¡MEXICO!
A New Opportunity

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Forward
ENERGY GROUP INC.

Outline

- Introduction
- Mexico's Gas Supply Challenge
- Multiple Service Contracts
- Overview of PEMEX Offering
- Burgos Basin
- Summary

Forward Energy Group Inc.

- Consultancy based in Calgary
- Analysis and advice on strategic choices for the upstream petroleum sector
- Answer business questions at a strategic level through creative technical analysis at the basin level
- Multi-client study of gas production trends in WCSB
- Project with Canadian Hunter :
  - entry into upstream gas sector in Mexico

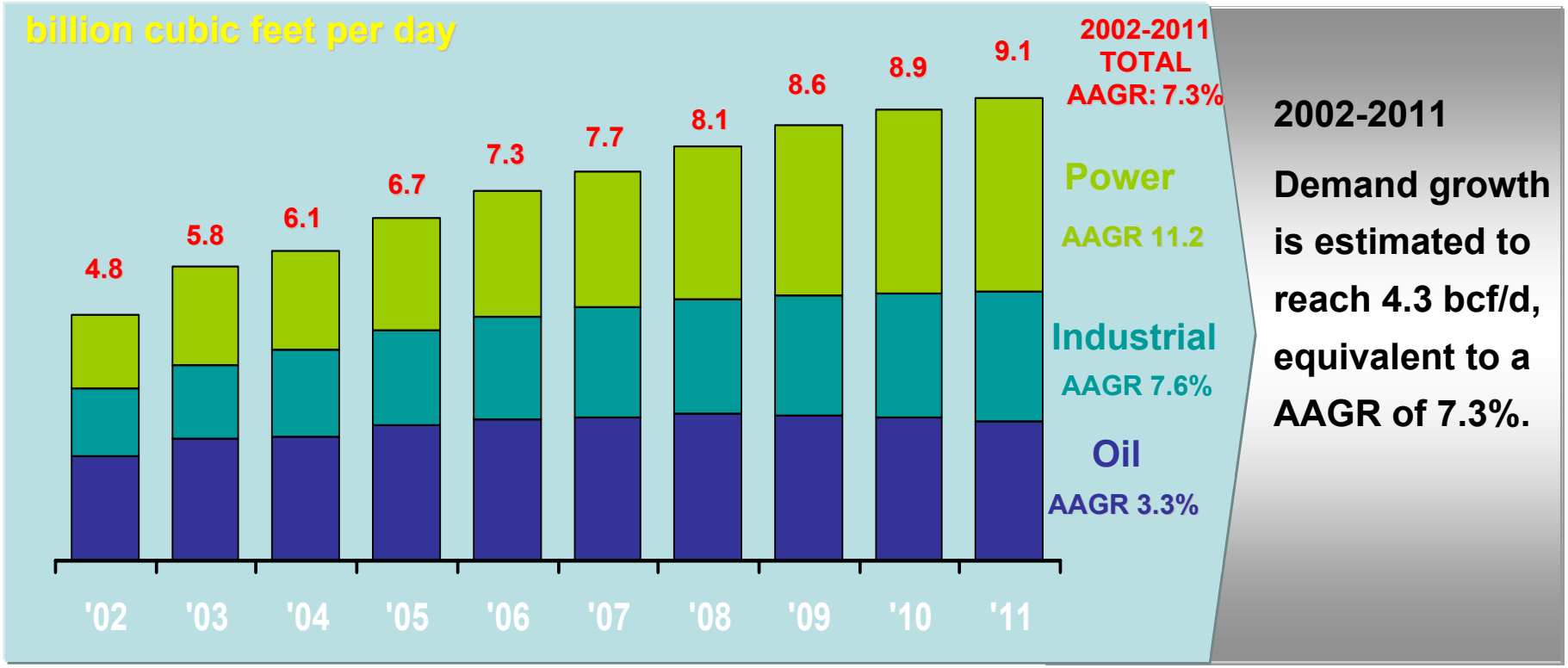
New Opportunity

- Enter the upstream gas business in Mexico through service contracts in non-associated natural gas basins.

- Create attractive return on investment by reactivating, extending, developing and operating tight gas sand fields.

- Enter other gas basins and oil sector in Mexico from an established position.

