

Imperial Oil
Sherwood Park, AB

General Information

Tank Number	332
Date of Strapping Data	06/24/2019
Year Built	1949
Product in Service	Diesel
Product Service Density	0.86 g/cc (SG)

Tank Dimensions

Nominal Diameter	60 Feet
Nominal Height	48 Feet
Measured Tank Height	14.621 Metres
Tank Tilt	0 Millimetres
Gauge Point Information	Plate opposite Hinge
Reference Gauge Height	14.868 Metres
Horizontal To Gauge	0.500 Metres

Roof & Bottom Survey

Roof Type	Cone
Floating Roof Shape	N/A
Floating Roof Weight	N/A
Roof Landed Height	N/A
Roof Full Floating Height	N/A
Bottom Description	Physical Survey

Report Constraints

Main Increment	Inches
Main Volume	US Barrel
Product at Strapping	empty
Product Strap Density	1 g/cc (SG)
Liquid Height at Strap	
Safe Fill Height	48 Feet
Overflow Or Foamline	

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Strap Correction to 60°F

Shell Temperature (°F)	59.0	Master Tape Serial
Shell Material	Carbon Steel	Master Tape Span
Shell Expansion (per Foot)	0.000006450	Master Tape Tension

Certified Tape Factor	1
Tape Correction Factor	$1 + ('Shell\ Temperature' - 68)'Tape\ Expansion'$
Shell Correction Factor	$1 + (60 - 'Shell\ Temperature')'Shell\ Expansion'$

Correction Summary

Certified Tape Factor * Tape Correction Factor * Shell Correction Factor

Correction Factor = 1.00000645

Course	Strap Circumference Feet	Converted Circumference (Feet)	Tape Rise (Feet)	Corrected Strap Circumference (Feet)
1	188.401	188.401	0.000	188.402
2	188.401	188.401	0.000	188.402
3	188.401	188.401	0.000	188.402
4	188.401	188.401	0.000	188.402
5	188.401	188.401	0.000	188.402
6	188.401	188.401	0.000	188.402

Optical Circumference Corrections

Course	Average Optical Offset Millimetres	Difference Millimetres	Correction Millimetres	Corrected Circumference Metres	Corrected Circumference (Feet)
1	521.938	0.000	0.000	57.425	188.402
2	526.125	4.188	26.311	57.451	188.488
3	525.969	4.031	25.329	57.450	188.485
4	524.406	2.469	15.512	57.440	188.453
5	523.781	1.844	11.585	57.436	188.440
6	524.094	2.156	13.548	57.438	188.446

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Tank Measurements

Course	Strap (Feet)	Plate Thickness	Course Height	Accumulated Total
1	188.402	0.375 Inches	2.433 Metres	2.433 Metres
2	188.488	0.312 Inches	2.422 Metres	4.855 Metres
3	188.485	0.250 Inches	2.431 Metres	7.286 Metres
4	188.453	0.188 Inches	2.421 Metres	9.707 Metres
5	188.440	0.188 Inches	2.426 Metres	12.133 Metres
6	188.446	0.188 Inches	2.488 Metres	14.621 Metres

Tank Construction

Course	Course Fit/Join	Plates per Course	Width of Tape Rise	Depth of Tape Rise
1	Butt Weld	8	0.000 Inches	0.000 Inches
2	Butt Weld	8	0.000 Inches	0.000 Inches
3	Butt Weld	8	0.000 Inches	0.000 Inches
4	Butt Weld	8	0.000 Inches	0.000 Inches
5	Butt Weld	8	0.000 Inches	0.000 Inches
6	Butt Weld	8	0.000 Inches	0.000 Inches

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Circumference Corrected to Empty Tank Basis

$$\frac{-W * H * C^2}{2 * \pi * E * T} \quad (\text{Correction in Feet}) \quad \text{Or} \quad \frac{-K (G * H * C^2)}{T} \quad (\text{Correction in Inches})$$

Where :

$$K = \frac{W}{24 * \pi * E} = 0.000000028550919$$

G = Observed Density of Liquid in tank.

H = height of liquid above strap, in feet.

C = measured circumference, in feet.

T = thickness of shell material, in inches.

W = weight of liquid, in pounds per cubic foot.

E = modulus of elasticity of shell material.

Correction Summary

Course	Product Weight (Lb/Ft3)	Density	Liquid Height (Feet)	Corrected Circumference (Feet)	Plate Thickness (Inches)	Empty Tank Corrected (Feet)
1.00	62.428	1.000	0	188.402	0.375	0
2.00	62.428	1.000	0	188.488	0.312	0
3.00	62.428	1.000	0	188.485	0.250	0
4.00	62.428	1.000	0	188.453	0.188	0
5.00	62.428	1.000	0	188.440	0.188	0
6.00	62.428	1.000	0	188.446	0.188	0

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Circumference Deduction for Tape Rises

Butt Strap Correction (In Feet)

$$= \frac{(2 * N * T * W)}{(12 * D)} + \frac{(8 * N * T)}{(12 * 3)} * \sqrt{T/D}$$

Lap Joint Correction (In Feet)

$$= \frac{(4 * N * T)}{(12 * 3)} * \sqrt{T/(2*D)}$$

Where :

N = number of butt straps or projections per course

T = thickness of straps or projections (in inches)

W = width of straps or projections (in inches)

D = nominal diameter of tank (in inches)

Circumference Deduction for Shell Thickness

$$= \frac{(\pi * T)}{6} \quad (\text{Correction In Feet})$$

Where :

T = thickness of shell material (In Inches)

Summary of Circumference Deductions

Course	Temperature Compensated Circumference	Empty Tank (Feet)	Tape Rise (Feet)	Plate Thickness (Feet)	Inside Circumference (Feet)
1	188.402	0.000	0.000	0.000	188.402
2	188.488	0.000	0.000	0.000	188.488
3	188.485	0.000	0.000	0.000	188.485
4	188.453	0.000	0.000	0.000	188.453
5	188.440	0.000	0.000	0.000	188.440
6	188.446	0.000	0.000	0.000	188.446

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Incremental Volume Per Course

Liquid Head Stress Correction (In Feet)

$$= \frac{K (G * H * C^2)}{T}$$

Incremental Volume (in Cubic Feet)

$$= (C / \pi / 2)^2 * (\pi / 12)$$

Where :

G = tank Service Density.

H = height of liquid (between strap & top of course), in feet.

C = circumference, in feet.

T = thickness of shell material, in inches.

Incremental Volume Per Course

Course	Inside Circumference (Feet)	Liquid Head Stress (Feet)	Stressed Circumference (Feet)	US Barrel Per Inch
1	188.402	0.005	188.407	41.926
2	188.488	0.010	188.498	41.967
3	188.485	0.012	188.497	41.966
4	188.453	0.016	188.469	41.954
5	188.440	0.016	188.456	41.948
6	188.446	0.016	188.463	41.951

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Liquid Head Corrections

Volumetric Increase per Course

$$= \frac{H}{T} * \frac{K}{F}$$

Where :

H = Course Height (in inches)

T = Plate Thickness (in inches)

$$K = \frac{\pi * W * G * D^3}{4 * E}$$

W = weight of liquid, in pounds per cubic foot.

G = Specific Gravity of product to be stored.

D = Inside Diameter of the Course.

E = modulus of elasticity of shell material.

F = desired volume conversion (cubic inch per unit volume)

eg. 231 to US Gallons, 61.023744 to Litres

Gross Volume per Chart Increment

Course	US Barrel Per Inch	Volume Correction US Barrel	Incremental Correction US Barrel	Gross Volume @ 60°F	Gross Volume @ 59 °F 0.9999871
1	41.926	0.007	0.000	41.926	41.926
2	41.967	0.009	0.007	41.974	41.973
3	41.966	0.011	0.016	41.982	41.981
4	41.954	0.014	0.026	41.980	41.979
5	41.948	0.014	0.040	41.988	41.988
6	41.951	0.000	0.055	42.005	42.005

Action Number P2190102940 - Exhibit G

Imperial Oil

TANK # 908

Sherwood Park, AB

878 Kg/m³ @ 15°C

External Floating Roof Tank - Nominal Dimensions : 175 Feet X 51 Feet

INNAGE TABLE

Ref Gauge Height - 58' 8-1/8"; Located 35-1/2" to Benchmark in hatch opposite hinge										Height in Inches: Capacities in US Barrel				
0	0	2,513.598	4	0	19,461.008	8	0	35,809.207	12	0	52,937.906	16	0	70,066.712
	1	2,869.045		1	19,762.870		1	36,165.950		1	53,294.756		1	70,423.562
	2	3,225.545		2	20,064.731		2	36,522.800		2	53,651.606		2	70,780.412
	3	3,581.998		3	20,366.593		3	36,879.650		3	54,008.456		3	71,137.262
	4	3,938.449		4	20,668.454		4	37,236.500		4	54,365.306		4	71,494.112
	5	4,294.901		5	20,970.316		5	37,593.351		5	54,722.156		5	71,850.962
	6	4,651.359		6	21,272.177		6 LLC	37,950.201		6	55,079.006		6	72,207.843
	7	5,007.810		7	21,574.039		7	38,307.051		7	55,435.857		7	72,564.845
	8	5,364.256		8	21,875.901		8	38,663.901		8	55,792.707		8	72,921.846
	9	5,720.767		9	22,177.762		9	39,020.751		9	56,149.557		9	73,278.848
	10	6,077.279		10	22,479.624		10	39,377.601		10	56,506.407		10	73,635.849
	11	6,433.767		11 LL	22,781.485		11	39,734.451		11	56,863.257		11	73,992.851
1	0	6,790.255	5	0	23,083.347	9	0	40,091.301	13	0	57,220.107	17	0	74,349.853
	1	7,146.745		1	23,385.209		1	40,448.151		1	57,576.957		1	74,706.854
	2	7,503.234		2	23,687.070		2	40,805.002		2	57,933.807		2	75,063.856
	3	7,859.724		3	24,043.604		3	41,161.852		3	58,290.658		3	75,420.857
	4	8,216.214		4	24,400.137		4	41,518.702		4	58,647.508		4	75,777.859
	5	8,572.704		5	24,756.670		5	41,875.552		5	59,004.358		5	76,134.860
	6	8,929.193		6	25,113.204		6	42,232.402		6	59,361.208		6	76,491.862
	7	9,285.691		7	25,469.737		7	42,589.252		7	59,718.058		7	76,848.863
	8	9,642.190		8	25,826.271		8	42,946.102		8	60,074.908		8	77,205.865
	9	9,998.694		9	26,182.804		9	43,302.952		9	60,431.758		9	77,562.866
	10	10,355.121		10	26,539.338		10	43,659.803		10	60,788.608		10	77,919.868
	11	10,711.654		11	26,895.871		11	44,016.653		11	61,145.459		11	78,276.869
2	0	11,068.189	6	0	27,252.405	10	0	44,373.503	14	0	61,502.309	18	0	78,633.871
	1	11,424.725		1	27,608.938		1	44,730.353		1	61,859.159		1	78,990.872
	2	11,781.261		2	27,965.471		2	45,087.203		2	62,216.009		2	79,347.874
	3	12,137.796		3	28,322.005		3	45,444.053		3	62,572.859		3	79,704.875
	4	12,494.332		4	28,678.538		4	45,800.903		4	62,929.709		4	80,061.877
	5	12,850.868		5	29,035.072		5	46,157.753		5	63,286.559		5	80,418.879
	6	13,207.404		6	29,391.605		6	46,514.604		6	63,643.409		6	80,775.880
	7	13,563.941		7	29,748.139		7	46,871.454		7	64,000.260		7	81,132.882
	8	13,920.478		8	30,104.672		8	47,228.304		8	64,357.110		8	81,489.883
	9	14,277.013		9	30,461.205		9	47,585.154		9	64,713.960		9	81,846.885
	10	14,633.549		10	30,817.739		10	47,942.004		10	65,070.810		10	82,203.886
	11	14,990.084		11	31,174.272		11	48,298.854		11	65,427.660		11	82,560.888
3	0	15,346.620	7	0	31,530.806	11	0	48,655.704	15	0	65,784.510	19	0	82,917.889
	1	15,703.156		1	31,887.339		1	49,012.554		1	66,141.360		1	83,274.891
	2	16,059.689		2	32,243.873		2	49,369.405		2	66,498.210		2	83,631.892
	3	16,416.223		3	32,600.406		3	49,726.255		3	66,855.060		3	83,988.894
	4	16,772.756		4	32,956.940		4	50,083.105		4	67,211.911		4	84,345.895
	5	17,129.290		5	33,313.473		5	50,439.955		5	67,568.761		5	84,702.897
	6	17,485.823		6	33,670.006		6	50,796.805		6	67,925.611		6	85,059.898
	7	17,842.356		7	34,026.540		7	51,153.655		7	68,282.461		7	85,416.900
	8	18,198.890		8	34,383.073		8	51,510.505		8	68,639.311		8	85,773.902
	9	18,555.423		9	34,739.607		9	51,867.355		9	68,996.161		9	86,130.903
	10	18,857.285		10	35,096.140		10	52,224.205		10	69,353.011		10	86,487.905
	11	19,159.146		11	35,452.674		11	52,581.056		11	69,709.861		11	86,844.906

** Volume Below Strike Point. Located 2-5/8" Above intersection of shell & bottom.

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* Bottom volume based on Physical Survey Calculation. Average Inches not applicable

Volumes reflect a Shell Temperature of 15°C

LLC - Low Level Cut Out 8'6"

LL - Low Level Alarm 4'11"

HL - High Level Alarm 44'1"

High-High Level Alarm 44'5"

SF - Safe Fill Height @ 48'

Tables produced by:
Nextgen Industrial Services Inc.
(306) 596-8330
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A total of 929.422 US Barrel were deducted between 43 & 64 Inches based on a weight of 129738.7576 Kilograms and a density of 878 Kg/m³. Gauged quantities above 64 Inches reflect this deduction but shall be adjusted for a differing specific gravity at 15°C according to the following formula (see page 2).

Action Number P2190102940 - Exhibit G

Imperial Oil

TANK # 908

Sherwood Park, AB

878 Kg/m³ @ 15°C

External Floating Roof Tank - Nominal Dimensions : 175 Feet X 51 Feet

INNAGE TABLE

Ref Gauge Height - 58' 8-1/8": Located 35-1/2" to Benchmark in hatch opposite hinge											Height in Inches; Capacities in US Barrel										
20	0	87,201.908	24	0	104,337.981	28	0	121,483.073	32	0	138,630.964	36	0	155,783.444							
	1	87,558.909		1	104,694.983		1	121,840.321		1	138,988.212		1	156,140.839							
	2	87,915.911		2	105,051.984		2	122,197.568		2	139,345.459		2	156,498.235							
	3	88,272.912		3	105,408.986		3	122,554.816		3	139,702.707		3	156,855.630							
	4	88,629.914		4	105,765.987		4	122,912.064		4	140,059.955		4	157,213.026							
	5	88,986.915		5	106,122.989		5	123,269.312		5	140,417.202		5	157,570.421							
	6	89,343.917		6	106,479.990		6	123,626.559		6	140,774.450		6	157,927.817							
	7	89,700.918		7	106,836.992		7	123,983.807		7	141,131.698		7	158,285.212							
	8	90,057.920		8	107,193.993		8	124,341.055		8	141,488.946		8	158,642.608							
	9	90,414.921		9	107,550.995		9	124,698.302		9	141,846.193		9	159,000.003							
	10	90,771.923		10	107,907.997		10	125,055.550		10	142,203.441		10	159,357.399							
	11	91,128.925		11	108,264.998		11	125,412.798		11	142,560.689		11	159,714.794							
21	0	91,485.926	25	0	108,622.155	29	0	125,770.046	33	0	142,917.937	37	0	160,072.190							
	1	91,842.928		1	108,979.402		1	126,127.293		1	143,275.184		1	160,429.585							
	2	92,199.929		2	109,336.650		2	126,484.541		2	143,632.432		2	160,786.981							
	3	92,556.931		3	109,693.898		3	126,841.789		3	143,989.680		3	161,144.376							
	4	92,913.932		4	110,051.146		4	127,199.037		4	144,346.928		4	161,501.772							
	5	93,270.934		5	110,408.393		5	127,556.284		5	144,704.183		5	161,859.167							
	6	93,627.935		6	110,765.641		6	127,913.532		6	145,061.579		6	162,216.563							
	7	93,984.937		7	111,122.889		7	128,270.780		7	145,418.974		7	162,573.958							
	8	94,341.938		8	111,480.136		8	128,628.027		8	145,776.370		8	162,931.354							
	9	94,698.940		9	111,837.384		9	128,985.275		9	146,133.765		9	163,288.749							
	10	95,055.941		10	112,194.632		10	129,342.523		10	146,491.161		10	163,646.145							
	11	95,412.943		11	112,551.880		11	129,699.771		11	146,848.556		11	164,003.540							
22	0	95,769.944	26	0	112,909.127	30	0	130,057.018	34	0	147,205.952	38	0	164,718.331							
	1	96,126.946		1	113,266.375		1	130,414.266		1	147,563.347		1	165,075.727							
	2	96,483.947		2	113,623.623		2	130,771.514		2	147,920.743		2	165,433.122							
	3	96,840.949		3	113,980.871		3	131,128.762		3	148,278.138		3	165,790.518							
	4	97,197.951		4	114,338.118		4	131,486.009		4	148,635.534		4	166,147.913							
	5	97,554.952		5	114,695.366		5	131,843.257		5	148,992.929		5	166,505.309							
	6	97,911.954		6	115,052.614		6	132,200.505		6	149,350.325		6	166,862.704							
	7	98,268.955		7	115,409.861		7	132,557.752		7	149,707.720		7	167,220.100							
	8	98,625.957		8	115,767.109		8	132,915.000		8	150,065.116		8	167,577.495							
	9	98,982.958		9	116,124.357		9	133,272.248		9	150,422.511		9	167,934.891							
	10	99,339.960		10	116,481.605		10	133,629.496		10	150,779.907		10	168,292.286							
	11	99,696.961		11	116,838.852		11	133,986.743		11	151,137.302		11	168,649.682							
23	0	100,053.963	27	0	117,196.100	31	0	134,343.991	35	0	151,494.698	39	0	169,364.473							
	1	100,410.964		1	117,553.348		1	134,701.239		1	151,852.093		1	169,721.868							
	2	100,767.966		2	117,910.596		2	135,058.487		2	152,209.489		2	170,079.264							
	3	101,124.967		3	118,267.843		3	135,415.734		3	152,566.884		3	170,436.659							
	4	101,481.969		4	118,625.091		4	135,772.982		4	152,924.280		4	170,794.055							
	5	101,838.970		5	118,982.339		5	136,130.230		5	153,281.675		5	171,151.450							
	6	102,195.972		6	119,339.587		6	136,487.477		6	153,639.071		6	171,508.846							
	7	102,552.974		7	119,696.834		7	136,844.725		7	153,996.466		7	171,866.241							
	8	102,909.975		8	120,054.082		8	137,201.973		8	154,353.862		8	172,223.637							
	9	103,266.977		9	120,411.330		9	137,559.221		9	154,711.257		9	172,581.032							
	10	103,623.978		10	120,768.577		10	137,916.468		10	155,068.653		10	172,938.428							
	11	103,980.980		11	121,125.825		11	138,273.716		11	155,426.048		11	173,295.823							

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Fractions

1/16	22.312596	9/16	200.813362
1/8	44.625191	5/8	223.125957
3/16	66.937787	11/16	245.438553
1/4	89.250383	3/4	267.751149
5/16	111.562979	13/16	290.063745
3/8	133.875574	7/8	312.376340
7/16	156.188170	15/16	334.688936
1/2	178.500766	1	357.001532

