Stadium at the end of the 19th century played a critical role in Los Angeles' development. By 1930, the City's population grew to 1.2 million as California produced one quarter of the world's oil output. The history of this oil boom still dot the City's landscape - with active, idle, buried and abandoned oil and gas wells located near homes, schools, parks, hospitals and workplaces.

Numbers: According to the California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR) database, as of April 2018, there are 5,130 oil and gas wells within the City of Los Angeles. DOGGR, the state agency that oversees the drilling, operation, maintenance, and plugging and abandonment of oil, natural gas, and geothermal wells, indicates 3,133 of these are plugged and abandoned (wells that have been sealed with cement), 930 are buried, 780 are active and 287 idle (wells that have been inactive for a 24 consecutive months). About 77% of active and idle wells in the City are operated by six companies. A map illustrating oil and gas wells within the City of Los Angeles can be found at www.lacontroller.org/oilandgasreview.

- (1) Protecting Angelenos:** The City needs to take a more proactive, inclusive approach to oil and gas well inspections. The Los Angeles Fire Department has an inspection and permitting framework to protect residents and property from hazards of fire or explosions.



These inspections - conducted based on geographic data and date of last inspections - present an opportunity to assess risk and mitigate disaster. To improve information sharing, the City should refine its inspection program to enhance interdepartmental collaboration while also implementing a risk-based approach to site selection.

- (2) Protecting taxpayer's financial interest:** The City does not have adequate insurance and bond requirements to protect taxpayers from well operators that knowingly or unknowingly cause harm to the public or environment. There is more the City can and should do to control liabilities, to recover costs, and to consider other revenue generating measures. The City should consider policy changes to require that all well operators obtain, maintain and show proof of a combination of adequate insurance coverage and surety bonds while also performing periodic reviews of bonds/insurance policies. The City should also file claims when irresponsible operators of drilling sites demonstrate noncompliance with legal requirements and conditions of approval.
- (3) Increasing transparency:** Because it lacks comprehensive and reliable information about oil and gas drilling sites, the City cannot effectively facilitate coordination between Departments or make timely, data-driven policy decisions. In addition to building a centralized repository of interagency and interdepartmental information, officials should consider policy changes that require operators of oil and gas drilling sites to provide the City's Office of Petroleum and Natural Gas Administration and Safety with timely information.

Why these recommendations matter: The City has made good strides as of late demonstrating its commitment to improving local control of oil and gas drilling, including the appointment of a Petroleum Administrator in 2016. We would like to thank the Petroleum Administrator and the Office of Petroleum and Natural Gas Administration and Safety for their work and ongoing cooperation. Moving forward, there is more officials can do to consider a more public-health focused path and take a deliberate, data rich approach to protect public safety, establish priorities and make policy decisions that reflect the unique risks associated with oil and gas drilling within our large urbanized City.

Respectfully submitted,



RON GAPERIN
Los Angeles Controller



Review of the City of Los Angeles' Oil and Gas Drilling Sites



Hancock oil field, (top, 1910), present day location of the LA Brea Tar Pits (bottom) Top photo: L.A. Public Library Photo Archives (top), Wikipedia (bottom)



RON GALPERIN
LA CONTROLLER

TABLE OF CONTENTS

EXECUTIVE SUMMARY	i
BACKGROUND	1
DISCUSSION AND RECOMMENDATIONS	
I. Improving Quality of Life and Public Safety	11
II. Protecting City Taxpayers' Financial Interests.	18
III. Generating City Revenue from Oil and Gas Wells.	26
IV. Increasing Transparency and Information Sharing	33
SCOPE & METHODOLOGY.....	37
SUMMARY OF RECOMMENDATIONS	38

EXECUTIVE SUMMARY

The history of the City of Los Angeles is closely tied to oil and gas drilling activity that began in the nineteenth century. Despite the City's growth into a densely-populated urban environment, oil and gas operations continue today in close proximity to non-industrial sites such as homes, schools, businesses, and parks. The City's challenge is how to effectively oversee existing wells.

According to the California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR), as of April 2018, there are approximately 5,000 known wells in the City.¹ Approximately 1,000 of these wells are active or idle, and the remaining wells are buried, or plugged and abandoned in accordance with State requirements. Further, approximately 77% of active and idle wells in the City are operated by six companies. The geographic distribution of wells overlaps with locations where large deposits of recoverable oil and gas were discovered.

Oil and gas drilling sites pose unique risks that can jeopardize public health or environmental quality, and the State is the primary regulator of the industry. Because of the State's regulatory authority, the City is generally preempted from controlling *how* oil and gas activities are carried out **below ground**. Nonetheless, the California State Constitution authorizes local governments to "make and enforce within its limits all local, police, sanitary, and other ordinances and regulations not in conflict with general laws [i.e., federal and State]." **Accordingly, the City can use its land use authority to determine *where* the activities are carried out and ensure that they are performed in accordance with local health and safety codes, as long as those codes do not conflict with federal or State laws.**

We initiated this review to determine if the City has:

- Established monitoring and enforcement programs to improve quality of life and public safety. We found that the City did not effectively enforce its land use decisions at drilling sites and we identified opportunities to improve how Fire Code inspections are performed.
- Required appropriate coverage to protect itself and its residents from financial risks associated with oil and gas wells. We noted the City does not have adequate insurance and surety bond requirements to protect taxpayers.
- Implemented effective processes to collect revenues and recover costs. We found that the City needs to do more to prioritize cost recovery, pursue new revenue streams, and ensure it receives the royalty revenue due from oil and gas operators.

For decades, City Departments tasked with carrying out responsibilities related to oil and gas activities did so without input from a professional with technical expertise to help establish priorities, coordinate efforts, and make informed decisions. Recent actions by City Policymakers demonstrate a commitment to improving local control: in September 2016 the City hired a full-time Petroleum Administrator, and members of the City Council recently expressed interest reorganizing the City's oversight framework.

¹ DOGGR defines idle wells as wells that have been inactive for a period of 24 consecutive months (i.e., two years). Plugged and abandoned wells have been sealed with cement using techniques outlined by the State. Buried wells are typically older and are not abandoned to current standards; the mapped locations of those wells are sometimes only approximate.

Generally, we found that the City did not effectively exercise local control over oil and gas drilling sites due to the historical nature of drilling activity combined with a fragmented approach to oversight. This report and its related recommendations are intended to assist the City as it moves forward with efforts to improve oversight of oil and gas drilling sites, specifically as it relates to: (1) improving quality of life and public safety; (2) protecting City taxpayers' financial interests; (3) generating City revenue from oil and gas wells; and (4) increasing transparency and information sharing.

Improving Quality of Life and Public Safety

The City has taken a lax and reactive approach to monitoring, enforcing, and modernizing conditions of approval at oil and gas drilling sites. Upon granting land use approval, the Department of City Planning (DCP)/Office of Zoning Administration (OZA) establishes conditions under which a drilling site can operate (i.e., conditions of approval). These requirements are established on a site-by-site basis and are designed to mitigate nuisances such as foul odors, loud noises, bright lights, industrial traffic, vibrations, and other adverse effects. Documented evidence of noncompliance or ineffectiveness can be used to implement modified conditions of approval or require corrective actions.

Although the City's Department of Building and Safety (DBS) is responsible for enforcing the City's land use decisions, investigations about potential violations are only initiated based on complaints and, until recently, the City did not have a Petroleum Administrator to provide technical assistance. This approach limited the City's ability to document evidence that could be used to: (1) modify operating requirements to account for community concerns and surrounding land uses; and (2) modernize operating requirements to account for advances in technology, such as continuous air quality monitoring, and improved data management practices.

As it refines its Fire Code inspection program, the City should prioritize enhanced interdepartmental collaboration, and implement a risk-based approach to site selection. The Los Angeles Fire Department (LAFD) has an inspection and permitting framework to protect residents and property from hazards of fire, explosion, or panic. Each inspection performed by LAFD presents an opportunity to assess risk and share information with City Departments and regulatory agencies. Despite the City's recent efforts to reorganize its oversight approach, these inspections remain within a departmental silo. The effectiveness of the City's oversight efforts will remain constrained as long as these activities are not part of a larger, coordinated framework.

Currently, geographic proximity and date of last inspection are the primary factors considered when planning annual Fire Code inspections at oil and gas drilling sites. The LAFD needs to consider additional risk factors to make strategic decisions about which locations should be prioritized at the beginning of each inspection cycle.

To address these quality of life and public safety issues, the City should:

- **Identify** high-risk drilling sites, perform targeted reviews, document evidence of noncompliance, and take appropriate action to modify and modernize conditions of approval to include emerging technologies such as continuous air monitoring devices. These reviews should include input from residents and businesses located near high-risk

drilling sites. (Responsible entity: Petroleum Administrator in collaboration with DCP/OZA, the City Attorney and DBS)

- **Prioritize** interdepartmental collaboration and plan annual Fire Code inspections using additional risk-based factors such as: (1) proximity to residential and other non-industrial sites; (2) age and number of wells; and (3) number and severity of previous Fire Code violations. (Responsible entity: LAFD)
- **Consider** development of an enhanced oversight program to proactively monitor/enforce conditions of approval at drilling sites. In addition, consider the development of a single, cohesive inspection program that leverages expertise across City Departments. (Responsible entity: City Policymakers)
- **Consider** amending the Los Angeles Municipal Code (LAMC) to allow the City to undertake periodic reviews of conditions of approval at all drilling sites. (Responsible entity: City Policymakers)

Protecting City Taxpayers' Financial Interests

The City does not have adequate insurance and surety bond requirements to protect taxpayers from well operators that knowingly or unknowingly cause harm to the public or environment.

Operators of oil and gas wells located in the City are not required to maintain insurance policies with the City as a named party, despite the fact that clean-up costs from accidents such as well blowouts, oil/chemical spills, or groundwater contamination can be significant. In contrast, the City of Carson requires well operators to obtain policies such as control of well insurance, excess liability, and environmental impairment coverage that name the City of Carson, its officers, officials, agents, and employees as additional insured entities.

The City's current approach to limiting financial liability is through surety bond requirements. Well operators seeking to obtain an operational permit from LAFD or land use approval from DCP/OZA are required to post and maintain surety bonds. Currently, the City requires \$10,000 surety bond per well or a blanket bond of \$50,000 for any number of wells (or cash-in-lieu deposits) to ensure compliance with the Fire Code. In addition, the City requires a \$5,000 surety bond to ensure compliance with zoning and conditions of approval. Generally, the purpose of the surety bonds is to ensure the City has access to funds if an operator is unable to absorb the costs of site remediation and well plugging and abandonment.

These bonding requirements have not been revised in decades. In addition, the City does not have a process to adjust for risk factors unique to each site such as well depth, methods of operation, operator history, and proximity to residents and sensitive environmental sites. The State has recently taken steps to increase its bonding requirements and remediation budget, but these resources may not be sufficient to cover costs associated with all orphan wells in the City of Los Angeles.

The City needs to improve its processes to ensure well operators maintain insurance and bond coverage. As the City develops insurance requirements for oil and gas operators, it should also

establish minimum advance notification protocols about insurance policy renewals, revisions, and cancellations.

Currently, the City does not have adequate processes in place to ensure that operational and zoning surety bonds provided by well operators are still valid. Information provided by the Office of Finance, DCP/OZA, and City Administrative Officer (CAO) Risk Management Division showed that the City did not have a complete and accurate inventory of surety bonds and cash-in-lieu deposits. As a result, it is likely that older wells are no longer covered by active surety bonds due to insolvent surety companies.

To protect City taxpayers' financial interests, the City should:

- **Consider** policy changes to require all well operators to obtain and maintain a combination of adequate insurance coverage and surety bonds that reflect the unique public safety and environmental risks of operating a drilling site in a densely-populated urban environment. (Responsible entity: City Policymakers)
- **Consider** policy changes to require well operators to submit proof of bond/insurance coverage as part of annual applications for LAFD operational permits, and LAFD should upload bond/insurance documents to the City's electronic database. (Responsible entity: City Policymakers)
- **Perform** periodic reviews of bonds/insurance policies on file with the City, and file claims when irresponsible operators of drilling sites demonstrate noncompliance with legal requirements and conditions of approval. (Responsible entity: Petroleum Administrator)

Generating City Revenue from Oil and Gas Wells

Operators of oil and gas drilling sites are subject to several types of federal, State, and local taxes like other businesses operating in the City. The City can also generate revenue through industry-specific fees and extraction of oil and gas from City-owned property. Given the historical nature of drilling activity in the City, successful extraction of oil/gas from older wells is likely more challenging and expensive than in the past. Policymakers should consider these factors when evaluating taxes and fees from oil/gas extraction activity and develop an equitable framework that generates revenue for the City without discouraging business activity.

As it enhances the local oversight framework, the City should prioritize cost recovery. Successful implementation of the recommendations in this report, and the Council's interest in developing an enhanced local oversight framework, will require additional financial resources. Currently, the LAMC allows the City to recover costs only as related to processing land use applications and performing Fire Code inspections in conjunction with annual operational permits or specific-action permits. Moving forward, the City should ensure that additional costs associated with issuing licenses/permits, performing investigations/inspections, and administrative enforcement are borne by operators of drilling sites instead of taxpayers.

