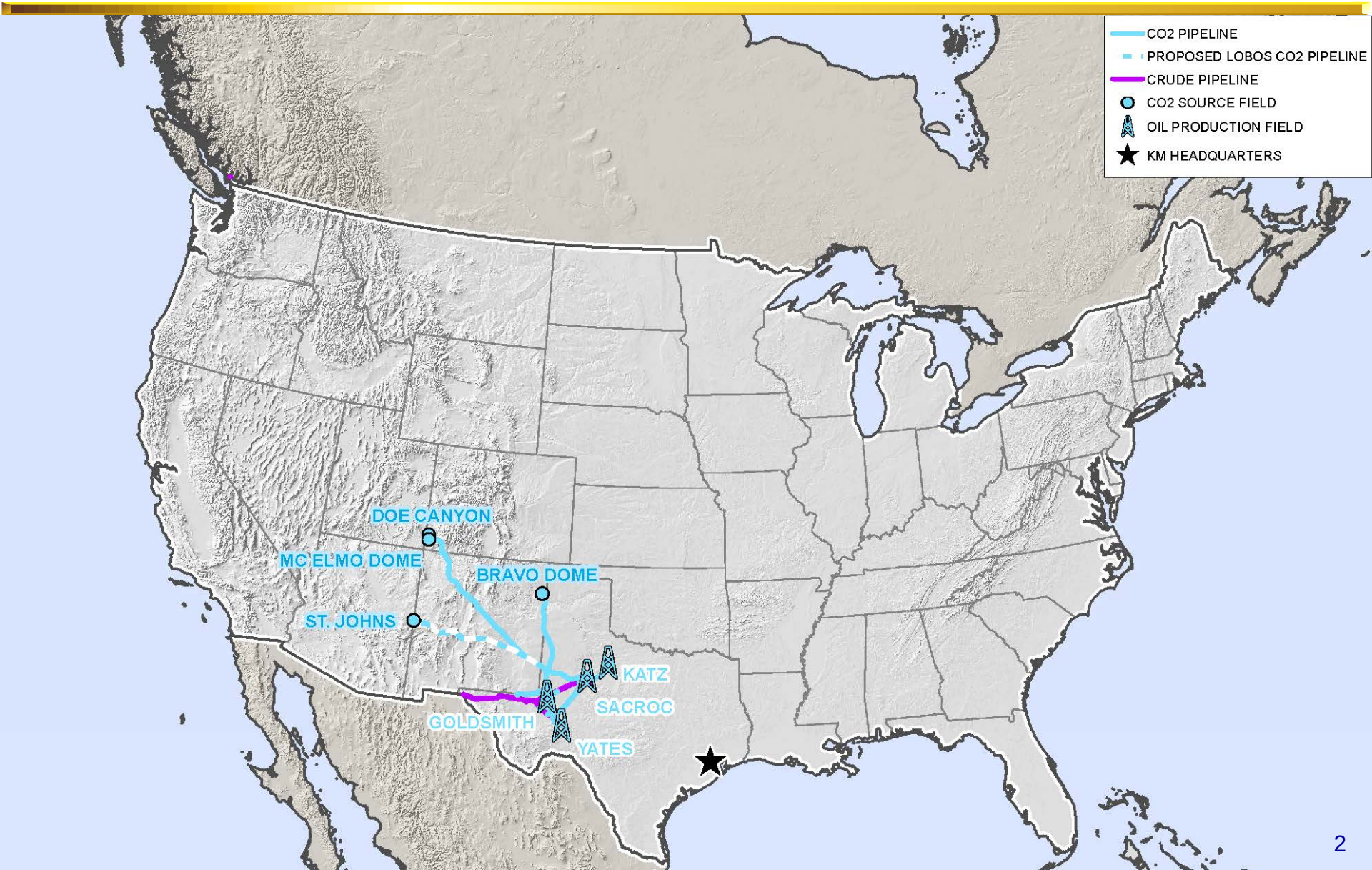
KINDER MORGAN INC.

CO_2

Jesse Arenivas

President CO_2 Group

Kinder Morgan CO_2 Asset Map

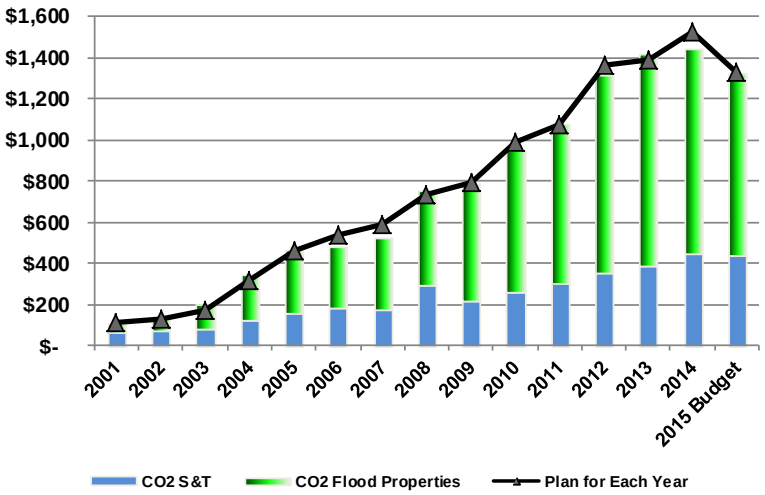


History of CO_2 Group and Looking Forward

Track Record – Consistently very close to budget despite inherent volatility

- Shell CO_2 formed in 1998, KM share 20%
- Acquired remaining 80% in April 2000
- Acquired SACROC interests June 2000
- Acquired Yates interests in 2001 and 2003
- Ramped up developments at SACROC 2003+
  - Constructed Centerline pipeline in 2003
  - Constructed power plant in 2005
  - Increased oil production 3X+
- Acquired Wink pipeline in 2004
- Acquired Katz field 2006
- Increased SW Colorado CO_2 capacity 30% 2008
- Katz CO_2 project: CO_2 injection commenced Dec-2010
- 2013-Acquired Goldsmith Landreth San Andres (GLSAU)
- Tall Cotton (ROZ) CO_2 project: CO_2 injection commenced Nov-2014

DCF ($MM)[(a)]



Our assets, resources and technologies provide us with growth opportunities

- Strong CO_2 demand
- Continued developments at SACROC, Yates, Katz, ROZ, and GLSAU

(a) CO_2 Sales and Transportation includes Yates Oil Gathering System (YOGS), CO_2 sales profit on own use has not been eliminated

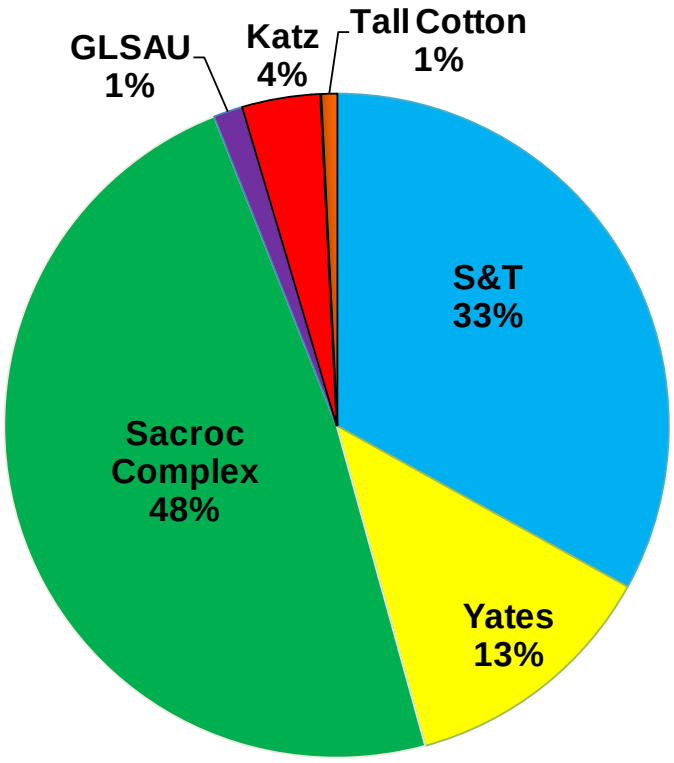
Historical Growth

Gross volumes	2012 Actual	2013 Actual	2014 Actual	2015 Budget
Oil Production (Bbl/d)				
SACROC	28,968	30,655	33,155	33,005
YATES	20,839	20,360	19,531	19,216
KATZ	1,722	2,691	3,641	5,025
GOLDSMITH [(a)]	N/A	1,278	1,257	2,408
SGP NGLs (Bbl/d)	18,900	19,520	19,835	19,815
CO2 (MMCF/d)	1,212	1,218	1,282	1,421

(a) Goldsmith acquired June 2013.

2015 DCF by Asset Group[(a)]

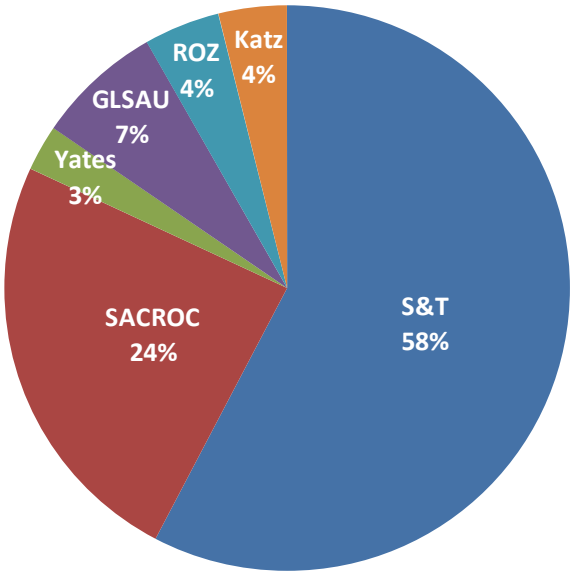
2015 DCF = $1,327 MM



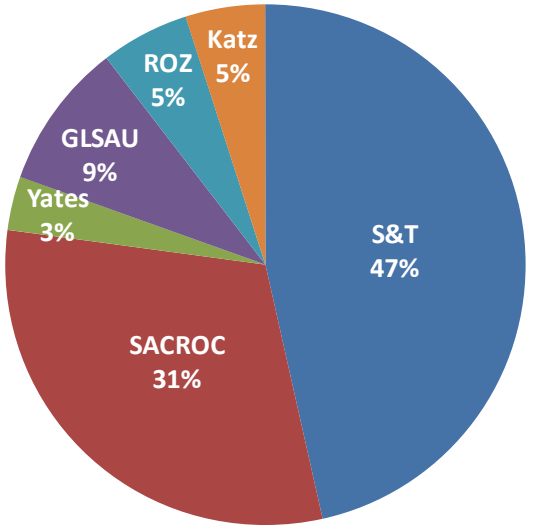
(a) Segments shown without elimination.