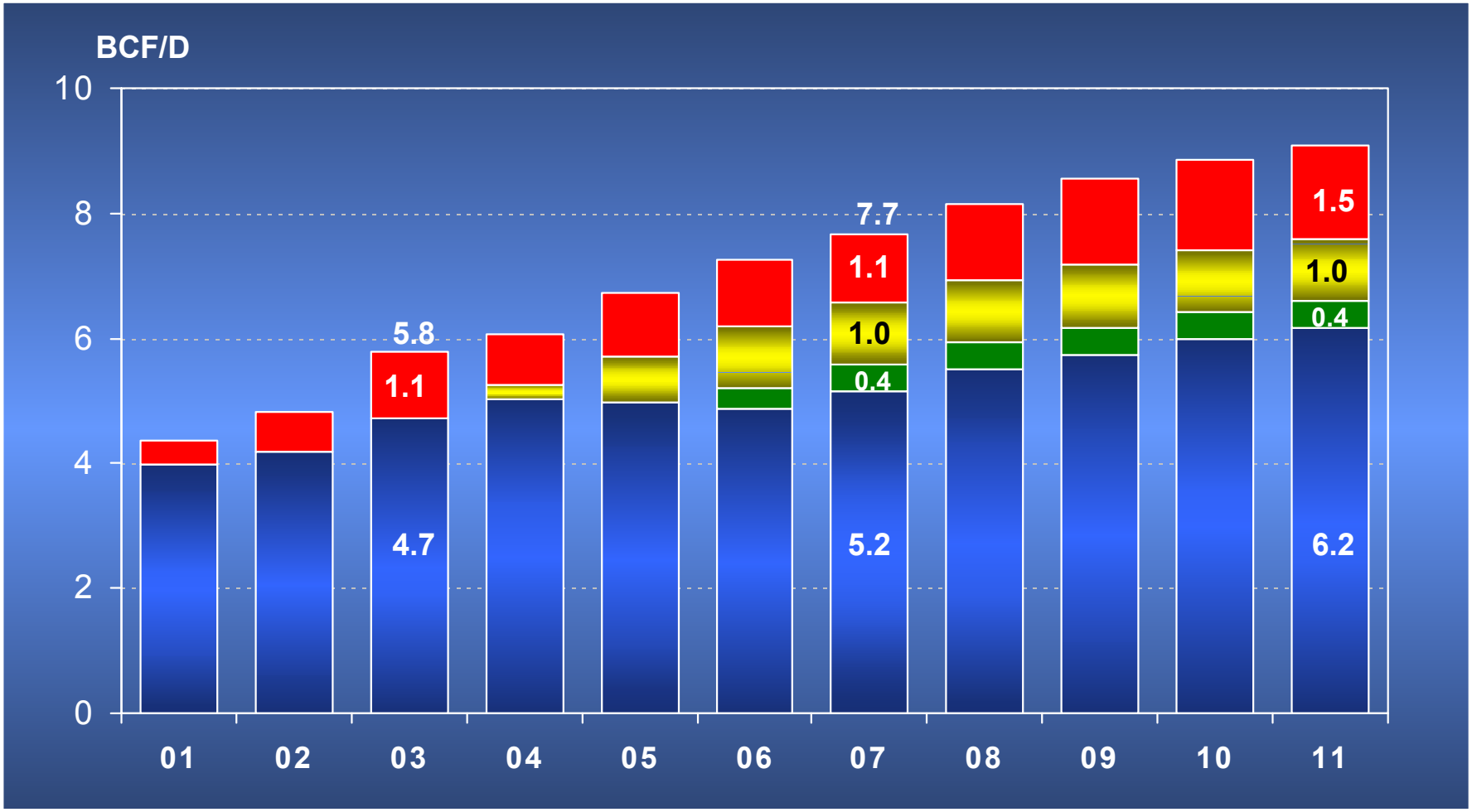
Mexico's Gas Demand Forecast



Source: SENER's Prospectiva del mercado de gas natural 2002-2011

Mexico is anticipating significant growth in gas demand

Mexico's Gas Supply Challenge



Source: SENER's Prospectiva del mercado de gas natural 2002-2011 and PEP's estimates

Even with MSCs, Mexico's imports will climb

Why Mexico is Opening to International Oil Companies (IOCs)

- To increase substantially the national production of natural gas and to reduce the shortage that is predicted for the coming years
- To guarantee the availability of gas for electricity generation
- To obtain additional resources for investment in non-associated natural gas
- To stimulate the economic activity in Mexico

Mexico wants to import capital, not gas

Service Contracts

- Mexico's efforts follow on previous programs in Kuwait, Iran and Venezuela
- Service contracts generally suitable for lower risk operations, not applicable for Exploration
- Typically grant fees for services provided; fee levels not affected by commodity prices
- Often include performance incentives for higher production, higher reserves and lower cost structures
- Alignment of host country and IOC interests not always easy
- PEMEX as the "national patrimony": constitutional, political and emotional constraints to opening

Mexico is building on experience of other countries

PEMEX Service Contracts

- Developed to comply with Constitution and existing legal framework,
- Lower risk operations: existing production, development upside, “extended development”, infrastructure and maintenance
- Pays fees for services provided; timing of payment affected by amortization schedule and payment cap
- To maximize return, Contractor has incentive to lower cost structures and ensure production and revenues exceed payment cap
- In Mexico, contract to be awarded, based on a single bid criteria:
  - bidding of a discount to the standard costs – The company that bids the greatest discount wins the contract!

MSCs to attract IOCs, align interests and remain legal

Elements of MSCs

- International Oil Companies (IOCs) act as general contractors
- Contractor to act like an E&P company, with operational freedom within constraints of:
  - Pre-approved minimum work plan
  - Proper oil and gas conservation
  - Health, safety and environmental regulations
  - Drill or drop
- Contractor does not share in production, book reserves or own assets
- Fiscal system does not require cost verification
- Three phases: development, reactivation and maximum recovery, over the contract term of 10 to 20 years

MSCs profitable for highly efficient operators

Standard (Unit) Prices

- Catalogue of standard unit prices developed for gas field activities
  - Development, Infrastructure and Maintenance (which includes Operations)

- Each item includes five components
  - Direct
  - Indirect (G&A)
  - Financing
  - Profit Margin
  - Other

- Examples from Catalogue

	$US
– Shoot >500 km new 2D seismic	$ 8,600/ km
– Drill and abandon 3000m vertical well	$ 960,000/ well
– Drill and case 3000m vertical well	$ 1,650,000/ well
– Install 101.6mm gathering line	$ 112,000/ km
– Install 25 mmcf/d dew point control unit	$ 6,300,000/ ea
– Maintain 3000m gas well	$ 560/ day

Contractor upside in beating these costs

How Contractors Make Money

There are a number of processes that must be performed well to maximize the Contractor's rate of return

- Fees Available
  - Profit margin on, and return of, recoverable capital spending
  - Profit margin on, and return of, recoverable maintenance spending
  - Spend less than the unit capital costs
  - Spend less than the unit maintenance costs
  - Carry out extra work beyond the minimum work program

- Supportive Processes
  - Create sufficient revenue stream to fund fees
  - Ensure downstream infrastructure is not a barrier;
  - Manage cost of bid (discount) to obtaining contract
  - Plan and execute incremental operations without a new bid
  - Optimally balance spending between operating and capital
  - Develop alliances with service providers (drilling, seismic, etc.)

