Submit 3 Copies To Appropriate District					Form C-	
Office District1	Energy, Minerals and Nat	ural Resources	DUCKT ADING		June 19,	2008
1625 N. French Dr., Hobbs, NM 87240 District II	OH CONCEDUATIO	N DIVIGIONI	WELL API NO	). 0 <u>45-34919                                   </u>		-
1301 W. Grand Ave., Artesia, NM 88210	OIL CONSERVATIO 1220 South St. Fr		5. Indicate Ty			
District.III 1000 Rio Brazos Rd, Aztec, NM 87410	Santa Fe, NM 8		STATE	☐ FEE		
District IV 1220 S. St. Francis Dr, Santa Fe, NM	Sunta 1 3, 1 11 1		6. State Oil &	Gas Lease No.	<del></del>	
87505	FIGER AND DEPORTS ON ME					
(DO NOT USE THIS FORM FOR PRODIFFERENT RESERVOIR. USE "APP PROPOSALS.)		OR PLUG BACK TO A	7. Lease Name Navajo 1	or Unit Agree	ment Nam	e:
1. Type of Well: Oil Well Gas Well	Other		8. Well Numb	er 1M		
2. Name of Operator	<del></del>	•	9. OGRID Nun			
ENERGEN RESOURCES CORPOR	RATION .					
3. Address of Operator			10. Pool name			
2010 Afton Place, Farming 4. Well Location	igton, NM 87401		Blanco MV/Ba	sın DK		
Unit Letter I :	1870feet from theSo	uth line and	903 feet	from the	East	line
Section 25			<del></del>	_	C T-	_
Section 25		Range 9W	NMPM	County	San Ju	ian Vist
	61	.37' GR				18
12 Check	Appropriate Box to Indicate	Nature of Notice	Papart or Oth	er Data		
12. CHCK	Appropriate box to maleate	inature of motice,	Report, or Our	ici Dala		
NOTICE OF IN	TENTION TO:	l SUB	SEQUENT F	REPORT O	F:	
PERFORM REMEDIAL WORK	PLUG AND ABANDON	REMEDIAL WORK		ALTERII	NG CASIN	G □
TEMPORARILY ABANDON		COMMENCE DRILL	ING OPNS 🗆	P AND A		
	_	CASING/CEMENT J		RCVD AUG		Ш
		CASING/CEMENT J	ОВ			
DOWNHOLE COMMINGLE				01L C0145		
				DIST.	8	
OTHER:		OTHER: Downhole				X
<ol> <li>Describe proposed or comple of starting any proposed work or recompletion.</li> </ol>	ted operations. (Clearly state all pock). SEE RULE 1103. For Multiple					
In accordance to Case 12	2346, Order # R-11363, this	well is downhole o	commingled (DH	C 3134AZ) ir	the Bla	nco
	(71599) and was done accordi				luction is	s
being allocated to the i	Basin DK from the analysis o	of the Weatherford	Production Lo	g.		
,		•				
,	`					
			,			
Spud Date: 4/8/09	Rig Rele	ase Date:	4/23/09			
Spud Bute.	Mg Notes	ase Bute.				
hereby certify that the information	above is true and complete to the	e best of my knowledg	e and belief.			
					0/40/0	_
SIGNATURE /		LE <u>Production</u> asotolenerg	on Engineer	DATE	8/13/0	9
Type or print name Andrew Soto	Е-т	nail address:	<u></u>	PHONE _	505-325-6	<u> 800</u>
For State Use Only		eputy Oil & Gas	Inspector,	<b>A</b> 1	ue o e	วกกก
APPROVED BY		TLE District a	#3 	DATE	UG 26	2009
Conditions of Approval (if any):						
	<b>1</b> 7					



#### **Purpose of Survey**

To quantify the production rate from the MesVaerde and Dakota for Royalt allocation.

#### **Discussion / Conclusions**

The flowing conditions of this well were stable across the Dakota but then it was loading up water. Hence the logging surveys were done in two separate stages across the Dakota and then the Mesa Verde. The analysis was done across the Dakotas and the production rates from the Mesa Verde have been estimated by subtracting from the surface rates as no reliable data could be obtained across the Mesa Verde.

The production log analysis indicates that the majority of the gas production in the well (@ 91% of the total downhole production) is from the Dakotas.

The major gas contributuing perforation is at 6498' - 6503' (@ 65% of the total downhole production) as indicated by the sharp decrease in fluid density and a corresponding large deflection on the flowmeter passes.

The upper stage perforations in the Mesa Verde are contributing less then 10 % of the total downhole production.

There is a reported surface production rate of 4 BWPD and @ 14 BPD of condensate oil but no liquid was detected downhole due to its small volume compared to the total downhole produced gas.

