



WESTERN TESTING CO., INC.  
FORMATION TESTING

TICKET No 9520

P. O. BOX 1599 PHONE (316) 262-5861  
WICHITA, KANSAS 67201

Elevation \_\_\_\_\_ Formation \_\_\_\_\_ Eff. Pay \_\_\_\_\_ Ft.

District Pratt Date 4-5-81 Customer Order No. \_\_\_\_\_

COMPANY NAME Imperial Oil Company

ADDRESS 720 South Financial Center Wichita, KS 67202

LEASE AND WELL NO. DAILY #4-17 COUNTY CLARK STATE Ks Sec. 14 Twp. 31 Rge. 22W

Mail Invoice To SAME Co. Name \_\_\_\_\_ Address \_\_\_\_\_ No. Copies Requested Req

Mail Charts To SAME Co. Name \_\_\_\_\_ Address \_\_\_\_\_ No. Copies Requested Req

Formation Test No. 1 Interval Tested from 5170 ft. to 5200 ft. Total Depth 5200 ft.

Packer Depth 5165 ft. Size 6 3/4 in. Packer Depth \_\_\_\_\_ ft. Size \_\_\_\_\_ in.

Packer Depth 5170 ft. Size 6 3/4 in. Packer Depth \_\_\_\_\_ ft. Size \_\_\_\_\_ in.

Depth of Selective Zone Set \_\_\_\_\_

Top Recorder Depth (Inside) 5175 ft. Recorder Number 11018 Cap. 4425

Bottom Recorder Depth (Outside) 5200 ft. Recorder Number 11019 Cap. 4500

Below Straddle Recorder Depth \_\_\_\_\_ ft. Recorder Number \_\_\_\_\_ Cap. \_\_\_\_\_

Drilling Contractor Eagle #1 Drill Collar Length 431 I. D. 2 1/4 in.

Mud Type MONRAL Viscosity 62 Weight Pipe Length 256 I. D. 3.0 in.

Weight 9.3 Water Loss 14.0 cc. Drill Pipe Length 4456 I. D. 4.0 in.

Chlorides 19,000 P.P.M. Test Tool Length 27 ft. Tool Size 3 1/2 in.

Jars: Make WTC Serial Number 3660 Anchor Length 30 ft. Size 4 1/2 in.

Did Well Flow? \_\_\_\_\_ Reversed Out \_\_\_\_\_ Surface Choke Size 1/2 in. Bottom Choke Size 1/2 in.

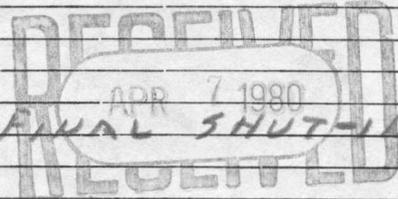
Main Hole Size 7 1/8 in. Tool Joint Size 4 1/2 FH in.

Blow: Initial flow  
Fair steady blow - Blow died in  
5 minutes on formation period

Recovered 240 ft. of DRLG MUD - NO SHOWS

Recovered \_\_\_\_\_ ft. of \_\_\_\_\_

Remarks: Hydrostatic Trap on Final Shut-in



Time On Location 8:30 A.M. Time Pick Up Tool 9:00 A.M. Time Off Location \_\_\_\_\_ A.M.

Time Set Packer(s) 11:00 P.M. Time Started Off Bottom 2:00 P.M. Maximum Temperature \_\_\_\_\_

Initial Hydrostatic Pressure \_\_\_\_\_ (A) 2500 P.S.I.

Initial Flow Period \_\_\_\_\_ Minutes 30 (B) 122 P.S.I. to (C) 144 P.S.I.

Initial Closed In Period \_\_\_\_\_ Minutes 60 (D) 355 P.S.I.

Final Flow Period \_\_\_\_\_ Minutes 30 (E) 177 P.S.I. to (F) 155 P.S.I.

Final Closed In Period \_\_\_\_\_ Minutes 60 (G) \_\_\_\_\_ P.S.I.

Final Hydrostatic Pressure \_\_\_\_\_ (H) 2466 P.S.I.

COMPANY TERMS

Western Testing Co., Inc. shall not be liable for damages of any kind to 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, of its statements or opinion concerning the results of any test. Tools lost or damaged in the hole shall be paid at cost by the party for whom the test is made.

All charges subject to 12% interest after 60 days from date of invoice. Any expense incurred for collection will be added to the original amount.

Test Approved By M.M. Armstrong  
Signature of Customer or his authorized representative

Western Representative Stuart Stover

FIELD INVOICE

Open Hole Test \$ 775.00  
Misrun \$ \_\_\_\_\_  
Straddle Test \$ \_\_\_\_\_  
Jars \$ 300.00  
Selective Zone \$ \_\_\_\_\_  
Safety Joint \$ 65.00  
Standby \$ \_\_\_\_\_  
Evaluation \$ \_\_\_\_\_  
Extra Packer \$ \_\_\_\_\_  
Circ. Sub. \$ \_\_\_\_\_  
Mileage 65 \$ 48.75  
Fluid Sampler \$ \_\_\_\_\_  
Extra Charts \$ \_\_\_\_\_  
Insurance \$ \_\_\_\_\_  
TOTAL \$ 1188.75

WESTERN TESTING CO., INC.

Pressure Data

Date 4-5

Test Ticket No. 9520

Recorder No. 11018

Capacity 4425

Location 5175 Ft.

Clock No. \_\_\_\_\_ Elevation \_\_\_\_\_ Well Temperature \_\_\_\_\_ °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	<u>2500</u> P.S.I.	Open Tool	<u>11:00 A</u>	
B First Initial Flow Pressure	<u>124</u> P.S.I.	First Flow Pressure	<u>30</u> Mins.	<u>30</u> Mins.
C First Final Flow Pressure	<u>159</u> P.S.I.	Initial Closed-in Pressure	<u>60</u> Mins.	<u>60</u> Mins.
D Initial Closed-in Pressure	<u>353</u> P.S.I.	Second Flow Pressure	<u>30</u> Mins.	<u>30</u> Mins.
E Second Initial Flow Pressure	<u>198</u> P.S.I.	Final Closed-in Pressure	<u>60</u> Mins.	<u>60</u> Mins.
F Second Final Flow Pressure	<u>173</u> P.S.I.			
G Final Closed-in Pressure	<u>1227</u> * P.S.I.			
H Final Hydrostatic Mud	<u>2466</u> P.S.I.			

\* Pressures questionable due to tool being picked up too high

PRESSURE BREAKDOWN

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: <u>6</u> Inc.		Breakdown: <u>20</u> Inc.		Breakdown: <u>6</u> Inc.		Breakdown: <u>20</u> Inc.	
of <u>5</u> mins. and a final inc. of <u>0</u> Min.		of <u>3</u> mins. and a final inc. of <u>0</u> Min.		of <u>5</u> mins. and a final inc. of <u>0</u> Min.		of <u>3</u> mins. and a final inc. of <u>0</u> Min.	
Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1 0	<u>124</u>	0	<u>159</u>	0	<u>198</u>	0	<u>173</u>
P 2 5	<u>136</u>	3	<u>236</u>	5	<u>184</u>	3	<u>1341</u> *
P 3 10	<u>140</u>	6	<u>242</u>	10	<u>178</u>	6	<u>1315</u> *
P 4 15	<u>144</u>	9	<u>247</u>	15	<u>176</u>	9	<u>1286</u> *
P 5 20	<u>156</u>	12	<u>253</u>	20	<u>173</u>	12	<u>1269</u> *
P 6 25	<u>159</u>	15	<u>260</u>	25	<u>173</u>	15	<u>1258</u> *
P 7 30	<u>159</u>	18	<u>267</u>	30	<u>173</u>	18	<u>1249</u> *
P 8 35		21	<u>273</u>	35		21	<u>1242</u> *
P 9 40		24	<u>281</u>	40		24	<u>1238</u> *
P10 45		27	<u>289</u>	45		27	<u>1236</u> *
P11 50		30	<u>296</u>	50		30	<u>1232</u> *
P12 55		33	<u>303</u>	55		33	<u>1231</u> *
P13 60		36	<u>309</u>	60		36	<u>1229</u> *
P14		39	<u>316</u>	65		39	( ) *
P15		42	<u>322</u>	70		42	( ) *
P16		45	<u>329</u>	75		45	<u>1229</u> *
P17		48	<u>333</u>	80		48	<u>1227</u> *
P18		51	<u>340</u>	85		51	( ) *
P19		54	<u>346</u>	90		54	( ) *
P20		57	<u>349</u>			57	( ) *
		60	<u>353</u>			60	<u>1227</u> *

Company Imperial Oil Company Lease & Well No. Daily #4-17  
 Elevation - Formation - Effective Pay - Ft. Ticket No. 9520  
 Date 4/5/81 Sec. 17 Twp. 31S Range 21W County Clark State Kansas  
 Test Approved by M. M. Armstrong Western Representative Stuart Stover

Formation Test No. 1 Interval Tested from 5170 ft. to 5200 ft. Total Depth 5200 ft.  
 Packer Depth 5165 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.  
 Packer Depth 5170 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.  
 Depth of Selective Zone Set -

Top Recorder Depth (Inside) 5175 ft. Recorder Number 11018 Cap. 4425  
 Bottom Recorder Depth (Outside) 5200 ft. Recorder Number 11019 Cap. 4500  
 Below Straddle Recorder Depth - ft. Recorder Number - Cap. -

Drilling Contractor Eagle Rig #1 Drill Collar Length 431 I. D. 2 3/4 in.  
 Mud Type Monpac Viscosity 62 Weight Pipe Length 256 I. D. 3.0 in.  
 Weight 9.3 Water Loss 14.0 cc. Drill Pipe Length 4456 I. D. 4.0 in.  
 Chlorides 19,000 P.P.M. Test Tool Length 27 ft. Tool Size 3 1/2 in.  
 Jars: Make WTC Serial Number 3660 Anchor Length 30 ft. Size 4 1/2 in.  
 Did Well Flow? - Reversed Out - Surface Choke Size 1/2 in. Bottom Choke Size 1/2 in.  
 Main Hole Size 7 7/8 in. Tool Joint Size 4 1/2 FH in.