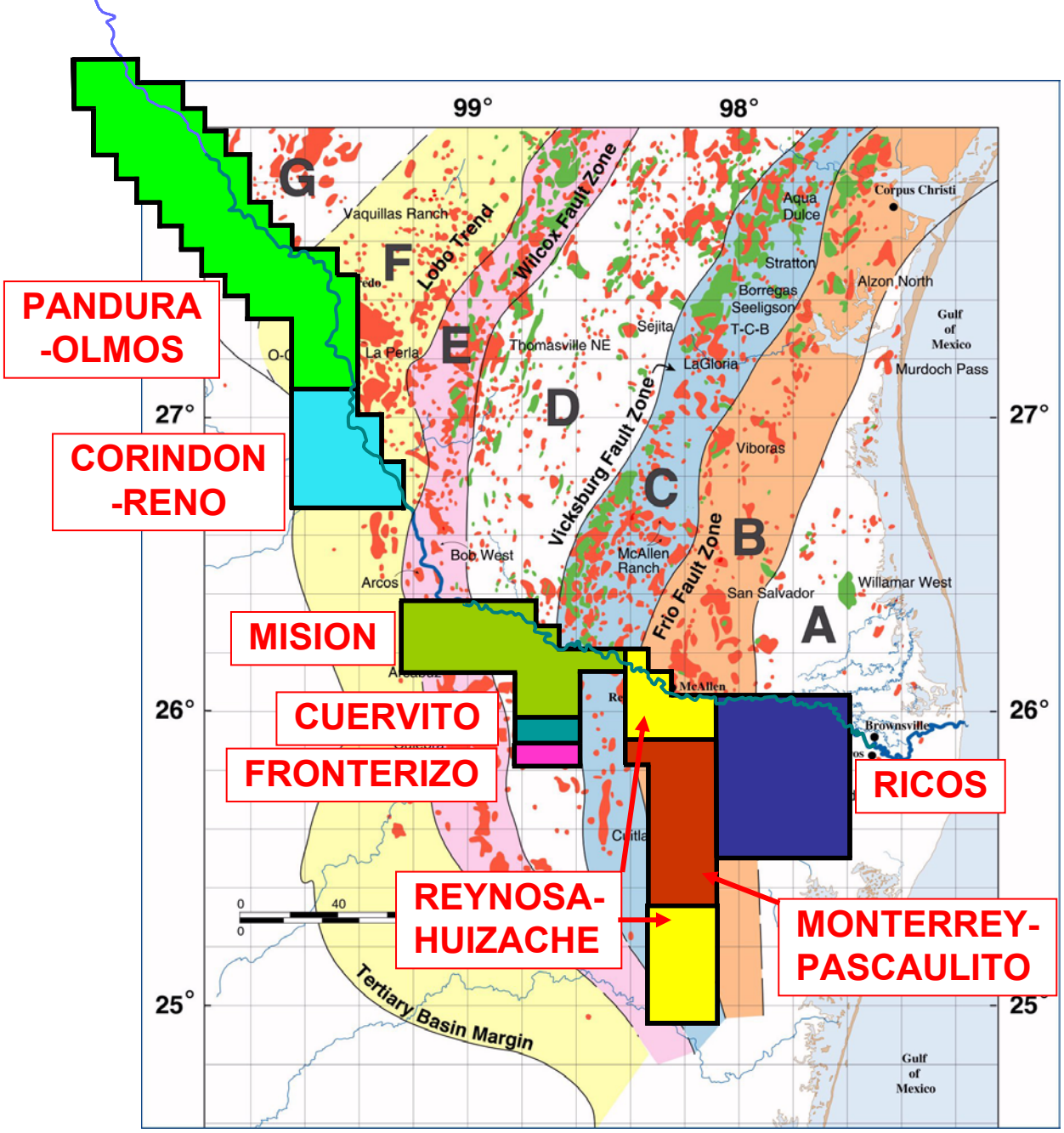
It's all about execution!

It's all about Execution!

MSC Supply Scenario

- Multiple bidding rounds for MSCs are envisioned
- Multiple Services Contracts will be awarded for a number of blocks in the Burgos Basin to add 1 bcf/d by 2007.
- Over 20 years, PEMEX expects recovery of 3 to 5 tcf from Round 1 contracts
- Exploration and development projects targeting 20 to 250 mmcf/d per block would be ongoing simultaneously

Initial 8 blocks to yield 1 bcf/d



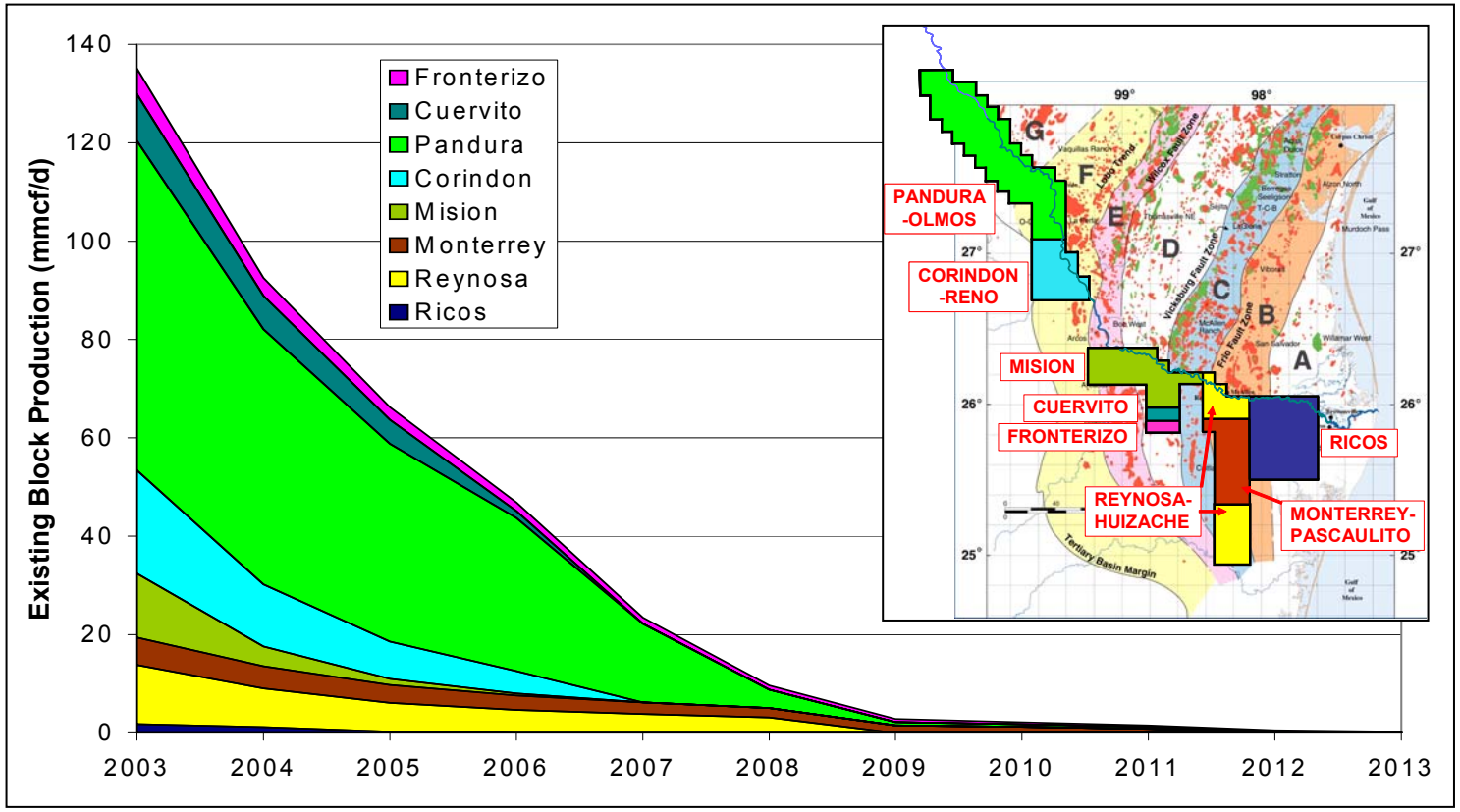
PEMEX Block Offerings

PEMEX Offering

- Eight blocks outlined, ranging in size from 230 km^2 to 4000 km^2; the small blocks are designed so specifically for small, independent operators
- Most blocks located at or near the Rio Bravo (Mexico – USA border)
- All blocks contain existing production (from 2 mmcf/d to 67 mmcf/d)
- Both exploitable lands and undeveloped areas exist in each block; each block also contains undiscovered potential
- All 8 blocks combined have PDP reserves of 140 bcf; 3P reserves of just over 1 tcf are envisioned with further development
- PEMEX remains open to additional posting requests by operators