The City should consider reintroducing a barrel tax for voter approval. Many neighboring local jurisdictions assess a per barrel tax on oil that is extracted by well operators. The City previously

had a barrel tax in place, however, the tax was repealed in 1996.² The City put forth a special ballot measure in 2011 that would have imposed a tax of \$1.44 per barrel of oil extracted within the City. The proposed tax rate was significantly higher than barrel taxes imposed by neighboring jurisdictions. The proposed ballot measure was narrowly rejected by voters 51.07% to 48.93%.

Although the March 2011 ballot measure was narrowly rejected, increased awareness about the impacts of oil and gas extraction in densely populated environment combined with high profile public health incidents such as Aliso Canyon may have shifted voter opinion.

The City's inadequate oversight of oil and gas extraction from under (or "subsurface") City-owned property makes it unlikely that the City is realizing the related value from its real estate assets. The City's revenue generation strategies include: (1) participating in agreements whereby well operators are extracting oil or gas from subsurface parcels whose mineral rights are owned by the City; and (2) awarding leases to allow well operators to construct and operate drilling sites directly on City-owned property. In exchange, the City is entitled to a percentage of profits from the sale of oil or gas extracted from those locations. Under both types of agreements, the City would receive "royalty" payments.

Council-controlled and Proprietary Departments provided information that showed oil and gas operators paid \$390,000 in royalty revenue in FY2017. However, we could not confirm the accuracy of these payments because: (1) the City does not currently know the locations of all subsurface parcels where it owns mineral rights and has participated in a pooling or unitization agreement; and (2) City Departments acknowledged that they did not have a process to verify that operators paid appropriate royalties.

In addition, lax oversight of oil and gas lease agreements increases the risk that City-owned property has not been restored to its original condition and therefore may include idle, orphan, or improperly plugged/abandoned wells.

To address these revenue-related issues, the City should:

- **Amend** the LAMC to allow the City to recover regulatory fees associated with an enhanced local oversight framework for oil and gas drilling sites. *(Responsible entity: City Policymakers)*
- **Perform** a cost-benefit analysis for implementing a barrel tax that considers factors such as: (1) projected extraction volume based on historical records and likelihood of future drilling activity; (2) cost of placing the measure on the ballot; (3) ongoing administrative costs with imposing and collecting the tax; and (4) the appropriate tax rate. *(Responsible entity: City Policymakers)*
- **Direct** all Departments to verify any oil or gas exploration on or under property they control. Once an inventory has been developed, determine whether to renew and

² The City currently assess a business tax (\$1.01 per \$1,000 in gross receipts) on wholesale sales of oil or gas that is extracted within City limits.

renegotiate any expired lease agreements. In addition, oversight responsibility for all oil and gas extracted from City-owned properties should be formally transferred to the Petroleum Administrator. *(Responsible entity: City Policymakers)*

- **Perform** title research of land records to identify subsurface parcels whose mineral rights are owned by the City. For those related to oil fields with active extraction activity, determine whether the City received appropriate royalty payments. For well operators who did not pay the City royalties it was owed, consult with the City Attorney to explore legal options. *(Responsible entity: Petroleum Administrator)*
- **Collaborate** with LAFD and State regulators to identify lessees who did not restore City-owned property previously used for oil/gas exploration to its natural condition or comply with State plugging/abandonment requirements. Propose remedial/legal actions for lessees who did not fulfill their obligations. *(Responsible entity: Petroleum Administrator)*
- **Develop** an improved reporting process to provide assurance of compliance with lease requirements, including periodic reviews of royalty payments. *(Responsible entity: Petroleum Administrator)*

Increasing Transparency and Information Sharing

Because it lacks comprehensive and reliable information about oil and gas drilling sites, the City cannot effectively facilitate coordination between Departments or make timely, data-driven policy and operational decisions. We noted the City did not have: (1) an independently verified inventory of well locations that matched the inventory maintained by the State; (2) an electronic database of conditions of approval for all oil and gas drilling sites; and (3) a mechanism to require well operators or external regulatory agencies to notify the City when permits are issued, operators are cited for violations, or complaints are filed.

To address these transparency and information sharing issues, the City should:

- **Improve** access, timeliness, and reliability of information related to oil and gas drilling sites. This information should be compiled and connected in a manner to facilitate informed decision-making and improve interdepartmental and interagency coordination. As the City builds a centralized and reliable repository of information, it should also prioritize development of a public-facing website to increase transparency and facilitate public engagement on issues related to oil and gas drilling sites. *(Responsible entity: Petroleum Administrator)*
- **Consider** policy changes that require operators of oil and gas drilling sites to provide the Petroleum Administrator with timely notifications of complaints and communications to and from external regulatory agencies. *(Responsible entity: City Policymakers)*

CONCLUSION

City Departments are responsible for performing a variety of tasks related to oil and gas drilling sites such as making land use decisions, issuing permits, performing inspections, enforcing code requirements, protecting the City's financial interests, and leasing City-owned property for oil

exploration and extraction. For decades, the City had no expert on staff to coordinate these activities or provide input in the form of technical assistance. The City's historically fragmented approach led to inadequate oversight of oil and gas drilling sites. Council's recent interest in reorganizing the City's oversight framework, and establishing a dedicated Office of Petroleum and Natural Gas Administration & Safety (OPNGAS), demonstrate a renewed commitment to improving local control.

The oversight of oil and gas drilling sites is a critical function that impacts residents' health and quality of life. The Los Angeles County Department of Public Health has issued a report on public health risks that highlights the importance of: (1) site-specific assessments to determine appropriate setback distances from sensitive land uses; (2) working with State regulators to implement requirements for continuous air monitoring systems at drilling sites located near urban areas; and (3) improved local oversight through coordination and data-sharing.

As the City moves forward, it should consider this public-health focused guidance and take a deliberate and data-driven approach to establishing priorities, designing programs, and making policy decisions that reflect the unique risks associated with oil and gas drilling within our large urbanized City.

On June 4, 2018, a draft of this report was provided to the Board of Public Works – Office of Petroleum and Natural Gas Administration and Safety (OPNGAS), Los Angeles Fire Department, Los Angeles Department of Building and Safety, Department of City Planning/Office of Zoning Administration (DCP), Office of Finance, the Risk Management Division of the Office of the City Administrative Officer, General Services Department, Library, Recreation and Parks, Harbor Department, and Los Angeles Department of Water and Power. We met with OPNGAS at an exit conference on June 7, 2018 and invited comments from the management of each of the departments indicated. We considered those comments as we finalized this report for issuance. We would like to thank the Board of Public Works, OPNGAS, and staff from other City Departments for their time, expertise, and cooperation during this special review.

BACKGROUND

The City's status as a leading business, trade, and cultural center would not be possible without its industrial past. The discovery of oil near present-day Dodger Stadium at the end of the nineteenth century played a critical role in the City's development. The ensuing decades brought significant population growth and oil production; by 1930 the City's population grew to 1.2 million and the State was producing one quarter of the world's oil output.³ Subsequent drilling overlapped with continued population growth.

Figure 1: Los Angeles City Oil Field (circa 1900)

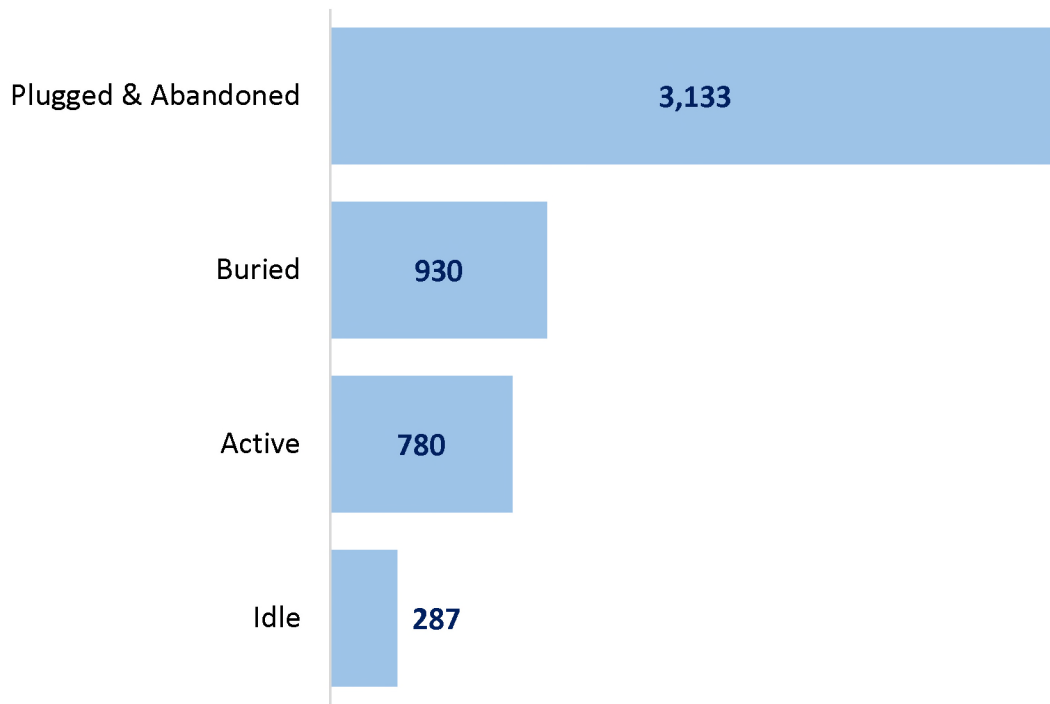


Source: California State Library

Regardless of whether oil and gas wells were drilled in established residential neighborhoods, or residential development followed after the drilling sites were established, the end result was the same. Today, a number of the City's active, idle, buried, and abandoned oil and gas wells are located in close proximity to homes, schools, hospitals, and other non-industrial sites. Further, many of the wells were initiated and/or abandoned prior to the establishment of modern federal, State, and local regulations.

According to the California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR) database, there are more than 5,000 known wells in the City of Los Angeles as of late-March 2018. DOGGR reported the status of those wells as follows:

³ Taylor, Alan. "The Urban Oil Fields of Los Angeles." *The Atlantic*, August 26, 2014.
<https://www.theatlantic.com/photo/2014/08/the-urban-oil-fields-of-los-angeles/100799/>

Figure 2: Number and Status of Oil and Gas Wells in the City⁴

Source: CA Department of Conservation Division of Oil, Gas, and Geothermal Resources (DOGGR)

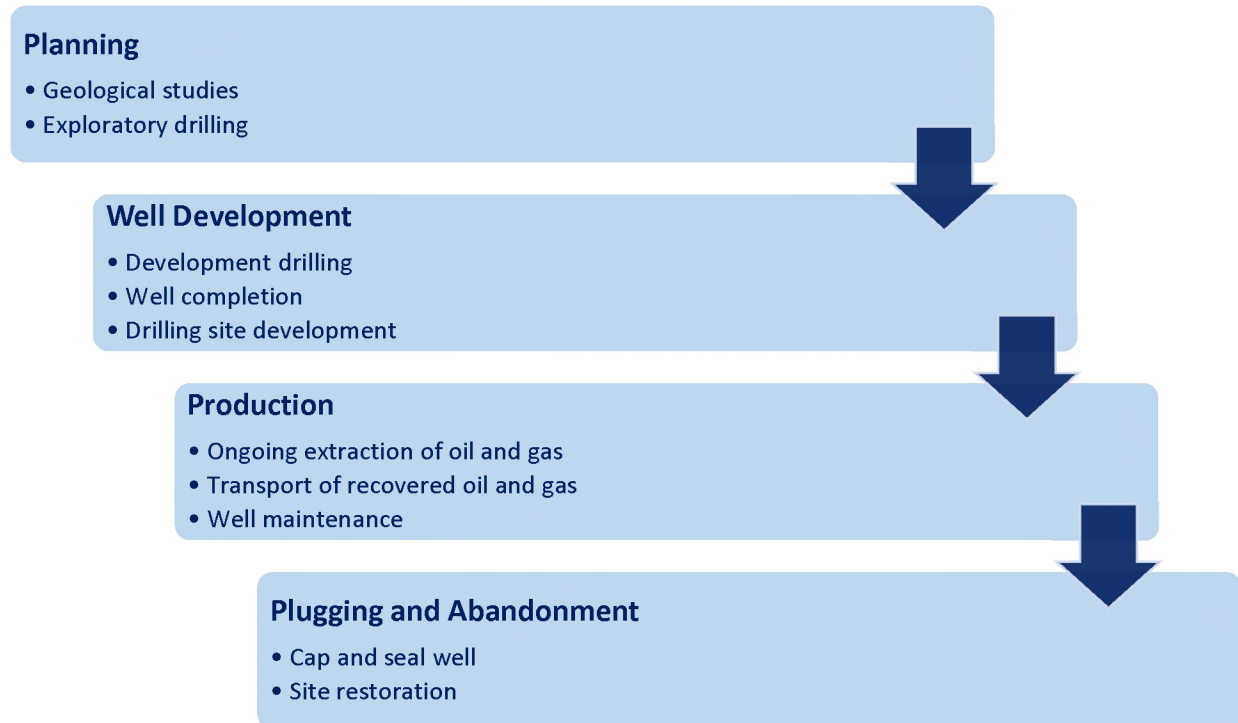
DOGGR data indicates that a small group of companies are responsible for ongoing oil and gas extraction; approximately 77% of active and idle wells in the City are operated by six companies. This group is comprised of the following companies: Warren E&P (224 wells); Freeport-McMoRan Oil & Gas LLC (217 wells); Tidelands Oil Production Company (183 wells); Southern California Gas Company (78 wells); Pacific Coast Energy Company LP (59 wells); and Brea Canon Oil Company (57 wells).