Tables produced by:
Nextgen Industrial Services Inc.
(306) 596-8330
www.nextgenis.net



Displacement Correction (US Barrel) = 129738.7576 Kilograms
Kilograms/Cubic Metre - 147.766 Cubic Metres * 6.2898

Action Number P2190102940 - Exhibit G

Imperial Oil

TANK # 908

Sherwood Park, AB

878 Kg/m3 @ 15°C

External Floating Roof Tank - Nominal Dimensions : 175 Feet X 51 Feet

INNAGE TABLE

Ref Gauge Height - 58' 8-1/8": Located 35-1/2" to Benchmark in hatch opposite hinge											Height in Inches: Capacities in US Barrel										
40	0	172,938.428	44	0	190,100.075	48	0	SF	207,267.554	52	0		56	0							
	1	173,295.823		1	HL 190,457.731		1		207,625.210		1			1							
	2	173,653.219		2			2		207,982.865		2			2							
	3	174,010.614		3			3		208,340.521		3			3							
	4	174,368.010		4			4		208,698.177		4			4							
	5	174,725.405		5	HH 191,888.354		5		209,055.833		5			5							
	6	175,082.801		6			6		209,413.489		6			6							
	7	175,440.196		7			7		209,771.145		7			7							
	8	175,797.592		8			8		210,128.800		8			8							
	9	176,154.987		9			9		210,486.456		9			9							
	10	176,512.383		10			10		210,844.112		10			10							
	11	176,869.778		11			11		211,201.768		11			11							
41	0	177,227.174	45	0	194,391.945	49	0		211,559.424	53	0		57	0							
	1	177,584.569		1			1		211,917.079		1			1							
	2	177,941.965		2			2		212,274.735		2			2							
	3	178,299.360		3			3		212,632.391		3			3							
	4	178,656.756		4			4		212,990.047		4			4							
	5	179,014.151		5			5		213,347.703		5			5							
	6	179,371.547		6			6		213,705.358		6			6							
	7	179,728.942		7			7		214,063.014		7			7							
	8	180,086.338		8			8		214,420.670		8			8							
	9	180,443.733		9			9		214,778.326		9			9							
	10	180,801.129		10			10		215,135.982		10			10							
	11	181,158.680		11			11		215,493.637		11			11							
42	0	181,516.336	46	0	198,683.815	50	0		215,851.293	54	0		58	0							
	1	181,873.992		1			1		216,208.949		1			1							
	2	182,231.647		2			2		216,566.605		2			2							
	3	182,589.303		3			3		216,924.261		3			3							
	4	182,946.959		4			4		217,281.916		4			4							
	5	183,304.615		5			5				5			5							
	6	183,662.271		6			6				6			6							
	7	184,019.926		7			7				7			7							
	8	184,377.582		8			8				8			8							
	9	184,735.238		9			9				9			9							
	10	185,092.894		10			10				10			10							
	11	185,450.550		11			11				11			11							
43	0	185,808.205	47	0	202,975.684	51	0			55	0		59	0							
	1	186,165.861		1			1				1			1							
	2	186,523.517		2			2				2			2							
	3	186,881.173		3			3				3			3							
	4	187,238.829		4			4				4			4							
	5	187,596.485		5			5				5			5							
	6	187,954.140		6			6				6			6							
	7	188,311.796		7			7				7			7							
	8	188,669.452		8			8				8			8							
	9	189,027.108		9			9				9			9							
	10	189,384.764		10			10				10			10							
	11	189,742.419		11			11				11			11							

Page 3 of 3

LLC - Low Level Cut Out 8'6"

LL - Low Level Alarm 4'11"

HL - High Level Alarm 44'11"

High-High Level Alarm 44'5"

SF - Safe Fill Height @ 48'

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Action Number P2190102940 - Exhibit G

Imperial Oil

TANK # 908

Sherwood Park, AB

878 Kg/m3 @ 15°C

External Floating Roof Tank - Nominal Dimensions : 175 Feet X 51 Feet

Volumes in: US Barrel

To Increment	Incs	Gross Volume per Increment	Deadwood Volume	Net Volume	Accumulated Volume
0	1	0.000000	2513.597693	2513.597693	2513.597693
1	1	356.534307	-1.086884	355.447423	2869.045117
2	1	356.534307	-0.034000	356.500307	3225.545423
3	1	356.534307	-0.082013	356.452294	3581.997717
4	1	356.534307	-0.082879	356.451428	3938.449145
5	1	356.534307	-0.081957	356.452350	4294.901495
6	1	356.534307	-0.076932	356.457374	4651.358869
7	1	356.534307	-0.083613	356.450694	5007.809563
8	1	356.534307	-0.087711	356.446596	5364.256159
9	1	356.534307	-0.023963	356.510343	5720.766502
10	1	356.534307	-0.021815	356.512492	6077.278994
11	1	356.534307	-0.045880	356.488427	6433.767421
12	1	356.534307	-0.046802	356.487505	6790.254926
18	6	356.534307	-0.044591	356.489716	8929.193220
20	2	356.534307	-0.036061	356.498245	9642.189711
21	1	356.534307	-0.030112	356.504195	9998.693906
22	1	356.534307	-0.106978	356.427329	10355.121235
23	1	356.534307	-0.001949	356.532358	10711.653593
29	6	356.534307	0.001345	356.535652	12850.867503
32	3	356.534307	0.002360	356.536667	13920.477505
37	5	356.534307	0.001345	356.535652	15703.155763
45	8	356.534307	-0.000866	356.533441	18555.423294
62	17	356.534307	-54.672729	301.861578	23687.070115
96	34	356.534307	-0.000866	356.533441	35809.207118
97	1	356.743765	-0.000866	356.742899	36165.950017
197	100	356.850987	-0.000866	356.850122	71850.962199
198	1	356.881985	-0.000866	356.881119	72207.843319
299	101	357.002397	-0.000866	357.001532	108264.998035
300	1	357.157482	-0.000866	357.156616	108622.154652
400	100	357.248594	-0.000866	357.247729	144346.927514
401	1	357.256739	-0.000866	357.255873	144704.183388
502	101	357.396364	-0.000866	357.395498	180801.128719
503	1	357.552139	-0.000866	357.551273	181158.679992
604	102	357.656672	-0.000866	357.655807	217281.916462

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Imperial Oil
Sherwood Park, AB

General Information

Tank Number	908
Date of Strapping Data	06/24/2019
Year Built	1972
Product in Service	Heavy Reformate
Product Service Density	0.878 g/cc (SG)

Tank Dimensions

Nominal Diameter	175 Feet
Nominal Height	51 Feet
Measured Tank Height	15.402 Metres
Tank Tilt	0 Millimetres
Gauge Point Information	Benchmark in hatch
Reference Gauge Height	58' 8-1/8" 17.885 Metres
Horizontal To Gauge	35.5 Inches

Roof & Bottom Survey

Roof Type	External Floating
Floating Roof Shape	Angle Pontoon
Floating Roof Weight	129738.76 Kilograms
Roof Landed Height	45 Inches
Roof Full Floating Height	62 Inches
Bottom Description	Physical Survey

Report Constraints

Main Increment	Inches
Main Volume	US Barrel
Product at Strapping	empty
Product Strap Density	1 g/cc (SG)
Liquid Height at Strap	
Safe Fill Height	48 Feet
Overflow Or Foamline	

Imperial Oil
Sherwood Park, AB

Strap Correction to 60°F

Shell Temperature (°F)	59.0	Master Tape Serial
Shell Material	Carbon Steel	Master Tape Span
Shell Expansion (per Foot)	0.000006450	Master Tape Tension

Certified Tape Factor	1
Tape Correction Factor	$1 + ('Shell\ Temperature' - 68) \times 'Tape\ Expansion'$
Shell Correction Factor	$1 + (60 - 'Shell\ Temperature') \times 'Shell\ Expansion'$

Correction Summary

Certified Tape Factor * Tape Correction Factor * Shell Correction Factor

Correction Factor = 1.00000645

Course	Strap Circumference Feet	Converted Circumference (Feet)	Tape Rise (Feet)	Corrected Strap Circumference (Feet)
1	549.996	549.996	0.000	550.000
2	549.996	549.996	0.000	550.000
3	549.996	549.996	0.000	550.000
4	549.996	549.996	0.000	550.000
5	549.996	549.996	0.000	550.000
6	549.996	549.996	0.000	550.000

Optical Circumference Corrections

Course	Average Optical Offset Millimetres	Difference Millimetres	Correction Millimetres	Corrected Circumference Metres	Corrected Circumference (Feet)
1	551.333	0.000	0.000	167.640	550.000
2	552.500	1.167	-7.330	167.633	549.976
3	554.021	2.688	-16.886	167.623	549.945
4	554.875	3.542	-22.253	167.618	549.927
5	560.042	8.708	-54.716	167.585	549.820
6	559.167	7.833	-49.218	167.591	549.838

Imperial Oil
Sherwood Park, AB

Tank Measurements

Course	Strap (Feet)	Plate Thickness	Course Height	Accumulated Total
1	550.000	1.125 Inches	2.447 Metres	2.447 Metres
2	549.976	0.750 Inches	2.577 Metres	5.024 Metres
3	549.945	0.625 Inches	2.580 Metres	7.604 Metres
4	549.927	0.438 Inches	2.580 Metres	10.184 Metres
5	549.820	0.312 Inches	2.577 Metres	12.761 Metres
6	549.838	0.312 Inches	2.641 Metres	15.402 Metres

Tank Construction

Course	Course Fit/Join	Plates per Course	Width of Tape Rise	Depth of Tape Rise
1	Butt Weld	18	0.000 Inches	0.000 Inches
2	Butt Weld	18	0.000 Inches	0.000 Inches
3	Butt Weld	18	0.000 Inches	0.000 Inches
4	Butt Weld	18	0.000 Inches	0.000 Inches
5	Butt Weld	18	0.000 Inches	0.000 Inches
6	Butt Weld	18	0.000 Inches	0.000 Inches

Imperial Oil
Sherwood Park, AB

Circumference Corrected to Empty Tank Basis

$$\frac{-W * H * C^2}{2 * \pi * E * T} \quad (\text{Correction in Feet}) \quad \text{Or} \quad \frac{-K (G * H * C^2)}{T} \quad (\text{Correction in Inches})$$

Where :

$$K = \frac{W}{24 * \pi * E} = 0.000000028550919$$

G = Observed Density of Liquid in tank.

H = height of liquid above strap, in feet.

C = measured circumference, in feet.

T = thickness of shell material, in inches.

W = weight of liquid, in pounds per cubic foot.

E = modulus of elasticity of shell material.

Correction Summary

Course	Product Weight (Lb/Ft3)	Density	Liquid Height (Feet)	Corrected Circumference (Feet)	Plate Thickness (Inches)	Empty Tank Corrected (Feet)
1.00	62.428	1.000	0	550.000	1.125	0
2.00	62.428	1.000	0	549.976	0.750	0
3.00	62.428	1.000	0	549.945	0.625	0
4.00	62.428	1.000	0	549.927	0.438	0
5.00	62.428	1.000	0	549.820	0.312	0
6.00	62.428	1.000	0	549.838	0.312	0

Imperial Oil
Sherwood Park, AB

Circumference Deduction for Tape Rises

Butt Strap Correction (In Feet)

$$= \frac{(2 * N * T * W)}{(12 * D)} + \frac{(8 * N * T)}{(12 * 3)} * \sqrt{T/D}$$

Lap Joint Correction (In Feet)

$$= \frac{(4 * N * T)}{(12 * 3)} * \sqrt{T/(2*D)}$$

Where :

N = number of butt straps or projections per course

T = thickness of straps or projections (in inches)

W = width of straps or projections (in inches)

D = nominal diameter of tank (in inches)

Circumference Deduction for Shell Thickness

$$= \frac{(\pi * T)}{6} \quad (\text{Correction In Feet})$$

Where :

T = thickness of shell material (In Inches)

Summary of Circumference Deductions

Course	Temperature Compensated Circumference	Empty Tank (Feet)	Tape Rise (Feet)	Plate Thickness (Feet)	Inside Circumference (Feet)
1	550.000	0.000	0.000	0.589	549.411
2	549.976	0.000	0.000	0.393	549.583
3	549.945	0.000	0.000	0.327	549.617
4	549.927	0.000	0.000	0.229	549.698
5	549.820	0.000	0.000	0.163	549.657
6	549.838	0.000	0.000	0.163	549.675

Imperial Oil
Sherwood Park, AB

Incremental Volume Per Course

Liquid Head Stress Correction (In Feet)

$$= \frac{K (G * H * C^2)}{T}$$

Incremental Volume (in Cubic Feet)

$$= (C / \pi / 2)^2 * (\pi / 12)$$

Where :

G = tank Service Density.

H = height of liquid (between strap & top of course), in feet.

C = circumference, in feet.

T = thickness of shell material, in inches.

Incremental Volume Per Course

Course	Inside Circumference (Feet)	Liquid Head Stress (Feet)	Stressed Circumference (Feet)	US Barrel Per Inch
1	549.411	0.013	549.424	356.539
2	549.583	0.037	549.621	356.794
3	549.617	0.045	549.662	356.848
4	549.698	0.064	549.762	356.977
5	549.657	0.090	549.747	356.958
6	549.675	0.092	549.767	356.985

Imperial Oil
Sherwood Park, AB

Liquid Head Corrections

Volumetric Increase per Course

$$= \frac{H}{T} * \frac{K}{F}$$

Where :

H = Course Height (in inches)

T = Plate Thickness (in inches)

$$K = \frac{\pi * W * G * D^3}{4 * E}$$

W = weight of liquid, in pounds per cubic foot.

G = Specific Gravity of product to be stored.

D = Inside Diameter of the Course.

E = modulus of elasticity of shell material.

F = desired volume conversion (cubic inch per unit volume)

eg. 231 to US Gallons, 61.023744 to Litres

Gross Volume per Chart Increment

Course	US Barrel Per Inch	Volume Correction US Barrel	Incremental Correction US Barrel	Gross Volume @ 60°F	Gross Volume @ 59 °F 0.9999871
1	356.539	0.062	0.000	356.539	356.534
2	356.794	0.097	0.062	356.856	356.851
3	356.848	0.117	0.159	357.007	357.002
4	356.977	0.167	0.276	357.253	357.249
5	356.958	0.234	0.443	357.401	357.396
6	356.985	0.000	0.677	357.661	357.657



CO-OP Refinery Complex

TANK # 923

Regina, SK

746 Kg/m³ @ 15°C

Internal Floating Roof Tank - Nominal Dimensions : 150 Feet X 48 Feet

INNAGE TABLE

Ref Gauge Height - 51' 11-31/32"; Located 38" to Benchmark in hatch opposite hinge										Height in Inches; Capacities in Cubic Metres									
0	0	6.093	4	0	1,921.376	8	0	3,899.796	12	0	5,901.704	16	0	7,903.655					
1	*	21.483	1	Low Critical Zone	1,963.075	1	1	3,941.494	1	1	5,943.411	1	1	7,945.363					
2	*	41.271	2		2,004.774	2	2	3,983.192	2	2	5,985.118	2	2	7,987.070					
3	*	67.495	3		2,046.472	3	3	4,024.890	3	3	6,026.826	3	3	8,028.777					
4	*	98.121	4		2,065.079	4	4	4,066.588	4	4	6,068.533	4	4	8,070.485					
5	*	133.593	5		2,106.778	5	5	4,108.288	5	5	6,110.240	5	5	8,112.192					
6	*	172.023	6		2,148.476	6	6	4,149.996	6	6	6,151.948	6	6	8,153.899					
7	*	211.746	7		2,190.175	7	7	4,191.703	7	7	6,193.655	7	7	8,195.607					
8		253.441	8		2,231.873	8	8	4,233.410	8	8	6,235.362	8	8	8,237.314					
9		295.139	9		2,273.572	9	9	4,275.118	9	9	6,277.069	9	9	8,279.021					
10		336.837	10		2,315.270	10	10	4,316.825	10	10	6,318.777	10	10	8,320.729					
11		378.534	11		2,356.969	11	11	4,358.532	11	11	6,360.484	11	11	8,362.436					
1	0	420.231	5	0	2,398.667	9	0	4,400.240	13	0	6,402.191	17	0	8,404.143					
1		461.928	1		2,440.365	1	1	4,441.947	1	1	6,443.899	1	1	8,445.851					
2		503.626	2		2,482.063	2	2	4,483.654	2	2	6,485.606	2	2	8,487.558					
3		545.324	3		2,523.761	3	3	4,525.362	3	3	6,527.313	3	3	8,529.265					
4		587.022	4		2,565.459	4	4	4,567.069	4	4	6,569.021	4	4	8,570.973					
5		628.720	5		2,607.157	5	5	4,608.776	5	5	6,610.728	5	5	8,612.680					
6		670.417	6		2,648.855	6	6	4,650.484	6	6	6,652.435	6	6	8,654.387					
7		712.115	7		2,690.553	7	7	4,692.191	7	7	6,694.143	7	7	8,696.095					
8		753.813	8		2,732.251	8	8	4,733.898	8	8	6,735.850	8	8	8,737.802					
9		795.512	9		2,773.949	9	9	4,775.606	9	9	6,777.557	9	9	8,779.509					
10		837.210	10		2,815.647	10	10	4,817.313	10	10	6,819.265	10	10	8,821.216					
11		878.909	11		2,857.345	11	11	4,859.020	11	11	6,860.972	11	11	8,862.924					
2	0	920.608	6	0	2,899.043	10	0	4,900.728	14	0	6,902.679	18	0	8,904.631					
1		962.307	1		2,940.741	1	1	4,942.435	1	1	6,944.387	1	1	8,946.338					
2		1,004.006	2		2,982.440	2	2	4,984.142	2	2	6,986.094	2	2	8,988.046					
3		1,045.705	3		3,024.138	3	3	5,025.850	3	3	7,027.801	3	3	9,029.753					
4		1,087.403	4		3,065.836	4	4	5,067.557	4	4	7,069.509	4	4	9,071.460					
5		1,129.102	5		3,107.534	5	5	5,109.264	5	5	7,111.216	5	5	9,113.158					
6		1,170.801	6		3,149.232	6	6	5,150.972	6	6	7,152.923	6	6	9,154.855					
7		1,212.499	7		3,190.930	7	7	5,192.679	7	7	7,194.631	7	7	9,196.553					
8		1,254.198	8		3,232.628	8	8	5,234.386	8	8	7,236.338	8	8	9,238.251					
9		1,295.897	9		3,274.326	9	9	5,276.094	9	9	7,278.045	9	9	9,279.949					
10		1,337.595	10		3,316.024	10	10	5,317.801	10	10	7,319.753	10	10	9,321.647					
11		1,379.294	11		3,357.722	11	11	5,359.508	11	11	7,361.460	11	11	9,363.344					
3	0	1,420.993	7	0	3,399.420	11	0	5,401.216	15	0	7,403.167	19	0	9,405.042					
1		1,462.691	1	High Critical Zone	3,441.118	1	1	5,442.923	1	1	7,444.875	1	1	9,446.740					
2		1,504.390	2		3,482.816	2	2	5,484.630	2	2	7,486.582	2	2	9,488.438					
3		1,546.089	3		3,524.514	3	3	5,526.338	3	3	7,528.289	3	3	9,530.136					
4		1,587.787	4		3,566.212	4	4	5,568.045	4	4	7,569.997	4	4	9,571.833					
5		1,629.486	5		3,607.910	5	5	5,609.752	5	5	7,611.704	5	5	9,613.531					
6		1,671.185	6		3,649.608	6	6	5,651.460	6	6	7,653.411	6	6	9,655.229					
7		1,712.883	7		3,691.306	7	7	5,693.167	7	7	7,695.119	7	7	9,696.927					
8		1,754.582	8		3,733.004	8	8	5,734.874	8	8	7,736.826	8	8	9,738.625					
9		1,796.280	9		3,774.702	9	9	5,776.582	9	9	7,778.533	9	9	9,780.322					
10		1,837.979	10		3,816.400	10	10	5,818.289	10	10	7,820.241	10	10	9,822.020					
11		1,879.678	11		3,858.098	11	11	5,859.996	11	11	7,861.948	11	11	9,863.718					

** Volume Below Strike Point. Located 1/2" Above intersection of shell & bottom.

Page 1 of 3

* Bottom volume based on Physical Survey Calculation. Average Inches not applicable

Volumes reflect a Shell Temperature of 15°C

SF - Safe Fill Height @ 44'

A total of 23.0912 Cubic Metres were deducted between 49 & 54 Inches based on a weight of 17226 Kilograms and a density of 746 Kg/m³. Gauged quantities above 54 Inches reflect this deduction but shall be adjusted for a differing specific gravity at 15°C according to the following formula (see page 2).