2015 Expansion Capital Budget - $1,237MM
REVISED - $978MM

2015 Budget –
$1,237 Expansion Capital



2015 Budget REVISED –
$978MM Expansion Capital



Note: CO_2 purchases and staff overhead are allocated to assets

2015 Expansion Program Summary

REVISED Capex Program $978MM[(a)]

S&T – $454MM Capex (includes $36MM Cap OH & Cap CO_2)	**$454MM**	**47%**
■ Continue Cow Canyon Development ■ Wink to Colorado City pipeline ■ Hovenweep Cooling ■ St Johns unit and Lobos pipeline development ■ CO_2 Production 1,421 MMCF/d		
SACROC Complex – $300MM Capex[(b,c)] (includes $100MM Cap OH & Cap CO_2)	**$300MM**	**31%**
■ Activate 30 patterns ■ Expand success of Infill Program and Bypassed Pay ■ Continuing developing Platform 4 expansion area ■ Purchase 130 MMcf/d CO_2, Produce 33 MBbl/d oil, 19.8 MBbl/d NGL ■ SACROC Services Reinecke $25MM CAPEX		
Yates – $33MM Capex[(c)] (includes $12MM Cap OH & Cap CO_2)	**$33MM**	**3%**
■ Drill 30 wells (one 20 Well East Side HDH Programs and 10 stranded oil wells) ■ Purchase 95 MMscf/d CO_2 ■ Produce 19.3 MBbl/d oil (19.2 MMBbl/d YFU, 0.1 MBbl/d Deep)		
Katz – $48MM Capex (includes $30MM Cap OH & Cap CO_2)	**$48MM**	**5%**
■ Activate 7 patterns, Reservoir Conformance Work in 15+ Patterns ■ Install Additional Compression ■ Purchase 55 MMcf/d CO_2, Produce 5,025 Bbl/d oil		
GLSAU - $85MM Capex (includes $22MM Cap OH & Cap CO_2)	**$85MM**	**9%**
■ Drill 32 Wells ■ Activate 10 Patterns in Phase IV ■ Purchase 50MMcf/d CO2, Produce 2,408 Bbl/d oil		
ROZ - $54MM Capex (includes $20MM Cap OH & Cap CO_2)	**$54MM**	**5%**
■ Drill 4 Wells for Phase 1 ■ Initiate Work on Phase 2; Drill 14 Wells and Begin Facilities Design/Installation starting 3Q ■ Purchase 50MMcf/d CO_2, Produce 1,085 Bbl/d oil		
	Total $978MM Capex[(a)]	

(a) Included in $978 million total capex program are overhead and CO_2 purchases, in the aggregate, of approximately $221 million.
(b) Includes minor properties, unallocated costs.
(c) Includes secondary objectives.

Impact of Oil Price / Volume Variance on 2015 DCF

($ in millions)		
	2015 Budget:	**$1,327MM**
	Volume +/- 1,000 Bbl/d	
	SACROC / Katz / GLSAU	$20.0MM
	Yates	$10.6MM
	CO_2 Volume +/- 50 MMcf/d	$8.8MM
	Oil Price +/- $1/Bbl WTI	
	NGL	$2.1MM
	CO_2	$1.7MM
	Crude	$3.2MM
	TOTAL:	**$7.0MM**
	Mid/Cush Diff +/- $1/Bbl	$4.7MM

Notes: Unhedged WTI price presumed to average $70/Bbl; WTI-WTS spread = ($2.00)/Bbl / Midland-Cushing spread = ($2.30)/Bbl
NGL price presumed to be $32.90 (47% WTI)

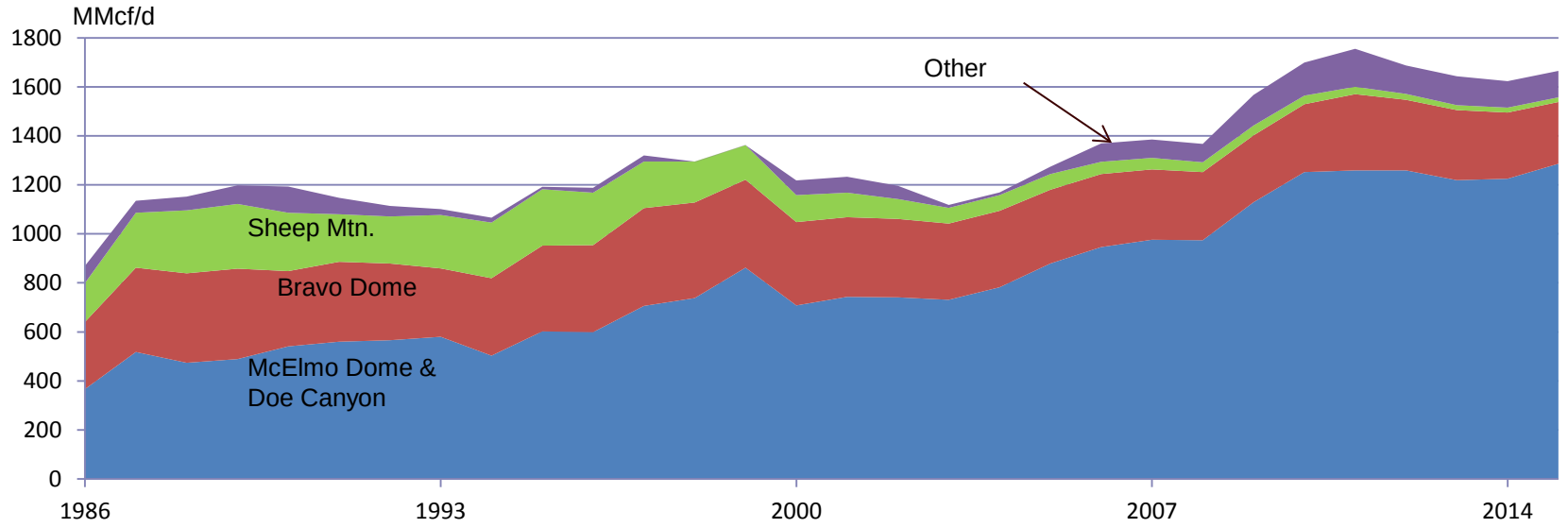
Actions Taken/Budget Upsides

Projected oil production increase 1,500 Bbl/d at SACROC	$30MM
Targeted OPEX Savings	$30MM
Potential DCF Impact	$60MM
Targeted CAPEX Savings	$113MM

CO_2 Source & Transportation

Continuing Business Opportunities – Record Year for SW Colorado Production

Permian Basin CO_2 Deliveries



Permian Basin

- Permian Basin demand continues. No near term erosion of demand for CO_2 in existing CO_2 contracts.
- Opportunities in the Permian Residual Oil Zone (ROZ)

Domestic EOR

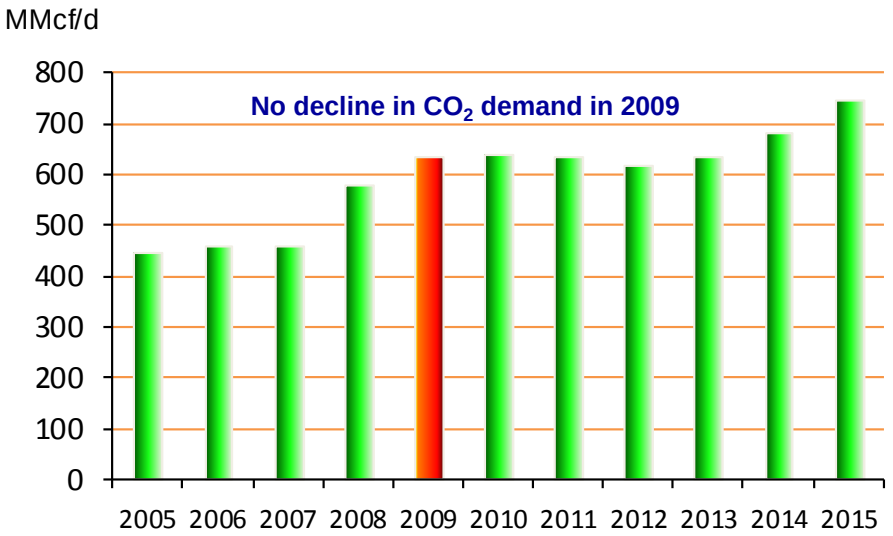
- CO_2 Industry EOR activity is steady

Sources: KM estimates, Oil and Gas Journal, EIA, XOM, Dakota Gasification, DRI, Denbury

CO_2 Entitlement Volumes

Produced and Sold to our Customers

CO_2 KM-share



Significant growth since 2005:

- CAGR: volumes +5.57%
- 2015 vs 2014: volumes +9.05%

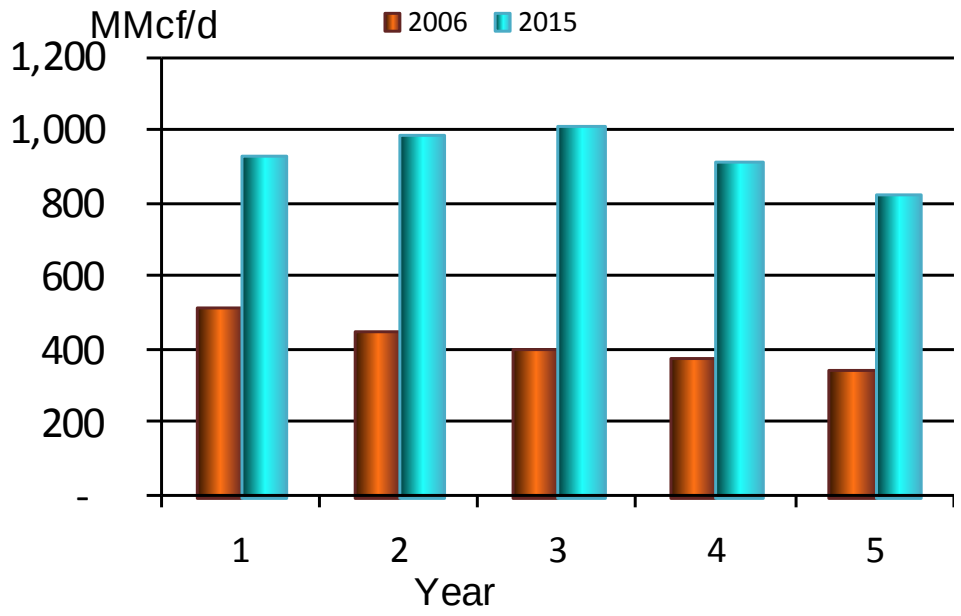
As a reminder:

- Sales revenues are based on our working interest entitlement and not deliveries
- KM share of EOR demand consumes ~42% of our entitled production in 2015
- Elimination: consolidation results in eliminating profit on sales to ourselves, however we view our S&T and O&G businesses independently, and price sales to ourselves at market prices