The City's Municipal Code (LAMC) defines an oil well as "any well or hole already drilled, being drilled, or to be drilled into the surface of the earth which is used or intended to be used in connection with...producing petroleum, natural gas, or other hydrocarbon substances." The LAMC categorizes oil and gas wells as either production wells ("Class A") or injection wells ("Class B"). Generally, Class A wells are designed to extract oil and gas substances from subsurface locations and Class B wells are used to inject substances such as oil field waste, gas, water, or

⁴ Plugged and abandoned wells have been sealed with cement using techniques outlined by the State. Buried wells are typically older and are not abandoned to current standards and the mapped locations of these wells are sometimes approximate. As of January 2018, DOGGR defines idle wells as wells that have been inactive for a period of 24 consecutive months (i.e., two years) but can still be reactivated.

other substances into subsurface locations. The graphic below provides an overview of the process by which wells are established, activated, and abandoned.

Figure 3: Typical Life Cycle of a Well



Los Angeles Fire Department (LAFD) records indicate that there are more than a dozen large drilling sites across the City that include many of the active and idle wells listed in Figure 2. A single drilling site can consist of multiple wells, large pieces of industrial equipment, storage tanks, boilers, pumps, pipelines, pressure vessels, and other types of machinery and equipment.

Regulatory Framework

Oil and gas drilling sites pose unique risks that can jeopardize public health or environmental quality. Once a well has been drilled and easily accessible oil deposits have been extracted, operators may use enhanced recovery techniques that involve the subsurface injection of steam, gases, or chemicals to bring oil to the surface. Depending on the location of the drilling site, these chemicals may be transported through residential neighborhoods. Public health and environmental risks are not limited to active drilling sites; buried and idle wells can leak methane or contaminate drinking water. Given the number and magnitude of risks, several governmental entities are tasked with regulating oil and gas extraction activities.

The U.S. Department of the Interior, Bureau of Land Management oversees oil and gas drilling activities on federal land. However, regulation of oil and gas drilling activities on non-federal land is largely left to the State. DOGGR supervises the drilling, operation, maintenance, and plugging/abandonment of oil and gas wells. Entities seeking to engage in oil and gas activities

are required to obtain approval from DOGGR and submit monthly reports detailing the volume of oil and gas that was extracted.

There are additional State-level regulatory agencies tasked with protecting the public from health and environmental risks associated with oil and gas extraction activities. Under the oversight of the California Air Resources Board (CARB), the South Coast Air Quality Management District (SCAQMD) is the air pollution control agency for all of Orange County and the urban portions of Los Angeles, Riverside, and San Bernardino counties. Every piece of stationary equipment in the City that emits or controls air pollution must be permitted by SCAQMD. In March 2017, CARB approved new regulations designed to detect and reduce methane leaks from oil and gas facilities.

Because of the State's regulatory authority, the City is preempted from controlling how oil and gas activities are carried out. Nonetheless, the California State Constitution authorizes local governments to "make and enforce within its limits all local, police, sanitary, and other ordinances and regulations not in conflict with general laws [i.e., federal and State]." Accordingly, the City can use its land use authority to determine where the activities are carried out and ensure that they are performed in accordance with local health and safety codes, as long as those codes do not conflict with federal or State laws.

City Departments' Roles and Responsibilities

There are several City Departments responsible for a wide range of approval, enforcement, and oversight of activities pertaining to oil and gas drilling. Operators of oil and gas drilling sites are subject to remitting City business and utility taxes, and some City Departments have leases with private companies to operate oil and gas wells on City-owned property. Lastly, the City established an Office of Petroleum Natural Gas Administration and Safety in 2016, intended to coordinate all matters related to the exploration for oil and gas in the City. The specific roles and responsibilities for each of these departments/offices are detailed below.

Land Use Approval to Establish a Drilling Site

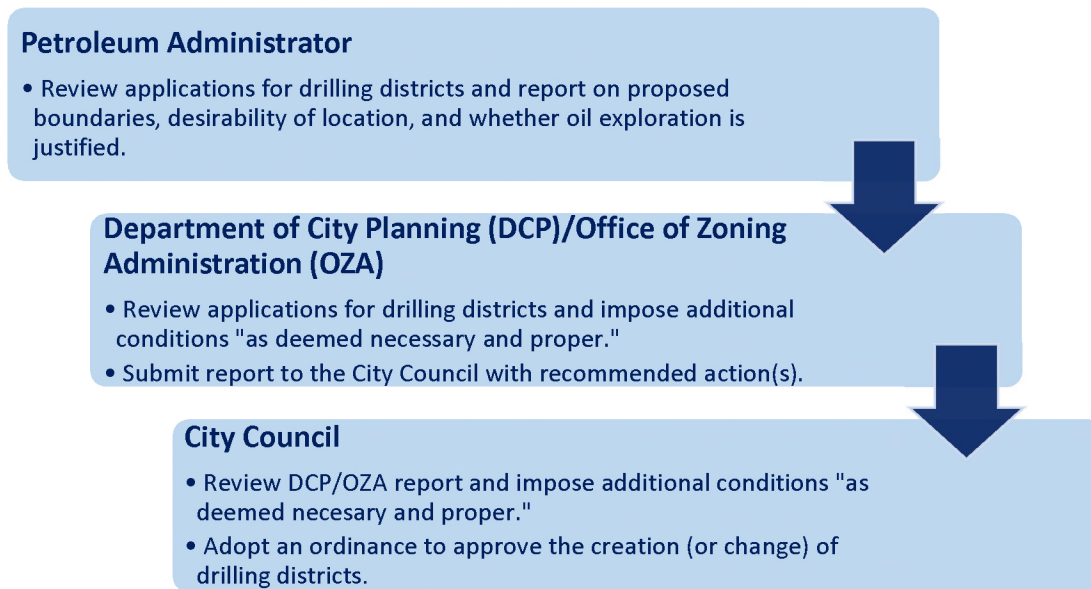
In addition to regulatory approval from DOGGR, operators must obtain land use approval from the City before establishing a drilling site. Land use decisions by planning officials related to drilling sites are discretionary and must weigh existing General Plan Policies, Goals, and Objectives along with the interests of the surrounding community.

The City's land use framework that dictates where and under what conditions oil and gas exploration can occur is outlined in the LAMC. This framework was originally established in 1946, decades after significant oil and gas exploration activity had already occurred within the region. Currently, the LAMC outlines a two-step process for obtaining land use approval from the City: establishment of an oil drilling district; and establishment of an oil drilling site.⁵

⁵ According to the City's zoning code, land use approval to establish a drilling district or site in the M3 Zone ("Heavy

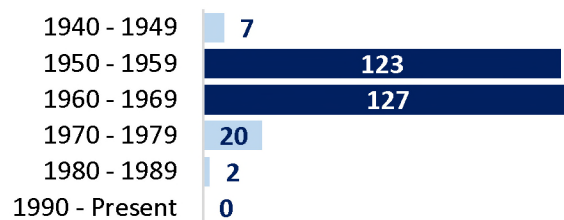
The LAMC divides the City into areas within which oil drilling districts can be established. Each area has a set of standard conditions that establish the minimum size of oil drilling districts, the allowable number and density of drilling sites and individual wells, and fencing and landscaping requirements. The graphic below outlines the process by which the City reviews and approves applications for oil drilling districts.

Figure 4: Establishing an Oil Drilling District



The City has not established a new drilling district in decades; a review of drilling district ordinances provided by DCP/OZA showed that the most recent drilling district was established in 1984 and a large number of drilling districts were established in the 1950s and 1960s. Some of these drilling districts were later terminated by the City but are included in Figure 5 to show the large amount of oil and gas exploration activity that occurred during the middle of the twentieth century.⁶

Figure 5: Oil Drilling Districts Established by Decade



Industrial”) is not required unless the activity occurs within 500 feet of a more restrictive zone.

⁶ DCP/OZA also provided documents that showed drilling district locations, establishment dates, and ordinance numbers but did not include corresponding ordinance language. These drilling districts may have been established in the 1950s (or prior) but were not included in Figure 5.

[illegible]

Once an oil drilling district has been established by ordinance, anyone seeking to "drill, deepen, or maintain an oil well or convert an oil well from one class to another [e.g., production to injection]" must file an application with DCP/OZA to request a determination of the conditions of approval under which the site can operate. Conditions of approval vary from site-to-site, however, the general purpose is to protect residents and property adjacent to the drilling site and ensure the operation is not a nuisance. If the application is approved, DCP/OZA sends the operator a letter of determination with a list of conditions. According to the Petroleum Administrator, no new drilling sites have been established in recent years; yet a challenge remains in how the City effectively regulates existing (i.e., "grandfathered") drilling sites.

Historically, DCP/OZA processed applications for modifications to original conditions of approval using a limited review process, which did not require an Environmental Impact Report or public participation. In September 2016, DCP/OZA agreed to follow a more comprehensive review process for (new) applications under the Municipal Code, including environmental review pursuant to the California Environmental Quality Act (CEQA), increased notification requirements to affected stakeholders, and public hearings. DCP/OZA staff indicated that no new applications have been received since the change in the City's review process.

Oversight of Oil and Gas Drilling Sites

Once a drilling site has been granted land use approval, there are various one-time and ongoing responsibilities assigned to City Departments to ensure that operators are in compliance with conditions of approval and local public safety codes. These functions are primarily assigned to the Department of Building and Safety (DBS) and Los Angeles Fire Department (LAFD).

Figure 7: Monitoring and Enforcement Activities Assigned to City Departments



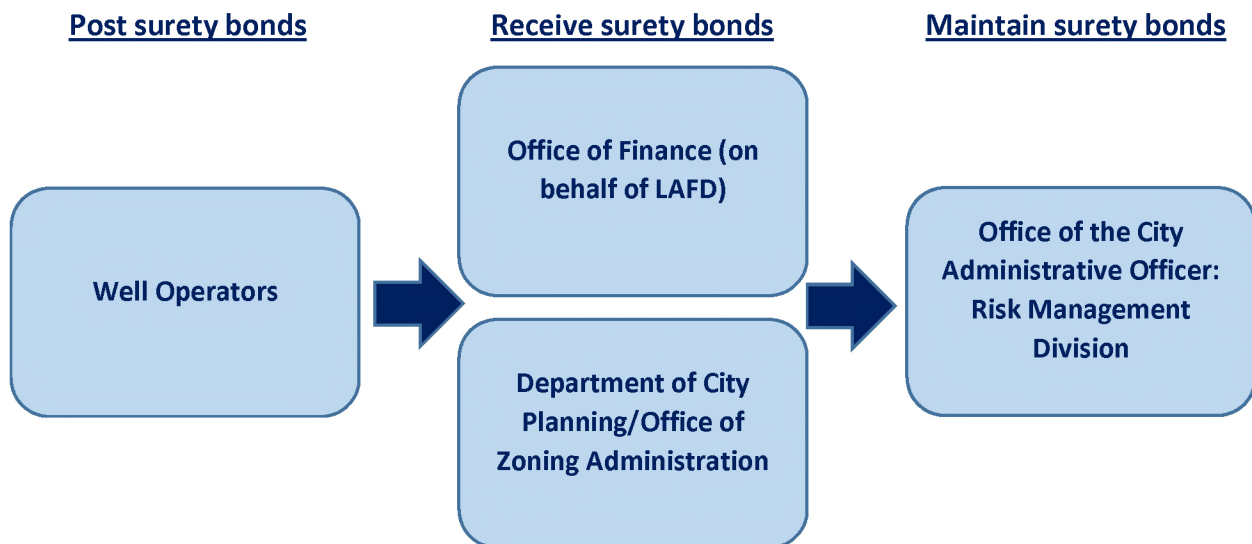
LAFD is also designated by the State as a Certified Unified Program Agency (CUPA) and is required to apply statewide standards to each facility in its jurisdiction that treats or generates hazardous waste, operates underground storage tanks, or stores hazardous material. Drilling sites with these items must be inspected and permitted to ensure compliance with State requirements.

Oil and Gas Well Bonds

In addition to activities to mitigate operational risks, the City has a system in place that is intended to limit exposure to financial risks associated with oil and gas drilling activities. Well operators seeking to obtain an operational permit from LAFD or land use approval from DCP/OZA are required to file and maintain surety bonds with the City. The purpose of the bonds is to ensure the City has financial resources available in the event the operator is unable to remediate issues related to Fire Code or land use violations. Operators are required to maintain active bonds until LAFD has determined that the well has been plugged and abandoned in accordance with DOGGR requirements.

The process by which bonds are posted and maintained are outlined in the graphic below.

Figure 8: Posting and Maintaining Surety Bonds



Prior to 2005, the City Attorney was responsible for maintaining the bonds to ensure they were enforceable in the event a claim needed to be filed. Since 2009, the Office of the City Administrative Officer (CAO) Risk Management Division has maintained an online system (“Track4LA”) to streamline the processing, tracking, and verification of insurance policies and bonds submitted by contractors, vendors, and permittees.

Revenue

In addition to the activities described above, the City can exercise local control of oil and gas drilling sites through various revenue generation and cost recovery strategies. Generally, these revenues fall into two categories: (1) taxes applicable to all businesses operating in the City; and

(2) industry-specific strategies, including extraction (i.e., “barrel”) taxes; fees to recover local regulatory costs; and revenue sharing agreements with private well operators that allow for oil/gas extraction from subsurface locations where the City owns the mineral rights.

