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AP42 Section:	7.1
Related	6
Title:	Written communication from Robert Russell to Richard K. Burr, US EPA. Detailed calculations of the K_s and n values which appear in the draft copy of API Bulletin 2517 November 28, 1979

11/28/79

Mr. Richard K. Burr
Environmental Protection Agency
Research Triangle Park
North Carolina, 27711

Dear Dick:

Per our phone conversation of today, I am enclosing copies of the detailed calculations of the K_s and n values which appear in the draft copy of API Bulletin 2517. As noted in the draft copy, Appendix A, we used a slightly different wind speed calibration for the CBI pilot tank. Therefore I have also enclosed copies of the relevant CBI test data summary sheets which have the API wind speeds recorded in the final column.

In all of our calculations following the determination of S and n for a particular test set we carried 4 figures beyond the decimal point to reduce roundoff errors. The K_s and n values in Table 1 and Table B1 of the draft are

obtained by rounding the numbers in the enclosed Tables 1-4 to the nearest 0.1 units. Given the nature of the data and the calculations we do not believe we can justify numbers more precise than 0.1 units.

In Tables 1-4 the K_s and n values for "tight" seals (Table B1 in API 2517) are in the first line for each case. The K_s and n values for "average" seals (Table 1 in API 2517) follow the symbol "∴" in the right hand side of the Tables. These values were obtained by weighting all relevant tests by the expected percent of time that certain size gap ranges are expected to occur in field tanks (based on the CARG data which you supplied to us). Because of the nature of this data, and the fact that the pilot tank data did not necessarily cover exactly the range of interest, we chose to cover gap ranges of 0; $>0 \leq 5$; $>5 \leq 10$; $>10 \leq 15$ in²/(ft of tank diameter), as appropriate.

for the seal(s) in question, and to round the percent of time to the nearest 5%. The percent of time was determined from the plot of "Cumulative percent of tank inspections" versus "Gap area ($\text{in}^2/\text{ft } \emptyset$)", Figures 5-15.

Figures 1-4 are plots of emissions versus wind speed for each case, based on the calculated results. These plots have not been completed and are therefore not enclosed.

If you have any questions feel free to give me a call.

Very truly yours,
Robert L. Russell

CC: K. M. Hangerack, Exxon
R. E. Hills, Pittsburgh-Des Moines Steel
R. J. Saveman, Chicago Bridge & Iron
J. G. Zabaga, Mobil

Table 1: Calculation of "Average" Seal Condition Emissions

Welded Tank With Mechanical Shoe Primary

Case	CRI Emission Tests	Gap Area (in ² /sec)	Percent of Tank Inspections	No. of Points	S^b	b	n	$\hat{r}^2(K_S)$	Emissions at Wind Speed (mph) = C	Emission Contribution at Wind Speed (mph) = d
	Number (s)	Primary Secondary							5	15
1a	W1, W2, W3, W4, W5, W6	0	10	47	0.2095	1.6427	1.6427	0.7777 (0.8369)	2.9470	0.2947
	W1, W2, W3, W4, W5, W6	1.7038	80	10	0.1973	1.5942	1.5942	0.9704	2.5670	2.0536
	W1, W2, W3, W4, W5, W6	9.4	10	5	1.5921	1.1088	1.1088	0.9845	9.4839	0.9484
									Total Emissions	3.2967
									$n = 1.4840$	$K_S = 1.2102$
1b	C2	0	75	6	0.1990	1.1485	1.1485	0.9374 (0.780)	1.2626	0.9477
	C1	0.4	25	5	0.2160	1.3371	1.3371	0.9319	1.8580	0.4645
									Total Emissions	1.4122
									$n = 1.2150$	$K_S = 0.7993$
1c	9	0.1738	75	—	0.04929	0.9264	0.9264	— (0.1971)	0.2189	0.1642
	9	1.7038	25	—	0.03920	1.2107	1.2107	—	0.2751	0.06878
									Total Emissions	0.2330
									$n = 1.0198$	$K_S = 0.1806$
1d	9	0.1738	75	—	0.04929	0.9264	0.9264	— (0.1971)	0.2189	0.1642
	9	1.7038	25	—	0.03920	1.2107	1.2107	—	0.2751	0.06878
									Total Emissions	0.2330
									$n = 1.0198$	$K_S = 0.1806$
1e	9	0.1738	75	—	0.04929	0.9264	0.9264	— (0.1971)	0.2189	0.1642
	9	1.7038	25	—	0.03920	1.2107	1.2107	—	0.2751	0.06878
									Total Emissions	0.2330
									$n = 1.0198$	$K_S = 0.1806$

a. Determined from Figure 5 (Case 1a), Figure 6 (Case 1b), Figure 7 (Case 1c).

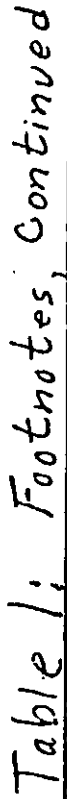
b. From regression of $\log(E)$ versus $\log(V)$ for the indicated test number(s); i.e. $E = SV^n$ (K_S for "tight seal" only).

c. Calculated emissions for the indicated tests at 5 and 15 mph using $E = SV^n$.

d. Calculated emission contribution = (Emissions at Wind Speed (V)) times (Percent of Tank Inspections).

e. $n = [1/\log(E_{V=15}/E_{V=5})] / [1/\log(15/5)]$, $K_S = 4/S$, where E is total emissions.

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Footnote	CBI Emission Numbers(s)	Mission Test(s)		Number of Points	S	n	R ²	Emissions at Wind Speed (mph) =
		Primary	Secondary					
⑧ For 0 in ² /(ft of Ø) secondary seal W6 and apply it to W1, W1A, W2, W3, W4, W5, W6, W7, W8, W9, W10, W11, W12, W13, W14, W15, W16, W17, W18, W19, W20, W21, W22, W23, W24, W25, W26, W27, W28, W29, W30, W31, W32, W33, W34, W35, W36, W37, W38, W39, W40, W41, W42, W43, W44, W45, W46, W47, W48, W49, W50, W51, W52, W53, W54, W55, W56, W57, W58, W59, W60, W61, W62, W63, W64, W65, W66, W67, W68, W69, W70, W71, W72, W73, W74, W75, W76, W77, W78, W79, W80, W81, W82, W83, W84, W85, W86, W87, W88, W89, W90, W91, W92, W93, W94, W95, W96, W97, W98, W99, W100, W101, W102, W103, W104, W105, W106, W107, W108, W109, W110, W111, W112, W113, W114, W115, W116, W117, W118, W119, W120, W121, W122, W123, W124, W125, W126, W127, W128, W129, W130, W131, W132, W133, W134, W135, W136, W137, W138, W139, W140, W141, W142, W143, W144, W145, W146, W147, W148, W149, W150, W151, W152, W153, W154, W155, W156, W157, W158, W159, W160, W161, W162, W163, W164, W165, W166, W167, W168, W169, W170, W171, W172, W173, W174, 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W2006, W2007, W2008, W2009, W2010, W2011, W2012, W2013, W2014, W2015, W2016, W2017, W2018, W2019, W2020, W2021, W2022, W2023, W2024, W2025, W2026, W2027, W2028, W2029, W2030, W2031, W2032, W2033, W2034, W2035, W2036, W2037, W2038, W2039, W2040, W2041, W2042, W2043, W2044, W2045, W2046, W2047, W2048, W2049, W2050, W2051, W2052, W2053, W2054, W2055, W2056, W2057, W2058, W2059, W2060, W2061, W2062, W2063, W2064, W2065, W2066, W2067, W2068, W2069, W2070, W2071, W2072, W2073, W2074, W2075, W2076, W2077, W2078, W2079, W2080, W2081, W2082, W2083, W2084, W2085, W2086, W2087, W2088, W2089, W2090, W2091, W2092, W2093, W2094, W2095, W2096, W2097, W2098, W2099, W2100, W2101, W2102, W2103, W2104, W2105, W2106, W2107, W2108, W2109, W2110, W2111, W2112, W2113, W2114, W2115, W2116, W2117, W2118, W2119, W2120, W2121, W2122, W2123, W2124, W2125, W2126, W2127, W2128, W2129, W2130, W2131, W2132, W2133, W2134, W2135, W2136, W2137, W2138, W2139, W2140, W2141, W2142, W2143, W2144, W2145, W2146, W2147, W2148, W2149, W2150, W2151, W2152, W2153, W2154, W2155, W2156, W2157, W2158, W2159, W2160, W2161, W2162, W2163, W2164, W2165, W2166, W2167, W2168, W2169, W2170, W2171, W2172, W2173, W2174, W2175, W2176, W2177, W2178, W2179, W2180, W2181, W2182, W2183, W2184, W2185, W2186, W2187, W2188, W2189, W2190, W2191, W2192, W2193, W2194, W2195, W2196, W2197, W2198, W2199, W2200, W2201, W2202, W2203, W2204, W2205, W2206, W2207, W2208, W2209, W2210, W2211, W2212, W2213, W2214, W2215, W2216, W2217, W2218, W2219, W2220, W2221, W2222, W2223, W								

Table 2: Footnotes, Continued

Footnote	CBI Emission Test(s)	Number of Points	S	n	R ²	Emissions at Wind Speed (mph)		
						Primary	Secondary	
								5
f	For Weathershield with 0 (in ² of gap/ft ² of ϕ) over a primary with 0 $\rightarrow$ 1.3 (in ² of gap/ft ² of ϕ) take delta between C35 and C36, C38 and apply it to C29, C30.							
	C35	2.6	8	0.3509	0.9265	0.9529	1.5588 4.3135	
	C36, C38	2.6	13	.5819	1.0072	.4593	2.9434 8.9004	
	C29, C30	0 or 1.3	16	.2060	1.0551	.6372	1.1255 3.4872	
g	$\therefore E_5 = (1.5588/2.9434) 1.1255 = 0.5961$ and $E_{15} = (4.3135/8.9004) 3.5572 = 1.7385 \therefore n = 0.9743, S = 0.1243, K_5 = 0.4970$							
	For Weathershield with ($>0 \leq 5$) (in ² of gap/ft ² of ϕ) over a primary with (1.3 $\rightarrow$ 2.6) (in ² of gap/ft ² of ϕ) take delta between C35 and C36, C38 and apply it to C39, C36, C38.							
	C39, C36, C38	1.3 or 2.6	22	0.5598	0.8930	0.6475	2.3562 6.2847	
	$\therefore E_5 = (1.5588/2.9434) 2.3562 = 1.2478$ and $E_{15} = (4.3135/8.9004) 6.2847 = 3.0458 \therefore n = 0.8123, S = 0.3376$							
h	For Secondary with 0 (in ² of gap/ft ² of ϕ) over a primary with 0 $\rightarrow$ 1.3 (in ² of gap/ft ² of ϕ) take delta between C31 and C36, C38 and apply it to C29, C30.							
	C31	2.6	7	0.3532	0.4082	0.8796	0.6813 1.0668	
	$\therefore E_5 = (0.6813/2.9434) 1.1255 = 0.2605$ and $E_{15} = (1.0668/8.9004) 3.5572 = 0.4300 \therefore n = 0.4562, S = 0.1250, K_5 = 0.5000$							
	For Secondary with ($>0 \leq 5$) (in ² of gap/ft ² of ϕ) over a primary with (1.3 $\rightarrow$ 2.6) (in ² of gap/ft ² of ϕ) take delta between C31 and C36, C38 and apply it to C30, C36, C38.							
i	$\therefore E_5 = 10.6817/1.4421 2.3562 = 7.4021$ and $E_{15} = (1.0668/8.9004) 6.2847 = 0.7533 \therefore n = 0.2940, S = 0.3398$							

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On next page.

Table 3: Footnotes (Continued)

7, 9. Because no experiments were done with a weathershield over a vapor-mounted seal it is assumed that the efficiency observed

for the weathershield over a liquid-mounted seal applies. Therefore

for a "tight" case apply the delta between Case 2b^("tight") and Case 2a^("tight") to Case 3a^("tight"); and for an "average" case apply the delta

between Case 2b^("average") and Case 2a^("average") to Case 3a^("average"). i.e.

