



Overview of SoCalGas

System Operations and Aliso Canyon SS-25 Incident

SoCalGas - Company Overview

- » Nation's largest natural gas distribution utility; fifth largest in the world
- » In business for 140+ years
- » 12 counties and 500+ communities served
- » 21.3 million consumers; 5.9 million gas meters
- » 20,000+ square miles of service territory
- » Gas system operator for San Diego Gas & Electric (SDG&E)
- » Over 3,500 miles of transmission pipeline⁽¹⁾
- » Nearly 100,000 miles of distribution pipeline⁽¹⁾
- » 137 Bcf billion cubic feet of gas storage capacity (3% of national storage capacity)
- » 8,300+ full-time and part-time employees

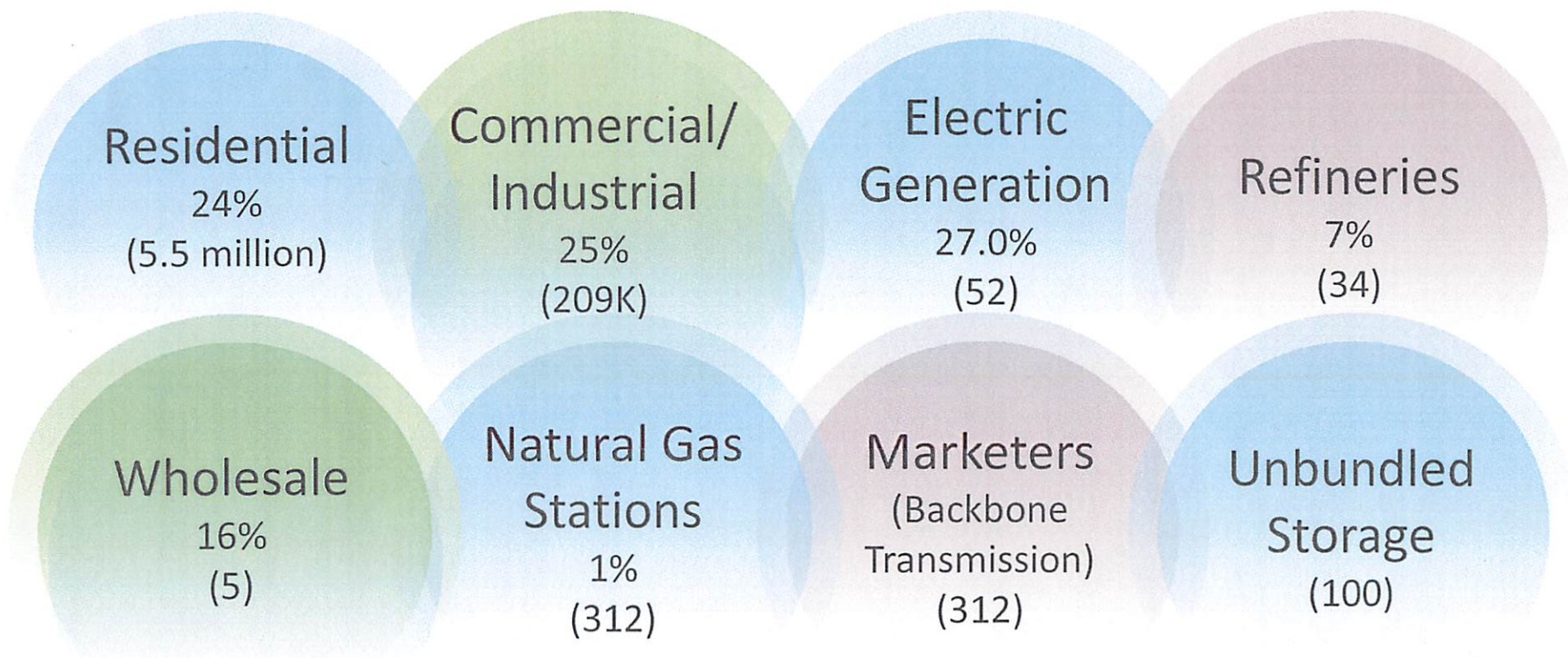
(1) DOT defined as of year-end 2013

(2) 2014 weighted average

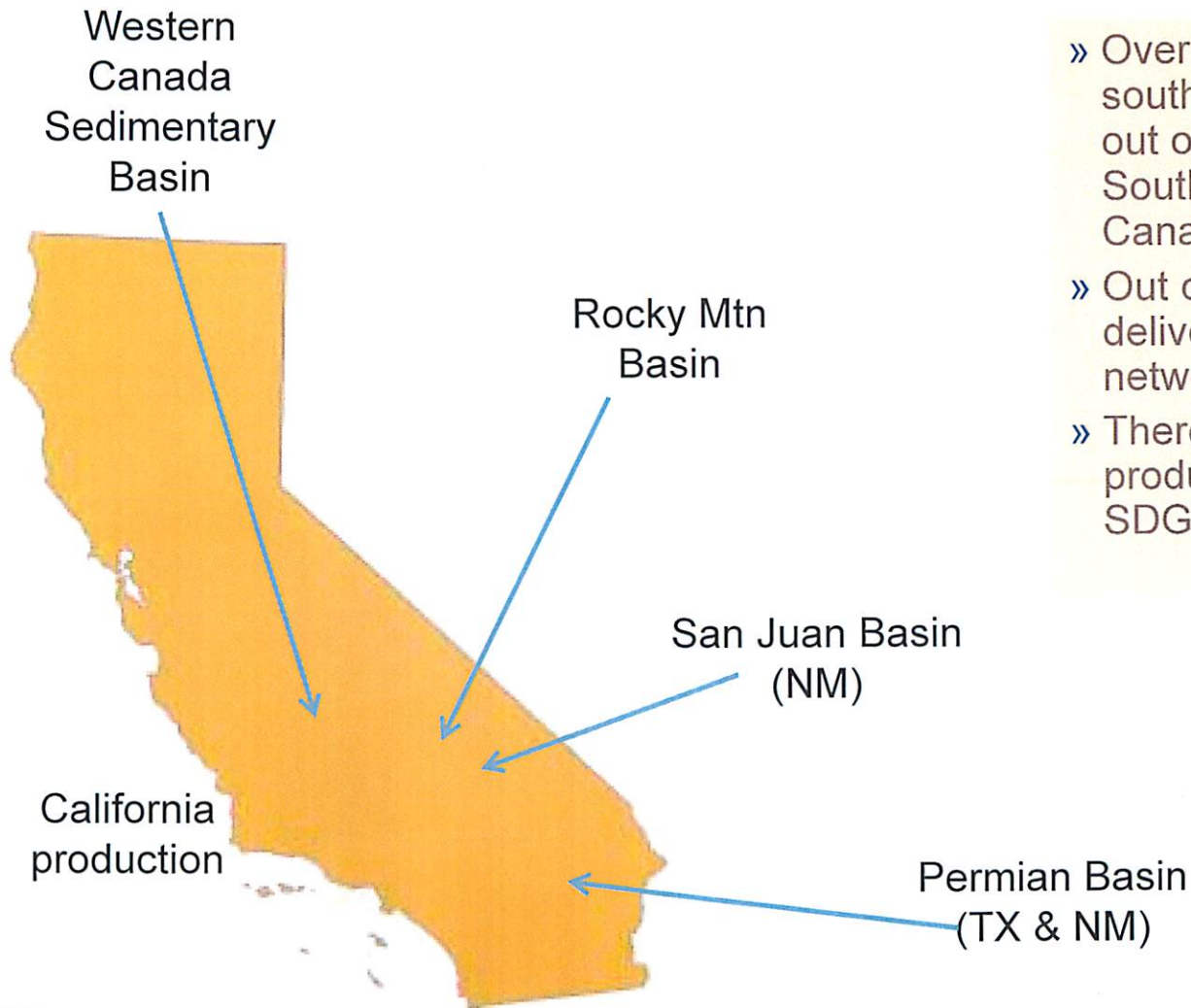


Our Customer Sectors

(% of deliveries and number of customers)

