Table 1: Ball Mill Design Basis

Design Criteria

		Scenario 1	Scenario 2	Scenario 3	Scenario 4
Solids	t/h*	5.5	* 5.5	7.3	7.3
Liquid	t/h*	2.7	3.6	3.6	4.9
Total	t/h*	8.1	9.1	10.9	12.1
% Solids	%	67.00	60.00	67.00	60.00
Specific Gravity		1.64	1.54	1.64	1.54
Flow Rate	m^3/hr	4.5	5.4	6.0	7.2
Flow Rate	Usgpm	20	24	27	32

* *Note:* tonnage rate in short tons/hr

Mill Sizing

		Scenario 1	Scenario 2	Scenario 3	Scenario 4
Net Specific Power	kWh/t	2.5*	2.5*	2.5*	2.5*
Requirement	t/h	6.0	6.0	8.0	8.0
Tonnage		1.12	1.12	1.12	1.12
EF3=1.25/1.12	kWh/t	2.23	2.23	2.23	2.23
Corrected Net Specific Power	kW	13.4	13.4	17.9	17.9
Net Power Requirement	kW	9.5	9.5	9.5	9.5
No Load**	%	92	92	92	92
Drive Efficiency	kW	25	25	30	30
Gross Power					
Mill Diameter (inside shell)	m	1.50			
Mill Diameter (inside liner)	m	1.34			
Mill Length (inside shell)	m	3.00			
Mill Length (inside liner)	m	2.84			
Ball Size	in	5/8"			
Ball Charge (% of mill Vol.)	%	20% to 45%			
Mill Critical Speed	RPM	34.5			
Mill Design Speed	RPM	adjustable 20.7 - 27.6			
Mill Des. Speed as % of critical	%	adjustable 60% - 80%			
Discharge Mechanism		Grate			
Installed Power	kW	40.0			

* *Notes:* Mill shall be designed to provide 2.5 kWh/t for grinding only; i.e., in addition to the power required to run the mill empty (no-load).

** Assumed value for no-load power is 9.5 kW; the supplier shall specify power requirements if no-load power is different from 9.5 kW.