From Table 2: $E_5^{2bt} = 0.5963$ (Note: subscript indicates wind

Speed in mph; superscript indicates case number (2b) and whether it is for

a "tight" (t) or "average" (a) seal. $E_{15}^{2bt} = 1.7391$; $E_5^{2at} = 0.7237$;

$E_{15}^{2at} = 2.5048$; $E_5^{2ba} = 0.8244$; $E_{15}^{2ba} = 2.1965$; $E_5^{2aa} = 1.2951$; $E_{15}^{2aa} = 3.8277$

and From Table 3: $E_5^{3at} = 4.0210$; $E_{15}^{3at} = 26.8469$; $E_5^{3aa} = 11.2776$;

$E_{15}^{3aa} = 136.9766$. Therefore $E_5^{3bt} = (0.5963/0.7237) 4.0210 = 3.3131$;

$E_{15}^{3bt} = (1.7391/2.5048) 26.8469 = 18.6400$; $E_5^{3ba} = (0.8244/1.2951) 11.2776 =$

7.1788 ; and $E_{15}^{3ba} = (2.1965/3.8277) 136.9766 = 78.6031$.

∴ for "tight" case: $n = [\log(18.6400/3.3131)]/\log(3) = 1.5724$;

$S = (18.6400)/15^{1.5724} = 0.2638$; and $K_s = 1.0550$.

∴ for "average" case: $n = [\log(78.6031/7.1788)]/\log(3) = 2.1785$;

$S = (78.6031)/15^{2.1785} = 0.2155$; and $K_s = 0.8619$

Emissions

Riveted Tank With Mechanical Shoe Primary

UNION

Table 4: Footnotes, Continued

Footnote	CBIE		Emission Test(s)		Number of Points	S	n	R ²	Emissions at Wind Speed (mph)	
	Numbers		Primary	Secondary					5	15
5. For $\geq 0 \leq 10 \text{ in}^2 / (\text{ft of } \phi)$ secondary seal over $\alpha \geq 0 \leq 15 \text{ in}^2 / (\text{ft of } \phi)$ primary seal take delta between C1 and W3, W4, W5 and apply it to Case 4a										
	C1	0	0.4		5	0.2160	1.3371	0.9818	1.8580	8.0725
	W3, W4, W5	1.70, 3.8	—		10	.1973	1.5942	.9704	2.5670	14.7428
	Case 4a	—	—		—	.3183	1.4625	—	3.3503	16.7059
	$\therefore E_5 = (1.8580 / 2.5670) 3.3503 = 2.4250$; $E_{15} = (8.0725 / 14.7428) 16.7059 = 9.1165$								$\therefore n = 1.2054$	$S = 0.2485$
g. Same as for footnote f for Table 1										
h. Same as for footnote g for Table 1										
i. For $\geq 5 \leq 10 \text{ in}^2 / (\text{ft of } \phi)$ secondary seal over $\alpha > 5 \leq 10 \text{ in}^2 / (\text{ft of } \phi)$ in primary seal take delta between W2, W25 and W26 and apply it to W6.										
	W2, W25	13.3	0.7607, 66		16	0.07445	1.8819	0.7798	1.5391	12.1661
	W26	13.3	—		5	.5622	1.2219	.9854	4.0176	15.2800
	W6	9.4	—		5	1.5421	1.1088	.9845	9.4839	32.0642
	$\therefore E_5 = (1.5391 / 4.0176) 9.4839 = 3.6332$; $E_{15} = (12.1661 / 15.2800) 32.0642 = 25.3634$									
									$\therefore n = 1.7688$	$S = 0.2208$

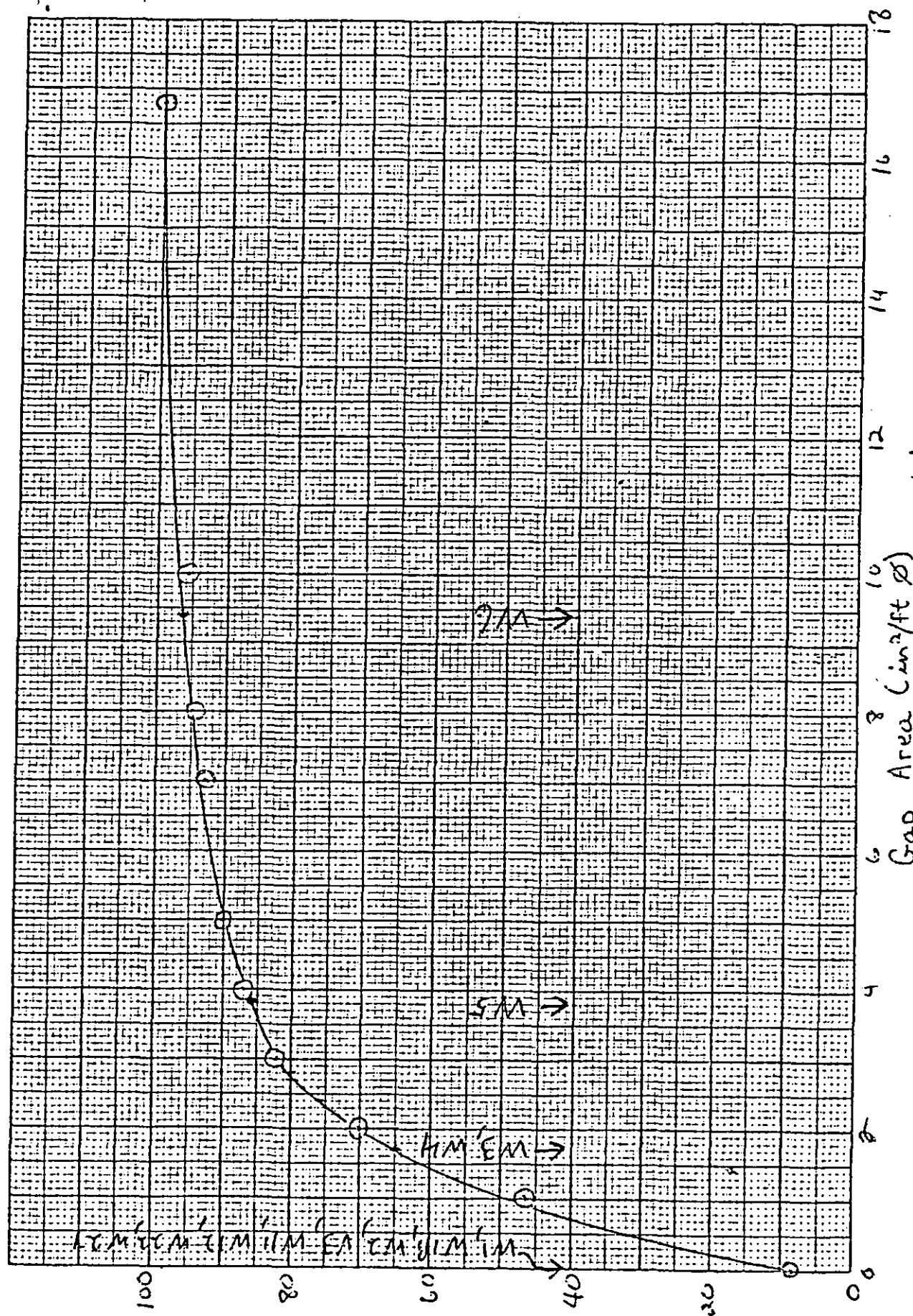


Figure 5: Primary Seal Gap Area of Inspected Welded Tanks With Primary Mechanical Shoe Seals

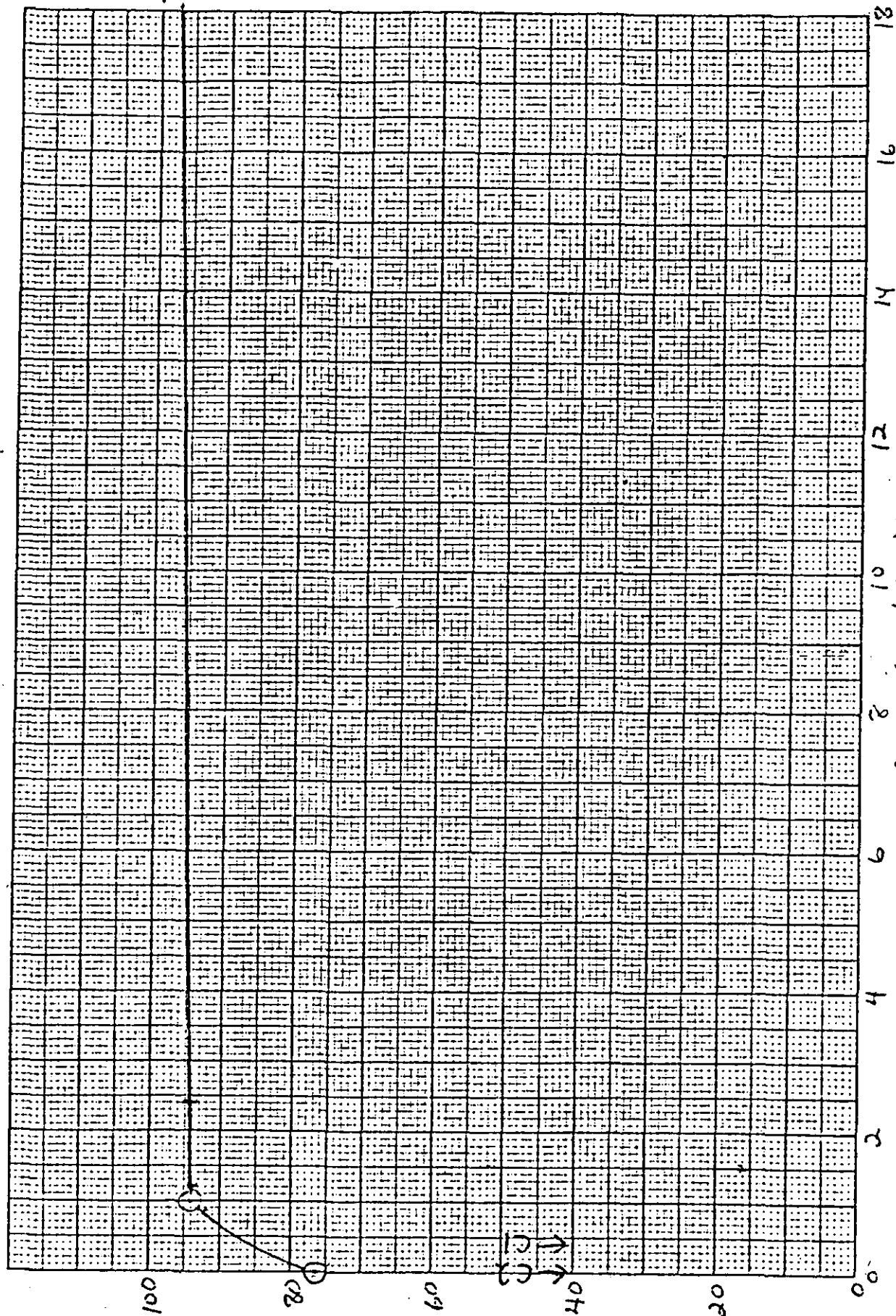


Figure 6: Secondary Seal [2] Gap Area of Inspected Welded Tanks with Primary Mechanical Shoe Seals

