Notes:

The pump requires a 24 volt DC power supply which can supply about 3 amps. The same power supply can be used with a 7812 voltage regulator to provide a source of 12 volts to power the integrated circuits. High power current supplies can be found at All Electronics http://www.allelectronics.com and also at circuit specialists http://www.circuitspecialists.com

Any 555 timer chip can be used instead of the NE555. In particular, modern low-power versions of the 555 timer are OK.

Any power MOSFET that can handle 5 amps or more and 50 volts or more can be substituted for the IRF640. I just happened to have lots of IRF640s lying around.

You can control the pump by setting pin 2 of the CD4001 NOR gate high (12 volts). When pin 2 is high, the pump will be off. This is useful if you want to make patterns of drops via computer control.

Most Gorman-Rupp pumps sold on eBay are either 120 volt or 220 volt, but there are some lower voltage models available. I purchased some 19 VAC pumps that work just fine with pulsed 24Volt DC. It probably wouldn't hurt to place a power diode across the pump to prevent inductive kickback.

3 ohm power resistors are available on eBay for reasonable prices.

Multi-turn pots are useful for fine-tuning the pump rate (good for matching pump to strobe or camera frame rate).