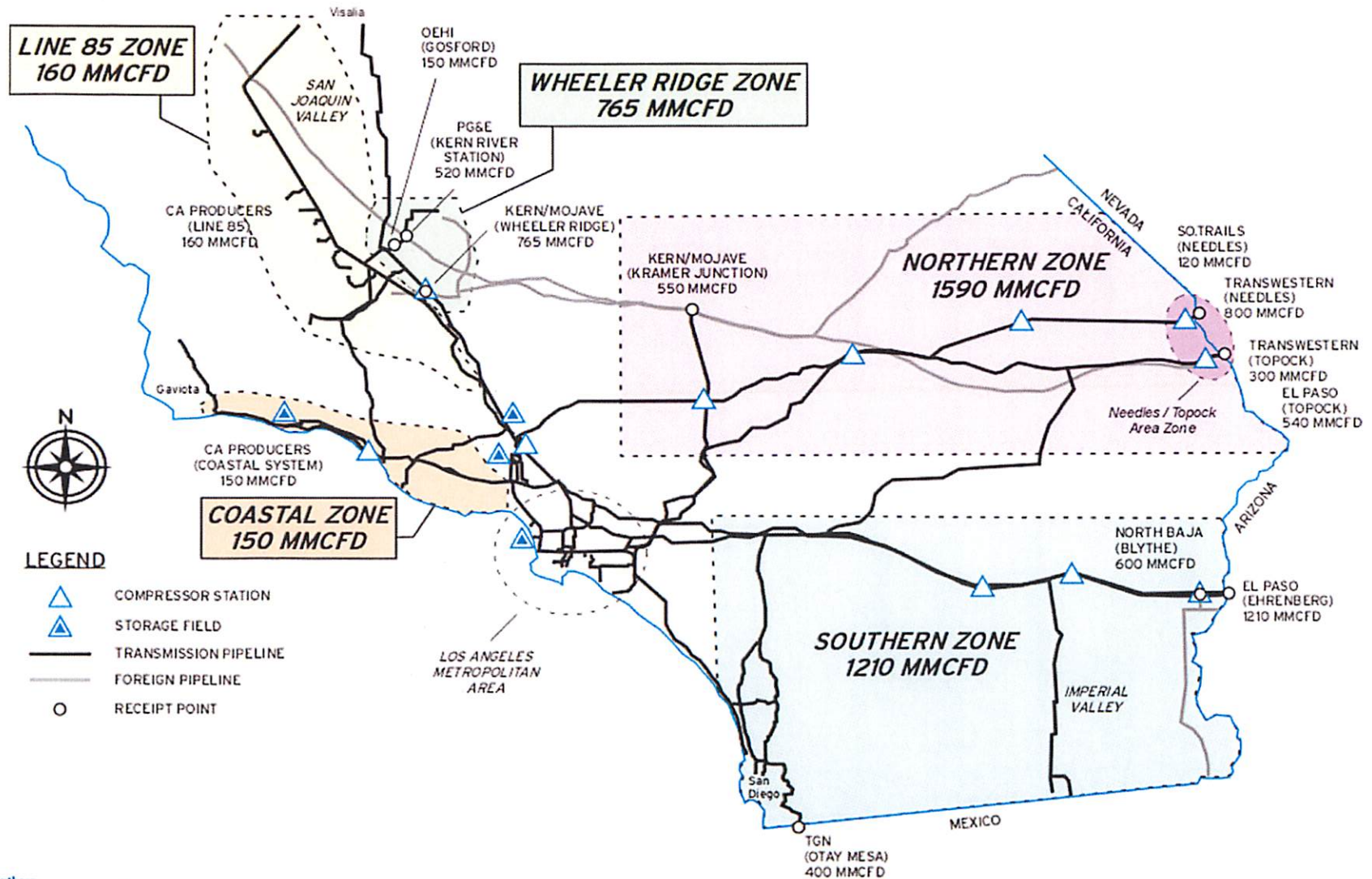


Sources of Natural Gas Supplies to Southern California



- » Over 90% of gas used in southern California comes from out of state sources in the Southwest, Rockies, and Canada.
- » Out of state gas supplies are delivered to California through a network of interstate pipelines.
- » There are no California production sources in the SDG&E service territory.

