

TECHNICAL MANUAL

**UNIT, INTERMEDIATE DIRECT SUPPORT AND
INTERMEDIATE GENERAL SUPPORT MAINTENANCE MANUAL**

**DRILLING SYSTEM, WELL, ROTARY,
TRUCK MOUNTED, AIR TRANSPORTABLE,
600 FEET CAPACITY
MODEL LP-12
NSN 3820-01-246-4276**

This technical manual is an authentication of the manufacturer's commercial literature and does not conform with the format and content requirements normally associated with Army technical manuals. This technical manual does, however, contain all essential information required to operate and maintain the equipment.

Approved for public release; distribution is unlimited.

HEADQUARTERS, DEPARTMENT OF THE ARMY
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INTRODUCTION

1. SCOPE

This manual covers the 600 Feet Capacity Well Drilling System, Model LP-12, NSN 3820-01-246-4276. This manual consists of six volumes.

2. DRILLING SYSTEM

The Drilling System consists of three main components; a well drilling machine; a support vehicle (rig tender); and a well completion kit. Government furnished (GFE) incorporated as part of the system include a trailer mounted power unit and 3,000 gallon, collapsible, fabric water tank.

3. DRILLING MACHINE - VOLUME 1

The drilling machine is a truck mounted rotary well drilling machine consisting of a 32 foot mast, three drum drawworks assembly, rotary table, mud pump and air compressor. The components of the drilling machine are powered by the truck engine.

4. SUPPORT VEHICLE - VOLUME 2

The support vehicle is a truck mounted vehicle consisting of a 1,000 gallon water tank, hydraulically driven water pump, an electric fuel pump and fuel dispensing nozzle, a welder-generator assembly, and an electro-hydraulic crane. The support vehicle also provides a storage area for transport of drill pipe, collars, hand tools, operating and accessory equipment for the drilling machine, and the well completion equipment.

5. TRUCKS - VOLUMES 3, 4 and 5

The drilling machine and support vehicle are mounted on truck chassis of the same model. The drilling machine truck has a special design low profile cab. The truck is a diesel engine powered, 6x6 vehicle with a transfer case to transfer engine power to truck mounted components.

6. WELL COMPLETION - VOLUME 6

The well completion kit consists of equipment necessary for completion of a 600-ft. water well.

7. OPERATION INSTRUCTIONS

Refer to TM5-3820-256-10 for Operation, Preventive Maintenance and Lubrication of the Well Drilling System.

8. REPAIR PARTS

For repair parts refer to TM5-3820-256-24P, Repair Parts and Special Tools List.

9. APPENDIXES - VOLUME 6

Maintenance Allocation Chart is contained in Appendix A; Torque Requirements are contained in Appendix B.

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CHAPTER 1

GENERAL INFORMATION

1-1. INTRODUCTION

1-1.1 Scope. This manual volume covers operations performed following the drilling of a water well. Information is arranged as follows:

Chapter 1 - General Information

Chapter 2 - Logging Wells

Chapter 3 - Well Casing

Chapter 4 - Water Production

1-1.2 Requirements. Instructions in this manual are used in conjunction with the following equipment:

- a. Electric Logging System, p/n 149F923 (CAGE 21363). This equipment is used following drilling to determine the types and locations of formations in the well borehole.
- b. Kit, Well Completion, p/n 165F004 (CAGE 21363), NSN 3820-01-178-4981. This kit contains components necessary to complete a water well to a depth of 600 feet, and for water production. Components of the kit are listed in Department of the Army Supply Catalog, SC 3820-97-CL-E.
- c. Well Sounder, p/n 149F924 (CAGE 21363). This instrument is used to determine water levels.
- d. Dart Valve Bailer, p/n 149F917 (CAGE 21363). This equipment is used to remove accumulations of sand or mud from well.

1-2 DEFINITIONS

1-2.1 Casing. Pipe constructed of PVC material used to form a 'wall' for a well.

1-2.2 Draw-Down. The distance water recedes from static (standing) level to pumping level.

1-2.3 Overburden. A soft ground formation above a rock layer.