Demand Growth and Regeneration

5-year Contracted CO_2 Volumes

CO_2 Daily Contract Quantities



Previously higher oil prices increased long-term demand for CO_2

- Weighted average contract life with 3rd parties is 10 years

Serving the Market

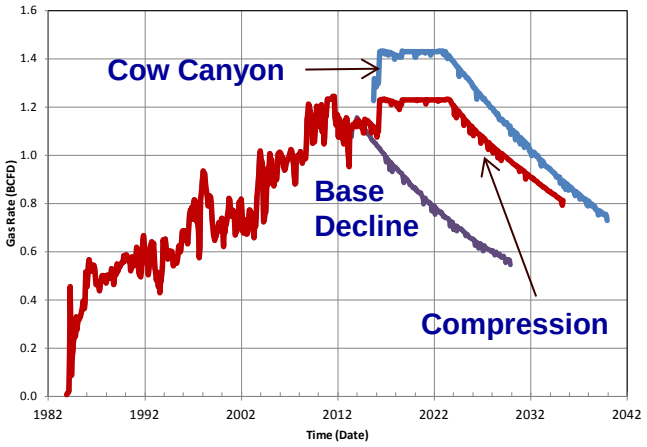
Timely Supply Expansions…

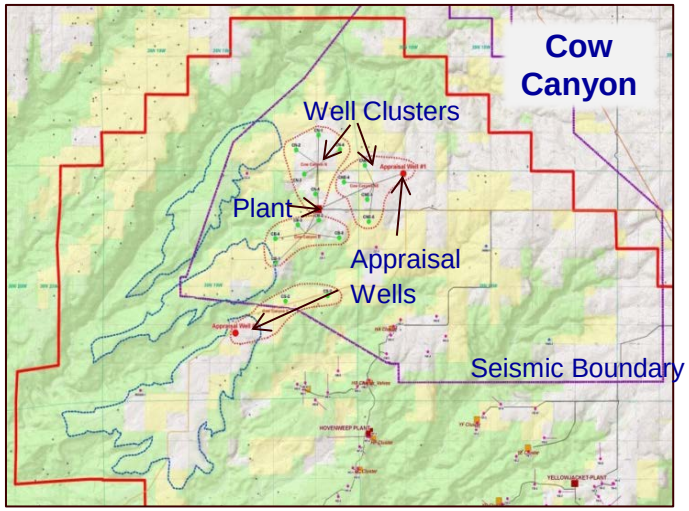
Southwest Colorado CO_2 Production	Volumes as of:	Actual 2012 MMcfd	Actual 2013 MMcfd	Actual 2014 MMcfd	Budget 2015 MMcfd	Future Potential Projects
SWC Actual Average Daily Volumes →		1,212	1,218	1,282	1,421	
Year-end System Capacity		1,264	1,358	1,371	1,568	
Capacity of Approved Supply Projects - By Year Completed:	*est. cost $MM*					
✓ Doe Expansion	$255		65MMcfd			
✓ Yellow Jacket	$214			80MMcfd		
✓ Cow Canyon	$380				200MMcfd	
✓ Required (debottlenecking) Cortez Pipeline Expansion - North	$233				★	
Projects Pending Further Appraisal/Approval:	*est. cost $MM*					
St Johns	$982					300MMcfd
Additional SWC Source Projects	$184					60MMcfd
CO_2 Recapture Projects	$80					70MMcfd
Required (debottlenecking) Cortez Pipeline Expansion - South	$97					

McElmo Dome Field Expansion

Cow Canyon Development

Projected Production Forecast (MMcf/d)

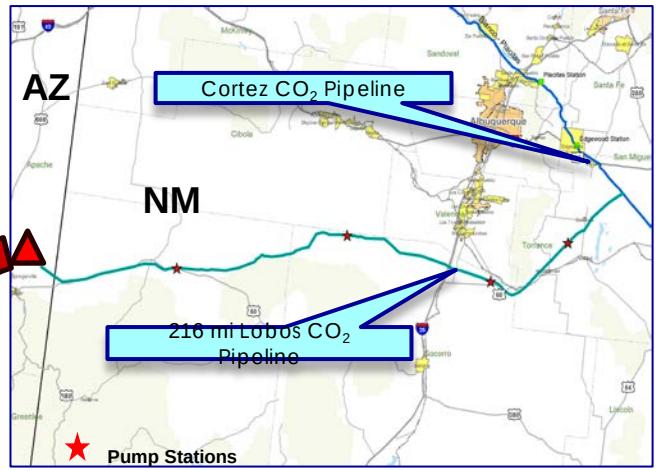


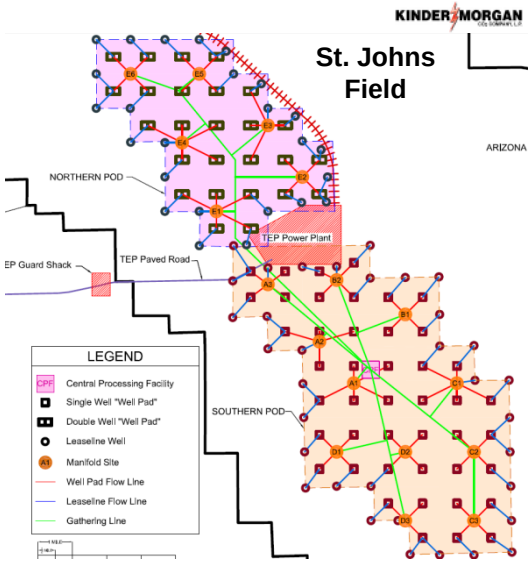


- **Additional 200 MMcf/d Opportunity**
  - 1.3 TCF reserves potential
  - Known area from past drilling
- **Project Costs $344MM**
  - 14 development wells
  - Compression & gathering facilities
- **Successful Pre-Development Phase**
  - 2 appraisal wells, 3D seismic
  - Enabled optimized development plan
  - Initial development wells exceeding expectations
- **Targeting mid-2015 1st Production**
  - Progressing on time/on budget

St. Johns Development

Project Update

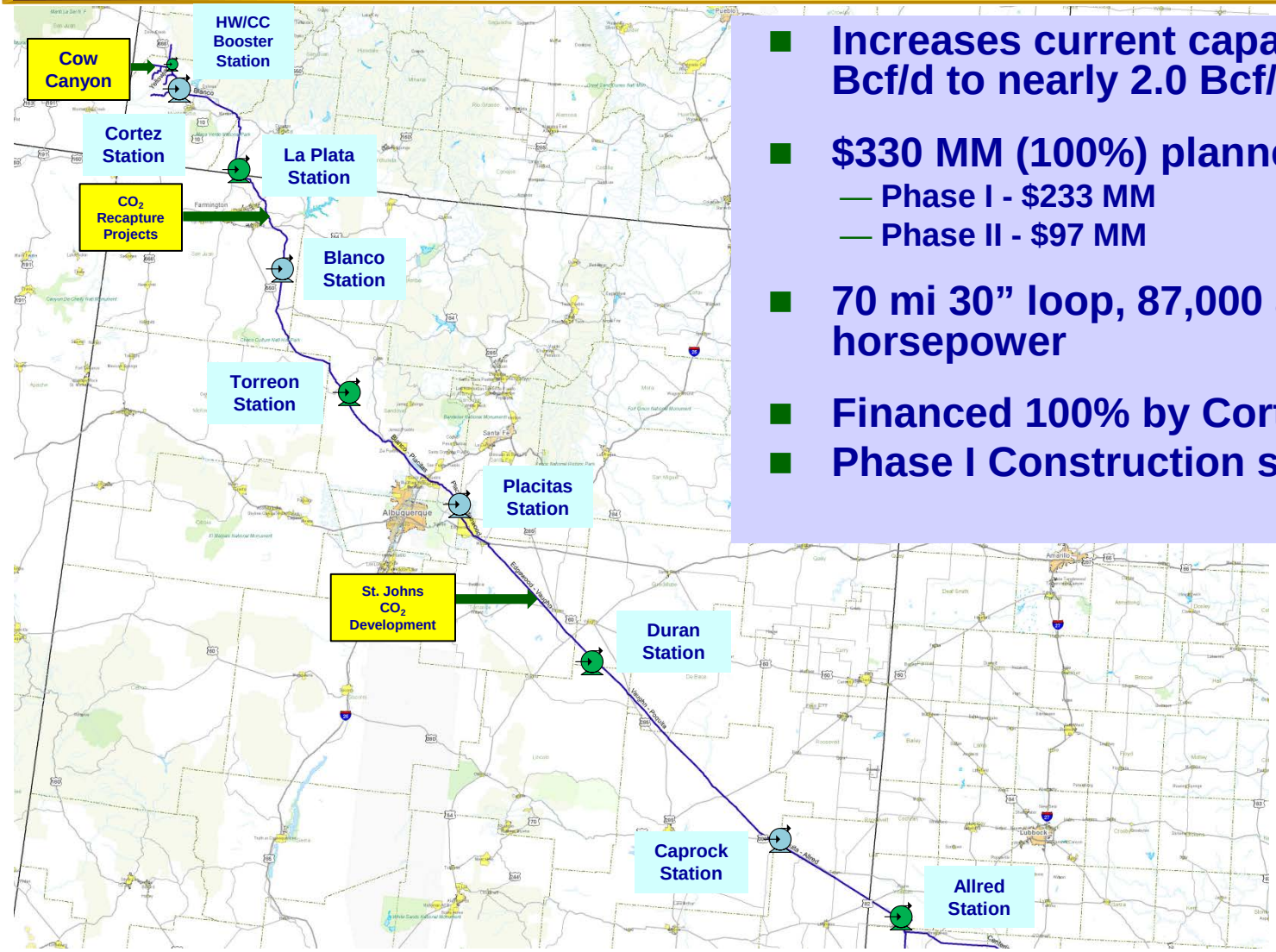




- **Develops additional 300 MMcf/d**
  - 1.3 TCF reserves potential
  - 450 sq. mi Unit, 300 sq. mi developed
  - 216-mile Lobos PL w/interconnect to Cortez
- **Successful 2014 Appraisal Program**
  - 8 Wells, Grav/Mag, 2D Seismic
  - Better than expected well performance
- **Full project cost of $982MM**
  - Includes field development costs and 216 mile Lobos pipeline build cost
- **Evaluating Timing versus Market Demand**

