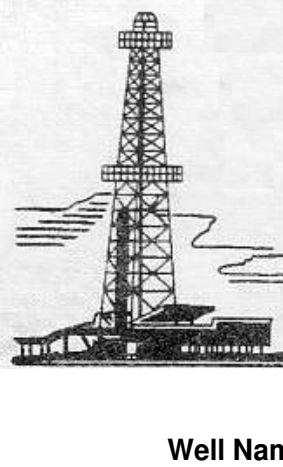


# WELLSITE GEOLOGIST'S REPORT

VERNON C. SCHRAG  
CONSULTANT GEOLOGIST



Scale 1:240 (5"=100') Imperial

Well Name: **E.M. STANLEY UNIT #1-20**  
 Location: **SW SE SE SE OF SEC. 20-18S-27W**  
 Licence Number: **API: 15-101-22531**      Region: **Lane Co., KS**  
 Spud Date: **July 26, 2014**      Drilling Completed: **August 4, 2014**  
 Surface Coordinates: **134' FSL & 347' FEL**

Bottom Hole Coordinates:  
 Ground Elevation (ft): **2687'**      K.B. Elevation (ft): **2694'**  
 Logged Interval (ft): **3800'**      To: **RTD**      Total Depth (ft): **4644'**  
 Formation: **D&A, Mississippi**  
 Type of Drilling Fluid: **Chemical Premix (Displaced)**  
 Printed by MUD.LOG from WellSight Systems 1-800-447-1534 www.WellSight.com

### OPERATOR:

Company: **Larson Engineering Inc.**  
 Address: **562 West State Road 4**  
**Olmitz, KS 67564-8561**

### DRILLING CONTRACTOR:

**H. D. Drilling, LLC, Rig #3 (Co. Tools)**

**DP 4.5" XH (16.6#); DC 6-1/4" x 2-3/8" x 556', Kelly 40.30', Tool Joint 5.5" ; Bit: JZ-HA23, 7-7/8", standard jets 15-15-15; rpm 80, WOB 35k; Kelly Bushing 7' above ground level; LeWayne "Lew" Tresner (tool pusher).**

### CASING:

**Set 8-5/8" casing at 262'**

### CIRCULATION SYSTEM:

**Continental EMSCO D-300, duplex, 6 x 14, 60-62 spm, Chemical, premix, earth pits, Morgan Mud, Inc., Cade Lines.**

### OPEN HOLE LOGS:

**DN, DI (SP) (Run-1); ML (Run-2); No Sonic; 5" detail LTD-3600; 2" DI to surface casing; LogTech-Pioneer Wireline, Hays, KS, Jerrod Long, Log total depth (4640') was four feet short to rotary total depth (4644').**

### DRILL STEM TEST #1:

**LKC (K-zone): Interval: 4242-4256 (14'); Blow: weak surf IFF, no RB, no blow 2nd open; Times: 5-15-15-30; Recovery: 3' mud (100%M); Pressures: HP: 2114-2107, SIP: 866-870, FP: 22-24, 23-23; BHT: 123 F; Trilobite Testing, Inc., Scott City, KS, Bradley "Walt" Walter.**

### DRILL STEM TEST #2:

**LKC (L-zone): Interval: 4278-4298 (20'); Blow: weak surf died 4 min IFF; Times: 5-15-15-30; Recovery: 2' mud (100%M); Pressures: HP: 2147-2072, SIP: 24-24; FP: 15-16, 14-17; BHT: 117 F; Trilobite Testing, Inc., Scott City, KS, Bradley "Walt" Walter.**

### DRILL STEM TEST #3:

**Pleas., Marmaton: Interval: 4324-4420 (96'); Blow: weak surf IFF, no RB, no Blow FFP; Times: 5-15-15-30; Recovery: 10' mud w/oil spots (100%M); Pressures: HP: 2185-2109, SIP: 101-56, FP: 17-19, 20-21; BHT: 117 F; Trilobite Testing, Inc., Scott City, KS, Bradley "Walt" Walter.**

### DRILL STEM TEST #4:

**Pawnee thru Cherokee: Interval: 4432-4575 (143'); Blow: weak surf IFF, no RB, no blow FFP; Times: 5-15-15-30; Recovery: 15' mud w/oil spots (100%M); Pressures: HP: 2224-2180, SIP: 210-345, FP: 19-20, 21-22; BHT: 117 F; Trilobite Testing, Inc., Scott City, KS, Bradley "Walt" Walter.**

### DRILL STEM TEST #5:

**Cherokee Sand: Interval: 4565-4590 (25'); Tool slid about 2' at open; lost some mud; Blow 3" decr 2" IFF, no blow 2nd open; Times: 5-15-15-30; Recovery: 70' mud (probably due to leak past packer); Pressures: HP: 2303-2294, SIP: 521-441, FP: 55-61, 57-58; BHT: 119 F; Trilobite Testing, Inc., Scott City, KS, Bradley "Walt" Walter.**