Cumulative Percent of Tank Inspections Passed

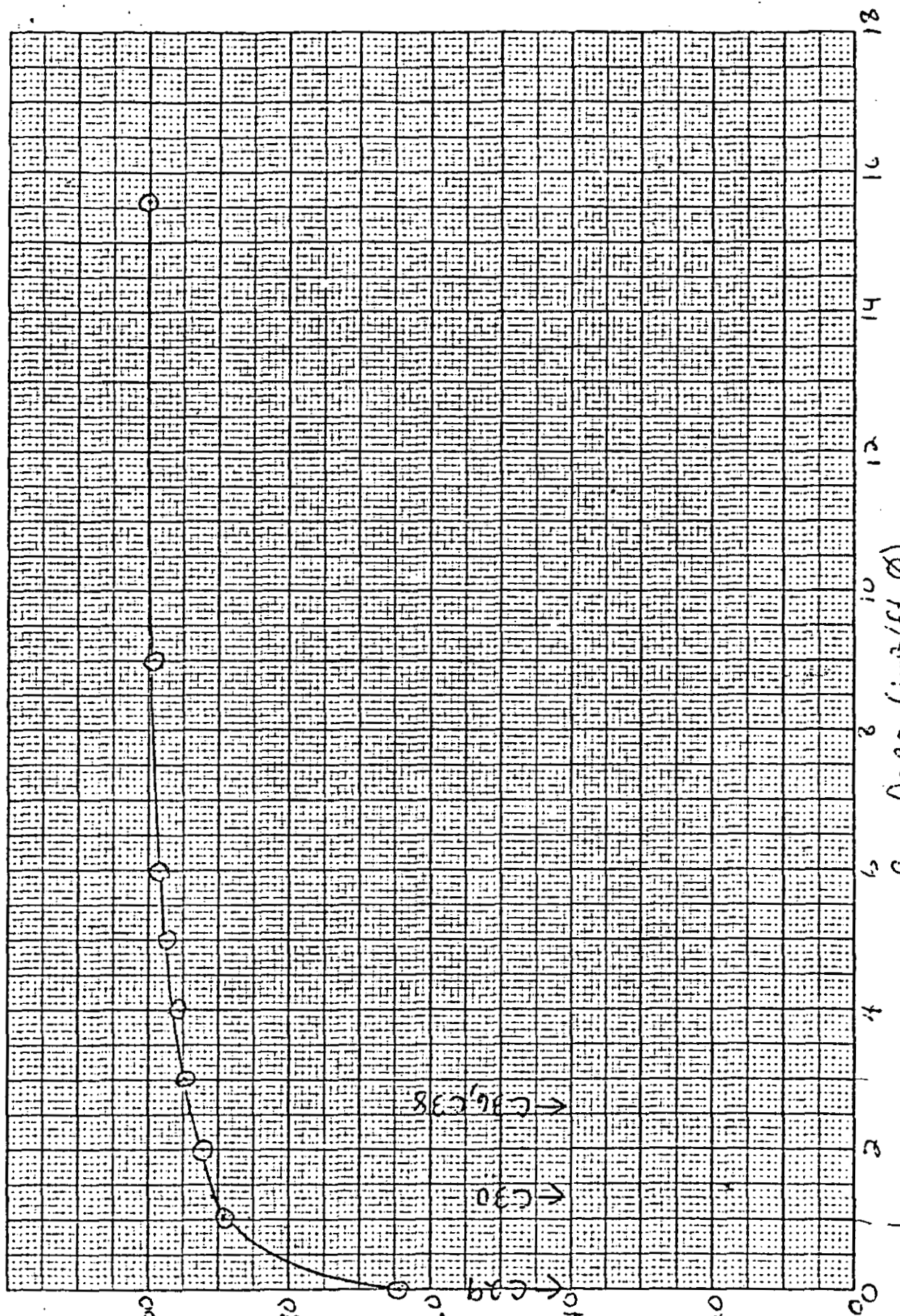


Figure 8: Primary Seal Gap Area of Inspected Welded Tanks With Primary Resilient Filled Seals

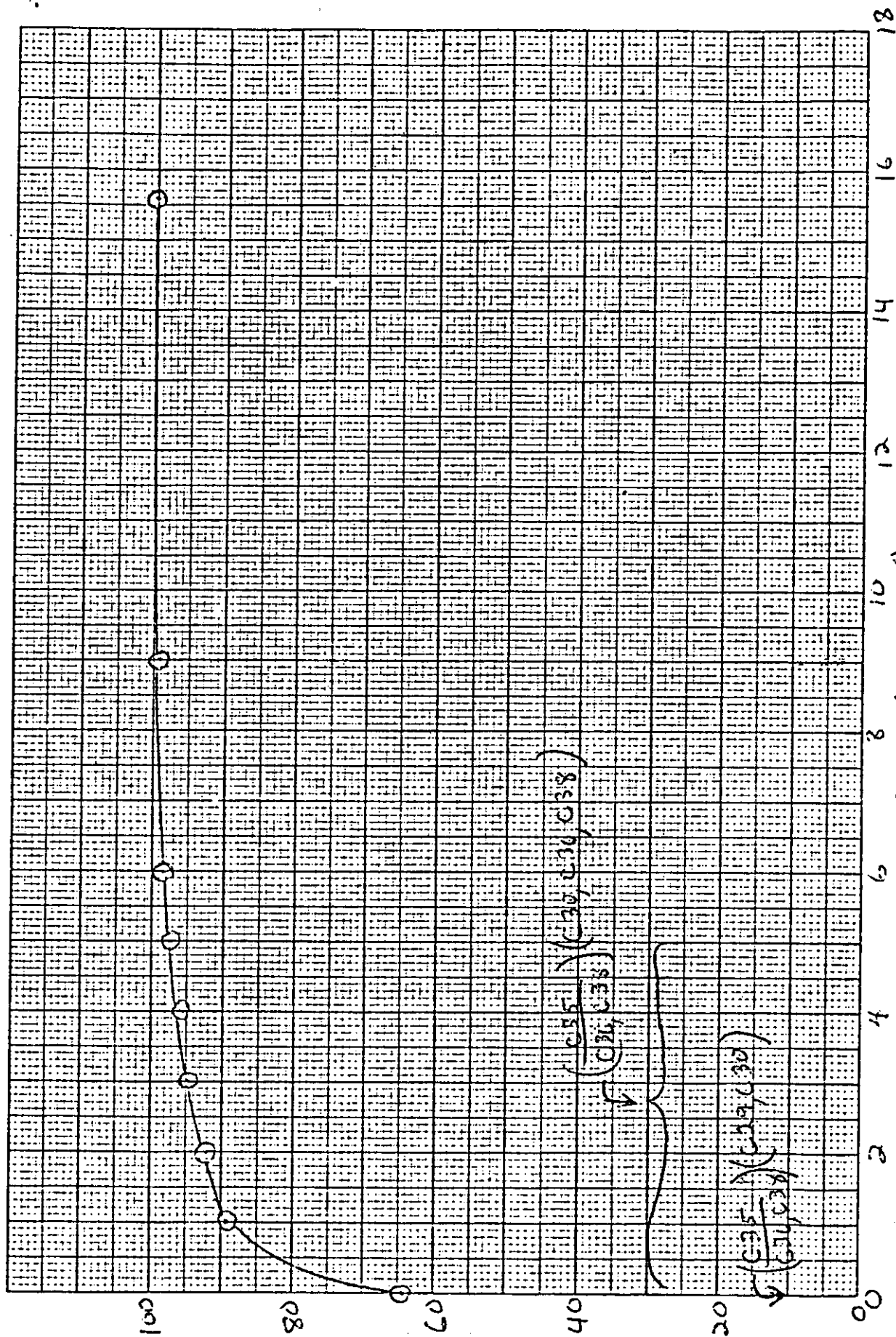


Figure 9: Primary Seal Gap Area of Inspected Welded Tanks With Primary Resilient Filled Seals (Also applies to Weathershield)

Cumulative Percent of Tanks Inspected NCFR 10 only
 20 for all cases

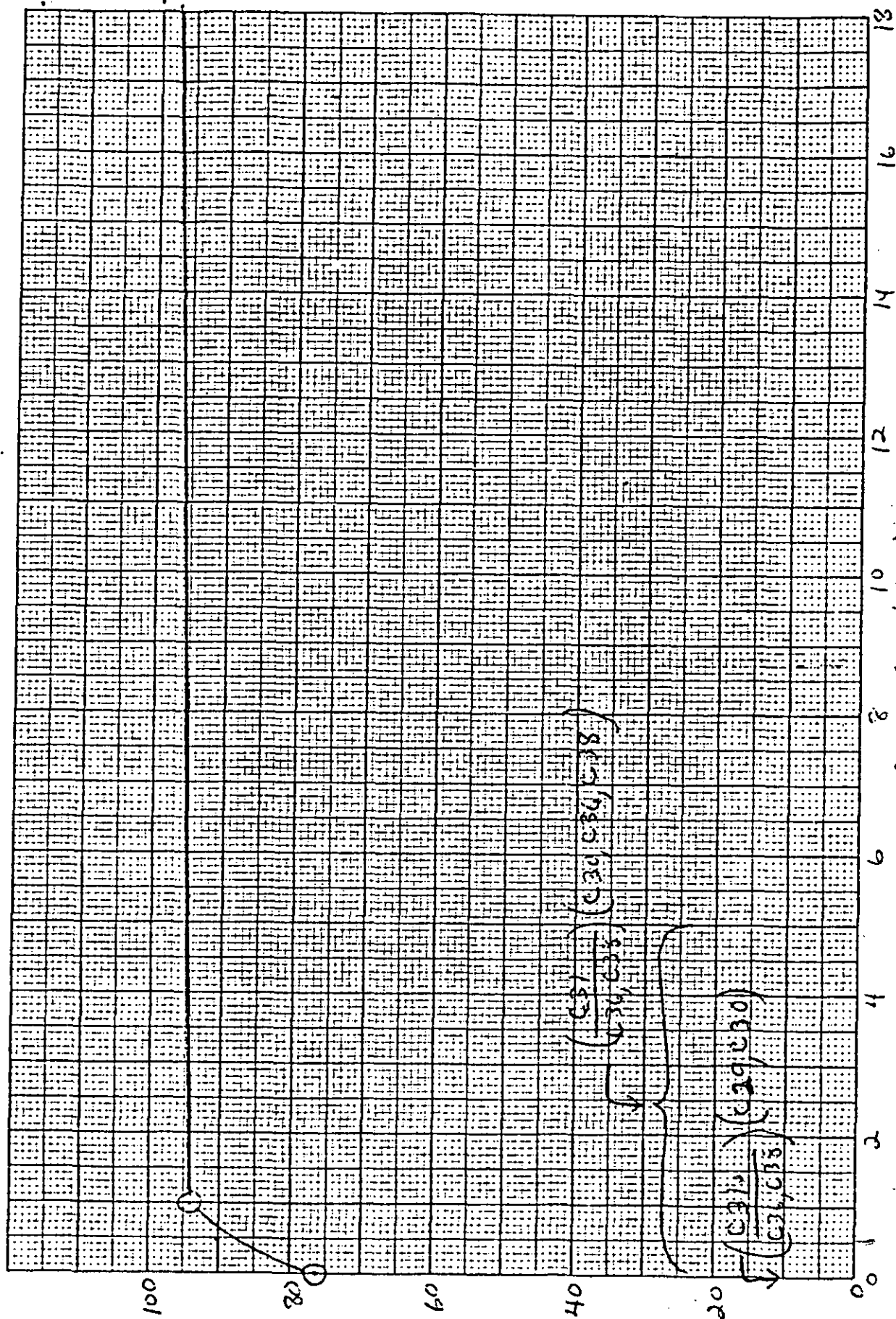


Figure 10: Secondary Seal [2] Gap Area of Inspected Welded Tanks
 with Primary Mechanical Shoe Seals (Assumed to apply to secondaries
 over resilient filled primaries.)