Blow: Initial flow period fair steady blow. Blow died in 5 minutes on final flow period.

Recovered 240 ft. of drilling mud - no shows  
 Recovered     ft. of      
 Recovered     ft. of      
 Recovered     ft. of      
 Recovered     ft. of    

Remarks: Hydrostatic trap on final shut-in

Time Set	Packer(s)	11:00	A.M. <del>P.M.</del>	Time Started	Off Bottom	2:00	A.M. P.M.	Maximum Temperature	-
Initial Hydrostatic Pressure					(A)	2500	P.S.I.		
Initial Flow Period				30	(B)	124	P.S.I. to (C)	159	P.S.I.
Initial Closed In Period				60	(D)	353	P.S.I.		
Final Flow Period				30	(E)	198	P.S.I. to (F)	173	P.S.I.
Final Closed In Period				60	(G)	1227*	P.S.I.		
Final Hydrostatic Pressure					(H)	2466	P.S.I.		

# WESTERN TESTING CO., INC.

## Pressure Data

Date 4/5/81 Recorder No. 11018 Capacity 4425 Test Ticket No. 9520 Location 5175 Ft.  
 Clock No. - Elevation - Well Temperature - °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	2500	P.S.I.	11:00A	M
B First Initial Flow Pressure	124	P.S.I.	30	Mins. 30 Mins.
C First Final Flow Pressure	159	P.S.I.	60	Mins. 60 Mins.
D Initial Closed-in Pressure	353	P.S.I.	30	Mins. 30 Mins.
E Second Initial Flow Pressure	198	P.S.I.	60	Mins. 60 Mins.
F Second Final Flow Pressure	173	P.S.I.	*Pressures questionable due to tool being picked up too high.	
G Final Closed-in Pressure	1227*	P.S.I.		
H Final Hydrostatic Mud	2466	P.S.I.		

### PRESSURE BREAKDOWN

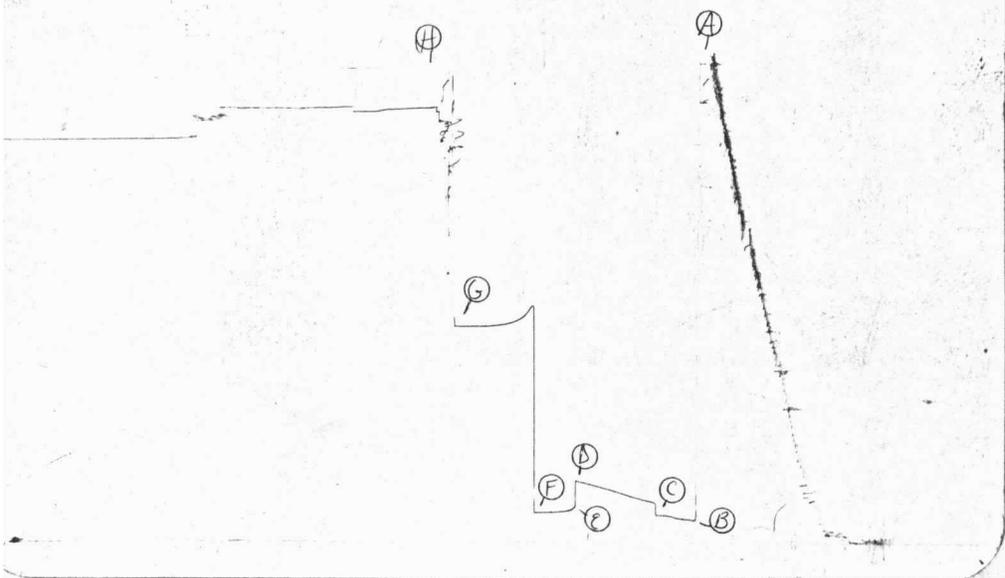
<b>First Flow Pressure</b> Breakdown: <u>6</u> Inc. of <u>5</u> mins. and a final inc. of <u>0</u> Min.	<b>Initial Shut-In</b> Breakdown: <u>20</u> Inc. of <u>3</u> mins. and a final inc. of <u>0</u> Min.	<b>Second Flow Pressure</b> Breakdown: <u>6</u> Inc. of <u>5</u> mins. and a final inc. of <u>0</u> Min.	<b>Final Shut-In</b> Breakdown: <u>20</u> Inc. of <u>3</u> mins. and a final inc. of <u>0</u> Min.
--	---	---	---

Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1 0	124	0	159	0	198	0	173
P 2 5	136	3	236	5	184	3	1341*
P 3 10	140	6	242	10	178	6	1315*
P 4 15	144	9	247	15	176	9	1286*
P 5 20	156	12	253	20	173	12	1269*
P 6 25	159	15	260	25	173	15	1258*
P 7 30	159	18	267	30	173	18	1249*
P 8		21	273			21	1242*
P 9		24	281			24	1238*
P10		27	289			27	1236*
P11		30	296			30	1232*
P12		33	303			33	1231*
P13		36	309			36	1229*
P14		39	316			39	1229*
P15		42	322			42	1229*
P16		45	329			45	1229*
P17		48	333			48	1227*
P18		51	340			51	1227*
P19		54	346			54	1227*
P20		57	349			57	1227*
WTC - 4		60	353			60	1227*

TKT # 9520

11018-9520

I





WESTERN TESTING CO., INC.
FORMATION TESTING

TICKET No 9521

P. O. BOX 1599 PHONE (316) 262-5861
WICHITA, KANSAS 67201

Elevation \_\_\_\_\_ Formation MORROW Eff. Pay \_\_\_\_\_ Ft.

District Pratt Date 4-6-81 Customer Order No. \_\_\_\_\_

COMPANY NAME Imperial O.I. Co.

ADDRESS 720 South Lincoln Center Wichita Ks

LEASE AND WELL NO. Daily #4-17 COUNTY CHARK STATE Ks Sec. 1417 Twp. 315 Rge. 21W

Mail Invoice To Daily #4-17 Same No. Copies Requested Reg

Mail Charts To Same Address No. Copies Requested Reg

Formation Test No. 2 Interval Tested from 5191 ft. to 5236 ft. Total Depth 5236 ft.

Packer Depth 5186 ft. Size 6 3/4 in. Packer Depth \_\_\_\_\_ ft. Size \_\_\_\_\_ in.

Packer Depth 5191 ft. Size 6 3/4 in. Packer Depth \_\_\_\_\_ ft. Size \_\_\_\_\_ in.

Depth of Selective Zone Set \_\_\_\_\_

Top Recorder Depth (Inside) 5196 ft. Recorder Number 11018 Cap. 4425

Bottom Recorder Depth (Outside) 5236 ft. Recorder Number 11019 Cap. 4500

Below Straddle Recorder Depth \_\_\_\_\_ ft. Recorder Number \_\_\_\_\_ Cap. \_\_\_\_\_

Drilling Contractor Eagle #1 Drill Collar Length 431 I. D. 2 1/4 in.

Mud Type \_\_\_\_\_ Viscosity \_\_\_\_\_ Weight Pipe Length 256 I. D. 3.0 in.

Weight \_\_\_\_\_ Water Loss \_\_\_\_\_ cc. Drill Pipe Length \_\_\_\_\_ I. D. 4.0 in.

Chlorides \_\_\_\_\_ P.P.M. Test Tool Length 27 ft. Tool Size 3 1/2 in.

Jars: Make WTC Serial Number 3660 Anchor Length 45 ft. Size 4 1/2 in.

Did Well Flow? \_\_\_\_\_ Reversed Out \_\_\_\_\_ Surface Choke Size 1/2 in. Bottom Choke Size 1/2 in.

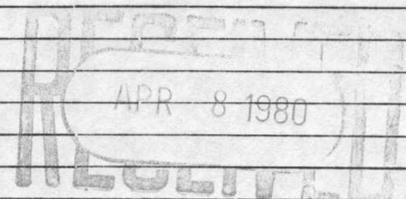
Main Hole Size 2 7/8 in. Tool Joint Size 4 1/2 in.

Blow: \_\_\_\_\_

Recovered 4.30 ft. of DRIG MUD

Recovered \_\_\_\_\_ ft. of \_\_\_\_\_

Remarks: MISRUN - PACKER FAILURE



Time On Location 3:15 A.M. Time Pick Up Tool 3:45 P.M. Time Off Location \_\_\_\_\_ A.M. P.M.

Time Set Packer(s) 5:30 A.M. P.M. Time Started Off Bottom 6:00 A.M. P.M. Maximum Temperature \_\_\_\_\_

Initial Hydrostatic Pressure \_\_\_\_\_ (A) X P.S.I.

Initial Flow Period \_\_\_\_\_ Minutes (B) P.S.I. to (C) \_\_\_\_\_ P.S.I.

Initial Closed In Period \_\_\_\_\_ Minutes (D) P.S.I.

Final Flow Period \_\_\_\_\_ Minutes (E) P.S.I. to (F) \_\_\_\_\_ P.S.I.

Final Closed In Period \_\_\_\_\_ Minutes (G) P.S.I.

Final Hydrostatic Pressure \_\_\_\_\_ (H) P.S.I.

COMPANY TERMS

Western Testing Co., Inc. shall not be liable for damages of any kind to 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, of its statements or opinion concerning the results of any test. Tools lost or damaged in the hole shall be paid at cost by the party for whom the test is made.

All charges subject to 12% interest after 60 days from date of invoice. Any expense incurred for collection will be added to the original amount.