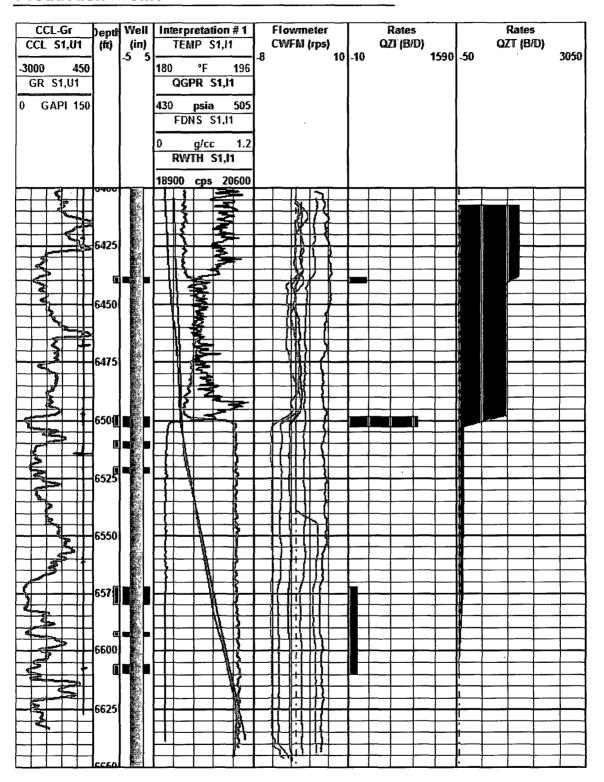
Field personnel reported that the well head pressure was 200 psi at the time of logging operation.

Refer to page 4 for a graphical representation of the flow profile, and <u>pages 6,7 and 10</u> for a tabular display of the calculated results by analyzed <u>zones</u> in this well.

ALL INTERPRETATIONS ARE OPINIONS BASED ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENTS AND WE CANNOT AND DO NOT GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATION, AND WE SHALL NOT, EXCEPT IN THE CASE OF GROSS OR WILLFULL NEGLIGENCE ON OUR PART, BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COSTS, DAMAGES, OR EXPENSES INCURRED OR SUSTAINED BY ANYONE RESULTING FROM ANY INTERPRETATION MADE BY ANY OF OUR OFFICERS, AGENTS OR EMPLOYEES THESE INTERPRETATIONS ARE ALSO SUBJECT TO OUR GENERAL TERMS AND CONDITIONS SET OUT IN OUR CURRENT PRICE SCHEDULE



## **Production Profile**





### **Survey Summary**

Survey Name:

Flowing

Reported Surface rates:

 Gas
 230 Mscf/D

 Oil
 14 STB/D

 Water
 4 STB/D

**Tools Summary** 

String OD 1.6875 in Capacitance (Calib. Type )

100% Water N/A 100% HC N/A

Density Nuclear tool Spinner blade OD 2.44 in

### **Interpretation Summary**

Interpretation Name: Interpretation # 1

Flow type

Single-phase

Flow model

Flow model L-G Flow model W-O Vpcf multipler 1 Vslip multipler N/A Vslip mult.W-O N/A

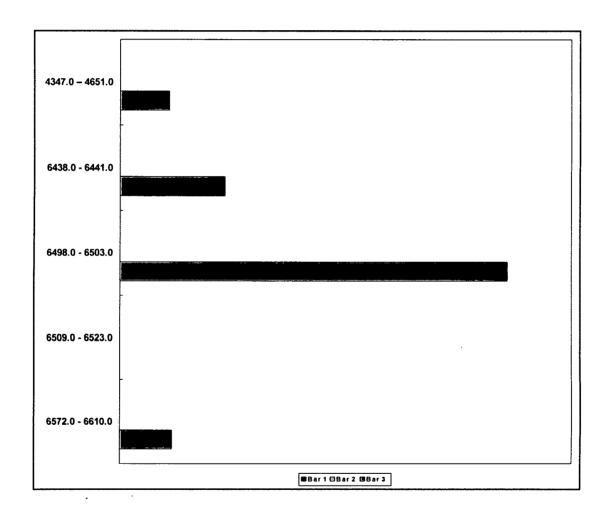
#### **General Interpretation Comments:**

- 1) The well is producing up a 2-3/8" tubing in a 4-1/2" casing with no packer in the hole.
- 2) The flowing conditions of this well were stable across the Dakota but then it was loading up water. Hence the logging surveys were done in two separate stages across the Dakota and then the Mesa Verde.
- 3) The well was swabbed right before the PL Surveys.
- 4) A number of perforations have been grouped together for the purpose of the analysis based on the observed flow profile downhole.
- 5) Reported surface rates are 4 BWPD, 14 BOPD and 230 Mscf/D.
- 6) A single phase gas analysis was done on this well. The analysis was done across the Dakotas and the production rates from the Mesa Verde have been estimated by subtracting from the surface rates as no reliable data could be obtained across the Mesa Verde.
- 7) Reported WHP=200 psi at the time of logging operation.



