



COMMUNITY AWARENESS

## ALISO CANYON FREQUENTLY ASKED QUESTIONS

### BACKGROUND

Since October 23, 2015 SoCalGas® has been working to stop the leak at our Aliso Canyon natural gas storage field. We understand the leak has created concerns, heightened awareness and public urgency. We are highly committed to end the continuing impact caused by the gas leak on the community and the environment. We have assembled a world-class team of experts, and we are working as quickly as safety will allow to stop the leak.

On December 4, we began drilling a relief well that will intercept the leaking well. When the relief well and leaking well are connected, fluids will be pumped to stop the natural gas flow. Finally, cement will be pumped into the bottom of the well to permanently seal it.

The relief well drilling is expected to reach the bottom of the well at a depth of about 8,500 feet below the surface next month. Once the leaking well is sealed, it will be taken out of service permanently. We are currently entering phase five of the operation and are ahead of schedule to complete it.

---

### FOLLOWING ARE ANSWERS TO QUESTIONS WE'VE BEEN ASKED:

#### Is the gas leak harmful to breathe?

On January 14, 2016, the California Environmental Protection Agency's Office of Environmental Health Hazard Assessment (OEHHA) stated that "nearly all measured benzene concentrations in the Porter Ranch community during the leak are similar to background levels generally found in the Los Angeles area, including at the nearest long-term monitoring station in Burbank."

On January 15, 2016, the South Coast Air Quality Management District posted the results of a Preliminary Evaluation for Potential Health Impacts that concluded: "the current levels of community exposure to the leaking gas are not expected to cause a significant increase in overall risk of health effects from either short-term or long-term exposure to air toxic pollutants typically found in outdoor air in Southern California."

SoCalGas® continues to work with city, county and state air quality agencies to sample the air twice per day at ten monitoring stations in the Porter Ranch community and has added six 12-hour samples to the monitoring program at the facility perimeter closest to the community. The air sampling data as a whole reflects benzene levels that are consistent with background levels found in the Los Angeles area. The air quality agencies have said that no acute or long-term adverse health effects are expected at these low levels.

Air sample results are posted for public review on the Environmental Concerns page on [AlisoUpdates.com](http://AlisoUpdates.com).