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www.nextgenis.net



No Measurements are to be taken in Critical Zones



CO-OP Refinery Complex

TANK # 923

Regina, SK

746 Kg/m³ @ 15°C

Internal Floating Roof Tank - Nominal Dimensions : 150 Feet X 48 Feet

INNAGE TABLE

Ref Gauge Height - 51' 11-31/32"; Located 38" to Benchmark in hatch opposite hinge											
Height in Inches						Capacities in Cubic Metres					
20	0	9,905.416	24	0	11,906.911	28	0	13,908.406	32	0	15,911.146
	1	9,947.114		1	11,948.609		1	13,950.104		1	15,952.871
	2	9,988.812		2	11,990.306		2	13,991.819		2	15,994.595
	3	10,030.509		3	12,032.004		3	14,033.544		3	16,036.320
	4	10,072.207		4	12,073.702		4	14,075.268		4	16,078.044
	5	10,113.905		5	12,115.400		5	14,116.993		5	16,119.769
	6	10,155.603		6	12,157.098		6	14,158.717		6	16,161.493
	7	10,197.301		7	12,198.795		7	14,200.442		7	16,203.217
	8	10,238.998		8	12,240.493		8	14,242.166		8	16,244.942
	9	10,280.696		9	12,282.191		9	14,283.891		9	16,286.666
	10	10,322.394		10	12,323.889		10	14,325.615		10	16,328.391
	11	10,364.092		11	12,365.587		11	14,367.340		11	16,370.115
21	0	10,405.790	25	0	12,407.285	29	0	14,409.064	33	0	16,411.840
	1	10,447.487		1	12,448.982		1	14,450.789		1	16,453.564
	2	10,489.185		2	12,490.680		2	14,492.513		2	16,495.289
	3	10,530.883		3	12,532.378		3	14,534.238		3	16,537.013
	4	10,572.581		4	12,574.076		4	14,575.962		4	16,578.738
	5	10,614.279		5	12,615.774		5	14,617.687		5	16,620.462
	6	10,655.976		6	12,657.471		6	14,659.411		6	16,662.187
	7	10,697.674		7	12,699.169		7	14,701.136		7	16,703.911
	8	10,739.372		8	12,740.867		8	14,742.860		8	16,745.636
	9	10,781.070		9	12,782.565		9	14,784.585		9	16,787.360
	10	10,822.768		10	12,824.263		10	14,826.309		10	16,829.085
	11	10,864.466		11	12,865.960		11	14,868.034		11	16,870.809
22	0	10,906.163	26	0	12,907.658	30	0	14,909.758	34	0	16,912.534
	1	10,947.861		1	12,949.356		1	14,951.483		1	16,954.258
	2	10,989.559		2	12,991.054		2	14,993.207		2	16,995.983
	3	11,031.257		3	13,032.752		3	15,034.932		3	17,037.707
	4	11,072.955		4	13,074.449		4	15,076.656		4	17,079.432
	5	11,114.652		5	13,116.147		5	15,118.381		5	17,121.156
	6	11,156.350		6	13,157.845		6	15,160.105		6	17,162.881
	7	11,198.048		7	13,199.543		7	15,201.830		7	17,204.605
	8	11,239.746		8	13,241.241		8	15,243.554		8	17,246.330
	9	11,281.444		9	13,282.939		9	15,285.279		9	17,288.054
	10	11,323.141		10	13,324.636		10	15,327.003		10	17,329.779
	11	11,364.839		11	13,366.334		11	15,368.728		11	17,371.503
23	0	11,406.537	27	0	13,408.032	31	0	15,410.452	35	0	17,413.228
	1	11,448.235		1	13,449.730		1	15,452.177		1	17,454.952
	2	11,489.933		2	13,491.428		2	15,493.901		2	17,496.677
	3	11,531.631		3	13,533.125		3	15,535.626		3	17,538.401
	4	11,573.328		4	13,574.823		4	15,577.350		4	17,580.126
	5	11,615.026		5	13,616.521		5	15,619.075		5	17,621.850
	6	11,656.724		6	13,658.219		6	15,660.799		6	17,663.575
	7	11,698.422		7	13,699.917		7	15,702.524		7	17,705.299
	8	11,740.120		8	13,741.614		8	15,744.248		8	17,747.024
	9	11,781.817		9	13,783.312		9	15,785.973		9	17,788.748
	10	11,823.515		10	13,825.010		10	15,827.697		10	17,830.473
	11	11,865.213		11	13,866.708		11	15,869.422		11	17,872.197

SF - Safe Fill Height @ 44'

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Fractions

1/16	2.606113	9/16	23.455018
1/8	5.212226	5/8	26.061131
3/16	7.818339	11/16	28.667245
1/4	10.424453	3/4	31.273358
5/16	13.030566	13/16	33.879471
3/8	15.636679	7/8	36.485584
7/16	18.242792	15/16	39.091697
1/2	20.848905	1	41.697810

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Displacement Correction = 17226 Kilograms - 23.0912 Cubic Metres
Kilograms/Cubic Metre

Action Number P2190102940 - Exhibit G



CO-OP Refinery Complex

TANK # 923

Regina, SK

746 Kg/m³ @ 15°C

Internal Floating Roof Tank - Nominal Dimensions : 150 Feet X 48 Feet

INNAGE TABLE

Ref Gauge Height - 51' 11-31/32"; Located 38" to Benchmark in hatch opposite hinge											Height in Inches; Capacities in Cubic Metres										
40	0	19,917.510	44	0	SF	21,921.928	48	0			52	0				56	0				
	1	19,959.268		1				1				1					1				
	2	20,001.027		2				2				2					2				
	3	20,042.786		3				3				3					3				
	4	20,084.545		4				4				4					4				
	5	20,126.303		5				5				5					5				
	6	20,168.062		6				6				6					6				
	7	20,209.821		7				7				7					7				
	8	20,251.579		8				8				8					8				
	9	20,293.338		9				9				9					9				
	10	20,335.097		10				10				10					10				
	11	20,376.856		11				11				11					11				
41	0	20,418.614	45	0			49	0			53	0				57	0				
	1	20,460.373		1				1				1					1				
	2	20,502.132		2				2				2					2				
	3	20,543.890		3				3				3					3				
	4	20,585.649		4				4				4					4				
	5	20,627.408		5				5				5					5				
	6	20,669.167		6				6				6					6				
	7	20,710.925		7				7				7					7				
	8	20,752.684		8				8				8					8				
	9	20,794.443		9				9				9					9				
	10	20,836.201		10				10				10					10				
	11	20,877.960		11				11				11					11				
42	0	20,919.719	46	0			50	0			54	0				58	0				
	1	20,961.477		1				1				1					1				
	2	21,003.236		2				2				2					2				
	3	21,044.995		3				3				3					3				
	4	21,086.754		4				4				4					4				
	5	21,128.512		5				5				5					5				
	6	21,170.271		6				6				6					6				
	7	21,212.030		7				7				7					7				
	8	21,253.788		8				8				8					8				
	9	21,295.547		9				9				9					9				
	10	21,337.306		10				10				10					10				
	11	21,379.065		11				11				11					11				
43	0	21,420.823	47	0			51	0			55	0				59	0				
	1	21,462.582		1				1				1					1				
	2	21,504.341		2				2				2					2				
	3	21,546.099		3				3				3					3				
	4	21,587.858		4				4				4					4				
	5	21,629.617		5				5				5					5				
	6	21,671.376		6				6				6					6				
	7	21,713.134		7				7				7					7				
	8	21,754.893		8				8				8					8				
	9	21,796.652		9				9				9					9				
	10	21,838.410		10				10				10					10				
	11	21,880.169		11				11				11					11				

SF - Safe Fill Height @ 44'

Page 3 of 3

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Action Number P2190102940 - Exhibit G

CO-OP Refinery Complex

TANK # 923

Regina, SK

746 Kg/m³ @ 15°C

Internal Floating Roof Tank - Nominal Dimensions : 150 Feet X 48 Feet

Volumes in: Cubic Metres

To Increment	Incs	Gross Volume per Increment	Deadwood Volume	Net Volume	Accumulated Volume
0	1	0.000000	6.092572	6.092572	6.092572
1	1	41.723422	-26.333067	15.390355	21.482927
2	1	41.723422	-21.934950	19.788472	41.271399
3	1	41.723422	-15.500201	26.223221	67.494620
4	1	41.723422	-11.096722	30.626700	98.121320
5	1	41.723422	-6.251797	35.471625	133.592945
6	1	41.723422	-3.293119	38.430303	172.023249
7	1	41.723422	-2.000795	39.722627	211.745875
8	1	41.723422	-0.028096	41.695326	253.441201
9	1	41.723422	-0.025680	41.697742	295.138943
10	1	41.723422	-0.025773	41.697649	336.836592
13	3	41.723422	-0.026160	41.697262	461.928378
14	1	41.723422	-0.025379	41.698043	503.626421
19	5	41.723422	-0.025667	41.697755	712.115195
20	1	41.723422	-0.025604	41.697818	753.813013
23	3	41.723422	-0.024831	41.698591	878.908787
24	1	41.723422	-0.024429	41.698994	920.607780
25	1	41.723422	-0.024631	41.698791	962.306571
27	2	41.723422	-0.024425	41.698997	1045.704566
28	1	41.723422	-0.024631	41.698791	1087.403357
50	22	41.723422	-0.024767	41.698655	2004.773766
51	1	41.723422	-0.024984	41.698438	2046.472204
52	1	41.723422	-23.116136	18.607286	2065.079490
60	8	41.723422	-0.024984	41.698438	2398.666998
100	40	41.723422	-0.025386	41.698036	4066.588439
101	1	41.725398	-0.025386	41.700011	4108.288450
219	118	41.732714	-0.025386	41.707328	9029.753127
220	1	41.731964	-0.025386	41.706578	9071.459706
337	117	41.723196	-0.025386	41.697810	13950.103504
338	1	41.741265	-0.025386	41.715879	13991.819383
456	118	41.749879	-0.025386	41.724493	18915.309505
457	1	41.775206	-0.025386	41.749820	18957.059325
575	118	41.784098	-0.025386	41.758712	23884.587336
576	1	8.225216	-0.025386	8.199830	23892.787166

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CO-OP Refinery Complex
Regina, SK

General Information

Tank Number	923
Date of Strapping Data	06/11/2019
Year Built	
Product in Service	GDS Gasoline
Product Service Density	0.746 g/cc (SG)

Tank Dimensions

Nominal Diameter	150 Feet
Nominal Height	48 Feet
Measured Tank Height	14.610 Metres
Tank Tilt	0 Millimetres
Gauge Point Information	Benchmark in hatch opposite hinge
Reference Gauge Height	51' 11-31/32" 15.849 Metres
Horizontal To Gauge	38 Inches

Roof & Bottom Survey

Roof Type	Internal Floating
Floating Roof Shape	Flat Pan
Floating Roof Weight	17226 Kilograms
Roof Landed Height	51 Inches
Roof Full Floating Height	52 Inches
Bottom Description	Physical Survey

Report Constraints

Main Increment	Inches
Main Volume	Cubic Metres
Product at Strapping	empty
Product Strap Density	1 g/cc (SG)
Liquid Height at Strap	
Safe Fill Height	44 Feet
Foamline	13.823 Metres

CO-OP Refinery Complex
Regina, SK

Strap Correction to 60°F

Shell Temperature (°F)	77.0	Master Tape Serial
Shell Material	Carbon Steel	Master Tape Span
Shell Expansion (per Foot)	0.000006450	Master Tape Tension

Certified Tape Factor	1
Tape Correction Factor	$1 + ('Shell\ Temperature' - 68) 'Tape\ Expansion'$
Shell Correction Factor	$1 + (60 - 'Shell\ Temperature') 'Shell\ Expansion'$

Correction Summary

Certified Tape Factor * Tape Correction Factor * Shell Correction Factor
Correction Factor = 0.99994839

Course	Strap Circumference Metres	Converted Circumference (Feet)	Tape Rise (Feet)	Corrected Strap Circumference (Feet)
1	143.799	471.781	0.001	471.756
2	143.799	471.781	0.001	471.756
3	143.799	471.781	0.001	471.756
4	143.799	471.781	0.001	471.756
5	143.799	471.781	0.001	471.756

Optical Circumference Corrections

Course	Average Optical Offset Millimetres	Difference Millimetres	Correction Millimetres	Corrected Circumference Metres	Corrected Circumference (Feet)
1	467.688	0.000	0.000	143.791	471.756
2	472.188	4.500	-28.274	143.763	471.664
3	483.938	16.250	-102.102	143.689	471.421
4	481.781	14.094	-88.554	143.703	471.466
5	477.594	9.906	-62.243	143.729	471.552

CO-OP Refinery Complex
Regina, SK

Tank Measurements

Course	Strap (Feet)	Plate Thickness	Course Height	Accumulated Total
1	471.756	0.750 Inches	2.560 Metres	2.560 Metres
2	471.664	0.625 Inches	3.026 Metres	5.586 Metres
3	471.421	0.438 Inches	2.982 Metres	8.568 Metres
4	471.466	0.438 Inches	3.021 Metres	11.589 Metres
5	471.552	0.438 Inches	3.021 Metres	14.610 Metres

Tank Construction

Course	Course Fit/Join	Plates per Course	Width of Tape Rise	Depth of Tape Rise
1	Butt Weld	17	1.000 Inches	1.000 Millimetres
2	Butt Weld	17	1.000 Inches	1.000 Millimetres
3	Butt Weld	17	1.000 Inches	1.000 Millimetres
4	Butt Weld	17	1.000 Inches	1.000 Millimetres
5	Butt Weld	17	1.000 Inches	1.000 Millimetres

CO-OP Refinery Complex
Regina, SK

Circumference Corrected to Empty Tank Basis

$$\frac{-W * H * C^2}{2 * \pi * E * T} \quad (\text{Correction in Feet}) \quad \text{Or} \quad \frac{-K (G * H * C^2)}{T} \quad (\text{Correction in Inches})$$

Where :

$$K = \frac{W}{24 * \pi * E} = 0.000000028550919$$

G = Observed Density of Liquid in tank.

H = height of liquid above strap, in feet.

C = measured circumference, in feet.

T = thickness of shell material, in inches.

W = weight of liquid, in pounds per cubic foot.

E = modulus of elasticity of shell material.

Correction Summary

Course	Product Weight (Lb/Ft3)	Density	Liquid Height (Feet)	Corrected Circumference (Feet)	Plate Thickness (Inches)	Empty Tank Corrected (Feet)
1.00	62.428	1.000	0	471.756	0.750	0
2.00	62.428	1.000	0	471.664	0.625	0
3.00	62.428	1.000	0	471.421	0.438	0
4.00	62.428	1.000	0	471.466	0.438	0
5.00	62.428	1.000	0	471.552	0.438	0

CO-OP Refinery Complex
Regina, SK

Circumference Deduction for Tape Rises

Butt Strap Correction (In Feet)

$$= \frac{(2 * N * T * W)}{(12 * D)} + \frac{(8 * N * T)}{(12 * 3)} * \sqrt{T/D}$$

Lap Joint Correction (In Feet)

$$= \frac{(4 * N * T)}{(12 * 3)} * \sqrt{T/(2*D)}$$

Where :

N = number of butt straps or projections per course

T = thickness of straps or projections (in inches)

W = width of straps or projections (in inches)

D = nominal diameter of tank (in inches)

Circumference Deduction for Shell Thickness

$$= \frac{(\pi * T)}{6} \quad (\text{Correction In Feet})$$

Where :

T = thickness of shell material (In Inches)

Summary of Circumference Deductions

Course	Temperature Compensated Circumference	Empty Tank (Feet)	Tape Rise (Feet)	Plate Thickness (Feet)	Inside Circumference (Feet)
1	471.756	0.000	0.001	0.393	471.364
2	471.664	0.000	0.001	0.327	471.336
3	471.421	0.000	0.001	0.229	471.192
4	471.466	0.000	0.001	0.229	471.237
5	471.552	0.000	0.001	0.229	471.323

CO-OP Refinery Complex
Regina, SK

Incremental Volume Per Course

Liquid Head Stress Correction (In Feet)

$$= \frac{K (G * H * C^2)}{T}$$

Incremental Volume (in Cubic Feet)

$$= (C / \pi / 2)^2 * (\pi / 12)$$

Where :

G = tank Service Density.

H = height of liquid (between strap & top of course), in feet.

C = circumference, in feet.

T = thickness of shell material, in inches.

Incremental Volume Per Course

Course	Inside Circumference (Feet)	Liquid Head Stress (Feet)	Stressed Circumference (Feet)	Cubic Metres Per Inch
1	471.364	0.011	471.374	41.724
2	471.336	0.038	471.374	41.724
3	471.192	0.053	471.245	41.701
4	471.237	0.053	471.290	41.709
5	471.323	0.053	471.377	41.724

CO-OP Refinery Complex
Regina, SK

Liquid Head Corrections

Volumetric Increase per Course

$$= \frac{H}{T} * \frac{K}{F}$$

Where :

H = Course Height (in inches)

T = Plate Thickness (in inches)

$$K = \frac{\pi * W * G * D^3}{4 * E}$$

W = weight of liquid, in pounds per cubic foot.

G = Specific Gravity of product to be stored.

D = Inside Diameter of the Course.

E = modulus of elasticity of shell material.

