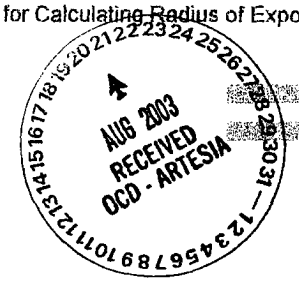
MEAD #4
SECTION 5, T22S, R27E 2418'FNL, 171'FEL
API #: 30-15-32945 EDDY CO., N.M.

OCD Rule 118

Pasquill-Gifford Equation for Calculating Radius of Exposure (ROE) of Hydrogen Sulfide (H2S)



Enter H2S in PPM	4000	*enter Data in green shaded areas*	
Enter Gas flow in mcf/day	500		
Constant for 500 ppm ROE	0.4546	constant	
Constant for 300 ppm ROE	0.77	constant	
Constant for 100 ppm ROE	1.589	constant	
Mult factor for 500 ppm ROE	909.2	formula	
Mult factor for 300 ppm ROE	1540	formula	
Mult factor for 100 ppm ROE	3178	formula	
Flow Rate of Pure H2S in Gas Stream (Actual Volume Fraction)	2	mcf/day	
H2S Concentration Volume Fraction	0.004	decimal equivalent	
H2S Concentration Volume Fraction in percent %	0.40%	percent	
500 ppm radius of exposure (public road)	71	feet	*ANSWER*
300 ppm radius of exposure	99	feet	*ANSWER*
100 ppm radius of exposure (public area)	155	feet	*ANSWER*

Conversions:

	Input H2S in % below	ppm	
To convert H2S in percent to parts per million (ppm) Put H2S in % in blue shaded area; read answer to the right in the yellow shaded area in ppm	10	100000	*ANSWER*
	Input H2S in ppm below	%	
To convert H2S from parts per million (ppm) to perecent Put H2S in ppm in blue shaded area; read answer to the right in the yellow shaded area in percent	214	0.0214%	*ANSWER*
	Input cubic feet per day below	mcf/day	
To convert gas flow in cubic feet per day to mcf per day put cubic feet per day in blue shaded area; read answer to the right in the yellow shaded area in MCF	125999	125.999	*ANSWER*
	Input MCF day below	Cubic feet per day	
To convert gas flow from MCF per day to cubic feet per day put MCF per day in blue shaded area; read answer to the right in the yellow shaded area in Cubic feet per day	599	599000	*ANSWER*

EXAMPLE CALCULATIONS and DEFINITIONS:

Problem: **Calculate the 100 PPM ROE for a gas well that contains 10,000 ppm of H2S and the absolute open gas flow rate is calculated to be 1000 mcf/day**

cf = cubic feet = ft^3

P-G Eq. $X\ (feet) = [1.589 \times H2S\ Concentration \times Q\ ]^{.6258}$

H2S concentration is found by taking 10000 ppm / 1,000,000 ppm = .01 (Decimal equivalent)

Q is gas flow rate in ft^3/day can be found by 1000 mcf/day x 1000 ft^3/mcf = 1,000,000 (ft^3/day)

$x(ft) = [1.589 \times .01 \times 1{,}000{,}000]^{.6258}$

$x(ft) = [1.589 \times \underline{10{,}000}]^{.6258}$

100 ROE = 426 feet

Note: The actual H2S Volume fraction (pure H2S) in this case would be 10,000 cf/day obtained by the product of H2S concentration x Q (.01 x 1,000,000 cf/day) = 10,000 cf/day