

Carbon Capture from Oil Refining - Best Practices in Enhanced Oil Recovery

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About Forward-Looking Statements



The data contained in this presentation that are not historical facts are forward-looking statements that involve a number of risks and uncertainties. Such statements may relate to, among other things: long-term strategy; anticipated levels of future dividends and rate of dividend growth; forecasts of capital expenditures, drilling activity and development activities; timing of carbon dioxide (CO₂) injections and initial production response to such tertiary flooding projects; estimated timing of pipeline construction or completion or the cost thereof; dates of completion of to-be-constructed industrial plants and their first date of capture of anthropogenic CO₂; estimates of costs, forecasted production rates or peak production rates and the growth thereof; estimates of hydrocarbon reserve quantities and values, CO₂ reserves, helium reserves, future hydrocarbon prices or assumptions; future cash flows or uses of cash, availability of capital or borrowing capacity; rates of return and overall economics; estimates of potential or recoverable reserves and anticipated production growth rates in our CO₂ models; estimated production and capital expenditures for full-year 2014 and periods beyond; and availability and cost of equipment and services. These forward-looking statements are generally accompanied by words such as “estimated”, “preliminary”, “projected”, “potential”, “anticipated”, “forecasted”, “expected”, “assume” or other words that convey the uncertainty of future events or outcomes. These statements are based on management’s current plans and assumptions and are subject to a number of risks and uncertainties as further outlined in our most recent Form 10-K and Form 10-Q filed with the SEC. Therefore, actual results may differ materially from the expectations, estimates or assumptions expressed in or implied by any forward-looking statement herein made by or on behalf of the Company.

Cautionary Note to U.S. Investors – Current SEC rules regarding oil and gas reserve information allow oil and gas companies to disclose in filings with the SEC not only proved reserves, but also probable and possible reserves that meet the SEC’s definitions of such terms. We disclose only proved reserves in our filings with the SEC. Denbury’s proved reserves as of December 31, 2013 were estimated by DeGolyer & MacNaughton, an independent petroleum engineering firm. In this presentation, we make reference to probable and possible reserves, some of which have been estimated by our independent engineers and some of which have been estimated by Denbury’s internal staff of engineers. In this presentation, we also refer to estimates of original oil in place, resource or reserves “potential”, barrels recoverable, or other descriptions of volumes potentially recoverable, which in addition to reserves generally classifiable as probable and possible (2P and 3P reserves), include estimates of reserves that do not rise to the standards for possible reserves, and which SEC guidelines strictly prohibit us from including in filings with the SEC. These estimates, as well as the estimates of probable and possible reserves, are by their nature more speculative than estimates of proved reserves and are subject to greater uncertainties, and accordingly the likelihood of recovering those reserves is subject to substantially greater risk.

A Different Kind of Oil Company

Long-Term Visibility

- Proven process
- Lower-risk & long-life assets
- Tremendous resource potential

Capital Flexibility

- Fund capex & dividends with cash flow
- Relatively low capital intensity
- Adjust to oil price environment

Competitive Advantages

- Strategic CO₂ supply
- >1,100 miles of CO₂ pipelines
- Large inventory of oil fields

Denbury at a Glance



Total 3P Reserves (12/31/13)	~1.25 BBOE
% Oil Production (3Q14)	95%
Total Daily Production – BOE/d (3Q14)	73,810
Proved PV-10 (12/31/13) \$96.94 NYMEX Oil Price	\$10.6 billion
Market Cap (11/26/14)	~\$3.5 billion
Total Debt (9/30/14)	\$3.6 billion
CO ₂ Supply 3P Reserves (12/31/13)	~17 Tcf
CO ₂ Pipelines Operated or Controlled	~1,100 miles
Credit Facility Availability (9/30/14)	~\$1.1 billion
Anticipated Annual Dividend per Share	2015E - \$0.40

Core Focus: CO₂ EOR

CO₂ EOR Process

Secure CO₂ Supply



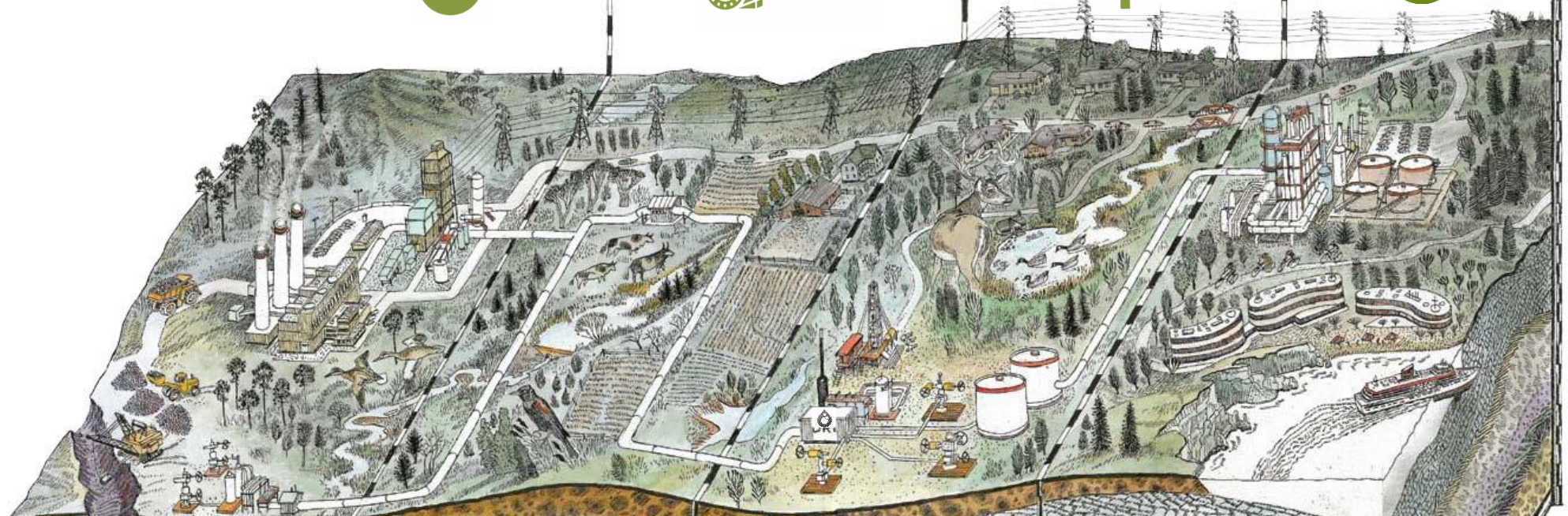
Transport via Pipeline



Inject into Oilfield



Capture & Store CO₂



Sources of CO₂

Natural & Anthropogenic (Man-made)

Infrastructure

Carbon Steel Pipeline
Dry CO₂
Dense Phase (>1200 psi)