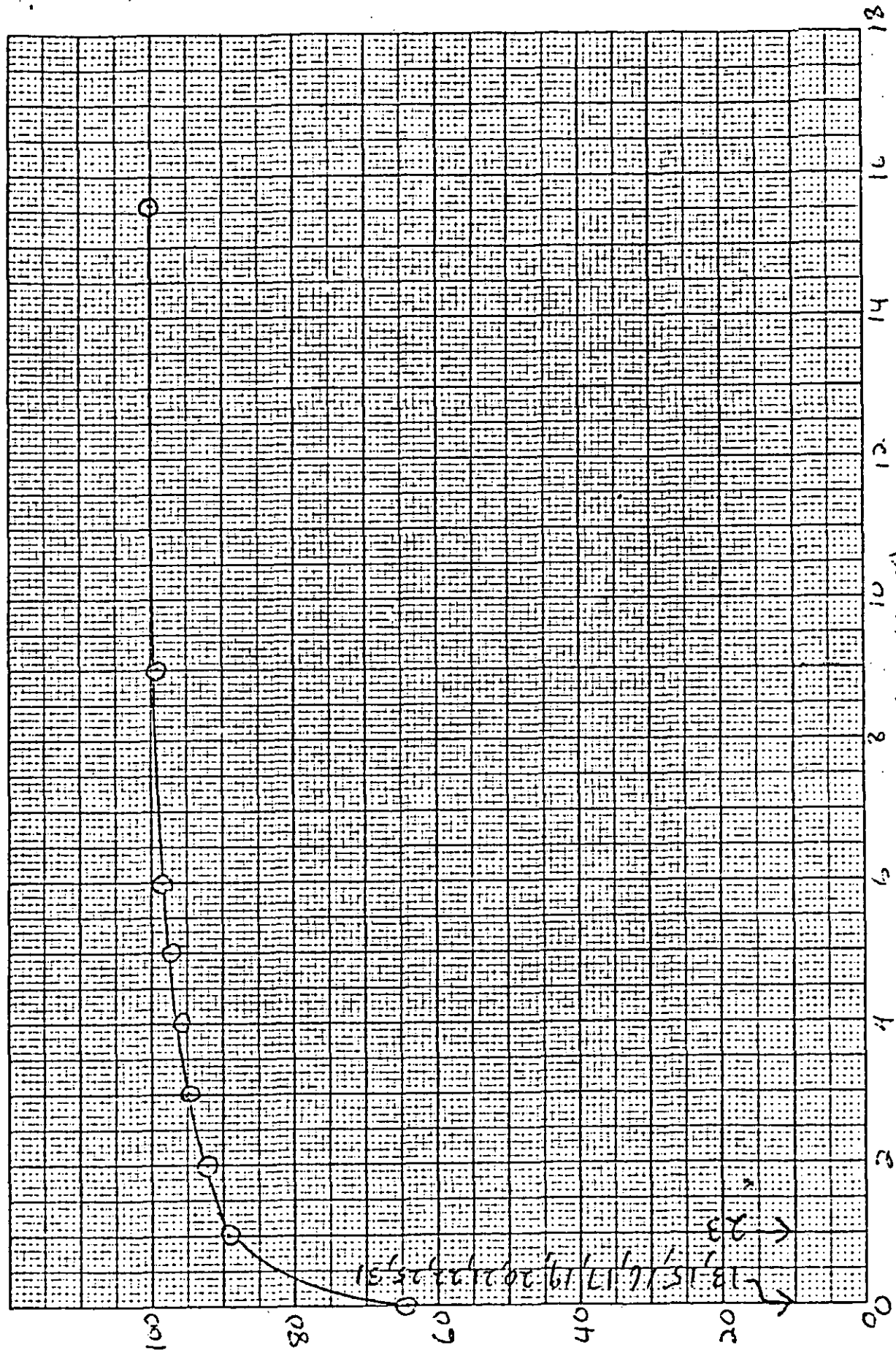


Figure 11: Primary Seal Gap Area of Inspected Welded Tanks With Primary Resilient Filled Seals

→ 100%
at
26.6
in 2/32 φ

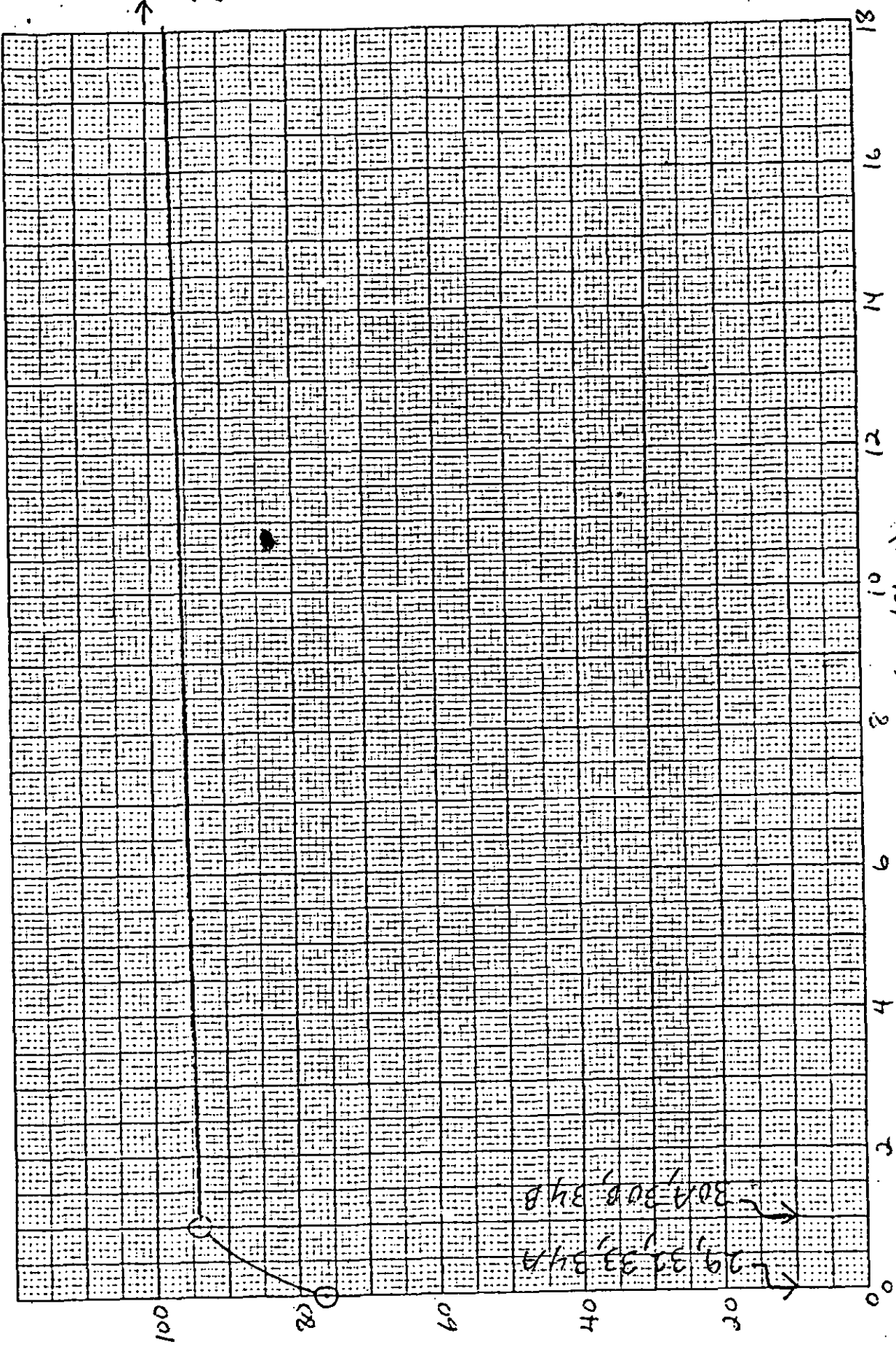


Figure 12: Secondary Seal [2] Gap Area of Inspected Welded Tanks
With Primary Mechanical Shoe Seals (Assumed to apply to secondaries
over resilient-filled primaries)

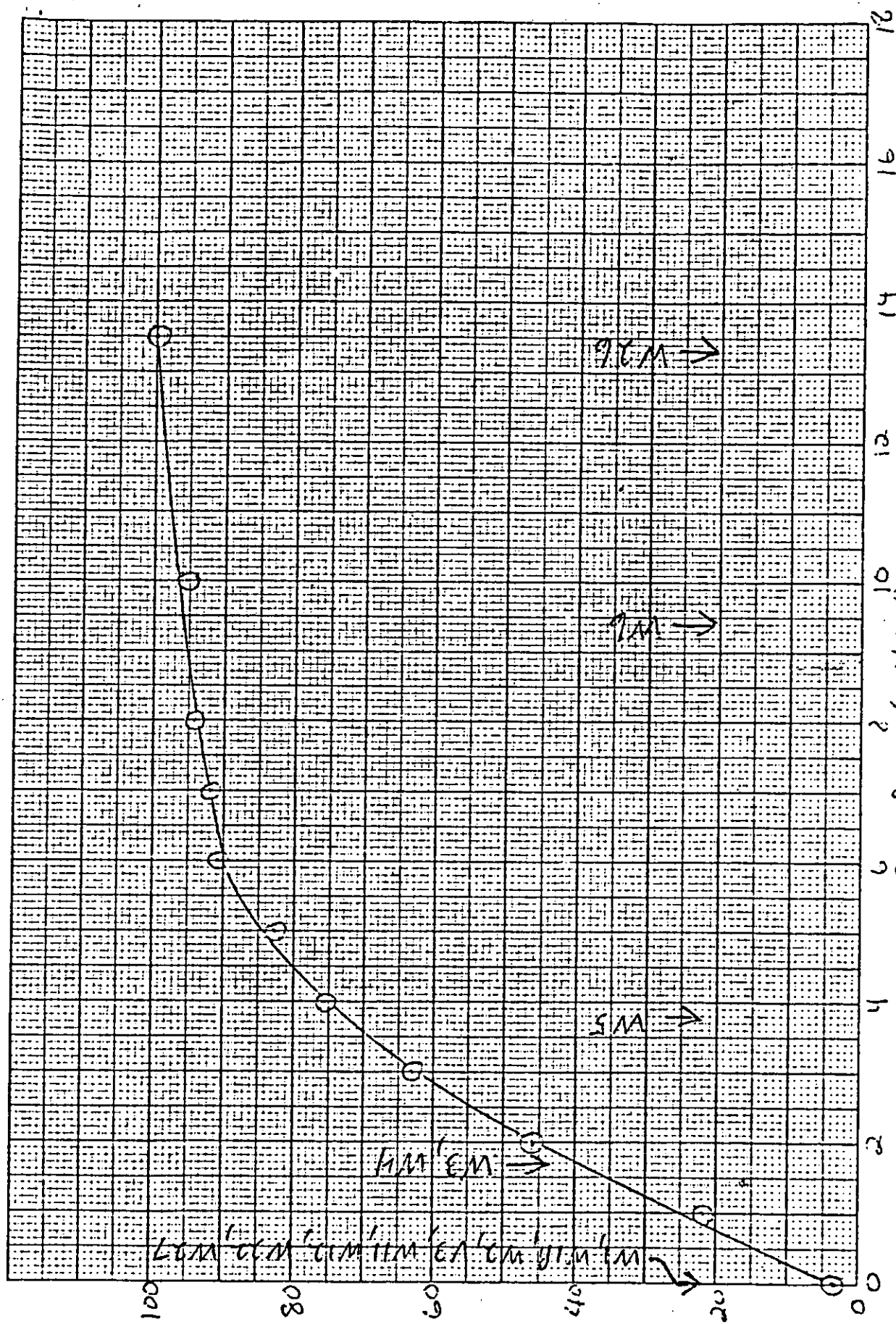


Figure 13: Primary Seal Gap Area of Inspected Riveted Tanks with Primary Mechanical Shoe Seals