PEMEX offering something for everyone

Existing Production



- Current production from 150 wells on 8 blocks totals 135 mmcf/d, but decline rates averaging 35% per year are expected
- In aggregate, 740 bcf of Proved and Probable reserves
- Over half the area is covered with 3D seismic

Development potential available

PEMEX Blocks: Bidder Qualification

- Two large blocks (Ricos and Pandura – Olmos), with over 3000 km^2 each, are designed for large IOCs
  - Qualification: must operate 600 mmcf/d in ’02, $750mm in capex in ’02 and have international operations
- Four medium sized blocks (Reynosa, Monterrey, Mision and Corindon), with 1000 to 2000 km^2 each, are designed for medium sized companies
  - Qualification: must operate 300 mmcf/d in ’02, $300mm in capex in ’02 and have international operations
- Two small blocks (Cuervito and Fronterizo), with only 230 km^2 each, are designed specifically for small, independent operators
  - Qualification: must operate 12-50 mmcf/d in ’02, $10-50mm in capex in ’02 but do not require international operations

PEMEX offering something for everyone

Contract Economics – Example Small Block

- Example for a small block development: 3 existing wells
- Contractor drills 9 new wells, 2 dry wells, installs facilities
- Produces 21.6 bcf over 8 years (1.8 bcf/well)
- No royalties, severance tax or property tax on assets built for PEMEX

	Fees (US $mm)	Costs (US $mm)	Margin (US $mm)
Capex	**21.2**	**17.4**	**3.8**
Maintenance	**17.2**	**12.3**	**4.9**
Interest	**1.5**	**0.0**	**1.5**
	------	**------**	**------**
Total	**39.9**	**29.7**	**10.2**
Income Tax (32%)			**3.3**
Net			**6.9**

SOURCE: PEMEX, 2003-03

24% IRR; $NPV_{10\%}$ = $3.0mm

Contract Economics – Example Small Block

- IRR of example block, initial reserves plus undiscovered potential
- PEMEX calculation of contractor position (March, 2003)

Gas Price	Low Production	Medium Production	High Production	Medium Production
				With 10% cost efficiency
$2.50/mcf		18%		30%
$3.50/mcf	10%	24%	26%	36%
$4.50/mcf		24%		36%

- Low Production – 1.1 bcf/well
- Medium Production – 1.8 bcf/well
- High Production – 3.1 bcf/well

SOURCE: PEMEX, 2003-03

Attractive to contractor with sufficient reserves and reasonable prices

Contractor Risks

- Monthly Payment Limit could be restricted by:
  - Insufficient production volumes from the block
  - Low gas prices
- Competition for services with other MSC operators
- Cross-cultural operations
- Political roadblocks that could delay MSCs
  - From political opposition
  - Within Mexican government bureaucracy
  - Within PEMEX
  - Unions
  - Landowners
  - Others

MSCs provide relief for some of these risks; some risks need more planning

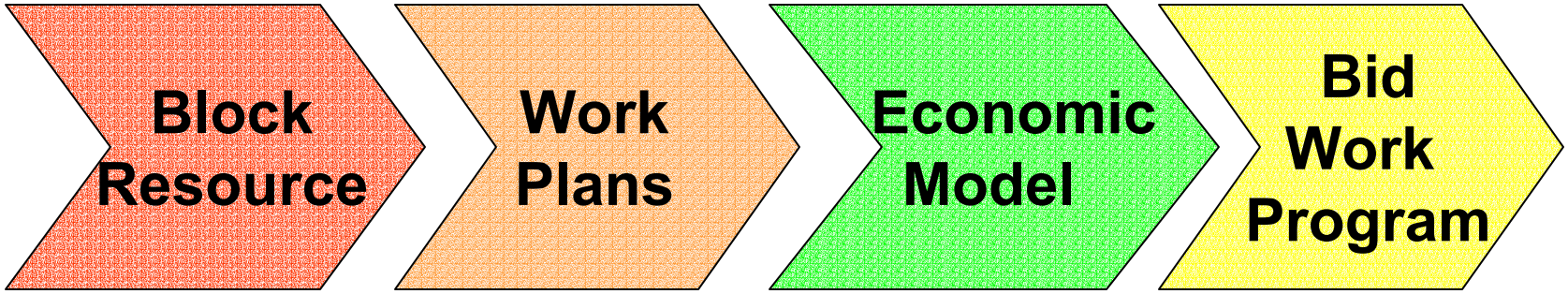
Bid Process and Timing

- December 2001: PEMEX official announcement of program start
- June 2002: IOC conference and 1st draft of model contract
- August 2002: 2nd draft of model contract
- Sep/Oct 2002: legal and economics conferences
- January 2003: 3rd draft of model contract
- February 2003: Release of viewable data

- April 2003: expected approval of new Public Works Law
- April 2003 technical conference, Reynosa
- May 2003: close of small block request period
- End of June 2003: call for bids for Round 1
- August to Sept 2003: closing of bids
- Sept to Oct 2003: contract signing

