

North Nenana Well Costs

prepared for

Doyon, Limited

DOYON, LIMITED



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Peter J. Stokes, PE

Petrotechnical Resources of Alaska
3601 C Street Suite 1424
Anchorage, AK 99503
(907) 272-1232



Due to the uncertainties of drilling rig and supplier market and the uncertainties from possible drilling problems, this is a best estimate based of well costs based on current data. As such, Petrotechnical Resources of Alaska can make no warranty as to actual future well drilling costs for the North Nenana wells.

Introduction

This report details cost estimates and timing for wells at Northern Nenana, near the Old Minto town site. Ultimate locations and planned depths will be based on prospects identified from the interpretation of the Doyon 2011-12 Seismic Program, but for a range of costs, an 8,000' MD and a 12,000' MD well were estimated for dry hole costs and completed and tested costs.

Cost Estimate Assumptions

Each well cost assumes a summer barging operation and included in each cost is the barging, mob and de-mob of the rig for a single well.

The rig, equipment and materials will be transported from Nenana on a chartered large barge/tug. This chartered barge will also be under contract during drilling operations and will also be used for de-mob back to Nenana.

The well drilling time estimates were based on drilling rates experienced from the Nunivak #1 well drilled in 2009.

Drilling rig cost estimates were assumed to be \$51,000 per day to reflect the current tight rig market conditions.

Equipment, materials, rentals and other costs were based on actual expenditures for the Nunivak #1 well escalated by 12.5% for inflation and the completion costs estimates from a current Kenai drilling program using a 25% increase in estimate to allow for a remote operation.

There was no contingency added for additional costs due to delays from drilling problems, fire delays or weather conditions.

Summary of Well Cost Estimates

A summary of the operational days and well costs are shown below:

Well	Days	Cost, MM\$
8,000' MD Dry Hole	65	22.8
8,000' MD Completed & Tested	69	25.6
12,000' MD Dry Hole	72	24.4
12,000' MD Completed & Tested	76	27.6

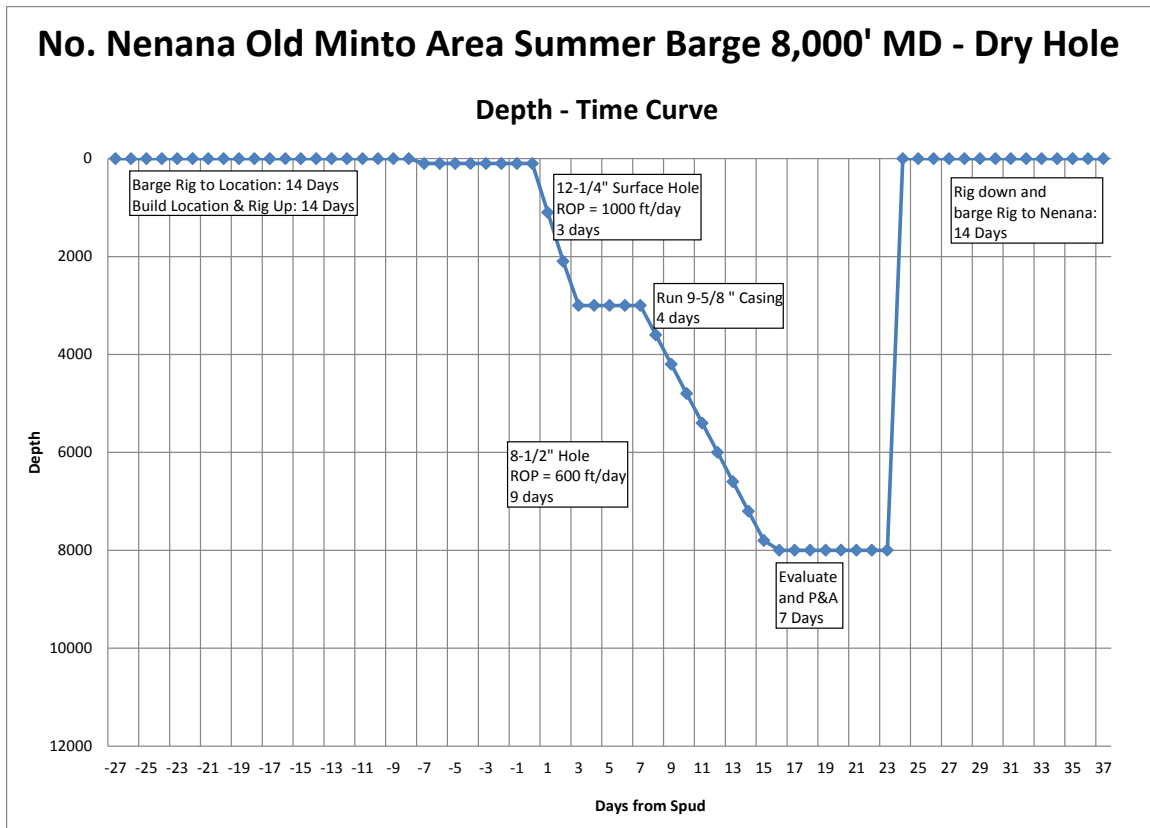
Following is the cost and detail of each well.