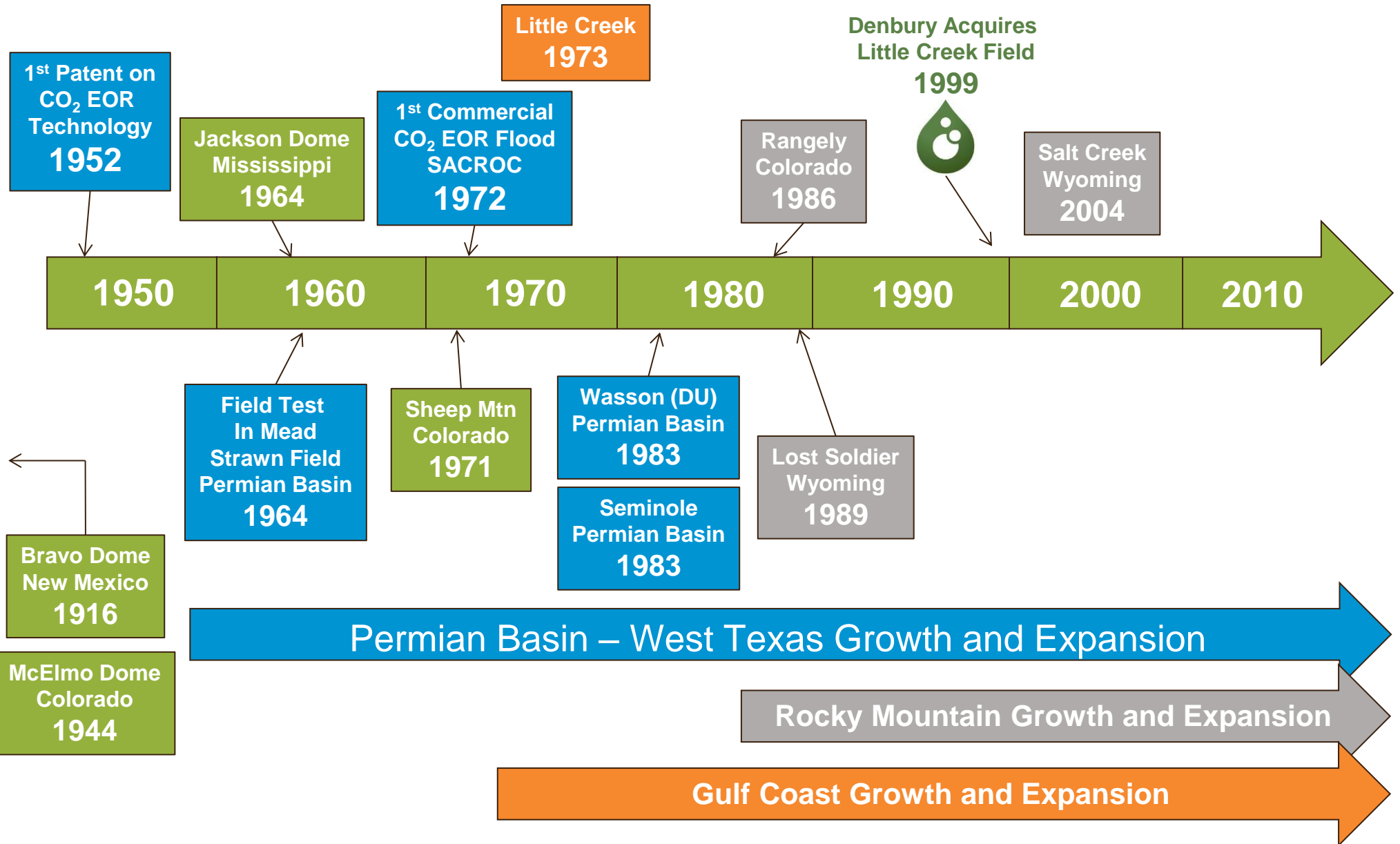
CO₂ EOR Reservoir Requirements

Adequate Depth (> +/-3000')
Confining Geologic Seals
Reserve Potential
Rock Characteristics

Captured/ Stored CO₂

Positive for US energy security, the environment and the economy

CO₂ EOR – A Brief History

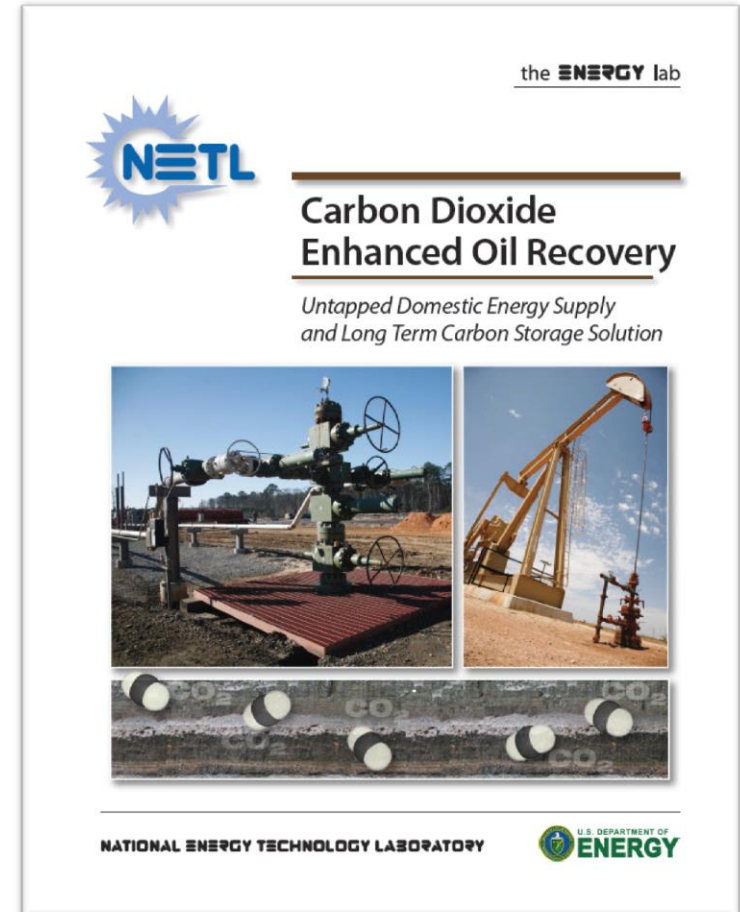


2008 - DOE/NETL Report

- “CO₂ enhanced oil recovery (CO₂ EOR) offers the potential for storing significant volumes of carbon dioxide emissions while increasing domestic oil production”
- Next generation technology offers potential for recovering more stranded oil and storing significantly more CO₂