Coordination

Given the number of City Departments tasked with responsibilities associated with oil and gas drilling sites, the City has established a framework to help ensure these activities are coordinated by a professional with technical and administrative expertise.

Board of Public Works, Office of Petroleum and Natural Gas Administration and Safety

The City hired a full-time Petroleum Administrator in September 2016 to improve oversight of petroleum and natural gas operations. The Petroleum Administrator was placed under the Board of Public Works in the Office of Petroleum and Natural Gas Administration and Safety (OPNGAS). The Los Angeles Administrative Code (LAAC) tasks the Petroleum Administrator with a broad range of responsibilities including:

- coordinating all matters respecting or concerning the exploration for, or production of, petroleum in the City;
- making recommendations concerning matters related directly or indirectly to the exploration for, or production of, petroleum within the City;
- reporting, upon request, to any department, bureau or office of the City regarding the creation of drilling districts;
- establishing rules and procedures for leasing of City-owned property for oil and gas exploration or production;
- administering and determining compliance with all provisions of oil and gas leases; and
- investigating and making recommendations concerning existing restrictions on exploration for, and production of, petroleum in the City.

The City did not have a full-time, qualified Petroleum Administrator on staff for approximately 30 years and the responsibilities delineated above were handled on an ad hoc basis by analysts who did not have a technical background in oil and gas matters.⁷ As a result, the effectiveness of local oversight diminished because the City lacked input from a professional with technical and administrative expertise.

During this review, members of the City Council introduced a motion seeking to centralize oversight of oil and gas activity in the City under the Board of Public Works. One of the stated goals of the reorganization is to modernize the City's oversight structure to "enhance public safety, provide greater efficiency in deliver[ing] high quality public services, improve communications, and strengthen public health protections." Specifically, the motion tasks the Petroleum Administrator and City Departments with:

⁷ The LAAC previously assigned these responsibilities to the Office of the City Administrative Officer (CAO).

- identifying functions performed by City Departments that can be transferred to OPNGAS;
- identifying the budget resources and LAMC amendments to facilitate the transfer of functions to OPNGAS;
- recommending operational improvements such as data management, community participation, and enhanced permitting and inspection activities; and
- recommending methods to integrate workflows and increase interdepartmental and interagency collaboration.

In March 2018, members of the City Council introduced a motion requesting that OPNGAS and DCP develop a plan to implement annual compliance checks to ensure oil and gas drilling sites are meeting appropriate regulatory standards and mitigating negative impacts. OPNGAS completed a preliminary assessment of the resources needed for an inspection program and requested funding to perform a fee study.

These efforts indicate that Policymakers are seeking a more defined and enhanced role for OPNGAS moving forward. Issues and recommendations regarding coordination and information sharing are included in Section IV of this report.

SECTION I: IMPROVING QUALITY OF LIFE AND PUBLIC SAFETY

The City can exercise local control of oil and gas drilling sites through its land use authority and local health and safety codes. Given the risks associated with oil and gas drilling sites, effective monitoring and enforcement activities to prevent and detect noncompliance are essential to protecting residents and property.

Quality of Life

Operators seeking to establish drilling sites in the City must obtain land use approval from DCP/OZA. Similar to other land use decisions in the City, DCP/OZA staff must respect the applicant's property rights and consider the compatibility of the proposed activities with the surrounding area. The industrial nature of oil and gas extraction means that drilling sites may be responsible for foul odors, loud noises, bright lights, industrial traffic, vibrations, and other adverse effects. The LAMC authorizes DCP/OZA to implement rules that operators must follow (i.e., conditions of approval) to mitigate the impact of these activities.

Conditions of approval vary from site-to-site, however, the general purpose is to protect residents and property adjacent to the drilling site and ensure the operation is not a nuisance. Once the conditions have been established, effective monitoring and enforcement is important as many drilling sites are located in close proximity to non-industrial sites such as homes, schools, and parks. Documented evidence of noncompliance can be used by DCP/OZA to implement modified conditions and/or corrective actions.

The City Has Missed Opportunities to Document Evidence of Violations of Conditions of Approval at Drilling Sites, but Recent Efforts Demonstrate Progress

Many of the drilling districts and sites in the City were established during the 1950s and 1960s. Generally, conditions of approval for existing drilling sites remain in perpetuity. While the LAMC allows DCP/OZA to impose additional conditions or require corrective actions, there is no mechanism in place to periodically assess whether the original conditions are still appropriate or effective. As a result, conditions of approval for older drilling sites may not consider advances in technology, improved data management practices, and surrounding land uses.

Historically, the City has taken a lax and reactive approach to monitoring and enforcing compliance with conditions of approval at oil and gas drilling sites. Evidence of violations has not been documented and the City has not made a concerted effort to modify and modernize operating requirements to account for community concerns and surrounding land uses.

The LAMC allows additional conditions or corrective measures to be imposed if there is demonstrated evidence that additional conditions are necessary to provide greater protection to residents and surrounding property. According to DCP/OZA, the following types of evidence can be used to initiate this process:

- failure to comply with existing conditions of approval;
- regulatory or Municipal Code violations; or
- a pattern of complaints backed by evidence that demonstrates the site is a nuisance to the community.

The LAMC also allows the City to implement additional conditions when operators of drilling sites submit an application to DCP/OZA to drill, deepen, or maintain a new or existing well.

The City has recently taken steps toward implementing modified conditions of approval at a drilling site in South L.A. that may serve as a model for future oversight activities.⁸ The drilling site was originally established in 1965 and in recent years, residents living adjacent to the site have complained about its incompatibility with the surrounding neighborhood and accused the site operator of noncompliance with conditions of approval. In September 2016, DCP/OZA staff requested that the operator file a new Plan Approval application for a review of compliance with existing conditions of approval. The operator did not comply with the request and DCP/OZA staff and the Petroleum Administrator initiated a review of records maintained by City Departments and external regulatory agencies, conducted site visits, and held a public hearing to determine: (1) if the operator was complying with conditions of approval; and (2) if the existing conditions adequately protect the surrounding community.

Based on their efforts, DCP/OZA and the Petroleum Administrator found that since 2001, the operator obtained approval from DOGGR for at least 42 oil well maintenance and re-drilling jobs without requesting a determination of conditions of approval from DCP/OZA, as required by the LAMC. DCP/OZA also concluded that the operator failed to comply with requirements to effectively mitigate issues related sound, odor, light pollution, and the appropriate handling of hazardous materials. To address these findings, DCP/OZA issued a new letter of determination with modified conditions, which include:

- enclosing drilling equipment in a 45-foot structure;
- several technology-focused improvements to allow real-time monitoring of the site;
- increased restrictions on industrial traffic in the neighborhood; and
- filing a Plan Approval application within two years to review compliance with the modified conditions.

As described above, DCP/OZA is authorized to require an operator to file an application for modified conditions of approval as a means to abate a nuisance or address non-compliance with existing conditions. However, this process is not possible unless the City has documented evidence of noncompliance or nuisance operations.

Missed Opportunities to Document Evidence of Violations

DBS is responsible for enforcing the City's zoning ordinances, including compliance with conditions of approval established by DCP/OZA. The LAMC provides DBS with authority to conduct inspections to enforce land use decisions and compliance with various building regulations (e.g., Building Code, Electrical Code, Plumbing Code). However, we found that DBS does not use this authority to perform proactive monitoring and enforcement of conditions of approval at oil and gas drilling sites.

⁸ In April 2018, the operator filed a lawsuit challenging the City's right to impose additional conditions and seeking to set aside the determination in full. The trial in the matter is not expected to take place until 2019.

DBS staff stated that investigations about potential violations are initiated based on complaints about issues within their authority; complaints about non-DBS issues are referred to other City Departments. However, the information management challenges described in this report make it unlikely that DBS received notification of all relevant complaints. DBS also noted that some of the conditions of approval they are tasked with enforcing are outside their area of expertise and, until September 2016, the City lacked a full-time Petroleum Administrator that could provide technical assistance on these matters. As a result, the City missed opportunities to document evidence of violations at drilling sites.

These issues are not new. The need for a proactive code enforcement program to monitor and enforce compliance with conditions of approval at oil and gas drilling sites was outlined in a City Planning report to the City Council in November 2014. The report suggested that DBS' proactive monitoring and enforcement of businesses such as junkyards, auto body shops, recycling centers, and used car lots could be used as a model for the new program. For those sites, DBS is required to perform annual inspections to verify compliance with minimum standards included in the LAMC. Fees to cover the cost of performing the inspections are paid by property owners or business operators. However, a proactive enforcement program for oil and gas drilling sites was not developed; DBS' approach remains reactive.

A Way Forward

Although DBS is responsible for enforcing compliance with conditions of approval at drilling sites, there are obstacles that have prevented it from effectively performing those duties. DBS cannot enforce what it does not know; documents outlining conditions of approval for older drilling sites are stored in DCP/OZA files or in the City Archives. In addition, DBS inspectors may lack the technical expertise to evaluate whether the equipment and operations at a drilling site are appropriate.

These limitations suggest that simply providing DBS with additional resources to increase the number of available inspectors may not be enough. Although recent efforts by DCP/OZA and the Petroleum Administrator were a reactive approach to longstanding issues, they demonstrated that a targeted interdepartmental response can be used to document evidence of violations or nuisance operations. There may be additional sites in close proximity to residential neighborhoods that have not been subject to comprehensive review during the decades-long period when the City lacked a Petroleum Administrator. Investigations of these high-risk sites should be prioritized as the City develops a proactive monitoring and enforcement program.

Proactive, thorough inspections are critical to ensure compliance with conditions of approval. However, an inspection represents a snapshot in time, and may not be representative of the continuing day-to-day activities at a drilling site. The City's recent efforts at the South L.A. drilling site described above are notable for utilizing emerging technologies to improve the City's ability to monitor quality of life and public safety issues on an ongoing basis. Specifically, the City is requiring the operator to install and maintain the following:

- a fence-line air monitoring system that provides real-time air quality data via a website that also generates quarterly reports for SCAQMD, the Petroleum Administrator, and DCP/OZA;

- an early detection system to notify LAFD when hydrogen sulfide or methane is detected;
- acoustic, vibration, and video monitoring systems to track noise/vibration issues, and determine the cause(s) of a disturbance.

Additional technologies, such as the use of drones or other tools with advanced sensing technologies, can improve the City's ability to monitor and detect unfavorable issues at drilling sites. The City should prioritize incorporating these types of technologies into modified conditions and development of a single, cohesive inspection program that leverages expertise across all City Departments.

In addition to site-specific investigations to identify noncompliance, the City needs a mechanism to periodically review conditions of approval for *all* drilling sites in order to ensure that it is protecting residents from public health risks, effectively utilizing emerging technologies, and considering surrounding land uses. The Petroleum Administrator should collaborate with City Policymakers to determine an appropriate interval for these citywide reviews (e.g., every five years).

Public Safety

In addition to land use controls to ensure drilling sites are not a nuisance to the surrounding community, the City has a recurring inspection and permitting framework to protect residents and property from hazards of fire, explosion, or panic. Anyone seeking to establish or maintain an oil or gas well must obtain an operational permit from LAFD for each well that has not been appropriately abandoned (i.e., all active and idle wells). LAFD also requires specific-action permits for activities such as drilling, re-drilling, and well abandonment. For both operational permits and specific-action permits, the LAMC tasks the LAFD with performing investigations and granting approval, conditional approval, or denial of the application. By issuing the permit, LAFD is attesting that the well (and drilling site) does not create any undue hazards and is compliant with the City's Fire Code. LAFD has the authority to revoke or suspend permits due to violations of the Fire Code or when necessary for the protection of life and property.

Given the inherent risks of oil and gas operations and the large number of wells located throughout the City, regular and thorough Fire Code inspections are needed to protect public safety. Prior to 2017, the Fire Code inspections were performed by the LAFD's Harbor Industrial Unit (LAFD-HIU) in San Pedro. This function was transferred to the LAFD-CUPA unit in late 2017 due to personnel changes and organizational restructuring, however, responsibility for Fire Code inspections is being returned to LAFD-HIU due to LAFD-CUPA taking on additional responsibilities related to hazardous waste inspections. LAFD-CUPA staff have begun working on transferring the program back to LAFD-HIU and indicated that the current plan is to maintain the existing staffing model (i.e., one inspector for all active and idle wells).

The City Should Prioritize Annual Fire Code Inspections Using a Risk-Based Approach

The LAMC requires the Fire Marshal (or designee) to investigate applications for operational permits **before** making a decision and instructing Finance to issue or deny the permit. The investigation and operational permit issuance process outlined in the LAMC does not distinguish between applications submitted for new wells and renewal applications submitted for existing wells. Although a new drilling site has not been established in recent years, Finance and LAFD staff agreed that an inspection demonstrating compliance with the Fire Code would be required prior to the issuance of a new operational permit. In contrast, renewal applications for existing wells are renewed automatically upon receipt of payment, and Fire Code inspections are performed throughout the calendar year.