2003 timing may slide

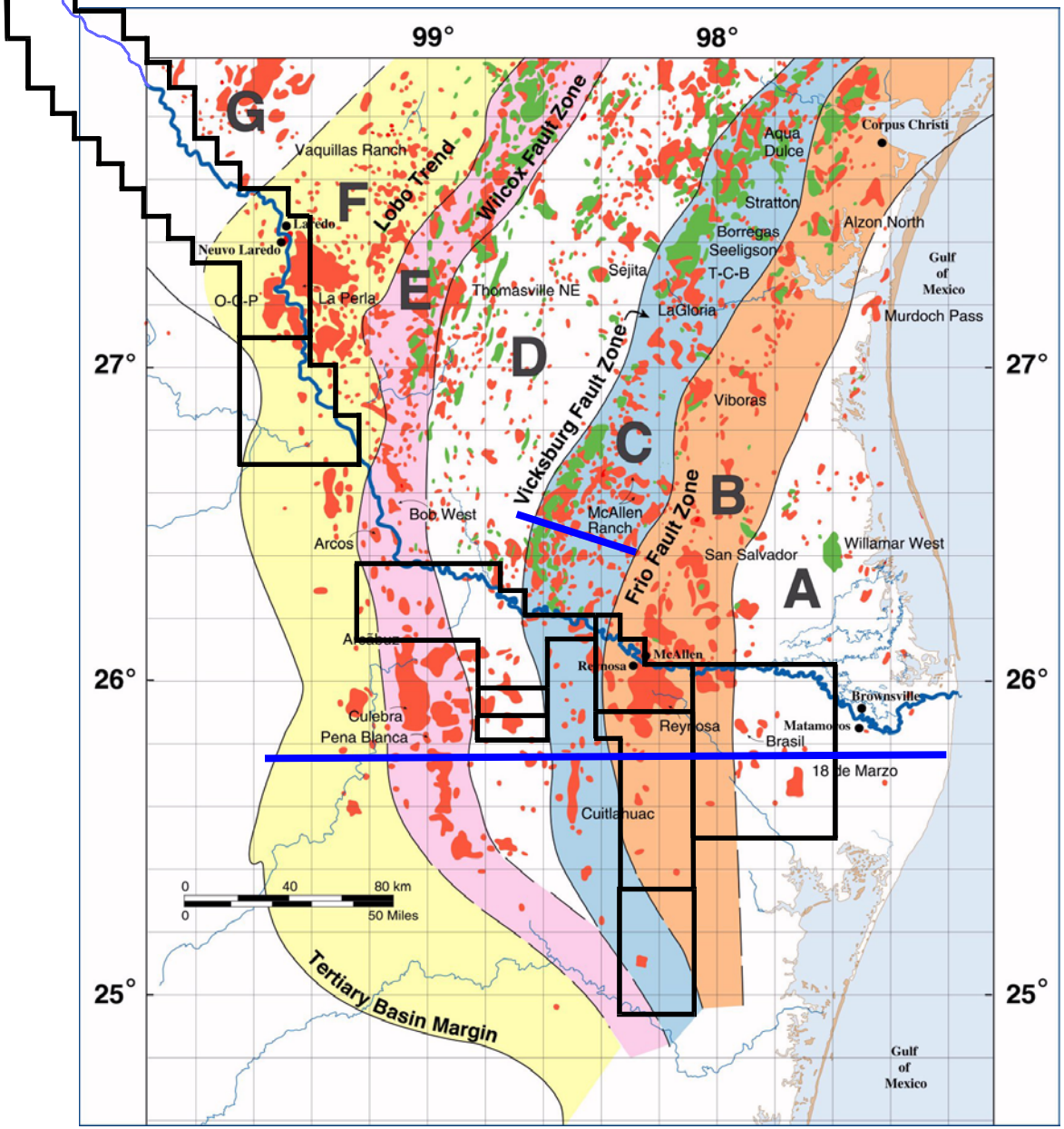
Bid Evaluation Process



Potential → Development → Value → Bid

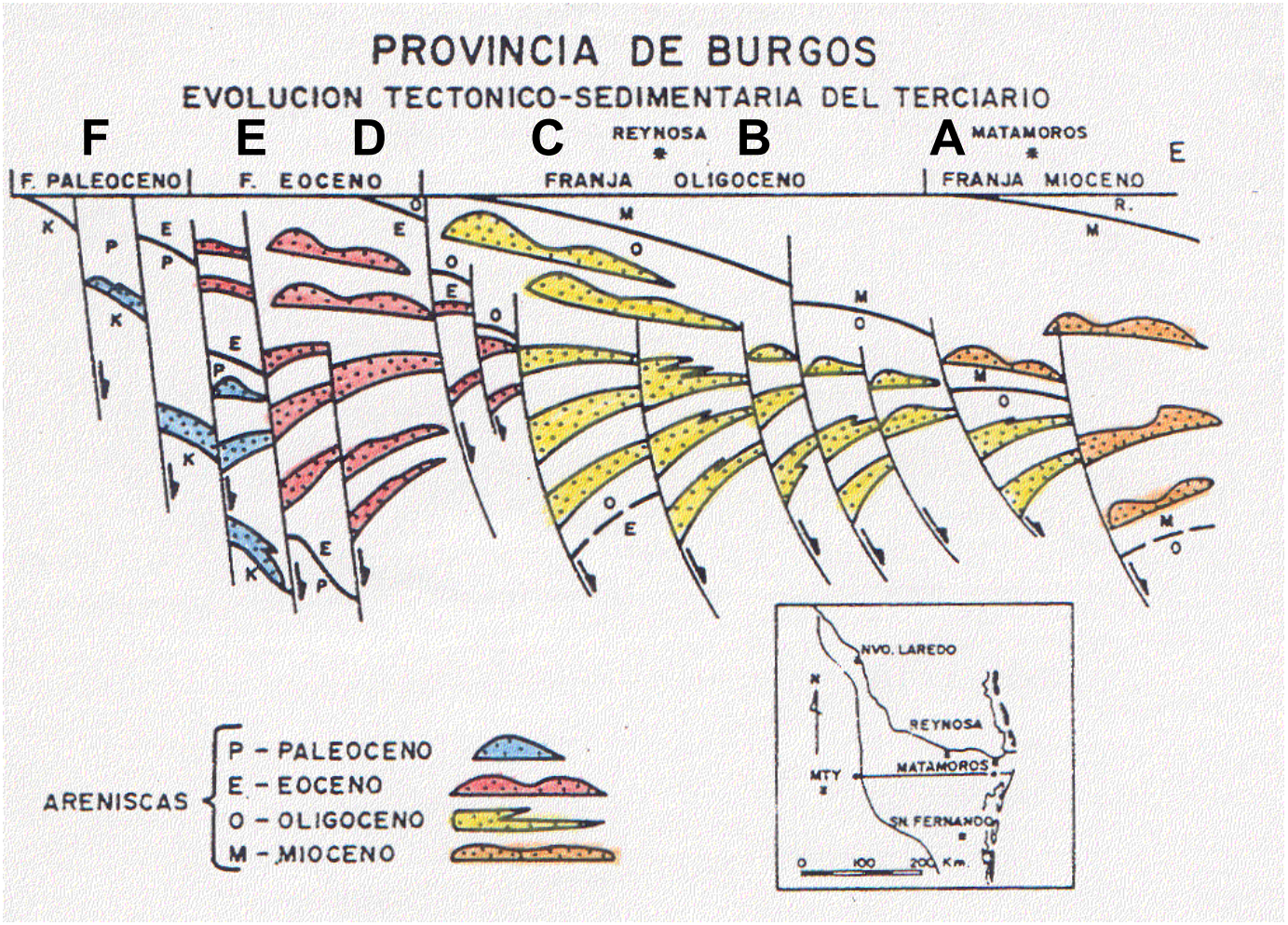
Burgos Basin

- Location
- Trends and schematic
- Production history
- Production potential
- Producing characteristics
- Success factors