2011 - DOE/NETL Report

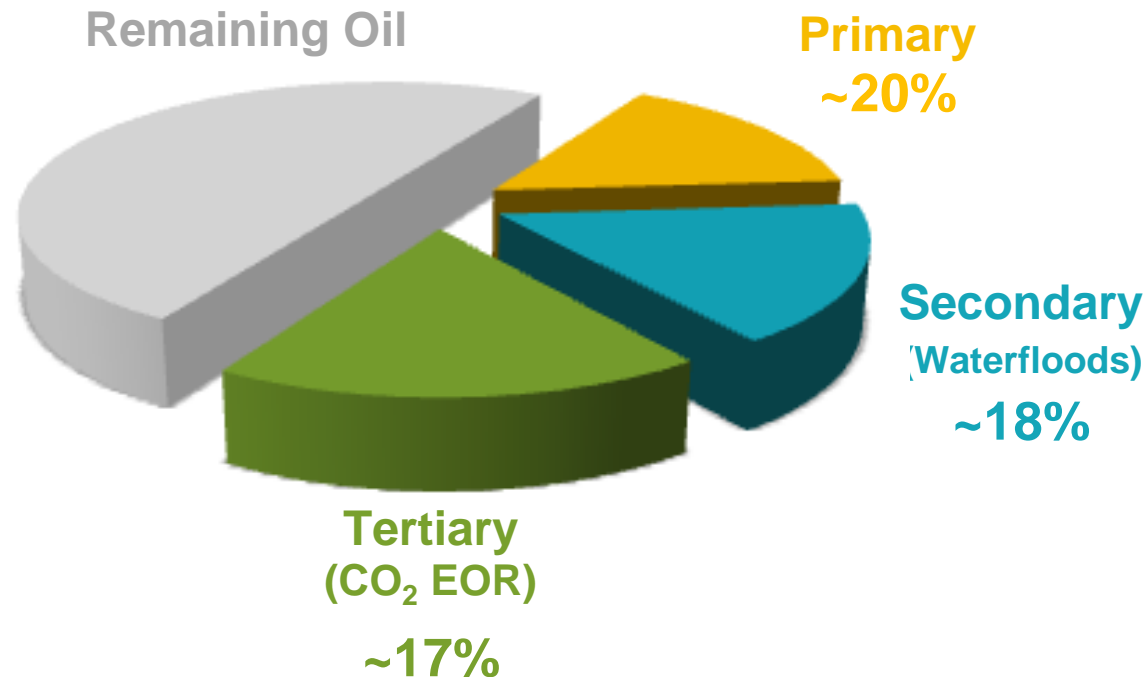
- “Next Generation” CO₂ EOR can provide 137 billion barrels of additional technically recoverable domestic oil, with about half (67 billion barrels) economically recoverable at an oil price of \$85 per barrel. Technical CO₂ storage capacity offered by CO₂ EOR would equal 45 billion metric tons
- The market for captured CO₂ emissions from power plants created by economically feasible CO₂ EOR projects would be sufficient to permanently store the CO₂ emissions from 93 large one GW size coal-fired power plants operated for 30 years



What is CO₂ EOR & How Much Oil Does it Recover?

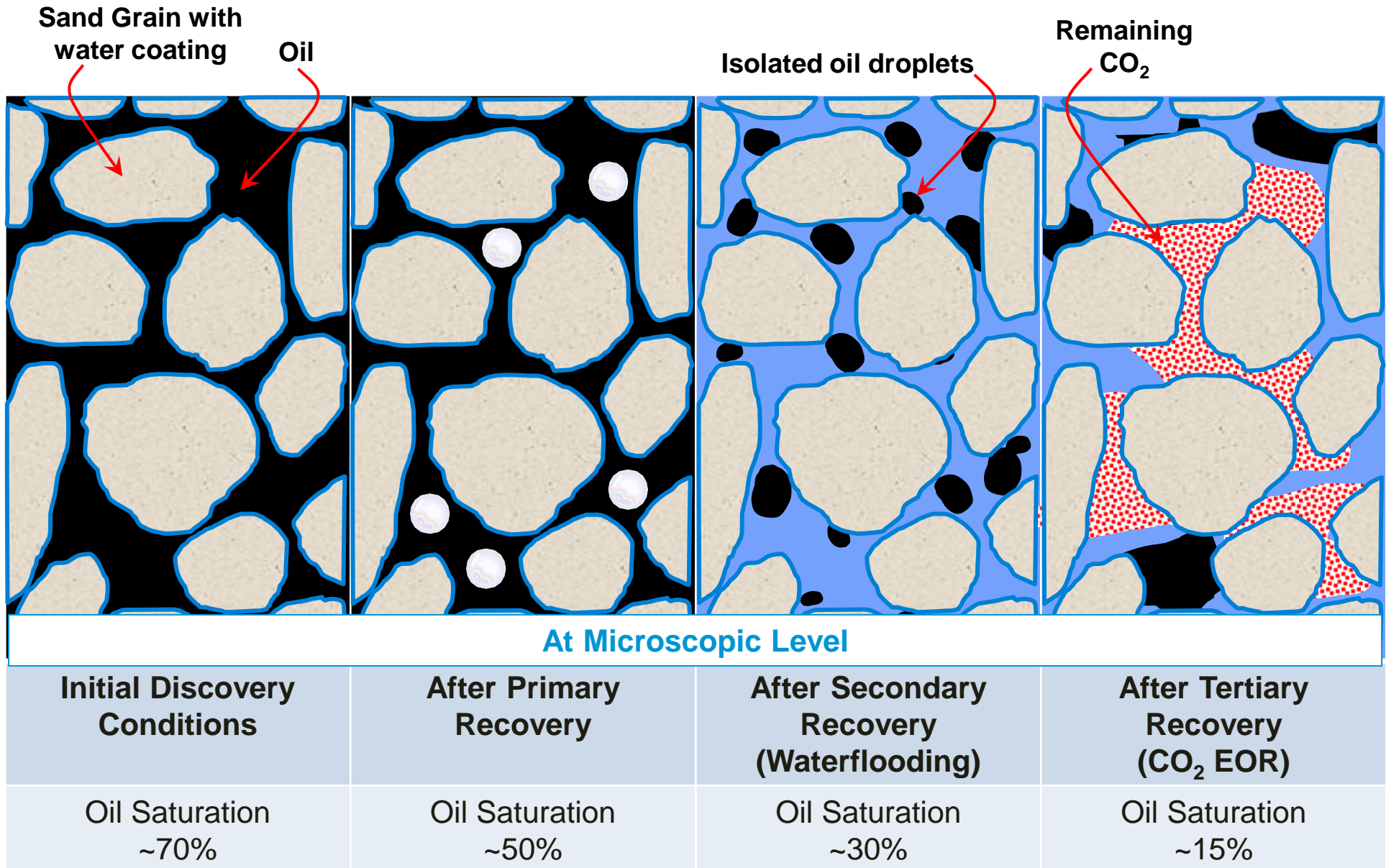


CO₂ EOR Delivers Almost as Much Production as Primary or Secondary Recovery⁽¹⁾



(1) Recovery of original oil in place based on history at Little Creek Field.