Although an inspection only provides a snapshot of the site's compliance with the Fire Code, the annual inspection cycle provides an opportunity to make strategic decisions about which locations should be prioritized. LAFD-CUPA staff indicated that factors such as geographic proximity and date of last inspection have guided their selection of locations since they began performing inspections in October 2017. As the City transfers this function back to LAFD-HIU, it should consider additional risk factors when deciding which locations to inspect at the beginning of each year. These risk factors include: (1) proximity to residential and other non-industrial sites; (2) age and number of wells; and (3) number and severity of previous Fire Code violations cited by LAFD.

The City Should Enhance Interdepartmental Collaboration as it Refines its Fire Code Inspection Program

Because DBS does not proactively inspect oil and gas drilling sites to ensure compliance with conditions of approval, the annual Fire Code inspections performed by LAFD are the City's primary tool to monitor activity at oil and gas drilling sites. Although LAFD's responsibilities are limited to enforcement of the Fire Code, each inspection presents an opportunity to assess risk and collect and disseminate information to other City Departments and external regulatory agencies.

Recent actions by City policymakers to improve local control (i.e., hiring a Petroleum Administrator and working to reorganize the oversight framework) demonstrate a commitment to mending the fragmented approach of the past. However, LAFD's process of performing Fire Code inspections, and information about those inspections, remains within a departmental silo. Currently, a single LAFD inspector is assigned to inspect more than 1,000 active and idle wells throughout the City on an annual basis. Operators who are cited for violations of the Fire Code are provided an opportunity to remediate the issue, and instances of continued noncompliance are forwarded to the City Attorney for follow-up actions. Information about Fire Code inspections and violations was previously recorded in the LAFD's Fire Prevention Application (FPA) system and until the recent decision to return control to LAFD-HIU, LAFD-CUPA staff began migrating the data to its Envision Connect data management system. Access to FPA and Envision Connect is limited to LAFD personnel; the software is housed on an LAFD server.

LAFD's approach may meet its needs based on LAMC requirements to enforce the Fire Code at drilling sites. However, the effectiveness of the City's oversight efforts will remain constrained if these activities are not part of a larger, coordinated framework. For example, a recurring pattern of Fire Code violations may alert other City Departments to potential issues such as noncompliance with conditions of approval or violations of the City's building codes (e.g., electric or plumbing codes). Technical assistance from the Petroleum Administrator could be used to identify high-risk sites that should be inspected more frequently. Photos of drilling sites and equipment could be used to track modifications to the site, or be used to compile information for a more centralized database that begins to address the information gaps described in this report. Currently, the level of ongoing and proactive interdepartmental collaboration falls short.

In March 2016, the LA County Board of Supervisors formed a multi-agency team to conduct site visits and collect information about safety conditions, permit requirements, and zoning recommendations for oil and gas wells in unincorporated areas of the County. The multi-agency team included officials from the County's Department of Regional Planning, Department of Public Health, Fire Department, and Department of Public Works. LAFD staff expressed concerns about involvement in a similar endeavor for the City. They cautioned that it would reduce efficiency and decrease the likelihood that all required inspections could be completed with existing staff. Further, LAFD officials expressed concerns about the effectiveness of non-LAFD personnel unfamiliar with oil and gas drilling sites accompanying LAFD inspectors. Despite these concerns, the City should evaluate the feasibility of designing a comprehensive monitoring and enforcement program that includes staff across City Departments.

Recommendations

The Petroleum Administrator should:

- 1.1 Collaborate with DCP/OZA, the City Attorney, LAFD, and DBS to identify high-risk drilling sites and initiate targeted reviews to determine whether operators are in compliance with existing conditions of approval requirements.**
- 1.2 Engage residents and businesses near high-risk drilling sites to document evidence of nuisance operations.**
- 1.3 Collaborate with DCP/OZA to implement modified conditions or corrective actions for those high-risk sites determined not to be in compliance with existing conditions of approval or responsible for nuisance operations. Prioritize modernization of drilling sites by requiring operators to install continuous air monitoring devices and other emerging technologies.**

The Los Angeles Fire Department should:

- 1.4 Prioritize annual Fire Code inspections using additional risk-based factors such as: (1) proximity to residential and other non-industrial sites; (2) age and number of wells; and (3) number and severity of previous Fire Code violations cited by LAFD.**

City Policymakers should:

- 1.5 Amend the LAMC to allow the City to undertake periodic reviews of conditions of approval at all drilling sites to consider public health risks and surrounding land use. Collaborate with the Petroleum Administrator to determine an appropriate interval for these reviews.**
- 1.6 Consider developing an enhanced oversight program to proactively monitor and enforce compliance with conditions of approval at oil and gas drilling sites based on experience and data collected from the targeted reviews. In addition, determine whether annual inspections performed by City Departments such as LAFD and DBS should be incorporated into the proactive monitoring and enforcement program.**

SECTION II: PROTECTING CITY TAXPAYERS' FINANCIAL INTERESTS

The State's regulatory framework is designed to protect the public and environment from adverse impacts of oil and gas extraction activities; however, accidents such as blowouts, spills, or contamination are sometimes unavoidable. In addition, irresponsible or insolvent operators may desert wells when they are no longer producing, rather than plug the wells in accordance with State requirements. The probability, timing, duration, and magnitude of these risk events depends on many factors, including the wells' phase of production; proximity to residents or sensitive environmental sites; method of extraction/injection; well depth; age of well; financial stability of the well operator; and effectiveness of regulators.

Aside from potential harm, the financial costs of remediating issues related to oil and gas drilling sites in a densely-populated urban environment can be significant. Given the risks, the City needs to consider appropriate financial coverage requirements to protect taxpayers from well operators that knowingly or unknowingly cause harm.

The City's Risk Management Approach Should Include a Combination of Insurance and Increased Bonding Requirements

The type of financial risk management instruments and required coverage amounts should be determined based on the type of risk the City is seeking to mitigate.

Insurance

The City can initiate legal proceedings to pursue compensation from any operator responsible for an accident that causes harm to public safety or the environment. However, this approach may not be successful in providing funds necessary for remediation because the impacts of a serious incident may render the responsible operator insolvent. In addition, the City would be required to provide the evidence to show an operator was responsible for the accident, and that could prove challenging. One potential strategy is to transfer risk to a third party, through insurance requirements. Because insurers develop policies based on the required coverage amount and level of risk, operators of older drilling sites may be incentivized to invest in site modifications or safety enhancements to drive down monthly insurance costs.

The LAMC does not require operators of drilling sites on private property to maintain insurance policies with the City as a named party.⁹ However, DCP/OZA may use its discretion to require well operators to maintain insurance on a case-by-case basis, by attaching the requirement to the conditions of approval. For example, the conditions of approval for the South L.A. drilling site described earlier in this report require the operator to maintain \$2 million in general liability insurance to account for potential property damage caused by drilling or extraction activities. The City lacks a database of conditions of approval for all oil and gas drilling sites, therefore, the extent to which other well operators have been subject to similar insurance requirements is unknown.

⁹ The LAAC requires the Risk Manager to recommend changes to the City Council about the adequacy of ordinances that require entities to post insurance. However, the LAAC does not appear to specifically assign responsibility for situations where there is no insurance requirement.

Some local jurisdictions such as Culver City and Simi Valley require all operators of oil and gas wells to maintain general commercial liability insurance. Of particular note is the City of Carson, which made significant revisions to its Municipal Code in 2016. Operators of each oil and gas drilling site in Carson are required to maintain liability policies that also name the City of Carson, its officers, officials, agents, and employees as additional insured entities. The specific insurance requirements are outlined in the table below.

Figure 9: City of Carson Insurance Requirements for Operators of Oil/Gas Wells¹⁰

Insurance Type	Minimum Requirements	Notes
Control of Well Insurance	\$40 million per occurrence Max deductible of \$500k per occurrence	Only applies during drilling or reworking. Policies designed to cover cost of controlling well that is out of control, drilling or restoration expenses, and seepage and pollution damage. Requirements may be waived if operations are confined to depths and formations within which there is no substantial risk of loss of well control.
Excess (or umbrella) liability insurance	\$25 million	Provides excess coverage for each of the policies listed below, except for underground reservoir (or resources) damage.
Bodily injury and property damage	\$2 million per occurrence \$2.5 million in the aggregate	Coverage must include premises, operations, blowout or explosion, underground property damage, underground reservoir (or resources) damage, etc.
Environmental impairment (or seepage and pollution) coverage	\$2 million per occurrence \$2.5 million in the aggregate	Covers sudden or accidental release of oil/gas, vapors, fumes, chemicals, etc. Must be included in general liability coverage or as separate coverage. The policy must include a minimum 10 year discovery period.
Commercial automobile liability insurance	\$1 million per occurrence	Shall include coverage for all owned, hired and non-owned automobiles, or other licensed vehicles.
Workers' Compensation Insurance	\$1 million per occurrence	Operators must maintain coverage in accordance with minimum statutory requirements.

There are a variety of indemnity agreements and insurance models that may be appropriate. For example, the City can require well operators to obtain a policy that names the City as an

¹⁰ According to Carson's Municipal Code, well operators can "self-insure if insurance is not commercially feasible to obtain and maintain in the commercial insurance market, as certified by a written report prepared by an independent insurance advisory of recognized national standing..." This exception only applies to excess (or umbrella) liability coverage, control of well insurance, and environmental impairment (or seepage and pollution) coverage.

additional insured entity, which would allow the City to file a claim in the event that the activities of well operator harm the City's financial interests.

City Policymakers should consult with the Risk Manager and Petroleum Administrator and consider the following issues while developing insurance requirements: (1) policy types and minimum coverage amounts; (2) whether the City's interests would be best protected by being included in the policy as an additional insured entity; (3) duration of environmental insurance requirements to account for long-term risks such as oil seepage after a well has been plugged and abandoned; (4) carefully written language to ensure the City is able to collect from the insurance company in the event of a claim being filed; and (5) the minimum credit rating (as determined by a generally accepted rating organization) for eligible insurers.

Surety Bonds

In the absence of insurance requirements, the City requires two sets of surety bonds related to oil and gas well operations: a zoning bond and an operational bond. These surety bond requirements do not absolve well operators from liability associated with fire, well failures, or conditional use violations. Generally, the system is designed to protect the City and its taxpayers from irresponsible operators who simply desert wells when they are no longer productive or insolvent operators who enter bankruptcy and cannot afford the costs of well plugging and abandonment. Given the anticipated costs, surety bond requirements should reflect the costs of reclaiming a site on public or private land.

The LAMC requires well operators to post a \$5,000 bond or deposit cash when applying for a permit to drill, operate, or maintain any oil or gas well ("zoning bond") in urbanized areas of the City or the Los Angeles City Oil Field Area. The bond is intended to ensure operators comply with conditions of approval established by DCP/OZA. If the operator fails to comply, the City can claim the cash deposit or obtain financial compensation from the surety company and use the funds to defray any costs incurred to ensure compliance with zoning requirements and conditions of approval. Zoning bonds are required to be maintained throughout the life of an established drilling district or well. DCP/OZA staff stated the bond requirements were inadequate and noted that the last drilling district in the City was created decades ago.

The City's Fire Code, which is part of the LAMC, also requires operators of oil and gas wells to post surety bonds of \$10,000 per well, or through a blanket bond of \$50,000 for any number of wells ("operational bond"). The primary purpose of the operational bond is to ensure that the City has financial resources available in the event that an operator fails to plug and abandon a well in accordance with State law or is found in violation of fire and safety requirements outlined in the City's Fire Code. Bonds can be obtained from a surety company or the operator can deposit cash with the City Treasurer in-lieu of posting a bond. Operational bonds are released when the operator plugs (i.e., caps and seals the well in accordance with DOGGR requirements) and abandons (i.e., removes all equipment and restores the site back to its original condition) the well. The LAMC section related to operational surety bond requirements has not been revised for decades; City officials agreed that the requirements were outdated. According to the LAAC, the Risk Manager is required to make a recommendation to the City Council if it is determined that the City's bonding requirements do not provide adequate protection.

Several neighboring municipalities have lower operational surety bond requirements than the City, but require additional proof of liability insurance to operate a well within their respective jurisdiction. In addition, jurisdictions such as Culver City, Santa Fe Springs, and Carson have provisions in place to determine the appropriate level of bonding that is needed on a case-by-case basis. The City of Carson requires its Petroleum Administrator to reassess each bond requirement every five years to determine whether the amount is sufficient to cover any abandonment or remediation costs.

Figure 10: Comparison of Oil and Gas Well Bonding and Insurance Requirements for Selected Neighboring Municipalities

Jurisdiction	Bonding Requirements		Insurance Requirements		Notes
	Individual Well	Multiple Wells (5 or more)	Liability	Property	
City of Los Angeles	\$10,000	\$50,000	N/A	N/A	\$50,000 blanket bond for any number of wells
City of Simi Valley	\$10,000	N/A	\$500,000/\$1,000,000	\$2,000,000	Liability limits for one person/all persons
Culver City	①	①	\$10,000,000	N/A	General Commercial Liability
City of El Segundo	\$2,000	\$10,000	N/A	N/A	
Santa Fe Springs	②	②	N/A	N/A	
City of Torrance	\$5,000	\$25,000	N/A	N/A	
City of Fullerton	\$2,000	\$10,000	N/A	N/A	
City of Carson	③	③	\$2,000,000	See note	Environmental \$2M/ WC \$1M/ Auto \$1M/ Umbrella \$25M
County of Los Angeles	\$2,000	\$10,000	N/A	N/A	

- ① Bond requirements did not have a set amount, bond shall guarantee the faithful performance of all the conditions of the permit, and all other pertinent City, State or Federal laws rules and regulations.
- ② Bond requirements did not have a set amount, bond shall guarantee the faithful performance, sum to be determined by resolution of the City Council or State law, for each well.
- ③ The Petroleum Administrator shall determine the amount of the bond based on many factors and to ensure the completion of abandonment to the amount not covered by DOGGR bonds. Bond shall be inflation indexed, reassessed every 5 years, etc.

