



**DESERT MOUNTAIN  
ENERGY**



## HELIUM AND OIL & GAS IN THE U.S. SOUTHWEST



# FORWARD LOOKING STATEMENTS

Statements in this presentation that are forward-looking statements are subject to various risks and uncertainties concerning the specific factors. Such forward-looking information represents management's best judgment based on information currently available. No forward-looking statement can be guaranteed and actual future results may vary materially. Desert Mountain Energy Corp. does not assume the obligation to update any forward-looking statement.

# DESERT MOUNTAIN ENERGY CORP.

- ✓ Exploration and development of Helium and Oil & Gas properties in the U.S. Southwest.
- ✓ High-grade Helium project in Arizona and excellent permitted Helium, Oil & Gas Project in Oklahoma.
- ✓ Proven, successful management team that knows how to find, develop, package and vend projects. (e.g., Pan African Mining Corp.)
- ✓ World Class technical team with decades of experience in exploration and development of Helium, Hydrocarbons and other minerals.
- ✓ Excellent access to capital markets.
- ✓ Tight share structure and no long-term debt.
- ✓ Now trading on TSX Venture Exchange under ticker symbol “DME.V”. Also trades on the U.S. OTC as “DMEHF” and on Frankfurt as “QM01”. The Company has more value in place than ever before.
- ✓ Name change in 2018 from African Queen Mines Ltd. to Desert Mountain Energy Corp. to better reflect current focus and direction of the Company.



**DESERT MOUNTAIN**  
**E N E R G Y**

# Management Team

- **Irwin Olian, Chairman, CEO and President**, Entrepreneur with strong background in Finance and Law. Co-founder of several successful NASDAQ companies in medical device and biotech spaces. Mr. Olian was the founder and served as CEO and Chairman of Pan African Mining Corp. until its acquisition by Asia Thai Mining in June 2008, providing a substantial uplift for its shareholders. He is a graduate of Princeton University with an A.B. degree in Economics and Harvard Law School.
- **Scott Davis, CPA, CGA, CFO**, is a partner of Vancouver-based Cross Davis & Company LLP Chartered Professional Accountants. The firm is focused on providing accounting and management services for publicly-listed companies. Mr. Davis has extensive accounting and finance experience dealing with the complexities of both private and public corporations in a variety of industries. His experience includes CFO positions of several companies listed on the TSX Venture Exchange. His past senior management experience includes four years at Appleby as an Assistant Financial Controller, two years at Davidson & Company LLP Chartered Professional Accountants as an Auditor and five years with Pacific Opportunity Capital Ltd. as an Accounting Manager.
- **Dr. Edward A. Schiller, PGEO, Director, Senior Consultant**, 40 years experience across the mineral spectrum. Supervised drilling of Dia Met's Ekati Diamond Discovery in Canada.
- **Greg Sparks, Director, P. Eng.** formerly VP Development of Echo Bay Mines Ltd., 25 Years Experience. **Senior** Minerals Industry Consultant with John T. Boyd Company, Denver, Co. Extensive experience with the majors and in the junior sector.
- **Soren Christiansen– Director**. Among Canada's leading oil field operations executives, he has overseen drilling and other oil field operations both onshore and offshore in all corners of the globe, including Alaska, Argentina, Australia, Canada, Chad, and the U.S. From 1987-1989, he supervised a five- well drill program on China's Hainan Island as the first foreign operator onshore in China. From 1993 to 2006, he served as Team Leader and Drilling Manager for Canada-based Encana Corp., a leading international energy producer. He lives in Calgary, AB and is a graduate of the University of Calgary, where he received a B.Sc. degree in Mechanical Engineering.

## Management Team (Continued)

- **Robert Rohlfig, (Director) Executive Vice-President, Head of Technical Operations**, is a seasoned oil & gas industry operations executive with a strong geological background and over 25 years' experience in formulating, conducting and managing successful exploration, drilling, development and production programs for oil & gas and minerals worldwide. He has conducted geological exploration programs and drilling operations for a wide variety of companies for helium, hydrocarbons, gold, silver, rare earth metals, diamonds and gemstones in diverse areas ranging from Kansas, Oklahoma, Arizona and Alaska in the U.S. to Papua New Guinea, Malaysia, Australia, Canada, Vietnam, and Cambodia.
- **Greg Nowak, M.S., Senior Consulting Geologist**, has more than 30 years exploration experience in oil & gas, gold, uranium, and base metals. In the U.S., he has worked in the Permian Basin, the Gulf Coast and the Williston Basin of Montana, managing prospect screening, project generation, wellsite geology, drill log interpretation and planning of development wells. As Exploration Manager in Africa for Golden Star Resources and Ashanti Goldfields, he planned and conducted mineral field exploration and drilling projects throughout the West Africa Sub-Region. He is a Certified Professional Geologist (CPG # 10864) of the AIPG, a Fellow of the Society of Economic Geologists (SEG), and he is a Qualified Person, as defined by NI 43-101.
- **Reinhard Ramdohr, Ph.D., Senior Exploration Geologist**, a highly qualified exploration geologist and mining engineer, with 40 years experience in gold, base metals, iron ore, uranium and gemstone exploration around the world. His experience runs the gamut from grass roots exploration and mapping to sophisticated geophysical and drilling programs, to ore reserve calculation and feasibility studies, as well as overseeing formal training and education programs. He has a Mining Engineering degree from Clausthal-Zellerfeld Technical University and a Doctorate in Geology from Heidelberg University and is a frequent lecturer and published technical writer.
- **Lee Dunston, Marketing Director**, Thirty-three years experience in marketing, IT, management and business development with mining investor relations background.

# DESERT MOUNTAIN ENERGY PROJECTS

Exploration and development of Helium, Oil & Gas and mineral properties in the U.S. Southwest.

## Helium

- Heliopolis Project in Arizona's Holbrook Basin
- Worlds Best Address for Helium
- Prolific Historic Production
- 42,911 acres under lease



## Helium, Oil and Gas

- Kight Gilcrease Sand Unit in Seminole County, Oklahoma
- Located in the Iconic Gilcrease Sand Formation
- Recent discovery of Helium in existing oil wells grading up to 1.3622%
- Water Flood Secondary Production Project with new primary prospects.
- Stratigraphic zones above the Gilcrease Sands are viewed as highly prospective for helium.
- 883.7 acres under lease



# HELIOPOLIS



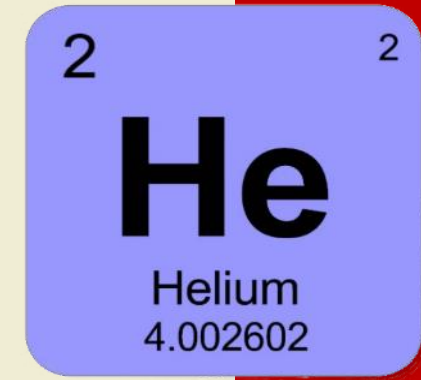
# EXPLORATION FOR HELIUM AND OIL & GAS IN ARIZONA'S PROLIFIC HOLBROOK BASIN

- Early mover among junior explorers in the Helium space.
- **42,911 acres of key Helium prospects** under lease throughout the Holbrook Basin. Among the highest He grades in world produced there ranging from **8% to 10%** vs. benchmark commercial grades of 0.3% to 1%.
- World's best address for Helium: **"The Saudi Arabia of Helium"**
- Worldwide shortage of Helium reflects huge demands from high tech and the new economy. Helium is now the **"High Tech Rare Gas"**.
- He supplies are limited with U.S. National Helium Reserve in Amarillo, TX projected to be exhausted in 2020. The world's largest supplier for 70 years.
- Worldwide market size approximately \$1.5 Billion and projected to grow sharply. The U.S. Currently now provides approximately 40% of worldwide supply.
- **Recent prices at BLM public auction averaged \$279 per thousand cu ft. (Mcf) for Crude He, reflecting an 135% increase over past 12 months.**
- Well positioned to provide a secure source of He supply to users in the high tech and aircraft industries in nearby California, the Western U.S. and worldwide.
- Many existing and potential sources of He are in high risk countries far from end users: Qatar, Algeria, Russia, Tanzania.
- Proven management team includes highly experienced oil & gas professionals with Helium experience in Arizona.
- **Seismic study and targeting work now complete for upcoming drill program. Drill permits are pending and drilling is expected to begin Q1 2020.**



