

TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Drill-Stem Test Data

Well Name ESSER #1 Test No. 1 Date 6/30/93
Company AMOCO PRODUCTION COMPANY Zone COUNCIL GROV
Address BOX 800 RM 2118 DENVER CO 80201 Elevation 3223 KB
Co. Rep./Geo. SAM CARMACK Cont. CHEYENNE DRLG RIG #2 Est. Ft. of Pay _____
Location: Sec. 16 Twp. 29S Rge. 39W Co. STANTON State KS

Interval Tested 2643-2662 Drill Pipe Size 4.5" XH
Anchor Length 19 Wt. Pipe I.D. - 2.7 Ft. Run _____
Top Packer Depth 2638 Drill Collar - 2.25 Ft. Run 660
Bottom Packer Depth 2643 Mud Wt. _____ FOAM _____ lb/Gal.
Total Depth 2662 Viscosity _____ Filtrate _____

Tool Open @ 1:21 AM Initial Blow SURFACE BLOW - BUILT TO 1" - (OPENED 2"

Final Blow _____

Recovery - Total Feet 30 Flush Tool? NO

Rec. 30 Feet of FOAMY WATER
Rec. _____ Feet of _____
Rec. _____ Feet of _____
Rec. _____ Feet of _____
Rec. _____ Feet of _____

BHT _____ °F Gravity 73 °API 5500 °F Corrected Gravity _____ °API
RW _____ °F Chlorides _____ ppm Recovery Chlorides _____ ppm System

(A) Initial Hydrostatic Mud _____ PSI AK1 Recorder No. _____ Range _____

(B) First Initial Flow Pressure _____ PSI (depth) _____ w / Clock No. _____

(C) First Final Flow Pressure _____ PSI AK1 Recorder No. _____ Range _____

(D) Initial Shut-in Pressure _____ PSI (depth) _____ w / Clock No. _____

(E) Second Initial Flow Pressure _____ PSI AK1 Recorder No. _____ Range _____

(F) Second Final Flow Pressure _____ PSI (depth) _____ w / Clock No. _____

(G) Final Shut-in Pressure _____ PSI Initial Opening 30 MIN Final Flow 1 MIN

(H) Final Hydrostatic Mud _____ PSI Initial Shut-in 23.5 HRS Final Shut-in OUT

Our Representative TOM HORACEK

FLUID SAMPLER DATA

Ticket No.: 5522 Date: 6/30/93
Company: AMOCO PRODUCTION COMPANY
Lease: ESSER #1 Test No.: 1
County: STANTON Sec.: 16 Twp.: 29S Rng.: 39W

SAMPLER RECOVERY

Gas 3 CU FT
Oil
Mud
Water
Other
Pressure 5
TOTAL 3 CU FT

SAMPLER ANALYSIS

Resistivity ohms@ F
Chlorides ppm.
Gravity corrected @60F

PIT MUD ANALYSIS

Chlorides
Resistivity ohms@ F
Viscosity
Mud Wt. FOAM
Filtrate
Other

PIPE RECOVERY

TOP
Resistivity ohms@ F
Chlorides ppm
MIDDLE
Resistivity ohms@ F
Chlorides ppm
BOTTOM
Resistivity ohms@ F
Chlorides ppm

FLUID SAMPLER DATA

Ticket No. 5522 Date 6-30-93
Company Name Amoco Production Company
Lease Esser #1 Test No. #1
County Stanton Ks. Sec. 16 Twp. 29 Rng. 39

SAMPLER RECOVERY

Gas 3 cubic ft. ML
Oil _____ ML
Mud _____ ML
Water _____ ML
Other _____ ML
Pressure 5 PSI
Total 3 cubic ft. ML

PIT MUD ANALYSIS

Chlorides _____ ppm.
Resistivity _____ ohms @ _____ F
Viscosity _____
Mud Weight _____
Filtrate _____
Other Foam

SAMPLER ANALYSIS

Resistivity _____ ohms @ _____ F
Chlorides _____ ppm.
Gravity _____ corrected @ 60 F

PIPE RECOVERY

TOP
Resistivity _____ ohms @ _____ F
Chlorides _____ ppm.
MIDDLE
Resistivity _____ ohms @ _____ F
Chlorides _____ ppm.
BOTTOM
Resistivity _____ ohms @ _____ F
Chlorides _____ ppm.

TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Test Ticket

No 5522

Well Name & No. <u>Esser #1</u>	Test No. <u>#1</u>	Date <u>6-30-93</u>
Company <u>Amoco Production Company</u>	Zone Tested <u>Council Grove</u>	
Address <u>Box 800, Rm. 2118 Denver Co. 80201</u>	Elevation <u>3223 (KB)</u>	
Co. Rep./Geo. <u>Sam Carmack</u>	Cont. <u>Cheyenne Dr. #2</u>	Est. Ft. of Pay _____
Location: Sec. <u>16</u>	Twp. <u>29</u>	Rge. <u>39</u> Co. <u>Stanton</u> State <u>KS</u>
No. of Copies <u>4</u>	Distribution Sheet _____	Yes <u>X</u> No Turnkey _____ Yes _____ No _____ Evaluation _____

Interval Tested <u>2643-2662</u>	Drill Pipe Size <u>4.5 x-Hole</u>
Anchor Length <u>19'</u>	Top Choke — 1" _____ Bottom Choke — 1/4" _____
Top Packer Depth <u>2638</u>	Hole Size — 7 7/8" _____ Rubber Size — 6 3/4" _____
Bottom Packer Depth <u>2643</u>	Wt. Pipe I.D. — 2.7 Ft. Run _____
Total Depth <u>2662</u>	Drill Collar — 2.25 Ft. Run <u>660'</u>
Mud Wt. <u>Foam</u> lb/gal.	Viscosity _____ Filtrate _____
Tool Open @ <u>1:21 AM</u>	Initial Blow <u>Surface blow - built to lin. (opened 2 in.)</u>

