Initial Deliverability Test

NEW MEXICO OIL CONSERVATION COMMISSION
GAS WELL TEST DATA SHEET - - SAN JUAN BASIN

(TO BE USED FOR FRUITLAND, PICTURED CLIFFS, MESAVERDE, & ALL DAKOTA EXCEPT BARKER DOME STORAGE AREA)

Pool **Blanco** Formation **Mesa Verde** County **San Juan**

Purchasing Pipeline **El Paso Natural Gas** Date Test Filed _____

Operator **El Paso Natural Gas** Lease **Riddle** Well No. **3-B**

Unit **K** Sec. **23** Twp. **30** Rge. **10** Pay Zone: From **4410** To **5251**

Casing: OD **7** WT. **23** Set At **4343** Tubing: OD **2** WT. **4.7** T. Perf. **4115**

Produced Through: Casing _____ Tubing **X** Gas Gravity: Measured **.681** Estimated _____

Date of Flow Test: From **10/15/59** To **10/22/59** * Date S.I.P. Measured **4/14/59**

Meter Run Size _____ Orifice Size _____ Type Chart _____ Type Taps _____

OBSERVED DATA

Flowing casing pressure (Dwt) _____ psig + 12 = _____ psia (a)

Flowing tubing pressure (Dwt) _____ psig + 12 = _____ psia (b)

Flowing meter pressure (Dwt) _____ psig + 12 = _____ psia (c)

Flowing meter pressure (meter reading when Dwt. measurement taken:

  Normal chart reading _____ psig + 12 = _____ psia (d)

  Square root chart reading (_____) ^{2} x spring constant _____ = _____ psia (d)

Meter error (c) - (d) or (d) - (c) ± = _____ psi (e)

Friction loss, Flowing column to meter:

  (b) - (c) Flow through tubing: (a) - (c) Flow through casing = _____ psi (f)

Seven day average static meter pressure (from meter chart):

  Normal chart average reading _____ psig + 12 = **483** psia (g)

  Square root chart average reading (_____) ^{2} x sp. const. _____ = **483** psia (g)

  Corrected seven day avge. meter press. (p_f) (g) + (e) = **483** psia (h)

P_t = (h) + (f) = **483** psia (i)

Wellhead casing shut-in pressure (Dwt) **781** psig + 12 = **793** + psia (j)

Wellhead tubing shut-in pressure (Dwt) **663** psig + 12 = **675** psia (k)

P_c = (j) or (k) whichever well flowed through = **793** + psia (l)

Flowing Temp. (Meter Run) **61** °F + 460 = **521** °Abs (m)

P_d = ½ P_c = ½ (l) = **397** psia (n)

FLOW RATE CALCULATION

$$Q = \underset{\text{(integrated)}}{\rule{2cm}{0.4pt}} \times \left(\frac{\sqrt{(c)}}{\sqrt{(d)}} = \rule{1cm}{0.4pt} = \rule{1cm}{0.4pt} \right) = \boxed{57} \text{ MCF/da}$$

DELIVERABILITY CALCULATION

$$D = Q\ \mathbf{57}\ \left[\frac{\left(P_c^2 - P_d^2\right) = \mathbf{471240}}{\left(P_c^2 - P_w^2\right) = \mathbf{393560}} \right]^n\ \frac{\mathbf{1.1913}}{\mathbf{1.1403}} = \mathbf{65}\ \text{MCF/da.}$$

SUMMARY

P_c = **793** psia

Q = **57** Mcf/day

P_w = **483** psia

P_d = **397** psia

D = **65** Mcf/day

Company **El Paso Natural Gas**

By ~~Original Signed~~

Title _____

Witnessed by **Harold L. Kendrick**

Company _____

* This is date of completion test.

* Meter error correction factor

REMARKS OR FRICTION CALCULATIONS

GL	$(1-e^{-s})$	$(F_cQ)2$	$\dfrac{(F_cQ)^2 \quad (1-e^{-s})}{R^2}$	$\dfrac{P_t^2}{\text{(Column i)}}$	$P_t^2 + R^2$	P_w
			Friction Negligible			

D at 500 = 54

+ Tubing perforated 9/3/59 **SIPC used for P_c**