# What is Helium ?

- An inert, monatomic gas that is non-flammable, colorless, odorless, tasteless, and has a boiling point of -452.07 f (-268.93 c), lowest of any element on earth.
- Symbol is He and its atomic number is 2; part of the noble gas group.
- Prevalent throughout the universe but rare on earth.
- Its very small atom makes it extremely motile, allowing it to penetrate most rocks and escape from earth's gravity, so trapping mechanisms are critical to retain it in host rocks.
- Two sources on earth: (1) primordial, part of the original formation of the planet; (2) radioactive decay of uranium and thorium in the earth's crust.
- Isotope composition of He in Arizona is consistent with preponderance of He arising from radioactive decay.
- Helium historically found incidental to oil & gas exploration but exploration now underway specifically for Helium.
- Helium often found in wells associated with natural gas. In Holbrook Basin it has generally been associated with nitrogen and carbon dioxide.
- After initial separation from other gases in the well, He is typically sold as raw Helium product grading 50-80% He; it is further processed into Grade A He.
- Typically shipped as liquid to distribution centers in trucks and sold as bulk liquid He or gasified and compressed into tanks or small cylinders for delivery to end users.



# Uses of Helium

Helium is now used for far more than just balloons!


It plays a **critical role** in the manufacture of high capacity hard drives, barcode readers, computer chips, semiconductors, LCD panels and fiber optic cable; as a refrigerant in cryogenics research; and as a coolant for nuclear reactors, MRI machines and space vehicles.



A photograph of an MRI machine in a clinical setting. The machine is a large, blue, cylindrical structure with a patient bed extending from its center. The room is brightly lit with white walls.

In Most High-Tech Coolant Applications there is NO Substitute

Liquid Helium is used as a coolant for superconductor magnets in MRI machines and Particle Accelerators

A photograph of a SpaceX Falcon Heavy rocket on the Mobile Launcher Platform (MLP) being transported by a crawler-transporter on the launch complex. The rocket is white with black boosters and is being moved along a dirt road. The MLP has "SPACEX" written vertically on its side.

Used to purge gas in rocket engine systems

Helium-Filled High Capacity Hard Drives increase capacity by 50% and energy efficiency by 23%. Now used to power industry's largest data centers including Netflix Video Streaming.



### Air HDD vs. Helium HDD

*Same Form Factor. Exponential Difference.*

5-disk design

7-disk design

4TB

6TB

Same z-height

HGST  
Western Digital company

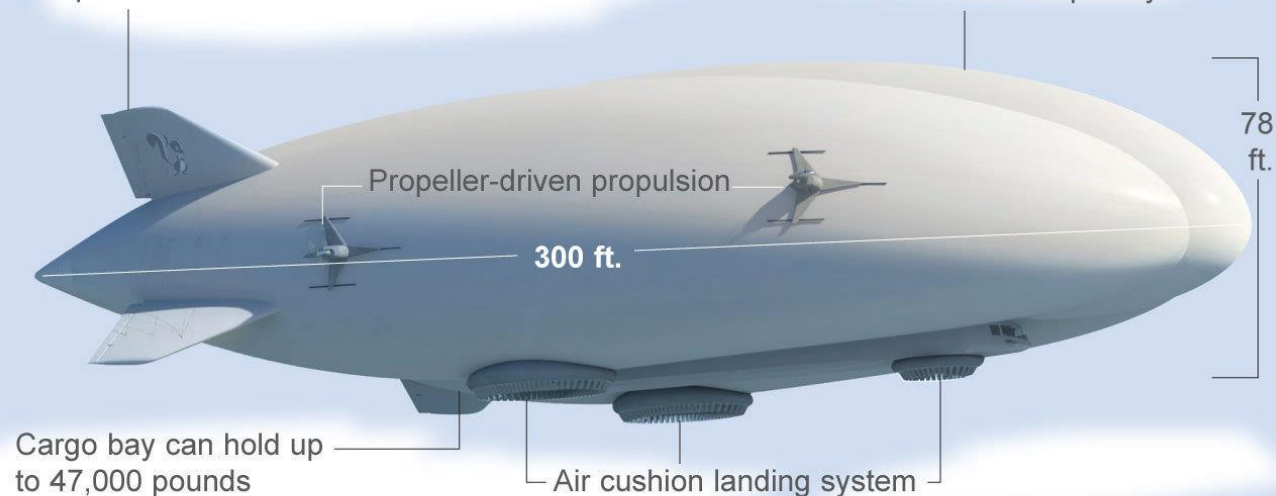
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## Lockheed Martin's hybrid airship

Engines and ailerons are computer-controlled

The airship's hull is made up of three balloon-shaped cylinders.



Source: Lockheed Martin

## Trucks of the future?

**Lockheed Martin** has landed its first contract for the hybrid helium airship it created inside its top secret Skunk Works division. [Straightline Aviation \(SLA\)](#) has signed a letter of intent to purchase 12 of the heavier-than-air airships that measure nearly a football field long for \$480 Million. First delivery is scheduled for 2018, with the final airship expected no later than 2021.

**Helium is Non-Flammable and Lighter Than Air**



PROJECT LOON

BALLOON-POWERED INTERNET  
FOR EVERYONE

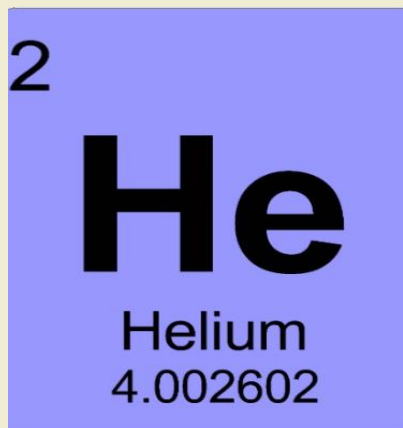
More than half the world is still without internet access. Google's **Project Loon** aims to fix this through a network of Helium gas filled balloons traveling on the edge of space.

With a new balloon launched every 30 minutes, it is designed to extend internet connectivity to people in rural and remote areas worldwide. Google has now flown over 25 million km of test flights with one balloon staying aloft for 190 days.