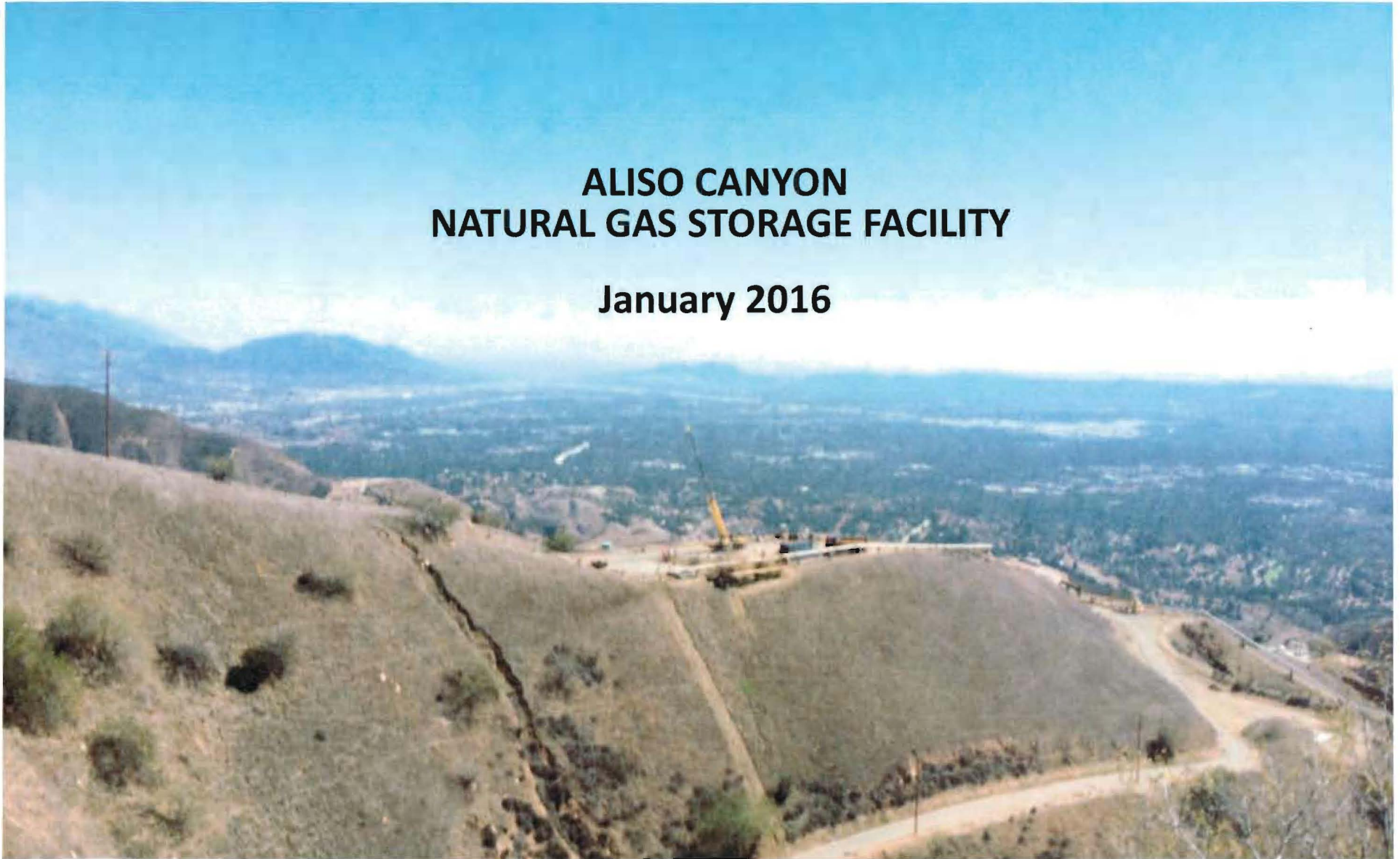




*Glad to be of service.®*

# ALISO CANYON NATURAL GAS STORAGE FACILITY

January 2016



# Southern California Gas overview

- **Serving California for more than 140 years**
- **Largest gas utility in U.S.**
  - Service provided to 21 million consumers through 5.8 million meters
  - 1 tcf of gas delivered annually; 5% of US gas deliveries
  - 136 bcf of gas storage capacity; 3% of US capacity
  - ~100,000 miles of distribution mains and service lines
  - 3,700 miles of gas transmission lines





## Aliso Canyon is a critical energy facility

- **Critical element of SoCalGas' gas delivery system** serving millions of homes and businesses across Southern California
- **Gas withdrawn from storage ensures reliability** for heating in winter and peak electric generation in summer
- **Critical for electric grid reliability**, and provides fuel to 14 power plants across southern California
- **Supports expanded use of renewable energy resources** in California



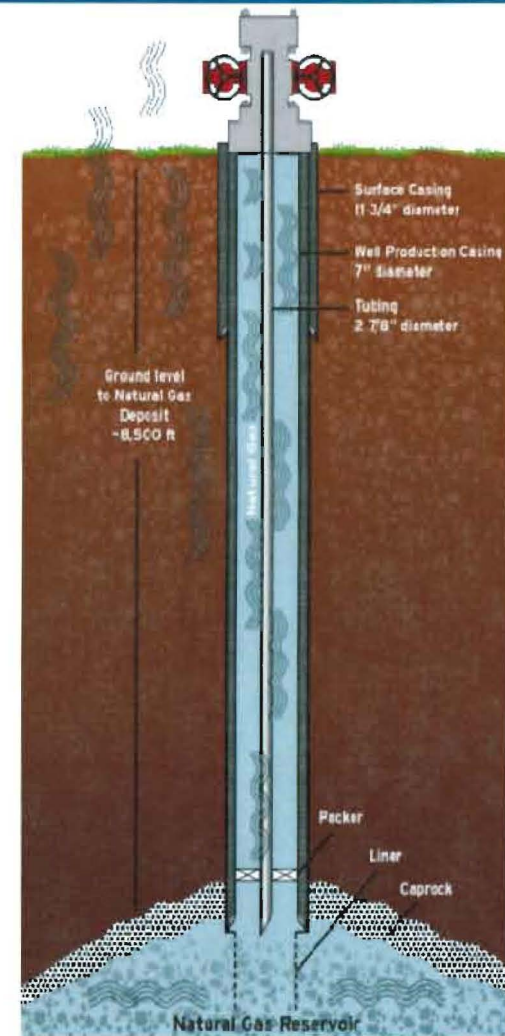
## Facility maintained according to regulations and corporate integrity management policies