Test Approved By M. M. Armstrong Signature of Customer or his authorized representative

Western Representative Stuart Stover

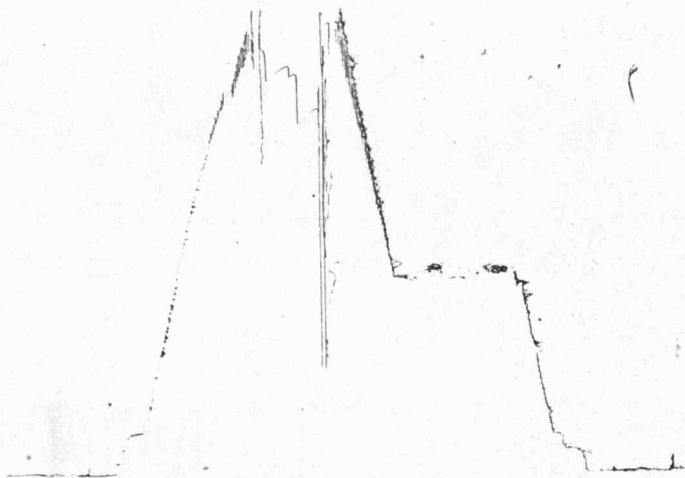
FIELD INVOICE

Table with 2 columns: Item Name and Amount. Items include Open Hole Test, Misrun, Straddle Test, Jars, Selective Zone, Safety Joint, Standby, Evaluation, Extra Packer, Circ. Sub., Mileage, Fluid Sampler, Extra Charts, Insurance, and TOTAL.

11019-9521

JK # 9521

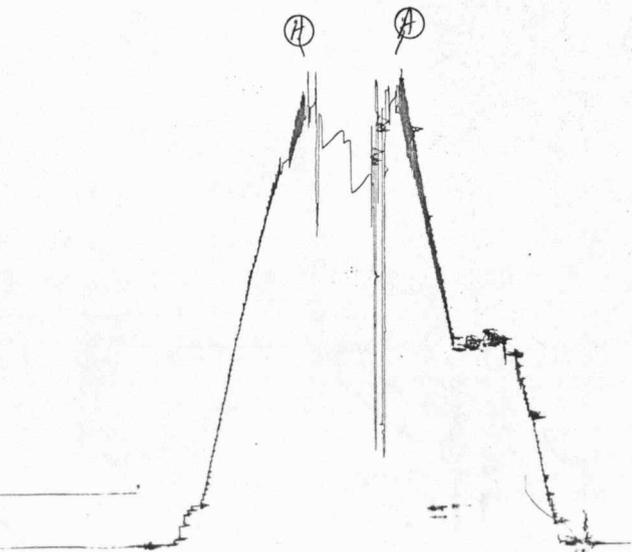
0



11018-9521

JK # 9521

I



Company Imperial Oil Company Lease & Well No. Daily #4-17  
 Elevation - Formation Morrow Effective Pay - Ft. Ticket No. 9521  
 Date 4/6/81 Sec. 17 Twp. 31S Range 21W County Clark State Kansas  
 Test Approved by M. M. Armstrong Western Representative Stuart Stover

Formation Test No. 2 Interval Tested from 5191 ft. to 5236 ft. Total Depth 5236 ft.  
 Packer Depth 5186 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.  
 Packer Depth 5191 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.

Depth of Selective Zone Set -  
 Top Recorder Depth (Inside) 5196 ft. Recorder Number 11018 Cap. 4425  
 Bottom Recorder Depth (Outside) 5236 ft. Recorder Number 11019 Cap. 4500  
 Below Straddle Recorder Depth - ft. Recorder Number - Cap. -

Drilling Contractor Eagle Rig #1 Drill Collar Length 431 I. D. 2 3/4 in.  
 Mud Type M Viscosity - Weight Pipe Length 256 I. D. 3.0 in.  
 Weight - Water Loss - cc. Drill Pipe Length - I. D. 4.0 in.  
 Chlorides - P.P.M. Test Tool Length 27 ft. Tool Size 3 1/2 in.  
 Jars: Make WTC Serial Number 3660 Anchor Length 45 ft. Size 4 1/2 in.  
 Did Well Flow? - Reversed Out - Surface Choke Size 1/2 in. Bottom Choke Size 1/2 in.  
 Main Hole Size 7 7/8 in. Tool Joint Size 4 1/2 FH in.

Blow: \_\_\_\_\_

Recovered 430 ft. of drilling mud  
 Recovered \_\_\_\_\_ ft. of \_\_\_\_\_  
 Recovered \_\_\_\_\_ ft. of \_\_\_\_\_  
 Recovered \_\_\_\_\_ ft. of \_\_\_\_\_  
 Recovered \_\_\_\_\_ ft. of \_\_\_\_\_

Remarks: Packer Failure MISRUN

Time Set Packer(s) 5:30 A.M. Time Started Off Bottom 6:00 P.M. Maximum Temperature -  
 Initial Hydrostatic Pressure (A) 2604 P.S.I.  
 Initial Flow Period (B) - Minutes - P.S.I. to (C) - P.S.I.  
 Initial Closed In Period (D) - Minutes - P.S.I.  
 Final Flow Period (E) - Minutes - P.S.I. to (F) - P.S.I.  
 Final Closed In Period (G) - Minutes - P.S.I.  
 Final Hydrostatic Pressure (H) 2573 P.S.I.



# WESTERN TESTING CO., INC.

## FORMATION TESTING

### TICKET No

### 9522

P. O. BOX 1599      PHONE (316) 262-5861  
WICHITA, KANSAS 67201

Elevation \_\_\_\_\_ Formation MORROW Eff. Pay \_\_\_\_\_ Ft.

District Pratt Date 4-6-81 Customer Order No. \_\_\_\_\_

COMPANY NAME Imperial Oil Company

ADDRESS 720 Fourth Financial Center Wichita Ks

LEASE AND WELL NO. DAILY 4-17 COUNTY CLARK STATE Ks Sec. 19 Twp. 31s Rge. 21

Mail Invoice To Same No. Copies Requested Reg

Co. Name \_\_\_\_\_ Address \_\_\_\_\_

Mail Charts To Same No. Copies Requested Reg

Address \_\_\_\_\_

Formation Test No. 3 Interval Tested from 5185 ft. to 5236 ft. Total Depth 5236 ft.

Packer Depth 5180 ft. Size 6 3/4 in. Packer Depth \_\_\_\_\_ ft. Size \_\_\_\_\_ in.

Packer Depth 5185 ft. Size 6 3/4 in. Packer Depth \_\_\_\_\_ ft. Size \_\_\_\_\_ in.

Depth of Selective Zone Set \_\_\_\_\_

Top Recorder Depth (Inside) 5195 ft. Recorder Number 11018 Cap. 4425

Bottom Recorder Depth (Outside) 5236 ft. Recorder Number 11019 Cap. 4500

Below Straddle Recorder Depth \_\_\_\_\_ ft. Recorder Number \_\_\_\_\_ Cap. \_\_\_\_\_

Drilling Contractor Eagle #1 Drill Collar Length 431 I. D. 2 1/4 in.

Mud Type MONARC Viscosity 46 Weight Pipe Length 256 I. D. 3.0 in.

Weight 9.1 Water Loss 13.2 cc. Drill Pipe Length 4471 I. D. 4.0 in.

Chlorides 15,000 P.P.M. Test Tool Length 27 ft. Tool Size 3 1/2 in.

Jars: Make WTC Serial Number 3660 Anchor Length 51 ft. Size 4 1/2 in.

Did Well Flow? \_\_\_\_\_ Reversed Out \_\_\_\_\_ Surface Choke Size 1/2 in. Bottom Choke Size 1/2 in.

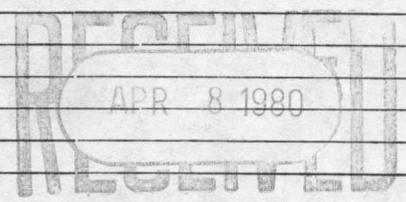
Main Hole Size 7 7/8 in. Tool Joint Size 4 1/2 PH in.

Blow: CO TO SURF IN 3 MINUTES

Recovered 300 ft. of DRUG MUD

Recovered \_\_\_\_\_ ft. of \_\_\_\_\_

Remarks: \_\_\_\_\_



Time On Location 3:15 A.M. Time Pick Up Tool 9:30 <sup>2ND</sup> RUN A.M.

Time Set Packer(s) 11:15 A.M. Time Started Off Bottom 3:45 A.M.

Initial Hydrostatic Pressure \_\_\_\_\_ (A) 2545 P.S.I. Maximum Temperature \_\_\_\_\_

Initial Flow Period \_\_\_\_\_ Minutes 30 (B) 520 P.S.I. to (C) 384 P.S.I.

Initial Closed In Period \_\_\_\_\_ Minutes 60 (D) 542 P.S.I.

Final Flow Period \_\_\_\_\_ Minutes 6:30 (E) 373 P.S.I. to (F) 294 P.S.I.

Final Closed In Period \_\_\_\_\_ Minutes 20:00 (G) 463 P.S.I.

Final Hydrostatic Pressure \_\_\_\_\_ (H) 2545 P.S.I.

### COMPANY TERMS

Western Testing Co., Inc. shall not be liable for damages of any kind to 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, of its statements or opinion concerning the results of any test. Tools lost or damaged in the hole shall be paid at cost by the party for whom the test is made.

All charges subject to 12% interest after 60 days from date of invoice. Any expense incurred for collection will be added to the original amount.