Cumulative Percent of Tanks Inspected

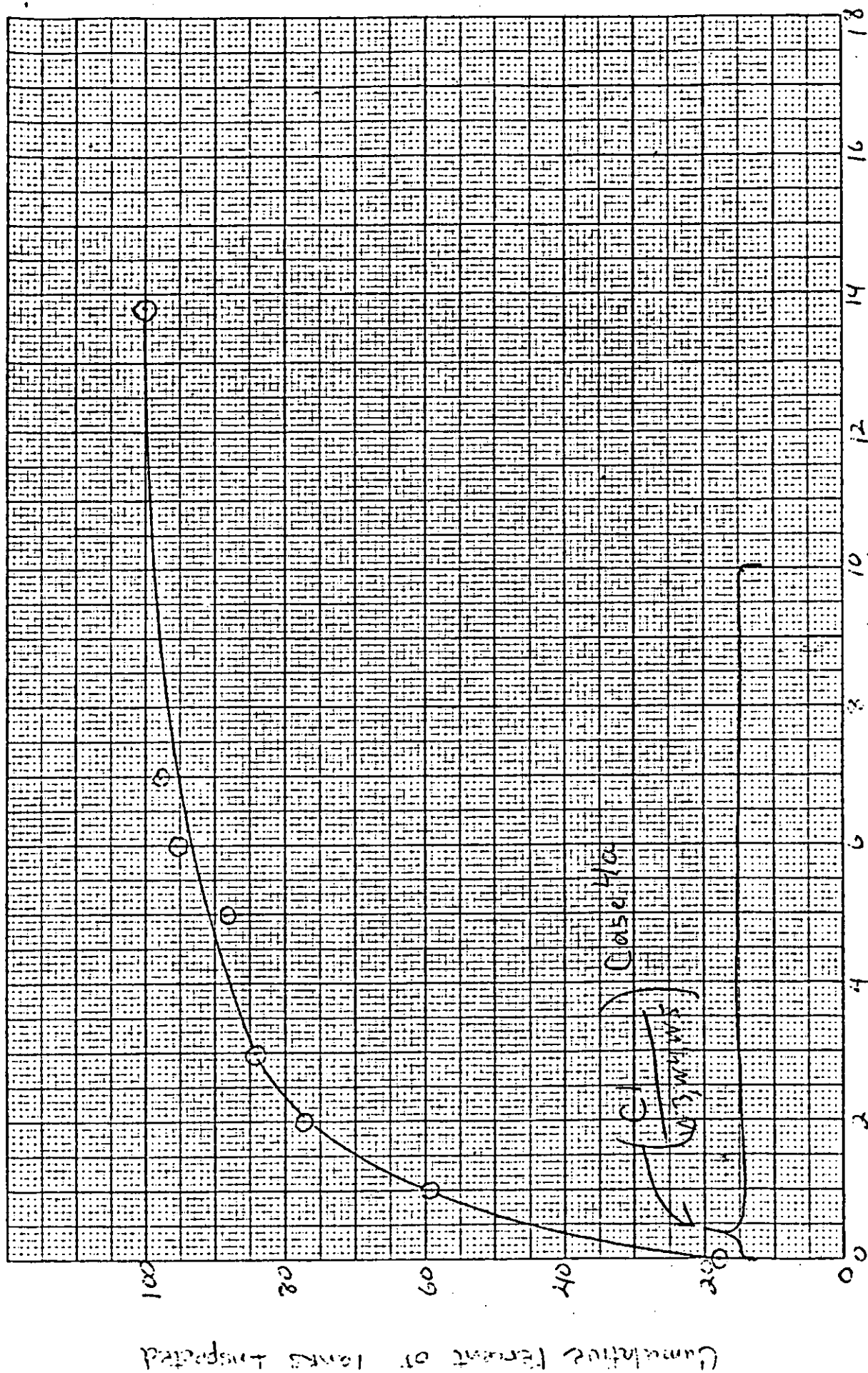


Figure 14: Secondary Seal [2] Gap Area of Inspected Riveted Tanks
With Mechanical Shoe Seals

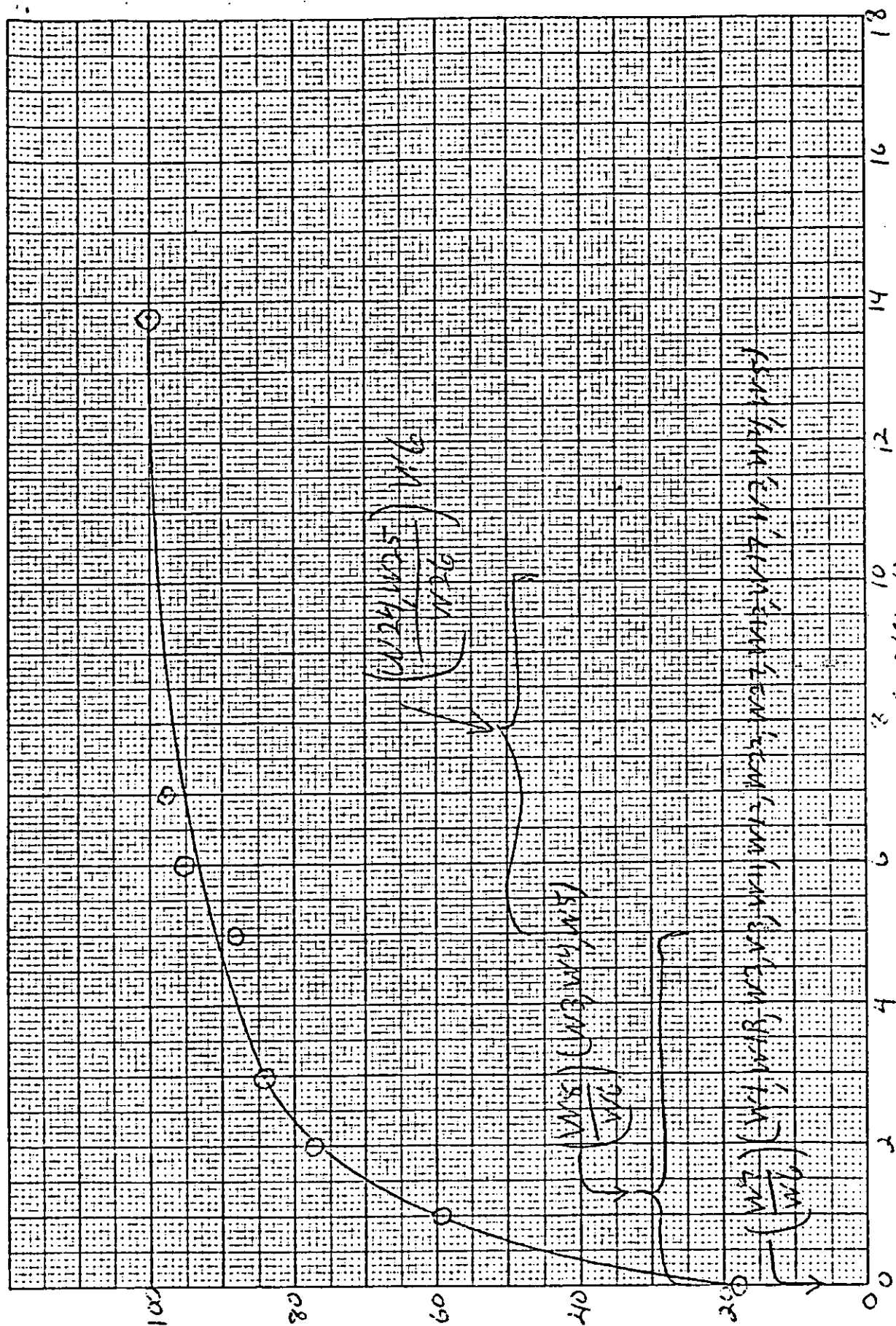


Figure 15: Secondary Seal [2] Gap Area of Inspected Riveted Tanks With Mechanical Shoe Seals

Location PlainfieldTable 2 - Summary of Emission Test Data
*Normalized to 5.0 psia vapor pressure

Test No. <i>Liquid Level (in)</i>	Air Flow Rate (scfm)	Product Temp. (°F)	Vapor Press. (psia)	(Outlet-Inlet) Concentration (ppmv) (Propane Basis)		Emissions (Propane Basis) (lb mass/day)	Wind Speed (mph)	Notes <i>Corrected Wind Speed (mph)</i>
				Measured	Calculated			
13 <i>(60)</i>	11,150	70.6	4.64	7.00	7.67	14.3	13.4	12.3
	8,900	70.3	4.62	7.25	7.98	11.9	10.3	9.8
	6,650	70.3	4.62	7.20	7.93	8.82	7.4	7.3
	4,925	70.1	4.61	6.30	7.00	5.73	5.2	5.4
	3,150	70.1	4.61	3.05	3.37	1.77	3.1	3.5
	10,950	69.9	4.60	9.00	9.96	18.3	13.1	12.1
	8,400	69.8	4.59	7.30	8.10	11.4	9.6	9.3
	7,000	69.5	4.57	7.20	8.03	9.41	7.8	7.7
	5,225	69.5	4.57	6.30	7.03	6.14	5.6	5.8
	2,925	69.5	4.57	3.40	3.79	1.86	2.9	3.2
	10,825	69.3	4.55	9.10	9.09	16.5	12.9	12.0
15 <i>(60)</i>	2,500	70.1	4.60	2.00	2.21	0.926	2.4	2.8
16 <i>(60)</i>	2,100	70.4	4.44	1.60	1.85	0.649	2.0	2.3
	4,250	70.3	4.43	5.7	6.60	4.69	4.4	4.7
	6,450	70.7	4.45	9.0	10.4	11.2	7.1	7.1
	5,950	71.3	4.50	7.6	8.64	8.60	6.5	6.6
	7,975	69.9	4.40	8.4	9.81	13.1	9.1	8.8
	10,575	69.9	4.40	9.0	10.5	18.6	12.6	11.7
17 <i>(60)</i>	2,800	69.9	4.40	1.90	2.22	1.04	2.7	3.1
	3,000	69.9	4.40	2.80	3.27	1.64	3.0	3.3
18	2,480	65.1-70.5	4.40	1.80-2.75	—	—	—	
19 <i>(60)</i>	2276	70.4	4.40	2.08	2.43	0.925	2.1	2.5
	2368	69.9	4.40	2.26	2.64	1.05	2.2	2.6
	2465	70.0	4.40	2.65	3.09	1.28	2.4	2.7
SUBJECT				MADE BY	CHKD BY	REV	By	CHARGE NO.
				DATE	DATE		Chkd	
							Date	SHT <u>2</u> OF <u> </u>

Location PlainfieldTable 2 - Summary of Emission Test Data
*Normalized to 5.0 psia vapor pressure

Test No. (Liquid Level Lin)	Air Flow Rate (scfm)	Product Temp. (°F)	Vapor Press. (psia)	(Outlet-Inlet) Concentration (ppmv) (Propane Basis)		Emissions (Propane Basis) (lb mass/day)	Wind Speed (mph)	Notes Corrected Wind Speed (mph)
				Measured	Calculated			
19 cont.	2725	70.0	4.40	2.56	2.99	1.36	2.6	3.0
20 (60)	2200	70.2	4.40	2.0	2.34	0.859	2.1	2.4
	4200	70.1	4.40	4.5	5.25	3.69	4.3	4.6
	6000	70.1	4.40	7.2	8.41	8.44	6.5	6.6
	8000	70.1	4.40	7.6	8.87	11.9	9.1	8.8
	9600	70.1	4.40	7.8	9.11	14.6	11.2	10.6
	11,800	70.1	4.40	7.8	9.11	18.0	14.3	13.0
	9500	70.3	4.40	6.0	7.01	11.1	11.1	10.5
21 (60)	11800	69.9	4.40	6.8	7.94	15.7	14.3	13.0
	9600	70.0	4.40	7.0	8.17	13.1	11.2	10.6
	7600	69.9	4.40	7.6	8.87	11.3	8.6	8.4
	5800	70.1	4.40	6.5	7.59	7.36	6.3	6.4
	5000	69.9	4.40	5.7	6.66	5.57	5.3	5.5
	4000	69.7	4.40	3.9	4.55	3.05	4.1	4.4
	4000	69.8	4.40	3.8	4.44	2.97	4.1	4.4
	3200	69.1	4.40	3.2	3.74	2.00	3.2	3.5
	3300	69.1	4.40	2.8	3.27	1.80	3.3	3.6
	2100	69.1	4.40	2.5	2.92	1.03	2.0	2.3
	2100	69.1	4.40	2.3	2.69	0.943	2.0	2.3
	6600	69.4	4.40	8.8	10.3	11.3	7.3	7.3
	6600	69.4	4.40	7.9	9.22	10.2	7.3	7.3
	8600	69.1	4.40	8.1	9.46	13.6	9.9	9.5
	8600	69.0	4.40	8.0	9.34	13.4	9.9	9.5
	10800	69.4	4.40	6.5	7.59	13.7	12.9	11.9
	10100	69.4	4.40	5.8	6.77	11.4	11.9	11.2
SUBJECT				MADE BY	CHKD BY	By	CHARGE NO.	
				DATE	DATE	Chkd	SHT 3 OF	
						Date		

Location PlainfieldTable 2 - Summary of Emission Test Data
*Normalized to 5.0 psia vapor pressure