Cortez Pipeline Expansion Project

Expansion enables significant growth in CO_2 supply to the Permian

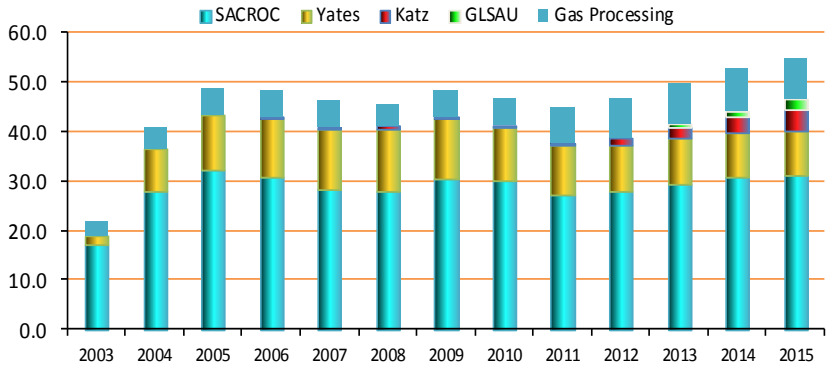


- Increases current capacity from 1.3 Bcf/d to nearly 2.0 Bcf/d
- $330 MM (100%) planned investment
  - Phase I - $233 MM
  - Phase II - $97 MM
- 70 mi 30” loop, 87,000 additional horsepower
- Financed 100% by Cortez Partnership
- Phase I Construction start in Feb. 2015

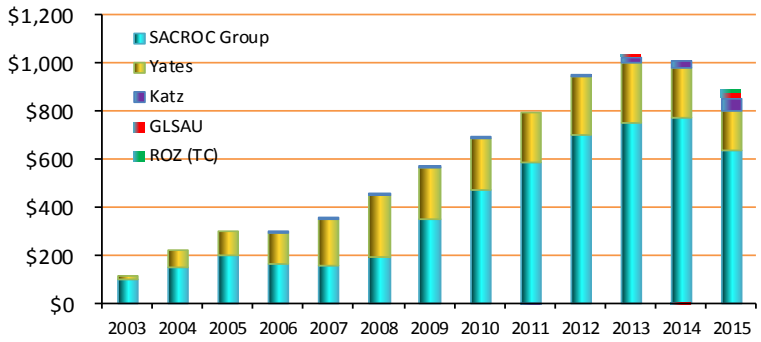
Oil and Gas Segment

Production and DCF

Net Hydrocarbon Production (Mboe/d)



DCF ($MM)



Original oil in place (Billion Bbls)

- SACROC 2.8
- Yates 5.0
- Katz 0.23
- GLSAU 0.48

Gross production (Bbl/d)[(a)]	2014	2015
SACROC oil	33,155	33,005
SGP NGLs	19,835	19,815
Yates	19,531	19,216
Katz	3,641	5,025
GLSAU	1,257	2,408

DCF[(a)] ($MM, without Elimination)	2014	2015
SACROC Group[(a,b)]	778	639
Yates[(a)]	204	170
Katz	32	51
GLSAU	(15)	19
ROZ		10

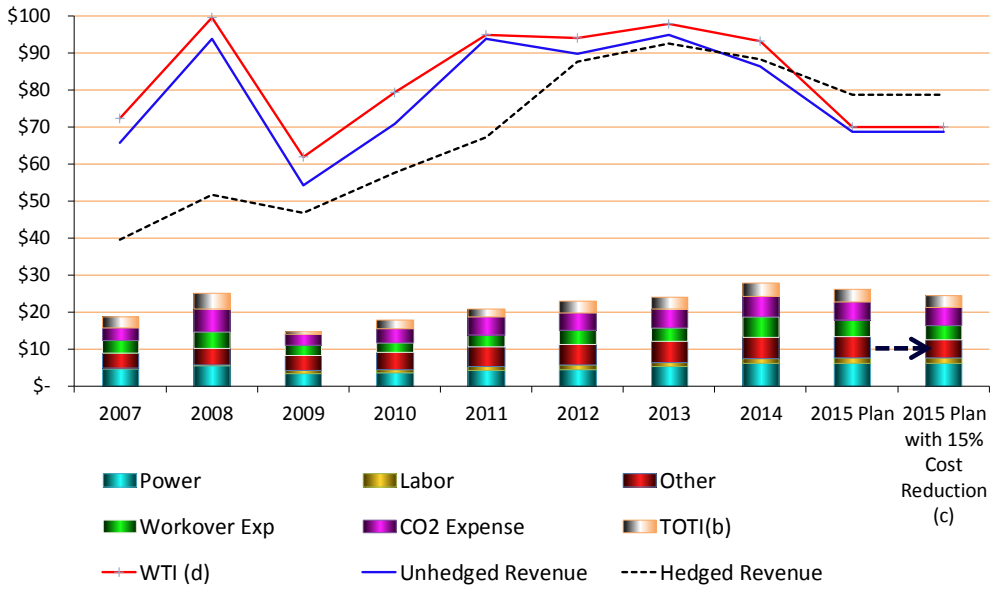
Notes: Yates DCF does not include contribution from MKM
BOE: Oil and NGL =1:1, Residue gas sales = 6:1
Gas Processing includes net Boe attributable to our plant interests and processing agreements but excluded from reserve report

(a) Includes Secondary Objectives
(b) Includes other minor oil and gas properties near SACROC

Oil & Gas

Margins and Cost Structure

Oil & Gas Cash Cost Structure[(a)] ($/Net Boe)



O&G cost structure has strong correlation to energy prices

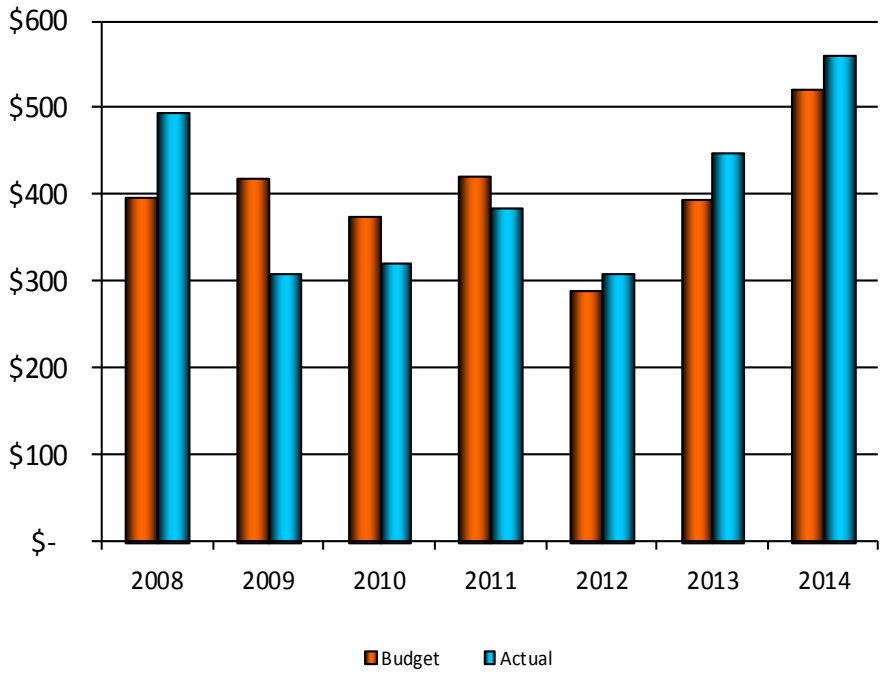
- Power is tied to gas prices
- High activity levels have increased staffing and other service costs – expect change
- Well-work and rig contracts now being tied to oil prices
- Purchased CO_2 and TOTI[(b)] are strongly correlated to oil prices

(a) Costs and Revenue per net Boe, including hedges where applicable; includes acquisition and all development costs
(b) Taxes other than income taxes
(c) 15% targeted cost reduction on Workover Expense and Other
(d) WTI Cushing Price, Source: www.eia.gov

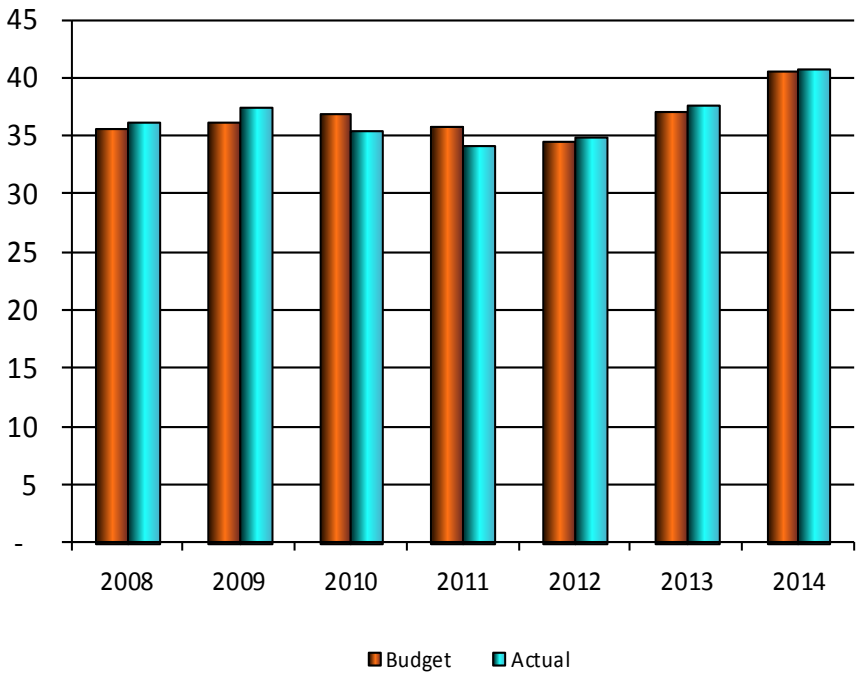
Oil and Gas Segment

Over past 7 years capex 0.5% above plan, oil production 0.1% below plan

Capex ($MM)



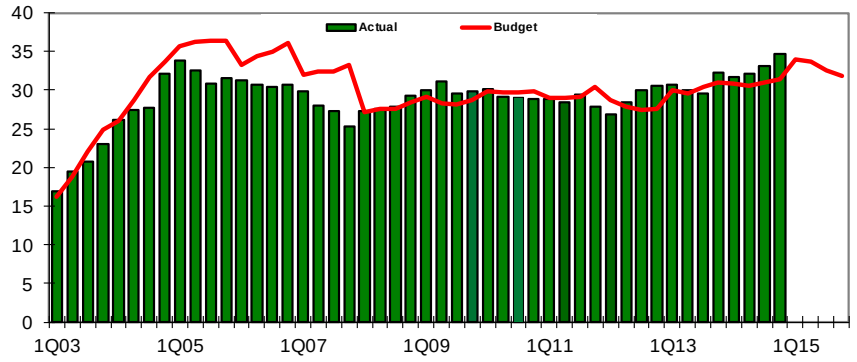
Net Oil Production (MBbl/d)