Regional Geology - Trend Map

Growth Fault Zones

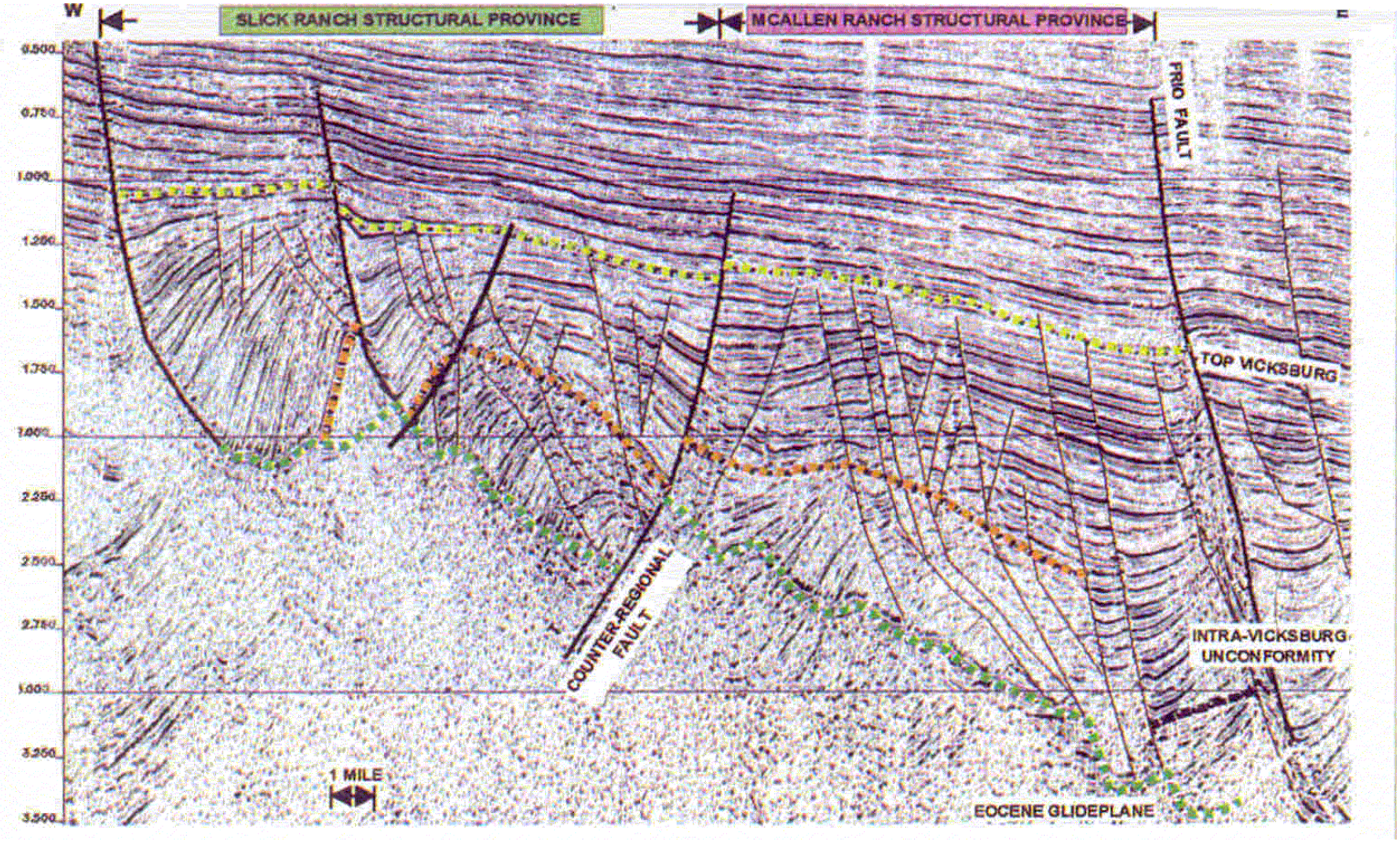


Source: Echanove, 1986

Multiple Reservoir Sands

Local Areas of Thick Net Sand

Seismic Section – E Trend



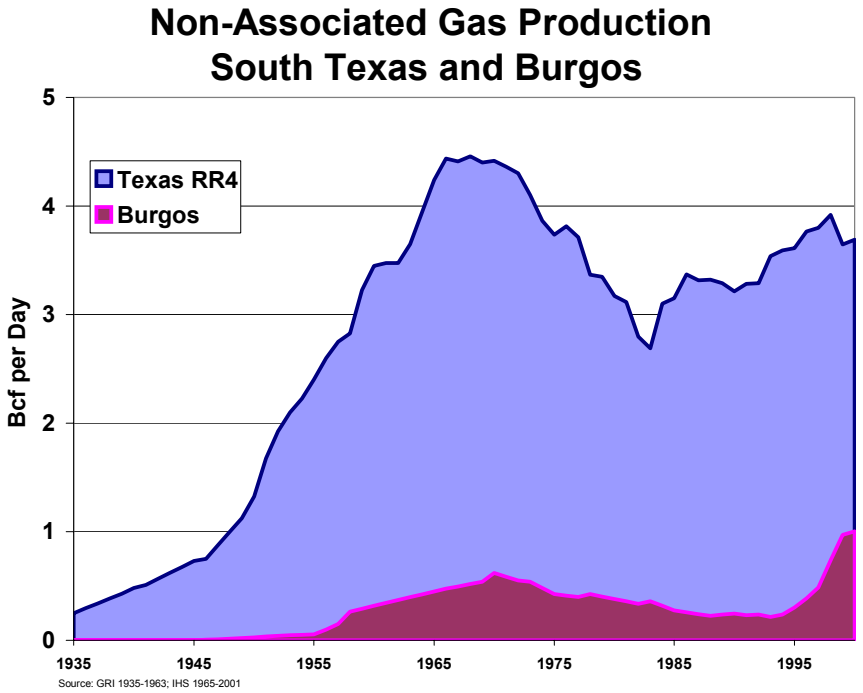
Source: Whitbread et al,

Complex Compartmentalized Structures

Unconformity – bounded Sequences

Burgos Basin v. South Texas

Year 2002	South Texas	Burgos, Mexico
Cumulative Production (tcf)	68	7
Cumulative Well Count	84000	4200
Current Production (bcf/d)	4.0	1.0
Current Reserves - Proven (tcf)	9.0	2.5
Number of gas wells drilled per year	800	300
Cumulative Well Count	1.3	0.6



- The Burgos Basin and the prolific gas fields of South Texas are part of the same geological province.
- South Texas has been producing close to 4 bcf/d for almost 30 years. The Burgos has similar potential.
- Some estimates place potential as high as 30 tcf, compared to the 6 tcf of total reserves estimated by PEMEX. This reserve base is capable of supporting in excess of 3 bcf/d of production compared to the current 1 bcf/d.