Test No. (Liquid Level (in))	Air Flow Rate (scfm)	Product Temp. (°F)	Vapor Press. (psia)	(Outlet-Inlet) Concentration (ppmv) (Propane Basis)		Emissions (Propane Basis) (lb mass/day)	Wind Speed (mph)	Notes Corrected Wind Speed (mph)
				Measured	Calculated*			
22 (60)	2825	69.5	4.35	4.0	4.73	2.24	2.8	3.1
	3035	69.6	4.35	4.7	5.56	2.82	3.0	3.4
	2970	69.6	4.35	4.5	5.33	2.65	2.9	3.3
	2815	69.9	4.35	4.8	5.68	2.68	2.7	3.1
	2815	69.9	4.35	5.9	6.98	3.29	2.7	3.1
	2700	70.5	4.35	6.0	7.10	3.21	2.6	3.0
23 (60)	11850	69.5	4.35	77.5	91.7	182	14.3	13.1
	11225	69.5	4.35	75.3	89.1	167	13.5	12.4
	11525	68.8	4.35	74.0	87.6	169	13.9	12.7
	9550	68.6	4.35	65.0	76.9	123	11.2	10.5
	7550	68.1	4.35	68.0	80.5	102	8.5	8.3
	5950	68.3	4.35	66.0	78.1	77.8	6.5	6.6
	4300	68.4	4.35	43.0	50.9	36.6	4.5	4.7
	2400	68.4	4.35	5.2	6.15	2.47	2.3	2.7
	8250	69.2	4.35	74.0	87.6	121	9.4	9.1
	8075	69.9	4.35	74.0	87.6	118	9.2	8.9
	1950	69.6	4.35	6.7	7.93	2.59	1.8	2.2
	3250	70.3	4.35	16.0	18.9	10.3	3.2	3.6
	3150	70.8	4.35	34.0	40.2	21.2	3.1	3.5
24 (60)	11500	67.5	4.22	14.4	17.7	34.0	13.8	12.7
	9500	66.9	4.22	11.0	13.5	21.5	11.1	10.5
	7400	66.6	4.22	11.0	13.5	16.7	8.3	8.2
	6200	66.8	4.22	15.0	18.4	19.1	6.8	6.8
	4500	67.2	4.22	17.0	20.9	15.7 ²	4.7	5.0
	2200	67.4	4.22	3.6	4.42	1.63	2.1	2.4
	3800	67.5	4.22	7.0	8.59	5.46	3.9	4.2
	6300	67.6	4.22	12.4	15.2	16.0	6.9	7.0
SUBJECT				MADE BY	CHKD BY	By	CHARGE NO.	
				DATE	DATE	Chkd		
						Date	SHT. 4 OF	

Location PlainfieldTable 2 - Summary of Emission Test Data
*Normalized to 5.0 psia vapor pressure

Test No. <i>Liquid Level (in)</i>	Air Flow Rate (scfm)	Product Temp. (°F)	Vapor Press. (psia)	(Outlet-Inlet) Concentration (ppmv) (Propane Basis)		Emissions (Propane Basis) ($\frac{\text{lb mass}}{\text{day}}$)	Wind Speed (mph)	Notes Corrected Wind Speed (mph)
				Measured	Calculated			
24 cont (60)	8300	67.8	4.22	15.0	18.4	25.6	9.5	9.2
	9600	67.8	4.22	13.0	16.0	25.6	11.2	10.6
	12000	67.8	4.22	17.5	21.5	43.1	14.5	13.3
	2200	67.9	4.22	8.4	10.3	3.79	2.1	2.4
	2200	68.0	4.22	3.0	3.68	1.35	2.1	2.4
25 (60)	2000	69.7	4.22	2.4	2.94	0.985	1.9	2.2
	3000	70.0	4.22	1.5	1.84	0.924	3.0	3.3
	4100	68.9	4.22	5.0	6.14	4.21	4.2	4.5
	4900	69.3	4.22	5.4	6.63	5.43	5.2	5.4
	6800	69.4	4.22	8.2	10.1	11.4	7.6	7.5
	8700	69.5	4.22	7.5	9.20	13.4	10.0	9.6
	10000	69.8	4.22	6.5	7.98	13.3	11.8	11.0
	10800	69.7	4.22	6.3	7.73	14.0	12.9	11.9
	11800	69.7	4.22	5.8	7.12	14.1	14.3	13.0
	8700	69.7	4.22	8.5	10.4	15.2	10.0	9.6
26	2900	68.0	3.17	12.0	20.5	9.94	2.8	
	4875	68.0	3.17	15.8	27.0	22.0	5.2	
	7000	67.9	3.17	16.5	28.2	33.0	7.8	
	8850	68.0	3.17	15.0	25.6	37.9	10.2	
	10400	68.0	3.17	15.0	25.6	44.6	12.3	
	7150	67.9	3.17	15.0	25.6	30.6	8.0	
	2850	68.1	3.18	15.0	25.5	12.2	2.8	
28A	10350	71.2	3.30	11.0	17.9	31.1	12.3	
	8000	71.3	3.31	14.0	22.8	30.5	9.1	
	6050	71.3	3.31	11.5	18.7	18.9	6.6	
	4325	71.1	3.29	8.5	13.9	10.1	4.5	
SUBJECT				MADE BY	CHKD BY	REV	By	CHARGE NO.
				DATE	DATE		Chkd	
							Date	SHT 5 OF

Location PlainfieldTable 2 - Summary of Emission Test Data
*Normalized to 5.0 psia vapor pressure

Test No. <i>(Liquid Level. in)</i>	Air Flow Rate (scfm)	Product Temp. (°F)	Vapor Press. (psia)	(Outlet-Inlet) Concentration (ppmv) (Propane Basis)		Emissions (Propane Basis) ($\frac{lb \text{ mass}}{day}$)	Wind Speed (mph)	Notes Corrected Wind Speed (mph)
				Measured	Calculated			
28A cont	2650	70.8	3.28	5.5	9.04	4.01	2.6	
28B	9750	70.5	3.27	13.0	21.4	35.0	11.4	10.8
	7775	70.3	3.26	12.0	19.9	25.8	8.8	8.6
	6150	70.2	3.25	9.7	16.1	16.6	6.7	6.8
29 (52-5)	9675	65.1	3.30	1.10	6.79	2.90	11.3	9.7
	6700	66.4	3.37	0.70	1.12	1.25	7.4	6.7
	4800	66.2	3.36	0.67	1.07	0.860	5.1	4.8
	3625	66.4	3.37	0.89	1.42	0.860	3.7	3.6
	11700	66.7	3.38	2.06	3.27	6.40	14.1	11.7
30A (52-5)	11475	66.6	3.38	21.6	34.3	65.8	13.8	11.5
	9650	66.6	3.38	21.5	34.1	55.1	11.3	9.6
	5950	66.6	3.38	1.64	2.60	2.59	6.5	5.9
	4275	66.6	3.38	0.97	1.54	1.10	4.4	4.3
	3800	66.5	3.37	0.96	1.53	0.972	3.9	3.8
30B (52-5)	3750	67.1	3.40	0.75	1.18	0.742	3.8	3.7
	5575	67.5	3.42	0.70	1.10	1.02	6.0	5.6
	8875	67.7	3.43	23.1	3.61	53.6	10.3	8.9
	10250	67.5	3.42	27.8	43.5	74.7	12.1	10.2
	11180	67.4	3.42	32.7	51.2	95.8	13.4	11.2
31 (52-5)	11550	67.7	3.43	5.47	8.54	16.5	13.9	11.5
	9775	67.2	3.41	4.30	6.76	11.1	11.5	9.8
SUBJECT				MADE BY	CHKD BY	REV	By	CHARGE NO.
				DATE	DATE		Chkd	
							Date	SHT <u>6</u> OF <u> </u>

Location PlainfieldTable 2 - Summary of Emission Test Data
*Normalized to 5.0 psia vapor pressure

Test No. (Liquid Level (in))	Air Flow Rate (scfm)	Product Temp. (°F)	Vapor Press. (psia)	(Outlet-Inlet) Concentration (ppmv) (Propane Basis)		Emissions (Propane Basis) (lb/mass day)	Wind Speed (mph)	Notes Corrected Wind Speed (mph)
				Measured	Calculated			
32 (52.5)	3500	63.6	2.80	0.62	1.22	0.712	3.5	3.5
	5650	62.5	2.80	0.49	0.961	0.909	6.1	5.6
	7700	63.6	2.80	0.51	1.00	1.29	8.7	7.7
	9850	63.6	2.80	0.64	1.26	2.07	11.6	9.8
	11000	63.3	2.80	0.76	1.49	2.74	13.1	11.0
33 (52.5)	11000	63.4	2.70	0.74	1.51	2.78	13.1	11.0
	10000	63.5	2.70	0.67	1.37	2.29	11.8	10.0
	7500	63.6	2.70	0.50	1.02	1.28	8.5	7.5
	5600	63.6	2.70	0.50	1.02	0.957	6.0	5.6
	3500	63.7	2.70	0.64	1.31	0.766	3.5	3.5
34A (52.5)	3550	65.2	2.75	0.55	1.10	0.654	3.6	3.5
	6550	65.2	2.75	0.66	1.32	1.45	7.2	6.5
	8650	65.0	2.75	1.21	2.42	3.51	10.0	8.6
	10450	65.0	2.75	1.76	3.52	6.16	12.4	10.4
	12450	64.8	2.75	1.54	3.08	6.42	15.2	12.4
34B (52.5)	2800	64.6	2.75	1.00	2.00	0.938	2.7	2.8
	4600	64.5	2.75	1.75	3.50	2.70	4.8	4.6
	6600	64.3	2.75	3.75	7.51	8.29	7.3	6.6
	8800	64.2	2.75	32.0	64.1	94.3	10.2	8.8
	11300	63.8	2.75	40.0	80.1	151	13.6	11.3
	12500	64.0	2.75	34.0	68.1	142	15.2	12.5
SUBJECT				MADE BY	CHKD BY	REV	By	CHARGE NO.
				DATE	DATE		Chkd	
							Date	SHT <u>7</u> OF <u> </u>

Location PlainfieldTable 2 - Summary of Emission Test Data
*Normalized to 5.0 psia vapor pressure

Test No. (Liquid Level)	Air Flow Rate (scfm)	Product Temp. (°F)	Vapor Press. (psia)	(Outlet-Inlet) Concentration (ppmv) (Propane Basis)		Emissions (Propane Basis) (lb mass/day)	Wind Speed (mph)	Notes Corrected Wind Speed (mph)
				Measured	Calculated			
W1 (50")	10,500	42.4	4.81	4.10	4.30	7.55	12.5	10.5
	12,400	44.5	4.96	4.80	4.85	9.96	15.1	12.4
	10,900	44.2	4.94	4.50 (1)	4.57	8.33	13.0	10.9 (1)
	8,800	44.4	49.6	4.80 (1)	4.85	7.14	10.2	8.8 (1)
	4,350	44.3	4.95	5.50 (1)	5.57	4.05	4.5	4.3 (1)
W2 (50")	12,450	44.3	5.07	4.70	4.62	9.62	15.2	12.4
	10,000	46.4	5.23	4.50	4.26	7.13	11.8	10.0
	7,550	46.8	5.26	4.20	3.94	4.98	8.5	7.5
	4,650	46.8	5.26	2.50	2.35	1.83	4.9	4.6
W1R (50")	6,550	46.7	5.23	4.40	4.16	4.56	7.2	6.5
	5,000	46.6	5.22	3.70	3.51	2.94	5.3	5.0
	8,950	46.6	5.22	4.80	4.55	6.81	10.4	8.9
	11,450	46.7	5.23	4.90	4.63	8.87	13.8	11.4
W3 (50")	12,000	49.0	5.33	5.40	5.00	10.0	14.5	12.0
	9,700	49.1	5.34	4.60	4.24	6.88	11.4	9.7
	6,850	49.2	5.35	3.60	3.31	3.79	7.6	6.8
	4,500	49.4	5.37	3.30	3.02	2.48	4.7	4.5
W4 (50")	4,400	49.5	5.35	3.60	3.31	2.44	4.6	4.4

NOTES: (1) These data points are considered void since the test conditions were changed too quickly to permit the data to represent steady state.

