

ELK PETROLEUM 

# Investor Presentation



excellence  
IN OIL AND GAS

7<sup>th</sup> April 2009

# Presentation Outline

- Company background; Corporate strategy
- April 2009 company outline and assets
- Elk March 2009 Business Model - low to medium risk assets only
- 2008 in review
  - Production, revenue, development and exploration
- Future plans 2009-2010
  - Development
    - Grieve Chemical Flood
    - Ash Creek
  - Appraisal and Exploration
    - Kakadu
    - Uluru
- Corporate Strategy revisited

# Company Background

- Listed on the ASX on **17<sup>th</sup> June 2005**
- Initial strategy to acquire and redevelop mature oil fields in the USA using both conventional and new extraction techniques
  - First acquisition, prior to listing, was 100% working interest (WI) in the producing **Grieve Oil Field** in the Wind River Basin, Wyoming. Plans were
    - Re-completions, Enhanced Oil Recovery (initial plans for using CO<sub>2</sub>) and shallow reservoirs
  - In **July 2005**, second acquisition was 100% WI in the producing **Sand Draw South Oil Field** also in the Wind River Basin. Plans were
    - Shallow reservoir re-completions
  - In **late 2006**, third acquisition was 50% WI in the abandoned **Ash Creek Oil Field** in the Powder River Basin; acquisition of the remaining 50% interest in **May 2008**. Plans were
    - Shallow sands untested potential and infill development and possible EOR
- Sand Draw South revenues produced positive cash flows during 2007 and most of 2008 enabling the Company to acquire an impressive **exploration acreage portfolio** at
  - Uluru and Kakadu/Didgeridoo in Montana, and
  - Outback in Wyoming.

# Board and Management

- **Dr Peter Power – Non-Executive Chairman**

Over 50 years' experience in hydrocarbon exploration worldwide in senior management positions with major international companies. Former Managing Director of Ampolex. Past Chairman of APPEA. Currently non-executive Director with Petsec and Chairman of Metgasco and Austex

- **Tony Strasser – Non-Executive Director**

Qualified accountant with extensive experience in corporate finance and advisory services over 16 years. Most recent role was as CFO and Company Secretary at Anzon Australia where he spent 5 years.

- **Andy Rigg – CEO and Managing Director**

Over 35 years' experience in international oil exploration and development with senior exploration management positions in Esso, Santos and Ampolex. He is a Distinguished Member of PESA and also Deputy Chairman of Mosaic and an adviser to the Australian Coal Industry on CO<sub>2</sub> storage

- **Bob Cook – Executive Director Operations**

Over 40 years experience in energy and petroleum industry with senior engineering and operating management positions at Esso and Ampolex.

- **Chris Mullen – President, Elk Inc**

Over 21 years experience as a senior geologist operating in the Rocky Mountains region. Vice President- Exploration at Tom Brown Inc and senior positions with Unocal.



# Corporate Strategy

- 1. To acquire large equity in historic producing and/or non-producing oil/gas fields in the Rocky Mountains region**
    - Mature basins and fields with significant remaining reserve potential
  - 2. To enhance productivity through forensic integration of field engineering and geology, and the application of modern oil extraction techniques**
    - e.g. EOR of Grieve Muddy reservoir; re-completions at SDS; infill, attic oil assessments and EOR at Ash Creek
  - 3. To form JVs for development and exploration; extract value and share risk**
    - e.g. for EOR development at Grieve, exploration drilling
  - 4. To apply in house knowledge and expertise through acquisition of high potential offset acreage with unevaluated exploration potential**
    - Seek farm outs to reduce risk and provide exploration funding
- to advance from 2008 financial self sufficiency to profitability**

# March 2009 Company Outline

## GENERAL

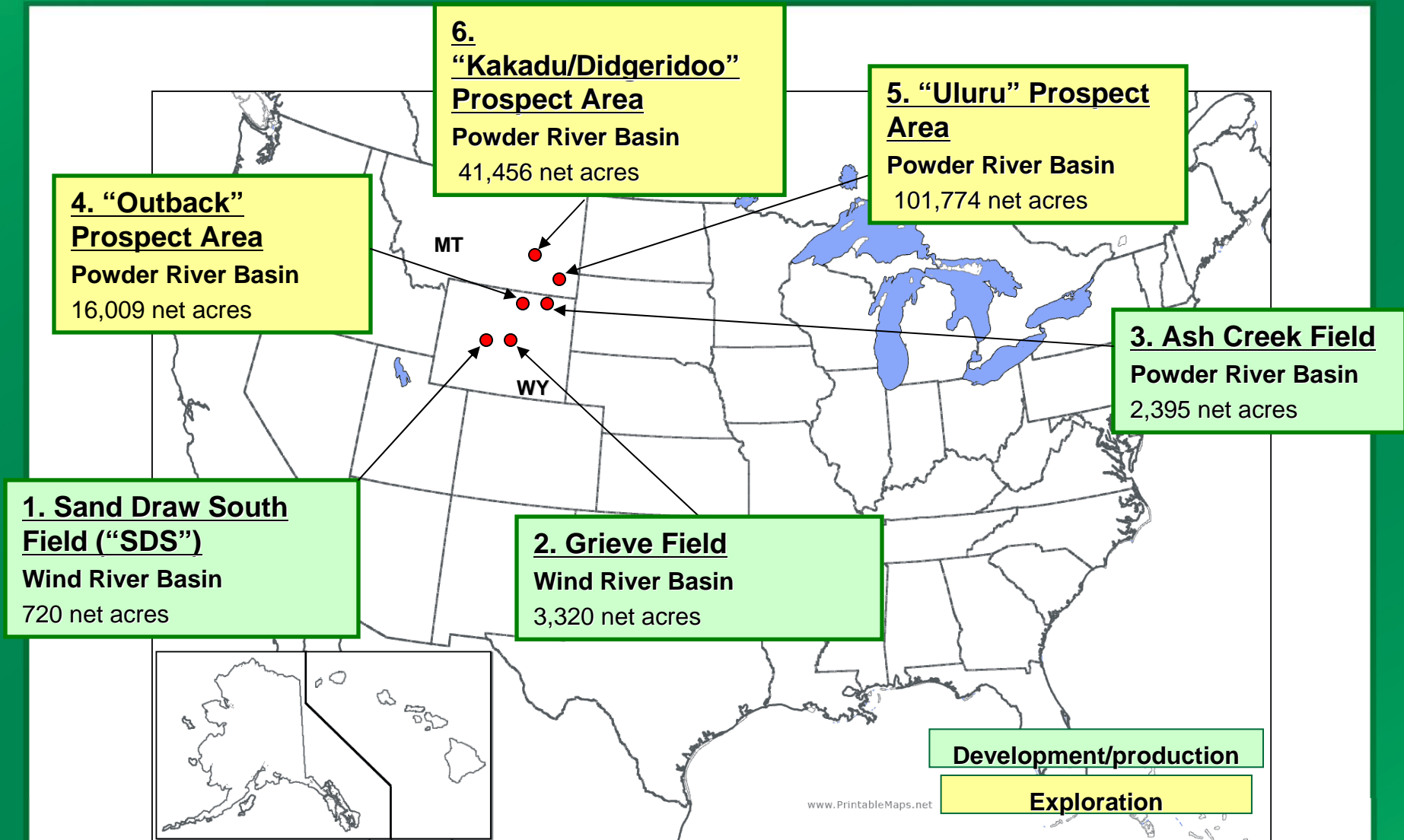
- Share price: **\$0.16**  
(30/03/09)
- 1 Year Price range: **\$0.115 - \$0.73**
- Shares on issue: **62.2 MM**
- Board and Employee options;  
**6.475 million**
- Market cap: **\$9.95 MM**  
(30/03/09)
- Cash on hand: **\$2.098 MM**  
(end December 2008)
- Debt: **none**
- Last capital raising; **March 2006**  
**(\$11.7 million)**

