

DISTRIBUTION		
SANTA FE		
FILE		
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LAND OFFICE		
OPERATOR		

**NEW MEXICO OIL CONSERVATION COMMISSION  
WELL COMPLETION OR RECOMPLETION REPORT AND LOG**

Revised 1-1-65

5a. Indicate Type of Lease State <input checked="" type="checkbox"/> Fee <input type="checkbox"/>
5. State Oil & Gas Lease No. LG-3926

1a. TYPE OF WELL OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> DRY <input type="checkbox"/> OTHER _____		7. Unit Agreement Name None	
b. TYPE OF COMPLETION NEW WELL <input checked="" type="checkbox"/> WORK OVER <input type="checkbox"/> DEEPEN <input type="checkbox"/> PLUG BACK <input type="checkbox"/> DIFF. RESVR. <input type="checkbox"/> OTHER _____		8. Farm or Lease Name State of New Mexico-16	
2. Name of Operator Kenai Oil and Gas Inc.		9. Well No. #21	
3. Address of Operator 717 17th Street, Suite 2000, Denver, CO 80202		10. Field and Pool, or Wildcat Nageezi-Gallup Ext.	
4. Location of Well UNIT LETTER <u>C</u> LOCATED <u>890</u> FEET FROM THE <u>North</u> LINE AND <u>1920</u> FEET FROM <u>West</u> LINE OF SEC. <u>16</u> TWP. <u>23N</u> RGE. <u>8W</u> NMPM		12. County San Juan	
15. Date Spudded 4/30/81	16. Date T.D. Reached 5/9/81	17. Date Compl. (Ready to Prod.) 6/17/81	18. Elevations (DF, RKB, RT, GR, etc.) 7013' GL; 7026' KB
20. Total Depth 5508' KB	21. Plug Back T.D. 5463'	22. If Multiple Compl., How Many None	23. Intervals Drilled By Rotary Tools Yes Cable Tools No
24. Producing Interval(s), of this completion - Top, Bottom, Name Lower Gallup: 5398-5216' Upper Gallup: 5178-5071'			25. Was Directional Survey Made No
26. Type Electric and Other Logs Run DIFL/GR; CDL/CN/GR			27. Was Well Cored No

28. CASING RECORD (Report all strings set in well)					
CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
8-5/8"	23#	259' KB	12-1/4"	275 sxs	----
5-1/2"	14#	5508' KB	7-7/8"	1st stage; 275 sxs	----
				2nd stage; 850 sxs	----

29. LINER RECORD					30. TUBING RECORD		
SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN	SIZE	DEPTH SET	PACKER SET
	NONE				2-3/8"	5407.03' KB	

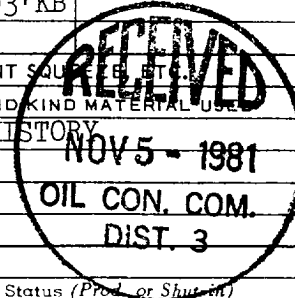
31. Perforation Record (Interval, size and number)  SEE ATTACHED COMPLETION HISTORY	32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.	
	DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
	SEE ATTACHED COMPLETION HISTORY	

33. PRODUCTION							
Date First Production 6/10/81		Production Method (Flowing, gas lift, pumping - Size and type pump) Swabbing and flowing.				Well Status (Prod. or Shut-in) Shut in	
Date of Test 6/16/81	Hours Tested 12	Choke Size	Prod'n. For Test Period	Oil - Bbl.	Gas - MCF	Water - Bbl.	Gas-Oil Ratio
				63	400	42	6350
Flow Tubing Press.	Casing Pressure 290 psi.	Calculated 24-Hour Rate	Oil - Bbl.	Gas - MCF	Water - Bbl.	Oil Gravity - API (Corr.)	
			126	800	84		

34. Disposition of Gas (Sold, used for fuel, vented, etc.) Will be sold when connected to gas pipeline.	Test Witnessed By Dave Howell
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35. List of Attachments Completion History, Wellsite Geologic Report
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36. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.		
SIGNED <u>D. S. Howell</u>	TITLE <u>Manager of Operations</u>	DATE <u>10/30/81</u>





Kenai Oil & Gas Inc.  
New Mexico State 16 #21  
NENW Section 16, T23N, R8W  
San Juan County, New Mexico

Elledge Consulting & Production Company

KENAI OIL AND GAS INC.  
RECEIVED  
AUG 17 1981

### COMPLETION HISTORY

5-29-81

RI Action Rig #4. Weld on 5 $\frac{1}{2}$ " bell nipple. Receive 175 jts 2 3/8" tubing. Nipple up BOP. MI circulating equipment. RIH HOMCO super mill and bit sub (4.84') and 131 jts tubing (4334.59') and tag cement at 4335' KB. Drilling 5' to DV tool at 4340' KB. Drilling tool in 3 hrs. Circulated hole clean. SI for night.