8,000' MD Well – Dry Hole

The single well dry hole cost for an 8,000' well from the Old Minto area is \$22.8 million. This estimated cost is for the well will be drilled to 8,000', logged and abandoned.

Below are the cost breakdown and the drilling time curve:

Well Expenditure Category	MM\$
Permits/Surveys/Insurance/Bonding	0.90
Drilling & Production Tangibles	0.47
Barging and Location Work	7.43
Rig Costs: Mob/Demob & Day Rates	8.93
Drilling Costs: Bits, Muds and Casing Crews	2.35
Cement / Stimulation	0.24
Directional	0.37
Logging	0.72
Specialty Services	0.16
Completion or Abandonment Costs	0.20
Project Management	1.02
Total Well	22.79

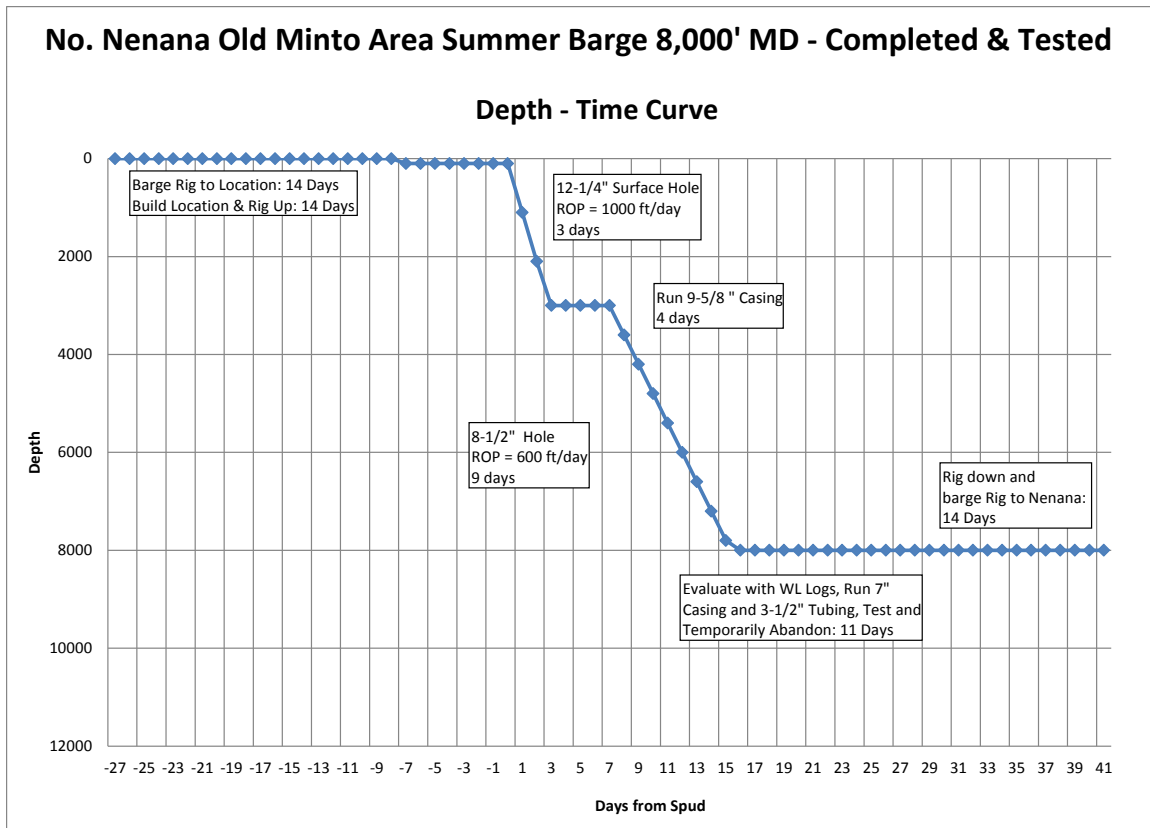


8,000' MD Well – Successful Tested Completion