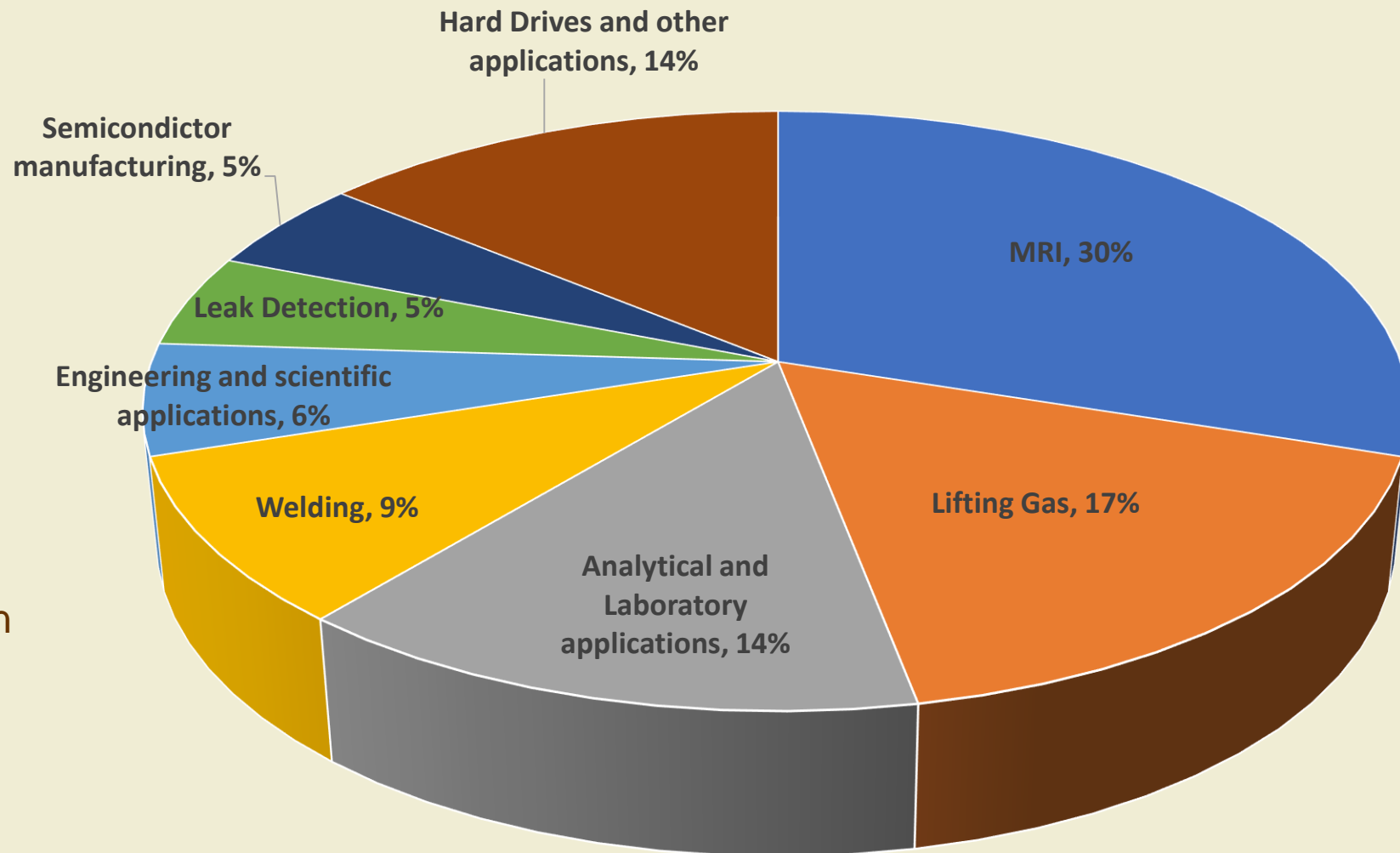
Google



# 2017 Estimated Domestic Helium Consumption and Usage by Application



Estimated domestic consumption of Grade-A helium was 1.5 billion cubic feet (Bcf) in 2017, and it was used in these applications.



**Source :** U.S. Geological Survey, Mineral Commodity Summaries, January 2018

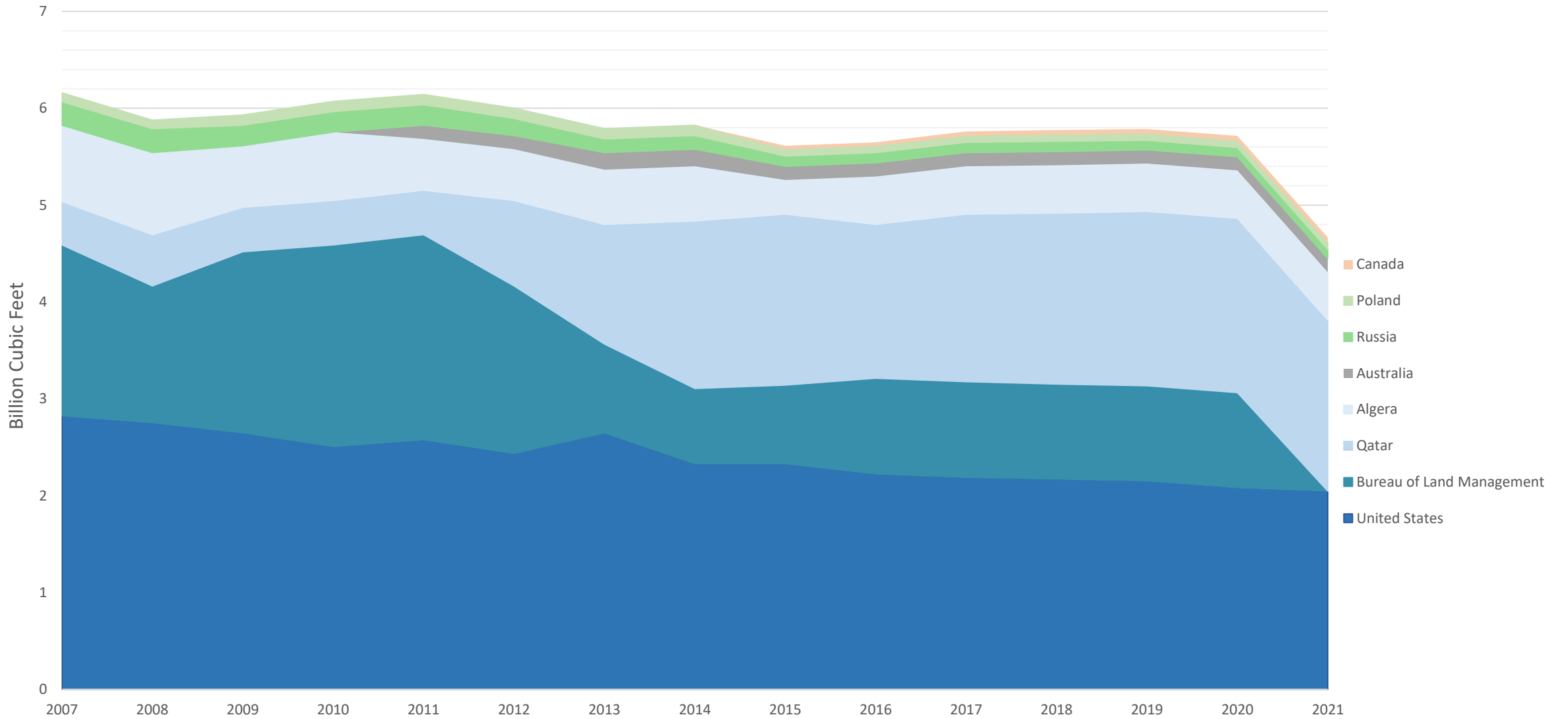
A row of large industrial helium liquefaction tanks, likely at a liquefaction plant. The tanks are cylindrical and made of metal, with a series of red handwheels for valves. The tanks are connected by a complex network of pipes and valves, some with red handwheels. The background shows a clear blue sky with some clouds.