In contrast, the City has established minimum bonding requirements without requiring additional liability insurance, nor a process to adjust for risk factors unique to each site such as well depth, methods of operation, operator history, and proximity of the well to residents and sensitive environmental sites.

As the regulator of oil and gas drilling activities throughout the State of California, DOGGR also requires operators to file bonds when seeking to drill, re-drill, deepen, or maintain an oil well. The conditions of bonds filed with DOGGR are tied to compliance with all provisions of Division 3 of the State's Public Resources Code and lawful orders made by DOGGR officials. DOGGR modified its bond requirements in January 2018. The tables below compare current individual and blanket bond amounts required by the City and DOGGR.

Figure 11: Bonding Requirements for Individual Oil and Gas Wells in the City

Jurisdiction	Individual Well	Well Depth	Number of Wells
City of Los Angeles	\$10,000	N/A	Unlimited
DOGGR	\$25,000	< 10,000 feet deep	1 to 19
DOGGR	\$40,000	> 10,000 feet deep	1 to 19

Figure 12: Bonding Requirements for Multiple Oil and Gas Wells in the City

Jurisdiction	Blanket Bond Amount	Well Depth	Number of Wells
City of Los Angeles	\$50,000	N/A	Unlimited
DOGGR	\$200,000	N/A	20 to 50
DOGGR	\$400,000	N/A	51 to 500
DOGGR	\$2,000,000	N/A	501 to 10,000
DOGGR	\$3,000,000	N/A	More than 10,000

The underlying goal of requiring a surety bond for oil and gas wells is to protect taxpayers from absorbing the cost of remediating a site if an operator is unable to pay. For example, idle oil and gas wells that are no longer in operation present environmental and safety risks. Irresponsible operators may shirk their responsibility to properly plug and abandon these wells in accordance with State law, because the costs can be significant and there is no return on investment. If DOGGR cannot identify the operator of a deserted well, or an operator enters bankruptcy, DOGGR can access funds from its Oil and Gas Environmental Remediation Account to plug and therefore appropriately abandon those “orphan” wells that pose a danger to life, health, water quality, wildlife, or natural resources. The State has gradually increased the maximum funding level for this account and DOGGR is currently authorized to spend up to \$3 million¹¹ per year to remediate deserted wells. DOGGR reportedly has plugged approximately 1,350 deserted wells since 1977 at a cost of more than \$27 million (approximately \$20,000 per well).

Although the State has a program in place to cover costs associated with orphan wells that pose a threat to public safety and the environment, it has recently taken steps to enhance its oversight. In September 2016, Governor Brown signed a bill to reduce the number of idle wells that may become orphaned. All operators must either submit a plan for the management and elimination of all long-term idle wells, or pay an annual fee. By increasing fees required to maintain idle wells, DOGGR’s goal is to encourage operators to either reactivate or plug and appropriately abandon idle wells in conformance with State requirements.

DOGGR’s remediation budget and bond requirements may not be sufficient to cover costs associated with all orphan wells in the City of Los Angeles. DOGGR recently sealed two orphan wells buried under a residential street in an Echo Park neighborhood after receiving complaints

¹¹ Commencing on July 1, 2018.

from residents about foul odors from leaking gas. The wells were originally drilled before 1903, and DOGGR concluded that they would likely continue to deteriorate without intervention. The total cost of plugging the two wells exceeded \$2 million. The City could have been forced to absorb a portion of the cost if DOGGR did not have funds available, or if deserted wells in other areas of the State were a higher priority. This example, though seen as a worst-case scenario, demonstrates the need for financial assurance requirements to reasonably reflect the cost of remediation.

The City Needs to Ensure Well Operators Maintain Active Insurance and Bond Coverage

Once a well operator provides proof of insurance or bond coverage, the City should have effective administrative processes in place to ensure that the insurance policy or surety bond does not lapse.

Insurance

As the City develops insurance requirements for oil and gas well operators, it should develop minimum notification requirements about insurance policy renewals, revisions, and cancellations. Failure to maintain coverage should be grounds for cancellation or suspension of the annual operational permit issued by LAFD, until the operator provides proof of coverage.

Surety Bonds

Each active and idle well in the City should be covered by an individual or blanket bond. Once a surety bond has been posted, it is incumbent upon the City to periodically confirm that it is still valid and the surety company is in good financial standing and can provide funds if a claim is filed. The LAAC tasks multiple City Departments with responsibilities related to oversight of surety bonds once they have been filed:

- City Departments that receive bonds are required to “keep an adequate” record of details associated with each bond such as filing date, operator performance, and occurrence of any loss or default;
- the Risk Manager is required to maintain bonds “in such manner as to keep them enforceable”;
- the City Controller, upon the Risk Manager’s request, is required to report on the financial standing and responsibility of a surety company that has offered a bond to the City.

The LAMC requires operators to file operational bonds or submit cash-in-lieu deposits to the Office of Finance when submitting an application to drill, operate, or maintain a well. We requested an inventory of surety bonds for oil and gas wells but Finance staff could not produce a listing; however, Finance provided a list of eight cash-in-lieu deposits, totaling approximately \$225,000.

The LAMC requires operators to file zoning bonds with DCP/OZA when submitting applications to establish drilling districts or sites. DCP/OZA staff were unfamiliar with the status and location of zoning bonds filed by oil and gas well operators because zoning bonds must be submitted with applications to establish drilling districts or sites, neither of which has occurred in recent years.

DCP/OZA staff stated that they inherited oversight of the zoning bonds and were generally unaware of their existence until a surety company contacted them in November 2016 and requested to cancel an operator's bond.

We also obtained information from the CAO Risk Management Division's Track4LA system related to oil and gas bonds. Track4LA showed only 70 records (some of which were blanket bonds or cash deposits covering multiple wells) related to oil well surety bonds or cash-in-lieu deposits, however, all of these records were created after 2005. According to CAO Risk Management staff, no records for oil and gas bonds transacted prior to 2005 were migrated into the Track4LA system, and they had no other information regarding the existence or completeness of such records.

Because City Departments have not effectively maintained and monitored surety bonds and many of the drilling sites were established decades ago, it is possible that older wells are no longer covered by active bonds due to insolvent surety companies. While the existing bond requirements appear to be inadequate and should be revisited, the City must also determine the status of its existing bond inventory, and determine how to bring operators into compliance. Rather than allocating resources to search for old, and perhaps expired or invalid, paper-based bond documents in the City Archives or Departmental files, the City should require operators to provide proof of active bond coverage on an annual basis.

Recommendations

City Policymakers should:

- 2.1 Amend the LAMC to require all operators of oil and gas drilling sites to maintain insurance coverage. Consult with the Risk Manager and Petroleum Administrator to determine appropriate types of insurance coverage and minimum coverage requirements.**
- 2.2 Amend the LAMC to revise the surety bond amounts required from operators of oil & gas wells to reflect risk, including providing the Petroleum Administrator with discretionary authority to set bond amounts on a case-by-case basis and allow for periodic reassessments to account for changing conditions.**
- 2.3 Revise City practices to require operators of all active and idle wells to submit proof of active and adequate bond coverage as well as liability insurance as part of the application process to obtain or renew an LAFD operational permit.**
- 2.4 Direct LAFD to submit/upload all bond and insurance documents to the system maintained by the CAO's Risk Management Division.**

The Petroleum Administrator should:

- 2.5 Work with the CAO Risk Management Division and DCP/OZA to periodically review the status of all oil and gas well surety bonds and insurance policies on file with the City. For operators and/or sites lacking the required and valid surety bond or insurance coverage, consult with the City Attorney to evaluate options for resolution.**

- 2.6 Work with responsible City Departments to file claims on surety bonds or insurance policies when drilling site operators demonstrate a pattern of noncompliance with legal requirements and conditions of approval.**

SECTION III: GENERATING CITY REVENUE FROM OIL AND GAS WELLS

The City can also exercise local control over oil and gas wells through imposition of taxes, fees, and other industry-specific revenue generation strategies. Given the historical nature of drilling activity in the City, successful extraction of oil/gas from older wells is likely more challenging and expensive than in the past. Policymakers should consider these factors when evaluating taxes and fees from oil/gas extraction activity and develop an equitable framework that generates revenue for the City without discouraging business activity.

Taxes Applicable to All Businesses in the City

Operators of oil and gas drilling sites are subject to several types of State and local government taxes like other businesses operating within the City. As shown in the table below, the City's business (i.e., gross receipts) tax and electricity user tax are the only tax revenue streams that are imposed and collected directly by the City. Other forms of tax revenue originating from oil and gas activities are collected by other entities, and the City receives an allocation or apportionment of that revenue.

Figure 13: Taxes Applicable to All Businesses in the City

Type	Rate	Tax base	Responsible entities
Property tax	City Treasury receives approximately 25% distribution from 1% property tax rate levied on properties in LA	Market value of an oil/gas mineral property interest determined by estimated value of proved reserves which are likely to be recoverable in the future	• LA County Assessor • LA County Auditor-Collector • LA County Treasurer and Tax Collector
Utility user taxes	Gas: 10% Electricity: 12.5% (industrial rate) Communications: 9%	Assessed upon monthly service charges	• LA Department of Water and Power • Southern California Gas Company • Communication service providers
Business tax	\$1.01 per \$1,000 of gross receipts	Each business transaction that occurs between entities (with separate business interests) is subject to taxes on the revenues generated from wholesale sales	• Office of Finance
Uniform local sales and use taxes	City Treasury receives 1% distribution from statewide sales/use tax rate of 7.25%	Sales - all retailers subject to sales tax in exchange for privilege of selling tangible goods at retail Use - buyers who engage in the use, storage, or other consumption of tangible personal property are subject to tax if retailer did not collect on behalf of State/City	• California State Board of Equalization

The amount of taxes collected from oil and gas operators cannot be readily determined; the City does not have a mechanism to actively track how much tax revenue it receives in the aggregate from operators of oil and gas wells. Revenues generated from these taxes are deposited into the City Treasury.

Industry-specific Fees, Taxes, and Royalties

The City can also impose industry-specific fees to recover local regulatory costs, taxes, or royalties to generate revenue. Various strategies to recover costs and generate revenue are outlined below.

Local Regulatory Fees

Although the City cannot levy taxes without voter approval, local governments in California are authorized to impose regulatory fees related to:

- issuing licenses and permits;
- performing investigations, inspections, and audits; and
- administrative enforcement and adjudication.

According to the California State Constitution, “the local government bears the burden of proving by a preponderance of the evidence that a levy, charge, or other exaction is not a tax, that the amount is no more than necessary to cover the reasonable costs of the governmental activity...”

The City Should Prioritize Cost Recovery as it Develops an Enhanced Local Oversight Framework

The City’s primary tool for recovering regulatory costs associated with active and idle wells are through fees for LAFD operational permits and specific-action permits.¹² The costs for these permits range from \$1,000 to \$2,600. Local jurisdictions with large numbers of active and idle wells also charge operators regulatory fees to recover the costs of issuing permits and performing public safety inspections. Although the specific activities performed as part of the inspection may vary, we noted the fees charged by other local jurisdictions (such as LA County, Long Beach, and Culver City) are lower than those currently charged by the City.

The City does not currently have legal authority to recover costs associated with the enhanced local oversight framework envisioned by the recent City Council motion. As a result, costs to perform activities such as conditional use inspections and administrative reviews of permits issued by external regulatory entities would be borne by the City’s taxpayers through an allocation of the City’s discretionary funds, rather than operators of drilling sites. In contrast, the City of Carson recently revised its Municipal Code to allow full cost recovery for activities related to enhanced compliance monitoring and periodic reviews of oil and gas drilling sites.

Extraction (i.e., “barrel”) Taxes

The LAMC previously included a tax specifically designed to generate revenue from operators of oil wells located in the City. On a quarterly basis, well operators were required to pay \$21.29 for each well that produced 200 barrels of oil or less. Wells that produced more than 200 barrels of

¹² The City is also authorized to recover all direct and indirect costs associated with performing inspections to ensure compliance with statewide standards to each facility in its jurisdiction that treats or generates hazardous waste, operates underground storage tanks, or stores hazardous material.

oil were subject to the base fee (\$21.29) plus \$0.11 for each barrel of oil extracted during the reporting period. This section of the LAMC was repealed in 1996, and taxes on oil production were shifted to the business tax on wholesale sales described in Figure 13.

The City cannot unilaterally undo its repeal of the barrel tax or implement another tax on oil extraction; local governments in California must obtain voter approval to levy any new tax. In March 2011, a ballot measure proposed that the City would impose a tax of \$1.44 per barrel of oil extracted within the City. The proposed tax rate was significantly higher than barrel taxes imposed by neighboring jurisdictions. The proposed ballot measure was narrowly rejected by voters 51.07% to 48.93%.

The City Should Consider Reintroducing a Barrel Tax for Voter Approval

Although the March 2011 ballot measure was narrowly rejected, increased awareness about the impacts of oil and gas extraction in a densely populated environment combined with high profile incidents such as Aliso Canyon may have shifted voter opinion.