F = desired volume conversion (cubic inch per unit volume)

eg. 231 to US Gallons, 61.023744 to Litres

Gross Volume per Chart Increment

Course	Cubic Metres Per Inch	Volume Correction Cubic Metres	Incremental Correction Cubic Metres	Gross Volume @ 60°F	Gross Volume @ 59 °F 0.9999871
1	41.724	0.009	0.000	41.724	41.723
2	41.724	0.013	0.009	41.733	41.733
3	41.701	0.019	0.023	41.724	41.723
4	41.709	0.019	0.041	41.750	41.750
5	41.724	0.000	0.060	41.785	41.784



CO-OP Refinery Complex

TANK # 924

Regina, SK

746 Kg/m³ @ 15°C

Internal Floating Roof Tank - Nominal Dimensions : 150 Feet X 48 Feet

INNAGE TABLE

Ref Gauge Height - 51' 11-9/16"; Located 38" to Benchmark in hatch opposite hinge										Height in Inches; Capacities in Cubic Metres				
0	0	2.720	4	0	1,893.762	8	0	3,872.788	12	0	5,874.476	16	0	7,876.117
1	*	12.811	1	Low Critical Zone	1,935.474	1	1	3,914.498	1	1	5,916.176	1	1	7,917.818
2	*	26.151	2		1,977.185	2	2	3,956.209	2	2	5,957.877	2	2	7,959.519
3	*	45.054	3		1,995.805	3	3	3,997.920	3	3	5,999.578	3	3	8,001.220
4	*	72.542	4		2,037.516	4	4	4,039.630	4	4	6,041.279	4	4	8,042.920
5	*	106.544	5		2,079.227	5	5	4,081.338	5	5	6,082.980	5	5	8,084.621
6	*	143.902	6		2,120.938	6	6	4,123.039	6	6	6,124.681	6	6	8,126.322
7	*	183.691	7		2,162.649	7	7	4,164.740	7	7	6,166.382	7	7	8,168.023
8	*	225.321	8		2,204.360	8	8	4,206.441	8	8	6,208.082	8	8	8,209.724
9		267.032	9		2,246.071	9	9	4,248.142	9	9	6,249.783	9	9	8,251.425
10		308.742	10		2,287.782	10	10	4,289.843	10	10	6,291.484	10	10	8,293.126
11		350.452	11		2,329.493	11	11	4,331.544	11	11	6,333.185	11	11	8,334.826
1	0	392.163	5	0	2,371.204	9	0	4,373.244	13	0	6,374.886	17	0	8,376.527
1		433.874	1		2,412.915	1	1	4,414.945	1	1	6,416.587	1	1	8,418.228
2		475.584	2		2,454.626	2	2	4,456.646	2	2	6,458.288	2	2	8,459.929
3		517.295	3		2,496.336	3	3	4,498.347	3	3	6,499.988	3	3	8,501.630
4		559.005	4		2,538.047	4	4	4,540.048	4	4	6,541.689	4	4	8,543.331
5		600.715	5		2,579.758	5	5	4,581.749	5	5	6,583.390	5	5	8,585.032
6		642.425	6		2,621.468	6	6	4,623.450	6	6	6,625.091	6	6	8,626.733
7		684.136	7		2,663.179	7	7	4,665.150	7	7	6,666.792	7	7	8,668.433
8		725.846	8		2,704.890	8	8	4,706.851	8	8	6,708.493	8	8	8,710.134
9		767.557	9		2,746.600	9	9	4,748.552	9	9	6,750.194	9	9	8,751.835
10		809.268	10		2,788.311	10	10	4,790.253	10	10	6,791.895	10	10	8,793.536
11		850.980	11		2,830.021	11	11	4,831.954	11	11	6,833.595	11	11	8,835.237
2	0	892.691	6	0	2,871.732	10	0	4,873.655	14	0	6,875.296	18	0	8,876.938
1		934.402	1		2,913.443	1	1	4,915.356	1	1	6,916.997	1	1	8,918.639
2		976.114	2		2,955.153	2	2	4,957.057	2	2	6,958.698	2	2	8,960.339
3		1,017.825	3		2,996.864	3	3	4,998.757	3	3	7,000.399	3	3	9,002.040
4		1,059.536	4		3,038.575	4	4	5,040.458	4	4	7,042.100	4	4	9,043.742
5		1,101.248	5		3,080.285	5	5	5,082.159	5	5	7,083.801	5	5	9,085.451
6		1,142.959	6		3,121.996	6	6	5,123.860	6	6	7,125.501	6	6	9,127.159
7		1,184.670	7		3,163.707	7	7	5,165.561	7	7	7,167.202	7	7	9,168.867
8		1,226.382	8		3,205.417	8	8	5,207.262	8	8	7,208.903	8	8	9,210.576
9		1,268.093	9		3,247.128	9	9	5,248.963	9	9	7,250.604	9	9	9,252.284
10		1,309.804	10		3,288.839	10	10	5,290.663	10	10	7,292.305	10	10	9,293.993
11		1,351.516	11		3,330.549	11	11	5,332.364	11	11	7,334.006	11	11	9,335.701
3	0	1,393.227	7	0	3,372.260	11	0	5,374.065	15	0	7,375.707	19	0	9,377.410
1		1,434.938	1	High Critical Zone	3,413.971	1	1	5,415.766	1	1	7,417.407	1	1	9,419.118
2		1,476.649	2		3,455.681	2	2	5,457.467	2	2	7,459.108	2	2	9,460.826
3		1,518.361	3		3,497.392	3	3	5,499.168	3	3	7,500.809	3	3	9,502.535
4		1,560.072	4		3,539.102	4	4	5,540.869	4	4	7,542.510	4	4	9,544.243
5		1,601.783	5		3,580.813	5	5	5,582.569	5	5	7,584.211	5	5	9,585.952
6		1,643.495	6		3,622.524	6	6	5,624.270	6	6	7,625.912	6	6	9,627.660
7		1,685.206	7		3,664.234	7	7	5,665.971	7	7	7,667.613	7	7	9,669.369
8		1,726.917	8		3,705.945	8	8	5,707.672	8	8	7,709.314	8	8	9,711.077
9		1,768.628	9		3,747.656	9	9	5,749.373	9	9	7,751.014	9	9	9,752.786
10		1,810.340	10		3,789.366	10	10	5,791.074	10	10	7,792.715	10	10	9,794.494
11		1,852.051	11		3,831.077	11	11	5,832.775	11	11	7,834.416	11	11	9,836.202

** Volume Below Strike Point. Located 1/8" Above intersection of shell & bottom.

Page 1 of 3

* Bottom volume based on Physical Survey Calculation. Average Inches not applicable

Volumes reflect a Shell Temperature of 15°C

SF - Safe Fill Height @ 44'

A total of 23.0912 Cubic Metres were deducted between 48 & 53 Inches based on a weight of 17226 Kilograms and a density of 746 Kg/m³. Gauged quantities above 53 Inches reflect this deduction but shall be adjusted for a differing specific gravity at 15°C according to the following formula (see page 2).

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No Measurements are to be taken in Critical Zones



CO-OP Refinery Complex

TANK # 924

Regina, SK

746 Kg/m³ @ 15°C

Internal Floating Roof Tank - Nominal Dimensions : 150 Feet X 48 Feet

INNAGE TABLE

Ref Gauge Height - 51' 11-9/16"; Located 38" to Benchmark in hatch opposite hinge										Height in Inches; Capacities in Cubic Metres				
20	0	9,877.911	24	0	11,879.916	28	0	13,881.921	32	0	15,885.451	36	0	17,889.016
	1	9,919.619		1	11,921.624		1	13,923.630		1	15,927.192		1	17,930.757
	2	9,961.328		2	11,963.333		2	13,965.368		2	15,968.933		2	17,972.498
	3	10,003.036		3	12,005.041		3	14,007.109		3	16,010.674		3	18,014.239
	4	10,044.745		4	12,046.750		4	14,048.850		4	16,052.415		4	18,055.980
	5	10,086.453		5	12,088.458		5	14,090.591		5	16,094.155		5	18,097.720
	6	10,128.162		6	12,130.167		6	14,132.331		6	16,135.896		6	18,139.461
	7	10,169.870		7	12,171.875		7	14,174.072		7	16,177.637		7	18,181.202
	8	10,211.578		8	12,213.584		8	14,215.813		8	16,219.378		8	18,222.943
	9	10,253.287		9	12,255.292		9	14,257.554		9	16,261.119		9	18,264.684
	10	10,294.995		10	12,297.000		10	14,299.295		10	16,302.860		10	18,306.425
	11	10,336.704		11	12,338.709		11	14,341.036		11	16,344.601		11	18,348.166
21	0	10,378.412	25	0	12,380.417	29	0	14,382.777	33	0	16,386.342	37	0	18,389.907
	1	10,420.121		1	12,422.126		1	14,424.518		1	16,428.083		1	18,431.648
	2	10,461.829		2	12,463.834		2	14,466.259		2	16,469.824		2	18,473.389
	3	10,503.537		3	12,505.543		3	14,508.000		3	16,511.565		3	18,515.130
	4	10,545.246		4	12,547.251		4	14,549.741		4	16,553.306		4	18,556.871
	5	10,586.954		5	12,588.960		5	14,591.482		5	16,595.047		5	18,598.612
	6	10,628.663		6	12,630.668		6	14,633.223		6	16,636.788		6	18,640.353
	7	10,670.371		7	12,672.376		7	14,674.964		7	16,678.529		7	18,682.094
	8	10,712.080		8	12,714.085		8	14,716.705		8	16,720.270		8	18,723.834
	9	10,753.788		9	12,755.793		9	14,758.446		9	16,762.010		9	18,765.575
	10	10,795.497		10	12,797.502		10	14,800.186		10	16,803.751		10	18,807.316
	11	10,837.205		11	12,839.210		11	14,841.927		11	16,845.492		11	18,849.057
22	0	10,878.913	26	0	12,880.919	30	0	14,883.668	34	0	16,887.233	38	0	18,890.798
	1	10,920.622		1	12,922.627		1	14,925.409		1	16,928.974		1	18,932.556
	2	10,962.330		2	12,964.335		2	14,967.150		2	16,970.715		2	18,974.315
	3	11,004.039		3	13,006.044		3	15,008.891		3	17,012.456		3	19,016.075
	4	11,045.747		4	13,047.752		4	15,050.632		4	17,054.197		4	19,057.834
	5	11,087.456		5	13,089.461		5	15,092.373		5	17,095.938		5	19,099.593
	6	11,129.164		6	13,131.169		6	15,134.114		6	17,137.679		6	19,141.353
	7	11,170.873		7	13,172.878		7	15,175.855		7	17,179.420		7	19,183.112
	8	11,212.581		8	13,214.586		8	15,217.596		8	17,221.161		8	19,224.872
	9	11,254.289		9	13,256.295		9	15,259.337		9	17,262.902		9	19,266.631
	10	11,295.998		10	13,298.003		10	15,301.078		10	17,304.643		10	19,308.390
	11	11,337.706		11	13,339.711		11	15,342.819		11	17,346.384		11	19,350.150
23	0	11,379.415	27	0	13,381.420	31	0	15,384.560	35	0	17,388.125	39	0	19,391.909
	1	11,421.123		1	13,423.128		1	15,426.301		1	17,429.865		1	19,433.669
	2	11,462.832		2	13,464.837		2	15,468.041		2	17,471.606		2	19,475.428
	3	11,504.540		3	13,506.545		3	15,509.782		3	17,513.347		3	19,517.187
	4	11,546.249		4	13,548.254		4	15,551.523		4	17,555.088		4	19,558.947
	5	11,587.957		5	13,589.962		5	15,593.264		5	17,596.829		5	19,600.706
	6	11,629.665		6	13,631.671		6	15,635.005		6	17,638.570		6	19,642.466
	7	11,671.374		7	13,673.379		7	15,676.746		7	17,680.311		7	19,684.225
	8	11,713.082		8	13,715.087		8	15,718.487		8	17,722.052		8	19,725.984
	9	11,754.791		9	13,756.796		9	15,760.228		9	17,763.793		9	19,767.744
	10	11,796.499		10	13,798.504		10	15,801.969		10	17,805.534		10	19,809.503
	11	11,838.208		11	13,840.213		11	15,843.710		11	17,847.275		11	19,851.263

SF - Safe Fill Height @ 44'

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Fractions

1/16	2.606778	9/16	23.460998
1/8	5.213555	5/8	26.067775
3/16	7.820333	11/16	28.674553
1/4	10.427110	3/4	31.281330
5/16	13.033888	13/16	33.888108
3/8	15.640665	7/8	36.494886
7/16	18.247443	15/16	39.101663
1/2	20.854220	1	41.708441

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Displacement Correction = 17226 Kilograms - 23.0912 Cubic Metres
Kilograms/Cubic Metre

Action Number P2190102940 - Exhibit G



CO-OP Refinery Complex

TANK # 924

Regina, SK

746 Kg/m³ @ 15°C

Internal Floating Roof Tank - Nominal Dimensions : 150 Feet X 48 Feet

INNAGE TABLE

Ref Gauge Height - 51' 11-9/16"; Located 38" to Benchmark in hatch opposite hinge											Height in Inches; Capacities in Cubic Metres										
40	0	19,893.022	44	0	SF	21,897.473	48	0	52	0	56	0									
	1	19,934.781		1				1		1		1									
	2	19,976.541		2				2		2		2									
	3	20,018.300		3				3		3		3									
	4	20,060.060		4				4		4		4									
	5	20,101.819		5				5		5		5									
	6	20,143.578		6				6		6		6									
	7	20,185.338		7				7		7		7									
	8	20,227.097		8				8		8		8									
	9	20,268.857		9				9		9		9									
	10	20,310.616		10				10		10		10									
	11	20,352.376		11				11		11		11									
41	0	20,394.135	45	0			49	0	53	0	57	0									
	1	20,435.894		1				1		1		1									
	2	20,477.654		2				2		2		2									
	3	20,519.413		3				3		3		3									
	4	20,561.173		4				4		4		4									
	5	20,602.932		5				5		5		5									
	6	20,644.691		6				6		6		6									
	7	20,686.451		7				7		7		7									
	8	20,728.210		8				8		8		8									
	9	20,769.970		9				9		9		9									
	10	20,811.729		10				10		10		10									
	11	20,853.488		11				11		11		11									
42	0	20,895.248	46	0			50	0	54	0	58	0									
	1	20,937.007		1				1		1		1									
	2	20,978.767		2				2		2		2									
	3	21,020.526		3				3		3		3									
	4	21,062.285		4				4		4		4									
	5	21,104.045		5				5		5		5									
	6	21,145.804		6				6		6		6									
	7	21,187.564		7				7		7		7									
	8	21,229.323		8				8		8		8									
	9	21,271.082		9				9		9		9									
	10	21,312.842		10				10		10		10									
	11	21,354.601		11				11		11		11									
43	0	21,396.361	47	0			51	0	55	0	59	0									
	1	21,438.120		1				1		1		1									
	2	21,479.879		2				2		2		2									
	3	21,521.639		3				3		3		3									
	4	21,563.398		4				4		4		4									
	5	21,605.158		5				5		5		5									
	6	21,646.917		6				6		6		6									
	7	21,688.676		7				7		7		7									
	8	21,730.436		8				8		8		8									
	9	21,772.195		9				9		9		9									
	10	21,813.955		10				10		10		10									
	11	21,855.714		11				11		11		11									

SF - Safe Fill Height @ 44'

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Action Number P2190102940 - Exhibit G

CO-OP Refinery Complex

TANK # 924

Regina, SK

746 Kg/m3 @ 15°C

Internal Floating Roof Tank - Nominal Dimensions : 150 Feet X 48 Feet

Volumes in: Cubic Metres

To Increment	Incs	Gross Volume per Increment	Deadwood Volume	Net Volume	Accumulated Volume
0	1	0.000000	2.720148	2.720148	2.720148
1	1	41.736008	-31.644812	10.091196	12.811344
2	1	41.736008	-28.396821	13.339187	26.150532
3	1	41.736008	-22.832342	18.903667	45.054198
4	1	41.736008	-14.248459	27.487549	72.541747
5	1	41.736008	-7.734201	34.001807	106.543554
6	1	41.736008	-4.377714	37.358294	143.901847
7	1	41.736008	-1.946440	39.789568	183.691415
8	1	41.736008	-0.106032	41.629976	225.321391
9	1	41.736008	-0.025481	41.710527	267.031918
10	1	41.736008	-0.025433	41.710575	308.742493
11	1	41.736008	-0.026149	41.709859	350.452353
12	1	41.736008	-0.025265	41.710743	392.163096
14	2	41.736008	-0.025404	41.710604	475.584304
18	4	41.736008	-0.025746	41.710262	642.425354
20	2	41.736008	-0.025682	41.710326	725.846006
24	4	41.736008	-0.024813	41.711195	892.690788
29	5	41.736008	-0.024596	41.711412	1101.247850
50	21	41.736008	-0.024724	41.711284	1977.184807
51	1	41.736008	-23.116094	18.619914	1995.804721
60	9	41.736008	-0.024941	41.711067	2371.204326
100	40	41.736008	-0.025361	41.710647	4039.630225
101	1	41.733543	-0.025361	41.708182	4081.338407
219	118	41.726224	-0.025361	41.700864	9002.040308
220	1	41.727119	-0.025361	41.701758	9043.742067
337	117	41.733801	-0.025361	41.708441	13923.629616
338	1	41.763482	-0.025361	41.738122	13965.367738
456	118	41.766297	-0.025361	41.740936	18890.798230
457	1	41.782875	-0.025361	41.757514	18932.555745
574	117	41.784766	-0.025361	41.759405	23818.406115

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CO-OP Refinery Complex
Regina, SK

General Information

Tank Number	924
Date of Strapping Data	05/22/2019
Year Built	
Product in Service	GDS Gasoline
Product Service Density	0.746 g/cc (SG)

Tank Dimensions

Nominal Diameter	150 Feet
Nominal Height	48 Feet
Measured Tank Height	14.599 Metres
Tank Tilt	0 Millimetres
Gauge Point Information	Benchmark in hatch opposite hinge
Reference Gauge Height	51' 11-9/16" 15.839 Metres
Horizontal To Gauge	38 Inches

Roof & Bottom Survey

Roof Type	Internal Floating
Floating Roof Shape	Flat Pan
Floating Roof Weight	17226 Kilograms
Roof Landed Height	50 Inches
Roof Full Floating Height	51 Inches
Bottom Description	Physical Survey

Report Constraints

Main Increment	Inches
Main Volume	Cubic Metres
Product at Strapping	empty
Product Strap Density	1 g/cc (SG)
Liquid Height at Strap	
Safe Fill Height	44 Feet
Foamline	13.823 Metres

CO-OP Refinery Complex
Regina, SK

Strap Correction to 60°F

Shell Temperature (°F)	77.0	Master Tape Serial
Shell Material	Carbon Steel	Master Tape Span
Shell Expansion (per Foot)	0.000006450	Master Tape Tension

Certified Tape Factor	1
Tape Correction Factor	$1 + ('Shell\ Temperature' - 68) \times 'Tape\ Expansion'$
Shell Correction Factor	$1 + (60 - 'Shell\ Temperature') \times 'Shell\ Expansion'$

Correction Summary

Certified Tape Factor * Tape Correction Factor * Shell Correction Factor

Correction Factor = 0.99994839

Course	Strap Circumference Metres	Converted Circumference (Feet)	Tape Rise (Feet)	Corrected Strap Circumference (Feet)
1	143.811	471.821	0.001	471.796
2	143.811	471.821	0.001	471.796
3	143.811	471.821	0.001	471.796
4	143.811	471.821	0.001	471.796
5	143.811	471.821	0.001	471.796

Optical Circumference Corrections

Course	Average Optical Offset Millimetres	Difference Millimetres	Correction Millimetres	Corrected Circumference Metres	Corrected Circumference (Feet)
1	463.875	0.000	0.000	143.803	471.796
2	472.063	8.188	-51.444	143.752	471.627
3	479.125	15.250	-95.819	143.708	471.481
4	475.375	11.500	-72.257	143.731	471.559
5	475.500	11.625	-73.042	143.730	471.556

CO-OP Refinery Complex
Regina, SK

Tank Measurements

Course	Strap (Feet)	Plate Thickness	Course Height	Accumulated Total
1	471.796	0.750 Inches	2.559 Metres	2.559 Metres
2	471.627	0.625 Inches	3.026 Metres	5.585 Metres
3	471.481	0.438 Inches	2.977 Metres	8.562 Metres
4	471.559	0.438 Inches	3.023 Metres	11.585 Metres
5	471.556	0.438 Inches	3.014 Metres	14.599 Metres

Tank Construction

Course	Course Fit/Join	Plates per Course	Width of Tape Rise	Depth of Tape Rise
1	Butt Weld	17	1.000 Inches	1.000 Millimetres
2	Butt Weld	17	1.000 Inches	1.000 Millimetres
3	Butt Weld	17	1.000 Inches	1.000 Millimetres
4	Butt Weld	17	1.000 Inches	1.000 Millimetres
5	Butt Weld	17	1.000 Inches	1.000 Millimetres

CO-OP Refinery Complex
Regina, SK

Circumference Corrected to Empty Tank Basis

$$\frac{-W * H * C^2}{2 * \pi * E * T} \quad (\text{Correction in Feet}) \quad \text{Or} \quad \frac{-K (G * H * C^2)}{T} \quad (\text{Correction in Inches})$$

Where :

$$K = \frac{W}{24 * \pi * E} = 0.000000028492394$$

G = Observed Density of Liquid in tank.