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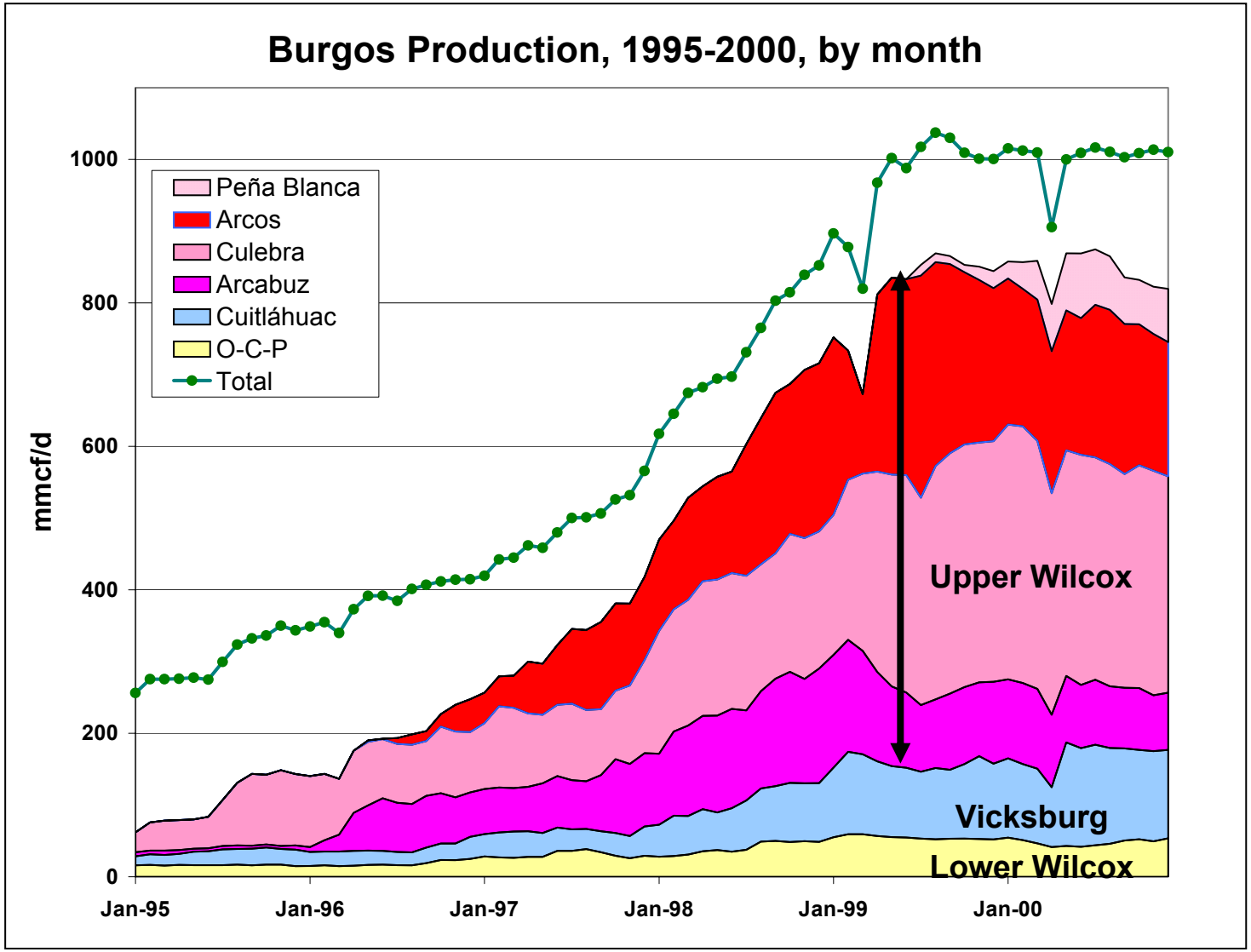
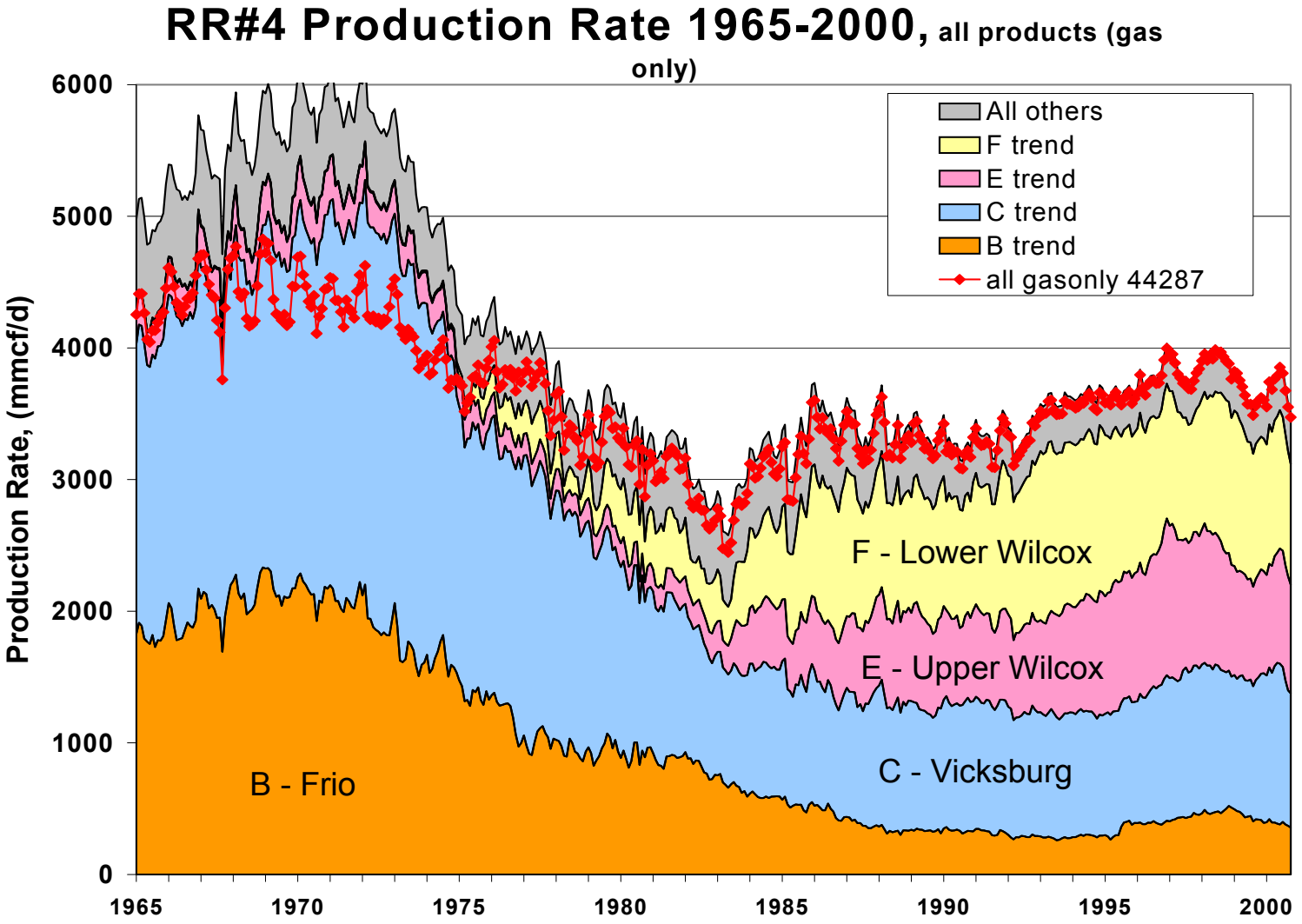
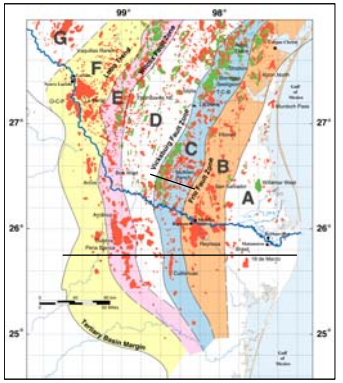
Burgos Basin - Production by Field