SUBJECT	MADE BY	CHKD BY	REV	By		CHARGE NO.
				Chkd		
				Date		SHT <u>10</u> OF <u> </u>

Location PlainfieldTable 2 - Summary of Emission Test Data
*Normalized to 5.0 psia vapor pressure

Test No. (Liquid Level)	Air Flow Rate (scfm)	Product Temp. (°F)	Vapor Press. (psia)	(Outlet-Inlet) Concentration (ppmv) (Propane Basis)		Emissions (Propane Basis) (lb mass/day)	Wind Speed (mph)	Notes Corrected Wind Speed (mph)
				Measured	Calculated			
W5 (50")	4,450	49.2	5.33	2.60	2.40	1.79	4.6	4.4
	6,500	48.9	5.31	3.40	3.16	3.44	7.2	6.5
	8,550	49.1	5.32	4.80	4.44	6.35	9.8	8.5
	10,450	49.0	5.31	5.20	4.83	8.44	12.4	10.4
	12,250	48.8	5.30	6.30	5.86	12.0	14.9	12.2
W6 (50")	4,350	49.0	5.28	12.5	11.7	8.51	4.5	4.3
	6,350	49.1	5.29	11.5	10.7	11.4	7.0	6.3
	8,400	49.1	5.29	12.2	11.4	16.0	9.6	8.4
	10,500	49.0	5.28	13.7	12.8	22.5	12.5	10.5
	12,400	48.8	5.27	13.7	12.8	26.6	15.1	12.4
W7 (50")	12,300	50.9	5.31	0.50	0.46	0.95	15.0	12.3
	10,200	51.0	5.31	0.65	0.60	1.02	12.1	10.2
	6,250	51.0	5.31	0.88	0.82	0.86	6.9	6.2
	4,500	51.2	5.33	0.95	0.88	0.66	4.7	4.5
	2,300	50.6	5.28	1.45	1.36	0.52	2.2	2.3
SUBJECT				MADE BY	CHKD BY	REV	By	CHARGE NO.
				DATE	DATE		Chkd	
							Date	SHT <u>11</u> OF <u> </u>

Location PlainfieldTable 2 - Summary of Emission Test Data
*Normalized to 5.0 psia vapor pressure

Test No. (Liquid Level)	Air Flow Rate (scfm)	Product Temp. (°F)	Vapor Press. (psia)	(Outlet-Inlet) Concentration (ppmv) (Propane Basis)		Emissions (Propane Basis) ($\frac{1b \text{ mass}}{\text{day}}$)	Wind Speed (mph)	Notes Corrected Wind Speed (mph)
				Measured	Calculated*			
W8 (50")	2,400	50.5	5.28	1.75	1.64	0.657	2.3	2.4
	4,350	50.8	5.30	1.25	1.16	0.846	4.5	4.3
	6,600	50.8	5.30	1.20	1.12	1.23	7.3	6.6
	8,450	50.8	5.30	0.90	0.84	1.19	9.7	8.4
	10,050	54.1	5.26	1.10	1.03	1.74	11.9	10.0
	12,100	53.8	5.25	1.20	1.13	2.29	14.7	12.1
W9 (50")	2,700	53.4	5.11	2.6	2.53	1.14	2.6	2.7
	4,450	53.4	5.11	2.3	2.24	1.67	4.6	4.4
	6,550	52.8	5.07	4.0	3.93	4.31	7.2	6.5
	8,650	52.7	5.06	5.7	5.62	8.13	10.0	8.6
	12,700	53.3	5.11	6.0	5.84	12.4	15.5	12.7
	10,350	52.6	5.05	7.3	7.21	12.5	12.3	10.3
W10 (50")	9,050	52.4	5.03	4.5	4.47	6.76	10.5	9.0
	12,500	52.3	4.92	0.20	0.204	0.427	15.2	12.5
	8,300	52.3	4.99	0.31	0.311	0.432	9.5	8.3
	6,200	53.5	5.00	0.40	0.400	0.415	6.8	6.2
	4,300	53.6	5.01	0.50	0.499	0.359	4.5	4.3
W11 (50")	2,250	53.3	4.99	0.55	0.551	0.208	2.1	2.2
	12250	49.1	5.23	8.9	8.42	17.3	14.9	12.2
	10600	49.0	5.23	5.7	5.39	9.56	12.6	10.6
	8600	49.4	5.26	5.2	4.88	8.66	9.9	8.6
	6600	50.0	5.30	4.1	3.81	4.21	7.3	6.6
	4350	49.8	5.29	2.8	2.61	1.90	4.5	4.3
SUBJECT				MADE BY	CHKD BY	REV	By	CHARGE NO.
				DATE	DATE		Chkd	
							Date	SHT <u>12</u> OF <u> </u>

Location PlainfieldTable 2 - Summary of Emission Test Data
*Normalized to 5.0 psia vapor pressure

Test No. (Liquid Level (in))	Air Flow Rate (scfm)	Product Temp. (°F)	Vapor Press. (psia)	(Outlet-Inlet) Concentration (ppmv) (Propane Basis)		Emissions (Propane Basis) ($\frac{1b \text{ mass}}{\text{day}}$)	Wind Speed (mph)	Notes Corrected Wind Speed (mph)
				Measured	Calculated			
W12 (50)	4500	44.2	4.57	3.1	3.46	2.60	4.7	4.5
	2450	42.4	4.45	2.4	2.76	1.13	2.3	2.4
	12200	43.0	4.49	7.4	8.43	17.2	14.8	12.2
	11500	43.7	4.52	6.5	7.35	14.1	13.8	11.5
	10750	43.8	4.54	5.6	6.30	11.3	12.8	10.7
	9800	44.0	4.55	4.8	5.38	8.83	11.5	9.8
W13 (50)	12600	45.0	4.48	11.0	12.6	26.5	15.4	12.6
	6500	45.8	4.53	7.7	8.68	9.44	7.2	6.5
W14 (50)	12650	53.0	5.03	32.9	32.7	69.1	15.4	12.6
	9800	55.5	4.79	24.9	26.2	43.0	11.5	9.8
W15 (50)	7450	55.8	4.71	12.5	13.4	16.8	8.4	7.4
	12200	56.0	4.72	24.2	26.0	53.0	14.8	12.2
	4500	55.8	4.71	7.0	7.53	5.67	4.7	4.5
	6050	55.6	4.69	10.0	10.8	10.9	6.6	6.0
	9750	55.2	4.56	17.5	19.6	31.9	11.4	9.7
W16 (50)	12750	52.2	4.28	15.8	19.1	40.7	15.6	12.7
	9550	52.3	4.29	10.5	12.6	20.2	11.2	9.5
	6700	52.4	4.29	7.1	8.54	9.58	7.4	6.7
	3550	52.5	4.30	4.9	5.88	3.49	3.6	3.5
SUBJECT				MADE BY	CHKD BY	REV	By	CHARGE NO.
				DATE	DATE		Chkd	
							Date	13 SHT OF

Location PlainfieldTable 2 - Summary of Emission Test Data
*Normalized to 5.0 psia vapor pressure

Test No.	Air Flow Rate (scfm)	Product Temp. (°F)	Vapor Press. (psia)	(Outlet-Inlet) Concentration (ppmv) (Propane Basis)		Emissions (Propane Basis) (lb mass/day)	Wind Speed (mph)	Notes Corrected Wind Speed (mph)
				Measured	Calculated			
W17 50"	3550	52.4	4.32	4.9	5.85	3.47	3.6	3.5
	6600	52.0	4.28	6.2	7.48	8.26	7.3	6.6
	9550	51.0	4.23	9.3	11.4	18.2	11.2	9.5
	12600	51.2	4.24	13.9	17.0	35.8	15.4	12.6
	11500	50.7	4.22	10.6	13.0	25.0	13.8	11.5
	4850	50.6	4.20	5.3	6.54	5.31	5.1	4.8
	8300	49.9	4.17	7.4	9.21	12.8	9.5	8.3
W18 (58.5)	10,950	68.8	4.06	6.3	8.09	14.8	13.1	12.1
	9,300	70.5	4.15	6.2	7.76	12.1	10.8	10.3
	7,650	71.9	4.24	5.4	6.59	8.43	8.7	8.4
	5,850	73.8	4.36	4.6	5.43	5.31	6.4	6.5
	3,900	75.3	4.45	3.5	4.03	2.63	4.0	4.3
	2,550	76.4	4.52	3.8	4.30	1.83	2.4	2.8
	11,650	77.9	4.62	7.0	7.71	15.0	14.0	12.9
	2,600	78.8	4.68	3.2	3.27	1.42	2.5	2.9
W19 (48.5)	12,925	81.4	4.83	7.0	7.30	15.8	15.8	12.9
	7,075	75.8	4.48	4.8	5.48	6.49	7.9	7.1
	9,300	76.5	4.53	6.0	6.77	10.5	10.8	9.3
	5,025	77.4	4.58	4.2	4.67	3.93	5.3	5.0
	11,200	77.4	4.58	6.2	6.90	12.9	13.4	11.2
W20 (48.5)	11,200	75.8	4.48	7.0	8.00	15.0	13.4	11.2
	7,150	76.4	4.53	5.6	6.31	7.55	8.0	7.1
SUBJECT				MADE BY	CHKD BY	REV	By	CHARGE NO.
				DATE	DATE		Chkd	
							Date	SHT 14 OF

Location PlainfieldTable 2 - Summary of Emission Test Data
*Normalized to 5.0 psia vapor pressure

Test No. <i>(Liquid Level)</i>	Air Flow Rate (scfm)	Product Temp. (°F)	Vapor Press. (psia)	(Outlet-Inlet) Concentration (ppmv) (Propane Basis)		Emissions (Propane Basis) ($\frac{\text{lb mass}}{\text{day}}$)	Wind Speed (mph)	Notes <i>Corrected Wind Speed (mph)</i>
				Measured	Calculated			
W21 <i>(48.5)</i>	5,850	77.0	5.82	7.1	5.87	5.74	6.4	5.8
	9,150	78.1	5.91	7.0	5.67	8.68	10.6	9.1
	11,000	78.2	5.92	8.1	6.55	12.1	13.1	11.0
	6,950	78.0	5.90	7.0	5.68	6.61	7.8	6.9
	4,700	77.8	5.88	5.7	4.65	3.65	4.9	4.7
W22 <i>(48.5)</i>	3,800	77.5	6.12	2.00	1.55	0.984	3.9	3.8
	11,200	79.2	6.26	3.00	2.25	4.22	13.4	11.2
	9,450	79.5	6.30	3.30	2.46	3.89	11.0	9.4
	7,900	79.6	6.30	3.15	2.35	3.10	9.0	7.9
	5,650	79.4	6.29	2.60	1.94	1.83	6.1	5.6
	1,900	79.8	6.32	2.30	1.71	0.542	1.7	1.9
W23	11,500	82.4	6.07	5.10	3.99	7.68	13.8	
	9,750	82.4	6.07	4.60	3.60	5.87	11.4	
	8,000	81.6	6.00	4.10	3.26	4.36	9.1	
	3,750	82.4	6.07	2.55	1.99	1.25	3.8	
	5,800	83.1	6.12	1.25	0.967	0.938	6.3	
	4,650	81.6	6.00	2.20	1.75	1.36	4.9	
W24 <i>(48.5)</i>	12,950	84.4	6.38	3.40	2.49	5.40	15.9	12.9
	11,350	84.4	6.38	4.75	3.48	6.61	13.7	11.3
	9,450	84.1	6.35	3.75	2.76	4.37	11.0	9.4
	7,500	84.0	6.34	2.15	1.59	1.99	8.5	7.5
	5,750	84.3	6.37	1.50	1.10	1.06	6.2	5.7
	3,850	84.4	6.38	1.50	1.10	0.708	3.9	3.8
	5,050	83.9	6.33	1.75	1.30	1.09	5.4	5.0
SUBJECT				MADE BY	CHKD BY	REV	By	CHARGE NO.
				DATE	DATE		Chkd	
							Date	SHT 15 OF

Location PlainfieldTable 2 - Summary of Emission Test Data
*Normalized to 5.0 psia vapor pressure

