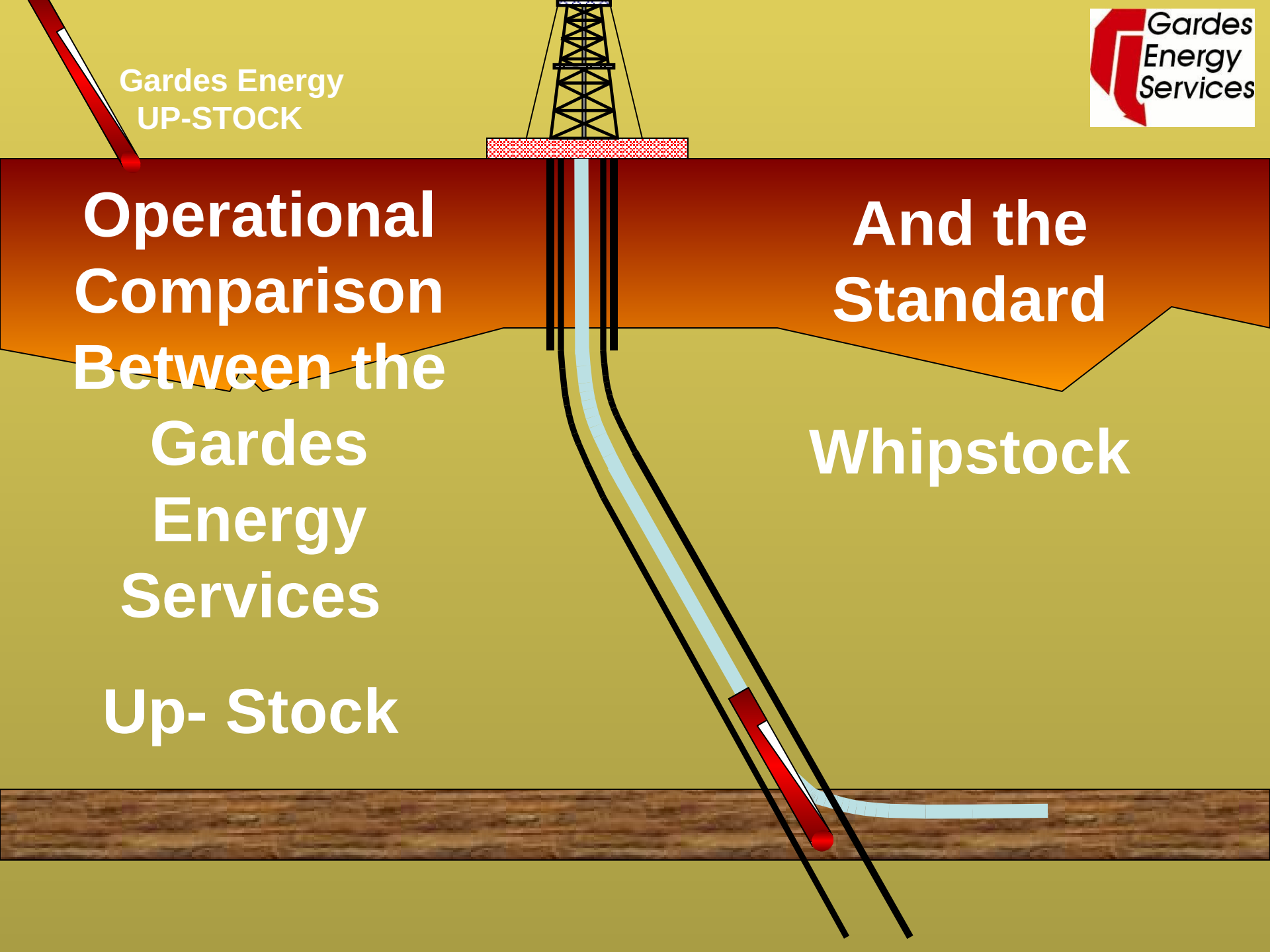


Gardes Energy
UP-STOCK

**Operational
Comparison
Between the
Gardes
Energy
Services
Up- Stock**

**And the
Standard**

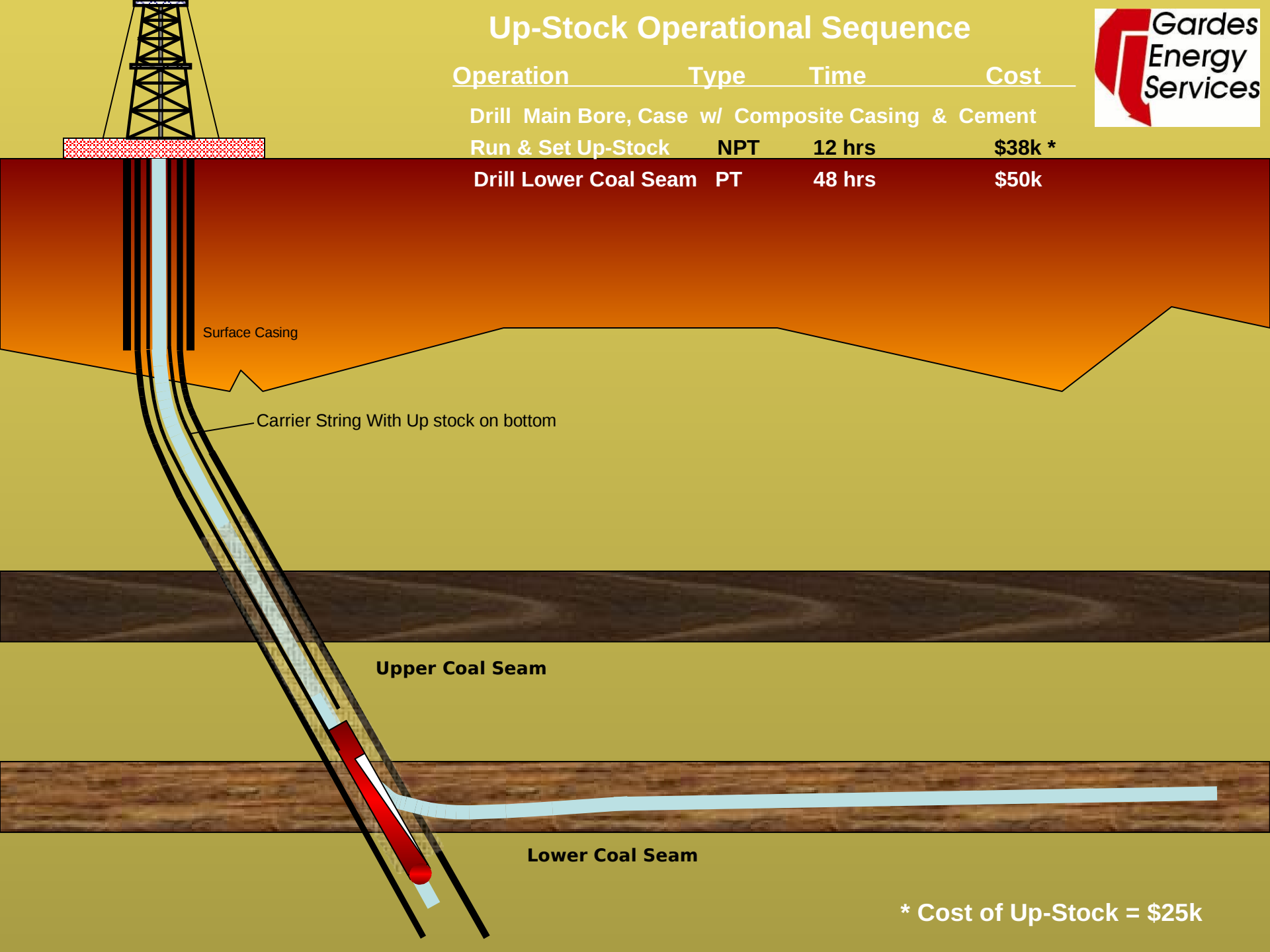
Whipstock



Up-Stock Operational Sequence



<u>Operation</u>	<u>Type</u>	<u>Time</u>	<u>Cost</u>
Drill Main Bore, Case w/ Composite Casing & Cement Run & Set Up-Stock	NPT	12 hrs	\$38k *
Drill Lower Coal Seam	PT	48 hrs	\$50k