Test Approved By M. M. Armstrong  
Signature of Customer or his authorized representative

Western Representative Stuart Stover

### FIELD INVOICE

Open Hole Test	\$ <u>775.00</u>
Misrun	\$ _____
Straddle Test	\$ _____
Jars	\$ <u>300.00</u>
Selective Zone	\$ _____
Safety Joint	\$ <u>65.00</u>
Standby	\$ _____
Evaluation	\$ _____
Extra Packer	\$ _____
Circ. Sub.	\$ _____
Mileage	\$ _____
Fluid Sampler	\$ _____
Extra Charts	\$ <u>50.00</u>



**No 2374**

**GAS FLOW REPORT**

Date 4-6-81 Ticket 9522 Company Imperial Oil Co.  
Well Name and No. DAILY 4-17 Dst No. 3 Interval Tested 5185-5236  
County CLARK State KS Sec. 14 Twp. 31S Rg. 21W

Time Gauge in Min.	P.S.I. on Merla Orifice Well Tester	Size of Orifice	P.S.I. on Pitot Tester	P.S.I. on Side Static Tester	Description of Flow
<b>PRE FLOW</b>					
5 min	22.0	1 1/4			1,316,000 mcfpd
10	30.0	1 1/4			1,612,000 "
15	38.0	1 1/4			1,911,000 "
20	39.0	1 1/4			1,948,000
25	38.0	1 1/4			1,911,000
30	38.0	1 1/4			1,911,000

<b>SECOND FLOW</b>					
10	38.0	1 1/4			1,911,000 mcfpd
20	36.0	1 1/4			1,836,000 "
30	33.0	1 1/4			1,729,000 "
35	32.0	1 1/4			1,690,000 "
40	30.0	1 1/4			1,612,000 "
45	29.0	1 1/4			1,579,000 "
50	28.0	1 1/4			1,539,000 "
55	27.0	1 1/4			1,506,000 "
60	27.0	1 1/4			1,506,000 "

**GAS BOTTLE**

Serial No. \_\_\_\_\_ Date Bottle Filled \_\_\_\_\_ Date to be Invoiced \_\_\_\_\_

Requisition and Provisions for high pressure stainless steel gas bottles. Western Testing Co., Inc. shall not be liable for damage of any kind to property or personnel of the one whom gas bottle is filled or for any loss suffered or sustained directly or indirectly through the use of these bottles. By signing of this ticket showing receipt of a gas testing bottle, the undersigned agrees for himself and as agent for operator, to return this bottle to Western Testing Co., Inc. within thirty (30) days free of charge, or be invoiced in the amount of \$75.00 (total charge). Should valve or seal plug be missing or damaged beyond repair, operator shall be invoiced for repairs at our invoiced price.

All charges subject to 1 1/2% per month, equal to 18% interest per annum after 30 days from date of invoice. Any expense incurred for collection will be added to the original amount.

COMPANY'S NAME \_\_\_\_\_

Authorized by \_\_\_\_\_

WESTERN TESTING CO., INC.

Pressure Data

Date 4-6 Recorder No. 110189 Capacity 4500 Test Ticket No. 9522 Location 5236 Ft.  
 Clock No. \_\_\_\_\_ Elevation \_\_\_\_\_ Well Temperature \_\_\_\_\_ °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	<u>2545</u>	P.S.I.	<u>11:15 A</u>	<u>M</u>
B First Initial Flow Pressure	<u>525</u>	P.S.I.	<u>30</u> Mins.	<u>30</u> Mins.
C First Final Flow Pressure	<u>394</u>	P.S.I.	<u>60</u> Mins.	<u>60</u> Mins.
D Initial Closed-in Pressure	<u>543</u>	P.S.I.	<u>60</u> Mins.	<u>60</u> Mins.
E Second Initial Flow Pressure	<u>394</u>	P.S.I.	<u>120</u> Mins.	<u>141</u> Mins.
F Second Final Flow Pressure	<u>296</u>	P.S.I.		
G Final Closed-in Pressure	<u>471</u>	P.S.I.		
H Final Hydrostatic Mud	<u>2545</u>	P.S.I.		

PRESSURE BREAKDOWN

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: <u>6</u> Inc.		Breakdown: <u>20</u> Inc.		Breakdown: <u>12</u> Inc.		Breakdown: <u>47</u> Inc.	
of <u>5</u> mins. and a		of <u>3</u> mins. and a		of <u>5</u> mins. and a		of <u>3</u> mins. and a	
final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.	
Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1	<u>0</u> <u>525</u>	<u>0</u> <u>394</u>	<u>0</u> <u>394</u>	<u>0</u> <u>394</u>	<u>0</u> <u>296</u>	<u>0</u> <u>296</u>	<u>0</u> <u>296</u>
P 2	<u>5</u> <u>523</u>	<u>3</u> <u>475</u>	<u>3</u> <u>475</u>	<u>5</u> <u>373</u>	<u>3</u> <u>357</u>	<u>3</u> <u>357</u>	<u>3</u> <u>357</u>
P 3	<u>10</u> <u>480</u>	<u>6</u> <u>489</u>	<u>6</u> <u>489</u>	<u>10</u> <u>364</u>	<u>6</u> <u>373</u>	<u>6</u> <u>373</u>	<u>6</u> <u>373</u>
P 4	<u>15</u> <u>434</u>	<u>9</u> <u>498</u>	<u>9</u> <u>498</u>	<u>15</u> <u>357</u>	<u>9</u> <u>389</u>	<u>9</u> <u>389</u>	<u>9</u> <u>389</u>
P 5	<u>20</u> <u>421</u>	<u>12</u> <u>505</u>	<u>12</u> <u>505</u>	<u>20</u> <u>351</u>	<u>12</u> <u>398</u>	<u>12</u> <u>398</u>	<u>12</u> <u>398</u>
P 6	<u>25</u> <u>407</u>	<u>15</u> <u>509</u>	<u>15</u> <u>509</u>	<u>25</u> <u>344</u>	<u>15</u> <u>407</u>	<u>15</u> <u>407</u>	<u>15</u> <u>407</u>
P 7	<u>30</u> <u>394</u>	<u>18</u> <u>514</u>	<u>18</u> <u>514</u>	<u>30</u> <u>337</u>	<u>18</u> <u>413</u>	<u>18</u> <u>413</u>	<u>18</u> <u>413</u>
P 8	<u>35</u> _____	<u>21</u> <u>518</u>	<u>21</u> <u>518</u>	<u>35</u> <u>328</u>	<u>21</u> <u>419</u>	<u>21</u> <u>419</u>	<u>21</u> <u>419</u>
P 9	<u>40</u> _____	<u>24</u> <u>520</u>	<u>24</u> <u>520</u>	<u>40</u> <u>319</u>	<u>24</u> <u>424</u>	<u>24</u> <u>424</u>	<u>24</u> <u>424</u>
P10	<u>45</u> _____	<u>27</u> <u>525</u>	<u>27</u> <u>525</u>	<u>45</u> <u>312</u>	<u>27</u> <u>430</u>	<u>27</u> <u>430</u>	<u>27</u> <u>430</u>
P11	<u>50</u> _____	<u>30</u> <u>527</u>	<u>30</u> <u>527</u>	<u>50</u> <u>305</u>	<u>30</u> <u>434</u>	<u>30</u> <u>434</u>	<u>30</u> <u>434</u>
P12	<u>55</u> _____	<u>33</u> <u>529</u>	<u>33</u> <u>529</u>	<u>55</u> <u>300</u>	<u>33</u> <u>436</u>	<u>33</u> <u>436</u>	<u>33</u> <u>436</u>
P13	<u>60</u> _____	<u>36</u> <u>531</u>	<u>36</u> <u>531</u>	<u>60</u> <u>296</u>	<u>36</u> <u>439</u>	<u>36</u> <u>439</u>	<u>36</u> <u>439</u>
P14	_____	<u>39</u> <u>533</u>	<u>39</u> <u>533</u>	<u>65</u> _____	<u>39</u> <u>441</u>	<u>39</u> <u>441</u>	<u>39</u> <u>441</u>
P15	_____	<u>42</u> <u>535</u>	<u>42</u> <u>535</u>	<u>70</u> _____	<u>42</u> <u>445</u>	<u>42</u> <u>445</u>	<u>42</u> <u>445</u>
P16	_____	<u>45</u> <u>537</u>	<u>45</u> <u>537</u>	<u>75</u> _____	<u>45</u> <u>447</u>	<u>45</u> <u>447</u>	<u>45</u> <u>447</u>
P17	_____	<u>48</u> <u>539</u>	<u>48</u> <u>539</u>	<u>80</u> _____	<u>48</u> <u>448</u>	<u>48</u> <u>448</u>	<u>48</u> <u>448</u>
P18	_____	<u>51</u> <u>540</u>	<u>51</u> <u>540</u>	<u>85</u> _____	<u>51</u> <u>450</u>	<u>51</u> <u>450</u>	<u>51</u> <u>450</u>
P19	_____	<u>54</u> <u>541</u>	<u>54</u> <u>541</u>	<u>90</u> _____	<u>54</u> <u>452</u>	<u>54</u> <u>452</u>	<u>54</u> <u>452</u>
P20	_____	<u>57</u> <u>542</u>	<u>57</u> <u>542</u>	_____	<u>57</u> <u>454</u>	<u>57</u> <u>454</u>	<u>57</u> <u>454</u>
	_____	<u>60</u> <u>543</u>	<u>60</u> <u>543</u>	_____	<u>60</u> <u>455</u>	<u>60</u> <u>455</u>	<u>60</u> <u>455</u>

WESTERN TESTING CO., INC.

Pressure Data

Date \_\_\_\_\_

Test Ticket No. 9522

Recorder No. \_\_\_\_\_ Capacity \_\_\_\_\_ Location \_\_\_\_\_ Ft.

Clock No. \_\_\_\_\_ Elevation \_\_\_\_\_ Well Temperature \_\_\_\_\_ °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud _____	P.S.I.	Open Tool	_____ M	_____
B First Initial Flow Pressure _____	P.S.I.	First Flow Pressure	_____ Mins.	_____ Mins.
C First Final Flow Pressure _____	P.S.I.	Initial Closed-in Pressure	_____ Mins.	_____ Mins.
D Initial Closed-in Pressure _____	P.S.I.	Second Flow Pressure	_____ Mins.	_____ Mins.
E Second Initial Flow Pressure _____	P.S.I.	Final Closed-in Pressure	_____ Mins.	_____ Mins.
F Second Final Flow Pressure _____	P.S.I.			
G Final Closed-in Pressure _____	P.S.I.			
H Final Hydrostatic Mud _____	P.S.I.			