---

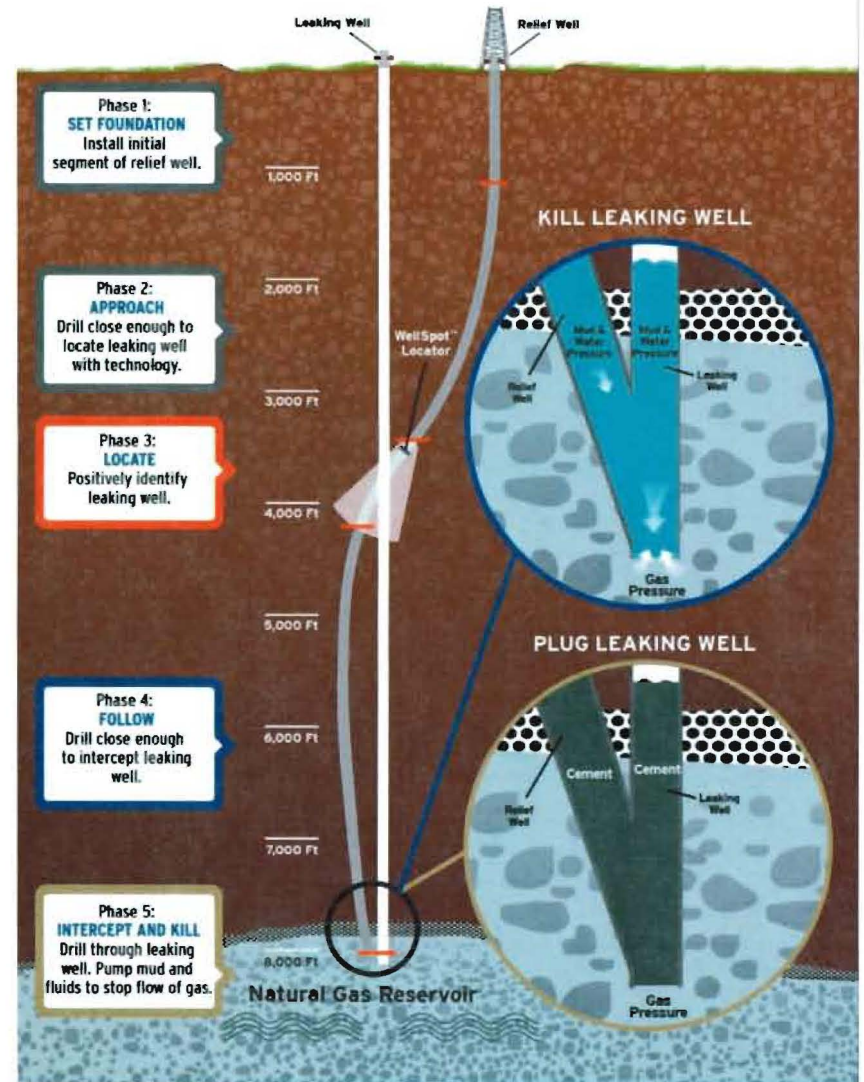
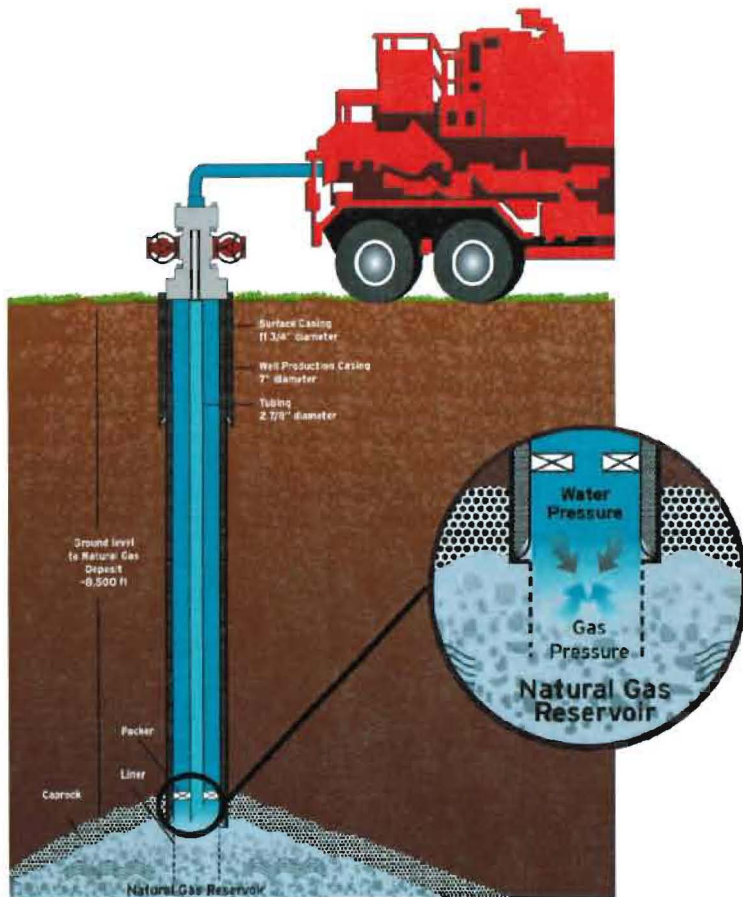
- **Storage wells regulated by CA Department of Conservation, Division of Oil, Gas and Geothermal Resources (DOGGR)**
- **Regular maintenance and inspection**
  - Daily observations of equipment and conditions
  - Weekly surface pressures measured and recorded
  - Monthly wellhead inspections and average pressures submitted to DOGGR
  - Annual well inspections for indications of leak
- **Leaking well at Aliso Canyon passed most recent annual inspection in Oct. 2014**
- **CPUC regulates surface operations, California Air Resources Board (CARB) and South Coast Air Quality Management District (SCAQMD) regulate emissions**
- **SoCalGas underground storage maintenance and safety programs**
  - 2014 application for authority to further enhance storage integrity management program (SIMP)

# Methane leak at Aliso Canyon

- Gas leak discovered at a storage well on October 23
- Indications are natural gas is leaking from the well pipe casing into the ground near the well
- Assembled world-class experts to assist with response
- Seven separate “well kill” attempts performed
- Relief well drilling in progress



# Attempting to stop flow by pumping fluids directly down the leaking well or through relief well



\* Graphic is for informational purposes only. Scale and technical detail are not precise. Fluids can be introduced via different methods.