Final Blow _____

Recovery — Total Feet <u>30'</u>	Feet of Gas In Pipe _____	Flush Tool? <u>NO</u>
Rec. _____ Feet Of _____	%gas _____ %oil _____ %water _____ %mud _____	
Rec. _____ Feet Of _____	%gas _____ %oil _____ %water _____ %mud _____	
Rec. <u>30'</u> Feet Of <u>Foamy water</u>	%gas _____ %oil _____ %water _____ %mud _____	
Rec. _____ Feet Of _____	%gas _____ %oil _____ %water _____ %mud _____	
Rec. _____ Feet Of _____	%gas _____ %oil _____ %water _____ %mud _____	

BHT _____ °F Gravity _____ °API @ _____ °F Corrected Gravity _____ °API
RW 1. @ 75 °F Chlorides 5500 ppm Recovery Chlorides _____ ppm System

- (A) Initial Hydrostatic Mud _____ PSI Ak1 Recorder No. _____ Range _____
- (B) First Initial Flow Pressure _____ PSI @ (depth) _____ w/Clock No. _____
- (C) First Final Flow Pressure _____ PSI AK1 Recorder No. _____ Range _____
- (D) Initial Shut-In Pressure _____ PSI @ (depth) _____ w/Clock No. _____
- (E) Second Initial Flow Pressure _____ PSI AK1 Recorder No. _____ Range _____
- (F) Second Final Flow Pressure _____ PSI @ (depth) _____ w/Clock No. _____
- (G) Final Shut-In Pressure _____ PSI Initial Opening 30 min. Test X 600.00
- (H) Final Hydrostatic Mud _____ PSI Initial Shut-In 23 1/2 hrs Jars X 200.00

TRILOBITE TESTING L.L.C. SHALL NOT BE LIABLE FOR DAMAGE OF ANY KIND OF THE PROPERTY OR PERSONNEL OF THE ONE FOR WHOM A TEST IS MADE, OR FOR ANY LOSS SUFFERED OR SUSTAINED, DIRECTLY OR INDIRECTLY, THROUGH THE USE OF ITS EQUIPMENT, OR ITS STATEMENTS OR OPINION CONCERNING THE RESULTS OF ANY TEST. TOOLS LOST OR DAMAGED IN THE HOLE SHALL BE PAID FOR AT COST BY THE PARTY FOR WHOM THE TEST IS MADE.

Final Flow 1 min. Safety Joint X 50.00
Final Shut-In Out. Straddle _____
Circ. Sub _____
Sampler X 200.00

Approved By _____

Our Representative Tom Horacek

Extra Packer _____

Other _____

TOTAL PRICE \$ 1050.00

TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Drill-Stem Test Data

Well Name ESSER #1 Test No. 2 Date 7/1/93
Company AMOCO PRODUCTION COMPANY Zone COUNCIL GROV
Address BOX 800 RM 2118 DENVER CO 80201 Elevation 3223 KB
Co. Rep./Geo. SAM CARMACK Cont. CHEYENNE DRLG RIG #2 Est. Ft. of Pay _____
Location: Sec. 16 Twp. 29S Rge. 39W Co. STANTON State KS

Interval Tested 2670-2702 Drill Pipe Size 4.5" XH
Anchor Length 32 Wt. Pipe I.D. - 2.7 Ft. Run _____
Top Packer Depth 2665 Drill Collar - 2.25 Ft. Run 660
Bottom Packer Depth 2670 Mud Wt. _____ FOAM _____ lb/Gal.
Total Depth 2702 Viscosity _____ Filtrate _____

Tool Open @ 6:35 PM Initial Blow NO BLOW

Final Blow 4" BLOW AS TOOL OPENED-THEN OPENED 2"

Recovery - Total Feet 20 Flush Tool? NO

Rec. 20 Feet of FOAMY WATER
Rec. _____ Feet of _____
Rec. _____ Feet of _____
Rec. _____ Feet of _____
Rec. _____ Feet of _____

BHT _____ °F Gravity 76 °API 4600 °F Corrected Gravity _____ °API
RW 1.5 Chlorides _____ ppm Recovery Chlorides _____ ppm System

(A) Initial Hydrostatic Mud _____ PSI AK1 Recorder No. _____ Range _____

(B) First Initial Flow Pressure _____ PSI (depth) _____ w / Clock No. _____

(C) First Final Flow Pressure _____ PSI AK1 Recorder No. _____ Range _____

(D) Initial Shut-in Pressure _____ PSI (depth) _____ w / Clock No. _____

(E) Second Initial Flow Pressure _____ PSI AK1 Recorder No. _____ Range _____

(F) Second Final Flow Pressure _____ PSI (depth) _____ w / Clock No. _____

(G) Final Shut-in Pressure _____ PSI Initial Opening 30 MIN Final Flow 1.5 H

(H) Final Hydrostatic Mud _____ PSI Initial Shut-in 5 HRS Final Shut-in 17 HR

Our Representative TOM HORACEK

TRILOBITE TESTING L.L.C.