System Receipt Points and Storage Fields



SocalGas Storage Facilities

	Inventory (Bcf)	Injection (MMcfd)	Withdrawal (MMcfd)
Aliso Canyon	86.2	413	1,860
Honor Rancho	27.0	235	1,000
La Goleta	21.5	127	420
Playa del Rey	2.4	75	400
Total	137.1	850	3,680

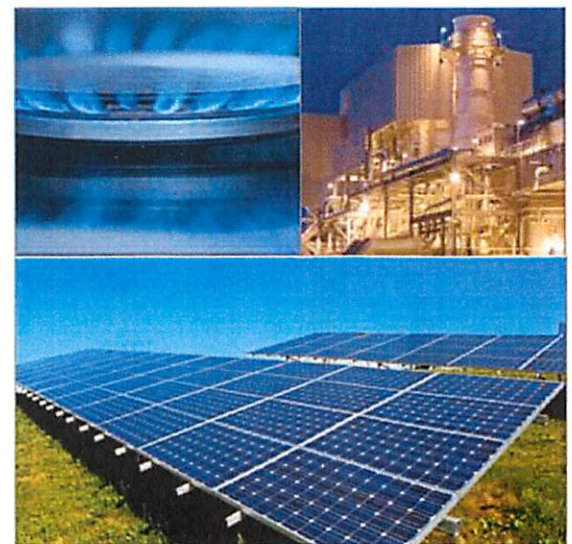
1.5 month
require along
12/28 - 4 last
demand

Shower -
2 to 3k
ten p.m.

Aliso Canyon Storage Field

- » SoCalGas acquired the field in 1972. Approximately 3,600 acres of land.
- » Depleted oil reservoir, by far the most common type of gas storage field in the U.S.
- » Fifth largest capacity in the U.S.
- » 115 wells provide injection and withdrawal capability.
- » Critical element of SoCalGas' gas delivery system for electric grid reliability and service to millions of homes and businesses.
- » Supports expanded use of renewable energy resources in California

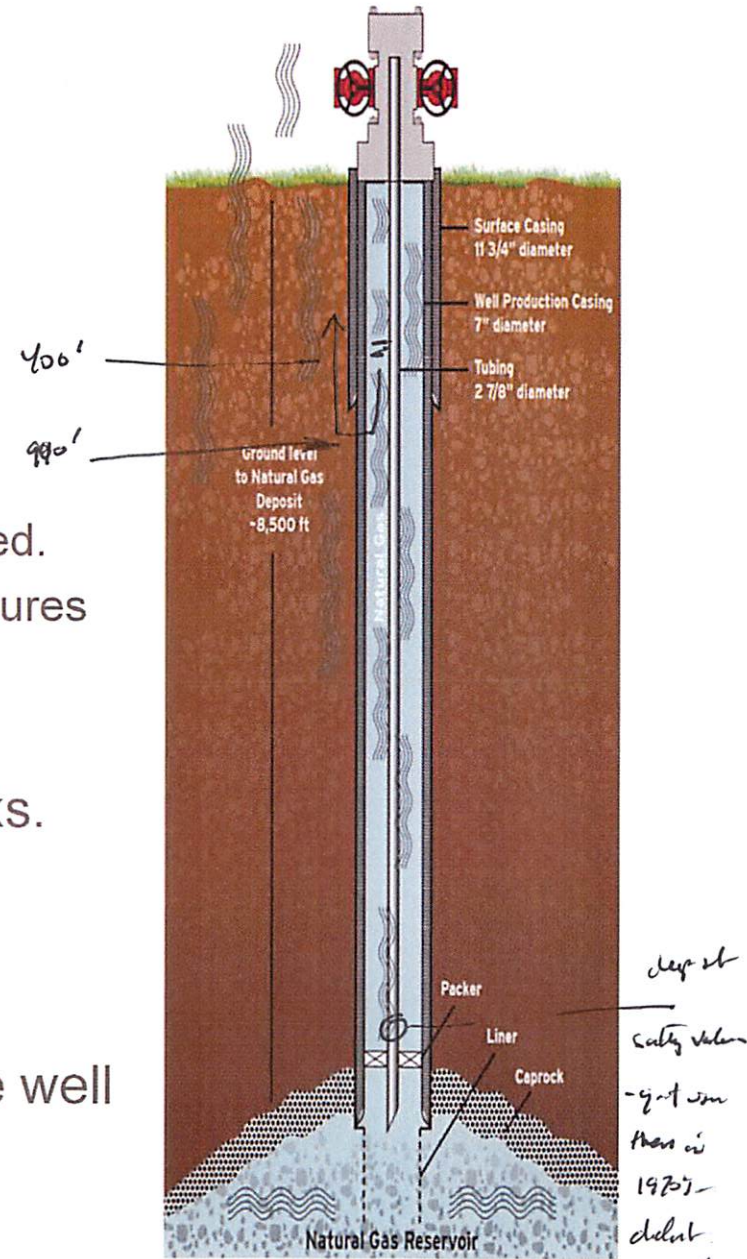
Equivalent to
2 to 3 miles
↓
water
but on
density
3, low
water
1 ps/H.
.2