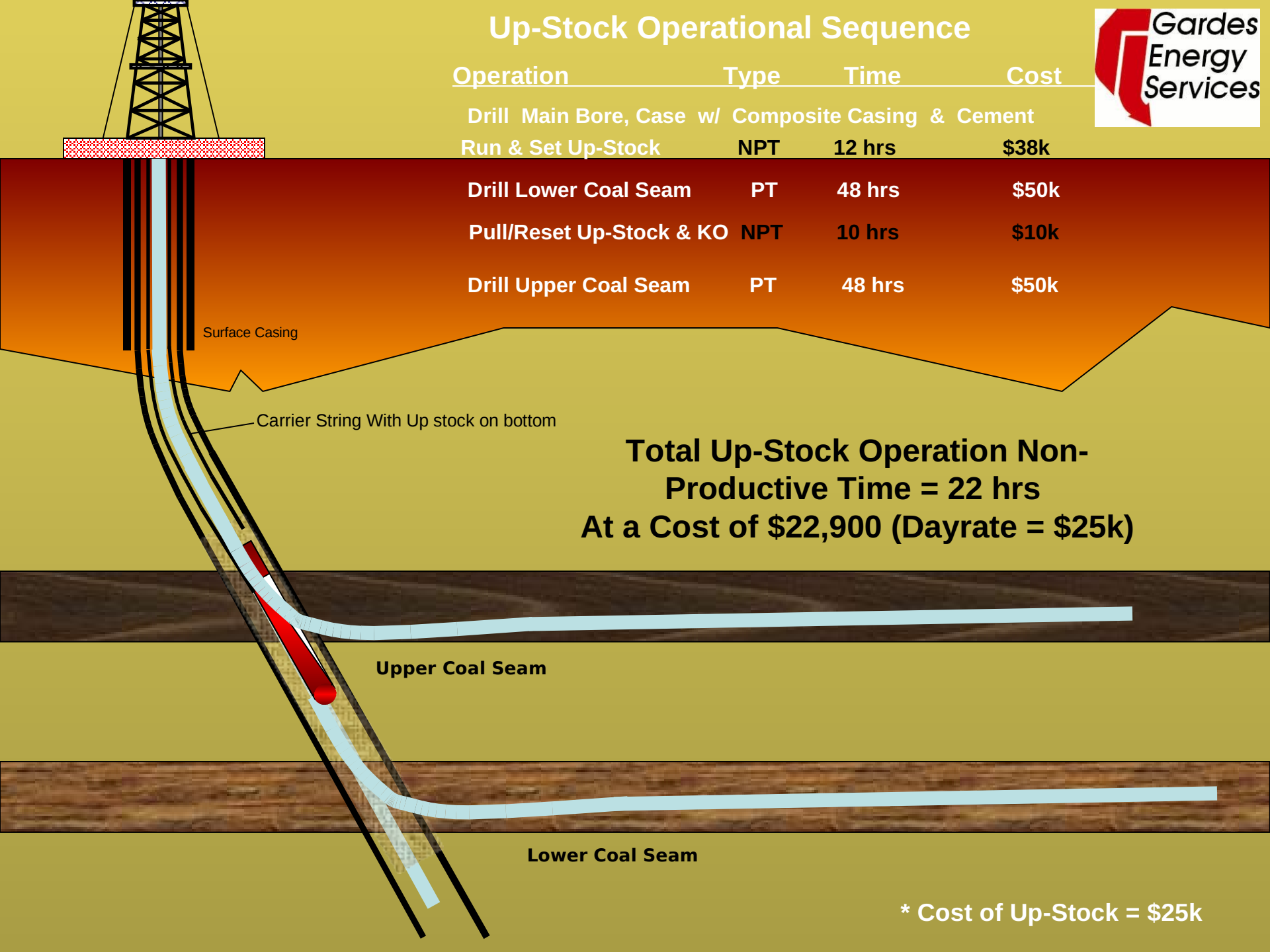


* Cost of Up-Stock = \$25k

Up-Stock Operational Sequence



Operation	Type	Time	Cost
Drill Main Bore, Case w/ Composite Casing & Cement Run & Set Up-Stock	NPT	12 hrs	\$38k
Drill Lower Coal Seam	PT	48 hrs	\$50k
Pull/Reset Up-Stock & KO	NPT	10 hrs	\$10k