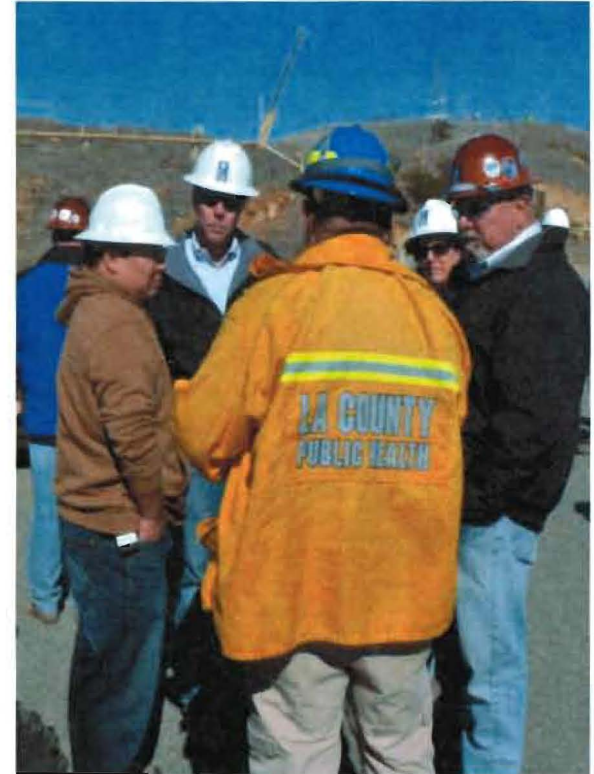
# Multi-pronged approach to stop and mitigate leaking gas

- Working as quickly as safety will allow
- Relief well is the primary solution for stopping the leak
- Ongoing mitigation measures
  - Reducing pressure – Drawing down storage gas inventory to reduce pressure and emissions to atmosphere; “measured” inventory reduced from 77 bcf (Oct 23, 2015) to approximately 36 bcf (Jan 8, 2016)
  - Odor mitigation – Installation of in-home and school classroom air filtration systems proven to capture odorants in the home



## Coordination with first responders and other agencies

- DOGGR, SCAQMD and first responder representatives on-site and assisting with the incident
- Daily morning briefings with Fire, LA County Dept. of Health, South Coast AQMD, EPA Region 9, Cal-OSHA, California Office of Emergency Services, and others
- Regular updates to a wide range of agency and elected officials such as CARB, City and County of Los Angeles and Gov. Brown's office



# Temporary relocation for impacted customers and community engagement

---

- **SoCalGas providing temporary accommodations to customers who want to relocate**
  - More than 3,100 customers offered temporary housing options to date
  - Reimbursed for meals and mileage beyond normal commuting and school transport
  
- **Installing air purification units to eliminate smell**
  - To date installed or scheduled for installation almost 4000 air scrubbers
  - Weatherized more than 1500
  - Approved or delivered Plug-In Intake units
  
- **Additional community engagement and communications**
  - 24/7 call center
  - Community Resource Center established in Porter Ranch to assist customers
  - Dedicated website: [www.alisoupdates.com](http://www.alisoupdates.com)
  - Ongoing communication with customers

# Leak poses no immediate danger or long-term health impacts

---

- Leak located more than one mile away and 1,200 feet above homes
- Safety remains the top priority for employees, contractors and customers and there is no danger to homes
- Natural gas consists of approximately 94% methane, and remaining 6% consists of ethane, CO2 and C3+
  - Methane is considered non-toxic and does not represent a health hazard from inhalation
  - Odorants added to natural gas for leak detection per DOT/CPUC and is detectable at 1 ppb

## Air Monitoring Overview

---

### Community Short-term Sampling (twice daily)

- Started October 30, 2015
- 11 locations

### 12- hour Samples (twice daily)

- 3 on facility and 6 at facility/community boundary
- Started January 11, 2016

Over 1400 Community short-term samples and 65 12-hour samples collected to date

Average benzene concentration to date in community samples is <0.37 ppb; in property-boundary samples <0.23 ppb; less than the nearest CARB monitoring station in Burbank

# SCAQMD and OEHHA Findings

---

## OEHHA Findings

- Overall, the available air sample data does not indicate that an acute health hazard exists from any of the volatile organic chemicals measured, including benzene
- Current measured exposures to benzene are below the level of concern for chronic health effects
- Nearly all measured benzene concentrations in the Porter Ranch community during the leak are similar to background levels generally found in the Los Angeles area, including at the nearest long-term monitoring station in Burbank

## SCAQMD Preliminary Health Evaluation

- posted January 15, 2016 that concluded “[c]urrent levels of community exposure to the leaking gas are not expected to cause a significant increase in overall risk of health effects from either short-term or long-term exposure to air toxic pollutants typically found in outdoor air in Southern California”

## SoCalGas Will Not Install a Gas Capture System

---

- Design of a gas capture system was initiated in November of 2015
- In consultation with AQMD and other agencies, we've decided not to install the gas capture system
- No design could be identified that would attain the safety level that SoCalGas believes would have been necessary to proceed

# SOCALGAS EXPECTS TO STOP ALISO CANYON LEAK BY LATE FEBRUARY, POSSIBLY SOONER

---

- SoCalGas announced that its relief well project to stop the Aliso Canyon natural gas leak is proceeding ahead of schedule and the company expects to stop the leak by late February, if not sooner
- Drilling of the relief well began on December 4, 2015
- Target drill depth was 8500 feet below the surface
- Work has been ongoing and around the clock
- Top priority has been to stop the leak as quickly and safely as possible
- Our schedule to control and stop the leak in February is consistent with the plan we have submitted to state regulators



# ALISO CANYON STORAGE FACILITY RELIEF WELL OPERATIONS

JAN 19, 2016

SoCalGas® began planning relief well operations in early-November and started drilling the first of two relief wells on December 4, 2015. The relief well is being drilled from around 1,500 feet away and is expected to reach the bottom of the well at a depth of about 8,500 feet below the surface next month. After intercepting it, SoCalGas will pump cement into the bottom of the leaking well to permanently cut it off from the natural gas reservoir. We are currently entering phase five of the operation. Drilling for the second relief well is slated to begin in February.