PRESSURE BREAKDOWN

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: _____ Inc.							
of <u>5</u> mins. and a		of <u>3</u> mins. and a		of <u>5</u> mins. and a		of <u>3</u> mins. and a	
final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.	
Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1 _____	_____	<u>63</u>	_____	_____	_____	<u>63</u>	<u>456</u>
P 2 _____	_____	<u>66</u>	_____	_____	_____	<u>66</u>	<u>457</u>
P 3 _____	_____	<u>69</u>	_____	_____	_____	<u>69</u>	<u>458</u>
P 4 _____	_____	<u>72</u>	_____	_____	_____	<u>72</u>	<u>458</u>
P 5 _____	_____	<u>75</u>	_____	_____	_____	<u>75</u>	<u>459</u>
P 6 _____	_____	<u>78</u>	_____	_____	_____	<u>78</u>	<u>459</u>
P 7 _____	_____	<u>81</u>	_____	_____	_____	<u>81</u>	<u>460</u>
P 8 _____	_____	<u>84</u>	_____	_____	_____	<u>84</u>	<u>461</u>
P 9 _____	_____	<u>87</u>	_____	_____	_____	<u>87</u>	<u>461</u>
P10 _____	_____	<u>90</u>	_____	_____	_____	<u>90</u>	<u>462</u>
P11 _____	_____	<u>93</u>	_____	_____	_____	<u>93</u>	<u>462</u>
P12 _____	_____	<u>96</u>	_____	_____	_____	<u>96</u>	<u>463</u>
P13 _____	_____	<u>99</u>	_____	_____	_____	<u>99</u>	<u>463</u>
P14 _____	_____	<u>102</u>	_____	_____	_____	<u>102</u>	<u>463</u>
P15 _____	_____	<u>105</u>	_____	_____	_____	<u>105</u>	<u>464</u>
P16 _____	_____	<u>108</u>	_____	_____	_____	<u>108</u>	<u>464</u>
P17 _____	_____	<u>111</u>	_____	_____	_____	<u>111</u>	<u>465</u>
P18 _____	_____	<u>114</u>	_____	_____	_____	<u>114</u>	<u>466</u>
P19 _____	_____	<u>117</u>	_____	_____	_____	<u>117</u>	<u>466</u>
P20 _____	_____	<u>120</u>	_____	_____	_____	<u>120</u>	<u>467</u>

WESTERN TESTING CO., INC.

Pressure Data

Date \_\_\_\_\_ Test Ticket No. \_\_\_\_\_  
 Recorder No. \_\_\_\_\_ Capacity \_\_\_\_\_ Location \_\_\_\_\_ Ft.  
 Clock No. \_\_\_\_\_ Elevation \_\_\_\_\_ Well Temperature \_\_\_\_\_ °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud _____	P.S.I.	Open Tool _____	M _____	
B First Initial Flow Pressure _____	P.S.I.	First Flow Pressure _____	Mins. _____	Mins. _____
C First Final Flow Pressure _____	P.S.I.	Initial Closed-in Pressure _____	Mins. _____	Mins. _____
D Initial Closed-in Pressure _____	P.S.I.	Second Flow Pressure _____	Mins. _____	Mins. _____
E Second Initial Flow Pressure _____	P.S.I.	Final Closed-in Pressure _____	Mins. _____	Mins. _____
F Second Final Flow Pressure _____	P.S.I.			
G Final Closed-in Pressure _____	P.S.I.			
H Final Hydrostatic Mud _____	P.S.I.			

PRESSURE BREAKDOWN

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: _____ Inc.							
of _____ mins. and a		of _____ mins. and a		of _____ mins. and a		of _____ mins. and a	
final inc. of _____ Min.		final inc. of _____ Min.		final inc. of _____ Min.		final inc. of _____ Min.	
Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1 _____	_____	63 _____	_____	_____	_____	123 _____	468 _____
P 2 _____	_____	66 _____	_____	_____	_____	126 _____	468 _____
P 3 _____	_____	69 _____	_____	_____	_____	129 _____	469 _____
P 4 _____	_____	72 _____	_____	_____	_____	132 _____	469 _____
P 5 _____	_____	75 _____	_____	_____	_____	135 _____	470 _____
P 6 _____	_____	78 _____	_____	_____	_____	138 _____	470 _____
P 7 _____	_____	81 _____	_____	_____	_____	141 _____	471 _____
P 8 _____	_____	84 _____	_____	_____	_____	_____	_____
P 9 _____	_____	87 _____	_____	_____	_____	_____	_____
P10 _____	_____	90 _____	_____	_____	_____	_____	_____
P11 _____	_____	93 _____	_____	_____	_____	_____	_____
P12 _____	_____	96 _____	_____	_____	_____	_____	_____
P13 _____	_____	99 _____	_____	_____	_____	_____	_____
P14 _____	_____	102 _____	_____	_____	_____	_____	_____
P15 _____	_____	105 _____	_____	_____	_____	_____	_____
P16 _____	_____	108 _____	_____	_____	_____	_____	_____
P17 _____	_____	111 _____	_____	_____	_____	_____	_____
P18 _____	_____	114 _____	_____	_____	_____	_____	_____
P19 _____	_____	117 _____	_____	_____	_____	_____	_____
P20 _____	_____	120 _____	_____	_____	_____	_____	_____

Company Imperial Oil Company Lease & Well No. Daily #4-17  
 Elevation - Formation Morrow Effective Pay - Ft. Ticket No. 9522  
 Date 4/6/81 Sec. 17 Twp. 31S Range 21W County Clark State Kansas  
 Test Approved by M. M. Armstrong Western Representative Stuart Stover

Formation Test No. 3 Interval Tested from 5185 ft. to 5236 ft. Total Depth 5236 ft.  
 Packer Depth 5180 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.  
 Packer Depth 5185 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.  
 Depth of Selective Zone Set -

Top Recorder Depth (Inside) 5195 ft. Recorder Number 11018 Cap. 4425  
 Bottom Recorder Depth (Outside) 5236 ft. Recorder Number 11019 Cap. 4500  
 Below Straddle Recorder Depth - ft. Recorder Number - Cap. -

Drilling Contractor Eagle Rig #1 Drill Collar Length 431 I. D. 2 1/4 in.  
 Mud Type Monpac Viscosity 46 Weight Pipe Length 256 I. D. 3.0 in.  
 Weight 9.1 Water Loss 13.2 cc. Drill Pipe Length 4471 I. D. 4.0 in.  
 Chlorides 15,000 P.P.M. Test Tool Length 27 ft. Tool Size 3 1/2 in.  
 Jars: Make WTC Serial Number 3660 Anchor Length 51 ft. Size 4 1/2 in.  
 Did Well Flow? - Reversed Out - Surface Choke Size 1/2 in. Bottom Choke Size 1/2 in.  
 Main Hole Size 7 7/8 in. Tool Joint Size 4 1/2 FH in.

Blow: Gas to surface in 3 minutes.

Recovered 300 ft. of drilling mud  
 Recovered      ft. of       
 Recovered      ft. of       
 Recovered      ft. of       
 Recovered      ft. of     

Remarks:     

Time Set Packer(s) 11:15 ~~P.M.~~ <sup>A.M.</sup> Time Started Off Bottom 3:45 ~~P.M.~~ <sup>A.M.</sup> Maximum Temperature -  
 Initial Hydrostatic Pressure 2545 P.S.I. (A)  
 Initial Flow Period 30 Minutes (B) 525 P.S.I. to (C) 394 P.S.I.  
 Initial Closed In Period 60 Minutes (D) 543 P.S.I.  
 Final Flow Period 60 Minutes (E) 394 P.S.I. to (F) 296 P.S.I.  
 Final Closed In Period 141 Minutes (G) 471 P.S.I.  
 Final Hydrostatic Pressure 2545 P.S.I. (H)

## GAS FLOW REPORT

Date 4/6/81 Ticket 9522 Company Imperial Oil Company  
 Well Name and No. Daily #4-17 Dst No. 3 Interval Tested 5185-5236  
 County Clark State Kansas Sec. 14 Twp. 31S Rg. 21W

Time Gauge Pre-Flow	Time Gauge in Min.	P.S.I. on Meria Orifice Well Tester	P.S.I. on Pitot Tester	P.S.I. on Side Static Tester	P.S.I. on U-Tube Tester	Description of Flow
<b>PRE FLOW</b>						
	5 Min	22.0 PSIG	1 1/4" Orifice			1,316,000 C.F.P.D.
	10 Min	30.0 PSIG	1 1/4" Orifice			1,612,000 C.F.P.D.
	15 Min	38.0 PSIG	1 1/4" Orifice			1,911,000 C.F.P.D.
	20 Min	39.0 PSIG	1 1/4" Orifice			1,948,000 C.F.P.D.
	25 Min	38.0 PSIG	1 1/4" Orifice			1,911,000 C.F.P.D.
	30 Min	38.0 PSIG	1 1/4" Orifice			1,911,000 C.F.P.D.

<b>SECOND FLOW</b>						
	10 Min	38.0 PSIG	1 1/4" Orifice			1,911,000 C.F.P.D.
	20 Min	36.0 PSIG	1 1/4" Orifice			1,836,000 C.F.P.D.
	30 Min	33.0 PSIG	1 1/4" Orifice			1,729,000 C.F.P.D.
	35 Min	32.0 PSIG	1 1/4" Orifice			1,690,000 C.F.P.D.
	40 Min	30.0 PSIG	1 1/4" Orifice			1,612,000 C.F.P.D.
	45 Min	29.0 PSIG	1 1/4" Orifice			1,579,000 C.F.P.D.
	50 Min	28.0 PSIG	1 1/4" Orifice			1,539,000 C.F.P.D.
	55 Min	27.0 PSIG	1 1/4" Orifice			1,506,000 C.F.P.D.
	60 Min	27.0 PSIG	1 1/4" Orifice			1,506,000 C.F.P.D.

