Well 4A Motor Replacement Options

Line Items	Unit Cost	Option 1A: New low-cost motor, during low demand, No Temp Pump needed	Option 1B: New low-cost motor, during high demand, Temp Pump needed	Option 2: Rebuild existing high-quality motor during low demand, No Temp Pump needed	Option 3A: New high-quality motor, during low demand, No Temp Pump needed	Option 3B: New high-quality motor, during high demand, Temp Pump needed
1) Pull and Install Pump (out and back in)	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00
2) Pump Rental, including install/remove (*assumes 2 months)	12,000.00		12,000.00			12,000.00
3) Rebuild Type H motor and mech seal conv	80,000.00			80,000.00		
Core credit	-7,500.00			-7,500.00		
4) New Hitachi 150 Hp motor (includes freight and pump conversion)	40,000.00	40,000.00	40,000.00			
5) New 150 Hp Type M BJ motor	80,000.00				80,000.00	80,000.00
6) Existing Type H Motor - ship and mercury fee	15,000.00	15,000.00	15,000.00	15,000.00	15,000.00	15,000.00
7) Submersible Cable @ $65.00/Ft	14,300.00	14,300.00	14,300.00	14,300.00	14,300.00	14,300.00
Cost Totals						
Applicable taxes on materials (8% assumed)		5,544.00	5,544.00	8,744.00	8,744.00	8,744.00
Subtotal Pump Contractor Estimate		$84,844.00	$96,844.00	$120,544.00	$128,044.00	$140,044.00
10% Contingency		$8,484.40	$9,684.40	$12,054.40	$12,804.40	$14,004.40
Engineering and Field Testing Services		$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00
Total Budgetary Estimate		**$98,328.40**	**$111,528.40**	**$137,598.40**	**$145,848.40**	**$159,048.40**
Performance and Technical						
Lead Time (from date of PO)		1 month		2.5 months	5 months	
Motor Warranty (from date of startup)		1 year		1 year	1 year	
Motor Life Expectancy		10 years (per manufacturer)		20 years (per manufacturer)	20 years **(as evidenced from old Well 4A motor)**	
Rebuild Cost		$15K - $30K (30-75% motor cost)		$25K - $60K (30-75% motor cost)	$25K - $60K (30-75% motor cost)	

9/4/19

Submersible Motor Cost and Life Expectancy

Motor	Flowserve Byron-Jackson	Hitachi
Life Expectancy	20 years	10 years
Warranty	12 months from date of startup, or 18 months from date of purchase, whichever occurs first.	12 months from date of startup, or 18 months from date of purchase, whichever occurs first.
Lead Time	18 weeks	1-2 weeks (off the shelf)
Capital Cost with Installation	$90,000	$50,000
Rebuild Cost with Installation	$50,000	$30,000
Motor Cost Projections		
Within 10 years	$90,000	$80,000
Within 20 years	$140,000	$110,000
Within 30 years	$140,000	$140,000

Notes:

1) Costs are only for the motor and do not include taxes or other components in the pump assembly that may require replacement.
2) Rebuild costs range from 30 to 75% of the cost for a new motor. The rebuild cost of 50% was assumed for this analysis.
3) Life expectancy is not a warranty. It is based on manufacturer and pump supplier information from empirical data.
4) The motor cost projections are in present costs and include the rebuild costs within each time period based on life expectancy. At year 30, the capital costs are equal and both have 10 years life remaining.