ELK vs Energy Index April 2008 to March 2009



**2008 Average Daily Production.: 200 BOPD**  
**2008 Net Sales Revenue : A\$5.842 MM**

# April 2009 Assets

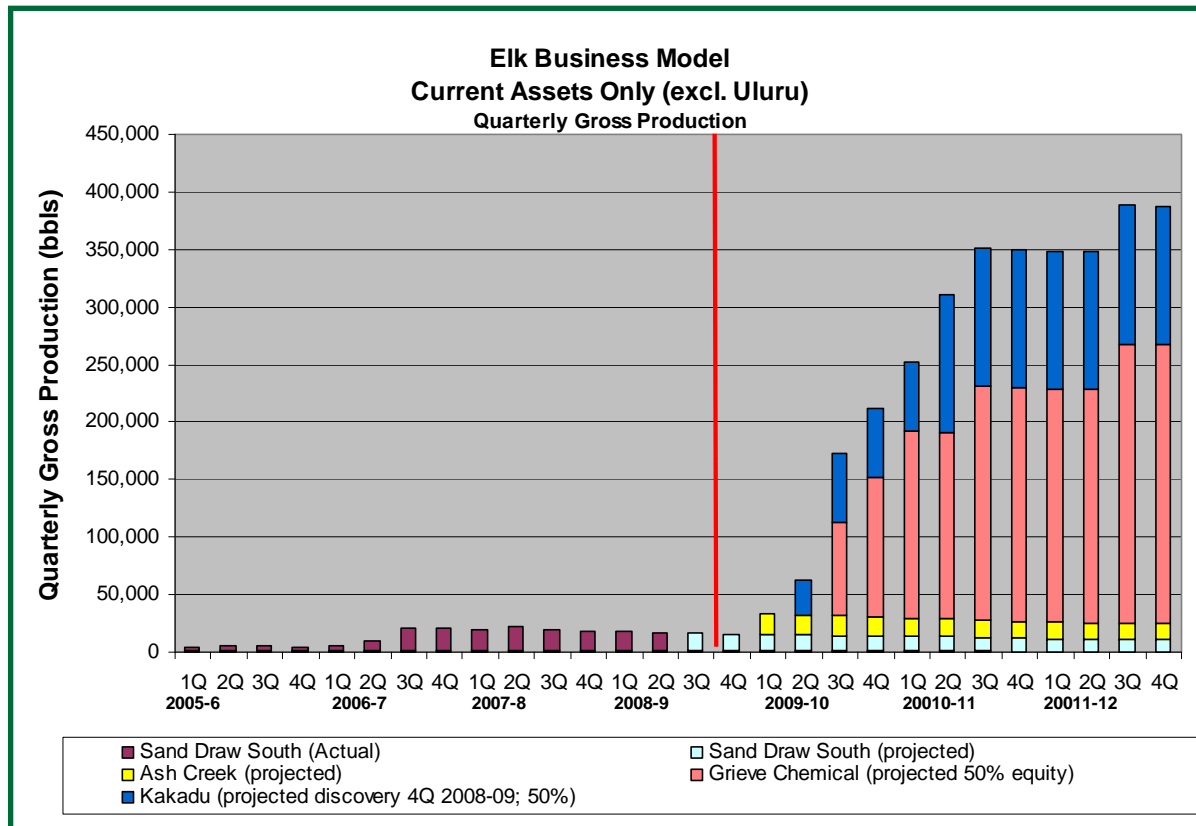


# Elk Petroleum Business Model

Current Low to Medium Risk Assets Only (i.e. excludes Uluru)

## Assumptions

- **Sand Draw South (ELK 100% WI)** production declines 10% pa
- **Ash Creek (ELK 100% WI)** production brought back similar to SDS
- **Grieve (ELK 100% WI) Chemical Flood EOR project** proceeds; 50% JV found; production starts 3Q 2009-2010 and ramps up to 5300 bopd gross
- **Kakadu (ELK 100% WI)** farmed out and confirms 20-30bcfe in one horizon; production starts 2Q 2009-2010
- **Uluru (ELK 100% WI)** farmed out but assumed to not be successful



— March 2009

# 2008 Highlights

- **Production**; maximised Sand Draw South (SDS) and Grieve oil production; with lower oil prices, shut-in uneconomic SDS well
- **Revenue**; maximised revenue; contained operating costs; utilised free cash flow for exploration asset growth; with lower revenues, accelerate process of farming out exploration acreage (cash and carry)
- **Assets**; built a strong asset portfolio for the future
  - **Development**
    - addressed **Grieve EOR** alternatives to using CO<sub>2</sub>
    - identified **Ash Creek** (Shannon) redevelopment potential
    - reviewed **SDS** shallow gas and deep/shallow oil potential
  - **Appraisal, Exploration**
    - acquired multi-target trend acreage at **Kakadu and Didgeridoo**; purchased and re-interpreted seismic data
    - after year end, still finalising substantial acreage acquisition at **Uluru** with Crow Nation
    - evaluated shallow reservoir potential at **Ash Creek** (low cost)
    - undertook JV drilling at **Outback** (fully carried on well)

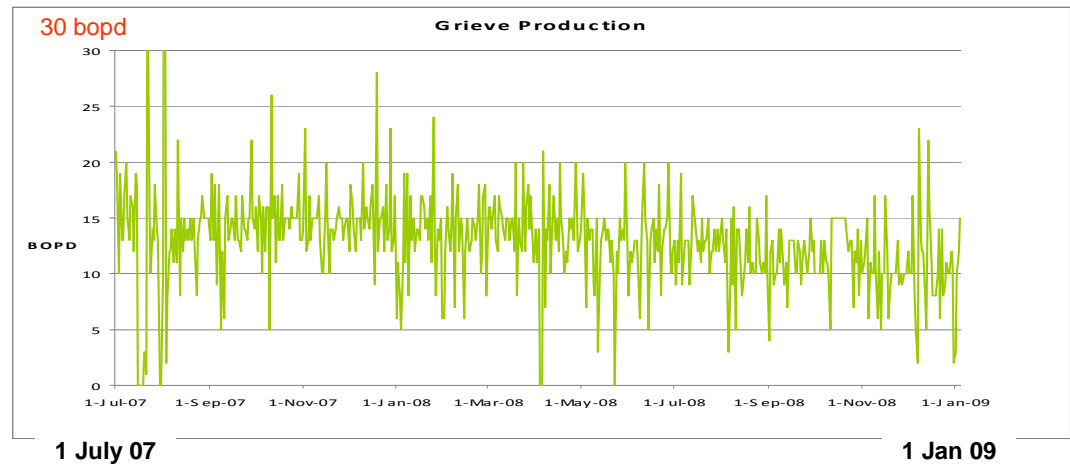
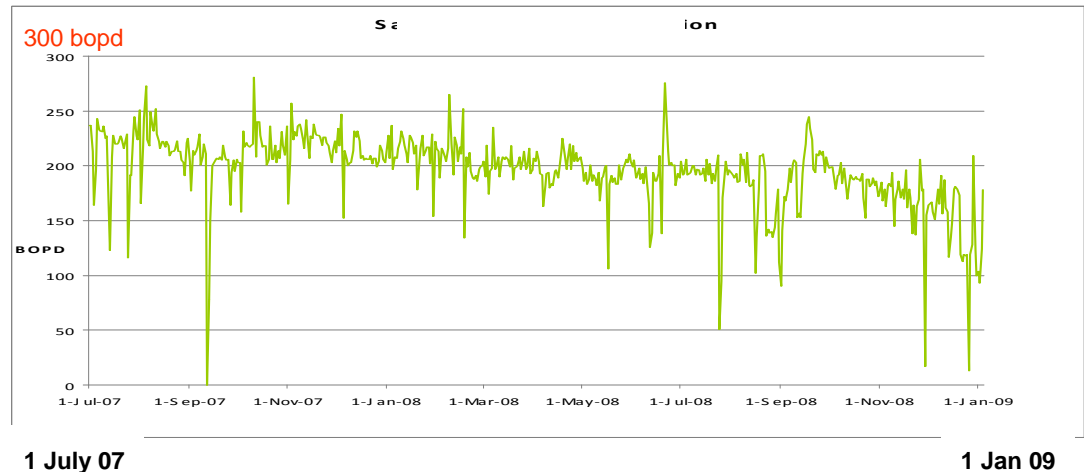
# 2008-Gross Production