Currently, barrel taxes in neighboring jurisdictions such as Long Beach, Santa Fe Springs, and Seal Beach range from \$0.41 to \$0.49 per barrel. Based on the Petroleum Administrator's estimate of current production levels (7,500 barrels per day), a barrel tax of \$0.50 would generate approximately \$1.4 million each year. City Policymakers should perform a formal cost-benefit analysis that considers factors such as:

- projected extraction volume based on historical records and the likelihood of future drilling activity;
- cost of placing the measure on the ballot;
- ongoing administrative costs associated with imposing and collecting the tax; and
- an appropriate tax rate.

If the City decides to move forward with a ballot initiative, City Policymakers should determine whether revenue generated from these taxes should be deposited in the City's general fund or restricted to a specific purpose.

Revenues from Oil and Gas extracted from Subsurface City-owned Property and Mineral Rights

The City owns a large real estate portfolio (almost 9,000 distinct parcels) that includes parks, libraries, municipal facilities, buildings, and vacant land. The value of the City's properties is not limited to structures that can be built upon them; recoverable deposits of oil and gas may be found in subsurface locations beneath these parcels. The City's ability to generate revenue by using its real estate assets for oil and gas extraction activity depends on the extent to which it owns the mineral rights associated with subsurface parcels of land.¹³

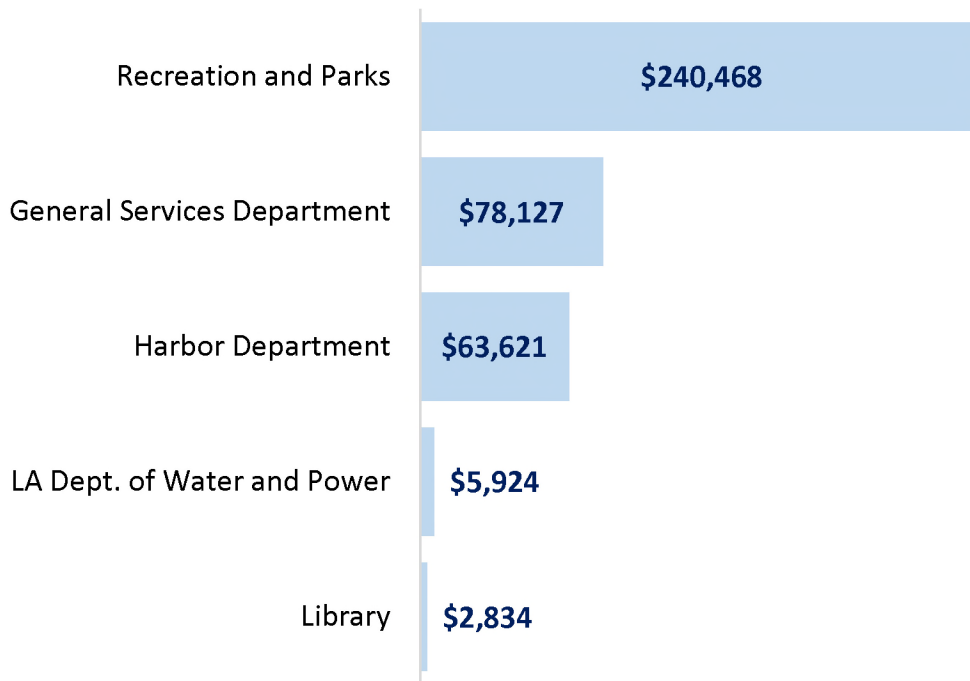
¹³ There are various degrees of land ownership in the United States. In a "fee simple" arrangement, the property owner has sole ownership of the surface of the land and sole ownership of any minerals located beneath the surface of the land (i.e., mineral rights or mineral interests). Property owners can also separate (or sever) ownership of the parcel into two distinct components, a surface estate and a mineral estate. Like other property rights, either of these components can be bought, sold, leased, and transferred in accordance with federal and state law.

The scenarios below describe two common business arrangements that can be used to generate revenue from oil and gas extraction activity.

- Scenario 1 – Subsurface deposits of oil and gas often cross property boundaries, including those owned by the City. To facilitate orderly/efficient extraction, the City may enter into pooling or unitization agreements where the City's mineral interests are joined with the mineral interests of other property owners. Together, the owners of the mineral rights delegate their right to drill and extract oil and gas to one or more well operators. In this scenario, the City and other mineral rights owners are paid royalties based on how much oil or gas is removed from subsurface areas, allocated to parcels they own.
- Scenario 2 – The City may enter into lease agreements with private well operators to allow for the construction of a drilling site on City-owned property, which extracts oil and gas from subsurface parcel(s). In exchange for allowing the lessee to operate the drilling site, the City is paid royalties based on how much oil or gas is extracted from subsurface parcels whose mineral rights are owned by the City.¹⁴

In both of these scenarios, the City's ability to collect the revenue it is owed requires complete information about its mineral interests and related lease and/or unitization agreements. According to information provided by Council-controlled and Proprietary Departments, the City received approximately \$390,000 royalty revenue through these methods during FY2017.

¹⁴ Adjacent property owners with mineral rights may also receive royalty payments from the well operator through a pooling or unitization agreement.

Figure 14: City Oil and Gas Royalties (FY2017)

The City Needs to Improve Oversight of Oil and Gas Extracted from City-owned Property to Ensure it Receives the Revenue it is Due

Like any other property owner, the City needs to ensure that its business partners make accurate payments in a timely manner. The LAAC outlines a centralized role for the Board of Public Works/Petroleum Administrator to oversee oil/gas extraction from City-owned property; however, the historical nature of drilling activity in the City combined with a decentralized approach created information gaps that prevented effective oversight.

The City does not currently know the locations of all subsurface parcels where it owns mineral rights. This prevents the ability to identify pooling or unit agreements that include the properties that should generate royalty revenue for the City based on the amount of oil or gas that is/was extracted. According to the Petroleum Administrator, there may be opportunities to recover revenues from former well operators who may not have paid royalties to the City for decades. However, any potential recovery of these funds is not possible without extensive title research of land records, to identify subsurface locations of oil deposits along with parcels owned by the City. Once identified, these parcel numbers can be compared to existing pooling and unit agreements, as well as historical extraction data, which is maintained by DOGGR.

During our review, staff from some of the City Departments listed in Figure 14 acknowledged that they did not have effective processes in place to ensure the City was receiving all of the revenue it was owed. For example:

- RAP staff could not verify the accuracy of all of the royalty payments it received;

- GSD and LADWP staff stated that they received royalty payments, but were unsuccessful in efforts to obtain information from well operators about the sources of those payments; and
- Harbor staff were aware that property under their control was part of a unitization agreement, however, they did not have a copy of the agreement or a process to verify if the royalty payments were accurate.

These examples demonstrate that City Departments are not exercising sufficient control to ensure the City receive the appropriate revenue for a defined use of the City's property assets.

The City Needs to Verify that Former Lease Operators Have Restored Public Property to its Original Condition

Lessees who construct and operate drilling sites on City-owned property are required to plug and abandon the wells in accordance with DOGGR requirements and restore the site back to its natural condition. Given the lack of effective oversight, the historical nature of the leases, and the long-term absence of a full-time Petroleum Administrator to provide technical assistance and coordinate activities, it is especially imperative for the City to ensure its former lessees have fulfilled their obligations.

One of the leases we reviewed included provisions to protect the City from financial risks associated with deserted wells on public property. RAP's lease with an operator at Rancho Park included provisions intended to protect the City if the operator deserted the well(s) or entered into bankruptcy. The lease extension was signed in 1994 and required the operator to make annual cash payments of \$50,000 until the City received \$500,000 to be held in a Trust Fund. RAP is authorized to periodically review the Fund balance and increase the requirement based on the estimated cost of well abandonment and site restoration. Upon the operator's fulfillment of all restoration requirements, the funds would be returned to the lessee.

Given the lack of reliable information about oil and gas leases, the City cannot make informed decisions about whether it should continue to lease public property for oil and gas exploration. Policymakers must weigh the costs of effectively administering the leases and the inherent environmental and public safety risks, against the amount of revenue that is generated. If the City continues to award and administer leases, it needs to improve oversight.

Recommendations

City Policymakers should:

- 3.1 Amend the LAMC to allow the City to recover costs associated with enhanced oversight activities including: (1) issuing licenses and permits; (2) performing investigations, inspections, and audits; and (3) administrative enforcement and adjudication of oil and gas wells.**
- 3.2 Perform a cost-benefit analysis to explore the feasibility of reintroducing a barrel tax for voter approval. At minimum, the cost-benefit analysis should consider: (1) projected extraction volume based on historical records and the likelihood of**

future drilling activity in the City; (2) cost of placing the measure on the ballot; (3) ongoing administrative costs associated with imposing and collecting the tax; and an appropriate per-barrel tax rate.

- 3.3 Direct all Departments to verify any oil or gas exploration on or under the real property they control. Once an inventory has been developed, determine whether to renew and renegotiate any expired lease agreements.
- 3.4 Formally transfer the responsibility for oversight of oil and gas extracted from City-owned properties to the Petroleum Administrator.
- 3.5 For future lease agreements, consider adding terms that would require payments into a restoration/abandonment fund, modeled after the Rancho Park lease.

The Petroleum Administrator should:

- 3.6 Perform title research to identify subsurface parcels whose mineral rights are owned by the City. For those related to oil fields with extraction activity, determine whether the City received appropriate royalty payments. For well operators who did not pay the City royalties it was owed, consult with the City Attorney to explore legal options.
- 3.7 Collaborate with LAFD and DOGGR to determine whether former lessees fulfilled their obligations to plug and abandon wells in accordance with State law, and restore the site to its natural condition.
- 3.8 For lessees who did not fulfill their obligations to plug and abandon wells in accordance with DOGGR requirements, consult with the City Attorney to explore legal options, and propose any remedial actions that should be taken by the City.
- 3.9 Develop and implement an improved reporting process to provide assurance of compliance with extraction agreements with well operators, including periodic reviews of royalty payments.

SECTION IV: INCREASING TRANSPARENCY AND INFORMATION SHARING

A comprehensive and reliable source of information related to oil and gas drilling sites is essential for City officials to make data-driven policy and operational decisions in a timely manner. We identified opportunities where the City could improve its management of information to facilitate the development of an efficient and effective centralized oversight framework.

The City's Management of Information Related to Oil and Gas Drilling Sites Requires Significant Improvement

The LAAC tasks the Petroleum Administrator with coordinating “all matters respecting or concerning the exploration for or production of petroleum within this City.” To effectively perform this task, the Petroleum Administrator needs easy access to reliable information about the drilling site and the activities of City Departments and external agencies tasked with overseeing the site.

City Departments are responsible for a wide range of activities related to oil and gas drilling sites. Because the City did not have a full-time Petroleum Administrator in place for decades, these activities have been performed independently rather than as part of a centralized oversight framework. This fragmented approach resulted in the development of information silos within individual City Departments.

External entities such as DOGGR and SCAQMD are responsible for regulating oil and gas drilling sites through an oversight framework that includes permitting, inspections, and ongoing monitoring to enforce compliance with federal and State regulatory requirements. Access to information about these activities allows the City and Petroleum Administrator to identify public health and environmental risks as they emerge and before they balloon into larger problems.

During our review, we identified several examples that indicate the City needs to improve its approach to managing information related to oil and gas drilling sites.

Inventory of Well Locations and Production Data

Some of the third-party data relied upon by the City may not adequately meet its operational needs. Although DOGGR maintains an online database with an inventory of all known active, idle, abandoned, and buried wells, the reliability of the data has not been verified by the City. DOGGR's database includes information such as unique identification numbers for each well in accordance with standards established by the American Petroleum Institute (i.e., API number), well status, well operator information, oil/gas field names, county names, and GPS coordinates; but the database does not include the **city** in which the well is located. Because oil/gas fields can cross city/county jurisdictions, the ability to isolate wells located in the City of Los Angeles requires a custom extract generated by DOGGR. Multiple City officials expressed concerns about the accuracy of the well locations on DOGGR's maps and cautioned about the potential impact of inaccurate data and previously unknown well sites interfering with new construction projects initiated by developers.

Because LAFD is tasked with conducting inspections and issuing permits to ensure compliance with the City's Fire Code, it maintains its own inventory of oil and gas wells separate from the DOGGR inventory. The list maintained by LAFD includes more than 3,500 wells. Although LAFD categorizes wells differently than DOGGR, there are significant discrepancies in the number of

total wells and the number of inactive wells (i.e., plugged/abandoned or buried) compared to the data provided by DOGGR, as noted below.¹⁵

Figure 15: LAFD and DOGGR Well Inventory

Source of Inventory	Wells Identified	Active and Idle Wells	Inactive Wells (Plugged & Abandoned or Buried)
LAFD (Sept. 2017)	3,558	1,139	2,419
DOGGR (April 2018)	5,130	1,067	4,063
Difference	1,572	72	1,644

These discrepancies indicate that there are approximately 1,600 buried, or plugged and abandoned wells that LAFD may not be aware of. Buried or improperly plugged wells may leak methane. The LAMC does not require LAFD to inspect wells once they have been appropriately plugged and abandoned; however, LAFD and DBS have a role in implementing the City's methane mitigation requirements. The City's ability to verify the accuracy of its well inventory has been limited; until 2017 the LAFD list included 4-digit numbers assigned to each well, but did not include API numbers used in the DOGGR list. LAFD staff has begun the process of reconciling the well inventory data.