## DRILLING PROCESS

The relief well drilling operation is being conducted 24/7 by some of the world's most experienced relief well drilling experts in collaboration with a team from SoCalGas. It is being monitored by the California Division of Oil, Gas and Geothermal Resources (DOGGR) and will proceed in five general phases.

### Phase 1 - Set Foundation:

A well is composed of several segments of pipe, each with a smaller diameter than the section above it and each encased in cement. The first segment of pipe, called the surface casing, is the widest and has the important job of providing a strong foundation for the well and providing an extra layer of protection for the subsurface environment. To install the surface casing, SoCalGas will drill a 17 1/2-inch hole to about 1,200 feet of measured depth\* (MD) and insert a 13 3/8-inch pipe all the way down the hole. This approximately 1,200-foot segment and all the others are put together by screwing 40-foot sections of pipe together as the string of pipe progresses deeper into the hole.

Additionally, at the beginning of each phase, SoCalGas will install a blowout preventer, which is a set of valves and pipes designed to

prevent the force of any gas or fluid that could unexpectedly run up the relief well, for the safety of the work crew.

**Phase 2 - Approach:** The objective of Phase 2 is to drill to a designated location closer to the leaking well and within the effective range of the equipment that will be used in the next phase to locate the well. The drilling crew will directionally drill an approximately 12 1/4 -inch hole toward the target well to about 3,800 feet MD and install a 9 5/8 -inch pipe, typically called the intermediate casing, inside.

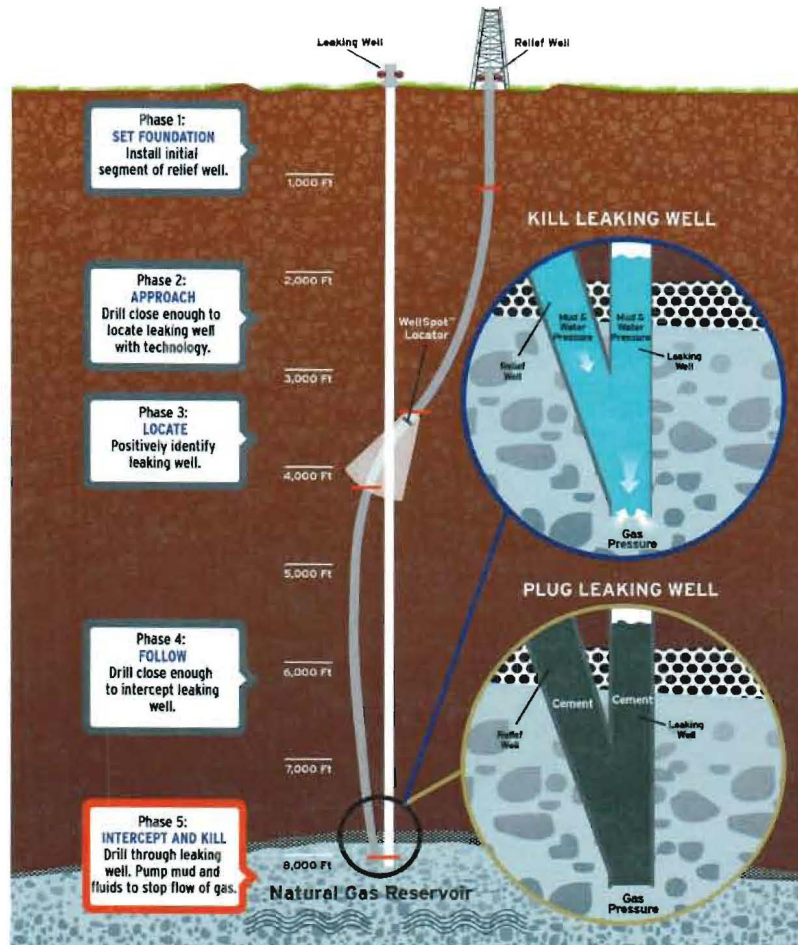
\*Measured depth (MD) represents the distance drilled, as opposed to the actual vertical depth below the surface.

### Phase 3 - Locate:

During Phase 3, progress, in terms of feet-per-day, will slow; however, the objective in this phase is less to drill for distance and more to positively identify the underground location of the leaking well and others nearby. An active magnetic ranging tool, called Well Spot™, will be used to “range” for the leaking well. The tool includes two components, one to generate an electromagnetic field and another to detect changes in that magnetic field that would indicate the locations of the wells. To avoid the other wells nearby, rare earth magnets will be placed inside those wells so sensors can identify the location. These ranging runs require the drilling equipment to be retracted and exchanged with the ranging tool, which could take up to a day each time. Once the underground location of the leaking well has been located, the crew will drill past it at a relatively close distance and then wind back to it at around 4,500 feet MD in order to confirm the location of the leaking well and to properly position the drill bit for the next phase of drilling.