* 115 quibin
7 * 229 orignd

Well SS-25

- » Storage well regulated by 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 leaks.
 - October 2014 – Passed most recent annual inspection. *- measure temperatures for leaks.*
- » Indications are natural gas is leaking from the well pipe casing into the ground near the well. *at 990'*



Relief Well Process

Phase 1 – Set Foundation

Install initial segment of relief well
1300'

Phase 2 – Approach

Drill close enough to locate leaking well with technology

Phase 3 – Locate

Positively identify leaking well

Using gyroscopic survey from 1953 - New area 10' to 385' - and magnetic deflection to locate - about 13' away

backed out and redrilled to below

Phase 4 – Follow

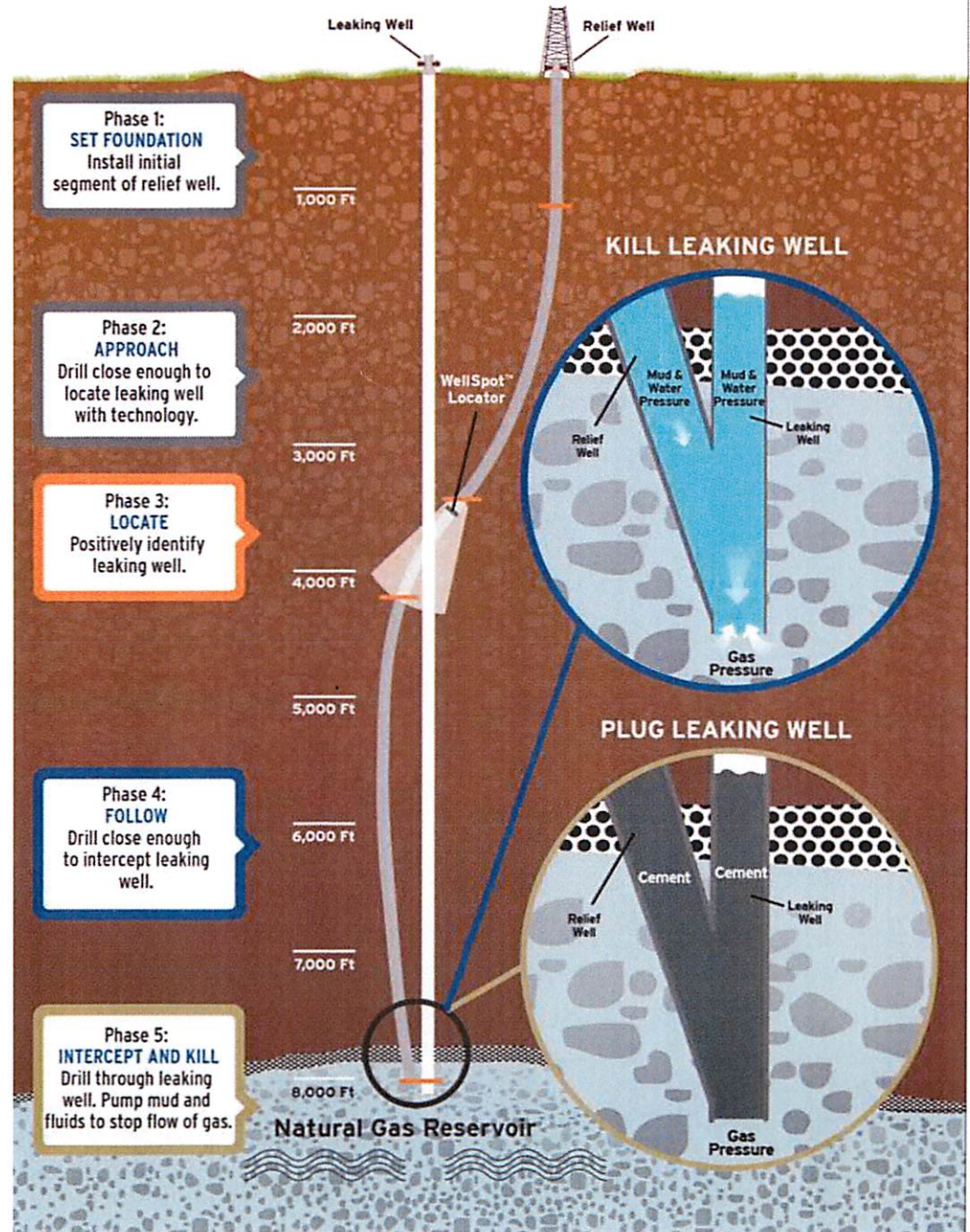
Drill close enough to intercept leaking well - keep 10-15'
more frequent location