P.O. Box 362 - Hays, Kansas 67601

FLUID SAMPLER DATA

Ticket No. 5523 Date 7-1-93
Company Name Amoco Production Company
Lease Esser #1 Test No. #2
County Stanton Ks. Sec. 16 Twp. 29 Rng. 39

SAMPLER RECOVERY

Gas 0.2 cubic ft. ML
Oil _____ ML
Mud _____ ML
Water 1000 ML
Other _____ ML
Pressure 2 PSI
Total 1000 ML

PIT MUD ANALYSIS

Chlorides _____ ppm.
Resistivity _____ ohms @ _____ F
Viscosity _____
Mud Weight _____
Filtrate _____
Other Foam

SAMPLER ANALYSIS

Resistivity 15 ohms @ 76 F
Chlorides 4600 ppm.
Gravity _____ corrected @ 60 F

PIPE RECOVERY

TOP
Resistivity _____ ohms @ _____ F
Chlorides _____ ppm.
MIDDLE
Resistivity _____ ohms @ _____ F
Chlorides _____ ppm.
BOTTOM
Resistivity 15 ohms @ 76 F
Chlorides 4600 ppm.

TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Test Ticket

No 5523

Well Name & No. <u>Esser #1</u>	Test No. <u>#2</u>	Date <u>7-1-93</u>
Company <u>Amoco Production Company</u>	Zone Tested <u>Council Grove</u>	
Address <u>Box 800, R.M. 2118 Denver Co. 80201</u>	Elevation <u>3223 (KB)</u>	
Co. Rep./Geo. <u>Sam Carmack</u>	cont. <u>Cherokee Dr. #2</u>	Est. Ft. of Pay _____
Location: Sec. <u>16</u>	Twp. <u>29</u>	Rge. <u>39</u> Co. <u>Stanton</u> State <u>Ks.</u>
No. of Copies _____	Distribution Sheet _____	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Turnkey _____
		Yes _____ No _____ Evaluation _____

Interval Tested <u>2670-2702</u>	Drill Pipe Size <u>4.5 x - Hole</u>
Anchor Length <u>32'</u>	Top Choke — 1" _____ Bottom Choke — 1/4" _____
Top Packer Depth <u>2665</u>	Hole Size — 7 7/8" _____ Rubber Size — 6 3/4" _____
Bottom Packer Depth <u>2670</u>	Wt. Pipe I.D. — 2.7 Ft. Run _____
Total Depth <u>2702</u>	Drill Collar — 2.25 Ft. Run <u>660'</u>
Mud Wt. <u>Foam</u> lb/gal.	Viscosity _____ Filtrate _____
Tool Open @ <u>6:35 pm.</u>	Initial Blow <u>NO blow</u>

Final Blow 4 in. blow as tool opened → Then opened 2 in.

Recovery — Total Feet <u>20'</u>	Feet of Gas In Pipe _____	Flush Tool? <u>NO</u>
Rec. _____ Feet Of _____	% gas _____ % oil _____ % water _____ % mud _____	
Rec. _____ Feet Of _____	% gas _____ % oil _____ % water _____ % mud _____	
Rec. <u>20'</u> Feet Of <u>Foamy water</u>	% gas _____ % oil _____ % water _____ % mud _____	
Rec. _____ Feet Of _____	% gas _____ % oil _____ % water _____ % mud _____	
Rec. _____ Feet Of _____	% gas _____ % oil _____ % water _____ % mud _____	

BHT _____ °F Gravity _____ °API @ _____ °F Corrected Gravity _____ °API
RW 15 @ 76 °F Chlorides 4600 ppm Recovery Chlorides _____ ppm System

- (A) Initial Hydrostatic Mud _____ PSI AK1 Recorder No. _____ Range _____
- (B) First Initial Flow Pressure _____ PSI @ (depth) _____ w/Clock No. _____
- (C) First Final Flow Pressure _____ PSI AK1 Recorder No. _____ Range _____
- (D) Initial Shut-In Pressure _____ PSI @ (depth) _____ w/Clock No. _____
- (E) Second Initial Flow Pressure _____ PSI AK1 Recorder No. _____ Range _____
- (F) Second Final Flow Pressure _____ PSI @ (depth) _____ w/Clock No. _____
- (G) Final Shut-In Pressure _____ PSI Initial Opening 30 Test 600.00
- (H) Final Hydrostatic Mud _____ PSI Initial Shut-In 5 hrs Jars 200.00

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Final Flow 1.5 hrs Safety Joint 50.00
Final Shut-In 17 hrs Straddle _____
Circ. Sub _____
Sampler 200.00
Extra Packer _____
Other _____

Approved By _____
Our Representative Tom Horacek

TOTAL PRICE \$ _____

TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Drill-Stem Test Data

Well Name ESSER #1 Test No. 3 Date 7/3/93
Company AMOCO PRODUCTION COMPANY Zone COUNCIL GROV
Address BOX 800 RM 2118 DENVER CO 80201 Elevation 3223 KB
Co. Rep./Geo. SAM CARMACK Cont. CHEYENNE DRLG RIG #2 Est. Ft. of Pay _____
Location: Sec. 16 Twp. 29S Rge. 39W Co. STANTON State KS

Interval Tested 2688-2702 Drill Pipe Size 4.5" XH
Anchor Length 14 Wt. Pipe I.D. - 2.7 Ft. Run _____
Top Packer Depth 2683 Drill Collar - 2.25 Ft. Run 660
Bottom Packer Depth 2688 Mud Wt. _____ FOAM _____ lb/Gal.
Total Depth 2702 Viscosity _____ Filtrate _____

Tool Open @ 8:51 AM Initial Blow SURFACE BLOW BUILT TO 3/4"

Final Blow _____

Recovery - Total Feet 20 Flush Tool? NO

Rec. 20 Feet of FOAMY WATER
Rec. _____ Feet of _____
Rec. _____ Feet of _____
Rec. _____ Feet of _____
Rec. _____ Feet of _____

BHT _____ °F Gravity _____ °API _____ °F Corrected Gravity _____ °API
RW 1.5 Chlorides 76 ppm Recovery Chlorides 4600 ppm System