H = height of liquid above strap, in feet.

C = measured circumference, in feet.

T = thickness of shell material, in inches.

W = weight of liquid, in pounds per cubic foot.

E = modulus of elasticity of shell material.

Correction Summary

Course	Product Weight (Lb/Ft3)	Density	Liquid Height (Feet)	Corrected Circumference (Feet)	Plate Thickness (Inches)	Empty Tank Corrected (Feet)
1.00	62.428	1.000	0	471.796	0.750	0
2.00	62.428	1.000	0	471.627	0.625	0
3.00	62.428	1.000	0	471.481	0.438	0
4.00	62.428	1.000	0	471.559	0.438	0
5.00	62.428	1.000	0	471.556	0.438	0

CO-OP Refinery Complex
Regina, SK

Circumference Deduction for Tape Rises

Butt Strap Correction (In Feet)

$$= \frac{(2 * N * T * W)}{(12 * D)} + \frac{(8 * N * T)}{(12 * 3)} * \sqrt{T/D}$$

Lap Joint Correction (In Feet)

$$= \frac{(4 * N * T)}{(12 * 3)} * \sqrt{T/(2*D)}$$

Where :

N = number of butt straps or projections per course

T = thickness of straps or projections (in inches)

W = width of straps or projections (in inches)

D = nominal diameter of tank (in inches)

Circumference Deduction for Shell Thickness

$$= \frac{(\pi * T)}{6} \quad (\text{Correction In Feet})$$

Where :

T = thickness of shell material (In Inches)

Summary of Circumference Deductions

Course	Temperature Compensated Circumference	Empty Tank (Feet)	Tape Rise (Feet)	Plate Thickness (Feet)	Inside Circumference (Feet)
1	471.796	0.000	0.001	0.393	471.403
2	471.627	0.000	0.001	0.327	471.300
3	471.481	0.000	0.001	0.229	471.252
4	471.559	0.000	0.001	0.229	471.330
5	471.556	0.000	0.001	0.229	471.327

CO-OP Refinery Complex
Regina, SK

Incremental Volume Per Course

Liquid Head Stress Correction (In Feet)

$$= \frac{K (G * H * C^2)}{T}$$

Incremental Volume (in Cubic Feet)

$$= (C / \pi / 2)^2 * (\pi / 12)$$

Where :

G = tank Service Density.

H = height of liquid (between strap & top of course), in feet.

C = circumference, in feet.

T = thickness of shell material, in inches.

Incremental Volume Per Course

Course	Inside Circumference (Feet)	Liquid Head Stress (Feet)	Stressed Circumference (Feet)	Cubic Metres Per Inch
1	471.403	0.042	471.445	41.737
2	471.300	0.037	471.337	41.717
3	471.252	0.053	471.305	41.712
4	471.330	0.054	471.383	41.726
5	471.327	0.053	471.380	41.725

CO-OP Refinery Complex
Regina, SK

Liquid Head Corrections

Volumetric Increase per Course

$$= \frac{H}{T} * \frac{K}{F}$$

Where :

H = Course Height (in inches)

T = Plate Thickness (in inches)

$$K = \frac{\pi * W * G * D^3}{4 * E}$$

W = weight of liquid, in pounds per cubic foot.

G = Specific Gravity of product to be stored.

D = Inside Diameter of the Course.

E = modulus of elasticity of shell material.

F = desired volume conversion (cubic inch per unit volume)

eg. 231 to US Gallons, 61.023744 to Litres

Gross Volume per Chart Increment

Course	Cubic Metres Per Inch	Volume Correction Cubic Metres	Incremental Correction Cubic Metres	Gross Volume @ 60°F	Gross Volume @ 59 °F 0.9999871
1	41.737	0.009	0.000	41.737	41.736
2	41.717	0.013	0.009	41.727	41.726
3	41.712	0.019	0.023	41.734	41.734
4	41.726	0.019	0.041	41.767	41.766
5	41.725	0.000	0.060	41.785	41.785

Action Number P2190102940 - Exhibit G

Shell Canada

TANK # 4

Kingston, ON

820 Kg/m3 @ 15°C

Cone Roof Tank - Nominal Dimensions : 10.688 Metres X 9.144 Metres

Volumes in: Litres

To Increment	Incs	Gross Volume per Increment	Deadwood Volume	Net Volume	Accumulated Volume
0	1	0.000000	799.137065	799.137065	799.137065
1	1	892.000296	-407.320853	484.679443	1283.816508
2	1	892.000296	-260.454484	631.545812	1915.362320
3	1	892.000296	-145.639641	746.360655	2661.722975
4	1	892.000296	-66.055909	825.944387	3487.667361
5	1	892.000296	-15.513795	876.486501	4364.153862
19	14	892.000296	-0.433980	891.566316	16846.082292
35	16	892.000296	-0.598571	891.401725	31108.509887
36	1	892.000296	-1.105161	890.895135	31999.405022
38	2	892.000296	-0.965243	891.035053	33781.475127
39	1	892.000296	-1.685424	890.314872	34671.790000
40	1	892.000296	-1.520832	890.479464	35562.269463
41	1	892.000296	-1.438597	890.561699	36452.831163
44	3	892.000296	-1.269030	890.731265	39125.024959
45	1	892.000296	-0.815438	891.184858	40016.209817
46	1	892.000296	-0.744586	891.255710	40907.465527
49	3	892.000296	-0.567093	891.433203	43581.765134
51	2	892.000296	-0.589944	891.410352	45364.585838
54	3	892.000296	-0.649329	891.350967	48038.638739
55	1	892.000296	-0.752106	891.248190	48929.886929
59	4	892.000296	-0.668587	891.331709	52495.213765
61	2	892.000296	0.154371	892.154667	54279.523100
84	23	892.000296	0.068175	892.068471	74797.151473
91	7	892.000296	0.102069	892.102365	81041.758769
92	1	892.000296	0.086461	892.086757	81933.845526
107	15	892.000296	0.070852	892.071148	95314.912745
182	75	892.000296		892.000296	162214.934938
183	1	892.052910		892.052910	163106.987849
365	182	892.438747		892.438747	325530.839847
366	1	892.083422		892.083422	326422.923269
548	182	890.958226		890.958226	488577.320342
549	1	890.505531		890.505531	489467.825874
731	182	889.700742		889.700742	651393.360888
732	1	889.347969		889.347969	652282.708858
914	182	888.965799		888.965799	814074.484357
915	1	355.586320		355.586320	814430.070677

Tables produced by:
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Action Number P2190102940 - Exhibit G

Shell Canada

TANK # 4

Kingston, ON

850 Kg/m3 @ 15°C

Cone Roof Tank - Nominal Dimensions : 10.688 Metres X 9.144 Metres

INNAGE TABLE

Reference Gauge Height - 9.425 Metres; 0.71 Metres to Top Edge of Gauge Window in Radar Hatch											
Height in Centimetres; Capacity in Litres											
.00**	799.137	.50	44,473.913	1.00	89,071.257	1.50	133,671.873	2.00	178,279.679	2.50	222,902.246
.01*	1,283.829	.51	45,365.326	1.01	89,963.331	1.51	134,563.876	2.01	179,172.131	2.51	223,794.698
.02*	1,915.387	.52	46,256.679	1.02	90,855.404	1.52	135,455.878	2.02	180,064.582	2.52	224,687.149
.03*	2,661.760	.53	47,148.032	1.03	91,747.477	1.53	136,347.881	2.03	180,957.033	2.53	225,579.600
.04*	3,487.717	.54	48,039.385	1.04	92,639.550	1.54	137,239.883	2.04	181,849.485	2.54	226,472.052
.05*	4,364.216	.55	48,930.635	1.05	93,531.624	1.55	138,131.885	2.05	182,741.936	2.55	227,364.503
.06	5,255.795	.56	49,821.969	1.06	94,423.697	1.56	139,023.888	2.06	183,634.387	2.56	228,256.954
.07	6,147.374	.57	50,713.303	1.07	95,315.770	1.57	139,915.890	2.07	184,526.839	2.57	229,149.406
.08	7,038.953	.58	51,604.637	1.08	96,207.773	1.58	140,807.893	2.08	185,419.290	2.58	230,041.857
.09	7,930.531	.59	52,495.970	1.09	97,099.775	1.59	141,699.895	2.09	186,311.741	2.59	230,934.308
.10	8,822.110	.60	53,388.127	1.10	97,991.777	1.60	142,591.897	2.10	187,204.193	2.60	231,826.760
.11	9,713.689	.61	54,280.284	1.11	98,883.780	1.61	143,483.900	2.11	188,096.644	2.61	232,719.211
.12	10,605.268	.62	55,172.357	1.12	99,775.782	1.62	144,375.902	2.12	188,989.095	2.62	233,611.663
.13	11,496.847	.63	56,064.430	1.13	100,667.785	1.63	145,267.905	2.13	189,881.547	2.63	234,504.114
.14	12,388.425	.64	56,956.504	1.14	101,559.787	1.64	146,159.907	2.14	190,773.998	2.64	235,396.565
.15	13,280.004	.65	57,848.577	1.15	102,451.789	1.65	147,051.909	2.15	191,666.449	2.65	236,289.017
.16	14,171.583	.66	58,740.650	1.16	103,343.792	1.66	147,943.912	2.16	192,558.901	2.66	237,181.468
.17	15,063.162	.67	59,632.723	1.17	104,235.794	1.67	148,835.914	2.17	193,451.352	2.67	238,073.919
.18	15,954.741	.68	60,524.797	1.18	105,127.797	1.68	149,727.917	2.18	194,343.803	2.68	238,966.371
.19	16,846.319	.69	61,416.870	1.19	106,019.799	1.69	150,619.919	2.19	195,236.255	2.69	239,858.822
.20	17,737.734	.70	62,308.943	1.20	106,911.801	1.70	151,511.921	2.20	196,128.706	2.70	240,751.273
.21	18,629.148	.71	63,201.016	1.21	107,803.804	1.71	152,403.924	2.21	197,021.157	2.71	241,643.725
.22	19,520.562	.72	64,093.090	1.22	108,695.806	1.72	153,295.926	2.22	197,913.609	2.72	242,536.176
.23	20,411.976	.73	64,985.163	1.23	109,587.809	1.73	154,187.929	2.23	198,806.060	2.73	243,428.627
.24	21,303.390	.74	65,877.236	1.24	110,479.811	1.74	155,079.931	2.24	199,698.511	2.74	244,321.079
.25	22,194.805	.75	66,769.309	1.25	111,371.813	1.75	155,971.933	2.25	200,590.963	2.75	245,213.530
.26	23,086.219	.76	67,661.383	1.26	112,263.816	1.76	156,863.936	2.26	201,483.414	2.76	246,105.981
.27	23,977.633	.77	68,553.456	1.27	113,155.818	1.77	157,755.938	2.27	202,375.865	2.77	246,998.433
.28	24,869.047	.78	69,445.529	1.28	114,047.821	1.78	158,647.941	2.28	203,268.317	2.78	247,890.884
.29	25,760.461	.79	70,337.602	1.29	114,939.823	1.79	159,539.943	2.29	204,160.768	2.79	248,783.335
.30	26,651.876	.80	71,229.676	1.30	115,831.825	1.80	160,431.945	2.30	205,053.220	2.80	249,675.787
.31	27,543.290	.81	72,121.749	1.31	116,723.828	1.81	161,323.948	2.31	205,945.671	2.81	250,568.238
.32	28,434.704	.82	73,013.819	1.32	117,615.830	1.82	162,215.950	2.32	206,838.122	2.82	251,460.689
.33	29,326.118	.83	73,905.890	1.33	118,507.833	1.83	163,108.006	2.33	207,730.574	2.83	252,353.141
.34	30,217.533	.84	74,797.961	1.34	119,399.835	1.84	164,000.458	2.34	208,623.025	2.84	253,245.592
.35	31,108.947	.85	75,690.034	1.35	120,291.837	1.85	164,892.909	2.35	209,515.476	2.85	254,138.043
.36	31,999.876	.86	76,582.107	1.36	121,183.840	1.86	165,785.360	2.36	210,407.928	2.86	255,030.495
.37	32,890.944	.87	77,474.180	1.37	122,075.842	1.87	166,677.812	2.37	211,300.379	2.87	255,922.946
.38	33,782.013	.88	78,366.269	1.38	122,967.845	1.88	167,570.263	2.38	212,192.830	2.88	256,815.397
.39	34,672.362	.89	79,258.374	1.39	123,859.847	1.89	168,462.714	2.39	213,085.282	2.89	257,707.849
.40	35,562.875	.90	80,150.478	1.40	124,751.849	1.90	169,355.166	2.40	213,977.733	2.90	258,600.300
.41	36,453.471	.91	81,042.583	1.41	125,643.852	1.91	170,247.617	2.41	214,870.184	2.91	259,492.751
.42	37,344.226	.92	81,934.671	1.42	126,535.854	1.92	171,140.068	2.42	215,762.636	2.92	260,385.203
.43	38,234.982	.93	82,826.745	1.43	127,427.857	1.93	172,032.520	2.43	216,655.087	2.93	261,277.654
.44	39,125.737	.94	83,718.818	1.44	128,319.859	1.94	172,924.971	2.44	217,547.538	2.94	262,170.106
.45	40,016.931	.95	84,610.891	1.45	129,211.861	1.95	173,817.422	2.45	218,439.990	2.95	263,062.557
.46	40,908.195	.96	85,502.964	1.46	130,103.864	1.96	174,709.874	2.46	219,332.441	2.96	263,955.008
.47	41,799.630	.97	86,395.038	1.47	130,995.866	1.97	175,602.325	2.47	220,224.892	2.97	264,847.460
.48	42,691.065	.98	87,287.111	1.48	131,887.869	1.98	176,494.777	2.48	221,117.344	2.98	265,739.911
.49	43,582.501	.99	88,179.184	1.49	132,779.871	1.99	177,387.228	2.49	222,009.795	2.99	266,632.362

** Volume Below Strike Point; Located at intersection of shell & bottom.

Page 1 of 4

* Bottom volume based on Liquid Calibrated Calculation. Average Centimetres not applicable

Volumes reflect a Shell Temperature of 15°C

Tables produced by:

Nextgen Industrial Services Inc.

(306) 596-8330

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High-High Level Alarm (HHLA) : 8539mm

High Level Alarm (HLA) : 8210mm

Normal Fill Level (NFL) : 7881mm

Low Level (LL) : 540mm



NEXTGEN
INDUSTRIAL SERVICES

Action Number P2190102940 - Exhibit G

Shell Canada

TANK # 4

Kingston, ON

850 Kg/m3 @ 15°C

Cone Roof Tank - Nominal Dimensions : 10.688 Metres X 9.144 Metres

INNAGE TABLE

Reference Gauge Height - 9.425 Metres; 0.71 Metres to Top Edge of Gauge Window in Radar Hatch Height in Centimetres; Capacity in Litres											
3.00	267,524.814	3.50	312,147.381	4.00	356,719.542	4.50	401,268.502	5.00	445,817.462	5.50	490,364.723
3.01	268,417.265	3.51	313,039.832	4.01	357,610.521	4.51	402,159.481	5.01	446,708.441	5.51	491,254.453
3.02	269,309.716	3.52	313,932.283	4.02	358,501.500	4.52	403,050.460	5.02	447,599.420	5.52	492,144.183
3.03	270,202.168	3.53	314,824.735	4.03	359,392.479	4.53	403,941.439	5.03	448,490.399	5.53	493,033.913
3.04	271,094.619	3.54	315,717.186	4.04	360,283.459	4.54	404,832.419	5.04	449,381.379	5.54	493,923.644
3.05	271,987.070	3.55	316,609.637	4.05	361,174.438	4.55	405,723.398	5.05	450,272.358	5.55	494,813.374
3.06	272,879.522	3.56	317,502.089	4.06	362,065.417	4.56	406,614.377	5.06	451,163.337	5.56	495,703.104
3.07	273,771.973	3.57	318,394.540	4.07	362,956.396	4.57	407,505.356	5.07	452,054.316	5.57	496,592.834
3.08	274,664.424	3.58	319,286.992	4.08	363,847.375	4.58	408,396.335	5.08	452,945.295	5.58	497,482.564
3.09	275,556.876	3.59	320,179.443	4.09	364,738.355	4.59	409,287.315	5.09	453,836.275	5.59	498,372.294
3.10	276,449.327	3.60	321,071.894	4.10	365,629.334	4.60	410,178.294	5.10	454,727.254	5.60	499,262.024
3.11	277,341.778	3.61	321,964.346	4.11	366,520.313	4.61	411,069.273	5.11	455,618.233	5.61	500,151.754
3.12	278,234.230	3.62	322,856.797	4.12	367,411.292	4.62	411,960.252	5.12	456,509.212	5.62	501,041.484
3.13	279,126.681	3.63	323,749.248	4.13	368,302.271	4.63	412,851.231	5.13	457,400.191	5.63	501,931.214
3.14	280,019.132	3.64	324,641.700	4.14	369,193.251	4.64	413,742.211	5.14	458,291.171	5.64	502,820.944
3.15	280,911.584	3.65	325,534.151	4.15	370,084.230	4.65	414,633.190	5.15	459,182.150	5.65	503,710.675
3.16	281,804.035	3.66	326,426.249	4.16	370,975.209	4.66	415,524.169	5.16	460,073.129	5.66	504,600.405
3.17	282,696.486	3.67	327,317.228	4.17	371,866.188	4.67	416,415.148	5.17	460,964.108	5.67	505,490.135
3.18	283,588.938	3.68	328,208.207	4.18	372,757.167	4.68	417,306.127	5.18	461,855.087	5.68	506,379.865
3.19	284,481.389	3.69	329,099.187	4.19	373,648.147	4.69	418,197.107	5.19	462,746.067	5.69	507,269.595
3.20	285,373.840	3.70	329,990.166	4.20	374,539.126	4.70	419,088.086	5.20	463,637.046	5.70	508,159.325
3.21	286,266.292	3.71	330,881.145	4.21	375,430.105	4.71	419,979.065	5.21	464,528.025	5.71	509,049.055
3.22	287,158.743	3.72	331,772.124	4.22	376,321.084	4.72	420,870.044	5.22	465,419.004	5.72	509,938.785
3.23	288,051.194	3.73	332,663.103	4.23	377,212.063	4.73	421,761.023	5.23	466,309.983	5.73	510,828.515
3.24	288,943.646	3.74	333,554.083	4.24	378,103.043	4.74	422,652.003	5.24	467,200.963	5.74	511,718.245
3.25	289,836.097	3.75	334,445.062	4.25	378,994.022	4.75	423,542.982	5.25	468,091.942	5.75	512,607.976
3.26	290,728.549	3.76	335,336.041	4.26	379,885.001	4.76	424,433.961	5.26	468,982.921	5.76	513,497.706
3.27	291,621.000	3.77	336,227.020	4.27	380,775.980	4.77	425,324.940	5.27	469,873.900	5.77	514,387.436
3.28	292,513.451	3.78	337,117.999	4.28	381,666.959	4.78	426,215.919	5.28	470,764.879	5.78	515,277.166
3.29	293,405.903	3.79	338,008.979	4.29	382,557.939	4.79	427,106.899	5.29	471,655.859	5.79	516,166.896
3.30	294,298.354	3.80	338,899.958	4.30	383,448.918	4.80	427,997.878	5.30	472,546.838	5.80	517,056.626
3.31	295,190.805	3.81	339,790.937	4.31	384,339.897	4.81	428,888.857	5.31	473,437.817	5.81	517,946.356
3.32	296,083.257	3.82	340,681.916	4.32	385,230.876	4.82	429,779.836	5.32	474,328.796	5.82	518,836.086
3.33	296,975.708	3.83	341,572.895	4.33	386,121.855	4.83	430,670.815	5.33	475,219.775	5.83	519,725.816
3.34	297,868.159	3.84	342,463.875	4.34	387,012.835	4.84	431,561.795	5.34	476,110.755	5.84	520,615.546
3.35	298,760.611	3.85	343,354.854	4.35	387,903.814	4.85	432,452.774	5.35	477,001.734	5.85	521,505.277
3.36	299,653.062	3.86	344,245.833	4.36	388,794.793	4.86	433,343.753	5.36	477,892.713	5.86	522,395.007
3.37	300,545.513	3.87	345,136.812	4.37	389,685.772	4.87	434,234.732	5.37	478,783.692	5.87	523,284.737
3.38	301,437.965	3.88	346,027.791	4.38	390,576.751	4.88	435,125.711	5.38	479,674.671	5.88	524,174.467
3.39	302,330.416	3.89	346,918.771	4.39	391,467.731	4.89	436,016.691	5.39	480,565.651	5.89	525,064.197
3.40	303,222.867	3.90	347,809.750	4.40	392,358.710	4.90	436,907.670	5.40	481,456.630	5.90	525,953.927
3.41	304,115.319	3.91	348,700.729	4.41	393,249.689	4.91	437,798.649	5.41	482,347.609	5.91	526,843.657
3.42	305,007.770	3.92	349,591.708	4.42	394,140.668	4.92	438,689.628	5.42	483,238.588	5.92	527,733.387
3.43	305,900.221	3.93	350,482.687	4.43	395,031.647	4.93	439,580.607	5.43	484,129.567	5.93	528,623.117
3.44	306,792.673	3.94	351,373.667	4.44	395,922.627	4.94	440,471.587	5.44	485,020.547	5.94	529,512.847
3.45	307,685.124	3.95	352,264.646	4.45	396,813.606	4.95	441,362.566	5.45	485,911.526	5.95	530,402.577
3.46	308,577.575	3.96	353,155.625	4.46	397,704.585	4.96	442,253.545	5.46	486,802.505	5.96	531,292.308
3.47	309,470.027	3.97	354,046.604	4.47	398,595.564	4.97	443,144.524	5.47	487,693.484	5.97	532,182.038
3.48	310,362.478	3.98	354,937.583	4.48	399,486.543	4.98	444,035.503	5.48	488,584.463	5.98	533,071.768
3.49	311,254.929	3.99	355,828.563	4.49	400,377.523	4.99	444,926.483	5.49	489,474.993	5.99	533,961.498