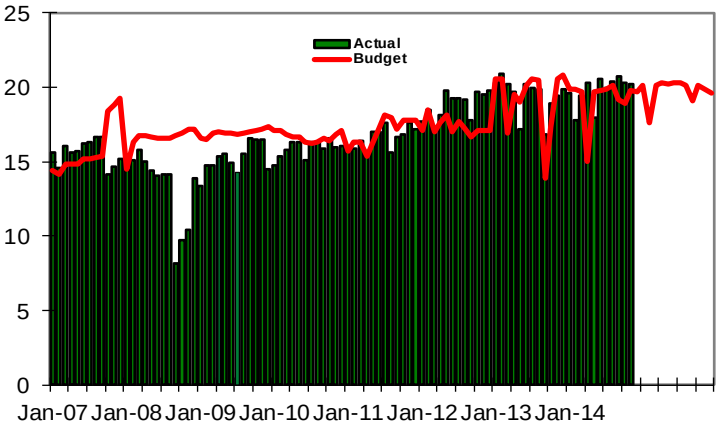
Note: Capex includes CO_2 purchases and capitalized overhead

SACROC Production & Operations Highlights

Oil Production 2003-2015 (MBbl/d)



NGL Production 2007-2014 (MBbl/d)



2014 – Review

- **Oil production 7.1% above plan**
  - Harvest better than expected
  - Infill results significantly better than plan
  - Platform 2 and 3 meeting oil expectations
  - GOR under control
  - Record Year
- **NGL production 2.5% above plan**
  - Strong yields
  - Record year
- **Costs**
  - Opex/sustaining capex: $4MM below plan
  - Expansion capex: $26 MM above plan
    - Additional infill wells drilled
    - Initiated Reinecke Project

2015 – Focus

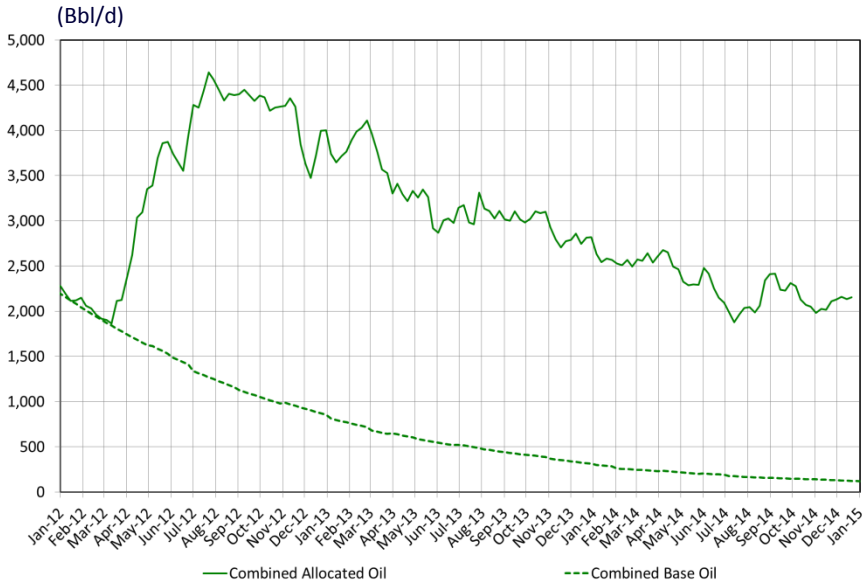
- **Expand infill program**
- **Develop bypass pay opportunity with horizontal injectors**
- **Add Platform 3 patterns at the right pace – manage gas volumes**

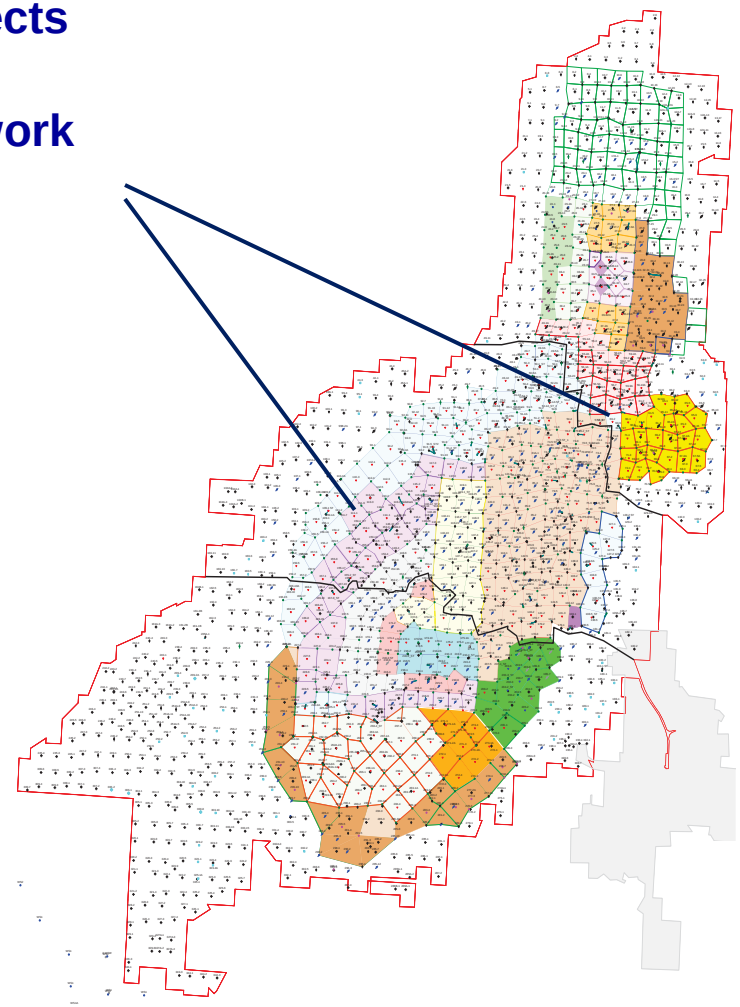
SACROC Unit Harvest Project:

2,200 Bbl/d of incremental oil & ~45 MMcf of additional recycled CO_2 to inject

- **Harvest Production – 2012 and 2013 projects**
  - Pump upsizes and reactivations
- **CR 1, CR 2 and GI primary areas of well-work**
  - Potential exists in other areas
  - Defer to exploit bypass pay opportunities

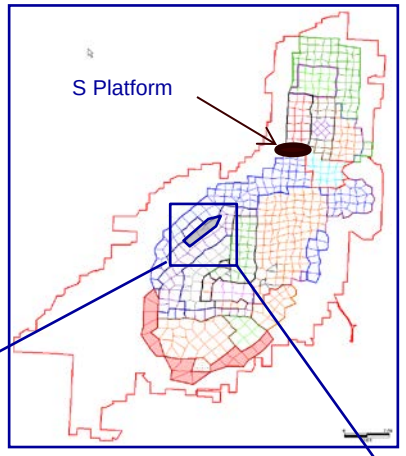
SACROC Unit: All Harvest Projects – Allocated Daily Volumes

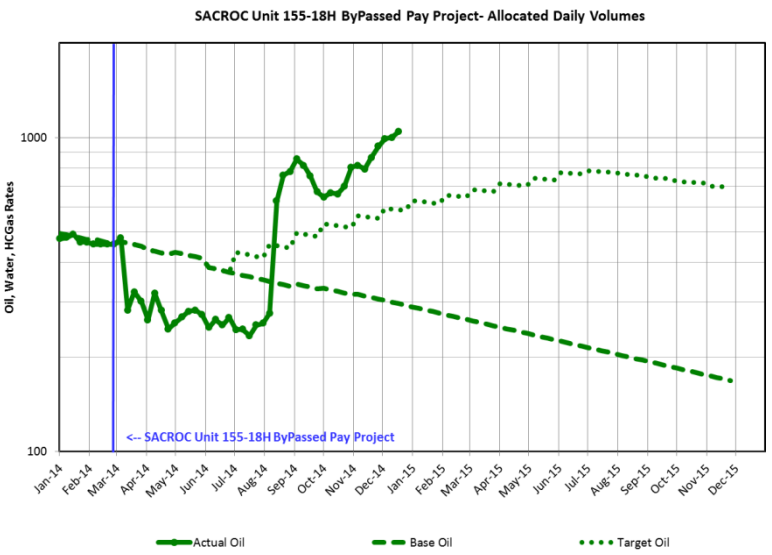


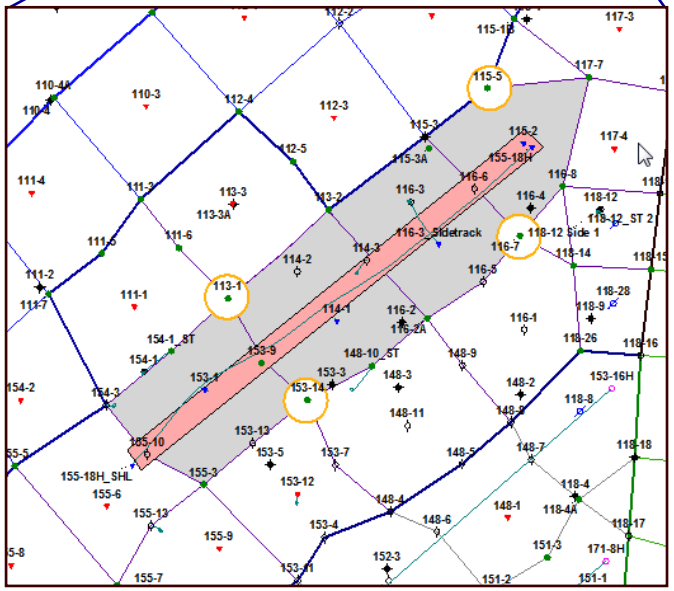


SACROC Unit – Bypassed Pay Project

- **Middle Canyon re-development (CR 1 and 2)**
  - Injection began on 8/5/14 – current 30 MMcf/d
  - 78% of injection going into 2 heel patterns
  - Production exceeding expectations
  - Injection sleeves can be closed to divert injection into remaining patterns
  - Next project – S Platform – drill in March