(A) Initial Hydrostatic Mud _____ PSI AK1 Recorder No. _____ Range _____

(B) First Initial Flow Pressure _____ PSI (depth) _____ w / Clock No. _____

(C) First Final Flow Pressure _____ PSI AK1 Recorder No. _____ Range _____

(D) Initial Shut-in Pressure _____ PSI (depth) _____ w / Clock No. _____

(E) Second Initial Flow Pressure _____ PSI AK1 Recorder No. _____ Range _____

(F) Second Final Flow Pressure _____ PSI (depth) _____ w / Clock No. _____

(G) Final Shut-in Pressure _____ PSI Initial Opening 60 MIN Final Flow 1 MIN

(H) Final Hydrostatic Mud _____ PSI Initial Shut-in 23 HRS Final Shut-in OUT

Our Representative TOM HORACEK

FLUID SAMPLER DATA

Ticket No. 5524 Date 7-5-93
Company Name Amoco Production Company
Lease Esser #1 Test No. #3
County Stanton KS Sec. 16 Twp. 29 Rng. 39

SAMPLER RECOVERY

Gas _____ ML
Oil _____ ML
Mud _____ ML
Water 1000 ML
Other _____ ML
Pressure 1 PSI
Total 1000 ML

PIT MUD ANALYSIS

Chlorides _____ ppm.
Resistivity _____ ohms @ _____ F
Viscosity _____
Mud Weight _____
Filtrate _____
Other Foam

SAMPLER ANALYSIS

Resistivity 1.5 ohms @ 76 F
Chlorides 4600 ppm.
Gravity _____ corrected @ 60 F

PIPE RECOVERY

TOP
Resistivity _____ ohms @ _____ F
Chlorides _____ ppm.
MIDDLE
Resistivity _____ ohms @ _____ F
Chlorides _____ ppm.
BOTTOM
Resistivity 1.5 ohms @ 76 F
Chlorides 4600 ppm.

TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Test Ticket

No 5524

Well Name & No. <u>Essex #1</u>	Test No. <u>#3</u>	Date <u>7-3-93</u>
Company <u>Amoco Production Company</u>	Zone Tested <u>Council Grove</u>	
Address <u>Box 800, R.M. 218 Denver Co. 80201</u>	Elevation <u>3223 (KB)</u>	
Co. Rep./Geo. <u>Sam Carmack</u>	Cont. <u>Cheyenne Drig. #2</u>	Est. Ft. of Pay _____
Location: Sec. <u>16</u>	Twp. <u>29</u>	Rge. <u>39</u> Co. <u>Stanton</u> State <u>Ks.</u>
No. of Copies _____	Distribution Sheet _____	Yes <u>X</u> No Turnkey _____ Yes _____ No _____ Evaluation _____

Interval Tested <u>2688-2702</u>	Drill Pipe Size <u>4.5 x-Hole</u>
Anchor Length <u>14'</u>	Top Choke — 1" _____ Bottom Choke — 1/4" _____
Top Packer Depth <u>2683</u>	Hole Size — 7 7/8" _____ Rubber Size — 6 3/4" _____
Bottom Packer Depth <u>2688</u>	Wt. Pipe I.D. — 2.7 Ft. Run _____
Total Depth <u>2702</u>	Drill Collar — 2.25 Ft. Run <u>660'</u>
Mud Wt. <u>Foam</u> lb/gal.	Viscosity _____ Filtrate _____
Tool Open @ <u>8:51 AM</u>	Initial Blow <u>Surface blow built to 3/4 in.</u>

Final Blow _____

Recovery — Total Feet <u>20'</u>	Feet of Gas In Pipe _____	Flush Tool? <u>NO</u>
Rec. _____ Feet Of _____	%gas _____ %oil _____ %water _____ %mud _____	
Rec. _____ Feet Of _____	%gas _____ %oil _____ %water _____ %mud _____	
Rec. <u>20'</u> Feet Of <u>Foamy water</u>	%gas _____ %oil _____ %water _____ %mud _____	
Rec. _____ Feet Of _____	%gas _____ %oil _____ %water _____ %mud _____	
Rec. _____ Feet Of _____	%gas _____ %oil _____ %water _____ %mud _____	

BHT _____ °F Gravity _____ °API @ _____ °F Corrected Gravity _____ °API
RW 1.5 @ 76 °F Chlorides 4600 ppm Recovery Chlorides _____ ppm System

- (A) Initial Hydrostatic Mud _____ PSI Ak1 Recorder No. _____ Range _____
- (B) First initial Flow Pressure _____ PSI @ (depth) _____ w/Clock No. _____
- (C) First Final Flow Pressure _____ PSI AK1 Recorder No. _____ Range _____
- (D) Initial Shut-in Pressure _____ PSI @ (depth) _____ w/Clock No. _____
- (E) Second Initial Flow Pressure _____ PSI AK1 Recorder No. _____ Range _____
- (F) Second Final Flow Pressure _____ PSI @ (depth) _____ w/Clock No. _____
- (G) Final Shut-in Pressure _____ PSI Initial Opening 60 Test X 600.00
- (H) Final Hydrostatic Mud _____ PSI Initial Shut-in 23 hrs Jars X 200.00

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Final Flow 1 min Safety Joint X 50.00
Final Shut-in out Straddle _____
Circ. Sub _____

Approved By _____
Our Representative Tom Horacek

Sampler X 200.00
~~Shale~~
Extra Packer X 215.00
Other _____
TOTAL PRICE \$ 1265.00

TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Drill-Stem Test Data

Well Name ESSER #1 Test No. 4 Date 7/4/93
Company AMOCO PRODUCTION COMPANY Zone COUNCIL GROV
Address BOX 800 RM 2118 DENVER CO 80201 Elevation 3223 KB
Co. Rep./Geo. SAM CARMACK Cont. CHEYENNE DRLG RIG #2 Est. Ft. of Pay _____
Location: Sec. 16 Twp. 29S Rge. 39W Co. STANTON State KS

