GENERAL NOTES ON PUMP SELECTION

In order to achieve a desired flow and pressure, the pump selected must provide a TDH at the given flow. The flow must exceed the desired discharge pressure plus friction losses resulting from the length of the pipe line, fittings and valves in the line and any other impediments to flow in the line.

The inlet and outlet port sizes of the pump selected do not necessarily indicate the actual size of either the suction or discharge piping. When specific gravities higher than 1.0 are encountered, oversized motors are required.

In any pumping system, valves should be selected to maintain the pump prime and control flow and pressure at the desired levels. In order to prevent backsiphoning, loss of solution or loss of prime, check valves should be utilized. Consideration must be given to ensure that the pump will develop adequate pressure to open the check valve at the time of start-up. A globe valve, ball valve or plug valve should be installed on the discharge line directly after the pump discharge nozzle. Gate valves are not recommended to throttle or regulate flow.

TYPICAL PUMP APPLICATIONS

Many different types of pumps with a wide range of flow rates and discharge pressures are available to meet the requirements of various applications. The drawing below illustrates a number of possible applications and the different types of pumps which can be used to meet these requirements.

Reference E in the above illustration indicates that the horizontal pump would have to be manually primed at least the first time used, and a foot valve (check valve) should be used on the suction side of the pump to maintain the primed condition when the pump is not operating.

The illustration also indicates the employment of three different length vertical pumps, the shortest of which will generally be considered to be the most dependable. The slightly longer pump with a suction extension could continue to lift the liquid, provided the level is slightly above the suction strainer (flooded suction). If the pump was shut off and the liquid level falls below the pump and suction strainer, it would lose its suction or prime and the pump would then require priming or a flooded suction. Therefore, use of the very longest pump may be required under certain conditions, particularly when it would be necessary to pump at any given time from any level within the reservoir.

If the installation requires constant pumping or pumping upon demand, it is recommended that standby pumps are included in the installation. If the desired flow rate reaches its peak only occasionally, then it might be possible to use a smaller pump with the second being energized only when required. In such an instance, a third pump might be suggested to make absolutely certain that two of the three pumps are available at any one time.
PUMP APPLICATION FORM

To help us recommend the proper pump for your use, please furnish as many details as possible. This information will be considered strictly confidential.

FROM:
Company ____________________________________________ Date __________________
Individual __________________________________________ Title __________________
Street ____________________________________________________________________________
City __________________________________________ State __________ Zip Code ____________

CAPACITY AND SPEED
Capacity required ________ U.S. gallons per minute. Operating speed ___________ RPM
Is service continuous or intermittent? ____________________________
If intermittent, please explain __________________________________________
Is there a filter system? __________ Average flow required _______________ U.S. GPM ___

LIQUID PUMPED
Type and concentration ______________________________ pH ____ Pumping temperature ______ °F
Viscosity at 70°F ___________________________ at 100°F _____________ at 210°F _____________
Specific gravity _______________ or weight per U.S. gallon ____________
Are solids or abrasives present? If so, please explain __________________________

DISCHARGE PRESSURE (if any)
Pounds per square inch ______ or ______ foot head Constant or varying? ________________
If varying, explain _______________________________________________________
Vertical distance from center line of pump to highest discharge outlet ______________________
Pipe size ________ I.D. Total length of discharge line ________ Number of elbows ______ 90°; ______ 45°
No. & desc. of other fittings _______________________________________________________
Is there a heat exchanger? ______________ Pressure drop ____________________ PSI __________
Type of filter system ________________________ Average pressure drop __________ PSI __________

SUCTION LINE
Vertical distance from center line of pump to surface of liquid supply ___________ Pipe size __________
I.D.
Total suction line length ______ No. of elbows ______ 90°; ______ 45°;
No. & desc. of other fittings _______________________________________________________
Is there a strainer? __________________________ Type ___________ size ___________
NPSH available __________________________ feet.

POWER UNIT
To be furnished by user __________; furnished by dealer __________; furnished by SERFILCO _______
Specify prime mover (electric motor, gas engine, etc.) _____________________________
Horsepower developed _______ and other characteristics _____________________________
Electric motor: Manufacturer __________________________, HP __________, RPM _____________
Phase __________________, Hertz ____________, Volts ____________, Motor enclosure ___________