Phase 5 – Intercept and Kill

Drill through leaking well. Pump mud and fluids to stop flow of gas

evaluate abandonment - tentatively - end of February

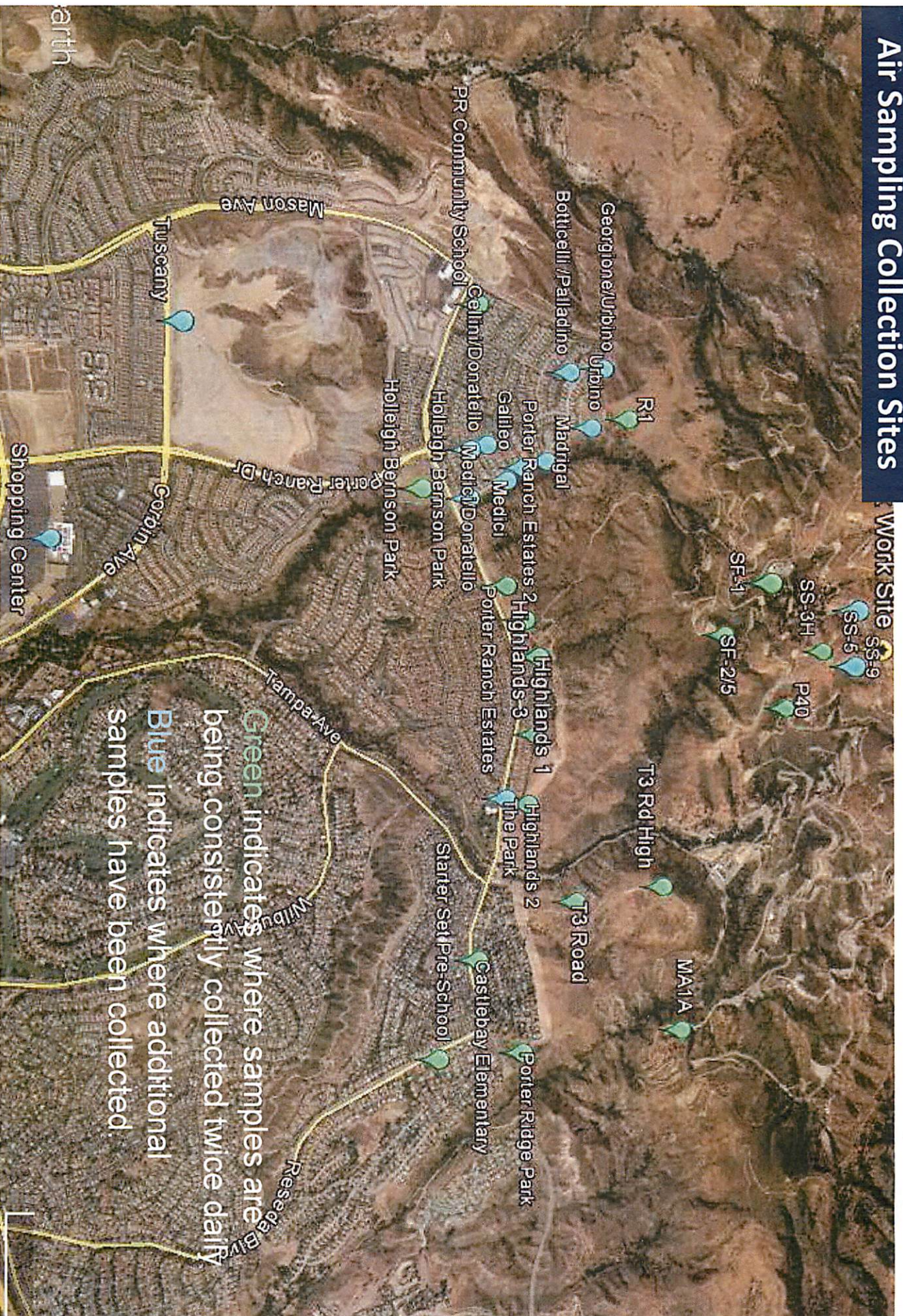
12/28 - 7 other kill attempts have failed