### GAS BOTTLE

Serial No. - Date Bottle Filled - Date to be Invoiced 4/6/81

Requisition and Provisions for high pressure stainless steel gas bottles. Western Testing Co., Inc. shall not be liable for damage of any kind to property or personnel of the one whom gas bottle is filled or for any loss suffered or sustained directly or indirectly through the use of these bottles. By signing of this ticket showing receipt of a gas testing bottle, the undersigned agrees for himself and as agent for operator, to return this bottle to Western Testing Co., Inc. within thirty (30) days free of charge, or be invoiced in the amount of \$75.00 (total charge). Should valve or seal plug be missing or damaged beyond repair, operator shall be invoiced for repairs at our invoiced price.

All charges subject to 1 1/2% per month, equal to 18% interest per annum after 30 days from date of invoice. Any expense incurred for collection will be added to the original amount.

COMPANY'S NAME Imperial Oil Company

Authorized by Stuart Stover

**WESTERN TESTING CO., INC.**

**Pressure Data**

Date 4/6/81 Test Ticket No. 9522  
 Recorder No. 11019 Capacity 4500 Location 5236 Ft.  
 Clock No. - Elevation - Well Temperature - °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	<u>2545</u> P.S.I.	Open Tool	<u>11:15A</u> M	
B First Initial Flow Pressure	<u>525</u> P.S.I.	First Flow Pressure	<u>30</u> Mins.	<u>30</u> Mins.
C First Final Flow Pressure	<u>394</u> P.S.I.	Initial Closed-in Pressure	<u>60</u> Mins.	<u>60</u> Mins.
D Initial Closed-in Pressure	<u>543</u> P.S.I.	Second Flow Pressure	<u>60</u> Mins.	<u>60</u> Mins.
E Second Initial Flow Pressure	<u>394</u> P.S.I.	Final Closed-in Pressure	<u>120</u> Mins.	<u>141</u> Mins.
F Second Final Flow Pressure	<u>296</u> P.S.I.			
G Final Closed-in Pressure	<u>471</u> P.S.I.			
H Final Hydrostatic Mud	<u>2545</u> P.S.I.			

**PRESSURE BREAKDOWN**

<b>First Flow Pressure</b> Breakdown: <u>6</u> Inc. of <u>5</u> mins. and a final inc. of <u>0</u> Min.	<b>Initial Shut-In</b> Breakdown: <u>20</u> Inc. of <u>3</u> mins. and a final inc. of <u>0</u> Min.	<b>Second Flow Pressure</b> Breakdown: <u>12</u> Inc. of <u>5</u> mins. and a final inc. of <u>0</u> Min.	<b>Final Shut-In</b> Breakdown: <u>47</u> Inc. of <u>3</u> mins. and a final inc. of <u>0</u> Min.
--	---	--	---

Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1	<u>0</u> <u>525</u>	<u>0</u> <u>394</u>	<u>0</u> <u>394</u>	<u>0</u> <u>394</u>	<u>0</u> <u>296</u>	<u>0</u> <u>296</u>	<u>296</u>
P 2	<u>5</u> <u>523</u>	<u>3</u> <u>475</u>	<u>3</u> <u>475</u>	<u>5</u> <u>373</u>	<u>3</u> <u>357</u>	<u>3</u> <u>357</u>	<u>357</u>
P 3	<u>10</u> <u>480</u>	<u>6</u> <u>489</u>	<u>6</u> <u>489</u>	<u>10</u> <u>364</u>	<u>6</u> <u>373</u>	<u>6</u> <u>373</u>	<u>373</u>
P 4	<u>15</u> <u>434</u>	<u>9</u> <u>498</u>	<u>9</u> <u>498</u>	<u>15</u> <u>357</u>	<u>9</u> <u>389</u>	<u>9</u> <u>389</u>	<u>389</u>
P 5	<u>20</u> <u>421</u>	<u>12</u> <u>505</u>	<u>12</u> <u>505</u>	<u>20</u> <u>351</u>	<u>12</u> <u>398</u>	<u>12</u> <u>398</u>	<u>398</u>
P 6	<u>25</u> <u>407</u>	<u>15</u> <u>509</u>	<u>15</u> <u>509</u>	<u>25</u> <u>344</u>	<u>15</u> <u>407</u>	<u>15</u> <u>407</u>	<u>407</u>
P 7	<u>30</u> <u>394</u>	<u>18</u> <u>514</u>	<u>18</u> <u>514</u>	<u>30</u> <u>337</u>	<u>18</u> <u>413</u>	<u>18</u> <u>413</u>	<u>413</u>
P 8		<u>21</u> <u>518</u>	<u>21</u> <u>518</u>	<u>35</u> <u>328</u>	<u>21</u> <u>419</u>	<u>21</u> <u>419</u>	<u>419</u>
P 9		<u>24</u> <u>520</u>	<u>24</u> <u>520</u>	<u>40</u> <u>319</u>	<u>24</u> <u>424</u>	<u>24</u> <u>424</u>	<u>424</u>
P10		<u>27</u> <u>525</u>	<u>27</u> <u>525</u>	<u>45</u> <u>312</u>	<u>27</u> <u>430</u>	<u>27</u> <u>430</u>	<u>430</u>
P11		<u>30</u> <u>527</u>	<u>30</u> <u>527</u>	<u>50</u> <u>305</u>	<u>30</u> <u>434</u>	<u>30</u> <u>434</u>	<u>434</u>
P12		<u>33</u> <u>529</u>	<u>33</u> <u>529</u>	<u>55</u> <u>300</u>	<u>33</u> <u>436</u>	<u>33</u> <u>436</u>	<u>436</u>
P13		<u>36</u> <u>531</u>	<u>36</u> <u>531</u>	<u>60</u> <u>296</u>	<u>36</u> <u>439</u>	<u>36</u> <u>439</u>	<u>439</u>
P14		<u>39</u> <u>533</u>	<u>39</u> <u>533</u>		<u>39</u> <u>441</u>	<u>39</u> <u>441</u>	<u>441</u>
P15		<u>42</u> <u>535</u>	<u>42</u> <u>535</u>		<u>42</u> <u>445</u>	<u>42</u> <u>445</u>	<u>445</u>
P16		<u>45</u> <u>537</u>	<u>45</u> <u>537</u>		<u>45</u> <u>447</u>	<u>45</u> <u>447</u>	<u>447</u>
P17		<u>48</u> <u>539</u>	<u>48</u> <u>539</u>		<u>48</u> <u>448</u>	<u>48</u> <u>448</u>	<u>448</u>
P18		<u>51</u> <u>540</u>	<u>51</u> <u>540</u>		<u>51</u> <u>450</u>	<u>51</u> <u>450</u>	<u>450</u>
P19		<u>54</u> <u>541</u>	<u>54</u> <u>541</u>		<u>54</u> <u>452</u>	<u>54</u> <u>452</u>	<u>452</u>
P20		<u>57</u> <u>542</u>	<u>57</u> <u>542</u>		<u>57</u> <u>454</u>	<u>57</u> <u>454</u>	<u>454</u>
WTC - 4		<u>60</u> <u>543</u>	<u>60</u> <u>543</u>		<u>60</u> <u>455</u>	<u>60</u> <u>455</u>	<u>455</u>

CONT'D NEXT PAGE

**WESTERN TESTING CO., INC.**  
**Pressure Data**

Date 4/6/81 Test Ticket No. 9522  
 Recorder No. 11019 Capacity 4500 Location 5236 Ft.  
 Clock No. - Elevation - Well Temperature - °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	<u>2545</u> P.S.I.	Open Tool	<u>11:15A</u> M	
B First Initial Flow Pressure	<u>525</u> P.S.I.	First Flow Pressure	<u>30</u> Mins.	<u>30</u> Mins.
C First Final Flow Pressure	<u>394</u> P.S.I.	Initial Closed-in Pressure	<u>60</u> Mins.	<u>60</u> Mins.
D Initial Closed-in Pressure	<u>543</u> P.S.I.	Second Flow Pressure	<u>60</u> Mins.	<u>60</u> Mins.
E Second Initial Flow Pressure	<u>394</u> P.S.I.	Final Closed-in Pressure	<u>120</u> Mins.	<u>141</u> Mins.
F Second Final Flow Pressure	<u>296</u> P.S.I.			
G Final Closed-in Pressure	<u>471</u> P.S.I.			
H Final Hydrostatic Mud	<u>2545</u> P.S.I.			

**PRESSURE BREAKDOWN**

**First Flow Pressure**  
 Breakdown: 6 Inc.  
 of 5 mins. and a  
 final inc. of 0 Min.

**Initial Shut-In**  
 Breakdown: 20 Inc.  
 of 3 mins. and a  
 final inc. of 0 Min.

**Second Flow Pressure**  
 Breakdown: 12 Inc.  
 of 5 mins. and a  
 final inc. of 0 Min.

**Final Shut-In**  
 Breakdown: 47 Inc.  
 of 3 mins. and a  
 final inc. of 0 Min.

Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1				63	456		
P 2				66	457		
P 3				69	458		
P 4				72	458		
P 5				75	459		
P 6				78	459		
P 7				81	460		
P 8				84	461		
P 9				87	461		
P10				90	462		
P11				93	462		
P12				96	463		
P13				99	463		
P14				102	463		
P15				105	464		
P16				108	464		
P17				111	465		
P18				114	466		
P19				117	466		
P20				120	467		

WESTERN TESTING CO., INC.

Pressure Data

Date 4/6/81

Test Ticket No. 9522

Recorder No. 11019

Capacity 4500

Location 5236 Ft.

Clock No. - Elevation - Well Temperature - °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	<u>2545</u> P.S.I.	Open Tool	<u>11:15A</u> M	
B First Initial Flow Pressure	<u>525</u> P.S.I.	First Flow Pressure	<u>30</u> Mins.	<u>30</u> Mins.
C First Final Flow Pressure	<u>394</u> P.S.I.	Initial Closed-in Pressure	<u>60</u> Mins.	<u>60</u> Mins.
D Initial Closed-in Pressure	<u>543</u> P.S.I.	Second Flow Pressure	<u>60</u> Mins.	<u>60</u> Mins.
E Second Initial Flow Pressure	<u>394</u> P.S.I.	Final Closed-in Pressure	<u>120</u> Mins.	<u>141</u> Mins.
F Second Final Flow Pressure	<u>296</u> P.S.I.			
G Final Closed-in Pressure	<u>471</u> P.S.I.			
H Final Hydrostatic Mud	<u>2545</u> P.S.I.			