Drill Upper Coal Seam	PT	48 hrs	\$50k



Surface Casing

Carrier String With Up stock on bottom

Upper Coal Seam

Lower Coal Seam

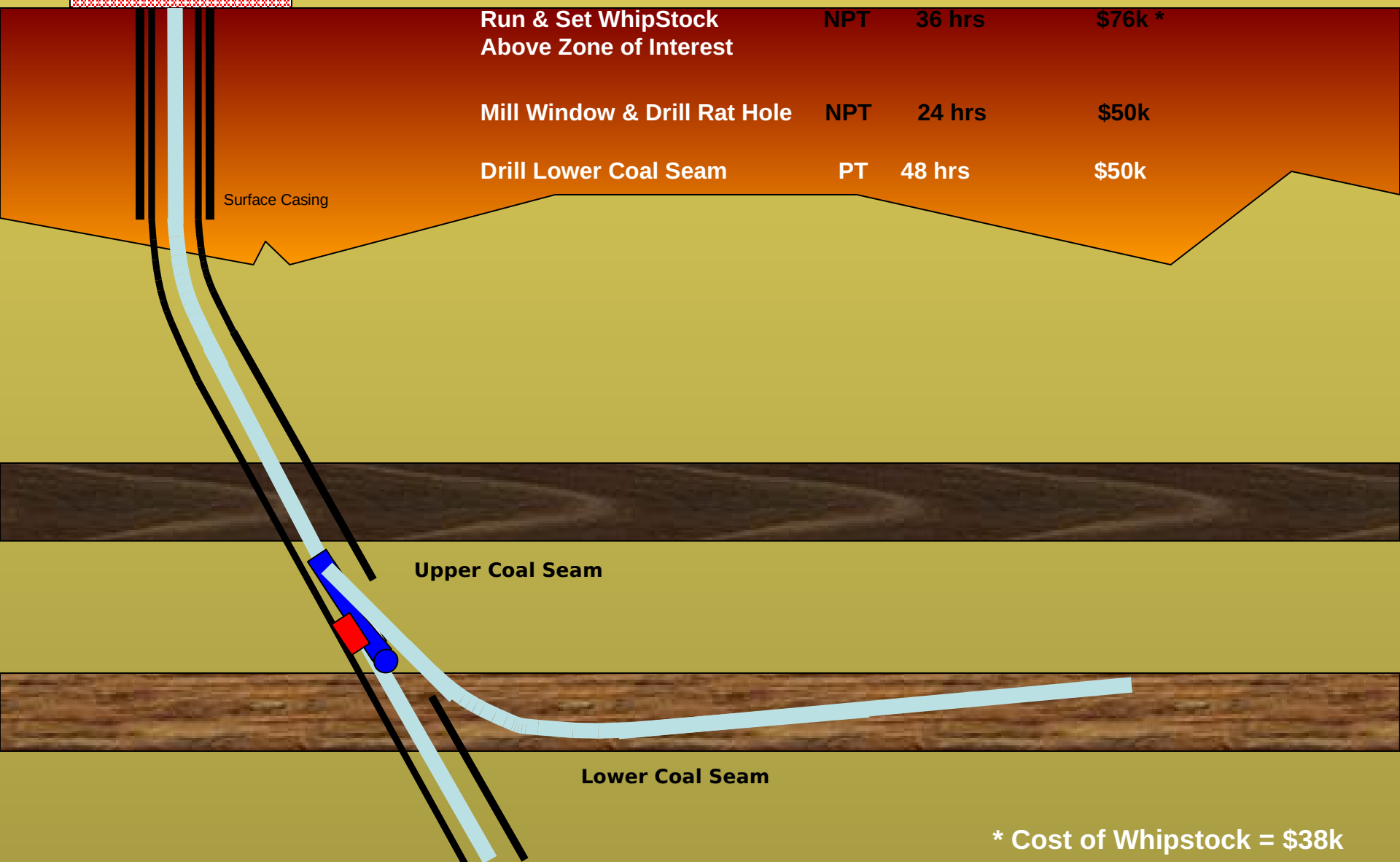
Total Up-Stock Operation Non-Productive Time = 22 hrs
At a Cost of \$22,900 (Dayrate = \$25k)