Original growth limited to 5 major fields – Upper Wilcox trend

Production by Trend, South Texas





U & L Wilcox and Vicksburg Trends Important

Producing Characteristics

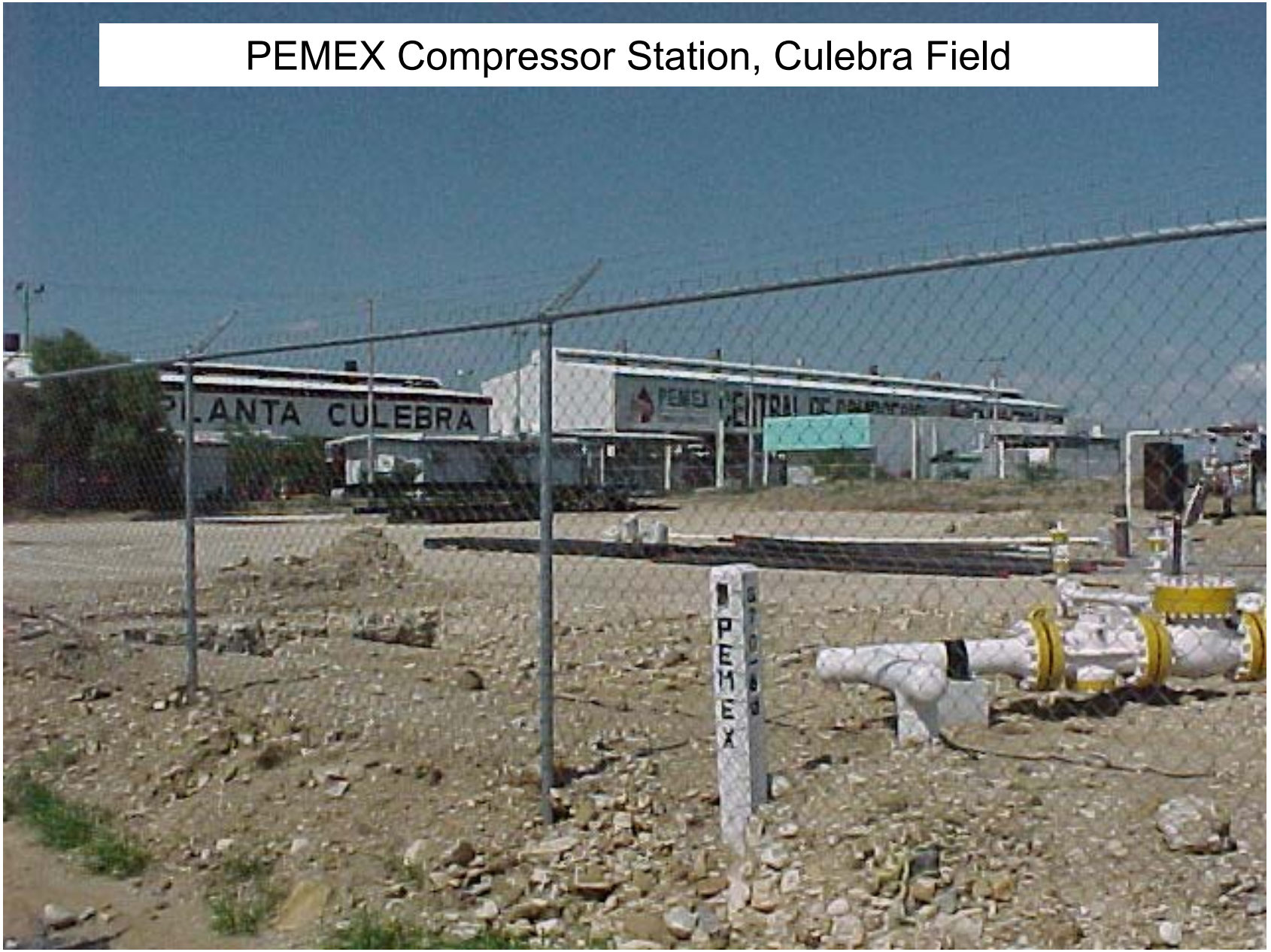
- Reservoirs compartmentalized
  - Compartments bounded by complex faulting
  - Facies control on rock types/reservoir geometry
  - Multiple stacked sandstones
- Low permeability sandstones
- Geopressured and hot
- Dry gas in deeper and older reservoirs
- Characteristics vary by trend

$$ Dollars are in the Details $$

Technical Success Factors

- 3D seismic to identify fault-bounded reservoir compartments
- Seismic attribute analysis and seismic inversion to map petrophysical properties
- Petrophysical pay recognition
- Drilling
  - Directional to maximize reservoir intersection
  - Deep and geopressured
- Fracture stimulation
  - Optimum frac length, height, direction – well spacing
  - Large fracs, stronger proppants
- Commingling

PEMEX Compressor Station, Culebra Field



Returning to the surface . . .

Business Success Factors

- Low cost operations
- Supplier management
  - Selection
  - Ongoing integration
- Efficient back office processes
  - Adherence to contract provisions
- Cultural integration
- Contract management
  - Identifying and exploiting opportunities
- Corporate reporting, communications
  - Reporting to stakeholders about a ‘non-standard’ business activity

Summary

- Mexico needs to develop domestic gas supply
- Multiple Services Contracts are a unique contract structure for IOCs
- MSCs require Contractors to implement effectively to manage cost and revenue risks
- Burgos Basin gas potential significantly underdeveloped relative to South Texas
- Application of new technology will reduce costs and identify new reserves
- Successful business integration will be necessary
- Mexico has created a new set of opportunities for IOCs to evaluate

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