5-30-81

Lowered tubing 34 jts and with 165 jts (5460.16') tag at 5464' KB. Drill out to PBTD of 5460' KB. Circulated hole clean. Rig up National Cementers and pressure casing to 3000 psi, bled to 1800 psi in 5 min. Repeated 3 times. POOH. RIH with fullbore packer and unloader (6.55') and 132 jts tubing (4367.67') and set at 4378' KB, ie below DV tool at 4347' KB. Pressured below packer to 3500 psi, 5 min, OK. Pull packer 48' up hole and placed packer at 4332' KB and pressured casing 3500 psi 5 min, OK. Pulled 4 jts and set packer at 4169' KB and pumped tubing to 3500 psi, bled 1000 psi per minute. Repeated. SD for day.

5-31-81

Sunday-Crew off

6-1-81

POOH with packer. Rig up GO Wireline and ran CBL-VDL from 5463 to 3400. Very poor bond. SD for day.

6-2-81

Shot squeeze holes, 2 each depth at 5450, 5260, 5180, and 4343. RIH with Baker fullbore packer and unloader (6.55') 159 jts tubing (5261.4') and set end of packer at 5272' KB. Rig up National Cementers. Broke perfs at 5450' at 1 bpm at 200 psi. Pumped in at 3 bpm at 2000 psi. Mixed 50 sx Class "B" neat and staged cement 1 hr. Squeezed to 3000 psi. Left TOC 5370' KB. Set packer at 5206' KB. Broke perfs at 5260' at 500 psi and 1 bpm. Pumped in at 3 bpm at 2000 psi. Squeezed with 30 Class "B" neat over 45 minutes to 3000 psi. Left TOC 5229'. Reversed out no cement. Set packer at 5040' KB and broke perfs at 5180' at 2000 psi at 1 bpm. Pumped in at 3 bpm at 1800 psi. Squeezed with 30 sx Class "B" neat over 2 hrs to 3000 psi. Left TOC 5149' KB. Reversed out no cement. Reset packer and left 500 psi on top squeeze overnight.

6-3-81

TP zero. Set packer at 4213' KB with 127 jts (4202.14'). Rig up National Cementers and broke perfs at 4343' at 2200 psi at 1 bpm. Pumped in at 3 bpm at 2200 psi. Mixed and spotted 60 sx Class "B" neat cement and staged for 1 hr. Squeezed to 4000 psi. Held for 20 min, no bleed off. Reversed out no cement. Left TOC at 4299' KB. POOH. WOC.

6-4-81

RIH with Smith 4 3/4" bit, bit sub, and x-over (3.01') and 130 jts tubing 4301.44' and tag cement at 4307' KB. Drlg out 35. Pressure test holes at 4343 to 1500, held OK. Tag cement at 5235' KB, drlg to 5266, pressure test squeeze at 5260, 1500 psi, held good. Tag cement at 5382' KB and drilled out to 5440' KB and pressure test 1500 psi, held OK. Circulated hole clean. POOH. Rig up GO Wireline and ran CBL-VDL log with 800 psi on casing.

6-5-81

Rig up GO Wireline and perforate lower Gallup with holes as follows: 5398, 97, 96, 96, 95, 95, 94, 93, 92, 91, 90, 80, 79, 79, 78, 78, 77, 76, 76, 75, 74, 17, 16, 13, 12, 5281, 80, 62, 61, 44, 43, 20, 20, 19, 19, 18, 17, and 16. RIH with Baker Retrieomatic packer and SN (6.98')

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COMPLETION HISTORY CONTINUED

and 164 jts tubing (5427.06') and rig at 5438' KB. Set packer at 5071' KB. Rig up Western and acidize with 2000 gal 15% HCL with clay stabilizer and NE agent and 60 balls. AIR 4 bpm at 2150 psi. Very little ball action. ISIP 350 psi. 15 min SIP 300 psi. 79 BLW to be recovered. Open to pit and flowed back 22 BLW in 40 minutes. Made 7 swab runs and recovered 35 BLW, and have 2 to 4' flare of gas and 2% oil in last run. FFL 4800'. SI.