How much oil remains in an old oil field?



Up to 16 Billion Gross Barrels Recoverable⁽¹⁾ in Our Two CO₂ EOR Target Areas

**2.8 to 6.6
Billion Barrels**
Estimated Recoverable in
Rocky Mountain Region⁽²⁾

**Denbury-operated fields
represent ~10% of total
potential⁽³⁾**

**3.7 to 9.1
Billion Barrels**
Estimated Recoverable in
Gulf Coast Region ⁽²⁾

- Existing Denbury CO₂ Pipelines
- - - Proposed Denbury CO₂ Pipelines
- Denbury owned fields
- Existing or Proposed CO₂ Source
Owned or Contracted

(1) Total estimated recoveries on a gross basis utilizing CO₂ EOR, based on a variety of recovery factors.
(2) Source: 2013 DOE NETL Next Gen EOR
(3) Using approximate mid-points of ranges, based on a variety of recovery factors.

CO₂ EOR in Gulf Coast Region:

Control of CO₂ Sources & Pipeline Infrastructure Provides a Strategic Advantage



Summary ⁽¹⁾	
Proved	195
Potential	363
Produced-to-Date ⁽²⁾	85
Total MMBOEs⁽³⁾	643

Houston Area ⁽³⁾	
Hastings	60 - 80 MMBbbls
Webster	60 - 75 MMBbbls
Thompson	30 - 60 MMBbbls
Total	150 - 215 MMBbbls

Conroe⁽³⁾
130 MMBbbls

~90 Miles
Cost: ~\$220MM

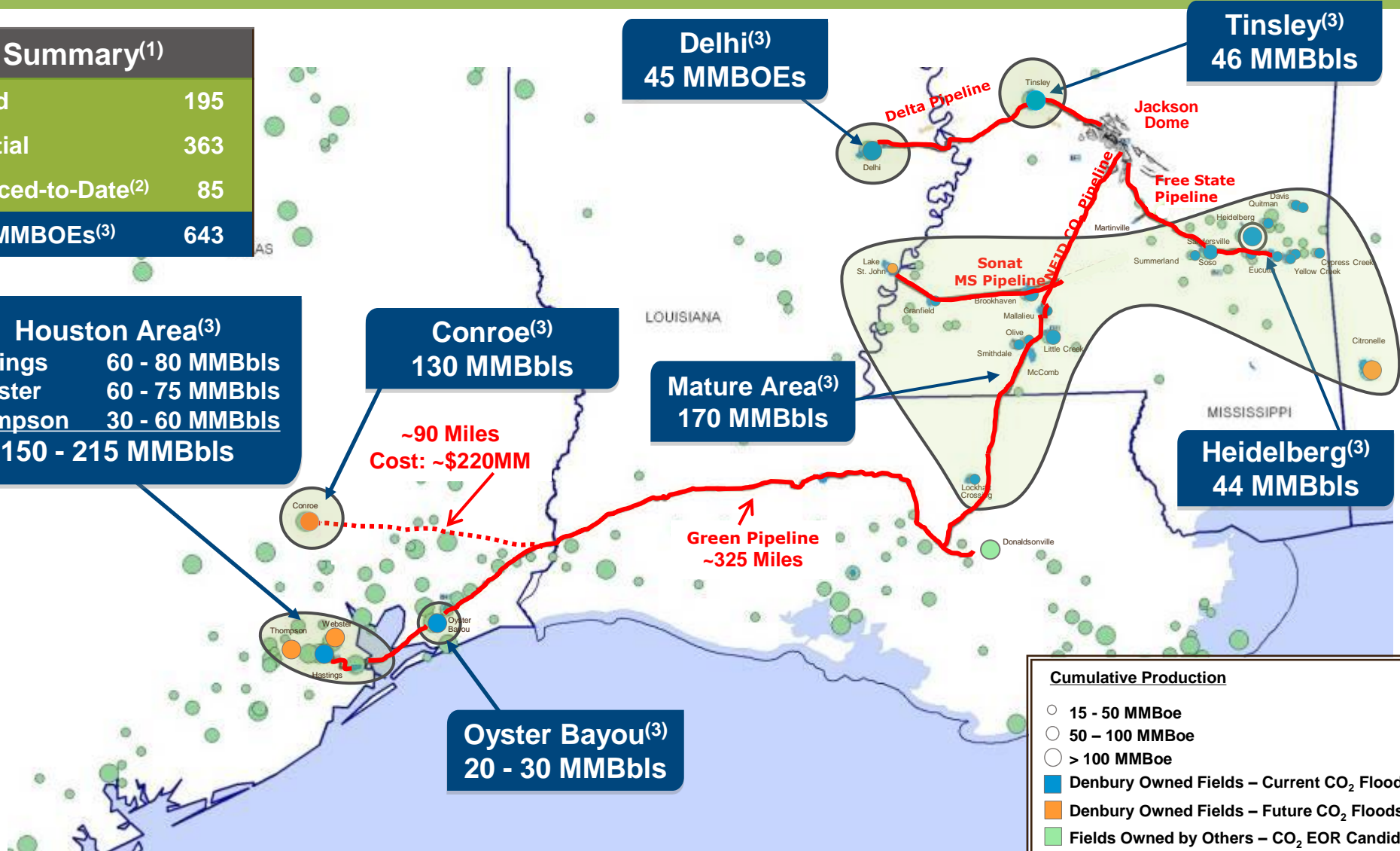
Mature Area⁽³⁾
170 MMBbbls

Delhi⁽³⁾
45 MMBOEs

Tinsley⁽³⁾
46 MMBbbls

Heidelberg⁽³⁾
44 MMBbbls

Oyster Bayou⁽³⁾
20 - 30 MMBbbls



Cumulative Production

- 15 - 50 MMBoe
- 50 - 100 MMBoe
- > 100 MMBoe
- Denbury Owned Fields – Current CO₂ Floods
- Denbury Owned Fields – Future CO₂ Floods
- Fields Owned by Others – CO₂ EOR Candidates

Pipelines

- Denbury Operated Pipelines
- - - Denbury Proposed Pipelines

(1) Proved tertiary oil reserves based on year-end 12/31/13 SEC proved reserves. Potential includes probable and possible tertiary reserves estimated by the Company as of 12/31/13, using mid-point of ranges, based on a variety of recovery factors.

(2) Produced-to-date is cumulative tertiary production through 12/31/13.

(3) Field reserves shown are estimated total potential tertiary reserves, including cumulative tertiary production through 12/31/13.