## Sand Draw South

- Oil from Tensleep and Lower Phosphoria
- Production disruptions mainly due to power outages and pump changes
- Since July 2007, around 10% decline
- **(Back to 200 bopd in February 2009)**

## Grieve

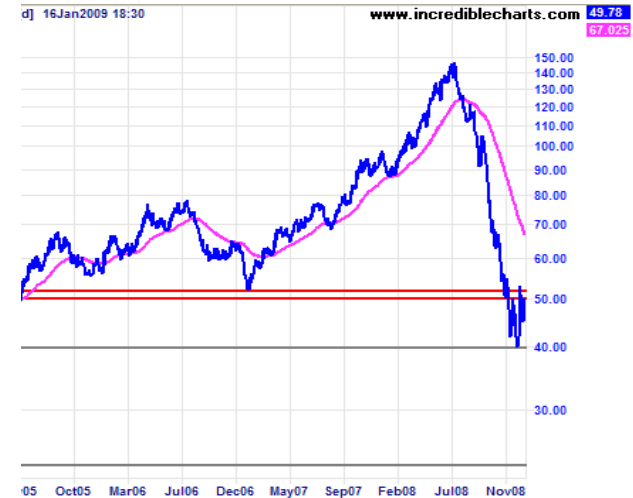
- Oil from Muddy Sandstone
- 1 well only; lease held by production (HBP)
- Holding lease until EOR project decided (expected September 2009)
- Decline rate of about 15%



# 2005-09 Oil Prices and Net Revenues

## Oil Prices

- Since December 2006, prices moved from US\$50/barrel to greater than US\$140/barrel
- In October 2008 back to around US\$60/barrel
- Currently oil price trend appears to be stabilising around US\$50 barrel but significant uncertainty remains as to immediate future direction and price

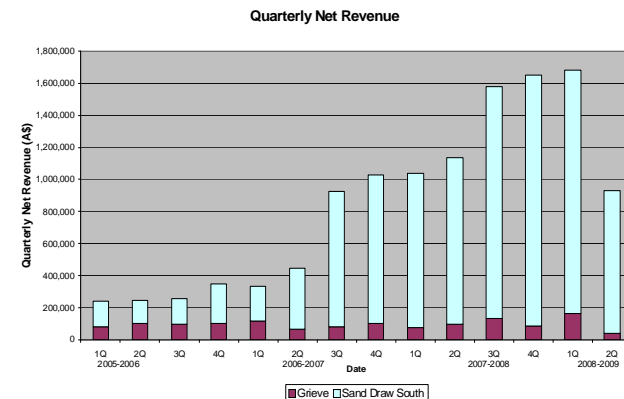


## Elk Net Revenue

- Elk's production increase from SDS fortuitously coincided with increase in price
- 1Q 2008-2009 (September 2008) quarterly revenue a record for the Company
- Calendar 2007 and 2008 Net Revenues allowed corporate growth into high-value exploration acreage,

## BUT

- 2<sup>nd</sup> Quarter 2008-2009 revenues declined significantly triggering strategy to extract value from exploration acreage portfolio



# 2008-Development

## Grieve-EOR

- **Ryder Scott** independent reserves verification of **18.6 mmbbls 3P reserves** for **CO<sub>2</sub>** gravity flood development
- Progressed discussions re **CO<sub>2</sub> supply** with current and future producers, and existing CO<sub>2</sub> contract holders
- Started work on **chemical flood** studies with University of Oklahoma; preliminary generic work encouraging
- Late December 2008 decided to instigate **Surtek chemical flood simulation** based on Nitec reservoir model and Grieve fluids.

## Ash Creek

- Commenced studies of Shannon OIP and cumulative production; **plan for field re-development.**

## Sand Draw South

- **Optimised production** from existing wells
- Evaluated in-fill drilling locations and shallow and deeper **re-completions** in Phosphoria and Tensleep
- Commenced study on Frontier shallow gas sands
- Managed operating costs

# 2008-Exploration

## **Uluru**

- Finalising land titles with Crow Nation for 88,421 acres; signed lease
- Plays are shallow biogenic gas and deeper gas and oil (Tensleep).
- Staked locations for first 4 wells

## **Kakadu-Didgeridoo**

- Increased acreage holding
- Plays are shallow biogenic gas, and deeper gas (Lakota/Dakota) and oil (Tensleep)
- Acquired, reprocessed and interpreted seismic

## **Grieve-shallow sands**

- Finalised Frontier sands study
- Decided to defer shallow drilling until EOR project drilling

## **Ash Creek-shallow sands**

- Increased acreage holding in area around field
- Evaluated high resistivity sands in shallow sands Teapot, Parkman and Eagle
- Selected Eagle in Trussler#8 for low cost re-entry, logging and testing; unsuccessful

## **Outback**

- Finalised acreage acquisition; formed JV with Paladin for a 25% interest; acreage payment equivalent to full carry on well
- Drilled Wilson#41-29 well to Parkman; despite shows, all formations dry

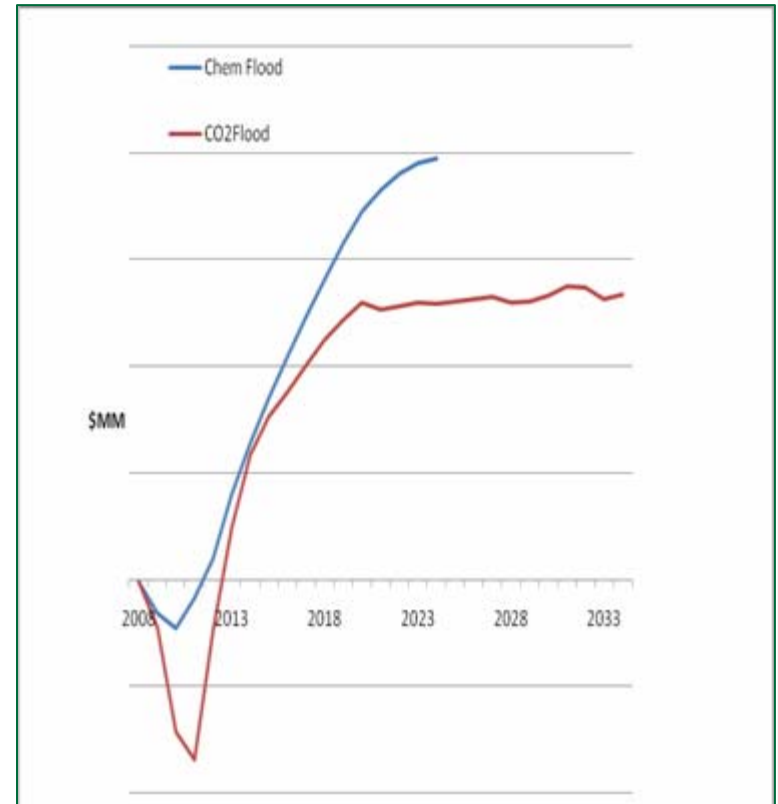
# Late 2008 Future Plans-Development Grieve