# Global Supply for Helium is Declining While Demand Surges

A global Helium shortage exists despite continued liquidation of inventories by the U.S. Government from its National Helium Reserve. These reserves are projected to be essentially exhausted within another two years. The ongoing political crisis involving Qatar has also highlighted the fragility of the global helium supply.



# World Helium Production (Data in Billion Cubic Feet)



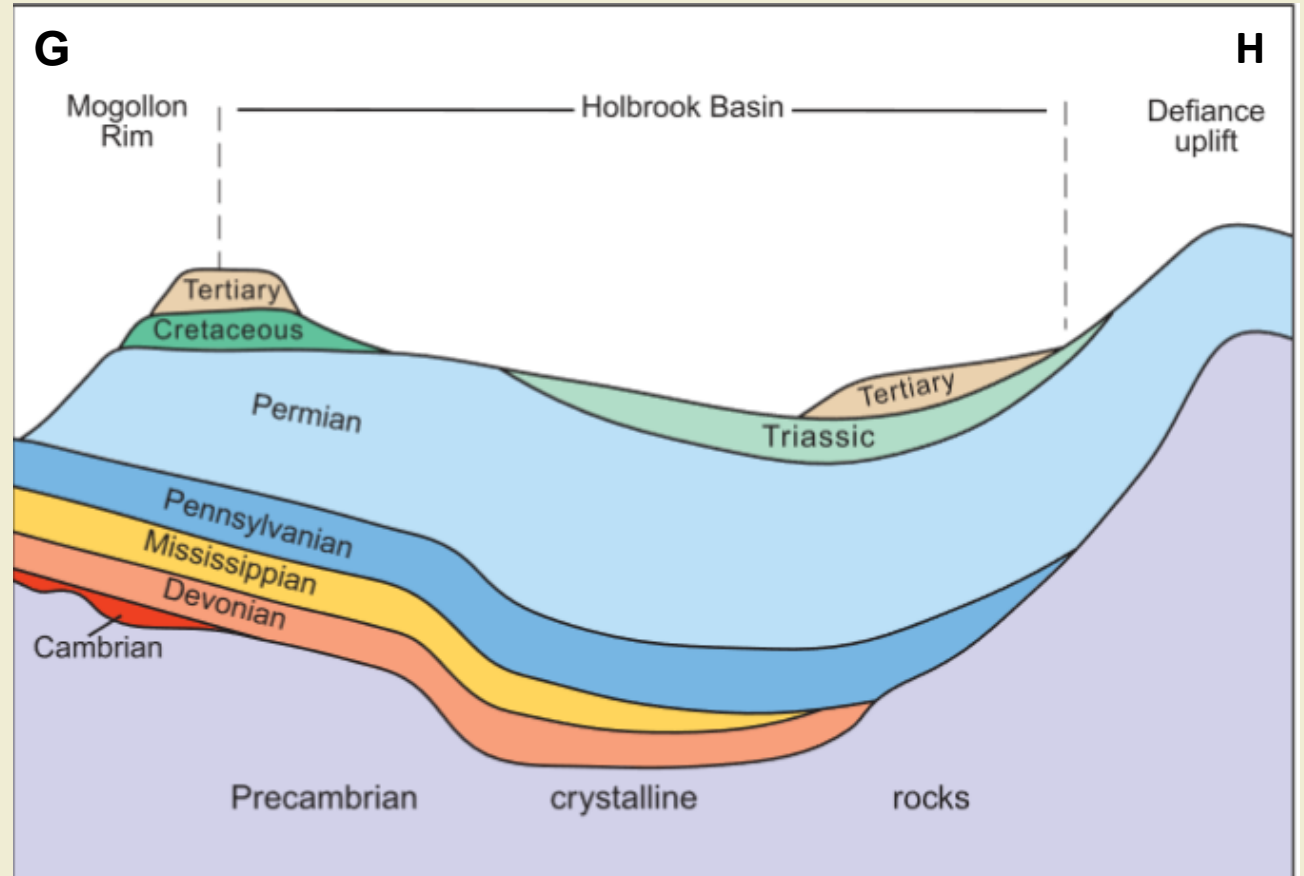
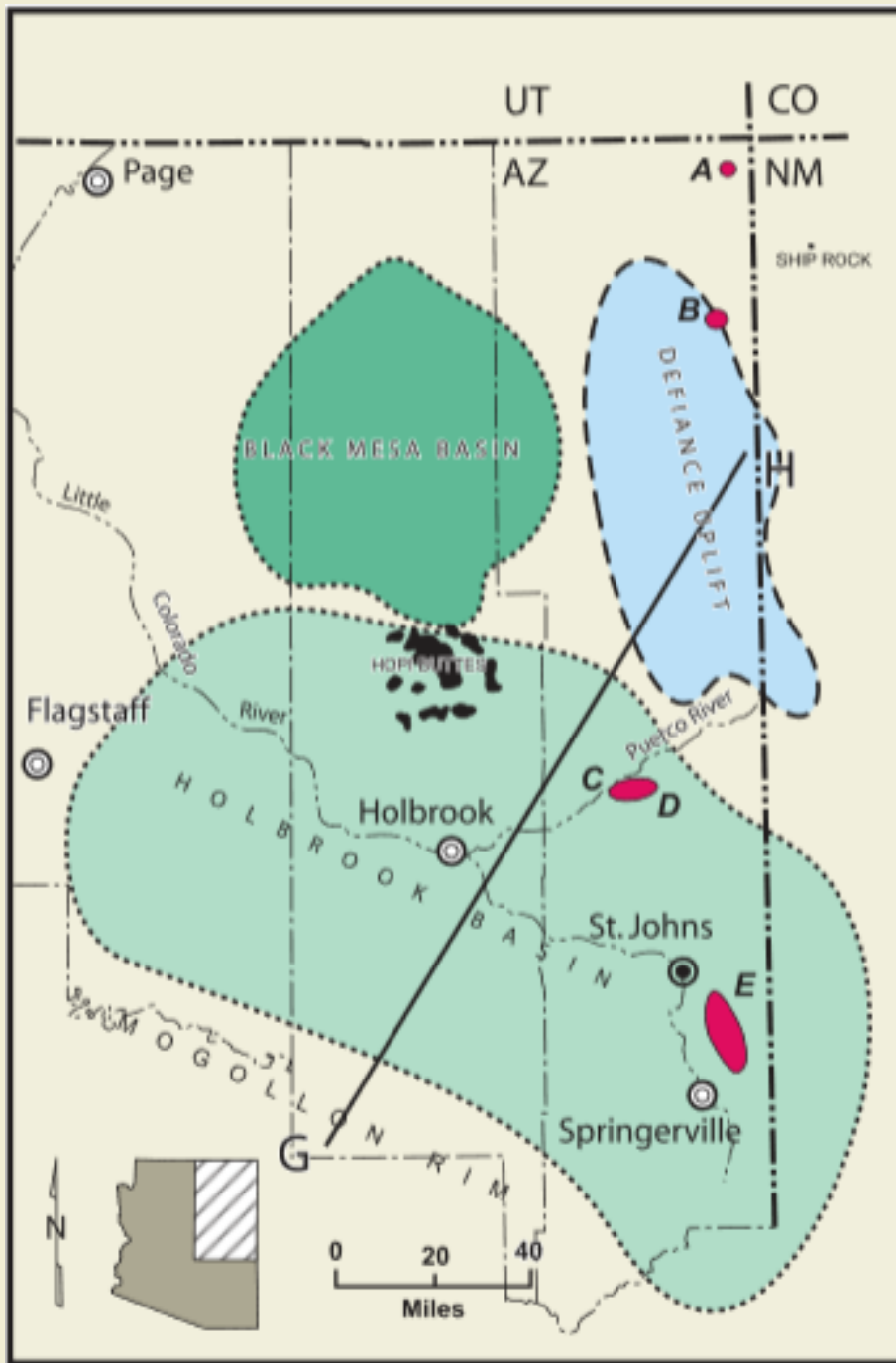
Source: U.S. Geological Survey, Mineral Commodity Summaries