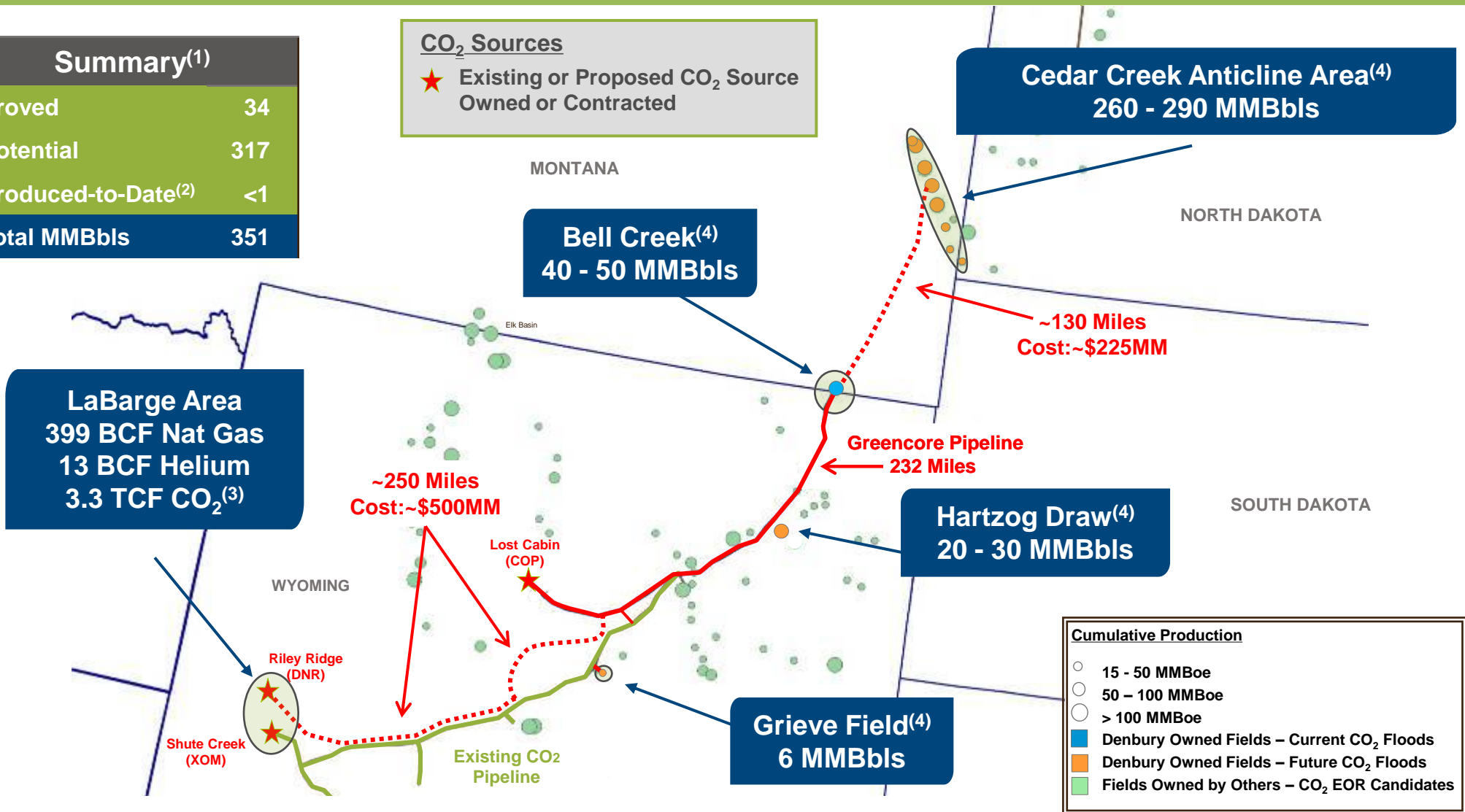
CO₂ EOR in Rocky Mountain Region:

Control of CO₂ Sources & Pipeline Infrastructure Provides a Strategic Advantage

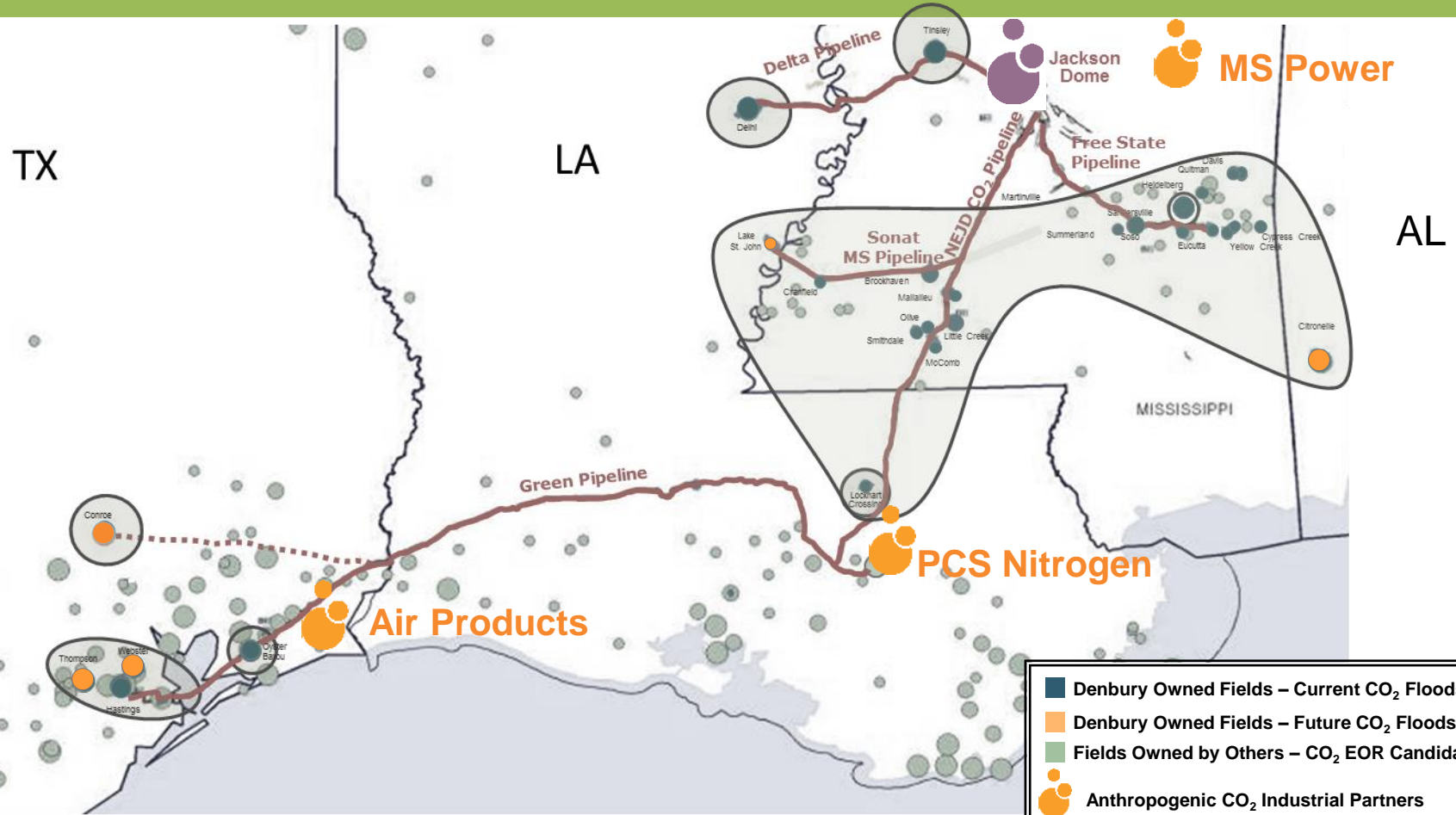


Summary ⁽¹⁾	
Proved	34
Potential	317
Produced-to-Date ⁽²⁾	<1
Total MMBbbls	351

CO₂ Sources
 ★ Existing or Proposed CO₂ Source Owned or Contracted



(1) Proved tertiary oil reserves based on year-end 12/31/13 SEC proved reserves. Potential includes probable and possible tertiary reserves estimated by the Company as of 12/31/13, using approximate mid-points of ranges, based on a variety of recovery factors.
 (2) Produced-to-date is cumulative tertiary production through 12/31/13.
 (3) Reported on a gross working interest or 8/8ths basis, except for overriding royalty interest in LaBarge Field.
 (4) Field reserves shown are estimated total potential tertiary reserves, including cumulative tertiary production through 12/31/13.



	Denbury Owned Fields – Current CO ₂ Floods
	Denbury Owned Fields – Future CO ₂ Floods
	Fields Owned by Others – CO ₂ EOR Candidates
	Anthropogenic CO ₂ Industrial Partners
	Natural CO ₂ Source

Currently Producing or Pending Startup

Air Products

- Port Arthur, Texas
- Hydrogen Plant
- Producing Since: 1Q 2013
- Quantity: ~50 MMcf/d

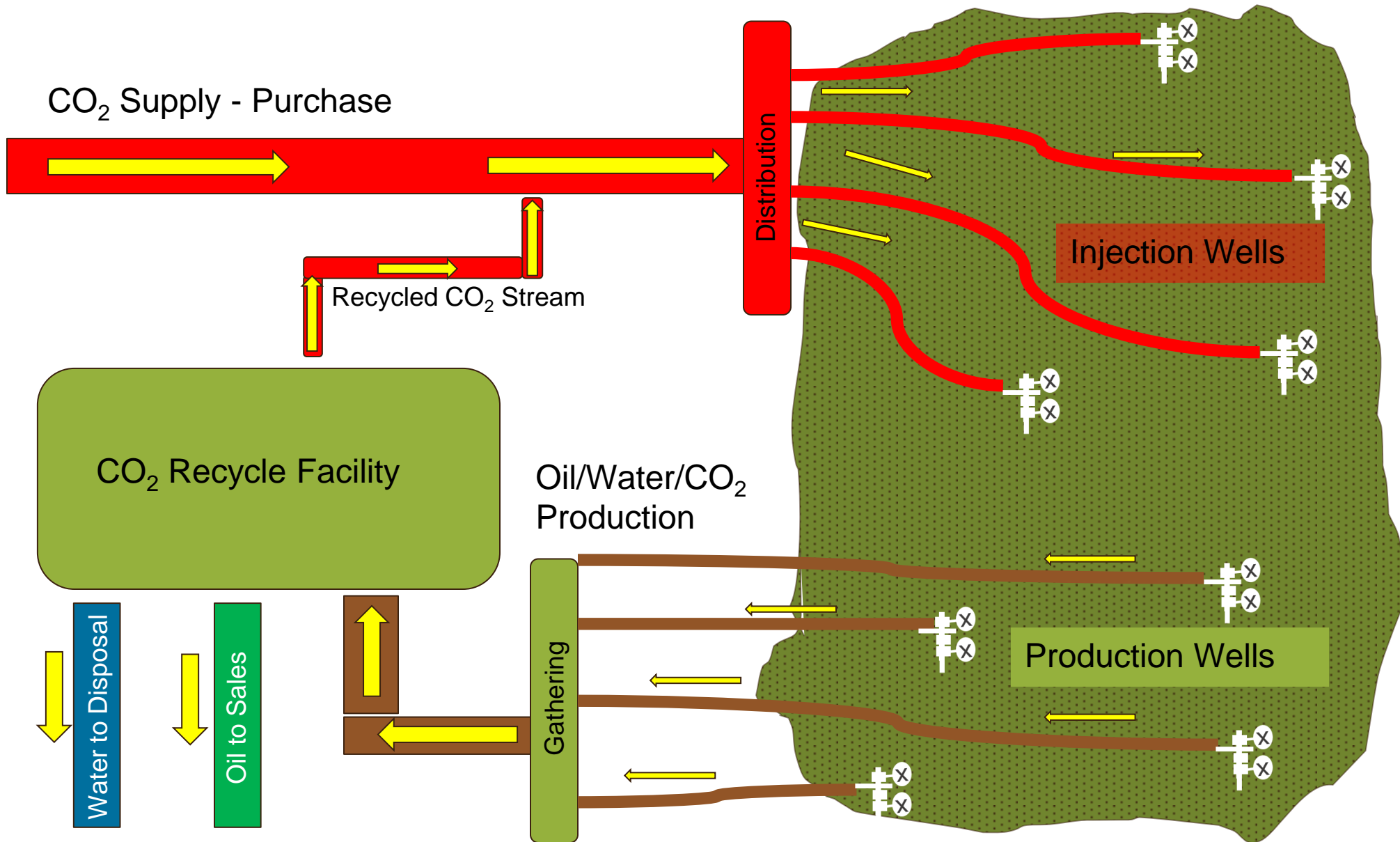
PCS Nitrogen

- Geismar, Louisiana
- Ammonia Products
- Producing Since: 2Q 2013
- Quantity: ~20 MMcf/d