* Cost of Up-Stock = \$25k

Whipstock Operational Sequence



Operation	Type	Days	Cost
Drill Main Bore, Case and Cement			



Run & Set WhipStock Above Zone of Interest NPT 36 hrs \$76k *

Mill Window & Drill Rat Hole NPT 24 hrs \$50k

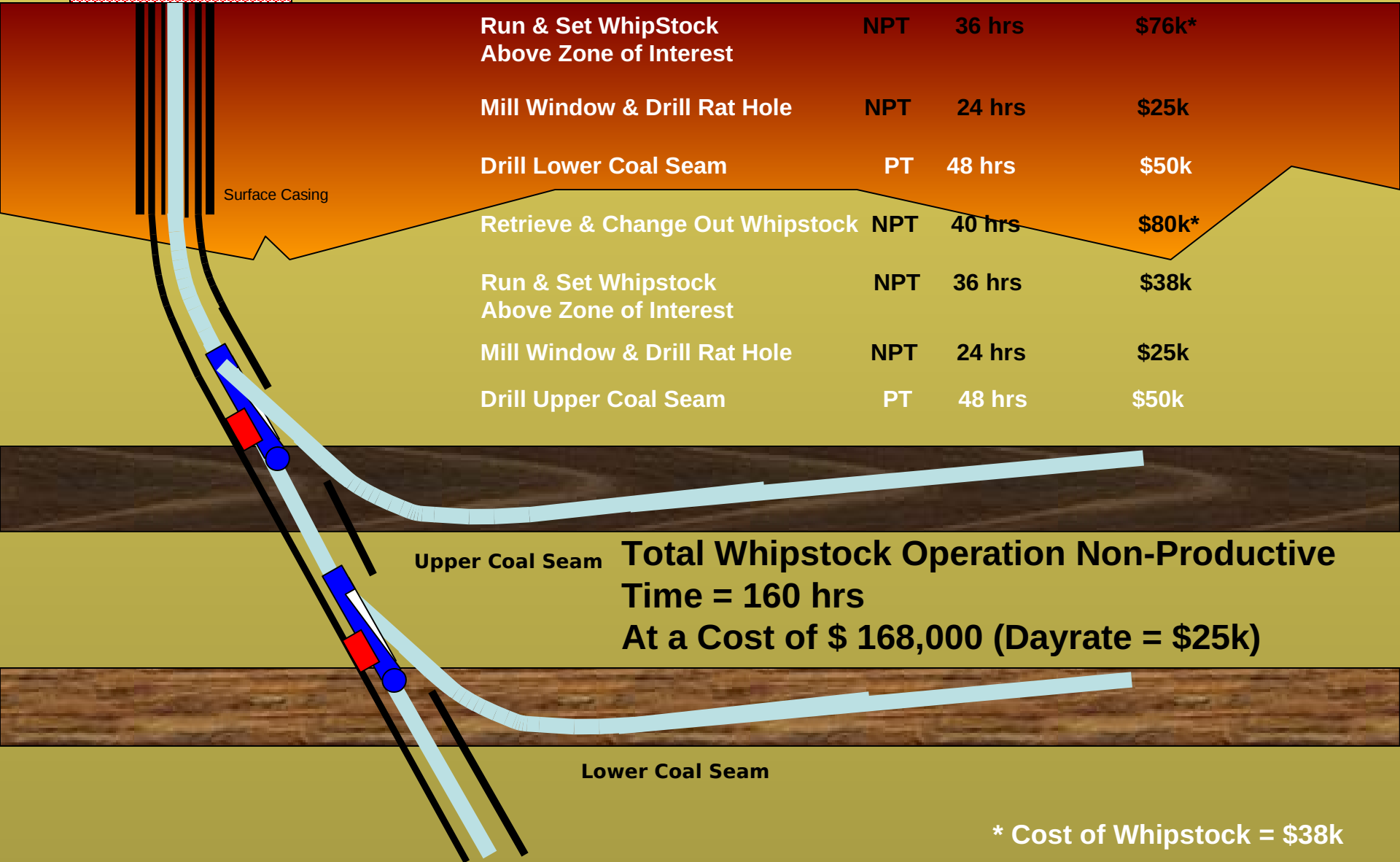
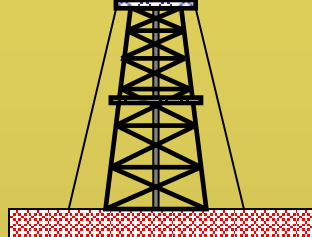
Drill Lower Coal Seam PT 48 hrs \$50k