6-6-81

SITP 100 psi. IFL 2000'. 1st run 70% oil. Made 5 runs and recovered 19 BLW. 3 BLW yet to be recovered. Lower packer thru perfs and POOH. With Western fracked with 72,534 gallons Mini Max III-30, 400 SCFPB nitrogen, 67000# 20/40 sand and 52000# 10/20 sand. AIR 58.3 bpm at avg trt pressure of 1600 psi. ISIP 1300 psi, 15 min SIP 1200 psi. 1823 BLW to be recovered. Left SI 1 hr and opened through 3/4" choke. Left open overnight. Unloading good.

6-7-81

Sunday-Well dead. SI well.

6-8-81

SICP 200. Bled to pit and flared gas and died in 4 minutes. RIH with wireline set tubing retrievable BP and could not pass 2260'. POOH. BP was partially set. Wait 3 1/2 hrs for another BP. RIH with BP to 2701 and could not pass. POOH. Had oil on BP and sand. RIH with 3 1/2" casing gun and tag at 5296' KB. Rig up Western and pump in 70 bbls 2% KCL water. Set BP at 5205' KB. SD for night.

6-9-81

Dump 10 gallons sand on BP. Rig up GO Wireline and perforate upper Gallup one shot at the following depth: 5178, 78, 77, 77, 76, 75, 74, 60, 59, 58, 40, 39, 37, 38, 32, 31, 30, 29, 28, 27, 15, 14, 13, 09, 09, 08, 08, 07, 06, 5095, 34, 33, 78, 77, 77, 76, 75, 74, 73, 72, and 71. RIH with Baker Retrieomatic packer and SN (C.94'), and 156 jts tubing (5103.29') and 22' of pups, and set packer at 5192. Test BP to 3300 psi, held OK. Set packer at 4906 and pressure annulus to 1500, 5 min, OK. With Western, acidize with 2000 gallons 15% HCL with clay stabilizer, NE agent, and 80 balls. Balled off with 33 RA in formation to 3500 psi. Release pressure and put remaining acid away. AVG TRT pressure 1350 psi at 4 1/2 bpm. ISIP 100 psi, 15 min, SIP 50 psi. Made 12 swab runs in 3 hrs and recovered 91 BLW. Total LW to be recovered was 21 bbls. FFL 1500'. Last 2 runs had 8% oil cut and 2' flare of gas. SI for night.

6-10-81

SITP 300 psi. Bled off no fluid to surface. Ran swab. IFL 1000', 1st run 7% oil, 2nd run trace. In 2 1/2 hrs, made 10 runs and recovered 62 BLW, final run 10% oil. Have gas throughout run. FL 2600'. Wait on additional frack tank for 1 1/2 hrs. Ran swab, FL 2000'. Made 11 runs in 3 hrs and recovered 65 BW, final oil cut 25%. Caught sample, CL 16000 ppm. For day, recovered 21 PO and 122 BW. FFL 3000'. SI for night.

6-11-81

SITP 1000 psi. Bled off in 10 min and flowed 3/4 hr and recovered 5.7 BO and 1/2 bbl water. Ran swab, FL 2500', made 2 runs and recovered 8 BO and 5 BW. Release packer and lowered tubing 9 jts and with 157 jts in (5195.40'), set packer at 5190' KB. Made 5 runs and recovered 12 BP. Wait 1 hr- ran swab, no recovery. ie BP holding.

**dick harnly**  
consulting petroleum geologist  
1932 eastlawn ave, durango colorado, 81301, 303-247-1518

WELLSITE GEOLOGIC REPORT

KENAI OIL & GAS INC  
State of New Mexico 16-21  
nw  $\frac{1}{4}$  16-T23N-R8W  
San Juan County, New Mexico

Prepared by: Dick Harnly

**dick harnly**  
consulting petroleum geologist  
1932 eastlawn ave, durango colorado, 81301, 303-247-1518

OPERATOR: Kenai Oil & Gas Inc.