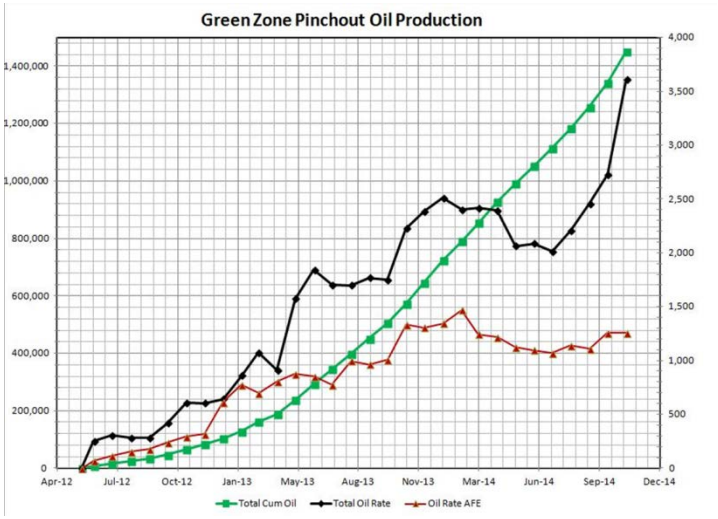


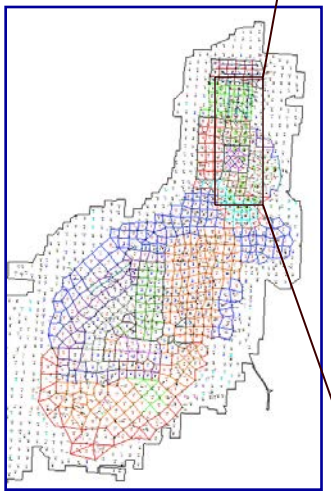


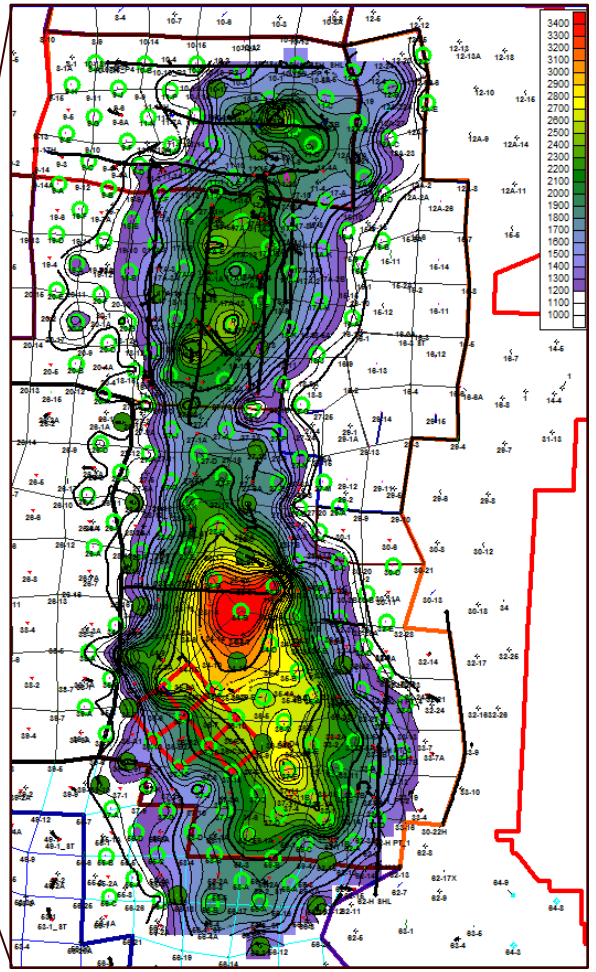


SACROC Unit – Infill Drilling Project

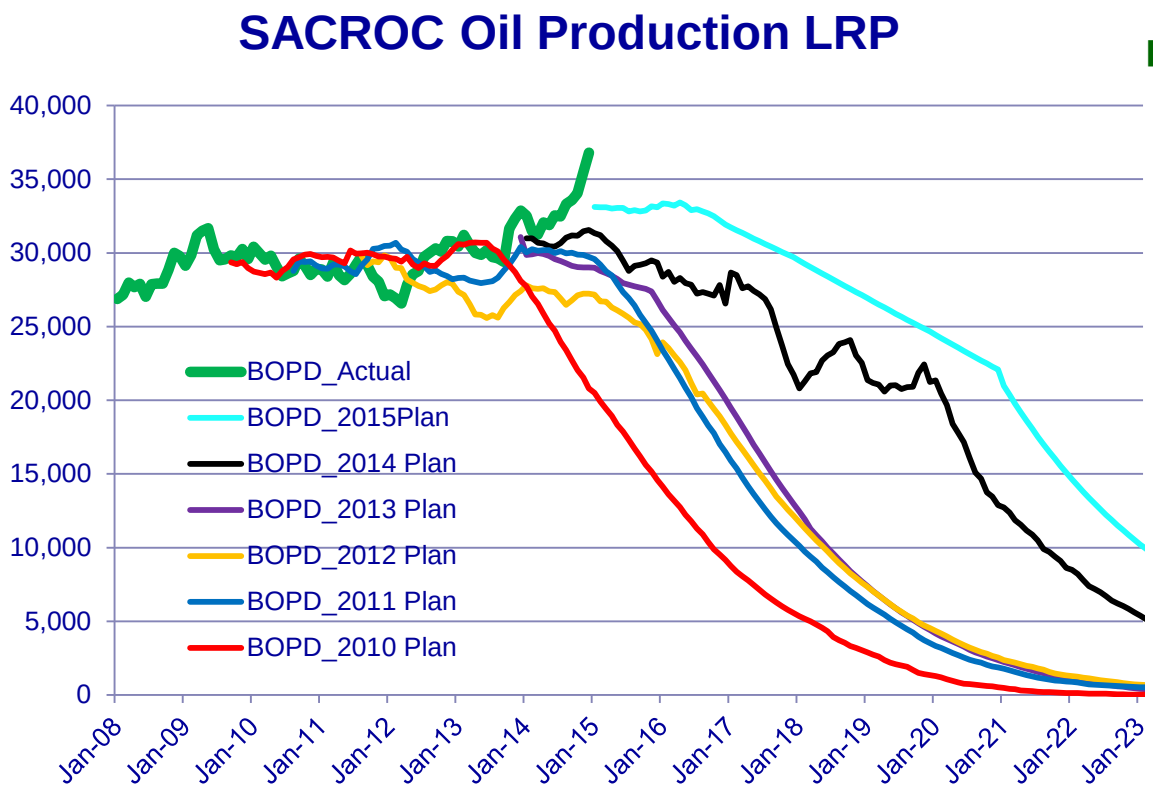
- **Denser-spaced Platform Drilling Project**
  - 26 GZ PO wells currently producing 3,600 Bbl/d
  - 3 Conventional Infill wells producing 712 Bbl/d
  - Results indicate that 104 solid prospects exist
  - Defers pattern activations and extends field life
  - Success could lead to extension throughout the field







SACROC Unit – Long Range Plan



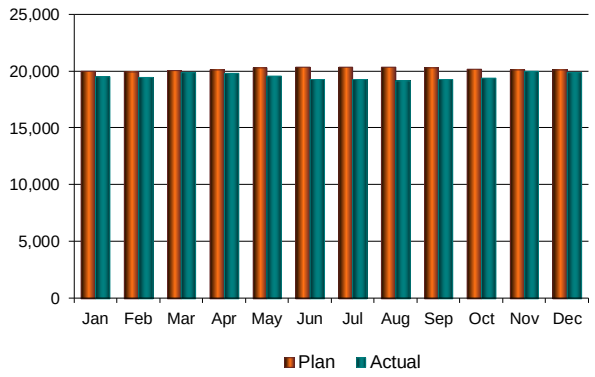
Changes from 2014 plan

- 104 Well Platform Infill Program identified
- Chiquita Expansion projects added
- Platform 4, Platform 5 and West Shore pushed back with slower activation pace
- 4 Horizontal Injectors per year
- Harvest Operations deferred
- 19 MMBO added recovery

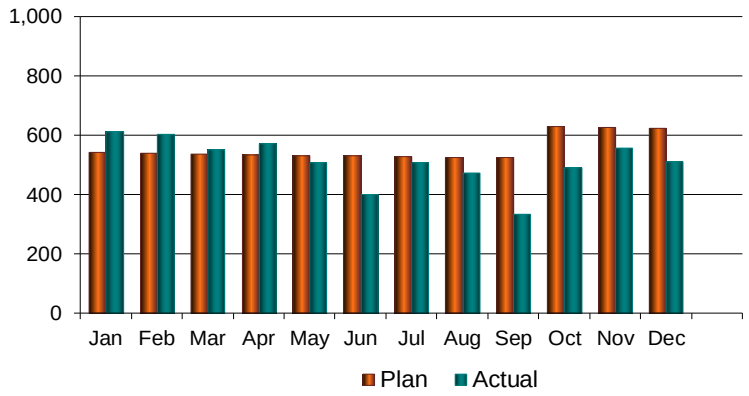
Yates Production

Steady

2014 Oil Production (Bbl/d)



2014 NGL Production (Bbl/d)



Oil Production 1.7% below plan

- Oil column is stable
- Continued success in targeted East Side drilling
  - Focus deeper completions to minimize gas
- West Side water-flood success
  - Phase I & II above budgeted volumes

Strategies to add long-term reserves include:

- Continuing strategy of raising reservoir pressure, increasing oil swelling and drainage
- Continue Deep East Side horizontal drilling in targeted areas
- Expanding water-flooding of West Side
- Utilize seismic to develop shallow/deep horizons
- Hydrocarbon miscible pilot (HCM)
  - Pilot NGL injection 1/2015
  - Next phase 6/2015
  - Overall Target - 200 MMB OOIP

Katz CO_2 Project

Production Building on Slower Trend

Investment

- $258MM project total, $225MM through 2014
- Continued expectation of 16% recovery and 25.1 MMBbls reserves

Oil Response

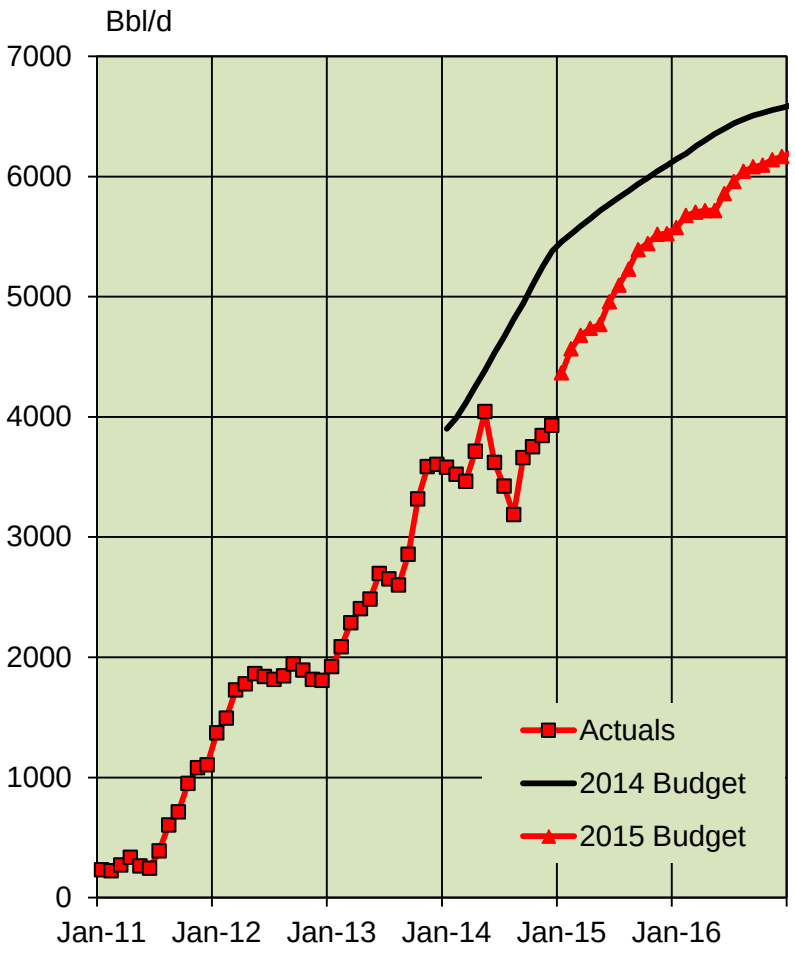
- Oil rate improved 3,605 to 3,910 Bbl/d (Dec to Dec)
- 2014 Plan 4,646 vs. Actual 3,643 Bbl/d
  - Phase 4-5 delayed response 300 Bbl/d
  - Phase 2-3 underperformed by 700 Bbl/d
    - High GOR, Vertical Conformance
    - Low Water Injectivity
- Successful injector stimulations