## Grieve-CO<sub>2</sub>

- Attempts to secure appropriate CO<sub>2</sub> contracts (post 2010, long-term, continuous, attractively priced) were unsuccessful
- Elk engaged in negotiations with those producers who currently emit or sell CO<sub>2</sub>; only contracts available are discontinuous supply contracts not suitable as primary contract for Grieve
- Elk bid alone or with others for new CO<sub>2</sub> contracts
- Elk has engaged in negotiations with parties who have future (post 2010) CO<sub>2</sub> contracts
- Late 2008 position “no bargaining chip”

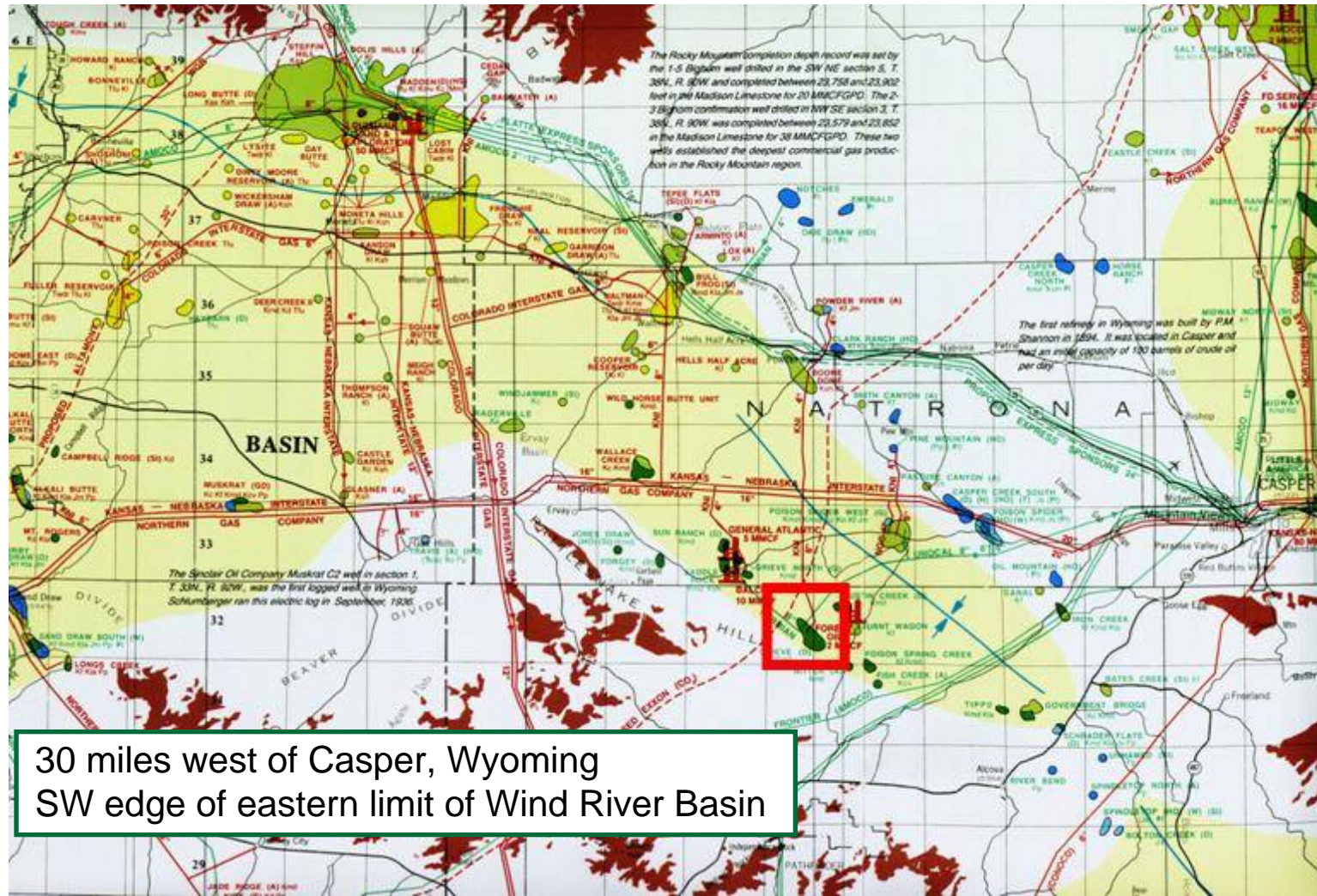
## Grieve-Chemical

- Alternative and viable solvent/chemical technology
- Technology is not new but use is expanding (see Elk Sept newsletter article)
- Although previously assumed oil recovery factor lower than for CO<sub>2</sub>, this may not be the case in all fields
- CAPEX much lower; no pipeline, pre-purchase CO<sub>2</sub>
- Requires accurate matching of reservoir rocks and fluids and predictions of chemical “soup”
- University of Oklahoma preliminary results encouraging for Grieve rocks/fluids
- Engaged Surtek to undertake simulations pre possible pilot project
- Generic economics better than CO<sub>2</sub> based on current knowledge, especially at low oil prices