### Phase 4 - Follow:

Because the leaking well does not go straight down, the crew will have to continue ranging so the relief well follows the leaking well while maintaining the proper distance and angle. This phase will be one of the longer phases in terms of time because the drilling crew has to work its way down to below 8,000 feet MD by alternating



Phased planning may change as drilling progresses.

Illustration is for informational purposes only. Drawings are not technically accurate or to scale.

between drilling and ranging. At a defined depth, a 7-inch pipe will be inserted and cemented into the hole. Importantly, at the end of this phase, the relief well will need to be in the proper orientation and angle, less than five degrees, to the leaking well in order to properly intercept it in the next phase.

**Phase 5 - Intercept & “Kill” the Well:** In Phase 5, SoCalGas will continue drilling approximately 600 feet to be very near the target well. While this is a relatively short distance, this phase will also be one of the longer phases because this 600 feet will be drilled in progressively shorter intervals with ranging and surveying being conducted at each interval to ensure the drill maintains the proper position. The team will cut through one side of the pipe and begin the process of pumping heavy fluids and drilling mud to outweigh the gas pressure flowing into the well from the reservoir and develop a column of fluids in the target well. When the flow of gas has been stopped and becomes a stable situation, SoCalGas will pump enough cement to displace the fluids and mud and leave a thick seal of cement to effectively shut off the target well from the reservoir and develop a column of fluids in the target well, stopping the leak at its source.

**Permanent Abandonment:** SoCalGas will execute an approved well abandonment plan which will include site preparations and pumping additional cement into the well. During this period, the investigation will begin on the circumstances surrounding the leak.

For more information, visit [AlisoUpdates.com](http://AlisoUpdates.com), call the SoCalGas Aliso Canyon hotline at 818-435-7707 or email us at [AlisoCanyon@SoCalGas.com](mailto:AlisoCanyon@SoCalGas.com).



COMMUNITY AWARENESS

## ALISO CANYON NATURAL GAS LEAK: RESPONSE TO UNSUBSTANTIATED CLAIMS

### **Q: How safe is the Aliso Canyon facility?**

**A.** SoCalGas® has operated and maintained the Aliso Canyon storage field for more than 40 years, and the facility continues to operate during this leak event. California Division of Oil, Gas and Geothermal Resources (DOGGR) has indicated that well SS25 was in compliance with its regulations at the time of the leak. SoCalGas shares this view, and will continue to cooperate with DOGGR as its compliance investigation continues. When the leak is stopped, and it is safe to do so, SoCalGas will conduct an analysis to determine its cause. The company also has agreed with DOGGR to fund an independent investigation into the cause.

### **Q. What are the results of the air sampling in the community near the natural gas leak?**

**A.** Earlier this month [1/15/16], the South Coast Air Quality Management District (AQMD) posted the results of a Preliminary Evaluation for Potential Health Impacts that concluded: “the current levels of community exposure to the leaking gas are not expected to cause a significant increase in overall risk of health effects from either short-term or long-term exposure to air toxic pollutants typically found in outdoor air in Southern California.” In December, the LA County Department of Public Health stated that “inhalation in this setting at the levels detected does not pose a significant health risk.” [12/01/15]

### **Q. Are the levels of benzene detected at the site unsafe as some have claimed?**

**A.** While benzene is a trace component of natural gas, the biggest contributors of benzene in the Los Angeles area are mobile sources – that is, cars, trucks, ships, and the like. Trace amounts of benzene have been detected in Porter Ranch by the community air monitoring program put in place after the Aliso Canyon leak began. The air sampling data, taken as a whole, reflect benzene levels consistent with background levels of benzene found in the Los Angeles area, according to the California Environmental Protection Agency’s Office of Environmental Health Hazard Assessment (OEHHA).

### **Q. What is the potential of a “catastrophic explosion” at Aliso Canyon as efforts continue to stop the leak on the site?**

**A.** The highest priority of SoCalGas continues to be the safety of its customers and workers at the site. We have been exploring ways to safely capture the leaking gas, and have now determined these operations would not satisfy our commitment to worker safety. Throughout our talks with AQMD, we have said we would conduct a gas capture operation only if it could be done safely.

SoCalGas has the world’s leading well experts working at the site. In addition, DOGGR officials, who have been on site daily since the beginning of this incident, have said publicly that the wellhead of the leaking well has been made stable and is safe.



**Q. If the infrastructure at the Aliso Canyon storage facility is safe, why do you need more money to fix it?**

**A.** DOGGR has previously noted that SoCalGas has been in compliance with regulations requiring regular maintenance and testing of the storage field and the affected well when the leak occurred. SoCalGas requested approval from the California Public Utilities Commission (CPUC) to include in its rates the costs of a six-year enhanced storage well integrity management program for our storage facilities that would incorporate new technology and maintenance practices. The proposed program is a proactive, methodical and structured integrity management program, which includes the use of advanced well inspection technologies that exceed traditional industry practices and regulatory requirements. Our application stated the new program is appropriate because ongoing annual maintenance and reliability costs are increasing. The CPUC could approve funding for the program later this year.