Interval Tested 2746-2757 Drill Pipe Size 4.5" XH
Anchor Length 11 Wt. Pipe I.D. - 2.7 Ft. Run _____
Top Packer Depth 2741 Drill Collar - 2.25 Ft. Run 660
Bottom Packer Depth 2746 Mud Wt. _____ FOAM _____ lb/Gal.
Total Depth 2757 Viscosity _____ Filtrate _____

Tool Open @ 1:30 AM Initial Blow SURFACE BLOW BUILT TO 4"-THEN OPENED TO 2"

Final Blow _____

Recovery - Total Feet 20 Flush Tool? NO

Rec. 20 Feet of FOAMY WATER
Rec. _____ Feet of _____
Rec. _____ Feet of _____
Rec. _____ Feet of _____
Rec. _____ Feet of _____

BHT _____ °F Gravity 77 °API 3800 °F Corrected Gravity _____ °API
RW 1.5 Chlorides _____ ppm Recovery Chlorides _____ ppm System

(A) Initial Hydrostatic Mud _____ PSI AK1 Recorder No. _____ Range _____

(B) First Initial Flow Pressure _____ PSI (depth) _____ w / Clock No. _____

(C) First Final Flow Pressure _____ PSI AK1 Recorder No. _____ Range _____

(D) Initial Shut-in Pressure _____ PSI (depth) _____ w / Clock No. _____

(E) Second Initial Flow Pressure _____ PSI AK1 Recorder No. _____ Range _____

(F) Second Final Flow Pressure _____ PSI (depth) _____ w / Clock No. _____

(G) Final Shut-in Pressure _____ PSI Initial Opening 60 MIN Final Flow 1 MIN

(H) Final Hydrostatic Mud _____ PSI Initial Shut-in 23 HRS Final Shut-in OUT

Our Representative TOM HORACEK

TRILOBITE TESTING L.L.C.

P.O. Box 362 - Hays, Kansas 67601

FLUID SAMPLER DATA

Ticket No. 5525 Date 7-4-93
Company Name Amoco Production Company
Lease Essie #1 Test No. #4
County Stanton KS Sec. 16 Twp. 29 Rng. 39

SAMPLER RECOVERY

Gas _____ ML
Oil _____ ML
Mud _____ ML
Water 3000 ML
Other _____ ML
Pressure 10 PSI
Total 3,000 ML

SAMPLER ANALYSIS

Resistivity 1.5 ohms @ 77 F
Chlorides 3800 ppm.
Gravity _____ corrected @ 60 F

PIT MUD ANALYSIS

Chlorides _____ ppm.
Resistivity _____ ohms @ _____ F
Viscosity _____
Mud Weight _____
Filtrate _____
Other Foam

PIPE RECOVERY

TOP
Resistivity _____ ohms @ _____ F
Chlorides _____ ppm.
MIDDLE
Resistivity _____ ohms @ _____ F
Chlorides _____ ppm.
BOTTOM
Resistivity 1.5 ohms @ 77 F
Chlorides 3800 ppm.

TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Test Ticket

No 5525

Well Name & No. <u>Essex #1</u>	Test No. <u># 4</u>	Date <u>7-4-93</u>
Company <u>Amoco Production Company</u>	Zone Tested <u>Council Grove</u>	
Address <u>Box 800 RM 2118 Denver Co 80201</u>	Elevation <u>3223 (KB)</u>	
Co. Rep./Geo. <u>Sam Carmack</u>	cont. <u>Cheyenne Dls #2</u>	Est. Ft. of Pay _____
Location: Sec. <u>16</u>	Twp. <u>29</u>	Rge. <u>39</u> Co. <u>Stanton</u> State <u>KS</u>
No. of Copies _____	Distribution Sheet _____	Yes _____ No _____ Turnkey _____ Yes _____ No _____ Evaluation _____

Interval Tested <u>2746 - 2757</u>	Drill Pipe Size <u>4.5 x-Hole</u>
Anchor Length <u>11'</u>	Top Choke — 1" _____ Bottom Choke — 1/4" _____
Top Packer Depth <u>2741</u>	Hole Size — 7 7/8" _____ Rubber Size — 6 3/4" _____
Bottom Packer Depth <u>2746</u>	Wt. Pipe I.D. — 2.7 Ft. Run _____
Total Depth <u>2757'</u>	Drill Collar — 2.25 Ft. Run <u>660'</u>
Mud Wt. <u>Foam</u> lb/gal.	Viscosity _____ Filtrate _____
Tool Open @ <u>1:30 AM</u>	Initial Blow <u>Surface blow built to 4 in. then opened</u>
<u>2 in.</u>	
Final Blow _____	

Recovery — Total Feet <u>20'</u>	Feet of Gas In Pipe _____	Flush Tool? <u>NO</u>
Rec. _____ Feet Of _____	%gas _____ %Oil _____ %water _____ %mud _____	
Rec. _____ Feet Of _____	%gas _____ %Oil _____ %water _____ %mud _____	
Rec. _____ Feet Of _____	%gas _____ %Oil _____ %water _____ %mud _____	
Rec. <u>20'</u> Feet Of <u>Foamy water</u>	%gas _____ %Oil _____ %water _____ %mud _____	
Rec. _____ Feet Of _____	%gas _____ %Oil _____ %water _____ %mud _____	

BHT _____ °F Gravity _____ °API @ _____ °F Corrected Gravity _____ °API
RW 1.5 @ 77 °F Chlorides 3800 ppm Recovery Chlorides _____ ppm System