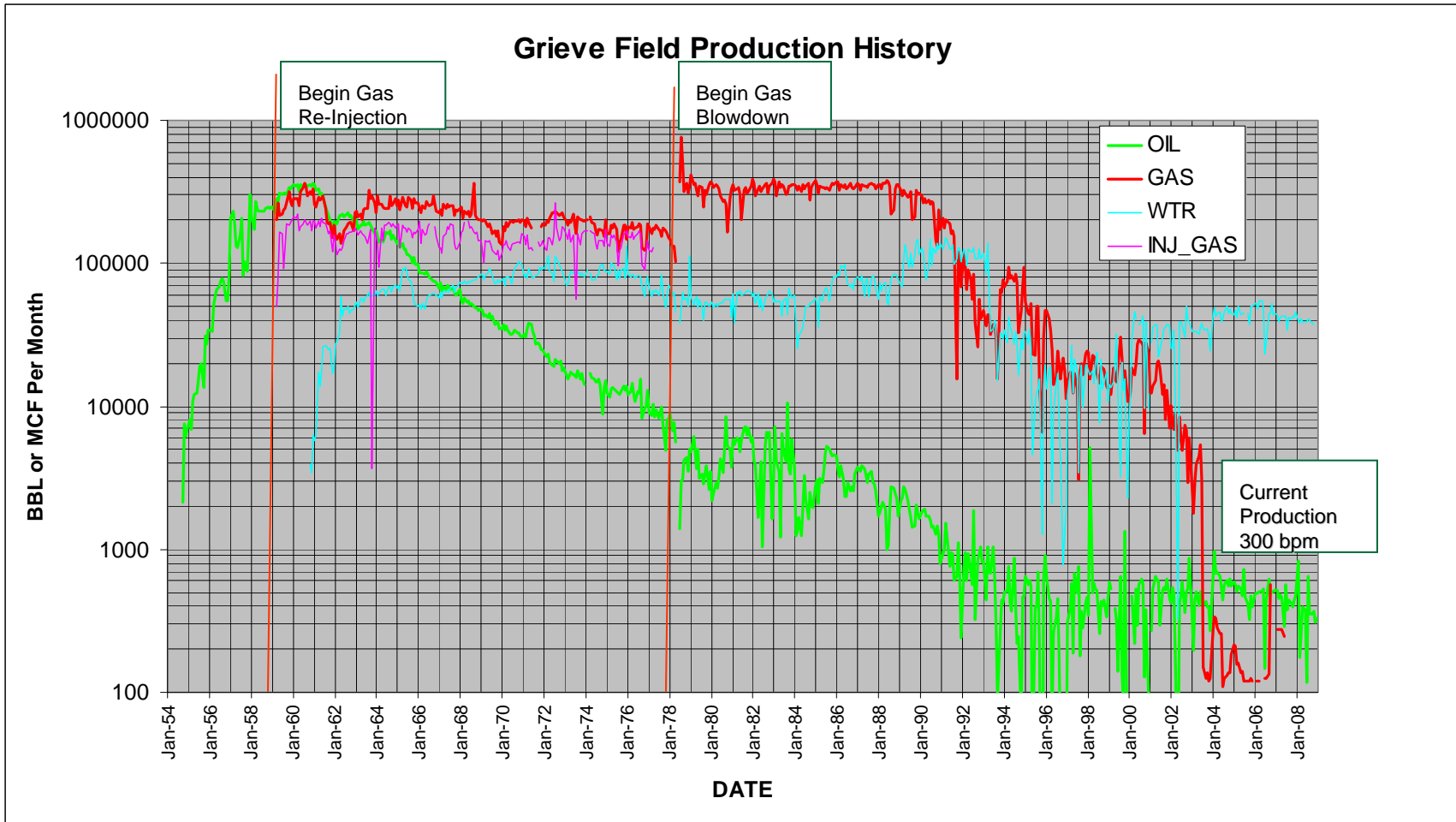


Generic economic comparison

# Grieve Field Index Map



# Grieve Field Production



# Grieve Field – Structure and Key Parameters

## Grieve Structure Map

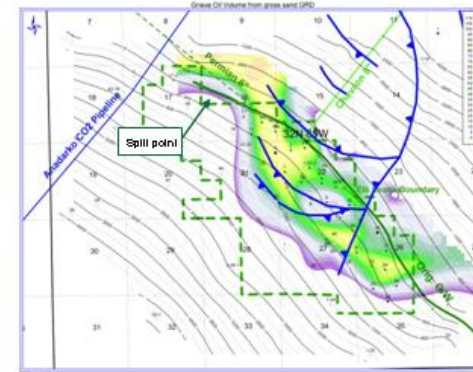
- Structure with 15° dips
- Reservoir pinch-out defined clearly from wells.
- Faulting interpreted from seismic
- Field geometry provides a virtual storage tank with spill to the NW.
- Proximity to Anadarko pipeline drove early efforts to secure CO<sub>2</sub> for EOR

## Grieve Field Key Parameters

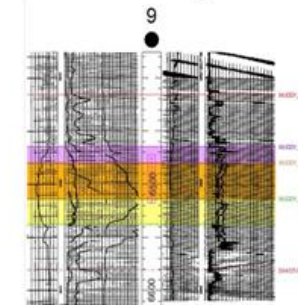
- Formation: Cretaceous Muddy Sandstone; Average Dip: 15°
- Porosity: 20.4% Average ; Permeability: 220 md Average
- Average Reservoir Thickness: 45 feet
- Original Oil/Gas Column: Oil – 700 feet; Gas – 900 feet
- Gas Oil Ratio: 861:1; Drive Mechanism: Gas expansion and partial water drive
- Character of oil and gas: Oil gravity –37° API, Gas 1168 BTU

April 2009

## Grieve Field Gross Sand/Structure Map



## Grieve Field Key Parameters



Cumulative Production to March 2009:  
32,042 MBO, 73,446 BCFCG, 31,232 MBWY

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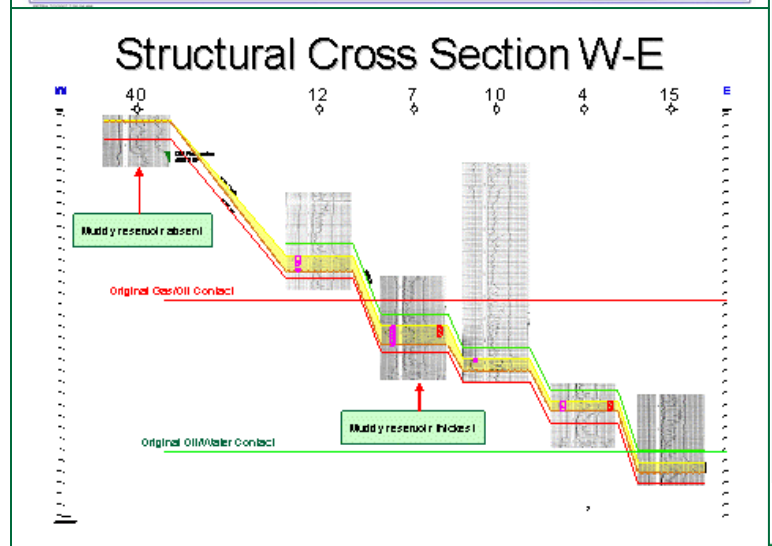
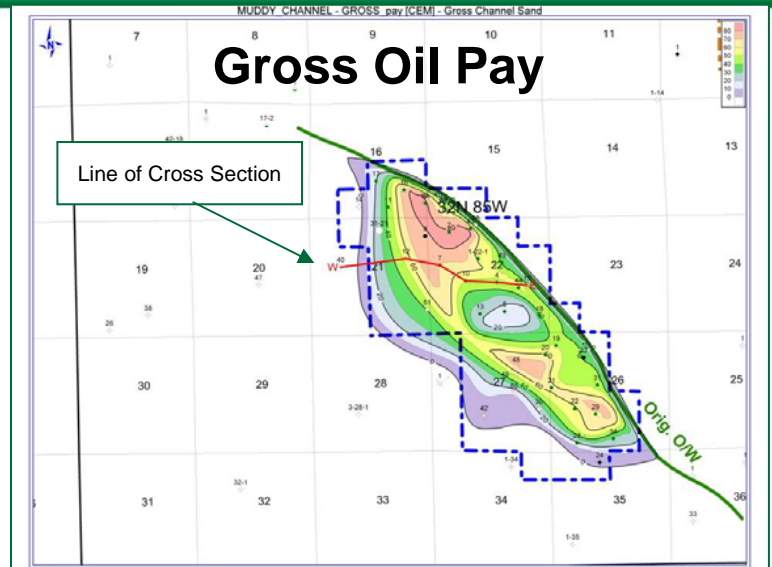
# Grieve Field – Gross Oil Pay and Cross -Section

## Gross Oil Pay

- Muddy Sandstone is of variable reservoir thickness deposited in NW trending meandering valley cut into underlying Skull Creek Shale
- Maximum reservoir thickness is greater than 80 feet in NW and SE of field.
- Reservoir is laterally continuous and is a highly permeable sandstone (50-800 millidarcy).

## Structural Cross Section

- Up-dip pinch-out controlled by wells
- Thickest reservoir section is in oil zone



# EOR Project Information

- Grieve Field has **produced >32 MMBbls** from the Muddy Sandstone reservoir via gas expansion and partial water drive
- Pressure maintenance was achieved by early gas injection then blow down
- **Original Oil In Place estimated to be 85 MMBbls**; recovery therefore to date is **38%**
- **Enhanced oil recovery (EOR)** has not been previously applied; field is considered ideal for either **CO<sub>2</sub> or chemical flood** EOR; additional recovery 25-18% of OOIP i.e. additional **21-15 MMBbls**
- Elk has not been able to secure CO<sub>2</sub> on favourable terms (volume, price, date)
- Elk appointed world leader in chemical flood design **Surtek in December 2008** to undertake multiple studies including laboratory and reservoir for **chemical flood**
- **Surtek's February 2009** report
  - Concluded that the field is a **definite candidate** for chemical flood
  - Indicated that chemical flood EOR is expected to produce up to a **further 15 MMBbls**
  - Proposed that new well is required for fresh reservoir core for laboratory studies and to confirm residual oil saturation
  - Proposed a phased development with Phase 1 achieving recovery of **2.8-3.7 MMBbls**
  - Concluded that Phase 1 development is economical at then current oil prices (US\$40/bbl).