The single well cost for tested discovery of an 8,000' well from the Old Minto area is \$25.6 million. This well will be drilled to 8,000', logged, 7" casing cemented, tested through 3-1/2" tubing and temporarily abandoned.

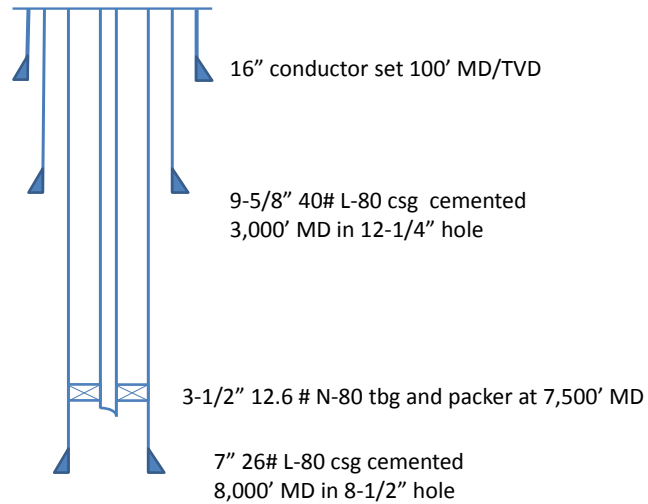
Below are the cost breakdown and the drilling time curve:

Well Expenditure Category	MM\$
Permits/Surveys/Insurance/Bonding	0.90
Drilling & Production Tangibles	1.28
Barging and Location Work	7.67
Rig Costs: Mob/Demob & Day Rates	9.22
Drilling Costs: Bits, Muds and Casing Crews	2.46
Cement / Stimulation	0.65
Directional	0.38
Logging	1.09
Specialty Services	0.16
Completion or Abandonment Costs	0.73
Project Management	1.02
Total Well	25.57



Below is the well schematic of the 8,000' completed well at North Nenana.