PRESSURE BREAKDOWN

First Flow Pressure  
Breakdown: 6 Inc.  
of 5 mins. and a  
final inc. of 0 Min.

Initial Shut-In  
Breakdown: 20 Inc.  
of 3 mins. and a  
final inc. of 0 Min.

Second Flow Pressure  
Breakdown: 12 Inc.  
of 5 mins. and a  
final inc. of 0 Min.

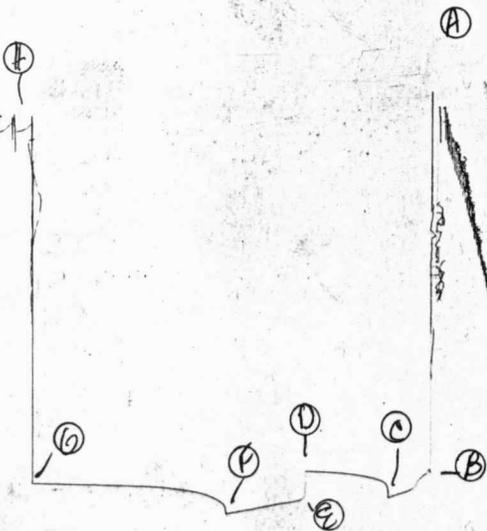
Final Shut-In  
Breakdown: 47 Inc.  
of 3 mins. and a  
final inc. of 0 Min.

Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1						123	468
P 2						126	468
P 3						129	469
P 4						132	469
P 5						135	470
P 6						138	470
P 7						141	471
P 8							
P 9							
P10							
P11							
P12							
P13							
P14							
P15							
P16							
P17							
P18							
P19							
P20							

11019-9522

SKT # 9522

○





WESTERN TESTING CO., INC.
FORMATION TESTING

TICKET NO 9523

P. O. BOX 1599 PHONE (316) 262-5861
WICHITA, KANSAS 67201

Elevation Formation mississippi Eff. Pay Ft.
District Platt Date 4-2-81 Customer Order No.

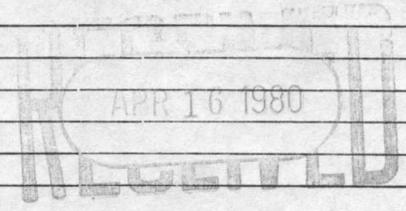
COMPANY NAME Imperial Oil Company
ADDRESS FOURTH FINANCIAL CENTER WICHITA KS
LEASE AND WELL NO. DAILY 4-17 COUNTY CHARLE STATE KS Sec. 14 Twp. 31s Rge. 22w
Mail Invoice To Same No. Copies Requested Reg
Co. Name Address
Mail Charts To Same No. Copies Requested Reg
Address

Formation Test No. 4 Interval Tested from 5306 ft. to 5332 ft. Total Depth 5332 ft.
Packer Depth 5301 ft. Size 6 3/4 in. Packer Depth ft. Size in.
Packer Depth 5306 ft. Size 6 3/4 in. Packer Depth ft. Size in.
Depth of Selective Zone Set

Top Recorder Depth (Inside) 5311 ft. Recorder Number 11019 Cap. 4500
Bottom Recorder Depth (Outside) 5332 ft. Recorder Number 13271 Cap. 4400
Below Straddle Recorder Depth ft. Recorder Number Cap.

Drilling Contractor Eagle #1 Drill Collar Length 431 I. D. 2 1/4 in.
Mud Type maxpac Viscosity 52 Weight Pipe Length 256 I. D. 3.0 in.
Weight 9.1 Water Loss 13.6 cc. Drill Pipe Length 4592 I. D. 4.0 in.
Chlorides 12,000 P.P.M. Test Tool Length 27 ft. Tool Size 3 1/2 in.
Jars: Make WTC Serial Number 3060 Anchor Length 26 ft. Size 4 1/2 in.
Did Well Flow? Reversed Out Surface Choke Size 1/2 in. Bottom Choke Size 1/2 in.
Main Hole Size 77/8 in. Tool Joint Size 4 1/2 in.

Blow:
Recovered 240 ft. of DRLC mud
Recovered ft. of
Recovered ft. of
Recovered ft. of
Recovered ft. of
Remarks: MIS RUN
Packer Failure



Time On Location 1:00 AM P.M. Time Pick Up Tool 1:30 AM P.M. Time Off Location AM P.M.
Time Set Packer(s) 3:45 AM P.M. Time Started Off Bottom 4:00 AM P.M. Maximum Temperature
Initial Hydrostatic Pressure (A) X 2635 P.S.I.
Initial Flow Period Minutes (B) P.S.I. to (C) P.S.I.
Initial Closed In Period Minutes (D) P.S.I.
Final Flow Period Minutes (E) P.S.I. to (F) P.S.I.
Final Closed In Period Minutes (G) P.S.I.
Final Hydrostatic Pressure (H) X 2568 P.S.I.

COMPANY TERMS

Western Testing Co., Inc. shall not be liable for damages of any kind to 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, of its statements or opinion concerning the results of any test. Tools lost or damaged in the hole shall be paid at cost by the party for whom the test is made.
All charges subject to 12% interest after 60 days from date of invoice. Any expense incurred for collection will be added to the original amount.

Test Approved By M.M. Armstrong
Signature of Customer or his authorized representative

Western Representative Stuart Stover

FIELD INVOICE

Open Hole Test \$400.00
Misrun \$400.00
Straddle Test \$
Jars \$300.00
Selective Zone \$
Safety Joint \$65.00
Standby \$
Evaluation \$
Extra Packer \$
Circ. Sub. \$
Mileage \$
Fluid Sampler \$
Extra Charts \$
Insurance \$
TOTAL \$765.00

Thanks

Company Imperial Oil Company Lease & Well No. Daily #4-17  
 Elevation - Formation Mississippi Effective Pay - Ft. Ticket No. 9523  
 Date 4/7/81 Sec. 17 Twp. 31S Range 21W County Clark State Kansas  
 Test Approved by M. M. Armstrong Western Representative Stuart Stover

Formation Test No. 4 Interval Tested from 5306 ft. to 5332 ft. Total Depth 5332 ft.  
 Packer Depth 5301 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.  
 Packer Depth 5306 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.  
 Depth of Selective Zone Set -

Top Recorder Depth (Inside) 5311 ft. Recorder Number 11019 Cap. 4500  
 Bottom Recorder Depth (Outside) 5332 ft. Recorder Number 13271 Cap. 4400  
 Below Straddle Recorder Depth - ft. Recorder Number - Cap. -

Drilling Contractor Eagle Drilling Rig #1 Drill Collar Length 431 I. D. 2 1/2 in.  
 Mud Type monpac Viscosity 52 Weight Pipe Length 256 I. D. 3.0 in.  
 Weight 9.1 Water Loss 13.6 cc. Drill Pipe Length 4592 I. D. 4.0 in.  
 Chlorides 17,000 P.P.M. Test Tool Length 27 ft. Tool Size 3 1/2 in.  
 Jars: Make WTC Serial Number 3660 Anchor Length 26 ft. Size 4 1/2 in.  
 Did Well Flow? - Reversed Out - Surface Choke Size 1/2 in. Bottom Choke Size 1/2 in.  
 Main Hole Size 7 7/8 in. Tool Joint Size 4 1/2 FH 4 in.

Blow: MISRUN

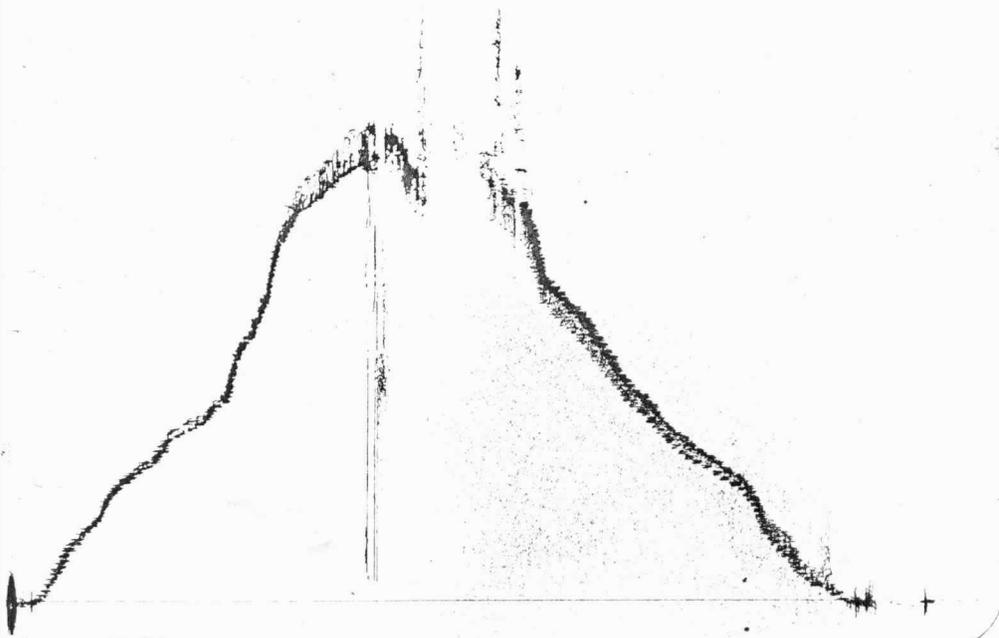
Recovered 240 ft. of drilling mud  
 Recovered \_\_\_\_\_ ft. of \_\_\_\_\_  
 Recovered \_\_\_\_\_ ft. of \_\_\_\_\_  
 Recovered \_\_\_\_\_ ft. of \_\_\_\_\_  
 Recovered \_\_\_\_\_ ft. of \_\_\_\_\_

Remarks: MISRUN PACKER FAILURE

Time Set Packer(s) 3:45 ~~AM~~ P.M. Time Started Off Bottom 4:00 ~~AM~~ P.M. Maximum Temperature ?  
 Initial Hydrostatic Pressure (A) 2635 P.S.I.  
 Initial Flow Period (B) - Minutes P.S.I. to (C) - P.S.I.  
 Initial Closed In Period (D) - Minutes P.S.I.  
 Final Flow Period (E) - Minutes P.S.I. to (F) - P.S.I.  
 Final Closed In Period (G) - Minutes P.S.I.  
 Final Hydrostatic Pressure (H) 2568 P.S.I.