**Q. If a working subsurface valve had been in place on the leaking well could it have stopped the leak quickly?**

**A.** Until the leak is stopped, and we can do a thorough root-cause analysis, we won't know what caused the leak. No one knows. It is premature to speculate about the cause of the incident. The facts are: the valve was not reliable, and it was removed; DOGGR regulations did not require this type of valve for this particular well, and has said the operations and maintenance systems at Aliso Canyon were in compliance with regulations at the time of the leak.

**Q. Why did the Federal Aviation Administration (FAA) declare a no-fly zone -- to prevent aircraft from igniting the natural gas?**

**A.** No. SoCalGas asked the state Office of Emergency Services to request the restriction from the FAA so repeated helicopter flights would not distract workers on the site when the workers are engaged in safety-sensitive work. It is highly unlikely that an aircraft could be an ignition source.

**Q. Is the ongoing natural gas leak an "environmental disaster" as some have called it?**

**A.** That's a subjective statement, but many of the comparisons being made to environmental incidents, such as the BP oil spill, are highly exaggerated. Some of these claims were made in reference to the methane released to the atmosphere. Methane is a non-toxic greenhouse gas (GHG) that can contribute to global warming, but the relative extent of this leak in terms of climate change has been overstated. A recent report by the California Air Resources Board (CARB) roughly estimated that a total of 2.0 million metric tons in carbon-dioxide equivalents (MMTCO<sub>2e</sub>) has leaked from the well. This figure represents less than one percent of California's annual GHG emissions, according to CARB's annual reports. To put this in context, California dairies emit 10 times more carbon dioxide equivalents each year than the Aliso Canyon leak is estimated to have released to date.

Nevertheless, SoCalGas has said it will work with the Governor's office and state officials on a plan to mitigate the environmental impact of the natural gas released from the leak.

**Q. Is it true this incident will cost SoCalGas "billions of dollars" as some have said?**

**A.** It is premature to try to guess what the final cost of this incident might be. In a Jan 6 filing with the U.S. Securities and Exchange Commission, SoCalGas stated that, "through December 31, 2015, the company estimates that it has spent approximately \$50 million addressing the leak and mitigating environmental and community impacts..."

**Q. What would be the consequences of shutting down the Aliso Canyon facility?**

**A.** The Aliso Canyon storage facility is vital to provide reliable, reasonably priced natural gas service to our customers to heat their homes, cook their food and power their businesses round-the-clock. Even with the increased availability of renewable energy, the majority of electricity consumed in Southern California is provided by natural gas-fired power plants. When the wind doesn't blow and the sun doesn't shine, natural gas fills that gap. Shutting down Aliso Canyon could result in natural gas shortages during periods of peak demand, higher natural gas prices due to more volatile spot market prices, and even electric power outages.

## DEAR NEIGHBOR,

Your safety continues to be our first priority. We are working safely and expeditiously to stop the flow of leaking gas at the Aliso Canyon Storage Facility. Please share the information in this bulletin with your Porter Ranch neighbors.

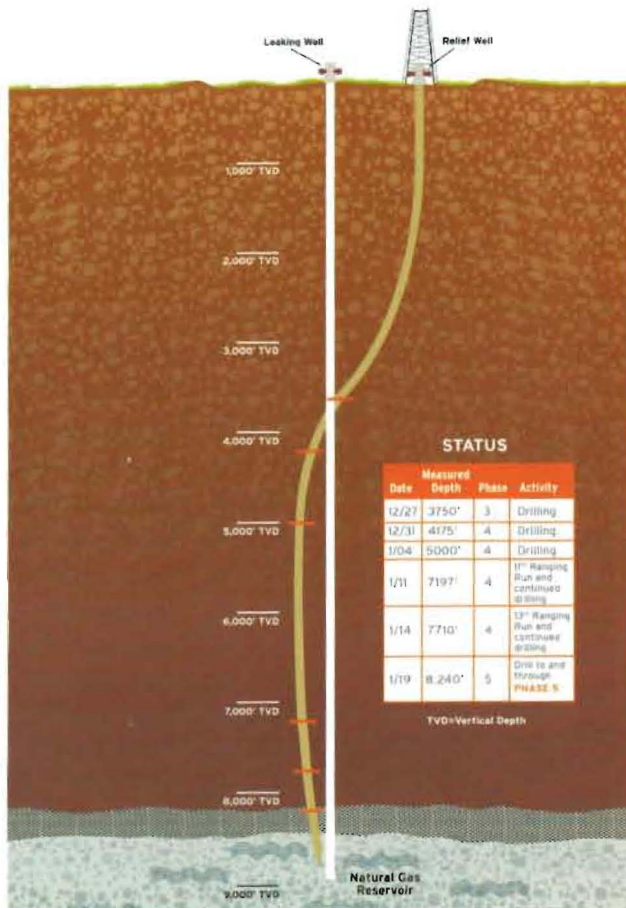
### In this week's Community Bulletin, you will find information on:

- Benzene levels and air sampling
- Operational update
- CARB reports leaking gas rate reduction
- Leak surveying
- New online portal for self-relocation

## BENZENE LEVELS & AIR SAMPLING

SoCalGas® is working with city, county and state air quality agencies to sample the air twice daily at ten monitoring stations in the Porter Ranch community, and we have added three other locations within the facility and six 12-hour samples to the air sampling program. Trace amounts of benzene have been detected in Porter Ranch by the community air monitoring data program put in place after the Aliso Canyon leak began. The air sampling data as a whole reflects benzene levels that are consistent with background levels. While benzene is a trace component of natural gas, the biggest contributors of benzene in the Los Angeles area are mobile sources such as cars, trucks, ships, and the like.