# Grieve Field – Chemical Flood Phase 1

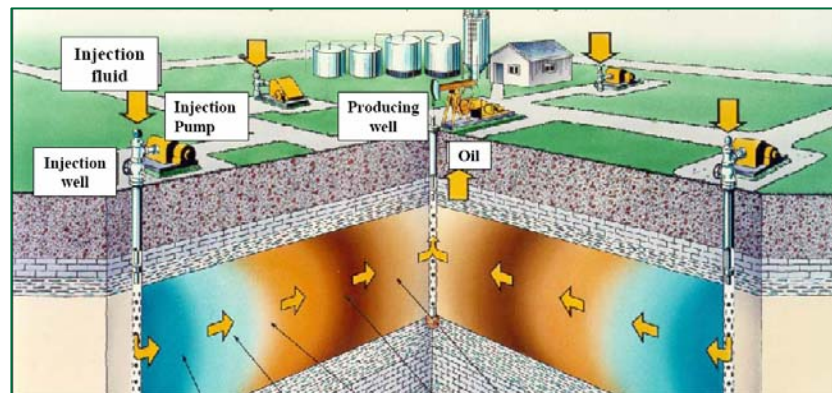
## Chemical Flood

- Injects chemical “soup” mixed with water into injection wells
- Chemicals reduce the inter-facial tension between the rock and the oil and move fluid towards production wells
- Fluids are separated at surface
- Chemicals are re-used

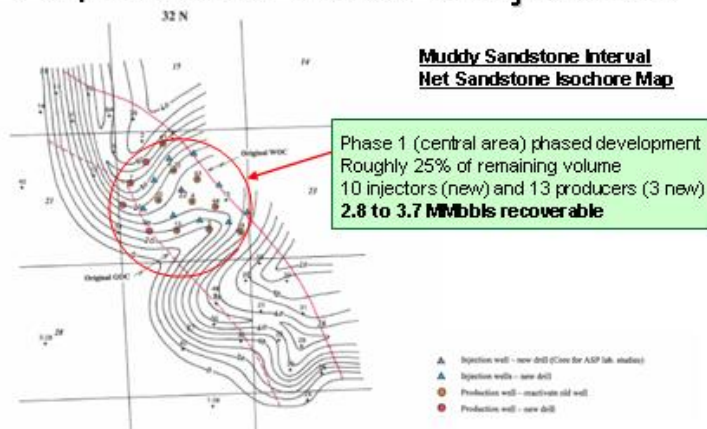
## Proposed Grieve ASP Phase 1

- Based on Surtek February 2009 report
- Central part of field only; roughly 25% of remaining oil volume
- Consists of 10 injectors (all new) and 13 producers (3 new and 10 existing)
- Expected to recover between 2.8 and 3.7 million barrels
- Requires fresh core material from new well (April 2009) and further laboratory testing

## Chemical Flood Schematic



## Proposed ASP Phase 1 Project Area



# ASP Floods

- **Alkali**
  - React with oils to produce natural surfactants
- **Surfactants**
  - Reduce interfacial tension between oil and water
  - Mobilises oil and reduces oil content remaining in reservoir rock
  - Mix with polymers to contact additional oil in reservoir
- **Polymers**
  - Increase the viscosity of the injected water
  - Improve sweep efficiency
  - Divert water from high K zones to aid additional oil recovery

# Grieve Field ASP Phase 1

## Grieve Field ASP Phase 1 Economics

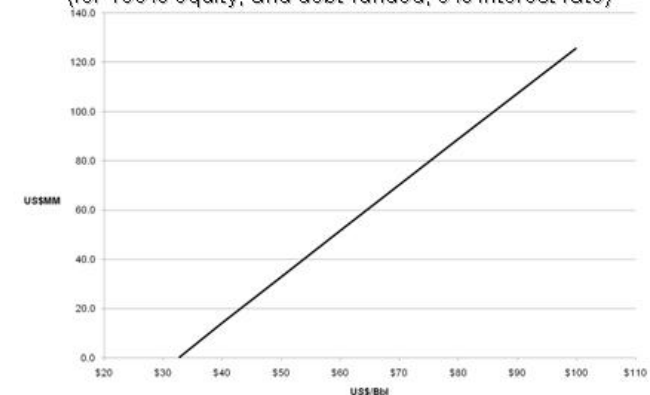
- CAPEX, OPEX and chemical cost assumptions as per supplementary slide
- Break-even oil price around US\$32/bbl
- At current oil prices (US\$50/bbl), **100% of Phase 1 of the project is worth around US\$30 million**
- Total full field development therefore worth around US\$100 million NPV<sub>10</sub>

## Grieve Field ASP Phase 1 NCF

- Assuming FID in end 3Q 2009, Phase 1 becomes cash flow positive in early 2011
- Cash flow can then be used for full field development
- Undiscounted cash flow reaches US\$55 million by 2017

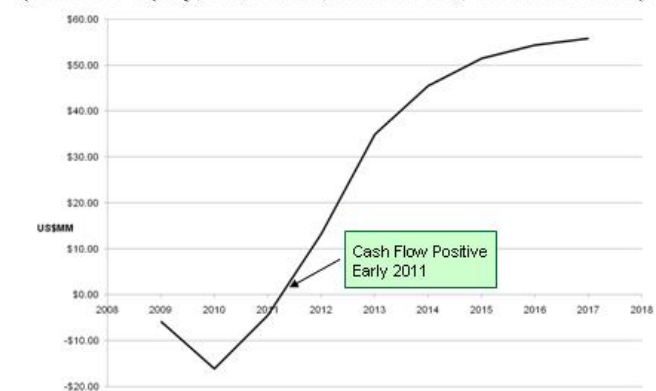
## Grieve Field ASP Phase 1 NPV<sub>10</sub> Economics

(for 100% equity, and debt-funded, 5% interest rate)



## Grieve Field ASP Phase 1 Cumulative NCF

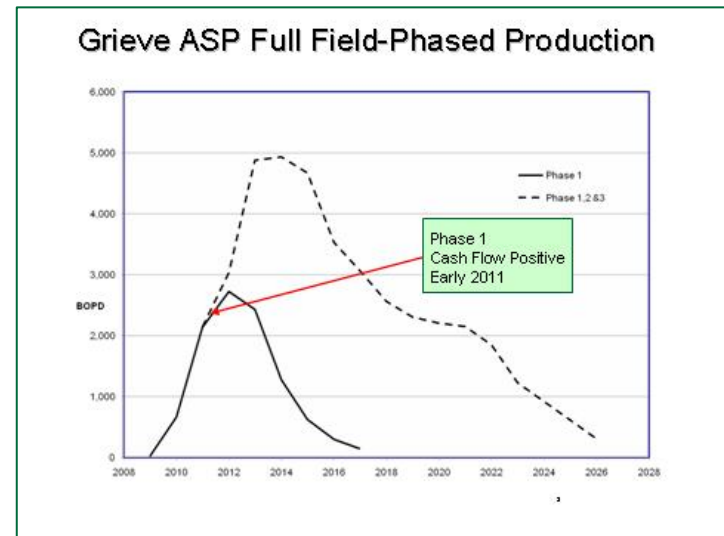
(for 100% equity, US\$50/Bbl, debt funded, 5% interest rate)