* Cost of Whipstock = \$38k

Whipstock Operational Sequence



Operation	Type	Days	Cost
Drill Main Bore,	Case and Cement		

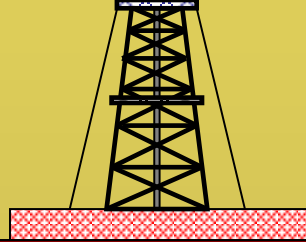


Run & Set WhipStock Above Zone of Interest	NPT	36 hrs	\$76k*
Mill Window & Drill Rat Hole	NPT	24 hrs	\$25k
Drill Lower Coal Seam	PT	48 hrs	\$50k
Retrieve & Change Out Whipstock	NPT	40 hrs	\$80k*
Run & Set Whipstock Above Zone of Interest	NPT	36 hrs	\$38k
Mill Window & Drill Rat Hole	NPT	24 hrs	\$25k
Drill Upper Coal Seam	PT	48 hrs	\$50k

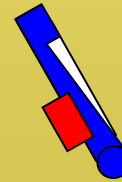
Total Whipstock Operation Non-Productive Time = 160 hrs
At a Cost of \$ 168,000 (Dayrate = \$25k)

* Cost of Whipstock = \$38k

**Gardes Energy
UP-STOCK**



**STANDARD
WHIPSTOCK**



Operation	Type	Time	Cost	Operation	Type	Time	Cost
Drill Main Bore, Case w/ Composite Casing & Cement Run & Set Up-Stock	NPT	12 hrs	\$38k	Drill Main Bore, Case and Cement Run & Set WhipStock Above Zone of Interest	NPT	36 hrs	\$76k*
Drill Lower Coal Seam	PT	48 hrs	\$50k	Mill Window & Drill Rat Hole	NPT	24 hrs	\$25k
Pull/Reset Up-Stock & KO	NPT	10 hrs	\$10k	Drill Lower Coal Seam	PT	48 hrs	\$50k
Drill Upper Coal Seam	PT	48 hrs	\$50k	Retrieve & Change Out Whipstock	NPT	40 hrs	\$80k*
				Run & Set Whipstock Above Zone of Interest	NPT	36 hrs	\$38k
				Mill Window & Drill Rat Hole	NPT	24 hrs	\$25k
				Drill Upper Coal Seam	PT	48 hrs	\$50k

Total Up-Stock Operation Non-Productive Time = 22 hrs

At a Cost of \$22,900 (Dayrate = \$25k)

Total Whipstock Operation Non-Productive Time = 160 hrs

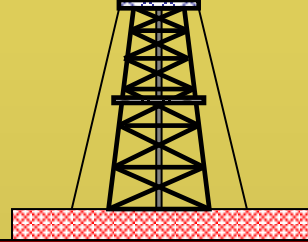
At a Cost of \$ 168,000 (Dayrate = \$25k)