The California Environmental Protection Agency's Office of Environmental Health Hazard Assessment (OEHHA) stated that "nearly all measured benzene concentrations in the Porter Ranch community during the leak are similar to background levels generally found in the Los Angeles area, including at the nearest long-term monitoring station in Burbank." SoCalGas air sample results are posted for public review on the **Environmental Concerns** page on **AlisoUpdates.com**.



## OPERATIONAL UPDATE

We continue to make great progress drilling the relief well. We are currently in Phase 5 and proceeding ahead of schedule. We expect to stop the leak by late February, if not sooner. We have worked with the world's leading well experts to secure the wellhead. Division of Oil, Gas & Geothermal Resources (DOGGR) officials have been onsite daily since the beginning of this incident and confirmed that the wellhead is both stable and safe. As of January 19, we have completed 18 ranging runs and successfully drilled to a depth of approximately 8,240 feet. Visit the **What Are We Doing** page on **AlisoUpdates.com** for the most current information on relief well operations.

*\*For a larger visual, visit **AlisoUpdates.com**. Graphic is for informational purposes only. Scale and technical detail are not accurate.*

## CARB REPORTS SIGNIFICANT RATE REDUCTION OF LEAKING GAS

The most recent Aliso Canyon preliminary methane emissions estimates by the California Air Resources Board (CARB) indicate that methane emissions have declined to 21,500 kilograms per hour or roughly a 60 percent decrease in methane emissions from the end of November and an approximate 20 percent reduction from the previous estimate made on November 28. According to CARB, the methane data collected to date suggests the emission rate of the leak is decreasing as the reservoir is being depleted. We expect the emission rate to continue to decrease as the reservoir pressure continues to be reduced.

## LEAK SURVEYING

SoCalGas is checking gas distribution pipelines throughout Porter Ranch to ensure that there are no natural gas leaks. Ordinarily, a gas leak would be made evident by the smell of the odorant, but because such leaks could be masked by the leak at Aliso Canyon, we are taking this extra safety precaution. These surveys began the weekend of January 9 and will be conducted once every two weeks. The increased survey frequency will involve various methods including SoCalGas personnel walking the system and/or using vehicles with instrumentation. Any conditions found that pose a safety hazard will be promptly repaired and made safe per federal requirements.

## NEW ONLINE PORTAL FOR SELF-RELOCATION

SoCalGas is offering online self-help services for the friends & family and hotel stay relocation options. Residents in the 91326 ZIP Code are able to arrange their own accommodations and apply online for reimbursement. If you are a Porter Ranch resident outside of 91326, please call 877-238-9555. Visit the **Need Assistance** page on **AlisoUpdates.com** for more relocation information.



## RESIDENT RESOURCES

For all resident resource and self-service information, visit the **Need Assistance** page on **AlisoUpdates.com**, call the **Aliso hotline** at **818-435-7707** or send an email to **AlisoCanyon@socalgas.com**.

### Air Purification & Weatherization

Submit Application on  
[AlisoUpdates.com/need-assistance](http://AlisoUpdates.com/need-assistance)

### Claims

213-244-5151  
[claimsreceipts@semprautilities.com](mailto:claimsreceipts@semprautilities.com)

### Pet Boarding

213-347-4038  
[animalboarding@alisoresponse.com](mailto:animalboarding@alisoresponse.com)

### Relocation Call Center

877-238-9555

### School Transportation

747-224-6094  
[student.transport@semprautilities.com](mailto:student.transport@semprautilities.com)

## COMMUNITY RESOURCE CENTER

The SoCalGas® Community Resource Center (CRC) has expanded to better assist Porter Ranch residents and answer questions relating to the Aliso Canyon incident. SoCalGas representatives are onsite to provide in-person assistance including:

- Filing a claim
- Requesting free home air filtration to reduce odor
- Multi-lingual company ambassadors on location (Korean and Spanish)

### CRC HOURS

10 a.m. to 8 p.m. Monday through Friday  
10 a.m. to 6 p.m. on weekends

### LOCATION:

19731 Rinaldi St., Los Angeles, CA 91326

Si desea obtener esta información en español visite el sitio web **AlisoUpdates.com**.

Եթե այս տեղեկությունները ցանկանում եք ստանալ հայերեն լեզվով, խնդրում ենք այցելել [alisoupdates.com](http://alisoupdates.com) կայքը:

한국어로 된 정보를 원하시면, [alisoupdates.com](http://alisoupdates.com)을 방문하세요.

For frequent updates on Aliso Canyon,  
follow us @SoCalGas



© 2016 SoCalGas. All copyright and trademark rights reserved.  
N16K0019B 01/16

INSERT  
POSTAGE  
HERE

YOUR SAFETY IS OUR TOP PRIORITY

**SOCALGAS**  
555 West Fifth St.  
M.L. GT20B2  
Los Angeles, CA 90013



COMMUNITY BULLETIN

# ALISO CANYON STORAGE FACILITY



FOR WEEK OF JANUARY 18, 2016