# Grieve Field ASP Phase 1

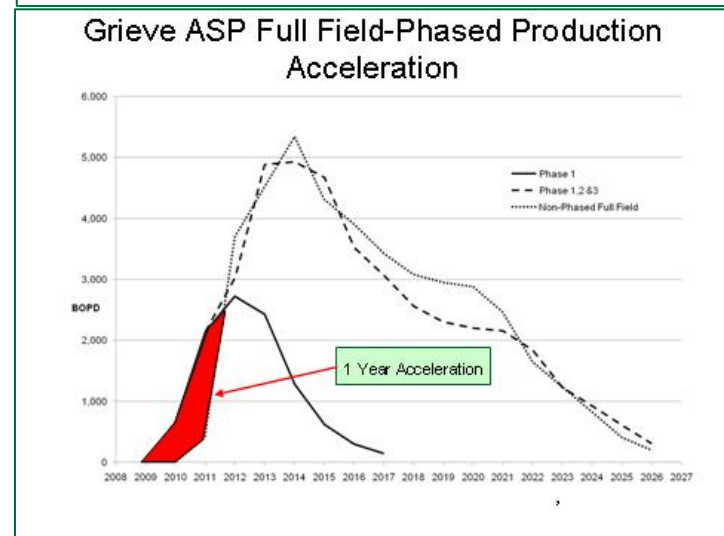
## Grieve ASP Full Field Phased Production

- Phase 1 achieves almost 2000 BOPD
- Phase 1 completed by 2017
- Phases 2 and 3 peak at almost 5000 BOPD in 2013
- Field production ceases in 2026



## Grieve ASP Full Field Phased Production-Acceleration

- Using phased approach allows both acceleration of 12 months and also use of cash flow for Phase 2 and 3 funding



# Thompson Creek

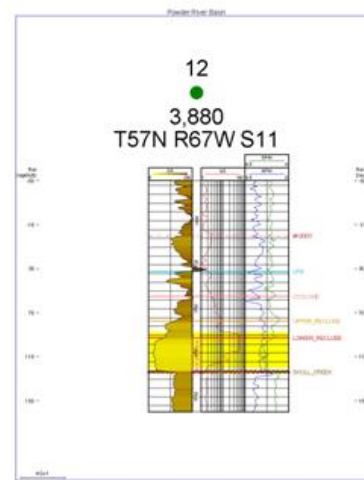
## A Powder River Basin Muddy Sandstone Chemical Flood

### Thomson Creek

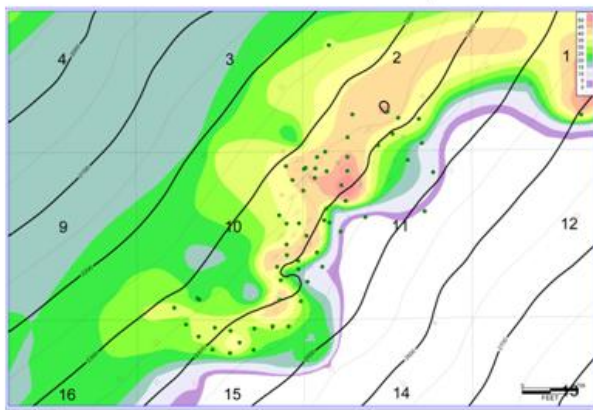
- Formation: Cretaceous Muddy Sandstone
- Trap; stratigraphic; Average Dip: 8° NW
- Average Porosity: 29%; permeability unknown
- Average Thickness: 21.5 feet
- Current Productive Area: 600 Acres.
- OOIP: 30 Million Stock Tank Barrels
- Cumulative Production 1.4 Million Barrels
- Surtek designed chemical flood
- Current production from 57 producers & 19 injectors

### Muddy Formation Type Log

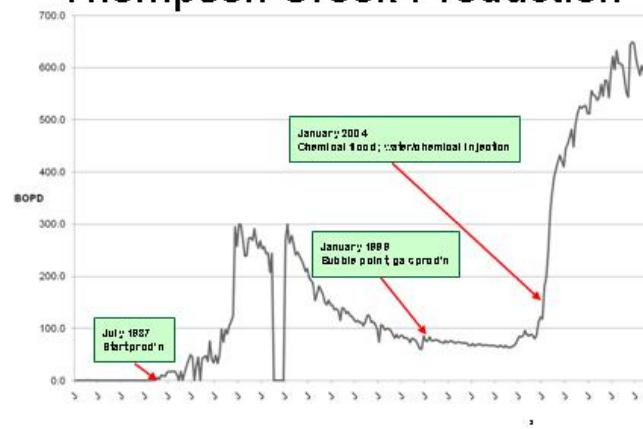
Average Porosity: 29%  
Average Thickness: 21.5'  
Productive Area: 680 acres  
OOIP: 30 Million Barrels



### Thompson Creek Muddy Formation Recluse Member Isopach



### Thompson Creek Production



# Summary – Capital Raising

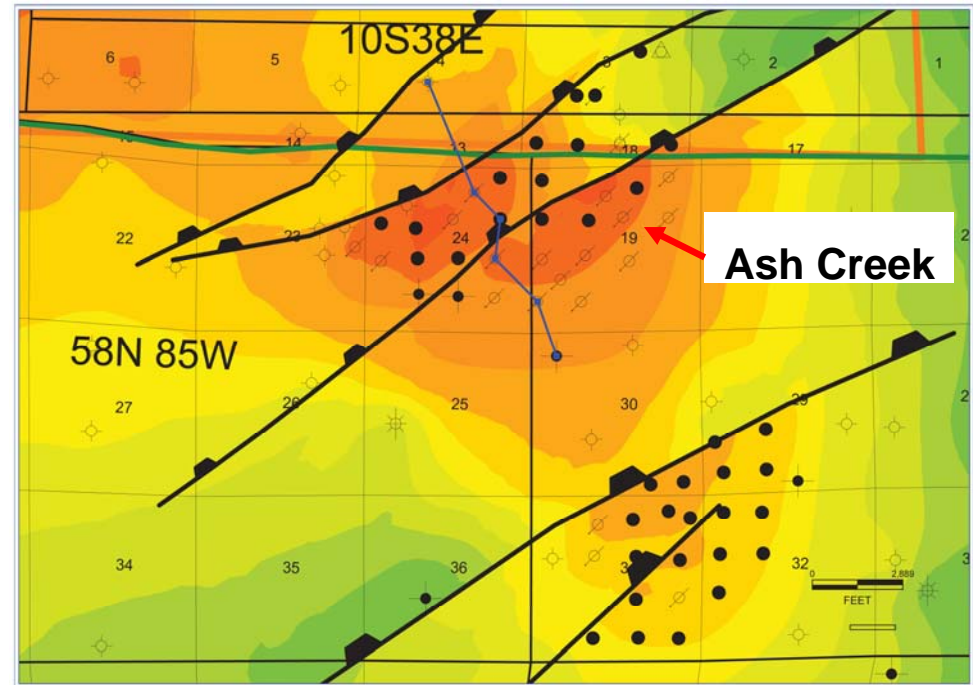
- ELK's current focus is the **Chemical Flood EOR development of the Grieve Oil Field** (ELK WI 100%)
- ELK went into Trading Halt 31<sup>st</sup> March 2006 announcing major capital raising.
- ELK will use the proceeds from the Offer for activities associated with a **Grieve Chemical Flood Feasibility Study** including
  - drilling a new injector well and obtaining fresh core material (NOTE; this well will also intersect the Grieve Shallow Sands undiscovered oil potential)
  - surveying of existing wells
  - completing final Surtek Inc independent expert studies including
    - Final laboratory testing (flood characteristics and residual oil saturation)
    - Reservoir simulation, facilities design and independent reserves verification
- It is expected that the proceeds from the Offer will provide **sufficient funding for all planned Grieve Chemical Flood activities up until Final Investment Decision (FID)** expected in September 2009

# Future Plans-Development Ash Creek

## Ash Creek (ELK 100% WI)

- All reservoirs <5000'
- Upper and Lower Shannon Produced > **6 mmbbls oil**
- OIP for Upper and Lower Shannon **24.5 mmbbls**
- Production history complex with mix of Upper/Lower Shannon separate and co-mingled wells
- Only Upper Shannon have been water-flooded
- It is likely that attic and by-passed oil exists in Lower Shannon; water flood also possible
- **Chemical flood possible for both Shannon reservoirs**