NPT Savings By Using UP-Stock = 138 hours at a Cost of \$141,500

Equipment Cost Savings By Using Up-Stock = \$69,000



Gardes Energy
UP-STOCK



**TOTAL POTENTIAL SAVINGS BY USING
GARDES ENERGY'S UP-STOCK VERSUS
THE STANDARD WHIPSTOCK ON A
TWO SEAM PROJECT IS:**

\$210,500

Equipment Cost Savings By Using Up-Stock = \$69,000

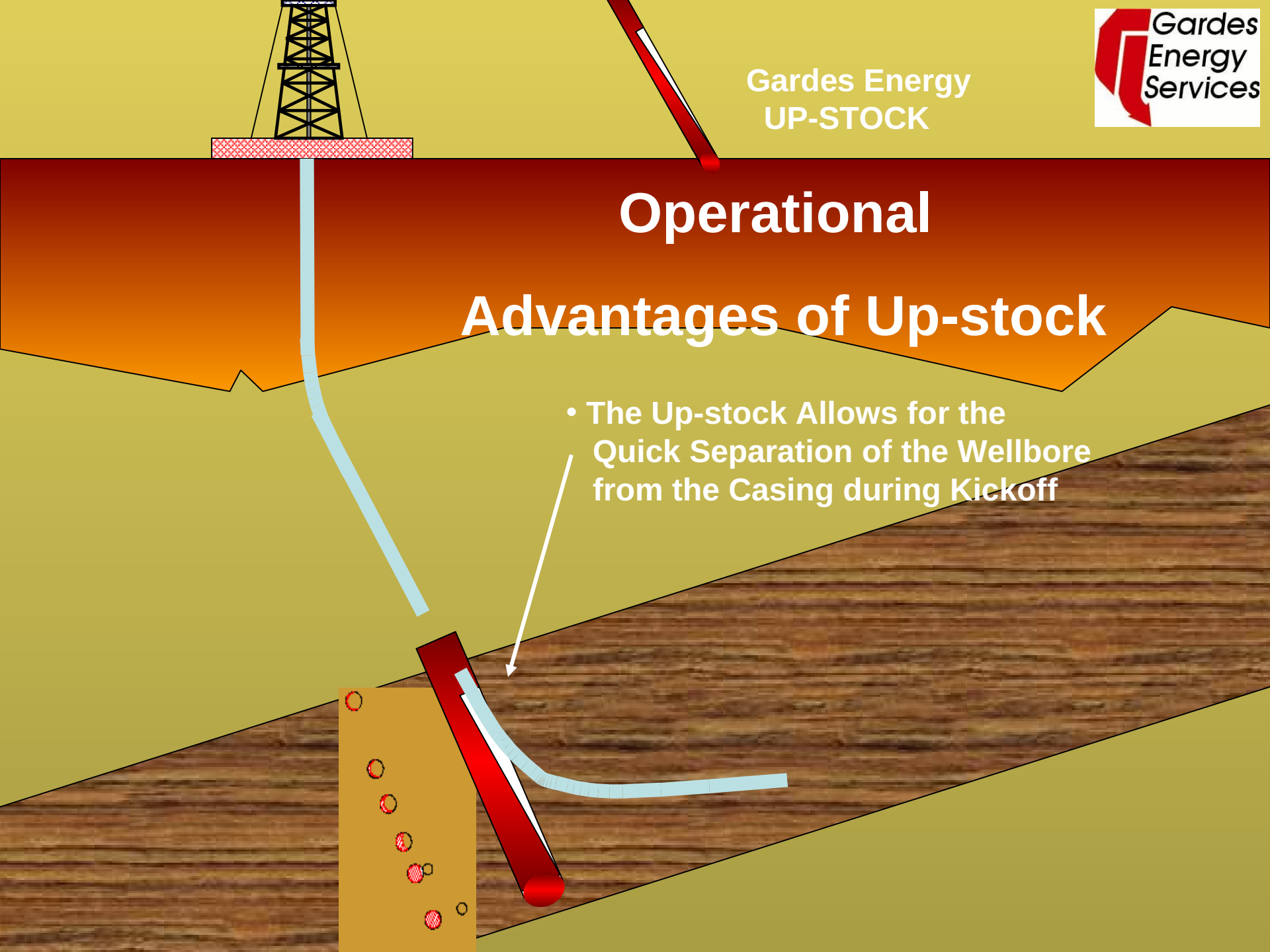
NPT Savings By Using UP-Stock = 138 hours at a Cost of \$141,500

Gardes Energy
UP-STOCK

Operational

Advantages of Up-stock

- The Up-stock Allows for the Quick Separation of the Wellbore from the Casing during Kickoff

