

Lario Oil & Gas Company
Tebo 32-1M
2,254' FNL 1,300' FEL (SE/4 NE/4)
Sec. 32 T4S R64W
Arapahoe County, Colorado
Surface: Fee
Mineral Lease: Fee

DRILLING PROGRAM

Please contact Mr. Gary Vogt 303-595-8030, if there are any questions or concerns regarding this Drilling Program.

SURFACE ELEVATION – 5,859' (Un-graded ground elevation)

SURFACE FORMATION – White River – Fresh water possible

ESTIMATED FORMATION TOPS

Formation	TVD	Subsea	Geology
White River	Surface		Shale & Sandstone
Fox Hills (Top)	1,758'	4,060'	Shale & Sandstone
Fox Hills (Base)	1,846'	3,972'	Shale & Sandstone
Sussex	5,246'	572'	Shale & Sandstone
Niobrara	7,581'	-1,763'	Shale
Fort Hays	7,929'	-2,111'	Shale & Sandstone
Carlile Shale	7,955'	-2,137'	Shale
Greenhorn	8,025'	-2,207'	Shale
D Sandstone	8,324'	-2,506'	Shale & Sandstone
J Sandstone	8,357'	-2,539'	Shale & Sandstone
Dakota Sandstone	8,506'	-2,688'	Shale & Sandstone
TOTAL DEPTH	8,900'		

ESTIMATED DEPTHS OF ANTICIPATED WATER, OIL, GAS, OR MINERAL BEARING FORMATIONS

Estimated depths at which water, oil, gas or other mineral-bearing formations are expected to be encountered:

Formation	TVD	Subsea	Lithology
White River	Surface		Some water bearing
Fox Hills (Top)	1,758'	4,060'	Some water bearing
Fox Hills (Base)	1,846'	3,972'	Some water bearing
Sussex	5,246'	572'	Some water bearing

Niobrara	7,581'	-1,763'	Gas & oil bearing
Fort Hays	7,929'	-2,111'	Some water, gas & oil bearing
Carlile Shale	7,955'	-2,137'	Some water, gas & oil bearing
Greenhorn	8,025'	-2,207'	Some water, gas & oil bearing
D Sandstone	8,324'	-2,506'	Some water, gas & oil bearing
J Sandstone	8,357'	-2,539'	Some water, gas & oil bearing
Dakota Sandstone	8,506'	-2,688'	Some water, gas & oil bearing

All fresh water and prospectively valuable minerals encountered during drilling will be recorded by depth and protected.

CASING/CEMENT PROGRAM

Total Measured Depth (MD)	Hole Diameter	Casing Diameter	Casing Weight and Grade	Cement
0 – 60'	20"	16"	Conductor Casing	To surface (± 50 sxs)
0' – 2,000'	12-1/4" or 11"	8-5/8"	J-55 24# ST&C New	To surface (± 915 sxs)*
0' – 8,900'	7-7/8"	5-1/2"	N-80 17# LT&C	TD to $\pm 6,600'$ (± 900 sxs)**

* Cement volume calculated with 100% excess.

** Cement volume calculated with 30% excess.

CASING DIMENSIONS & STRENGTHS

Size	Grade	Weight (lbs/ft)	Thread	Collapse (psi)	Burst (psi)	Joint Strength
8-5/8"	J-55	24#	ST&C	1,370	2,950	244,000
5-1/2"	N-80	17#	LT&C	6,280	7,740	348,000

Yields	Surface	Lead:	Varicem yield = 2.19 ft ³ /sx (12.0 ppg)
		Topout:	12.46 gal/sk
	Production	Lead:	Varicem yield = 1.55 ft ³ /sx (13.5 ppg)
		Tail:	7.71 gal/sk
			Extendacem yield = 2.41 ft ³ /sx (11.3 ppg)
			Versacem yield = 1.55 ft ³ /sx (13 ppg)
			7.71 gal/sk

Cement additives – (Note: Some additives are Schlumberger or B.J. Services proprietary products. If another cement contractor is used, these blends and products may vary slightly).

PRESSURE CONTROL

- See attached blowout preventer diagram.

BOPs and choke manifold will be installed and pressure tested before drilling out of surface casing (subsequent pressure test will be performed whenever pressure seals are broken), and then will be checked daily as to mechanical operating condition. BOPs will be pressure tested at least once every 30 days. Ram type preventers and related pressure control equipment will be pressure tested to related working pressure of the stack assembly if a test plug is used. If a plug is not used, the stack assembly will be tested to the rated working pressure of the stack assembly or 70% of the minimum internal yield of the casing, whichever is less. Annular type preventers will be pressure tested to 50% of their working pressure. All casing strings will be pressure tested to 0.22 psi/ft or 1,500 psi, whichever is greater, not to exceed 70% of the internal yield.

A manual locking device (i.e. hand wheels) or automatic locking devices shall be installed on the BOP stack. Remote controls capable of both opening and closing all preventers shall be readily accessible to the driller.

The BOP equipment will be tested after any repairs to the equipment. Pipe rams, blind rams and annular preventer will be activated on each trip and weekly BOP drills will be conducted with each crew. All tests, maintenance, and BOP drills will be documented on rig "tower sheets".

A remote accumulator will be used.

MUD PROGRAM (MD)

0' - 2,000'	Water Based Mud with Gel/Lime as required
	M.W.: 8.4 – 9.0 ppg
	Visc.: 30 – 45
	Ph: 8
	WL: NC
2,000' - TD	Water Based Mud
	M.W.: 8.4 – 9.5 ppg
	Visc.: 36 - 50
	WL: >20cc

Sufficient mud materials to maintain mud properties, control lost circulation and to contain a "kick" will be available on location.

AUXILIARY EQUIPMENT

- Upper Kelly cock; lower Kelly cock will be installed while drilling and tested at the time of the BOP test.
- Inside BOP or stabbing valve with handle (available on rig floor).
- Safety valve(s) and subs to fit all string connections in use.
- Mud monitoring will be with a pit level indicator, and visual observation.

LOGGING, CORING TESTING PROGRAM

- Pilot Hole Logging (Vert): Triple Combo: Gamma Ray, Density Neutron, Induction
Horizontal Logging: Gamma Ray (MWD)
- Coring: Sidewall cores may be drilled into the Niobrara/J-Sand.
- Testing: None planned – Drill Stem tests may be run on shows of interest.

ABNORMAL CONDITIONS

- A. Pressures: No abnormal conditions are anticipated.
Anticipated BHP gradient: 0.49 psi/ft
- B. Temperatures: No abnormal conditions are anticipated.
- C. H₂S: None Anticipated.
- D. Estimated bottomhole pressure: 4,361 psi

ANTICIPATED START DATE

Upon Approval

COMPLETION

The location pad will be sufficient size to accommodate all completion equipment activities and equipment. A string of 2-3/8", 4.7#, N-80, EUE 8rnd will be run as production tubing, or a sting of 2-7/8" 6.5# J-55 or N-80 EUE 8rd will be run as a pumping string. A Sundry Notice (SN) will be submitted with a revised completion program if warranted.