- (A) Initial Hydrostatic Mud _____ PSI Ak1 Recorder No. _____ Range _____
- (B) First Initial Flow Pressure _____ PSI @ (depth) _____ w/Clock No. _____
- (C) First Final Flow Pressure _____ PSI AK1 Recorder No. _____ Range _____
- (D) Initial Shut-In Pressure _____ PSI @ (depth) _____ w/Clock No. _____
- (E) Second Initial Flow Pressure _____ PSI AK1 Recorder No. _____ Range _____
- (F) Second Final Flow Pressure _____ PSI @ (depth) _____ w/Clock No. _____
- (G) Final Shut-In Pressure _____ PSI Initial Opening 60 min. Test X 600.00
- (H) Final Hydrostatic Mud _____ PSI Initial Shut-In 23 hrs. Jars X 200.00

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Final Flow <u>1 min.</u>	Safety Joint <u>X</u> <u>50.00</u>
Final Shut-in <u>out.</u>	Straddle _____
	Circ. Sub _____
	Sampler <u>X</u> <u>200.00</u>
	Slide Packer <u>X</u> <u>100.00</u>
	Other _____

Approved By _____
Our Representative Tom Horacek

TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Drill-Stem Test Data

Well Name ESSER #1 Test No. 5 Date 7/6/93
Company AMOCO PRODUCTION COMPANY Zone COUNCIL GROV
Address BOX 800 RM 2118 DENVER CO 80201 Elevation 3223 KB
Co. Rep./Geo. SAM CARMACK Cont. CHEYENNE DRLG RIG #2 Est. Ft. of Pay _____
Location: Sec. 16 Twp. 29S Rge. 39W Co. STANTON State KS

Interval Tested 2746-2757 Drill Pipe Size 4.5" XH
Anchor Length 11 Wt. Pipe I.D. - 2.7 Ft. Run _____
Top Packer Depth 2741 Drill Collar - 2.25 Ft. Run 660
Bottom Packer Depth 2746 Mud Wt. _____ lb/Gal.
Total Depth 2757 Viscosity _____ Filtrate _____

Tool Open 3:49 PM Initial Blow SURFACE BLOW BUILT TO 2" - THEN OPENED TO 2"

Final Blow _____

Recovery - Total Feet 30 Flush Tool? NO

Rec. 30 Feet of FOAMY WATER
Rec. _____ Feet of _____
Rec. _____ Feet of _____
Rec. _____ Feet of _____
Rec. _____ Feet of _____

BHT 1.5 °F Gravity 75 °API 4500 °F Corrected Gravity _____ °API
RW _____ °F Chlorides _____ ppm Recovery Chlorides _____ ppm System

(A) Initial Hydrostatic Mud _____ PSI AK1 Recorder No. _____ Range _____

(B) First Initial Flow Pressure _____ PSI (depth) _____ w / Clock No. _____

(C) First Final Flow Pressure _____ PSI AK1 Recorder No. _____ Range _____

(D) Initial Shut-in Pressure _____ PSI (depth) _____ w / Clock No. _____

(E) Second Initial Flow Pressure _____ PSI AK1 Recorder No. _____ Range _____

(F) Second Final Flow Pressure _____ PSI (depth) _____ w / Clock No. _____

(G) Final Shut-in Pressure _____ PSI Initial Opening _____ Final Flow _____

(H) Final Hydrostatic Mud _____ PSI Initial Shut-in _____ Final Shut-in _____

Our Representative TOM HORACEK

FLUID SAMPLER DATA

Ticket No.: 6052 Date: 7/6/93
Company: AMOCO PRODUCTION COMPANY
Lease: ESSER #1 Test No.: 5
County: STANTON Sec.: 16 Twp.: 29S Rng.: 39W

SAMPLER RECOVERY

Gas .7 CU FT
Oil
Mud
Water 2000
Other
Pressure
TOTAL 2000

SAMPLER ANALYSIS

Resistivity 1.5 ohms@ 75 F
Chlorides 4500 ppm.
Gravity corrected @60F

PIT MUD ANALYSIS

Chlorides
Resistivity ohms@ F
Viscosity
Mud Wt. FOAM
Filtrate
Other

PIPE RECOVERY

TOP
Resistivity ohms@ F
Chlorides ppm

MIDDLE
Resistivity ohms@ F
Chlorides ppm

BOTTOM
Resistivity 1.5 ohms@ 75 F
Chlorides 4500 ppm

FLUID SAMPLER DATA

Ticket No. 6052 Date 7-6-93

Company Name Amoco Production Company

Lease Esser #1 Test No. #5

County Stanton KS Sec. 16 Twp. 29 Rng. 39

SAMPLER RECOVERY

Gas 0.7 cubic ft. ML

Oil _____ ML

Mud _____ ML

Water 2000 ML

Other _____ ML

Pressure _____ PSI

Total 2000 ML

PIT MUD ANALYSIS

Chlorides _____ ppm.

Resistivity _____ ohms @ _____ F

Viscosity _____

Mud Weight _____

Filtrate _____

Other Foam

SAMPLER ANALYSIS

Resistivity 1.5 ohms @ 75 F

Chlorides 4500 ppm.

Gravity _____ corrected @ 60 F

PIPE RECOVERY

TOP

Resistivity _____ ohms @ _____ F

Chlorides _____ ppm.

MIDDLE

Resistivity _____ ohms @ _____ F

Chlorides _____ ppm.

BOTTOM

Resistivity 1.5 ohms @ 75 F

Chlorides 4500 ppm.

TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Test Ticket

No 6052

Well Name & No. <u>Essex #1</u>	Test No. <u>#5</u>	Date <u>7-6-93</u>
Company <u>Amoco Production Company</u>	Zone Tested <u>Council Grove</u>	
Address <u>Box 800 Rm. 2118 Denver Co. 80201</u>	Elevation <u>3223 (KRS)</u>	
Co. Rep./Geo. <u>Sam Garneck</u>	cont. <u>Cheyenne Dr. 2</u>	Est. Ft. of Pay _____
Location: Sec. <u>16</u>	Twp. <u>29</u>	Rge. <u>39</u> Co. <u>Stanton</u> State <u>Ks.</u>
No. of Copies _____	Distribution Sheet _____	Yes _____ No _____ Turnkey _____ Yes _____ No _____ Evaluation _____

Interval Tested <u>2746-2757</u>	Drill Pipe Size <u>4.5 x-Hole</u>
Anchor Length <u>11'</u>	Top Choke — 1" _____ Bottom Choke — 3/4" _____
Top Packer Depth <u>2741</u>	Hole Size — 7 7/8" _____ Rubber Size — 6 3/4" _____
Bottom Packer Depth <u>2746</u>	Wt. Pipe I.D. — 2.7 Ft. Run _____
Total Depth <u>2757</u>	Drill Collar — 2.25 Ft. Run <u>660</u>
Mud Wt. <u>Foam</u> lb/gal.	Viscosity _____ Filtrate _____
Tool Open @ <u>3:49 pm</u>	Initial Blow <u>surface blow built to 2 in - then opened 2 in.</u>

Final Blow _____

Recovery — Total Feet <u>30'</u>	Feet of Gas in Pipe _____	Flush Tool? <u>NO</u>
Rec. _____ Feet Of _____	% gas _____ % oil _____ % water _____ % mud _____	
Rec. _____ Feet Of _____	% gas _____ % oil _____ % water _____ % mud _____	
Rec. <u>30'</u> Feet Of <u>Foamy water</u>	% gas _____ % oil _____ % water _____ % mud _____	
Rec. _____ Feet Of _____	% gas _____ % oil _____ % water _____ % mud _____	
Rec. _____ Feet Of _____	% gas _____ % oil _____ % water _____ % mud _____	

BHT _____ °F Gravity _____ °API @ _____ °F Corrected Gravity _____ °API
RW 1.5 @ 75 °F Chlorides 4500 ppm Recovery Chlorides _____ ppm System

- (A) Initial Hydrostatic Mud _____ PSI AK1 Recorder No. _____ Range _____
- (B) First Initial Flow Pressure _____ PSI @ (depth) _____ w/Clock No. _____
- (C) First Final Flow Pressure _____ PSI AK1 Recorder No. _____ Range _____
- (D) Initial Shut-In Pressure _____ PSI @ (depth) _____ w/Clock No. _____
- (E) Second Initial Flow Pressure _____ PSI AK1 Recorder No. _____ Range _____
- (F) Second Final Flow Pressure _____ PSI @ (depth) _____ w/Clock No. _____
- (G) Final Shut-In Pressure _____ PSI Initial Opening _____ Test X 600.00
- (H) Final Hydrostatic Mud _____ PSI Initial Shut-In _____ Jars X 200.00

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Final Flow _____ Safety Joint X 50.00
Final Shut-In _____ Straddle _____
Circ. Sub _____

Sampler X 200.00
~~SHALE~~
Egg Packer X 215.00
~~SHALE~~ Packer X 100.00
~~Other~~

Approved By _____
Our Representative Tom Garneck

TOTAL PRICE \$ 1315.00

TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Drill-Stem Test Data

Well Name ESSER #1 Test No. 6 Date 7/9/93
Company AMOCO PRODUCTION COMPANY Zone COUNCIL GROV
Address BOX 800 RM 2118 DENVER CO 80201 Elevation 3223 KB
Co. Rep./Geo. SAM CARMACK Cont. CHEYENNE DRLG RIG #2 Est. Ft. of Pay _____
Location: Sec. 16 Twp. 29S Rge. 39W Co. STANTON State KS

Interval Tested	<u>2845-2866</u>	Drill Pipe Size	<u>4.5" XH</u>
Anchor Length	<u>21</u>	Wt. Pipe I.D. - 2.7 Ft. Run	_____
Top Packer Depth	<u>2838</u>	Drill Collar - 2.25 Ft. Run	<u>660</u>
Bottom Packer Depth	<u>2845</u>	Mud Wt.	<u>FOAM</u> lb/Gal.
Total Depth	<u>2866</u>	Viscosity	_____ Filtrate _____

Tool Open @ 4:06 PM Initial Blow SURFACE BLOW - BUILT TO 2" - THEN OPENED 2"

Final Blow _____

Recovery - Total Feet 65 Flush Tool? NO

Rec. 65 Feet of FOAMY WATER
Rec. _____ Feet of _____
Rec. _____ Feet of _____
Rec. _____ Feet of _____
Rec. _____ Feet of _____

BHT _____ °F Gravity 77 °API 5000 Chlorides _____ ppm Recovery _____ Chlorides _____ ppm System
RW 1.1 °F

(A) Initial Hydrostatic Mud _____ PSI AK1 Recorder No. _____ Range _____

(B) First Initial Flow Pressure _____ PSI (depth) _____ w / Clock No. _____

(C) First Final Flow Pressure _____ PSI AK1 Recorder No. _____ Range _____

(D) Initial Shut-in Pressure _____ PSI (depth) _____ w / Clock No. _____

(E) Second Initial Flow Pressure _____ PSI AK1 Recorder No. _____ Range _____

(F) Second Final Flow Pressure _____ PSI (depth) _____ w / Clock No. _____

(G) Final Shut-in Pressure _____ PSI Initial Opening 60 MIN Final Flow 1 MIN

(H) Final Hydrostatic Mud _____ PSI Initial Shut-in 23 HR Final Shut-in OUT

Our Representative TOM HORACEK

FLUID SAMPLER DATA

Ticket No.: 6053 Date: 7/9/93
Company: AMOCO PRODUCTION COMPANY
Lease: ESSER #1 Test No.: 6
County: STANTON Sec.: 16 Twp.: 29S Rng.: 39W