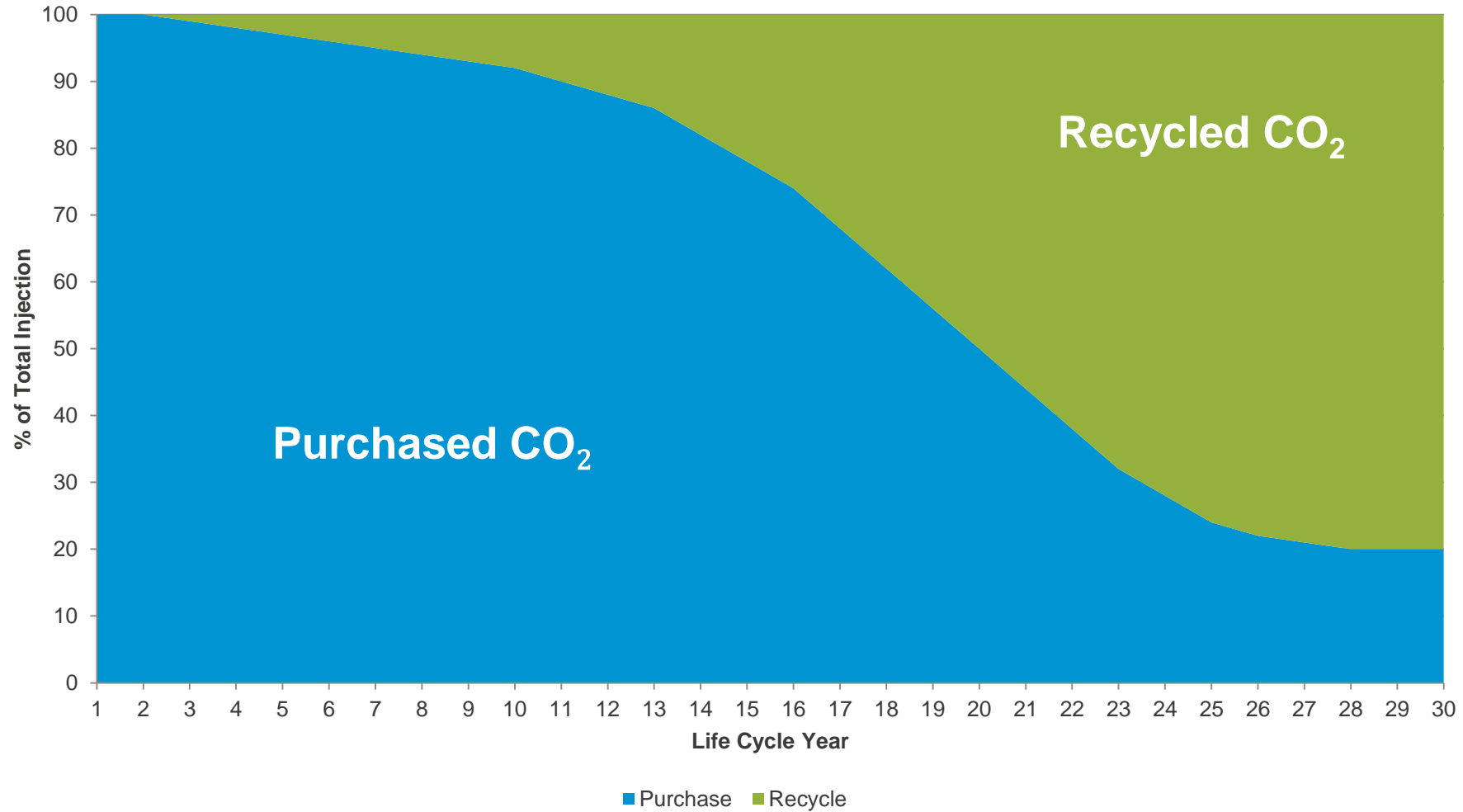
Mississippi Power (Pending Startup)

- Kemper County, MS
- Gasifier
- Estimated Capture Date: ~2016
- Quantity: ~115 MMcf/d

Simplified CO₂ EOR Closed Loop Recycle Facility



Illustrative Ratio of New vs Recycled CO₂ During CO₂ EOR Project Life Cycle



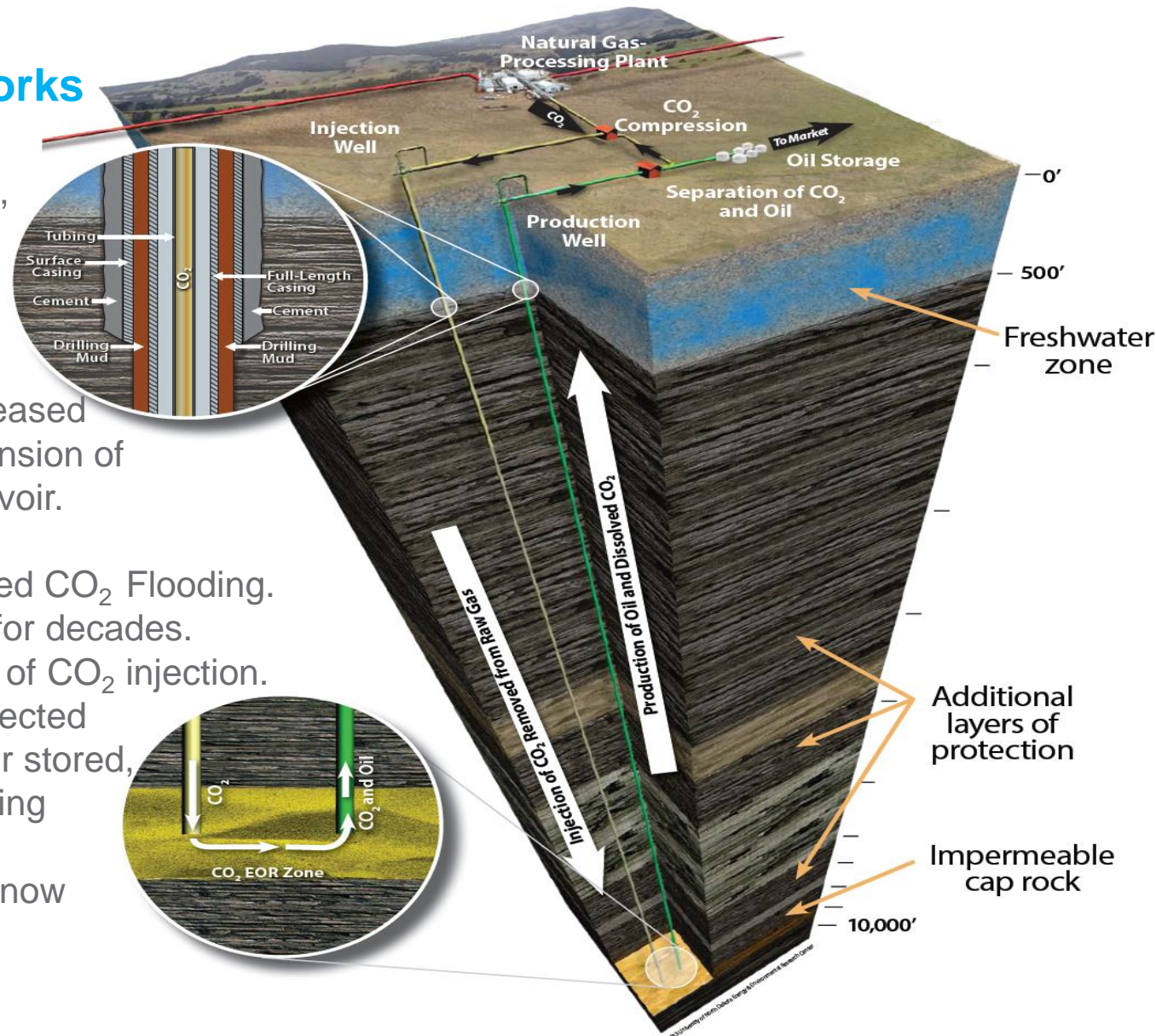
Hastings Aerial View



How CO₂ EOR to Storage Works

When CO₂ comes into contact with oil, a significant portion of the CO₂ dissolves into the oil, reducing oil viscosity and increasing the oils mobility. This, combined with the Increased pressure, can result in increased oil production rates as well as an extension of the operational lifetime of the oil reservoir.