Average Millimetres

Page 2 of 4

1	89.245	6	535.471
2	178.490	7	624.716
3	267.735	8	713.961
4	356.981	9	803.206
5	446.226	10	892.451

HHLA : 8539mm

HLA : 8210mm

NFL : 7881mm

LL : 540mm

Tables produced by:
Nextgen Industrial Services Inc.
(306) 596-8330
www.nextgenis.net



Action Number P2190102940 - Exhibit G

Shell Canada

TANK # 4

Kingston, ON

850 Kg/m3 @ 15°C

Cone Roof Tank - Nominal Dimensions : 10.688 Metres X 9.144 Metres

INNAGE TABLE

Reference Gauge Height - 9.425 Metres; 0.71 Metres to Top Edge of Gauge Window in Radar Hatch											
Height in Centimetres; Capacity in Litres											
6.00	534,851.228	6.50	579,337.733	7.00	623,824.238	7.50	668,297.316	8.00	712,747.493	8.50	757,197.670
6.01	535,740.958	6.51	580,227.463	7.01	624,713.968	7.51	669,186.319	8.01	713,636.496	8.51	758,086.673
6.02	536,630.688	6.52	581,117.193	7.02	625,603.698	7.52	670,075.323	8.02	714,525.500	8.52	758,975.677
6.03	537,520.418	6.53	582,006.923	7.03	626,493.428	7.53	670,964.326	8.03	715,414.503	8.53	759,864.680
6.04	538,410.148	6.54	582,896.653	7.04	627,383.158	7.54	671,853.330	8.04	716,303.507	8.54	760,753.684
6.05	539,299.878	6.55	583,786.383	7.05	628,272.888	7.55	672,742.333	8.05	717,192.510	8.55	761,642.687
6.06	540,189.609	6.56	584,676.113	7.06	629,162.618	7.56	673,631.337	8.06	718,081.514	8.56	762,531.691
6.07	541,079.339	6.57	585,565.844	7.07	630,052.348	7.57	674,520.341	8.07	718,970.517	8.57	763,420.694
6.08	541,969.069	6.58	586,455.574	7.08	630,942.078	7.58	675,409.344	8.08	719,859.521	8.58	764,309.698
6.09	542,858.799	6.59	587,345.304	7.09	631,831.809	7.59	676,298.348	8.09	720,748.525	8.59	765,198.701
6.10	543,748.529	6.60	588,235.034	7.10	632,721.539	7.60	677,187.351	8.10	721,637.528	8.60	766,087.705
6.11	544,638.259	6.61	589,124.764	7.11	633,611.269	7.61	678,076.355	8.11	722,526.532	8.61	766,976.709
6.12	545,527.989	6.62	590,014.494	7.12	634,500.999	7.62	678,965.358	8.12	723,415.535	8.62	767,865.712
6.13	546,417.719	6.63	590,904.224	7.13	635,390.729	7.63	679,854.362	8.13	724,304.539	8.63	768,754.716
6.14	547,307.449	6.64	591,793.954	7.14	636,280.459	7.64	680,743.365	8.14	725,193.542	8.64	769,643.719
6.15	548,197.179	6.65	592,683.684	7.15	637,170.189	7.65	681,632.369	8.15	726,082.546	8.65	770,532.723
6.16	549,086.910	6.66	593,573.414	7.16	638,059.919	7.66	682,521.372	8.16	726,971.549	8.66	771,421.726
6.17	549,976.640	6.67	594,463.144	7.17	638,949.649	7.67	683,410.376	8.17	727,860.553	8.67	772,310.730
6.18	550,866.370	6.68	595,352.875	7.18	639,839.379	7.68	684,299.379	8.18	728,749.556	8.68	773,199.733
6.19	551,756.100	6.69	596,242.605	7.19	640,729.110	7.69	685,188.383	8.19	729,638.560	8.69	774,088.737
6.20	552,645.830	6.70	597,132.335	7.20	641,618.840	7.70	686,077.387	8.20	730,527.563	8.70	774,977.740
6.21	553,535.560	6.71	598,022.065	7.21	642,508.570	7.71	686,966.390	8.21	731,416.567	8.71	775,866.744
6.22	554,425.290	6.72	598,911.795	7.22	643,398.300	7.72	687,855.394	8.22	732,305.571	8.72	776,755.747
6.23	555,315.020	6.73	599,801.525	7.23	644,288.030	7.73	688,744.397	8.23	733,194.574	8.73	777,644.751
6.24	556,204.750	6.74	600,691.255	7.24	645,177.760	7.74	689,633.401	8.24	734,083.578	8.74	778,533.755
6.25	557,094.480	6.75	601,580.985	7.25	646,067.490	7.75	690,522.404	8.25	734,972.581	8.75	779,422.758
6.26	557,984.211	6.76	602,470.715	7.26	646,957.220	7.76	691,411.408	8.26	735,861.585	8.76	780,311.762
6.27	558,873.941	6.77	603,360.445	7.27	647,846.950	7.77	692,300.411	8.27	736,750.588	8.77	781,200.765
6.28	559,763.671	6.78	604,250.176	7.28	648,736.680	7.78	693,189.415	8.28	737,639.592	8.78	782,089.769
6.29	560,653.401	6.79	605,139.906	7.29	649,626.411	7.79	694,078.418	8.29	738,528.595	8.79	782,978.772
6.30	561,543.131	6.80	606,029.636	7.30	650,516.141	7.80	694,967.422	8.30	739,417.599	8.80	783,867.776
6.31	562,432.861	6.81	606,919.366	7.31	651,405.871	7.81	695,856.425	8.31	740,306.602	8.81	784,756.779
6.32	563,322.591	6.82	607,809.096	7.32	652,295.252	7.82	696,745.429	8.32	741,195.606	8.82	785,645.783
6.33	564,212.321	6.83	608,698.826	7.33	653,184.256	7.83	697,634.433	8.33	742,084.609	8.83	786,534.786
6.34	565,102.051	6.84	609,588.556	7.34	654,073.259	7.84	698,523.436	8.34	742,973.613	8.84	787,423.790
6.35	565,991.781	6.85	610,478.286	7.35	654,962.263	7.85	699,412.440	8.35	743,862.617	8.85	788,312.793
6.36	566,881.511	6.86	611,368.016	7.36	655,851.266	7.86	700,301.443	8.36	744,751.620	8.86	789,201.797
6.37	567,771.242	6.87	612,257.746	7.37	656,740.270	7.87	701,190.447	8.37	745,640.624	8.87	790,090.801
6.38	568,660.972	6.88	613,147.477	7.38	657,629.273	7.88	702,079.450	8.38	746,529.627	8.88	790,979.804
6.39	569,550.702	6.89	614,037.207	7.39	658,518.277	7.89	702,968.454	8.39	747,418.631	8.89	791,868.808
6.40	570,440.432	6.90	614,926.937	7.40	659,407.280	7.90	703,857.457	8.40	748,307.634	8.90	792,757.811
6.41	571,330.162	6.91	615,816.667	7.41	660,296.284	7.91	704,746.461	8.41	749,196.638	8.91	793,646.815
6.42	572,219.892	6.92	616,706.397	7.42	661,185.287	7.92	705,635.464	8.42	750,085.641	8.92	794,535.818
6.43	573,109.622	6.93	617,596.127	7.43	662,074.291	7.93	706,524.468	8.43	750,974.645	8.93	795,424.822
6.44	573,999.352	6.94	618,485.857	7.44	662,963.295	7.94	707,413.471	8.44	751,863.648	8.94	796,313.825
6.45	574,889.082	6.95	619,375.587	7.45	663,852.298	7.95	708,302.475	8.45	752,752.652	8.95	797,202.829
6.46	575,778.812	6.96	620,265.317	7.46	664,741.302	7.96	709,191.479	8.46	753,641.655	8.96	798,091.832
6.47	576,668.543	6.97	621,155.047	7.47	665,630.305	7.97	710,080.482	8.47	754,530.659	8.97	798,980.836
6.48	577,558.273	6.98	622,044.777	7.48	666,519.309	7.98	710,969.486	8.48	755,419.663	8.98	799,869.839
6.49	578,448.003	6.99	622,934.508	7.49	667,408.312	7.99	711,858.489	8.49	756,308.666	8.99	800,758.843

Average Millimetres

Page 3 of 4

1	89.245	6	535.471
2	178.490	7	624.716
3	267.735	8	713.961
4	356.981	9	803.206
5	446.226	10	892.451

RHLA : 8539mm

HLA : 8210mm

NFL : 7881mm

LL : 540mm

Tables produced by:
Nextgen Industrial Services Inc.
(306) 596-8330
www.nextgenis.net



Action Number P2190102940 - Exhibit G

Shell Canada

TANK # 4

Kingston, ON

850 Kg/m3 @ 15°C

Cone Roof Tank - Nominal Dimensions : 10.688 Metres X 9.144 Metres

INNAGE TABLE

Reference Gauge Height - 9.425 Metres; 0.71 Metres to Top Edge of Gauge Window in Radar Hatch							Height in Centimetres; Capacity in Litres			
9.00	801,647.847	9.50		10.00		10.50		11.00		11.50
9.01	802,536.850	9.51		10.01		10.51		11.01		11.51
9.02	803,425.854	9.52		10.02		10.52		11.02		11.52
9.03	804,314.857	9.53		10.03		10.53		11.03		11.53
9.04	805,203.861	9.54		10.04		10.54		11.04		11.54
9.05	806,092.864	9.55		10.05		10.55		11.05		11.55
9.06	806,981.868	9.56		10.06		10.56		11.06		11.56
9.07	807,870.871	9.57		10.07		10.57		11.07		11.57
9.08	808,759.875	9.58		10.08		10.58		11.08		11.58
9.09	809,648.878	9.59		10.09		10.59		11.09		11.59
9.10	810,537.882	9.60		10.10		10.60		11.10		11.60
9.11	811,426.885	9.61		10.11		10.61		11.11		11.61
9.12	812,315.889	9.62		10.12		10.62		11.12		11.62
9.13	813,204.893	9.63		10.13		10.63		11.13		11.63
9.14	814,093.896	9.64		10.14		10.64		11.14		11.64
9.15	814,449.498	9.65		10.15		10.65		11.15		11.65
9.16		9.66		10.16		10.66		11.16		11.66
9.17		9.67		10.17		10.67		11.17		11.67
9.18		9.68		10.18		10.68		11.18		11.68
9.19		9.69		10.19		10.69		11.19		11.69
9.20		9.70		10.20		10.70		11.20		11.70
9.21		9.71		10.21		10.71		11.21		11.71
9.22		9.72		10.22		10.72		11.22		11.72
9.23		9.73		10.23		10.73		11.23		11.73
9.24		9.74		10.24		10.74		11.24		11.74
9.25		9.75		10.25		10.75		11.25		11.75
9.26		9.76		10.26		10.76		11.26		11.76
9.27		9.77		10.27		10.77		11.27		11.77
9.28		9.78		10.28		10.78		11.28		11.78
9.29		9.79		10.29		10.79		11.29		11.79
9.30		9.80		10.30		10.80		11.30		11.80
9.31		9.81		10.31		10.81		11.31		11.81
9.32		9.82		10.32		10.82		11.32		11.82
9.33		9.83		10.33		10.83		11.33		11.83
9.34		9.84		10.34		10.84		11.34		11.84
9.35		9.85		10.35		10.85		11.35		11.85
9.36		9.86		10.36		10.86		11.36		11.86
9.37		9.87		10.37		10.87		11.37		11.87
9.38		9.88		10.38		10.88		11.38		11.88
9.39		9.89		10.39		10.89		11.39		11.89
9.40		9.90		10.40		10.90		11.40		11.90
9.41		9.91		10.41		10.91		11.41		11.91
9.42		9.92		10.42		10.92		11.42		11.92
9.43		9.93		10.43		10.93		11.43		11.93
9.44		9.94		10.44		10.94		11.44		11.94
9.45		9.95		10.45		10.95		11.45		11.95
9.46		9.96		10.46		10.96		11.46		11.96
9.47		9.97		10.47		10.97		11.47		11.97
9.48		9.98		10.48		10.98		11.48		11.98
9.49		9.99		10.49		10.99		11.49		11.99

Average Millimetres

1	89.245	6	535.471
2	178.490	7	624.716
3	267.735	8	713.961
4	356.981	9	803.206
5	446.226	10	892.451

RHLA : 8539mm

HLA : 8210mm

NFL : 7881mm

LL : 540mm

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Page 4 of 4



Action Number P2190102940 - Exhibit G

Shell Canada

TANK # 4

Kingston, ON

850 Kg/m3 @ 15°C

Cone Roof Tank - Nominal Dimensions : 10.688 Metres X 9.144 Metres

Volumes in: Litres

To Increment	Incs	Gross Volume per Increment	Deadwood Volume	Net Volume	Accumulated Volume
0	1	0.000000	799.137065	799.137065	799.137065
1	1	892.002398	-407.310474	484.691924	1283.828989
2	1	892.002398	-260.444105	631.558293	1915.387281
3	1	892.002398	-145.629263	746.373136	2661.760417
4	1	892.002398	-66.045530	825.956868	3487.717285
5	1	892.002398	-15.503416	876.498982	4364.216266
19	14	892.002398	-0.423601	891.578797	16846.319428
35	16	892.002398	-0.588193	891.414206	31108.946717
36	1	892.002398	-1.073502	890.928896	31999.875612
38	2	892.002398	-0.933584	891.068814	33782.013241
39	1	892.002398	-1.653765	890.348633	34672.361874
40	1	892.002398	-1.489173	890.513225	35562.875099
41	1	892.002398	-1.406938	890.595460	36453.470560
44	3	892.002398	-1.246757	890.755641	39125.737484
45	1	892.002398	-0.809174	891.193225	40016.930708
46	1	892.002398	-0.738322	891.264077	40908.194785
49	3	892.002398	-0.567093	891.435305	43582.500699
51	2	892.002398	-0.589944	891.412454	45365.325607
54	3	892.002398	-0.649329	891.353069	48039.384815
55	1	892.002398	-0.752106	891.250292	48930.635107
59	4	892.002398	-0.668587	891.333811	52495.970352
61	2	892.002398	0.154371	892.156770	54280.283891
84	23	892.002398	0.068175	892.070574	74797.960615
91	7	892.002398	0.102069	892.104468	81042.582626
92	1	892.002398	0.086461	892.088859	81934.671485
107	15	892.002398	0.070852	892.073250	95315.770237
182	75	892.002398		892.002398	162215.950097
183	1	892.056272		892.056272	163108.006368
365	182	892.451344		892.451344	325534.150926
366	1	892.098029		892.098029	326426.248955
548	182	890.979201		890.979201	488584.463498
549	1	890.529523		890.529523	489474.993022
731	182	889.730097		889.730097	651405.870704
732	1	889.381349		889.381349	652295.252053
914	182	889.003539		889.003539	814093.896091
915	1	355.601415		355.601415	814449.497507

Tables produced by:
Nextgen Industrial Services Inc.
(306) 596-8330
www.nextgenis.net



Shell Canada
Kingston, ON

General Information

Tank Number	4
Date of Strapping Data	07/30/2019
Year Built	1953
Product in Service	Ultra low Sulphur Diesel
Product Service Density	0.850 g/cc (SG)

Tank Dimensions

Nominal Diameter	10.688 Metres
Nominal Height	9.144 Metres
Measured Tank Height	9.144 Metres
Tank Tilt	0 Millimetres
Gauge Point Information	Top edge of gauge window in Radar hatch
Reference Gauge Height	9.425 Metres
Horizontal To Gauge	28 Inches

Roof & Bottom Survey

Roof Type	Cone
Floating Roof Shape	
Floating Roof Weight	
Roof Landed Height	
Roof Full Floating Height	
Bottom Description	Laser Scan

Report Constraints

Main Increment	Centimetres
Main Volume	Litres
Product at Strapping	empty
Product Strap Density	1 g/cc (SG)
Liquid Height at Strap	0 Metres

Shell Canada
Kingston, ON

Strap Correction to 60°F

Shell Temperature (°F)	80.6	Master Tape Serial
Shell Material	Carbon Steel	Master Tape Span
Shell Expansion (per Foot)	0.000006450	Master Tape Tension

Certified Tape Factor	1
Tape Correction Factor	$1 + ('Shell\ Temperature' - 68) \times 'Tape\ Expansion'$
Shell Correction Factor	$1 + (60 - 'Shell\ Temperature') \times 'Shell\ Expansion'$

Correction Summary

Certified Tape Factor * Tape Correction Factor * Shell Correction Factor

Correction Factor = 0.99986713

Course	Strap Circumference Metres	Converted Circumference (Feet)	Tape Rise (Feet)	Corrected Strap Circumference (Feet)
1	33.484	109.857	0.000	109.842
2	33.490	109.875	0.000	109.860
3	33.460	109.777	0.000	109.762
4	33.434	109.692	0.000	109.678
5	33.418	109.640	0.000	109.625

Optical Circumference Corrections

Course	Average Optical Offset Millimetres	Difference Millimetres	Correction Millimetres	Corrected Circumference Metres	Corrected Circumference (Feet)
1	0.000	0.000	0.000	33.480	109.842
2	0.000	0.000	0.000	33.485	109.860
3	0.000	0.000	0.000	33.456	109.762
4	0.000	0.000	0.000	33.430	109.678
5	0.000	0.000	0.000	33.414	109.625

Shell Canada
Kingston, ON

Tank Measurements

Course	Strap (Feet)	Plate Thickness	Course Height	Accumulated Total
1	109.842	0.200 Inches	6.000 Feet	6.000 Feet
2	109.860	0.200 Inches	6.000 Feet	12.000 Feet
3	109.762	0.200 Inches	6.000 Feet	18.000 Feet
4	109.678	0.200 Inches	6.000 Feet	24.000 Feet
5	109.625	0.200 Inches	6.000 Feet	30.000 Feet

Tank Construction

Course	Course Fit/Join	Plates per Course	Width of Tape Rise	Depth of Tape Rise
1	Butt Weld	0	0.000 Inches	0.000 Inches
2	Butt Weld	0	0.000 Inches	0.000 Inches
3	Butt Weld	0	0.000 Inches	0.000 Inches
4	Butt Weld	0	0.000 Inches	0.000 Inches
5	Butt Weld	0	0.000 Inches	0.000 Inches

Shell Canada
Kingston, ON

Circumference Corrected to Empty Tank Basis

$$\frac{-W * H * C^2}{2 * \pi * E * T} \quad (\text{Correction in Feet}) \quad \text{Or} \quad \frac{-K (G * H * C^2)}{T} \quad (\text{Correction in Inches})$$

Where :

$$K = \frac{W}{24 * \pi * E} = 0.000000028492394$$

G = Observed Density of Liquid in tank.