Mitigation Measures

- » Continuing to reduce reservoir pressure by withdrawing gas to serve customers.
 - Operating overall SoCalGas system to support Aliso Canyon operations:
 - *Transmission Zone capacities have been adjusted as needed and posted as a maintenance notice on ENVOY in order to accommodate operations at the Aliso Storage Field. (Posted on SoCalGas Envoy System)*
 - Northern and Southern Zone capacity “windows” reduced and posted on Envoy to support Aliso Canyon operations.
 - Measured Aliso Canyon storage inventory reduced from 77 BCF (Oct 23, 2015) to 49.5 BCF (Dec 27, 2015)
- » Engineering capture system solution for gas leaking to surface.

Air Sampling Collection Sites



Green indicates where samples are being consistently collected twice daily
Blue indicates where additional samples have been collected.


Leak poses no immediate danger or long-term health threat; however, odor is causing symptoms and discomfort

» Why it's safe

- LA County Public Health has confirmed these levels “do not constitute an immediate danger to life, and permanent or long-term health effects are not expected.”
- LA County Health states: “short-term symptoms are expected to continue, as long as the odors remain”
- 1+ mi. from and ~1,200 feet above the nearest home
- Natural gas is lighter than air, so it quickly rises and dissipates
- Community air sampling results have read below any level of concern

ALISO CANYON GAS LEAK

Health Fact Sheet



Overview
This fact sheet provides information about the natural gas leak at the Aliso Canyon Storage Facility and its related health impacts to Porter Ranch residents. The natural gas leak began on October 23. The Department of Public Health (Public Health) determined that the emissions from this facility are causing health effects in some individuals in the Porter Ranch community. Exposures to these chemicals are generally not expected to lead to permanent or long-term health problems. However, short-term, recurrent symptoms may occur with these exposures as long as the odors persist, and some individuals may be more sensitive than others. Outdoor air is being monitored and, Public Health will continue to assess air quality until the gas leak is resolved.

Natural Gas
Natural gas in California is primarily composed of methane. Because natural gas is odorless by itself, trace amounts of odorants called Mercaptans are added so that a gas leak is easy to detect. Southern California Gas Company uses an odorant called Scentinel® T-50, which contains two ingredients, tetrahydrothiophene (THT) and t-butyl mercaptan. These gases have strong odors, even at very low air concentrations.