Recent Operational Challenges

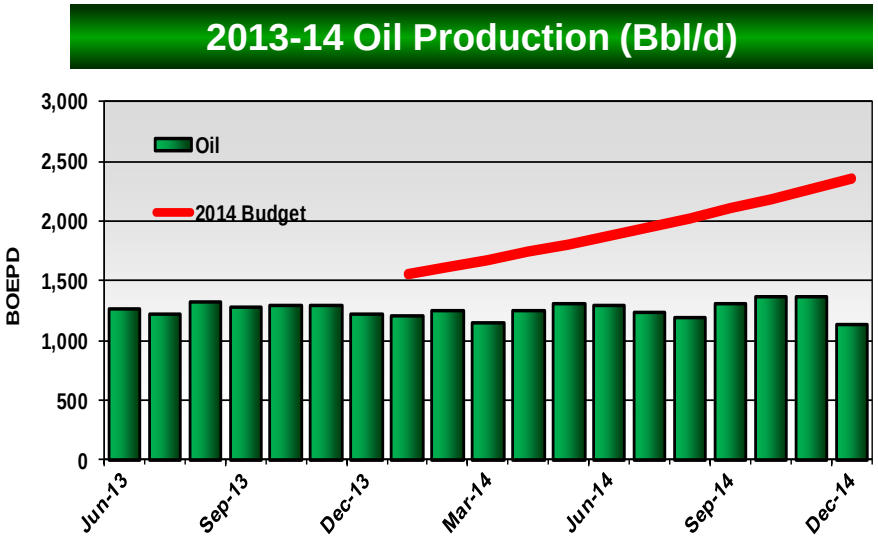
- High GOR curtailment, pump failures, 65 Bbl/d hurt
- Opex up 20% for power and chemicals

2015 Expected Production – 5,025 Bbl/d

- Phase 4-5 response
- Phase 2-3 conformance work
- Increase pattern activations by 14% (44-50)
- Reduce CO_2 purchases to 55 MMcf/d



GLSAU Production



2014 Results:

- Oil Production below plan

- Opex over plan

Operational and Reservoir challenges:

- Processing rate slower than expected
  - Conformance issues
  - Severe scale and asphaltenes
  - High CO_2 production
- High downtime due to impaired wells
- Facility issues inhibiting proper surveillance

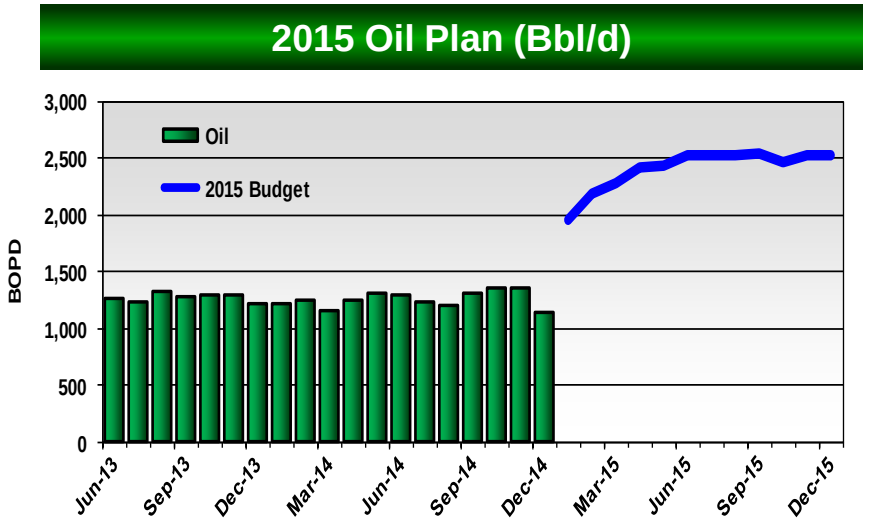
2015 Expectations and Focus

- **Better understanding of the reservoir**
  - This is typical San Andres – the oil is there
  - Determine operating parameters
  - Improve processing rate
  - Fix the conformance issues
- **Improve well and facility operations**

GLSAU Production

Strategies to address the challenges:

- **Improve Response**
  - Execute wellwork for the impaired wells
  - Improve processing rates
    - Infill drill
    - Stimulate existing wells (larger frac's)
  - Conformance work
- **Improve Facilities to Aid Surveillance**
  - Add bulk separation at each satellite
  - Add and upgrade test facilities
  - Optimize operating parameters
- **Costs**
  - Convert from ESP to gas lift where practical
- **Continue Development**
  - Activate phase 4 (more net pay than 3B)
  - 10 pattern activations – new drills + conversions



KM ROZ Phase I Project

- **San Andres ROZ oil saturation similar to water-flooded main pay San Andres**
- **Several significant San Andres ROZ projects underway in San Andres**

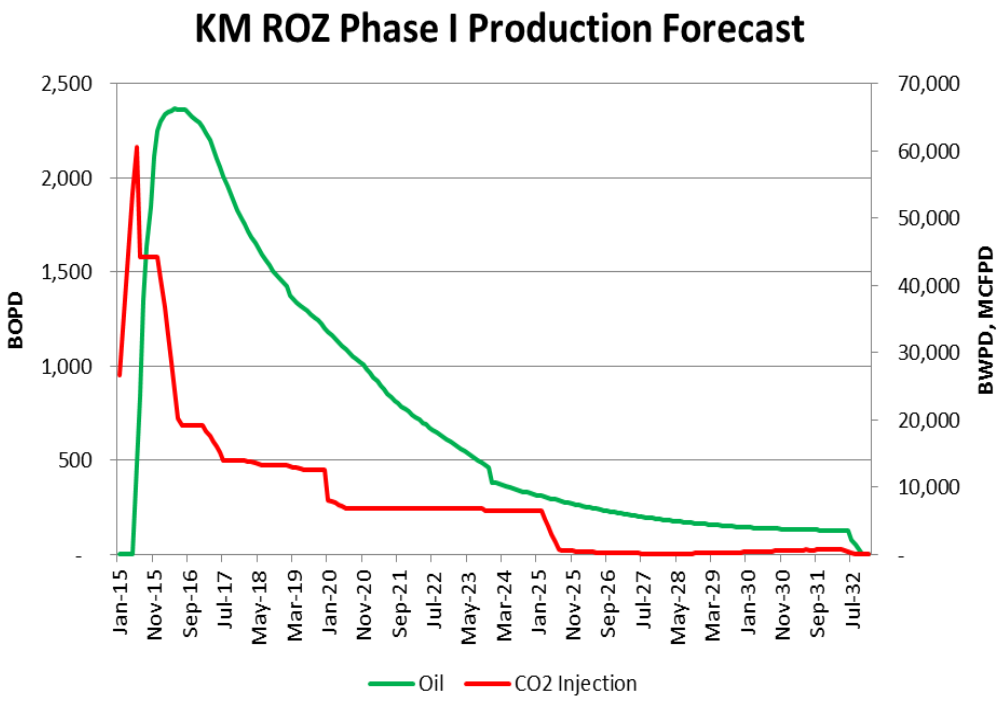
Phase 1

- $88.3 MM CAPEX
- Nine 20-acre 5 spots
- 4.7 MMBO recoverable reserves
- Phi-H better than average
- 7,127 acres leased

Project Execution

- Injection ahead of schedule
  - ✓ November 2014
- Production Facilities on schedule
  - ✓ January 2015
- Oil Response Expected in 2Q 2015

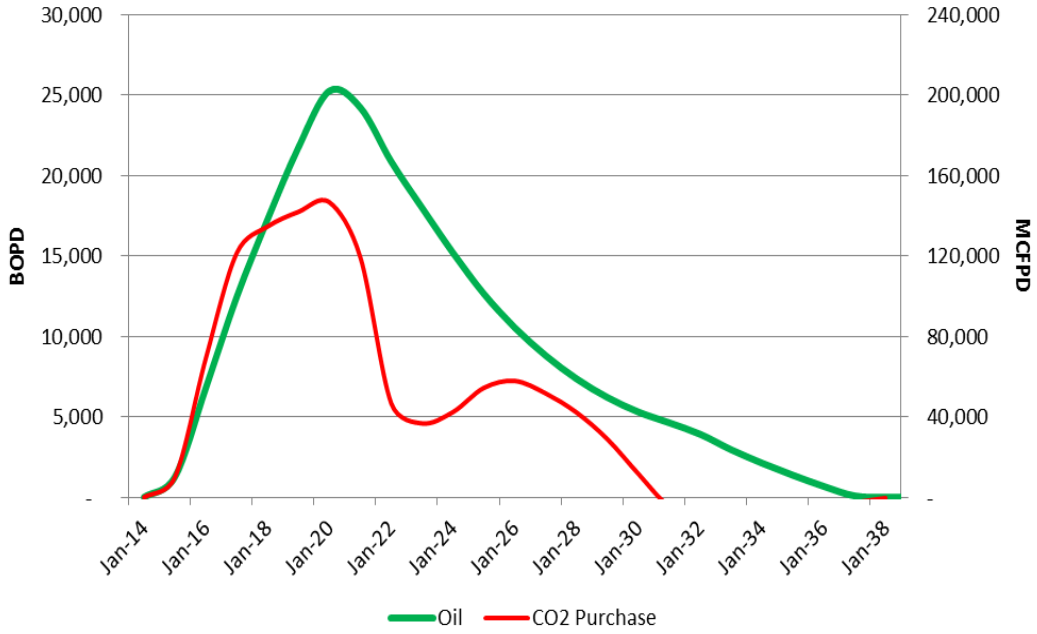
KM ROZ Phase I Production Forecast



(a) Phi = Reservoir Porosity, H = Reservoir Thickness

KM ROZ Future Development

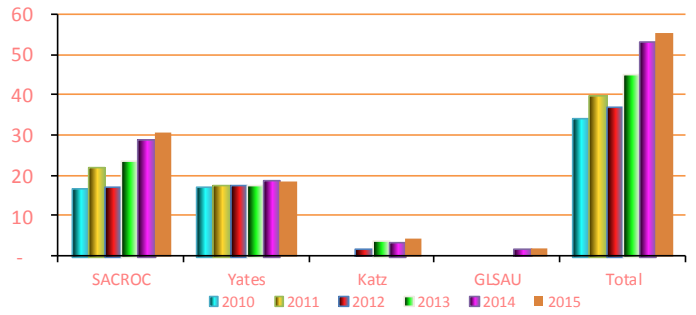
- **6 Section Development**
  - Based On 3D Seismic, Cores, Well Logs
- **194 Patterns**
  - 194 WAG Injectors
  - 233 Producers
  - Peak Oil Rate: 25,000 Bbl/d (2021)
  - ~ 93.5MM STBO Reserves
  - 12% Recovery Factor
  - 647 BCF CO_2 Purchases