H = height of liquid above strap, in feet.

C = measured circumference, in feet.

T = thickness of shell material, in inches.

W = weight of liquid, in pounds per cubic foot.

E = modulus of elasticity of shell material.

Correction Summary

Course	Product Weight (Lb/Ft3)	Density	Liquid Height (Feet)	Corrected Circumference (Feet)	Plate Thickness (Inches)	Empty Tank Corrected (Feet)
1.00	62.428	1.000	0	109.842	0.200	0
2.00	62.428	1.000	0	109.860	0.200	0
3.00	62.428	1.000	0	109.762	0.200	0
4.00	62.428	1.000	0	109.678	0.200	0
5.00	62.428	1.000	0	109.625	0.200	0

Shell Canada
Kingston, ON

Circumference Deduction for Tape Rises

Butt Strap Correction (In Feet)

$$= \frac{(2 * N * T * W)}{(12 * D)} + \frac{(8 * N * T)}{(12 * 3)} * \sqrt{T/D}$$

Lap Joint Correction (In Feet)

$$= \frac{(4 * N * T)}{(12 * 3)} * \sqrt{T/(2*D)}$$

Where :

N = number of butt straps or projections per course

T = thickness of straps or projections (in inches)

W = width of straps or projections (in inches)

D = nominal diameter of tank (in inches)

Circumference Deduction for Shell Thickness

$$= \frac{(\pi * T)}{6} \quad (\text{Correction In Feet})$$

Where :

T = thickness of shell material (In Inches)

Summary of Circumference Deductions

Course	Temperature Compensated Circumference	Empty Tank (Feet)	Tape Rise (Feet)	Plate Thickness (Feet)	Inside Circumference (Feet)
1	109.842	0.000	0.000	0.000	109.842
2	109.860	0.000	0.000	0.000	109.860
3	109.762	0.000	0.000	0.000	109.762
4	109.678	0.000	0.000	0.000	109.678
5	109.625	0.000	0.000	0.000	109.625

Shell Canada
Kingston, ON

Incremental Volume Per Course

Liquid Head Stress Correction (In Feet)

$$= \frac{K (G * H * C^2)}{T}$$

Incremental Volume (in Cubic Feet)

$$= (C / \pi / 2)^2 * (\pi / 12)$$

Where :

G = tank Service Density.

H = height of liquid (between strap & top of course), in feet.

C = circumference, in feet.

T = thickness of shell material, in inches.

Incremental Volume Per Course

Course	Inside Circumference (Feet)	Liquid Head Stress (Feet)	Stressed Circumference (Feet)	Litres Per Centimetre
1	109.842	0.002	109.844	892.019
2	109.860	0.004	109.865	892.352
3	109.762	0.004	109.767	890.759
4	109.678	0.004	109.682	889.389
5	109.625	0.004	109.630	888.542

Shell Canada
Kingston, ON

Liquid Head Corrections

Volumetric Increase per Course

$$= \frac{H}{T} * \frac{K}{F}$$

Where :

H = Course Height (in inches)

T = Plate Thickness (in inches)

$$K = \frac{\pi * W * G * D^3}{4 * E}$$

W = weight of liquid, in pounds per cubic foot.

G = Specific Gravity of product to be stored.

D = Inside Diameter of the Course.

E = modulus of elasticity of shell material.

F = desired volume conversion (cubic inch per unit volume)

eg. 231 to US Gallons, 61.023744 to Litres

Gross Volume per Chart Increment

Course	Litres Per Centimetre	Volume Correction Litres	Incremental Correction Litres	Gross Volume @ 60°F	Gross Volume @ 59 °F 0.9999871
1	892.014	0.121	0.000	892.014	892.002
2	892.342	0.121	0.121	892.463	892.451
3	890.749	0.121	0.242	890.991	890.979
4	889.379	0.121	0.363	889.742	889.730
5	888.531	0.000	0.484	889.015	889.004



CO-OP Refinery Complex

TANK # 54-10-807

Regina, SK

768 Kg/m³ @ 15°C

Internal Floating Roof Tank - Nominal Dimensions : 117 Feet X 42 Feet

INNAGE TABLE

Ref Gauge Height - 46' 5-15/16"; Located 61" to Benchmark in hatch opposite hinge										Height in Inches; Capacities in Cubic Metres									
0	0	5.578	4	0	1,183.016	8	0	2,353.581	12	0	3,568.254	16	0	4,783.291					
1	*	18.660	1	Low Critical Zone	1,193.890	1	1	2,378.886	1	1	3,593.560	1	1	4,808.612					
2	*	33.886	2		1,204.764	2	2	2,404.192	2	2	3,618.866	2	2	4,833.932					
3	*	52.358	3		1,215.638	3	3	2,429.498	3	3	3,644.172	3	3	4,859.253					
4	*	73.260	4		1,240.919	4	4	2,454.803	4	4	3,669.477	4	4	4,884.574					
5	*	95.878	5		1,266.199	5	5	2,480.109	5	5	3,694.783	5	5	4,909.894					
6		121.152	6		1,291.480	6	6	2,505.415	6	6	3,720.089	6	6	4,935.215					
7		146.436	7		1,316.761	7	7	2,530.721	7	7	3,745.394	7	7	4,960.536					
8		171.720	8		1,342.042	8	8	2,556.026	8	8	3,770.700	8	8	4,985.856					
9		197.004	9		1,367.322	9	9	2,581.332	9	9	3,796.006	9	9	5,011.177					
10		222.288	10		1,392.603	10	10	2,606.638	10	10	3,821.312	10	10	5,036.497					
11		247.572	11		1,417.884	11	11	2,631.943	11	11	3,846.617	11	11	5,061.818					
1	0	272.856	5	0	1,443.165	9	0	2,657.249	13	0	3,871.923	17	0	5,087.139					
1		298.140	1		1,468.445	1	1	2,682.555	1	1	3,897.229	1	1	5,112.459					
2		323.424	2		1,493.726	2	2	2,707.860	2	2	3,922.534	2	2	5,137.780					
3		348.708	3		1,519.007	3	3	2,733.166	3	3	3,947.840	3	3	5,163.101					
4		373.992	4		1,544.288	4	4	2,758.472	4	4	3,973.146	4	4	5,188.421					
5		399.276	5		1,569.568	5	5	2,783.778	5	5	3,998.451	5	5	5,213.742					
6		424.560	6		1,594.849	6	6	2,809.083	6	6	4,023.757	6	6	5,239.063					
7		449.844	7		1,620.130	7	7	2,834.389	7	7	4,049.063	7	7	5,264.383					
8		475.128	8		1,645.411	8	8	2,859.695	8	8	4,074.369	8	8	5,289.704					
9		500.415	9		1,670.691	9	9	2,885.000	9	9	4,099.674	9	9	5,315.025					
10		525.702	10		1,695.972	10	10	2,910.306	10	10	4,124.980	10	10	5,340.345					
11		550.988	11		1,721.253	11	11	2,935.612	11	11	4,150.286	11	11	5,365.666					
2	0	576.275	6	0	1,746.534	10	0	2,960.918	14	0	4,175.595	18	0	5,390.987					
1		601.556	1		1,771.814	1	1	2,986.223	1	1	4,200.916	1	1	5,416.307					
2		626.837	2		1,797.095	2	2	3,011.529	2	2	4,226.236	2	2	5,441.628					
3		652.118	3		1,822.376	3	3	3,036.835	3	3	4,251.557	3	3	5,466.949					
4		677.399	4		1,847.657	4	4	3,062.140	4	4	4,276.878	4	4	5,492.269					
5		702.680	5		1,872.937	5	5	3,087.446	5	5	4,302.198	5	5	5,517.590					
6		727.961	6		1,898.218	6	6	3,112.752	6	6	4,327.519	6	6	5,542.911					
7		753.242	7		1,923.499	7	7	3,138.057	7	7	4,352.840	7	7	5,568.231					
8		778.523	8		1,948.780	8	8	3,163.363	8	8	4,378.160	8	8	5,593.552					
9		803.804	9		1,974.060	9	9	3,188.669	9	9	4,403.481	9	9	5,618.873					
10		829.085	10		1,999.341	10	10	3,213.975	10	10	4,428.802	10	10	5,644.193					
11		854.365	11		2,024.622	11	11	3,239.280	11	11	4,454.122	11	11	5,669.514					
3	0	879.646	7	0	2,049.912	11	0	3,264.586	15	0	4,479.443	19	0	5,694.835					
1		904.927	1		2,075.218	1	1	3,289.892	1	1	4,504.764	1	1	5,720.155					
2		930.208	2		2,100.524	2	2	3,315.197	2	2	4,530.084	2	2	5,745.476					
3		955.489	3		2,125.829	3	3	3,340.503	3	3	4,555.405	3	3	5,770.797					
4		980.770	4		2,151.135	4	4	3,365.809	4	4	4,580.726	4	4	5,796.117					
5		1,006.051	5		2,176.441	5	5	3,391.115	5	5	4,606.046	5	5	5,821.438					
6		1,031.331	6		2,201.746	6	6	3,416.420	6	6	4,631.367	6	6	5,846.759					
7		1,056.612	7		2,227.052	7	7	3,441.726	7	7	4,656.688	7	7	5,872.079					
8		1,081.893	8		2,252.358	8	8	3,467.032	8	8	4,682.008	8	8	5,897.400					
9		1,107.174	9		2,277.663	9	9	3,492.337	9	9	4,707.329	9	9	5,922.721					
10		1,132.455	10		2,302.969	10	10	3,517.643	10	10	4,732.650	10	10	5,948.041					
11		1,157.736	11		2,328.275	11	11	3,542.949	11	11	4,757.970	11	11	5,973.362					

** Volume Below Strike Point. Located 1.9" Above intersection of shell & bottom.

Page 1 of 2

* Bottom volume based on Physical Survey Calculation. Average Inches not applicable

Volumes reflect a Shell Temperature of 15°C

SF - Safe Fill Height @ 38' 4"

A total of 14,406,873 Cubic Metres were deducted between 46 & 53 inches based on a weight of 11064,4787 Kilograms and a density of 768 Kg/m³. Gauged quantities above 53 inches reflect this deduction but shall be adjusted for a differing specific gravity at 15°C according to the following formula (see page 2).

Tables produced by:
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No Measurements are to be taken in Critical Zones

Action Number P2190102940 - Exhibit G



CO-OP Refinery Complex

TANK # 54-10-807

Regina, SK

768 Kg/m³ @ 15°C

Internal Floating Roof Tank - Nominal Dimensions : 117 Feet X 42 Feet

INNAGE TABLE

Ref Gauge Height - 46' 5-15/16"; Located 61" to Benchmark in hatch opposite hinge										Height in Inches; Capacities in Cubic Metres				
20	0	5,998.683	24	0	7,214.286	28	0	8,429.956	32	0	9,645.634	36	0	10,861.275
	1	6,024.003		1	7,239.613		1	8,455.282		1	9,670.960		1	10,886.599
	2	6,049.324		2	7,264.939		2	8,480.609		2	9,696.287		2	10,911.923
	3	6,074.645		3	7,290.266		3	8,505.936		3	9,721.613		3	10,937.247
	4	6,099.965		4	7,315.592		4	8,531.262		4	9,746.940		4	10,962.571
	5	6,125.286		5	7,340.918		5	8,556.589		5	9,772.267		5	10,987.895
	6	6,150.607		6	7,366.245		6	8,581.916		6	9,797.593		6	11,013.219
	7	6,175.927		7	7,391.571		7	8,607.242		7	9,822.920		7	11,038.543
	8	6,201.248		8	7,416.898		8	8,632.569		8	9,848.247		8	11,063.867
	9	6,226.569		9	7,442.224		9	8,657.895		9	9,873.573		9	11,089.191
	10	6,251.889		10	7,467.551		10	8,683.222		10	9,898.900		10	11,114.515
	11	6,277.210		11	7,492.877		11	8,708.549		11	9,924.226		11	11,139.839
21	0	6,302.534	25	0	7,518.204	29	0	8,733.875	33	0	9,949.553	37	0	11,165.163
	1	6,327.861		1	7,543.530		1	8,759.202		1	9,974.880		1	11,190.487
	2	6,353.187		2	7,568.856		2	8,784.528		2	10,000.206		2	11,215.811
	3	6,378.513		3	7,594.183		3	8,809.855		3	10,025.533		3	11,241.135
	4	6,403.840		4	7,619.509		4	8,835.182		4	10,050.860		4	11,266.459
	5	6,429.166		5	7,644.836		5	8,860.508		5	10,076.186		5	11,291.783
	6	6,454.493		6	7,670.162		6	8,885.835		6	10,101.513		6	11,317.106
	7	6,479.819		7	7,695.489		7	8,911.162		7	10,126.839		7	11,342.430
	8	6,505.146		8	7,720.815		8	8,936.488		8	10,152.166		8	11,367.754
	9	6,530.472		9	7,746.142		9	8,961.815		9	10,177.493		9	11,393.078
	10	6,555.799		10	7,771.468		10	8,987.141		10	10,202.819		10	11,418.402
	11	6,581.125		11	7,796.794		11	9,012.468		11	10,228.146		11	11,443.726
22	0	6,606.451	26	0	7,822.121	30	0	9,037.795	34	0	10,253.473	38	0	11,469.050
	1	6,631.778		1	7,847.447		1	9,063.121		1	10,278.799		1	11,494.374
	2	6,657.104		2	7,872.774		2	9,088.448		2	10,304.126		2	11,519.698
	3	6,682.431		3	7,898.100		3	9,113.775		3	10,329.452		3	11,545.022
	4	6,707.757		4	7,923.427		4	9,139.101		4	10,354.779	4	SF	11,570.346
	5	6,733.084		5	7,948.753		5	9,164.428		5	10,380.106		5	
	6	6,758.410		6	7,974.080		6	9,189.754		6	10,405.432		6	
	7	6,783.737		7	7,999.406		7	9,215.081		7	10,430.759		7	
	8	6,809.063		8	8,024.732		8	9,240.408		8	10,456.085		8	
	9	6,834.389		9	8,050.059		9	9,265.734		9	10,481.412		9	
	10	6,859.716		10	8,075.385		10	9,291.061		10	10,506.739		10	
	11	6,885.042		11	8,100.712		11	9,316.388		11	10,532.064		11	
23	0	6,910.369	27	0	8,126.038	31	0	9,341.714	35	0	10,557.388	39	0	
	1	6,935.695		1	8,151.365		1	9,367.041		1	10,582.712		1	
	2	6,961.022		2	8,176.691		2	9,392.367		2	10,608.035		2	
	3	6,986.348		3	8,202.018		3	9,417.694		3	10,633.359		3	
	4	7,011.675		4	8,227.344		4	9,443.021		4	10,658.683		4	
	5	7,037.001		5	8,252.670		5	9,468.347		5	10,684.007		5	
	6	7,062.327		6	8,277.997		6	9,493.674		6	10,709.331		6	
	7	7,087.654		7	8,303.323		7	9,519.000		7	10,734.655		7	
	8	7,112.980		8	8,328.650		8	9,544.327		8	10,759.979		8	
	9	7,138.307		9	8,353.976		9	9,569.654		9	10,785.303		9	
	10	7,163.633		10	8,379.303		10	9,594.980		10	10,810.627		10	
	11	7,188.960		11	8,404.629		11	9,620.307		11	10,835.951		11	

SF - Safe Fill Height @ 38' 4"

Page 2 of 2

Fractions

1/16	1.582541	9/16	14.242871
1/8	3.165082	5/8	15.825412
3/16	4.747624	11/16	17.407954
1/4	6.330165	3/4	18.990495
5/16	7.912706	13/16	20.573036
3/8	9.495247	7/8	22.155577
7/16	11.077789	15/16	23.738119
1/2	12.660330	1	25.320660

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Nextgen Industrial Services Inc.
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www.nextgenis.net



Displacement Correction = 11064.4787 Kilograms - 14.406873 Cubic Metres
Kilograms/Cubic Metre



Action Number P2190102940 - Exhibit G

CO-OP Refinery Complex

TANK # 54-10-807

Regina, SK

768 Kg/m³ @ 15°C

Internal Floating Roof Tank - Nominal Dimensions : 117 Feet X 42 Feet

Volumes in: Cubic Metres

To Increment	Incs	Gross Volume per Increment	Deadwood Volume	Net Volume	Accumulated Volume
0	1	0.000000	5.578137	5.578137	5.578137
1	1	25.281864	-12.199616	13.082248	18.660385
2	1	25.281864	-10.056533	15.225331	33.885716
3	1	25.281864	-6.809771	18.472092	52.357808
4	1	25.281864	-4.379486	20.902377	73.260185
5	1	25.281864	-2.664215	22.617649	95.877834
6	1	25.281864	-0.007453	25.274411	121.152245
10	4	25.281864	0.002115	25.283979	222.288160
11	1	25.281864	0.001977	25.283841	247.572001
12	1	25.281864	0.001840	25.283703	272.855704
18	6	25.281864	0.002145	25.284009	424.559758
20	2	25.281864	0.002352	25.284216	475.128189
24	4	25.281864	0.004904	25.286767	576.275258
25	1	25.281864	-0.000908	25.280956	601.556214
28	3	25.281864	-0.000794	25.281069	677.399422
45	17	25.281864	-0.001001	25.280863	1107.174087
48	3	25.281864	-0.001115	25.280749	1183.016333
51	3	25.281864	-14.407988	10.873875	1215.637960
83	32	25.281864	-0.001115	25.280749	2024.621920
84	1	25.291296	-0.001115	25.290181	2049.912102
167	83	25.306821	-0.001115	25.305706	4150.285706
168	1	25.310471	-0.001115	25.309356	4175.595062
251	83	25.321775	-0.001115	25.320660	6277.209829
252	1	25.325375	-0.001115	25.324260	6302.534089
335	83	25.327562	-0.001115	25.326447	8404.629180
418	83	25.327736	-0.001115	25.326621	10506.738714
419	1	25.325999	-0.001115	25.324884	10532.063598
502	83	25.325078	-0.001115	25.323963	12633.952560