WELL: State of New Mexico 16-21

PROSPECT: Wildcat Gallup

LOCATION: nw $\frac{1}{4}$  16-T23N-R8W  
San Juan County, New Mexico

LOGGED: 1000' 5500'  
5-1-81/5-10-81

WELLSITE GEOLOGY: Dick Harnly

MUDLOGGING: Durango Well Logging  
Logger: Mark Harnly

WELLSITE ENGINEERING: Elledge Consulting & Production Co.  
L. Bixler

DRILLING CONTRACTOR: Young Drilling Co. , Rig 2  
Pusher: L. Wheat

MUD: Shiprock Mud Co.  
Scott Smith

LOGGING: Dresser Atlas  
D. McKelvie

TESTING: No Tests

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SUMMARY OF MUD PROPERTIES (SHIPROCK MUD CO.)

<u>DEPTH</u>	<u>WEIGHT</u>	<u>VISCOSITY</u>	<u>WATER LOSS</u>	<u>CAKE</u>	<u>ph</u>	<u>CHLORIDES</u>	<u>% SOLIDS</u>
330	8.6	40	7.2	2	9.0	300	2.0
2800	9.1	34	7.0	2	8.5	300	6.0
4021	9.0+	41	6.0	2	8.5	250	5.5
4577	9.0+	36	8.0	2	8.0	250	5.0
5340	9.0+	39	7.0	3	8.0	250	5.5
5508	9.1	100.0	7.0	2	10.0	250	6.0

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consulting petroleum geologist  
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FORMATION TOPS (From "E" Logs)

Elevations: 7013 GL, 7026 KB

<u>FORMATION</u>	<u>DEPTH</u>	<u>ELEVATION</u>
Pictured Cliffs	1636	+5390
Cliff House	3095	+3931
Point Lookout	4031	+2995
Mancos	4232	+2794
Gallup	5066	+1960
Total Depth (Drilled)	<del>5808</del> 5508	+1518
Total Depth (Dresser Atlas)	5508	+1518



#### MUD LOGGING / GEOLOGIC

Mud logging services were performed by Mark Harnly of Durango Well logging, Durango, Colorado from a depth of 1000 feet to total depth 5500 feet. Services included the examination of samples of the drilling cuttings, with special attention to the identification of hydrocarbon shows, monitoring and maintaining the total gas detection and chromatographic equipment, and preparation of the mud log.

Geologic services were performed by Dick Harnly throughout the same interval.

#### OIL/GAS SHOWS

Several small shows of methane gas were detected as coming from some coals above the Point Lookout formation but the first significant show of hydrocarbons was detected in in said formation. At 4035 feet a sandstone of fine to medium grain, tightly infilled with a white clay material was determined to be the sample top of the Point Lookout formation. No evidence of staining, fluorescence or cut was found in the formation however a slight gas show was encountered at 4053 feet....14 units of total gas, 8 units of methane, 4 of ethane and a trace of propane.

A siltstone at 4355 feet (Mancos) exhibited a very dull yellow fluorescence with a fair blue-white cut fluorescence. This light gray brown to brown siltstone was slightly calcareous and was argillaceous. It was present in the samples for only 10 feet and no detectable gas was noted. Deeper in the Mancos 4845-55 feet a light gray slightly tan, slightly calcareous siltstone exhibited a faint yellow fluorescence with a trace of poor milky cut fluorescence. This zone produced no detectable gas.

In the Gallup formation two zones of interest were encountered...the first 5167-73 feet contained a very fine grained silty sandstone with a tan oil stain in about 10% of the sample. This sandstone exhibited a bright yellow

fluorescence and a fair slow blue-white cut fluorescence. Gas readings from this zone were a total of 22 units; 12 units of methane, 6 of ethane and 3 of propane. A trace of porosity and permeability was noted in this slightly calcareous silty sandstone.

The other zone exhibiting hydrocarbon shows was found in the samples between 5244 and 5251 feet. The quality of the sample in this interval was poor and only 10% of the sample consisted of a siltstone, grading to a very fine grained sandstone with a good bright yellow fluorescence and a very slow bleeding cut fluorescence. This slightly calcareous siltstone produced gas readings of 30 units of total gas, consisting of 19 units of methane, 7 units of ethane and two units of propane.