# THE HOLBROOK BASIN



- A large salt basin approximately 160 mi. by 100 mi. with thickened Permian sedimentary rocks.
- Situated in east-central Arizona South West of the defiance uplift near the South margin of the Colorado plateau in Apache, Navajo & Coconino Counties.
- Highly prospective for Helium, oil & natural gas and other minerals.
- Abundance of reservoir rocks with numerous showings of oil & gas in 28 stratigraphic intervals up to 150 ft. wide. Holbrook Helium typically found in the Permian Fort Apache limestone and Coconino sandstones.
- Many geologic similarities to the Permian basin of West Texas with extensive evaporate deposits.
- Extremely underexplored with only one well drilled per 100 sq. mi. Most historic drilling was for minerals. Modern exploration, drilling and production techniques enhance potential.
- **9.23 Billion cu ft. (Bcf)** of Helium gas produced from 22 wells in 3 fields in the Holbrook basin from 1961–1976: Pinta Dome, Navajo Springs & East Navajo Springs.
- **6.5 Bcf** produced from **Pinta Dome** alone, averaging **1400 Mcf per day** over 15 year period from only 11 wells. **Labelled “some of the richest helium-bearing gas ever produced in the world”** at that time.
- Largest well at Pinta Dome, Kerr McGee 01 Macie-State, produced stunning **1.779 Bcf Helium gas over that period; 304.7 Mcf per day.**
- Avg. Grades produced from Pinta Dome were **8-10% Helium**; 90% Nitrogen; 1% Carbon dioxide from avg. depths of 1050 ft.
- Elsewhere in N.E. Arizona He was produced in smaller concentrations with oil & natural gas production, e.g., the Dineh Bi Keyah field.
- Production ended in 1976 due to low Helium prices and liquidation of He inventories by the U.S. National Helium Reserve.

# THE HOLBROOK BASIN



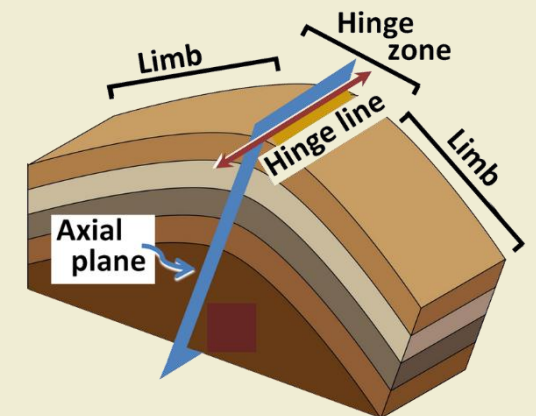
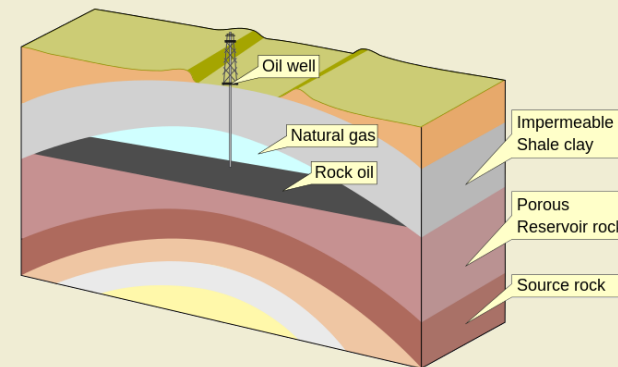
*Diagrammatic northeast-southwest geologic cross section from the Mogollon Rim to the Defiance uplift (From Peirce, 1970). This Figure shows line of cross section. The distance from G to H is about 150 miles. Not to scale.*

# GEOLOGICAL SETTING

The Pinta Dome, Navajo Springs & East Navajo Springs gas fields characterized by: (i) anticlinal features; (ii) favorable reservoir rocks and (iii) impermeable caprock traps.

## Anticlinal Features

- An anticline is an arch-shaped fold with the oldest beds at its core. Typically convex up with the greatest curvature at the hinge or crest. The limbs or sides of the fold dip away.
- Contains rock layers that become progressively older toward the center of the fold. Anticlinal ridges typically develop above thrust faults.
- Anticlines, structural domes and stratigraphic traps are favorable for sourcing oil & natural gas, as well as Helium.
- 80% of the world's oil was found in anticlinal traps.