# **Contributions by Phase (Downhole)**

Formation Names	Zones (fil)	Qw res. ((B/D))	@ res. (B/D)	Qg res. (B/D)
Mesaverde	4347.0 – 4651.0	0.00	0.00	130.23
Dakota	6438.0 - 6441.0	0.00	0.00	279.01
Dakota	6498.0 - 6503.0	0.00	0.00	1029.16
Dakota	6509.0 - 6523.0	0.00	0.00	0.00
Dakota	6572.0 - 6610.0	0.00	0.00	137.25





## **Contributions by Phase (Surface)**

Formation	Zones (fii)	QW S.C. (STE/D)	Qo s.c. (STB/D)	Qg S.C. (MSCID)
Mesaverde	4347.0 – 4651.0	0.00	0.00	19.60
Dakota	6438.0 - 6441.0	0.00	0.00	39.58
Dakota	6498.0 - 6503.0	0.00	0.00	148.42
Dakota	6509.0 - 6523.0	0.00	0.00	0.00
Dakota	6572.0 - 6610.0	0.00	0.00	20.16

Water total contribution SC: 0 STB/D Oil total contribution SC: 0 STB/D

Gas total contribution SC: 227.761 Mscf/D



08/11/09	12:33 55.8	F Ver 8021	4133R	Job 158921
	WHU Before 0	alibration		
Tool Type: WH	U-DA	Serial No: whu	· da145	
	Standard	Measured		
WHU GAS	0.0	34419.5	CPS	
WHU WATER	1.0	19167.7	CPS	

B 4.10144223e+01 -2.06572070e+02 2.54073510e+05 -5.27159067e+08 C -1.93040699e+03 8.96193313e+06 -3.82332228e+08 3.03448855e+11 D 5.91195073e+07 -4.39136964e+10 4.83729157e+11 5.26625471e+14  TEMPERATURE COEFFICIENTS  Source of f: F(Pres) F (temp) Fit Order: 0 3 Prescale. xp=m*(fp-fp0) xt=m*(ft-ft0) 0.01 0.01 fp0 = 19682 ft0 = 51296	08/24/00 12:0	0.0 F	Ver Job	
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B 4.10144223e+01 -2.06572070e-02 2.54073510e-05 -5.27159067e-08 C -1.93040699e-03 8.96193313e-06 -3.82332228e-08 3.03448855e-11 D 5.91195073e-07 -4.39136964e-10 4.83729157e-11 5.26625471e-14  TEMPERATURE COEFFICIENTS  Source of f: F(Pres) F (temp) Fit Order: 0 3 Prescale. xp=m*(fp-fp0) xt=m*(ft-ft0) m 0.01 0.01 fp0 = 19682 ft0 = 51296	ø	1	2	3
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D 5.91195073e-07 -4.39136964e-10 4.83729157e-11 5.26625471e-14  TEMPERATURE COEFFICIENTS  Source of f: F(Pres) F (temp) Fit Order: 0 3 Prescale. xp=m*(fp-fp0) xt=m*(ft-ft0) m 0.01 0.01 fp0 = 19682 ft0 = 51296  0 1 2 3				-5.27159067e-08
TEMPERATURE COEFFICIENTS  Source of f: F(Pres) F (temp) Fit Order: 0 3 Prescale.	C -1.93840699e-83	B.96193313e-06	- 3.82332228e-06	3.03448855e-11
Source of f: F(Pres) F (temp) Fit Order: 0 3 Prescale. xp=m*(fp-fp0) xt=m*(ft-ft0) m 0.01 0.01 fp0 = 19682 ft0 = 51296	D 5.91195073e-07	-4.39136964e-18	4.83729157e-11	5.26625471e-14
Fit Order: 0 3  Prescale. xp=m*(fp-fp0) xt=m*(ft-ft0)  m 0.01 0.01 fp0 = 19682 ft0 = 51296  0 1 2 3		TEMPERATURE COEFF	ICIENTS	
Prescale. xp=m*(fp-fp0) xt=m*(ft-ft0) m 0.01 0.01 fp0 = 19682 ft0 = 51296 0 1 2 3	Source of f:	F(Pres)	F (temp)	
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fp0 = 19682 ft0 = 51296 0 1 2 3	Prescale.	xp=m*(fp-fp0)	xt=m*(ft-ft0)	
0 1 2 3	m	0.01	0.01	
		fp0 = 19682	ft0 = 51296	
	θ	1	2	3
A 2.52111499e+81 -7.33077745e-01 -8.64073587e-04 -6.95309061e-07	A 2.52111499e+01	-7.33077745e-01	-8.64073587e-94	-6.95309061e-07

08/11/09	12.28	55.8 F	Ver 80214133R	Job 158921
	Fluid De	ensity Before Surv	rey Calibration	
	Tool Typ	oe FDT-JA	Serial No: fdt;	a147
	Source M	lumber. V488		
		Me	asured	
	Standard	Master Cal	Before Survey	Drift
	0.00 G/CC	18709.72 CPS	11163.98 CPS	0.05.6455
	0.00 0,00	10.00	11103.98 CPS	-0.05 G/CC
	0.50 G/CC	7292,48 CPS		8.01 G/CC
			7240.19 CPS	·
	0.50 G/CC	7292.48 CPS	7240.19 CPS	8.01 G/CC