Well Schematic No. Nenana 8,000' Completed Well

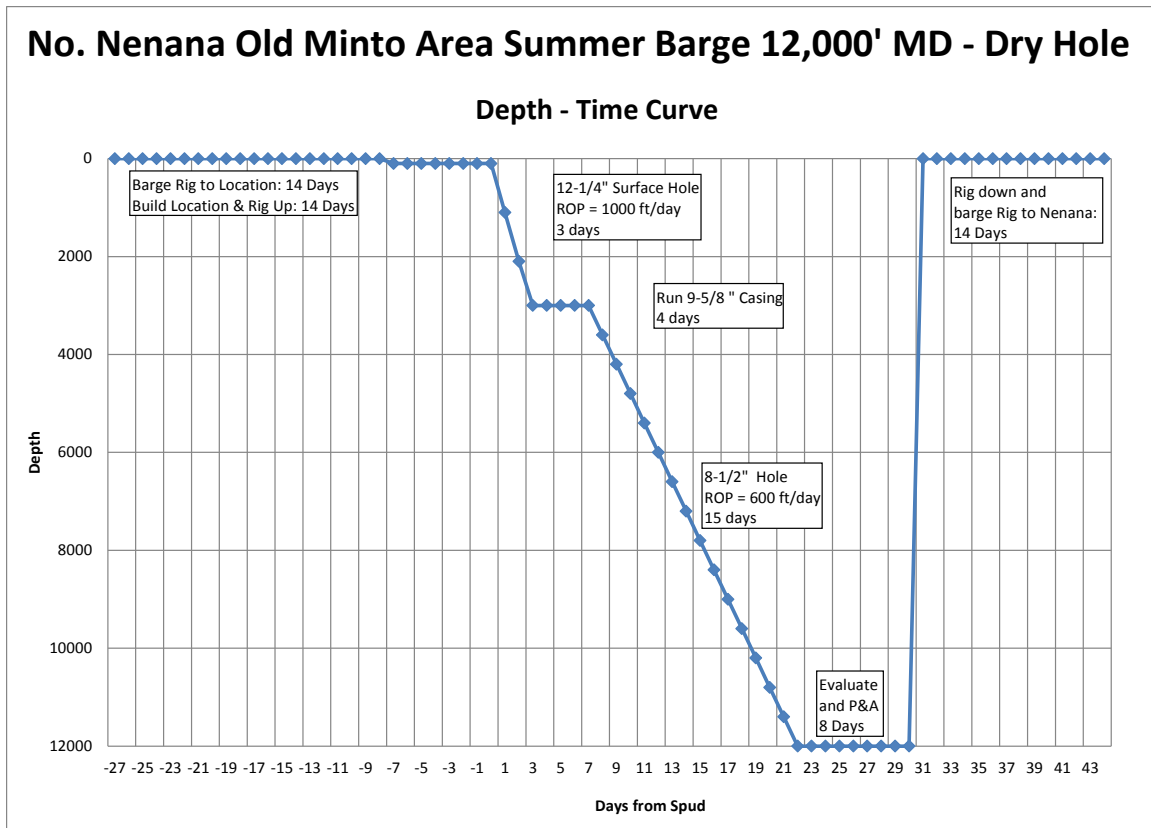


12,000' MD Well – Dry Hole

The single well dry hole cost for a 12,000' well from the Old Minto area is \$24.4 million. This well will be drilled to 12,000', logged and abandoned.

Below are the cost breakdown and the drilling time curve:

Well Expenditure Category	MM\$
Permits/Surveys/Insurance/Bonding	0.90
Drilling & Production Tangibles	0.47
Barging and Location Work	8.03
Rig Costs: Mob/Demob & Day Rates	9.44
Drilling Costs: Bits, Muds and Casing Crews	2.46
Cement / Stimulation	0.24
Directional	0.45
Logging	0.93
Specialty Services	0.18
Completion or Abandonment Costs	0.20
Project Management	1.14
Total Well	24.44