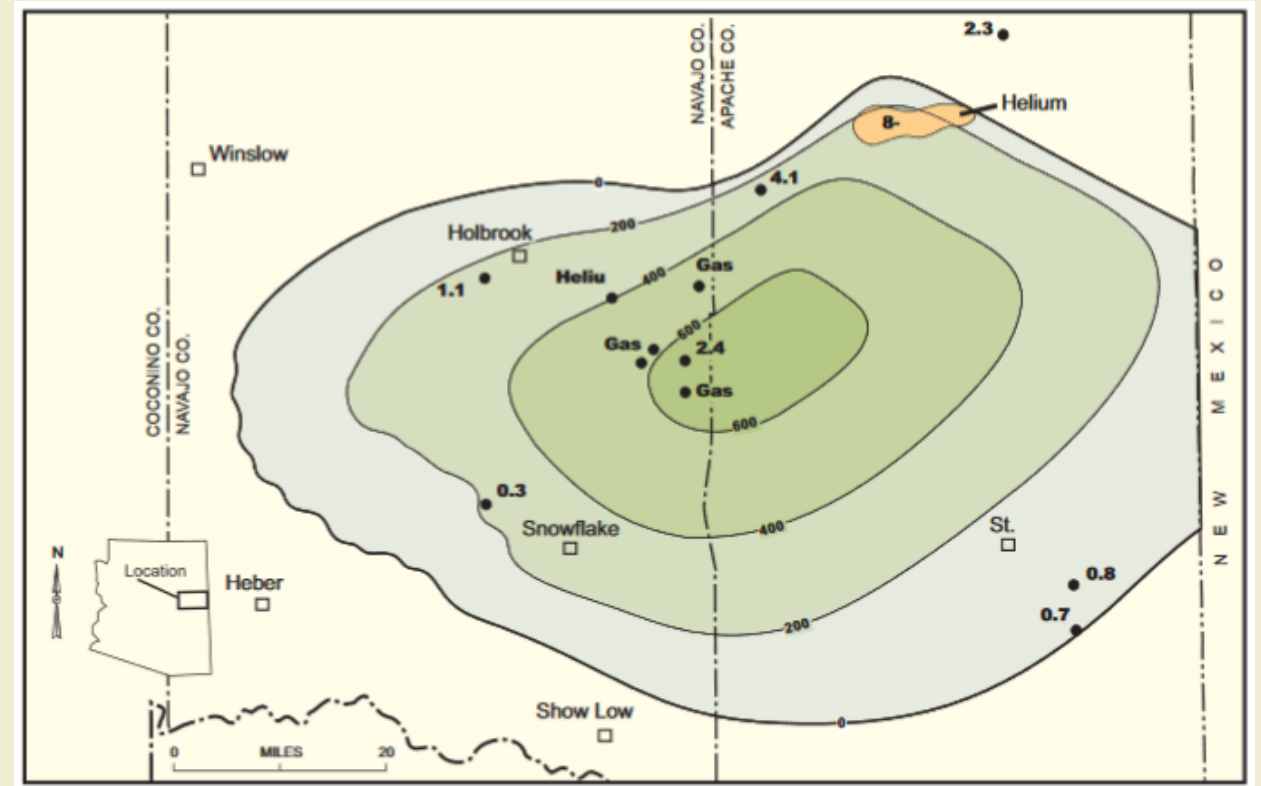


## Reservoir Rocks

- Helium in the Holbrook Basin generally found in pay zones 60-70 ft. wide in the Coconino sandstones and Fort Apache limestones at depths of approximately 1050 ft.
- These reservoir rocks are abundant in the Holbrook Basin.
- Coconino sandstones are particularly hospitable to hydrocarbons and helium with average porosity(14%), average permeability (110 millidarcies); and water saturation (29%)

## Capping Mechanism

- The Holbrook Basin is essentially a salt basin with salt and anhydrite acting as capping mechanisms to trap Helium in the reservoir rocks.



*Holbrook Salt Basin showing the thickness of salt (in feet) and helium content (percent) of selected wells.*

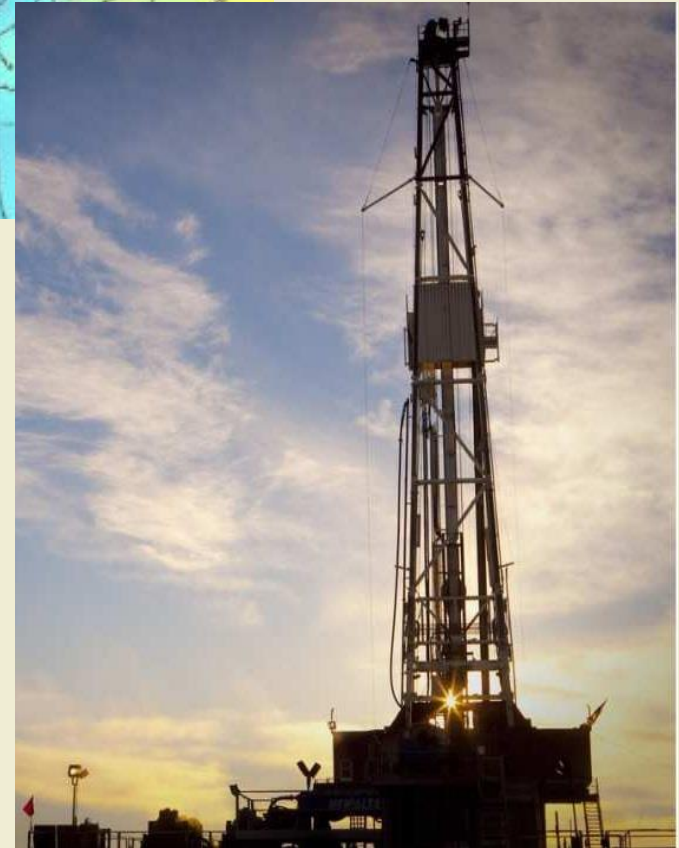
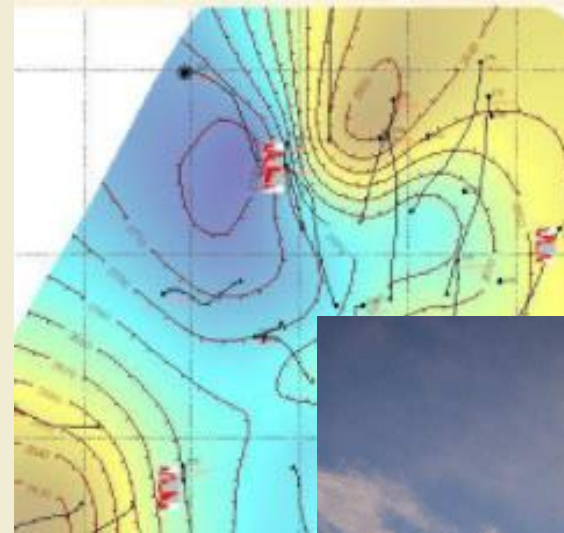
# HELIOPOLIS

- DME has **42,911 acres of key helium leases** throughout the Holbrook Basin.
- This project area is named “Heliopolis” after the famous ancient Egyptian city, seat of worship of the sun god Atum or Ra. The sun is comprised of 25% helium.
- Heliopolis is highly prospective for helium, oil & gas. Its leases were carefully selected from studies of regional geology, engineering reports and logs from historic wells.
- Heliopolis has two large anticlinal features covering an area more than double the other Holbrook helium fields.
- Heliopolis overlays typical Coconino sandstone reservoir rocks and has abundant salt caps to act as trapping mechanisms.
- Heliopolis has never been produced as the other Holbrook fields provided ample supply. Those fields are now largely depleted and Helium prices have skyrocketed in response to new demand.

# Heliopolis' time has come!

## Work program for 2019-2020 includes:

- Mapping, 2-D seismic survey now completed.
- Multiple Drill Targets ranging from 1500-4000 ft.
- Three shallow, vertical wells planned for 2020.
- First well planned for Q1 2020.
- Long-term development contemplates potential drilling of 50 wells at Heliopolis.