Ash Creek-Shannon Structure

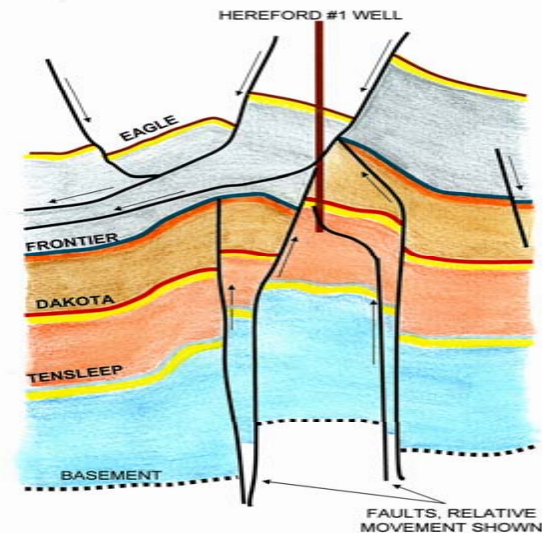
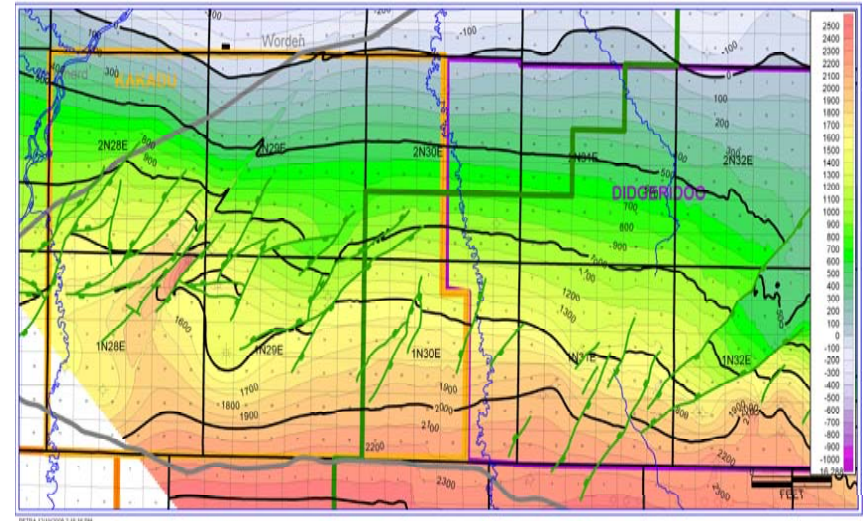


# Future Plans-Exploration (1)

## Kakadu and Didgeridoo

- Elk has nearly 39,000 net acres in this east-west structural trend in south central Montana overlying major left lateral shear fault
- Shallow structural trends clearly seen by surface faulting trends
- Seismic data shows multiple phases of faulting with numerous offset and untested structural highs throughout section
- Exploration plays are shallow biogenic gas (seen to east at Hardin and Toluca fields), as well as conventional gas (Lakota/Dakota-Turquoise seismic horizon) and deeper oil (Tensleep)
- 1950's Hereford#1 well (2500') tested 4-7 mmscfgpd on DST from Lakota
- **Retested in 1960's with flow of 46 mmscfgpd from Lakota and 35mmscfgpd from Dakota**
- Nitrogen content estimated 59%
- Wells expected 2Q 2009

## Greenhorn Structure



Kakadu seismic line interpretation

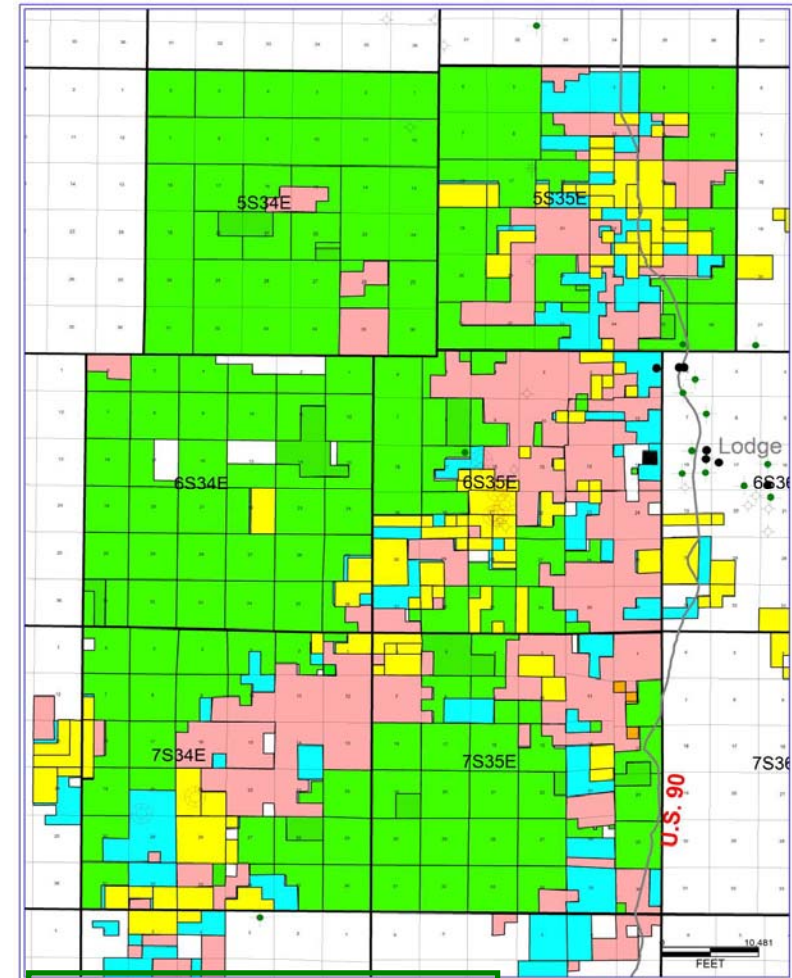


# Future Plans - Exploration (3)

Uluru; Elk acreage map

## Uluru

- Process to secure unique and immense acreage position takes long time; relationships are critical
- Obligations; 6 shallow wells in Year 1 (post July 2008); 6 shallow and 1 deep well in Year 2
- 4 locations already staked in northern 2/3 townships; 2 more to go in southern 1/3 townships
- Drilling expected May to June 2009 if Joint Venture Participants are secured
- Acreage payment for Crow lease is due late April 2009



Green; Elk Tribal; Yellow; Elk fee; Pink; Tribal allottee; Blue; other

# Corporate Strategy

- ✓ **To acquire large equity in historic producing and/or non-producing oil/gas fields in the Rocky Mountains region**
  - Mature basins and fields with significant remaining reserve potential
- ✓ **To enhance productivity through forensic integration of field engineering and geology, and the application of modern oil extraction techniques**
  - e.g. EOR of Grieve Muddy reservoir; re-completions at SDS; infill, attic oil assessments, EOR at Ash Creek
- ✓ **To form JVs for development and exploration; extract value and share risk**
  - e.g. EOR Grieve, Outback drilling
- ✓ **To apply in house knowledge and expertise through acquisition of high potential offset acreage with unevaluated exploration potential**
  - e.g. Seek farm outs to reduce risk and provide exploration funding

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- This presentation should not be considered as an invitation or recommendation to purchase securities in Elk.
- You should not act or refrain from acting in reliance on this presentation material. This overview of Elk does not purport to be all inclusive or to contain all information which its recipients may require in order to make an informed assessment of Elk's prospects.
- You should conduct your own investigation and perform your own analysis in order to satisfy yourself as to the accuracy and completeness of the information, statements and opinions contained in this presentation and making any investment decision.

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Thank You