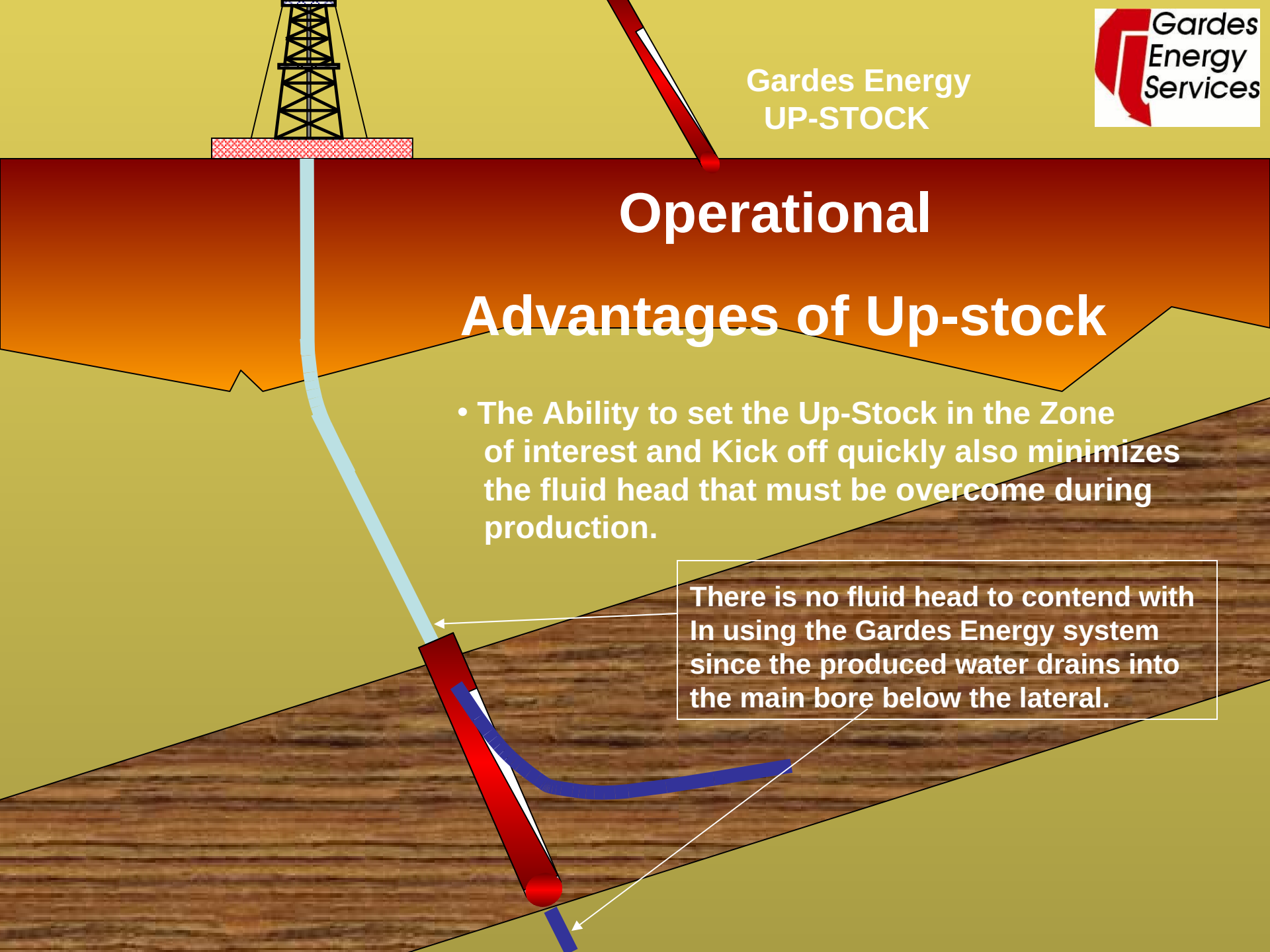


Operational

Advantages of Up-stock

- The Ability to set the Up-Stock in the Zone of interest and Kick off quickly also minimizes the fluid head that must be overcome during production.

There is no fluid head to contend with In using the Gardes Energy system since the produced water drains into the main bore below the lateral.

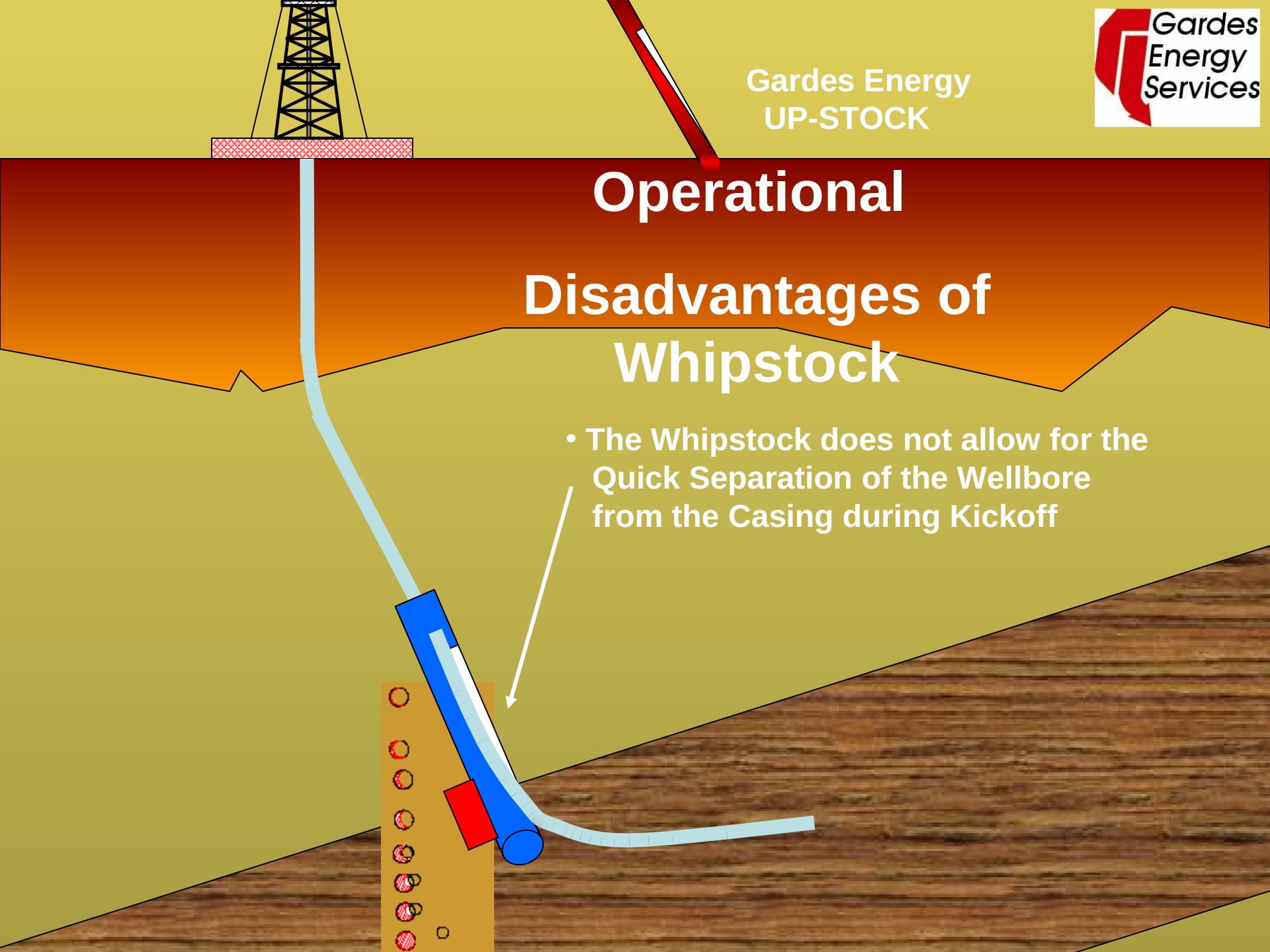


Gardes Energy
UP-STOCK

Operational

Disadvantages of Whipstock

- The Whipstock does not allow for the Quick Separation of the Wellbore from the Casing during Kickoff