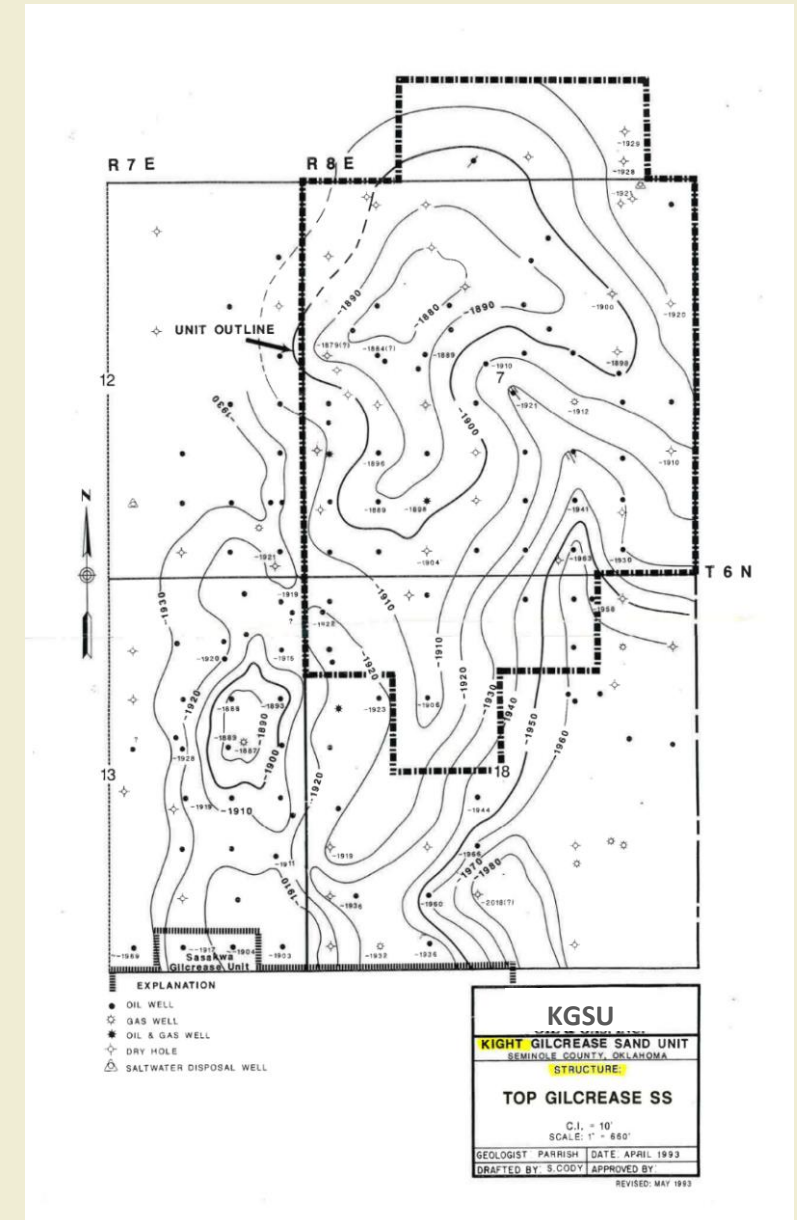
# **KIGHT GILCREASE SAND UNIT**





# KIGHT GILCREASE SAND UNIT (KGSU)

- An oil field in Seminole County, Oklahoma with strong potential for secondary water-flood production and new primary production Helium, Oil & Gas.
- Comprises approximately 883.7 acres, with 7 wells on site, one currently operational.
- Historic recorded production from the KGSU 1,690,240 BO, light sweet crude 34-43 API gravity.
- Permitted July, 1993 in unitization proceeding by the Oklahoma Corp. Commission Oil & Gas Division (the "OCC") as an enhanced recovery project utilizing water-flood secondary recovery operations.
- Early open hole production in the 1920's-30's resulted in rapid depletion of the original "gas drive" which pushed oil from the sand layer up into the wellbore, restricting production. The OCC estimates only 11% to 14% of the original oil in situ has been produced. This creates an outstanding opportunity for substantial new low-cost production using modern enhanced recovery techniques.
- Helium was recently discovered on the KGSU by sampling existing oil wells; Commercial grades up to **1.3622%** were found
- Drill permits have been granted in Oklahoma for two new primary wells.
- Drilling anticipated to begin Q4 2019 / Q1 2020.



# GILCREASE SAND FORMATION

- The overall Gilcrease Sand Formation, named after iconic Oklahoma oilman Tom Gilcrease, has produced in excess of **580 million BO**. One of the major historic producing formations in the State.
- Relatively shallow pay zone at 2,850 ft.
- "Clean" sand with some shale inclusions.
- Ample pore space into which oil & gas has migrated and tight "cap rock" on top of the formation, serving to trap hydrocarbons creating a large oil reservoir.
- Water flood units within the Gilcrease Sand Formation have been extremely successful, e.g., the nearby Sasakwa Sand Unit. Sasakwa has typical porosities of 14%-17% and permeability averaging 260 Mds.
- KGSU compares favorably. The 3PB's and Sears 18-H well logs from KGSU confirmed porosity of 24%-30% and 3,235 Mds of permeability. 3PB'S well log also confirmed at least two more highly prospective hydrocarbon zones above the Gilcrease Sand Formation.

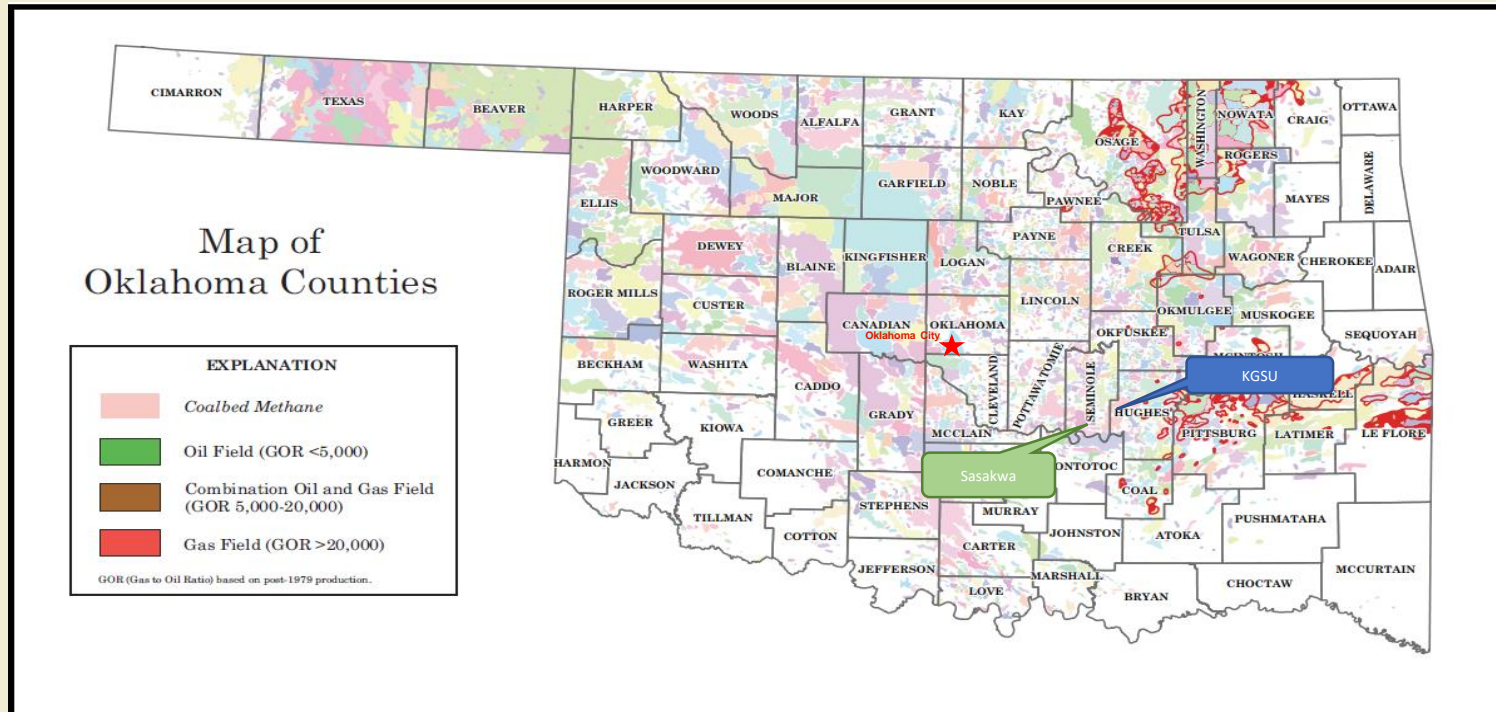


# EXAMPLE OF SUCCESSFUL IMPLEMENTATION OF WATER FLOOD SECONDARY PRODUCTION

## Sasakwa Gilcrease Sand Unit

In the Gilcrease Sand Formation

Located within one mile directly South of the KGSU on same geologic structure.