In addition to challenges regarding well inventory and locations, the City does not actively track how much oil or gas is extracted from wells located within the City. Operators are required to submit monthly production reports to DOGGR that are uploaded to their online system; however, the City does not currently have a process or method to pull that data and track it in the aggregate. The Petroleum Administrator estimated that 7,500 barrels of oil are extracted on a daily basis in the City, though the amount likely fluctuates. The City's ability to make informed policy and operational decisions about oil and gas extraction is limited if it cannot monitor the volume of activity on an ongoing basis.

Conditions of Approval for Oil and Gas Drilling Sites

The City does not have an electronic database of operating requirements for all oil and gas drilling sites. According to DCP/OZA personnel, letters outlining conditions of approval may be available through various DCP systems (Planning Case Tracking Management System and/or Zoning Information and Map Access System). However, the availability of documents depends on the date the site was established or last modified; hard copy documents associated with older drilling sites are stored in the City Archives. A large number of drilling sites are likely to fall into this category, given the historic nature of oil and gas activity in the City.

In an April 2016 report prepared by the Chief Legislative Analyst and City Administrative Officer, DCP/OZA outlined the need to catalog and digitize existing conditions of approval; but this has

¹⁵ According to LAFD staff, their inventory of 'active' wells includes idle wells, since both active and idle wells require annual Fire Code inspections. The DOGGR data in Figure 15 was reorganized to match LAFD's criteria.

not yet occurred. Lacking a comprehensive electronic repository inhibits DCP/OZA's ability to effectively work with the Petroleum Administrator and proactively identify drilling sites with potential for new or modified conditions. In addition, DBS cannot effectively carry out its responsibility to enforce DCP/OZA's land use decisions without reliable access to the conditions of approval for each drilling site.

External Regulatory Entities

The LAMC does not require operators or external regulatory agencies to notify the Petroleum Administrator when permits are issued, operators are cited for violations, or complaints are received. Currently, the Petroleum Administrator must engage DOGGR and other external agencies on a case-by-case basis. The Petroleum Administrator recently reached an agreement with SCAQMD to receive email notifications when operators are cited for violations pertaining to air pollution.

The examples below demonstrate the importance of timely access to information maintained by external regulatory entities.

- The City recently alleged that an operator performed at least 42 different re-drilling and maintenance activities with DOGGR's permission over a 16-year period without submitting an application to DCP/OZA in accordance with LAMC requirements. If the City had been notified, it could have considered implementing new conditions to ensure the activities were performed in a manner that were not a nuisance to the surrounding community.
- From 2010 to 2013, SCAQMD received approximately 260 complaints about poor air quality and effects such as headaches and nosebleeds from residents living near a drilling site. DBS officials tasked with enforcing conditions at the site were not aware of those complaints submitted or investigated by SCAQMD.

Although these examples may be outliers and the result of not having a full-time Petroleum Administrator in place to facilitate coordination, they highlight information gaps that need to be addressed by the City.

A Way Forward

The success of the Petroleum Administrator's efforts to coordinate the activities of City Departments and monitor the actions of external regulatory agencies depends on the ability to access reliable information about oil and gas drilling sites in a timely manner. Moving forward, the City needs to compile the necessary information and then connect it in a manner to facilitate effective decision making.

As the City builds a centralized and reliable repository of information, it should also prioritize development of a public-facing website to increase transparency and facilitate public engagement on issues related to oil and gas drilling sites. At minimum, the website should include information about well locations, permits, extraction amounts, conditions of approval, regulatory violations, and a complaint-intake mechanism. This should be supplemented by improved public outreach through City Council offices, Neighborhood Councils, and community-

based organizations to engage residents, especially those who may be less technologically-inclined. Ultimately, the City's goal should be to educate and empower residents to provide input on matters that affect their safety, health, and quality of life.

Recommendations

The Petroleum Administrator should:

- 4.1 Collaborate with responsible City Departments to develop short- and medium-term plans to identify and compile relevant records that are currently located in the City Archives or maintained by City Departments.**
- 4.2 Consult the City Attorney to establish formal information sharing agreements with external regulatory entities.**
- 4.3 Collaborate with responsible City Departments to determine whether existing technology platforms can be used to develop a centralized database of oil and gas drilling sites and relevant information. If not, the Petroleum Administrator should identify reasonable, cost-effective alternatives.**
- 4.4 Develop a public-facing website to increase transparency and facilitate public engagement on issues related to oil and gas drilling sites.**

City Policymakers should:

- 4.5 Consider revising the LAMC to require operators of drilling sites to notify the Petroleum Administrator of communications submitted to and received from external regulatory agencies. City officials should consult with the Petroleum Administrator to identify sources and types of information to be reported. At minimum, the notification requirement should include a timeframe within which the information must be provided.**
- 4.6 Consider revising the LAMC to require oil and gas operators to notify the Petroleum Administrator when complaints are received. At minimum, the notification requirement should include a timeframe within which complaints should be forwarded to the Petroleum Administrator.**

SCOPE & METHODOLOGY

The objective of our review was to identify areas of opportunity where the City can improve its oversight of oil and gas drilling sites as it moves toward developing a modern and centralized framework.

We planned and performed the review to obtain sufficient, appropriate evidence to provide a reasonable basis for our observations and conclusions based on our objectives. Fieldwork was primarily conducted from September 2017 through January 2018.

In accordance with auditing standards and best practices, we conducted interviews and walkthroughs of processes, reviewed documents and performed benchmarking, as noted below:

Interviews and Walk-Throughs

We conducted multiple interviews with the Petroleum Administrator and representatives from other City Departments to assess current roles and responsibilities and to document the quality and extent of interdepartmental and interagency collaboration, and to gain perspective on areas of potential improvement in developing a centralized oversight framework.

Data Analysis and Documents Reviewed

Where available, we gathered and reviewed documentation on the activities of City Departments tasked with responsibilities related to oil and gas drilling sites. We reviewed the legal frameworks of State and local laws to determine the extent of the City's authority and evaluate whether it was effectively exercising that authority.

Benchmarking

We researched policies and processes in other municipalities to identify model practices the City should consider as it seeks to improve oversight of oil and gas drilling sites.

SUMMARY OF RECOMMENDATIONS

Recommendation	Pg #	Responsibility Entity	Priority
I. IMPROVING QUALITY OF LIFE AND PUBLIC SAFETY			
1.1 Collaborate with DCP/OZA, the City Attorney, LAFD, and DBS to identify high-risk drilling sites and initiate targeted reviews to determine whether operators are in compliance with existing conditions of approval.	16	Petroleum Administrator	A
1.2 Engage residents and businesses near high-risk drilling sites to document evidence of nuisance operations.	16	Petroleum Administrator	A
1.3 Collaborate with DCP/OZA to implement modified conditions or corrective actions for those high-risk sites determined not to be in compliance with existing conditions of approval or responsible for nuisance operations. Prioritize modernization of drilling sites by requiring operators to install continuous air monitoring devices and other emerging technologies.	16	Petroleum Administrator	A
1.4 Prioritize annual Fire Code inspections using additional risk-based criteria such as: (1) proximity to residential and other non-industrial sites; (2) age and number of wells; and (3) number and severity of previous Fire Code inspections cited by LAFD.	16	Los Angeles Fire Department	A
1.5 Amend the LAMC to allow the City to undertake periodic reviews of conditions of approval at all drilling sites to consider public health risks and surrounding land use. Collaborate with the Petroleum Administrator to determine an appropriate interval for these reviews.	17	Policymakers	B

1.6	Consider developing an enhanced oversight program to proactively monitor and enforce compliance with conditions of approval at oil and gas drilling sites based on experience and data collected from the targeted reviews. In addition, determine whether annual inspections performed by City Departments such as LAFD and DBS should be incorporated into the proactive monitoring and enforcement program.	17	Policymakers	B
II. PROTECTING CITY TAXPAYERS' FINANCIAL INTERESTS				
2.1	Amend the LAMC to require all operators of oil and gas drilling sites to maintain insurance coverage. Consult with the Risk Manager and Petroleum Administrator to determine appropriate types of insurance coverage and minimum coverage requirements.	24	Policymakers	A
2.2	Amend the LAMC to revise the surety bond amounts required from operators of oil & gas wells to reflect risk, including providing the Petroleum Administrator with discretionary authority to set bond amounts on a case-by-case basis, and allow for periodic reassessments to account for changing conditions.	24	Policymakers	A
2.3	Revise City practices to require operators of all active and idle wells to submit proof of active and adequate bond coverage as well as liability insurance as part of the application process to obtain or renew an LAFD operational permit.	24	Policymakers	A
2.4	Direct LAFD to submit/upload all bond and insurance documents to the system maintained by the CAO's Risk Management Division.	24	Policymakers	A
2.5	Work with the CAO Risk Management Division and DCP/OZA to periodically review the status of all oil and gas well surety bonds and insurance policies on file with the City. For operators and/or sites lacking the required and valid surety bond, consult with the City Attorney to evaluate options for resolution.	24	Petroleum Administrator	B

2.6	Work with responsible City Departments to file claims on surety bonds or insurance policies when drilling site operators demonstrate a pattern of noncompliance with legal requirements and conditions of approval.	25	Petroleum Administrator	B
III. GENERATING CITY REVENUE FROM OIL AND GAS WELLS				
3.1	Amend the LAMC to allow the City to recover costs associated with enhanced oversight activities including: (1) issuing licenses and permits; (2) performing investigations, inspections, and audits; and (3) administrative enforcement and adjudication of oil and gas wells.	31	Policymakers	A
3.2	Perform a cost-benefit analysis to explore the feasibility of reintroducing a barrel tax for voter approval. At minimum, the cost-benefit analysis should consider: (1) projected extraction volume based on historical records and likelihood of future drilling activity in the City; (2) cost of placing the measure on the ballot; (3) ongoing administrative costs associated with imposing and collecting the tax; and (4) the appropriate per-barrel tax rate.	31	Policymakers	B
3.3	Direct all Departments to verify any oil or gas exploration on or under the real property they control. Once an inventory has been developed, determine whether to renew or renegotiate any expired lease agreements	32	Policymakers	A
3.4	Formally transfer the responsibility for oversight of oil and gas extracted from City-owned properties to the Petroleum Administrator.	32	Policymakers	B
3.5	For future lease agreements, consider adding terms that would require payments into a restoration/abandonment fund, modeled after the Rancho Park lease.	32	Policymakers	B
3.6	Perform title research to identify subsurface parcels whose mineral rights are owned by the City. For those related to oil fields with extraction activity, determine whether the City received appropriate royalty payments. For	32	Petroleum Administrator	A

	well operators who did not pay the City royalties it was owed, consult with the City Attorney to explore legal options.			
3.7	Collaborate with LAFD and DOGGR to determine whether former lessees fulfilled their obligations to plug and abandon wells on City-owned property in accordance with State law, and restore the site to its natural condition.	32	Petroleum Administrator	A
3.8	For lessees who did not fulfill their obligations to plug and abandon wells in accordance with DOGGR requirements, consult with the City Attorney to explore legal options, and propose any remedial actions that should be taken by the City.	32	Petroleum Administrator	A
3.9	Develop and implement an improved reporting process to provide assurance of compliance with extraction agreements with well operators, including periodic reviews of royalty payments.	32	Petroleum Administrator	B
IV. INCREASING TRANSPARENCY AND INFORMATION SHARING				
4.1	Collaborate with responsible City Departments to develop short- and medium-term plans to identify and compile relevant records that are currently located in the City Archives or maintained by City Departments.	36	Petroleum Administrator	A
4.2	Consult the City Attorney to establish formal information sharing agreements with external regulatory entities.	36	Petroleum Administrator	A
4.3	Collaborate with responsible City Departments to determine whether existing technology platforms can be used to develop a centralized database of oil and gas drilling sites and relevant information. If not, the Petroleum Administrator should identify reasonable, cost-effective alternatives.	36	Petroleum Administrator	A
4.4	Develop a public-facing website to increase transparency and facilitate public engagement on issues related to oil and gas drilling sites.	36	Petroleum Administrator	B
4.5	Consider revising the LAMC to require operators of drilling sites to notify the	36	Policymakers	B

	Petroleum Administrator of communications submitted to and received from external regulatory agencies. City officials should consult with the Petroleum Administrator to identify sources and types of information to be reported. At minimum, the notification requirement should include a timeframe within which the information must be provided.			
4.6	Consider revising the LAMC to require oil and gas operators to notify the Petroleum Administrator when complaints are received. At minimum, the notification requirement should include a timeframe within which complaints should be forwarded to the Petroleum Administrator.	36	Policymakers	B

A –High Priority - The recommendation pertains to a serious or materially significant audit finding or control weakness. Due to the seriousness or significance of the matter, immediate management attention and appropriate corrective action is warranted.

B –Medium Priority - The recommendation pertains to a moderately significant or potentially serious audit finding or control weakness. Reasonably prompt corrective action should be taken by management to address the matter. Recommendation should be implemented no later than six months.

C –Lower Priority - The recommendation pertains to an audit finding or control weakness of relatively minor significance or concern. The timing of any corrective action is left to management's discretion.

N/A - Not Applicable