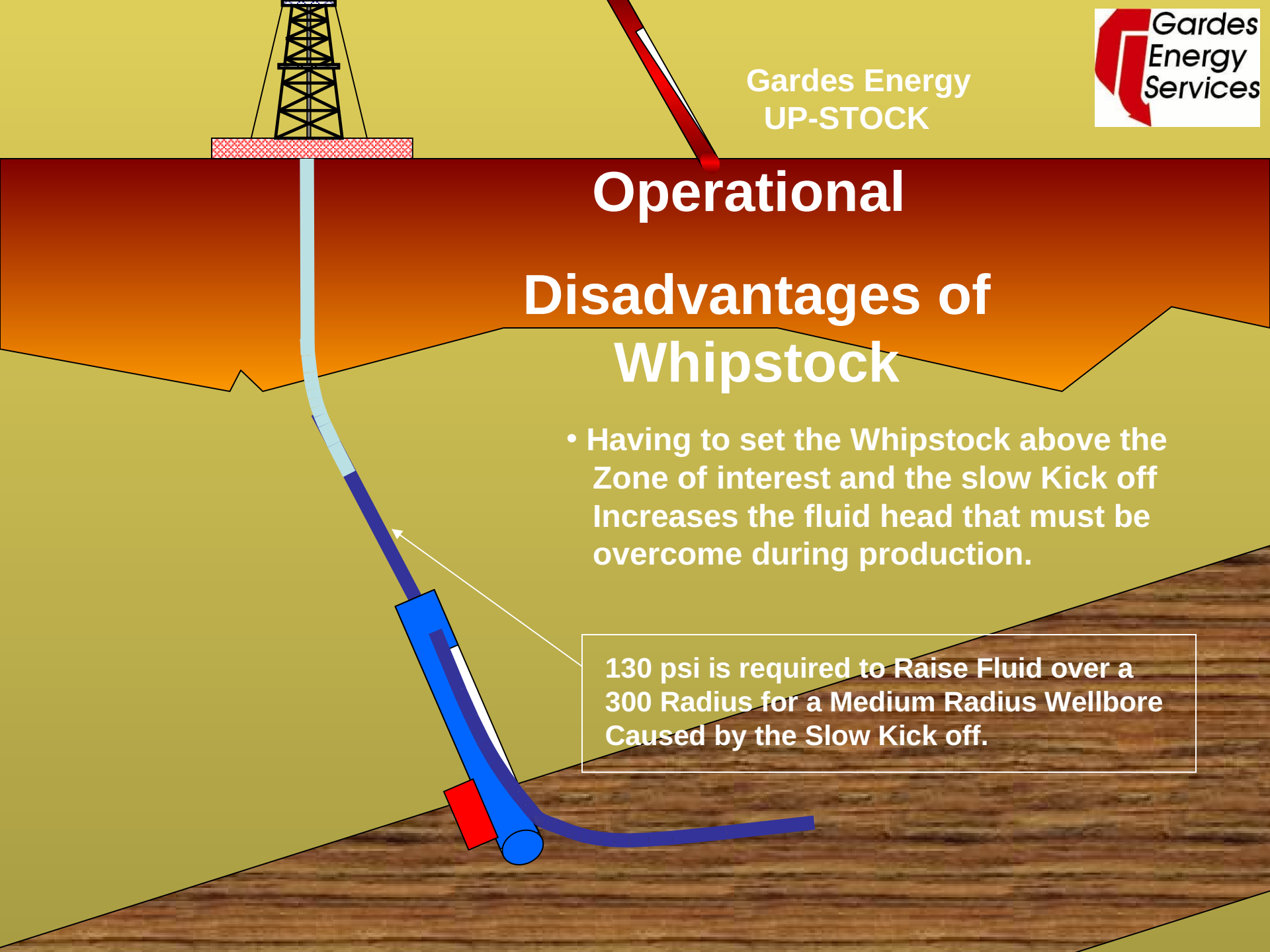


Operational

Disadvantages of Whipstock

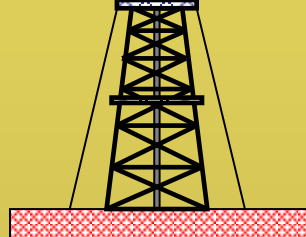
- Having to set the Whipstock above the Zone of interest and the slow Kick off Increases the fluid head that must be overcome during production.

130 psi is required to Raise Fluid over a 300 Radius for a Medium Radius Wellbore Caused by the Slow Kick off.





Gardes Energy
UP-STOCK



Thank You
For More Information Contact
Gardes Energy Services, Inc.
at:

(337) 234-6544

or visit our web site at:

www.Gardesenergy.com