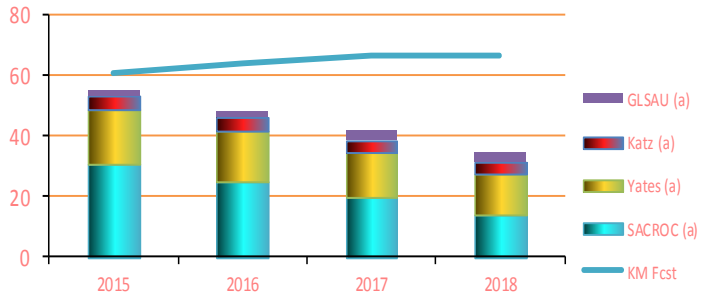
Oil and Gas Segment Production Forecasts

Production expectations tend to grow over time

Evolution of Forecasted 2015 Production[(a)] over Time (MBbl/d, 8/8ths)



Proved Reserves Production Forecast (MBbl/d, 8/8ths)



We expect production to exceed our reserve report over the long-term

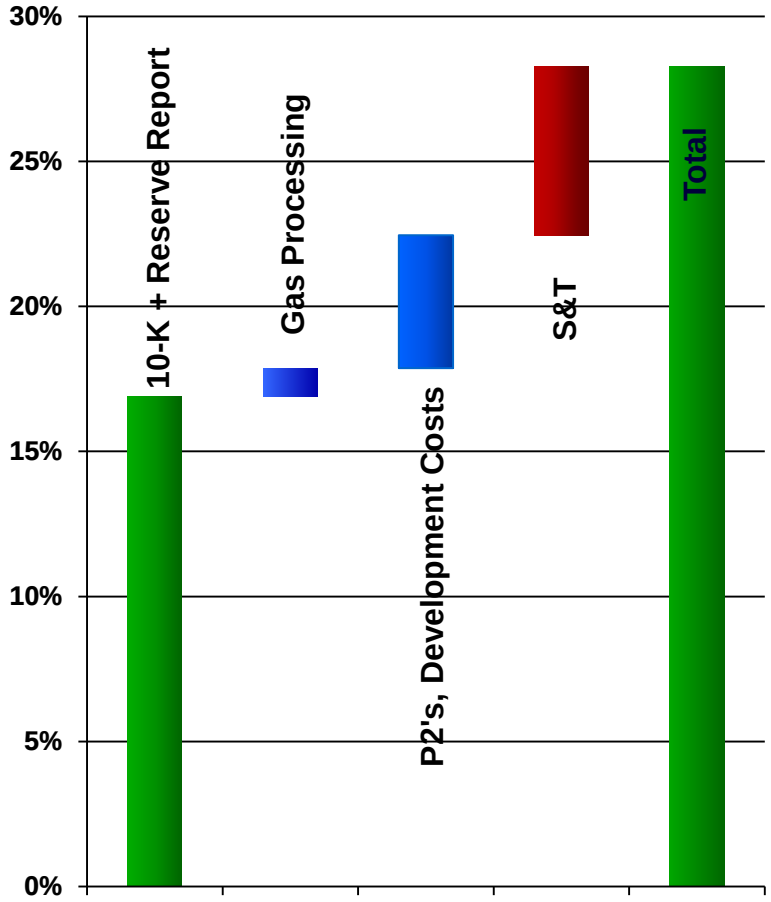
- Higher recoveries and additional targets added to inventory at SACROC
- New Technologies at Yates and perched oil found

Current challenge: slow the decline

- More efficient operations
- New opportunities
- Improve OpEx at Katz and GLSAU

(a) Forecasts based on independent consultant Reserve Report. Excludes minor properties

Oil & Gas, and Business Unit IRR



All-in O&G IRR (2000-2024) ~22.5%

- Required disclosures in 10-K plus proved reserves cash flows: 16.9%
- Adding in Gas Processing excluded from disclosures increases IRR to 17.9%
- Adding in reserves discounted to P2 and using planned development costs increases return to 22.5%

Total business IRR (2000-2024) ~28.3%

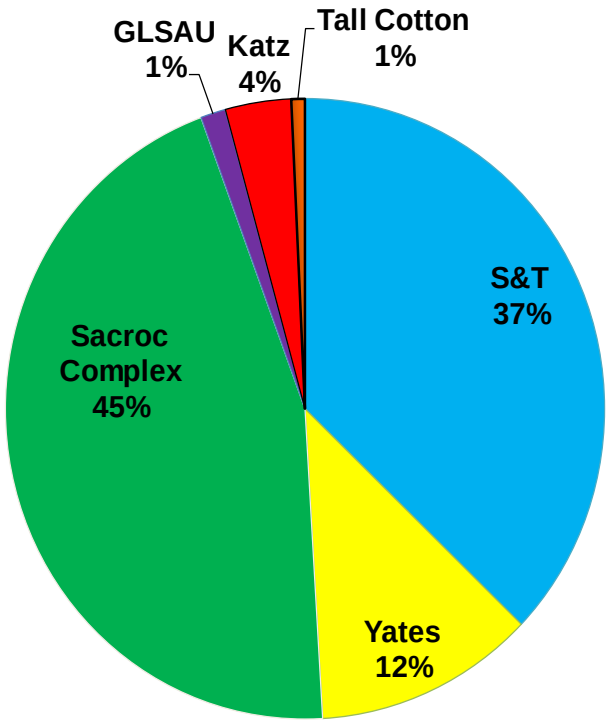
- Includes S&T assuming volumes increase with higher capacity, valued at market prices

As of 12/31/14, CO_2 Segment cumulative free cash flow is $3.6B+ (net of cumulative invested capital)

Note: Segments shown without elimination

Response to Current Oil Price Environment

Focus on Costs



SACROC, Yates and S&T have low cost structures

- **Cash lifting cost per BOE**
  - SACROC $11.62
  - Yates $7.90
- **Projects profitable at current prices**

Other EOR

- **Higher OPEX per barrel**
- **Most investments profitable at current prices**
- **Cost Reduction opportunities targeted in both CAPEX and OPEX**

2015 Projects – Price Sensitivity

IRR % at Variable Oil Price

$ / BO	40	50	60	70
SACROC Infill	35%	68%	100%	100%
SACROC- Bypass	35%	65%	100%	100%
SACROC P4	--	8%	11%	21%
Yates HDH	23%	40%	57%	74%
GLSAU 4a	3%	8%	12%	16%
Tall Cotton Ph 2	--	12%	20%	28%
Cow Canyon[(a)]	21%	21%	21%	29%

(a) Economics assume contract weighted average floor price

2015 Projects – Price Sensitivity

15% Cost Reduction

IRR % at Variable Oil Price

$ / BO	40	50	60	70
SACROC Infill	70%	82%	98%	100%
SACROC- Bypass	50%	79%	98%	100%
SACROC P4	--	10%	20%	30%
Yates HDH	34%	58%	76%	87%
GLSAU 4a	7%	11%	20%	30%
Tall Cotton Ph 2	6%	16%	26%	32%
Cow Canyon[(a)]	27%	27%	27%	38%

(a) Economics assume contract weighted average floor price

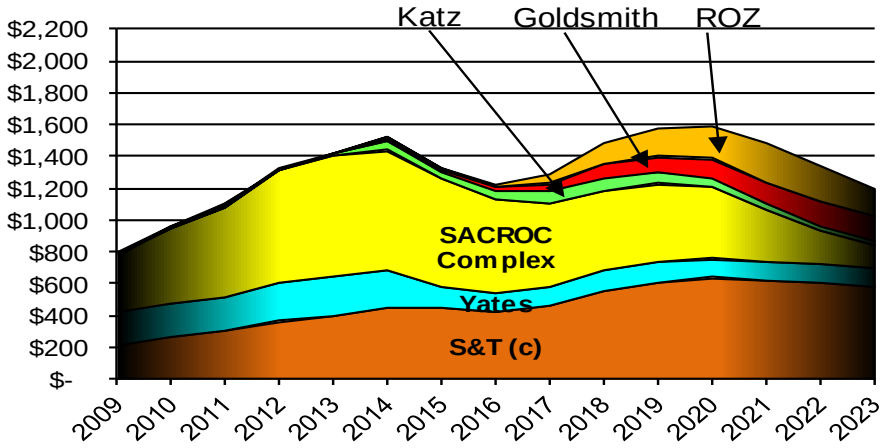
KM CO_2 Current Outlook

Development Plans 2015-2023

- **SACROC Group Forecast**
  - Continue platform development plan; production forecast is based on existing recovery expectations
  - Initiate Bypass Pay development in South Platform area
  - Exploit infill program
- **Yates Group**
  - Continue HDH programs and gravity drainage depletion plan
  - Initiate HCM pilot
- **Katz**
  - Continue development plans at Katz
  - Implement conformance program
- **GLSAU**
  - Implement conformance program
  - Phases 1 & 2 responding
- **ROZ**
  - Evaluate pilot performance
  - Initiate Phase II full field development
  - Develop additional project prospects
- **CO_2 S&T**
  - Increase capacity in existing source fields (McElmo and Doe Canyon)
  - Evaluate timing for St John's
  - Find and develop new source fields and develop new markets

	Net BOE [a] (MMBoe)	10 Year KM Share Capex (MM) [d]	10 Year Cap CO_2 & Overhead (MM)
SACROC	74	$1,278	$268
YATES GROUP	28	$234	$95
KATZ	16	$246	$218
GLSAU	24	$661	$326
ROZ	48	$1,252	$654
CO_2 S&T		$1,810	$192
Total	189	$5,481	$1,753

DCF ($MM)[b]



(a) Net BOE = Net Crude plus Net NGLs plus Net Residue Gas sold divided by 6.
(b) 2015 = Budget, 2016 at $65/Bbl, 2017 at $70/Bbl, 2018+ at $75/Bbl; cost metrics based on 2014 run rate; development plans may change in different price scenarios
(c) CO_2 profits not eliminated from S&T
(d) KM Share Capex is inclusive of Capitalized CO_2 and Capitalized OH


KINDER MORGAN
INC.