SAMPLER RECOVERY

Gas
Oil
Mud
Water 4000
Other
Pressure 3
TOTAL 4000

SAMPLER ANALYSIS

Resistivity 1.1 ohms@ 77 F
Chlorides 5000 ppm.
Gravity corrected @60F

PIT MUD ANALYSIS

Chlorides
Resistivity ohms@ F
Viscosity
Mud Wt. FOAM
Filtrate
Other

PIPE RECOVERY

TOP
Resistivity ohms@ F
Chlorides ppm
MIDDLE
Resistivity ohms@ F
Chlorides ppm
BOTTOM
Resistivity 1.1 ohms@ 77 F
Chlorides 5000 ppm

FLUID SAMPLER DATA

Ticket No. 6053 Date 7-9-93
Company Name Amoco Production Company
Lease Esser #1 Test No. 26
County Stanton K's. 16 Sec. 16 Twp. 29 Rng. 39

SAMPLER RECOVERY

Gas _____ ML
Oil _____ ML
Mud _____ ML
Water 4000 ML
Other _____ ML
Pressure 3 PSI
Total 4000 ML

PIT MUD ANALYSIS

Chlorides _____ ppm.
Resistivity _____ ohms @ _____ F
Viscosity _____
Mud Weight _____
Filtrate _____
Other Foam

SAMPLER ANALYSIS

Resistivity 1.1 ohms @ 77 F
Chlorides 5,000 ppm.
Gravity _____ corrected @ 60 F

PIPE RECOVERY

TOP
Resistivity _____ ohms @ _____ F
Chlorides _____ ppm.
MIDDLE
Resistivity _____ ohms @ _____ F
Chlorides _____ ppm.
BOTTOM
Resistivity 1.1 ohms @ 77 F
Chlorides 5,000 ppm.

TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Test Ticket

NE 6053

Well Name & No. <u>Esser #1</u>	Test No. <u>#6</u>	Date <u>7-9-93</u>
Company <u>Amoco Production Company</u>	Zone Tested <u>Council Grove</u>	
Address <u>Box 800 R.M. 2118 Denver Co. 80201</u>	Elevation <u>3223 (KB)</u>	
Co. Rep./Geo. <u>Sam Carmack</u>	cont. <u>Cheyenne Drk #2</u>	Est. Ft. of Pay _____
Location: Sec. <u>16</u>	Twp. <u>29</u>	Rge. <u>39</u> Co. <u>Stanton</u> State <u>KS</u>
No. of Copies <u>4</u>	Distribution Sheet _____	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Turnkey _____
		Yes <input type="checkbox"/> No <input type="checkbox"/> Evaluation _____

Interval Tested <u>2845-2866</u>	Drill Pipe Size <u>4.5 x-Hole</u>
Anchor Length <u>21'</u>	Top Choke — 1" _____ Bottom Choke — 3/4" _____
Top Packer Depth <u>2838</u>	Hole Size — 7 7/8" _____ Rubber Size — 6 3/4" _____
Bottom Packer Depth <u>2845</u>	Wt. Pipe I.D. — 2.7 Ft. Run _____
Total Depth <u>2866</u>	Drill Collar — 2.25 Ft. Run <u>660'</u>
Mud Wt. <u>Foam</u> lb/gal.	Viscosity _____ Filtrate _____
Tool Open @ <u>1:06 pm</u>	Initial Blow <u>surface blow - built to 2 in - then opened 2 in.</u>

Final Blow _____

Recovery — Total Feet <u>65'</u>	Feet of Gas in Pipe _____	Flush Tool? <u>NO</u>
Rec. _____ Feet Of _____	%gas _____ %oil _____ %water _____ %mud _____	
Rec. _____ Feet Of _____	%gas _____ %oil _____ %water _____ %mud _____	
Rec. <u>65'</u> Feet Of <u>Foamy water</u>	%gas _____ %oil _____ %water _____ %mud _____	
Rec. _____ Feet Of _____	%gas _____ %oil _____ %water _____ %mud _____	
Rec. _____ Feet Of _____	%gas _____ %oil _____ %water _____ %mud _____	

BHT _____ °F Gravity _____ °API @ _____ °F Corrected Gravity _____ °API
RW 1.1 @ 77 °F Chlorides 5000 ppm Recovery Chlorides _____ ppm System

- (A) Initial Hydrostatic Mud _____ PSI Ak1 Recorder No. _____ Range _____
- (B) First Initial Flow Pressure _____ PSI @ (depth) _____ w/Clock No. _____
- (C) First Final Flow Pressure _____ PSI Ak1 Recorder No. _____ Range _____
- (D) Initial Shut-in Pressure _____ PSI @ (depth) _____ w/Clock No. _____
- (E) Second Initial Flow Pressure _____ PSI Ak1 Recorder No. _____ Range _____
- (F) Second Final Flow Pressure _____ PSI @ (depth) _____ w/Clock No. _____
- (G) Final Shut-in Pressure _____ PSI Initial Opening 60 min. Test 600.00
- (H) Final Hydrostatic Mud _____ PSI Initial Shut-in 23 hrs. Jars 200.00

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Final Flow 1 min. Safety Joint 50.00
Final Shut-in out Straddle _____
Stand By 200.00
Sampler 200.00
Shale Packer 100.00
Shale Packer 100.00

Approved By _____
Our Representative Tom Horacek