In an oil field, this EOR method is called CO₂ Flooding. CO₂ floods are designed to be active for decades. Over the years there are many cycles of CO₂ injection. With each cycle, another portion of injected CO₂ becomes permanently trapped, or stored, in the oil reservoir. As a result of ongoing CO₂ EOR projects since the 1970s, hundreds of millions of tons of CO₂ is now permanently stored in oil fields.



- **Commercial CO₂ Operations Have Been Ongoing Continuously in the United States since 1972**
 - Current Annual injections: Approximately 63-68⁽¹⁾ Million Metric Tonnes Per Year
 - Cumulative CO₂ Injected (Net of Recycle) from 1984-2014: approximately 1,000 Million Metric Tonnes (i.e. One Gigaton)
 - Oil Production via CO₂ EOR 1984-2014: approximately 2 Billion Barrels
 - Annual Recovery of Oil via CO₂ EOR Currently Exceeds 100,000,000 bbls/yr
- **“All of the injected CO₂ is retained within the subsurface formation. . . . Or recycled to subsequent projects”; “When a CO₂ EOR flood is finished, the CO₂ that remains underground stays there.”⁽²⁾**

(1) US DOE estimated 63 million metric tonnes, US EPA estimated 64 million metric tonnes, Advanced Resources International estimated 68 million metric tonnes

(2) U.S. National Energy Technology Laboratory (NETL)

Under Clean Air Act and Massachusetts vs. EPA (2007)

- The atmospheric release of Greenhouse Gases (CO₂)
“fit well within the [Clean Air] Act’s ... definition of air pollutant”
- 2009 EPA issues the “*Endangerment*” finding – prerequisite for implementing GHG emission standards
- EPA issued the “*Tailoring Rule*” in 2010; a phased in approach for GHG emissions for stationary sources and Title V operating permitting
- As a regulated New Source Review pollutant (NSR) CO₂ become subject to requirements that major emitters apply “Best Available Control Technology” (BACT); in 2011 EPA issued guidance discussing emission control technologies that should be evaluated by permitting authorities on applying the BACT requirement
 - Under Federal Law CO₂ is now a regulated air pollutant for all major emitters
 - EPA determines CCS to be a pollution control technology for Greenhouse CO₂
 - EPA recognized a CO₂ pipeline as a “main component” of CCS Control System

- 2012 U.S. Court of Appeals D.C. Circuit rules EPA was “*unambiguously correct*” in its effort to address global warming through regulatory programs
- 2013 Supreme Court agrees to hear if prior legal determination in MA vs. EPA as applied to mobile sources can be extended to stationary sources governed under separate programs
- 2014 US Supreme Court substantially upholds EPA GHG regulatory authority under the CAA. EPA may not treat GHG’s as an air pollutant for purposes of determining whether it is a major source required to obtain a PSD or a Title V permit; however, PSD permits that are otherwise required may continue to require limitations on GHG’s based on BACT

- Geologic storage of CO₂ can continue to be permitted under the UIC Class II program

“CO₂ storage associated with Class II wells is a common occurrence, and CO₂ can be safely stored where injected through Class II-permitted wells for the purpose of oil or gas-related recovery.”
- Use of anthropogenic CO₂ in ER operations does not necessitate a Class VI permit

“ER operations can continue to be permitted as Class II wells, regardless of the source of CO₂. An owner or operator of an ER operation can switch from using a natural source to an anthropogenic source of CO₂ without triggering the need for a Class VI permit.”
- Class VI site closure requirements are not required for Class II CO₂ injection operations

“The most direct indicator of increased risk to USDW’s is increased pressure in the injection zone related to the significant storage of CO₂. Increases in pressure with the potential to impact USDWs should first be addressed using tools within the Class II program. Transition to Class VI should only be considered if the Class II tools are insufficient to manage the increased risk.”

(1) EPA Office of Ground Water and Drinking Water Memorandum, April 2015

EPA proposes NSPS rule that relies on CCS as the “best system of emission reduction” of CO₂ emissions

- Conflicting objectives of resource conservation and waste disposal
 - Subpart RR will transform EOR operations from resource recovery operations to waste disposal operations
- Subpart RR compliance will conflict with state mandates to conserve natural resources, prevent waste and protect correlative rights
 - Classifying CO₂ as a waste will preclude future timely access to any future technologies and access to the remaining oil at the end of EOR operations.
- Subpart RR reporting is a vehicle for litigation and substantive regulation under the yet undefined Monitoring, Reporting and Verification (MRV) plans.
 - CO₂ injected as a waste will require the operator to obtain approvals by the EPA for a MRV plan. The MRV plans are open for public comment, debate and litigation.
 - The EPA will control MRV plan not the oil operator or the developer of the generating project

ADOPTED RULES

Adopted rules include new rules, amendments to existing rules, and repeals of existing rules. A rule adopted by a state agency takes effect 20 days after the date on which it is filed with the Secretary of State unless a later date is required by statute or specified in the rule (Government Code, §2001.036). If a rule is adopted without change to the text of the proposed rule, then the *Texas Register* does not republish the rule text here. If a rule is adopted with change to the text of the proposed rule, then the final rule text is included here. The final rule text will appear in the Texas Administrative Code on the effective date.

TITLE 16. ECONOMIC REGULATION

PART 1. RAILROAD COMMISSION OF TEXAS

CHAPTER 5. CARBON DIOXIDE (CO₂)

SUBCHAPTER C. CERTIFICATION OF

GEOLOGIC STORAGE OF ANTHROPOGENIC

CARBON DIOXIDE (CO₂) INCIDENTAL TO

ENHANCED RECOVERY OF OIL, GAS, OR

GEOHERMAL RESOURCES

16 TAC §§5.301 - 5.308

CO₂-EOR is a viable, economical and technologically feasible way to encourage CCS of anthropogenic CO₂ in a safe and secure manner under a known and proven regulatory system



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