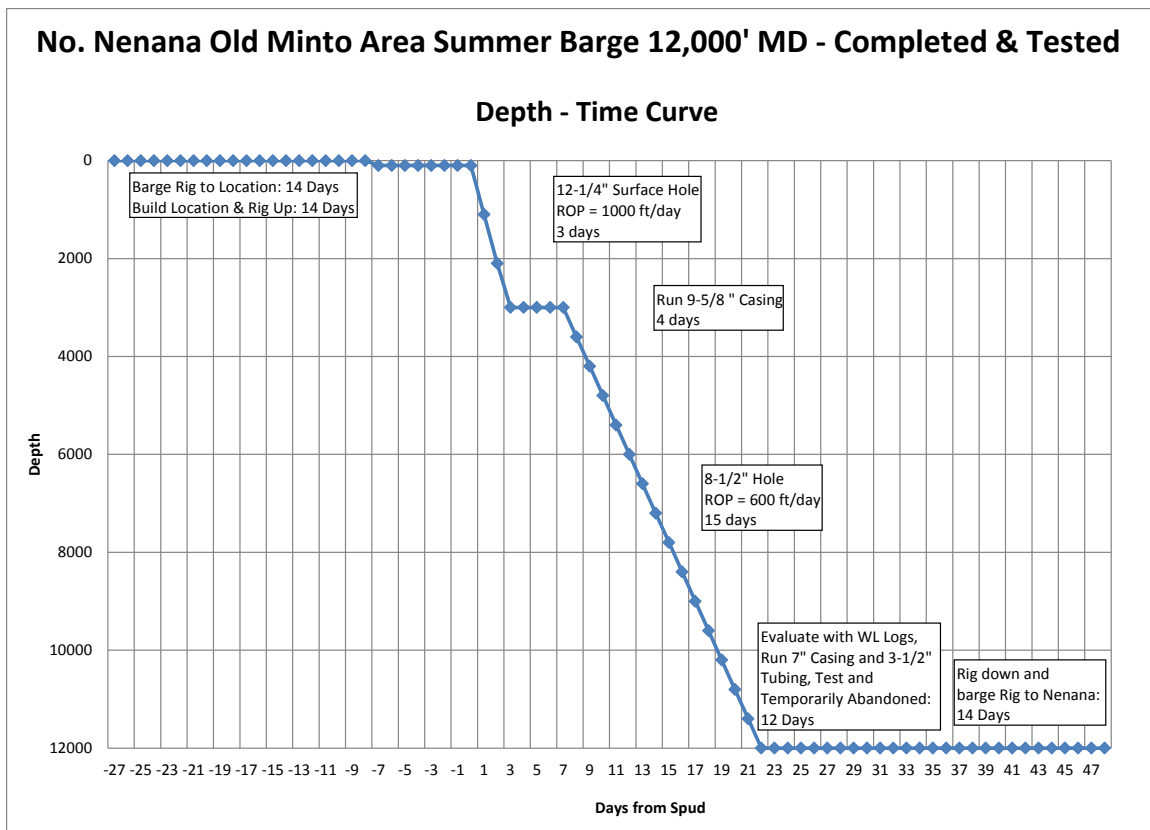


12,000' MD Well – Successful Tested Completion

The single well cost for tested discovery of a 12,000' well from the Old Minto area is \$27.6 million. This well will be drilled to 12,000', logged, 7" casing cemented, tested thorough 3-1/2" tubing and temporarily abandoned.

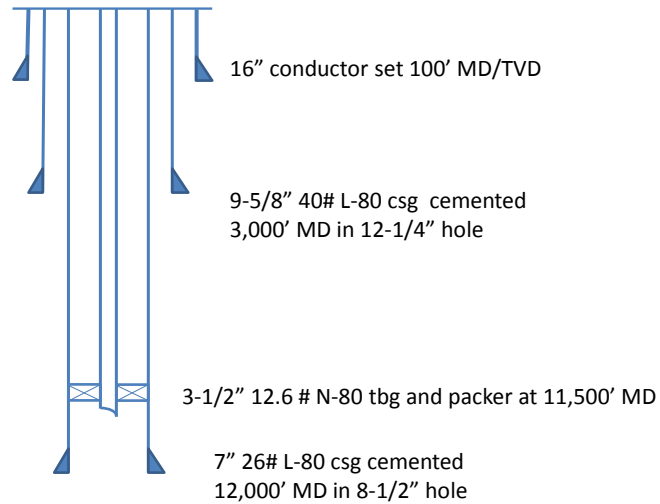
Below are the cost breakdown and the drilling time curve:

Well Expenditure Category	MM\$
Permits/Surveys/Insurance/Bonding	0.90
Drilling & Production Tangibles	1.60
Barging and Location Work	8.27
Rig Costs: Mob/Demob & Day Rates	9.73
Drilling Costs: Bits, Muds and Casing Crews	2.62
Cement / Stimulation	0.65
Directional	0.46
Logging	1.30
Specialty Services	0.18
Completion or Abandonment Costs	0.73
Project Management	1.14
Total Well	27.58



Below is the well schematic of the 12,000' completed well at North Nenana.

Well Schematic No. Nenana 12,000' Completed Well



Map of Northern Nenana Well and Barging Route