Health Effects
Methane: Methane is an odorless gas, and the primary health hazard associated with methane is its flammability. Methane inhalation in this setting generally does not lead to health effects. Methane level readings in Porter Ranch are substantially lower than flammable limits, and do not pose a health concern to residents in the area.
Mercaptans: At this time, the natural gas leak is releasing very low levels of mercaptans into the air. Mercaptans have a strong “rotten-egg,” “garlicky,” or “skunk-like” odor and can be irritating to the eyes, skin, and respiratory system at low levels. In this incident, the levels are so low they can escape detection by most monitoring equipment, however individuals are capable of detecting these odors. These low level exposures may cause eye, nose and throat irritation, coughing and nasal congestion, shortness of breath, nausea, stomach discomfort, dizziness, and headaches. Symptoms vary depending on the frequency and duration of the odor and will generally go away once the odor exposure has stopped. Odors are not associated with long-term health effects, but they may cause recurrent symptoms on a daily basis in some individuals as long as the odors remain.

Public Health Directive to Southern California Gas Company
If you are experiencing odors and symptoms AND you wish to be temporarily relocated from your home, Southern California Gas Company is offering free temporary relocation for any individuals, families, and pets. **Relocation is not mandatory.** To learn more about relocation assistance, call 404-497-6808.
If you or your health care provider have health-related questions, please call Dr. Cyrus Rangan, Director of the Bureau of Toxicology and Environmental Assessment, at 213-738-3220.

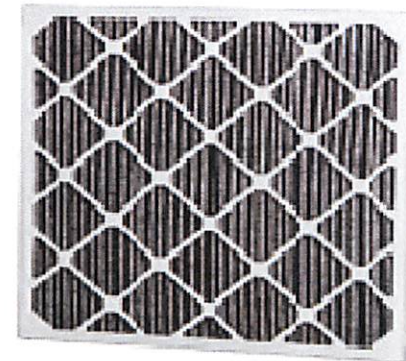
For More Information
Los Angeles County Department of Public Health, 888-700-9995
South Coast Air Quality Management District, 800-CUT-SMOG
Los Angeles County Fire Department, 323-881-2411
Southern California Gas Company, 800-427-2200

Los Angeles County Department of Public Health
www.pub@health.lacounty.gov

REVISED 11/05/15

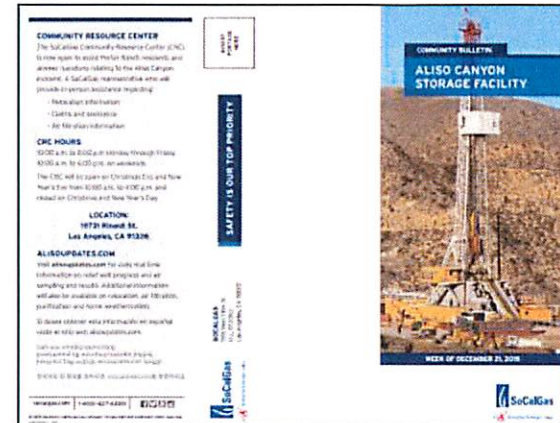
Air filtration and sealing, and temporary relocation for those affected

- » SoCalGas is also providing **temporary housing accommodations** to alleviate symptoms some are experiencing
- » SoCalGas is offering **air filtration and air purification** for homes and school classrooms using activated carbon filters to reduce or eliminate odors and alleviate symptoms
- » As much as possible, SoCalGas is accommodating **alternative housing arrangements** that are generally comparable to the core offer



Dedicated Community Outreach and Assistance Resources

- » **Community Resource Center** located in Porter Ranch Town Center
- » **Dedicated website** for Aliso updates: www.AlisoUpdates.com
- » **Weekly customer bulletins** by mail and email
- » **Outbound calls and text notifications** for significant events
- » **Porter Ranch Community Advisory Committee**





Questions and Discussion



Southern
California
Gas Company



A Sempira Energy utility™