### Sasakwa Gilcrease Sand Unit

Historic primary production  
(gas drive):  
**1,233,009 BO**

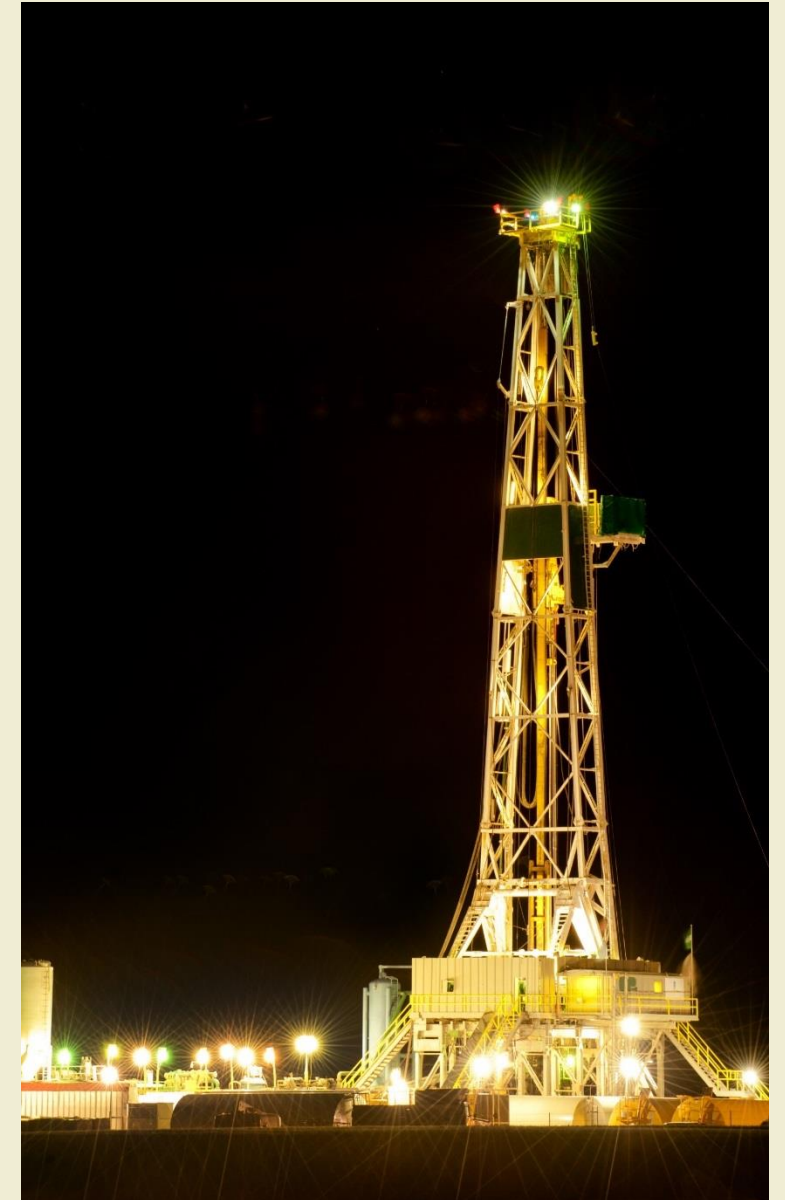
Secondary Water-flood enhanced  
recovery:  
**1,000,730 BO to date**  
**(81% of Primary production)**

KGSU provides opportunity for significant secondary production through water-flood with or without enhancement through injection of gas, as well as additional primary production through reworking of existing wells and drilling of new wells. Recent helium discovery on KGSU provides opportunity for potential helium production from wide zones above the Gilcrease Sands.



# GEOLOGY AND DEVELOPMENT

- Development plans for the KGSU contemplate reworking the 7 existing wells and drilling two new simple, vertical wells to a depths of up to 3500 ft. These two new primary wells will be targeted for helium in the upper zones as well as oil & gas.
- Existing 6 plugged wells ideal candidates for re-entry.
- One or two wells to be converted to injectors for water-flood.
- One nitrogen injection well to be drilled at the formation apex.
- Secondary production through injection of water, nitrogen and potentially carbon dioxide to create a new bottom drive.
- Result would be new primary production short-term followed by enhanced water-flood secondary production within 18 months.
- Neighboring operator drilling at depth has excess salt-water from operations needing disposal. Discussions underway for access by DME.
- Prior operator on the KGSU drilled deep test well in 2004. Confirmed high porosity and permeability of the KGSU and revealed thickness of the sand pay zone may be 30-40% wider than projected by the OCC raising potential for higher secondary production.



# ROYALTY PAYMENTS & LEGAL REQUIREMENTS

- Approximately 380 mineral owners of record on the KGSU, some of whose interests have escheated to the State.
- Current aggregate carried royalties payable to third parties are approximately 22%. Seminole, the prior owner-operator, is due 2% of that. DME is receiving an approximate 78% net revenue interest.
- Royalties accounted for and paid in OK to minerals rights holders by a licensed and insured oil purchasing company.
- Sunoco has been serving as purchaser.
- Each mineral holder receives its pro-rata share based on percentages for each tract within the KGSU set by the OCC in its 1993 unitization proceeding.
- The KGSU leases are renewable for one-year periods by current commercial production and sale of oil.



# PROJECT / FINANCIAL CONSIDERATIONS

Water floods typically require some months to take effect before large production increases develop. DME's development plans call for reestablishment of primary production to start immediately upon drilling with secondary water-flood production kicking in within 12 months.

KGSU Development Plan	Estimated Investment	Approximate Results
Phase IA - Re-enter and recondition 7 existing wells on-site.	\$100,000 USD	25-50 BBLs daily
Phase IB - Drill one new primary well to depth of approx. 2500 ft.	\$300,000 USD	Targeted production 60-100 BBL's daily
Phase IC - Drill one new primary well to depth of approx. 3000 ft.	\$350,000 USD	Targeted production 60-100 BBL's daily
<b>TOTAL PHASE I</b>	<b>\$750,000 USD</b>	<b>TOTAL PROJECTED 145-250 BBL's DAILY</b>
Phase II - Initiate water flood program with injection wells	\$1.25 million USD	Secondary production increasing to 150-200 BBLs daily within 12 months of commencement.
Phase III – Completion of Entire water flood supplemented with gas	\$2 Million USD	Further increase in secondary production to more than 500 BBLs daily over the following 12-16 months

- By reworking the 7 wells currently on the KGSU and drilling one or two new wells, primary oil production could be attained in a matter of only months generating significant cash flow whilst awaiting increased production from the water flood program.
- Estimated annual cost for care and maintenance of the KGSU and to hold the KGSU leases is only approximately \$50,000 pending commencement of new program.

# **CAPITAL STRUCTURE**

**Outstanding shares: 36,645,051**

**Options: 3,652,500**

**Warrants: 4,765,516**

**Fully diluted: 45,063,067**

**TSX Venture Exchange: DME**

**U.S. OTC: DMEHF**

**Frankfurt Exchange: QM01**



# Desert Mountain Energy Corp. (TSX.V: DME) Historic Stock Chart

11/15/2019





## DESERT MOUNTAIN ENERGY

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