Test No. (Liquid Level)	Air Flow Rate (scfm)	Product Temp. (°F)	Vapor Press. (psia)	(Outlet-Inlet) Concentration (ppmv) (Propane Basis)		Emissions (Propane Basis) (lb mass/day)	Wind Speed (mph)	Notes Corrected Wind Speed (mph)
				Measured	Calculated			
W25 (48.5")	13,150	84.3	5.93	5.30	4.27	9.40	16.1	13.1
	9,350	83.1	5.84	5.40	4.44	6.95	10.9	9.3
	11,150	83.9	5.91	8.20	6.64	12.4	13.4	11.1
	7,700	87.1	6.15	3.65	2.81	3.62	8.7	7.7
	4,800	85.1	5.99	3.20	2.55	2.05	5.1	4.8
	4,950	63.5	4.47	2.20	2.52	2.09	5.2	4.9
	9,800	49.4	3.64	4.40	6.42	10.5	11.5	9.8
	7,900	49.7	3.66	1.40	2.03	2.68	9.0	7.9
	4,000	49.7	3.66	1.65	2.39	1.60	4.1	4.0
W26 (48.5")	3,900	49.6	3.54	3.10	4.67	3.05	4.0	3.9
	11,500	49.6	3.54	4.10	6.17	11.9	13.8	11.5
	9,700	48.9	3.51	3.60	5.47	8.88	11.4	9.7
	7,750	48.4	3.48	3.10	4.76	6.17	8.8	7.7
	6,100	48.7	3.50	3.35	5.11	5.22	6.7	6.1
W27 (48.5")	11,150	48.6	3.49	2.50	3.83	7.14	13.4	11.1
	9,650	48.3	3.48	2.35	3.61	5.83	11.3	9.6
	7,700	48.4	3.48	2.05	3.15	4.06	8.7	7.7
	6,100	48.5	3.49	2.60	3.98	4.06	6.7	6.1
	5,100	48.6	3.49	1.90	2.91	2.48	5.4	5.1
	2,950	49.0	3.51	2.10	3.19	1.58	2.9	2.9
W28 (48.5")	11,100	48.2	3.35	12.4	19.9	36.9	13.3	11.1
	9,250	48.7	3.38	12.4	19.6	30.5	10.8	9.2
	7,600	48.3	3.36	12.2	19.5	24.8	8.6	7.6
	5,450	48.5	3.37	12.5	19.9	18.2	5.9	5.4
	4,150	48.1	3.35	11.6	18.6	12.9	4.3	4.1
SUBJECT				MADE BY	CHKD BY	By	CHARGE NO.	
				DATE	DATE	Chkd	SHT 16 OF	
						Date		

Location PlainfieldTable 2 - Summary of Emission Test Data
*Normalized to indicated vapor pressure

Test No. (Liqu. Level UN)	Air Flow Rate (scfm)	Product Temp. (°F)	Vapor Press. (psia)	(Outlet-Inlet) Concentration (ppmv) (Propane Basis)		Emissions (Propane Basis) (lb mass/day)	Wind Speed (mph)	NOTES Corrected Wind Speed (mph)
				Measured	Calcu-* lated			
V1 (50)	2600	52.0	0.75	1.90	1.90	0.826	2.5	Normalized to 0.75 psia vapor pressure.
	4350	51.8	0.75	1.20	1.20	0.873	4.5	
	7250	51.8	0.75	1.20	1.20	1.46	8.1	
	9750	50.2	0.73	0.95	0.977	1.59	11.4	
	12400	50.5	0.73	1.05	1.08	2.24	15.1	
	2750	50.6	0.73	1.30	1.34	0.615	2.7	
	3650	50.9	0.74	1.35	1.37	0.836	3.7	
	6050	51.4	0.75	1.15	1.15	1.16	6.6	
V2	2900	51.0	2.40	2.00	2.09	1.01	2.8	Normalized to 2.50 psia vapor pressure.
	5700	51.7	2.43	2.25	2.32	2.21	6.2	
	7800	52.1	2.43	2.48	2.40	3.23	8.9	
	10450	52.2	2.44	2.50	2.57	4.49	12.4	
	12300	52.6	2.45	1.95	1.99	4.10	15.0	
	6350	52.6	2.45	2.10	2.15	2.28	7.0	
	2250	52.6	2.45	1.25	1.28	0.481	2.1	
V3 (50)	12250	52.2	5.27	5.00	4.68	9.60	14.9	12.2 6.3 4.5 3.4 2.3 Normalized to 5.00 psia vapor pressure
	6300	51.9	5.25	4.10	3.86	4.07	6.9	
	4500	50.2	5.13	2.85	2.76	2.08	4.7	
	3400	49.7	5.09	2.70	2.64	1.50	3.4	
	2350	49.3	5.07	2.00	1.97	0.773	2.2	
SUBJECT				MADE BY	CHKD BY	REV	By	CHARGE NO.
				DATE	DATE		Chkd	19
							Date	SHT OF

Location PlainfieldTable 2 - Summary of Emission Test Data
*Normalized to 5.0 psia vapor pressure

Test No. <i>(Liquid Level)</i>	Air Flow Rate (scfm)	Product Temp. (°F)	Vapor Press. (psia)	(Outlet-Inlet) Concentration (ppmv) (Propane Basis)		Emissions (Propane Basis) ($\frac{\text{lb mass}}{\text{day}}$)	Wind Speed (mph)	Notes <i>Corrected Wind Speed (mph)</i>
				Measured	Calculated*			
C1 <i>(50$\frac{3}{8}$")</i>	12,700	50.3	3.94	2.15	2.86	6.08	15.5	12.7
	10,950	50.5	3.95	2.15	2.85	5.22	13.1	10.9
	8,800	50.6	3.96	2.13	2.82	4.15	10.2	8.8
	6,825	50.7	3.97	2.05	2.70	3.09	7.6	6.8
	4,580	51.5	4.02	1.55	2.01	1.54	4.8	4.6
	2,350	50.9	3.99	2.10	2.75	1.08	2.2	2.3
C2 <i>(50$\frac{3}{8}$")</i>	12,500	51.1	4.00	1.38	1.80	3.77	15.2	12.5
	10,500	51.0	3.99	1.35	1.77	3.11	12.5	10.5
	8,350	50.8	3.98	1.25	1.64	2.30	9.6	8.3
	6,250	51.0	3.99	1.00	1.31	1.37	6.9	6.2
	4,200	51.6	4.03	1.14	1.48	1.04	4.3	4.2
	2,200	52.1	4.06	1.10	1.41	0.520	2.1	2.2
C3 <i>(50$\frac{3}{8}$")</i>	12,100	53.1	4.10	1.10	1.40	2.83	14.7	12.1
C4 <i>(50$\frac{3}{8}$")</i>	1,125	56.4	5.65	14.0	12.0	2.26	1.0	1.1
	1,240	58.0	5.78	4.4	3.67	0.761	1.1	1.2
	1,470	60.0	5.95	6.5	5.22	1.28	1.3	1.5
	1,990	59.6	5.92	2.0	1.62	0.538	1.8	2.0
	1,610	60.2	5.97	6.0	4.80	1.29	1.4	1.6
SUBJECT				MADE BY	CHKD BY	By	CHARGE NO.	
						EV		
						CHKD		

Location PlainfieldTable² - Summary of Emission Test Data
*Normalized to 5.0 psia vapor pressure

Test No. <i>(Liquid Level (in))</i>	Air Flow Rate (scfm)	Product Temp. (°F)	Vapor Press. (psia)	(Outlet-Inlet) Concentration (ppmv) (Propane Basis)		Emissions (Propane Basis) ($\frac{\text{lb mass}}{\text{day}}$)	Wind Speed (mph)	Notes <i>Corrected Wind Speed (mph)</i>
				Measured	Calculated*			
C28	953	40.5	2.73	34.9	70.4	11.2	18.0	
	869	40.7	2.80	35.4	69.5	10.1	16.4	
	880	40.5	2.73	31.0	62.6	9.21	16.6	
	707	41.9	2.85	19.0	36.6	4.32	13.3	
	643	42.3	2.87	19.6	37.4	4.02	12.1	
	643	42.6	2.88	18.9	35.9	3.87	12.1	
	632	42.9	2.90	22.2	41.9	4.43	11.9	
	461	43.4	2.92	32.7	61.2	4.72	8.7	
	215	43.8	2.94	27.5	51.1	1.84	4.1	
	495	43.6	2.93	40.2	75.0	6.21	9.3	
C29P	12,585	37.9	4.37	0.30	0.353	0.744	15.4	
	10,791	38.0	4.37	0.28	0.330	0.595	12.9	
	9,063	40.2	4.51	0.34	0.385	0.584	10.5	
	7,315	43.0	4.69	0.51	0.551	0.675	8.2	
	7,389	41.6	4.60	0.72	0.797	0.985	8.3	
	6,142	44.3	4.77	0.53	0.561	0.577	6.7	
	4,111	45.3	4.85	0.53	0.550	0.378	4.2	
	2,528	48.4	5.07	1.18	1.16	0.491	2.4	
C29 (50)	12,187	49.3	5.13	1.04	1.01	2.05	14.8	12.2
	10,583	50.2	5.20	0.87	0.829	1.47	12.6	10.6
	9,163	49.0	5.71	1.47	1.24	1.91	10.7	9.2
	7,862	49.6	5.76	1.06	0.887	1.17	8.9	7.9
	5,515	50.0	5.80	0.94	0.780	0.720	5.9	5.5
	4,106	50.2	5.81	0.88	0.729	0.501	4.2	4.1
	2,248	50.5	5.83	1.04	0.857	0.322	2.1	2.2
SUBJECT				MADE BY	CHKD BY	REV	By	CHARGE NO.
				DATE	DATE		Chkd	
							Date	SHT 31 OF

Location Plainfield

Table 2 - Summary of Emission Test Data
 *Normalized to 5.0 psia vapor pressure

Test No. (Liquid Level (in))	Air Flow Rate (scfm)	Product Temp. (°F)	Vapor Press. (psia)	(Outlet-Inlet) Concentration (ppmv) (Propane Basis)		Emissions (Propane Basis) (lb mass/day)	Wind Speed (mph)	Notes Corrected Wind Speed (mph)
				Measured	Calculated*			
C30 (50)	12,456	51.0	5.87	2.76	2.26	4.70	15.2	12.4
	10,473	51.3	5.90	2.10	1.70	2.99	12.4	10.5
	9,275	51.3	5.90	1.99	1.62	2.51	10.8	9.3
	8,982	51.4	5.91	2.06	1.67	2.51	10.4	9.0
	7,127	51.4	5.91	2.22	1.80	2.14	8.0	7.1
	7,376	51.4	5.91	2.24	1.81	2.24	8.3	7.4
	5,159	51.3	5.90	2.30	1.87	1.61	5.5	5.2
	4,415	50.8	5.86	2.89	2.37	1.75	4.6	4.4
	2,749	51.0	5.87	2.64	2.16	0.992	2.7	2.7
C31 (50)	12,674	50.7	5.36	0.45	0.413	0.875	15.5	12.7
	10,474	50.7	5.36	0.60	0.550	0.964	12.4	10.5
	8,618	50.9	5.37	0.71	0.650	0.937	9.9	8.6
	7,218	51.0	5.38	0.78	0.712	0.860	8.1	7.2
	5,202	51.0	5.38	0.83	0.758	0.659	5.6	5.2
	4,276	51.2	5.40	0.94	0.854	0.611	4.4	4.3
	2,680	51.6	5.43	1.31	1.18	0.530	2.6	2.7
C32	12,582	52.0	5.50	2.43	2.16	4.54	15.3	
	10,592	51.9	5.48	3.21	2.86	5.07	12.6	
	9,247	51.9	5.48	2.57	2.29	3.55	10.8	
	7,207	52.0	5.50	2.73	2.42	2.92	8.1	
	5,264	52.0	5.50	4.16	3.69	3.25	5.6	
	4,115	52.2	5.52	3.97	3.51	2.42	4.2	
	2,812	51.5	5.47	4.66	4.17	1.96	2.7	
SUBJECT				MADE BY	CHKD BY	REV	By	CHARGE NO.
				DATE	DATE		Chkd	
							Date	SHT 32 OF