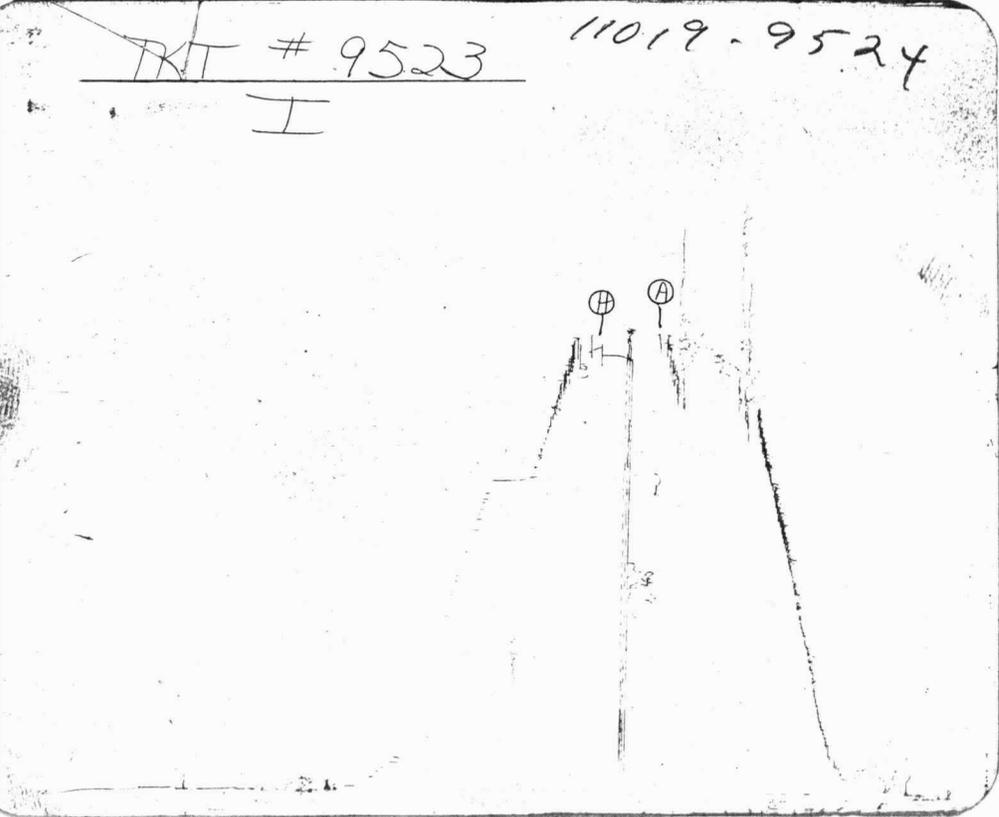
TKT # 9523 13271-9524

0



TKT # 9523 11019-9524

I





WESTERN TESTING CO., INC.

FORMATION TESTING

TICKET No 9524

P. O. BOX 1599 PHONE (316) 262-5861 WICHITA, KANSAS 67201

Elevation \_\_\_\_\_ Formation MISS. Eff. Pay \_\_\_\_\_ Ft.

District Pratt Date 4-7-81 Customer Order No. \_\_\_\_\_

COMPANY NAME Imperial O.I. Company ADDRESS 4044 Fourth Financial Center Wichita 21W

LEASE AND WELL NO. DAILY 4-17 COUNTY CLARK STATE KS Sec 14 1/2 Twp 31 S Rge 22 W

Mail Invoice To Same Co. Name Address No. Copies Requested Reg

Mail Charts To Same Address No. Copies Requested Reg

Formation Test No. 5 Interval Tested from 5310 ft. to 5332 ft. Total Depth 5332 ft.

Packer Depth 5305 ft. Size 6 3/4 in. Packer Depth \_\_\_\_\_ ft. Size \_\_\_\_\_ in.

Packer Depth 5310 ft. Size 6 3/4 in. Packer Depth \_\_\_\_\_ ft. Size \_\_\_\_\_ in.

Depth of Selective Zone Set \_\_\_\_\_

Top Recorder Depth (Inside) 5315 ft. Recorder Number 21019 Cap. 4500

Bottom Recorder Depth (Outside) 5332 ft. Recorder Number 13271 Cap. 4400

Below Straddle Recorder Depth \_\_\_\_\_ ft. Recorder Number \_\_\_\_\_ Cap. \_\_\_\_\_

Drilling Contractor 2991e #1 Drill Collar Length 431 I. D. 2 1/4 in.

Mud Type MON PAC Viscosity 52 Weight Pipe Length 256 I. D. 3.0 in.

Weight 9.1 Water Loss 13.6 cc. Drill Pipe Length 4596 I. D. 4.0 in.

Chlorides 17000 P.P.M. Test Tool Length 27 ft. Tool Size 3 1/2 in.

Jars: Make WTC Serial Number 3660 Anchor Length 22 ft. Size 4 1/2 in. 1/2

Did Well Flow? \_\_\_\_\_ Reversed Out \_\_\_\_\_ Surface Choke Size 1/2 in. Bottom Choke Size 1/2 in.

Main Hole Size 2 7/8 in. Tool Joint Size 4 1/2 in.

Blow: \_\_\_\_\_

Recovered \_\_\_\_\_ ft. of

Remarks: MIS RUN

PACKER FAILURE

Time On Location 1:00 AM P.M. Time Pick Up Tool 7:00 2ND RUN AM P.M. Time Off Location \_\_\_\_\_ AM P.M.

Time Set Packer(s) 8:30 AM P.M. Time Started Off Bottom 9:00 AM P.M. Maximum Temperature \_\_\_\_\_

Initial Hydrostatic Pressure (A) X 2592 P.S.I.

Initial Flow Period (B) \_\_\_\_\_ P.S.I. to (C) \_\_\_\_\_ P.S.I.

Initial Closed In Period (D) \_\_\_\_\_ P.S.I.

Final Flow Period (E) \_\_\_\_\_ P.S.I. to (F) \_\_\_\_\_ P.S.I.

Final Closed In Period (G) \_\_\_\_\_ P.S.I.

Final Hydrostatic Pressure (H) X 2559 P.S.I.

COMPANY TERMS

Western Testing Co., Inc. shall not be liable for damages of any kind to 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, of its statements or opinion concerning the results of any test. Tools lost or damaged in the hole shall be paid at cost by the party for whom the test is made.

All charges subject to 12% interest after 60 days from date of invoice. Any expense incurred for collection will be added to the original amount.

Test Approved By M.M. Armstrong Signature of Customer or his authorized representative

Western Representative Stuart Stover

FIELD INVOICE

Table with 2 columns: Item, Amount. Includes Open Hole Test, Misrun, Straddle Test, Jars, Selective Zone, Safety Joint, Standby, Evaluation, Extra Packer, Circ. Sub., Mileage, Fluid Sampler, Extra Charts, Insurance, TOTAL \$765.00

Thanks

Company Imperial Oil Company Lease & Well No. Daily #4-17

Elevation ----- Formation Mississippi Effective Pay - Ft. Ticket No. 9524

Date 4/7/81 Sec. 17 Twp. 31S Range 21W County Clark State Kansas

Test Approved by M. M. Armstrong Western Representative Stuart Stover

Formation Test No. 5 Interval Tested from 5310 ft. to 5332 ft. Total Depth 5332 ft.

Packer Depth 5305 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.

Packer Depth 5310 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.

Depth of Selective Zone Set -

Top Recorder Depth (Inside) 5315 ft. Recorder Number 11019 Cap. 4500

Bottom Recorder Depth (Outside) 5332 ft. Recorder Number 13271 Cap. 4400

Below Straddle Recorder Depth - ft. Recorder Number - Cap. -

Drilling Contractor Eagle Drilling Rig #1 Drill Collar Length 431 I. D. 2 1/4 in.

Mud Type monpac Viscosity 52 Weight Pipe Length 256 I. D. 3.0 in.

Weight 9.1 Water Loss 13.6 cc. Drill Pipe Length 4596 I. D. 4.0 in.

Chlorides 17,000 P.P.M. Test Tool Length 27 ft. Tool Size 3 1/2 in.

Jars: Make WTC Serial Number 3660 Anchor Length 22 ft. Size 4 1/2 in.

Did Well Flow? - Reversed Out - Surface Choke Size 1/2 1/8 in. Bottom Choke Size 1/2 in.

Main Hole Size 7 7/8 in. Tool Joint Size 4 1/2 FH in.

Blow: \_\_\_\_\_

Recovered \_\_\_\_\_ ft. of \_\_\_\_\_

Recovered \_\_\_\_\_ ft. of MISRUN PACKER FAILURE

Recovered \_\_\_\_\_ ft. of \_\_\_\_\_

Recovered \_\_\_\_\_ ft. of \_\_\_\_\_

Recovered \_\_\_\_\_ ft. of \_\_\_\_\_

Remarks: \_\_\_\_\_

Time Set Packer(s) 8:30 AM Time Started Off Bottom 9:00 AM Maximum Temperature ?

Initial Hydrostatic Pressure (A) 2592 P.S.I.

Initial Flow Period (B) - P.S.I. to (C) - P.S.I.

Initial Closed In Period (D) - P.S.I.

Final Flow Period (E) - P.S.I. to (F) - P.S.I.

Final Closed In Period (G) - P.S.I.

Final Hydrostatic Pressure (H) 2559 P.S.I.

TKT # 9524

952,

O



TKT # 9524

11019-9523

I