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Nextgen Industrial Services Inc.
(306) 596-8330
www.nextgenis.net



CO-OP Refinery Complex
Regina, SK

General Information

Tank Number	54-10-807
Date of Strapping Data	06/24/2019
Year Built	
Product in Service	Heavy Naphtha
Product Service Density	0.768 g/cc (SG)

Tank Dimensions

Nominal Diameter	117 Feet
Nominal Height	42 Feet
Measured Tank Height	12.765 Metres
Tank Tilt	0 Millimetres
Gauge Point Information	Benchmark on opposite side of hinge
Reference Gauge Height	14.17 Metres 46' 5-15/16"
Horizontal To Gauge	61 Inches

Roof & Bottom Survey

Roof Type	Internal Floating
Floating Roof Shape	Flat Pan
Floating Roof Weight	11064.48 Kilograms
Roof Landed Height	48 Inches
Roof Full Floating Height	51 Inches
Bottom Description	Physical Survey

Report Constraints

Main Increment	Inches
Main Volume	Cubic Metres
Product at Strapping	empty
Product Strap Density	1 g/cc (SG)
Liquid Height at Strap	N/A
Safe Fill Height	38' 4"
Overflow Or Foamline	N/A

CO-OP Refinery Complex
Regina, SK

Strap Correction to 60°F

Shell Temperature (°F)	71.6	Master Tape Serial
Shell Material	Carbon Steel	Master Tape Span
Shell Expansion (per Foot)	0.000006450	Master Tape Tension

Certified Tape Factor	1
Tape Correction Factor	$1 + ('Shell\ Temperature' - 68) \times 'Tape\ Expansion'$
Shell Correction Factor	$1 + (60 - 'Shell\ Temperature') \times 'Shell\ Expansion'$

Correction Summary

Certified Tape Factor * Tape Correction Factor * Shell Correction Factor
Correction Factor = 0.99992518

Course	Strap Circumference Metres	Converted Circumference (Feet)	Tape Rise (Feet)	Corrected Strap Circumference (Feet)
1	111.967	367.344	0.001	367.316
2	111.967	367.344	0.001	367.316
3	111.967	367.344	0.001	367.316
4	111.967	367.344	0.001	367.316
5	111.967	367.344	0.001	367.316
6	111.967	367.344	0.001	367.316

Optical Circumference Corrections

Course	Average Optical Offset Millimetres	Difference Millimetres	Correction Millimetres	Corrected Circumference Metres	Corrected Circumference (Feet)
1	415.429	0.000	0.000	111.958	367.316
2	413.429	-2.000	12.566	111.971	367.357
3	411.643	-3.786	23.786	111.982	367.394
4	415.107	-0.321	2.020	111.960	367.323
5	421.536	6.107	-38.372	111.920	367.190
6	426.464	11.036	-69.339	111.889	367.089

CO-OP Refinery Complex
Regina, SK

Tank Measurements

Course	Strap (Feet)	Plate Thickness	Course Height	Accumulated Total
1	367.316	0.750 Inches	2.124 Metres	2.124 Metres
2	367.357	0.563 Inches	2.137 Metres	4.261 Metres
3	367.394	0.500 Inches	2.124 Metres	6.385 Metres
4	367.323	0.375 Inches	2.124 Metres	8.509 Metres
5	367.190	0.250 Inches	2.117 Metres	10.626 Metres
6	367.089	0.250 Inches	2.139 Metres	12.765 Metres

Tank Construction

Course	Course Fit/Join	Plates per Course	Width of Tape Rise	Depth of Tape Rise
1	Butt Weld	15	0.750 Inches	1.000 Millimetres
2	Butt Weld	15	0.750 Inches	1.000 Millimetres
3	Butt Weld	15	0.750 Inches	1.000 Millimetres
4	Butt Weld	15	0.750 Inches	1.000 Millimetres
5	Butt Weld	15	0.750 Inches	1.000 Millimetres
6	Butt Weld	15	0.750 Inches	1.000 Millimetres

CO-OP Refinery Complex
Regina, SK

Circumference Corrected to Empty Tank Basis

$$\frac{-W * H * C^2}{2 * \pi * E * T} \quad (\text{Correction in Feet}) \quad \text{Or} \quad \frac{-K (G * H * C^2)}{T} \quad (\text{Correction in Inches})$$

Where :

$$K = \frac{W}{24 * \pi * E} = 0.000000028492394$$

G = Observed Density of Liquid in tank.

H = height of liquid above strap, in feet.

C = measured circumference, in feet.

T = thickness of shell material, in inches.

W = weight of liquid, in pounds per cubic foot.

E = modulus of elasticity of shell material.

Correction Summary

Course	Product Weight (Lb/Ft3)	Density	Liquid Height (Feet)	Corrected Circumference (Feet)	Plate Thickness (Inches)	Empty Tank Corrected (Feet)
1.00	62.428	1.000	0	367.316	0.750	0
2.00	62.428	1.000	0	367.357	0.563	0
3.00	62.428	1.000	0	367.394	0.500	0
4.00	62.428	1.000	0	367.323	0.375	0
5.00	62.428	1.000	0	367.190	0.250	0
6.00	62.428	1.000	0	367.089	0.250	0

CO-OP Refinery Complex
Regina, SK

Circumference Deduction for Tape Rises

Butt Strap Correction (In Feet)

$$= \frac{(2 * N * T * W)}{(12 * D)} + \frac{(8 * N * T)}{(12 * 3)} * \sqrt{T/D}$$

Lap Joint Correction (In Feet)

$$= \frac{(4 * N * T)}{(12 * 3)} * \sqrt{T/(2*D)}$$

Where :

N = number of butt straps or projections per course

T = thickness of straps or projections (in inches)

W = width of straps or projections (in inches)

D = nominal diameter of tank (in inches)

Circumference Deduction for Shell Thickness

$$= \frac{(\pi * T)}{6} \quad (\text{Correction In Feet})$$

Where :

T = thickness of shell material (In Inches)

Summary of Circumference Deductions

Course	Temperature Compensated Circumference	Empty Tank (Feet)	Tape Rise (Feet)	Plate Thickness (Feet)	Inside Circumference (Feet)
1	367.316	0.000	0.001	0.393	366.924
2	367.357	0.000	0.001	0.295	367.063
3	367.394	0.000	0.001	0.262	367.132
4	367.323	0.000	0.001	0.196	367.127
5	367.190	0.000	0.001	0.131	367.059
6	367.089	0.000	0.001	0.131	366.958

CO-OP Refinery Complex
Regina, SK

Incremental Volume Per Course

Liquid Head Stress Correction (In Feet)

$$= \frac{K (G * H * C^2)}{T}$$

Incremental Volume (in Cubic Feet)

$$= (C / \pi / 2)^2 * (\pi / 12)$$

Where :

G = tank Service Density.

H = height of liquid (between strap & top of course), in feet.

C = circumference, in feet.

T = thickness of shell material, in inches.

Incremental Volume Per Course

Course	Inside Circumference (Feet)	Liquid Head Stress (Feet)	Stressed Circumference (Feet)	Cubic Metres Per Inch
1	366.924	0.004	366.928	25.282
2	367.063	0.018	367.081	25.303
3	367.132	0.021	367.153	25.313
4	367.127	0.027	367.154	25.313
5	367.059	0.041	367.100	25.306
6	366.958	0.041	366.999	25.292

CO-OP Refinery Complex
Regina, SK

Liquid Head Corrections

Volumetric Increase per Course

$$= \frac{H}{T} * \frac{K}{F}$$

Where :

H = Course Height (in inches)

T = Plate Thickness (in inches)

$$K = \frac{\pi * W * G * D^3}{4 * E}$$

W = weight of liquid, in pounds per cubic foot.

G = Specific Gravity of product to be stored.

D = Inside Diameter of the Course.

E = modulus of elasticity of shell material.

F = desired volume conversion (cubic inch per unit volume)

eg. 231 to US Gallons, 61.023744 to Litres

Gross Volume per Chart Increment

Course	Cubic Metres Per Inch	Volume Correction Cubic Metres	Incremental Correction Cubic Metres	Gross Volume @ 60°F	Gross Volume @ 59 °F 0.9999871
1	25.282	0.004	0.000	25.282	25.282
2	25.303	0.005	0.004	25.307	25.307
3	25.313	0.006	0.009	25.322	25.322
4	25.313	0.008	0.015	25.328	25.328
5	25.306	0.011	0.022	25.328	25.328
6	25.292	0.000	0.033	25.325	25.325

Action Number P2190102940 - Exhibit G



CO-OP Refinery Complex

TANK # 16-10-082

Regina, SK

1800 Kg/m³ @ 120°C

Dome Roof Tank - Nominal Dimensions : 60 Feet X 42 Feet

INNAGE TABLE

Ref Gauge Height - 15.360m; Located 48" from shell to outer side of Flange										Height in Inches; Capacities in Cubic Metres					
0	0	**	5.276	4	0	325.993	8	0	646.982	12	0	968.245	16	0	1,289.536
	1	*	11.673		1	332.681		1	653.669		1	974.938		1	1,296.230
	2		18.360		2	339.369		2	660.357		2	981.632		2	1,302.923
	3		25.048		3	346.056		3	667.044		3	988.325		3	1,309.617
	4		31.735		4	352.744		4	673.731		4	995.019		4	1,316.310
	5		38.423		5	359.432		5	680.421		5	1,001.712		5	1,323.004
	6		45.110		6	366.120		6	687.115		6	1,008.406		6	1,329.697
	7		51.798		7	372.807		7	693.808		7	1,015.100		7	1,336.391
	8		58.485		8	379.494		8	700.502		8	1,021.793		8	1,343.085
	9		65.173		9	386.181		9	707.195		9	1,028.487		9	1,349.778
	10		71.860		10	392.869		10	713.889		10	1,035.180		10	1,356.477
	11		78.548		11	399.556		11	720.582		11	1,041.874		11	1,363.178
1	0		85.235	5	0	406.243	9	0	727.276	13	0	1,048.567	17	0	1,369.880
	1		91.923		1	412.930		1	733.970		1	1,055.261		1	1,376.581
	2		98.610		2	419.617		2	740.663		2	1,061.955		2	1,383.282
	3		105.298		3	426.305		3	747.357		3	1,068.648		3	1,389.984
	4		111.985		4	432.992		4	754.050		4	1,075.342		4	1,396.685
	5		118.673		5	439.679		5	760.744		5	1,082.035		5	1,403.386
	6		125.360		6	446.366		6	767.437		6	1,088.729		6	1,410.088
	7		132.048		7	453.053		7	774.131		7	1,095.422		7	1,416.789
	8		138.736		8	459.741		8	780.825		8	1,102.116		8	1,423.490
	9		145.424		9	466.428		9	787.518		9	1,108.810		9	1,430.192
	10		152.112		10	473.115		10	794.212		10	1,115.503		10	1,436.893
	11		158.800		11	479.802		11	800.905		11	1,122.197		11	1,443.594
2	0		165.488	6	0	486.489	10	0	807.599	14	0	1,128.890	18	0	1,450.296
	1		172.175		1	493.177		1	814.292		1	1,135.584		1	1,456.997
	2		178.863		2	499.864		2	820.986		2	1,142.277		2	1,463.698
	3		185.551		3	506.551		3	827.680		3	1,148.971		3	1,470.400
	4		192.238		4	513.238		4	834.373		4	1,155.665		4	1,477.101
	5		198.926		5	519.925		5	841.067		5	1,162.358		5	1,483.802
	6		205.614		6	526.613		6	847.760		6	1,169.052		6	1,490.504
	7		212.301		7	533.300		7	854.454		7	1,175.745		7	1,497.205
	8		218.989		8	539.987		8	861.147		8	1,182.439		8	1,503.906
	9		225.677		9	546.674		9	867.841		9	1,189.132		9	1,510.608
	10		232.364		10	553.361		10	874.535		10	1,195.826		10	1,517.309
	11		239.052		11	560.049		11	881.228		11	1,202.520		11	1,524.010
3	0		245.739	7	0	566.736	11	0	887.922	15	0	1,209.213	19	0	1,530.712
	1		252.427		1	573.423		1	894.615		1	1,215.907		1	1,537.413
	2		259.115		2	580.110		2	901.309		2	1,222.600		2	1,544.114
	3		265.803		3	586.797		3	908.002		3	1,229.294		3	1,550.815
	4		272.490		4	593.485		4	914.696		4	1,235.987		4	1,557.517
	5		279.178		5	600.172		5	921.390		5	1,242.681		5	1,564.218
	6		285.866		6	606.859		6	928.083		6	1,249.375		6	1,570.919
	7		292.553		7	613.546		7	934.777		7	1,256.068		7	1,577.621
	8		299.241		8	620.233		8	941.470		8	1,262.762		8	1,584.322
	9		305.929		9	626.921		9	948.164		9	1,269.455		9	1,591.023
	10		312.617		10	633.608		10	954.857		10	1,276.149		10	1,597.725
	11		319.305		11	640.295		11	961.551		11	1,282.842		11	1,604.426

** Volume Below Strike Point. Located 7/8" Above intersection of shell & bottom.

Page 1 of 3

* Bottom volume based on Physical Survey Calculation. Average Inches not applicable

Volumes reflect a Shell Temperature of 15°C

SF - Safe Fill Height @ 42'

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Action Number P2190102940 - Exhibit G



CO-OP Refinery Complex

TANK # 16-10-082

Regina, SK

1800 Kg/m³ @ 120°C

Dome Roof Tank - Nominal Dimensions : 60 Feet X 42 Feet

INNAGE TABLE

Ref Gauge Height - 15.360m; Located 48" from shell to outer side of Flange											
Height in Inches; Capacities in Cubic Metres											
20	0	1,611.127	24	0	1,932.791	28	0	2,254.665	32	0	2,576.626
	1	1,617.829		1	1,939.492		1	2,261.372		1	2,583.333
	2	1,624.530		2	1,946.194		2	2,268.080		2	2,590.041
	3	1,631.231		3	1,952.895		3	2,274.787		3	2,596.748
	4	1,637.933		4	1,959.596		4	2,281.495		4	2,603.456
	5	1,644.634		5	1,966.298		5	2,288.202		5	2,610.163
	6	1,651.335		6	1,972.999		6	2,294.910		6	2,616.871
	7	1,658.037		7	1,979.700		7	2,301.617		7	2,623.578
	8	1,664.738		8	1,986.401		8	2,308.325		8	2,630.286
	9	1,671.439		9	1,993.103		9	2,315.032		9	2,636.993
	10	1,678.141		10	1,999.804		10	2,321.740		10	2,643.701
	11	1,684.842		11	2,006.505		11	2,328.447		11	2,650.408
21	0	1,691.543	25	0	2,013.207	29	0	2,335.155	33	0	2,657.116
	1	1,698.245		1	2,019.908		1	2,341.862		1	2,663.823
	2	1,704.946		2	2,026.609		2	2,348.570		2	2,670.531
	3	1,711.647		3	2,033.316		3	2,355.277		3	2,677.238
	4	1,718.349		4	2,040.024		4	2,361.985		4	2,683.946
	5	1,725.050		5	2,046.731		5	2,368.692		5	2,690.653
	6	1,731.751		6	2,053.439		6	2,375.400		6	2,697.361
	7	1,738.453		7	2,060.147		7	2,382.108		7	2,704.068
	8	1,745.154		8	2,066.854		8	2,388.815		8	2,710.770
	9	1,751.855		9	2,073.562		9	2,395.523		9	2,717.473
	10	1,758.557		10	2,080.269		10	2,402.230		10	2,724.175
	11	1,765.258		11	2,086.977		11	2,408.938		11	2,730.878
22	0	1,771.959	26	0	2,093.684	30	0	2,415.645	34	0	2,737.580
	1	1,778.660		1	2,100.392		1	2,422.353		1	2,744.283
	2	1,785.362		2	2,107.099		2	2,429.060		2	2,750.985
	3	1,792.063		3	2,113.807		3	2,435.768		3	2,757.688
	4	1,798.764		4	2,120.514		4	2,442.475		4	2,764.390
	5	1,805.466		5	2,127.222		5	2,449.183		5	2,771.093
	6	1,812.167		6	2,133.929		6	2,455.890		6	2,777.795
	7	1,818.868		7	2,140.637		7	2,462.598		7	2,784.497
	8	1,825.570		8	2,147.344		8	2,469.305		8	2,791.200
	9	1,832.271		9	2,154.052		9	2,476.013		9	2,797.902
	10	1,838.972		10	2,160.759		10	2,482.720		10	2,804.605
	11	1,845.674		11	2,167.467		11	2,489.428		11	2,811.307
23	0	1,852.375	27	0	2,174.174	31	0	2,496.135	35	0	2,818.010
	1	1,859.076		1	2,180.882		1	2,502.843		1	2,824.712
	2	1,865.778		2	2,187.589		2	2,509.550		2	2,831.415
	3	1,872.479		3	2,194.297		3	2,516.258		3	2,838.117
	4	1,879.180		4	2,201.004		4	2,522.965		4	2,844.820
	5	1,885.882		5	2,207.712		5	2,529.673		5	2,851.522
	6	1,892.583		6	2,214.419		6	2,536.381		6	2,858.224
	7	1,899.284		7	2,221.127		7	2,543.088		7	2,864.927
	8	1,905.986		8	2,227.835		8	2,549.796		8	2,871.629
	9	1,912.687		9	2,234.542		9	2,556.503		9	2,878.332
	10	1,919.388		10	2,241.250		10	2,563.211		10	2,885.034
	11	1,926.090		11	2,247.957		11	2,569.918		11	2,891.737

SF - Safe Fill Height @ 42'

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Fractions

1/16	0.418833	9/16	3.769494
1/8	0.837665	5/8	4.188327
3/16	1.256498	11/16	4.607160
1/4	1.675331	3/4	5.025992
5/16	2.094163	13/16	5.444825
3/8	2.512996	7/8	5.863658
7/16	2.931829	15/16	6.282490
1/2	3.350662	1	6.701323

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Action Number P2190102940 - Exhibit G



CO-OP Refinery Complex

TANK # 16-10-082

Regina, SK

1800 Kg/m³ @ 120°C

Dome Roof Tank - Nominal Dimensions : 60 Feet X 42 Feet

INNAGE TABLE

Ref Gauge Height - 15.360m; Located 48" from shell to outer side of Flange											Height in Inches; Capacities in Cubic Metres										
40	0	3,220.157	44	0		48	0	SF	52	0		56	0								
	1	3,226.860		1			1			1			1								
	2	3,233.562		2			2			2			2								
	3	3,240.265		3			3			3			3								
	4	3,246.967		4			4			4			4								
	5	3,253.670		5			5			5			5								
	6	3,260.372		6			6			6			6								
	7	3,267.075		7			7			7			7								
	8	3,273.777		8			8			8			8								
	9	3,280.480		9			9			9			9								
	10	3,287.182		10			10			10			10								
	11	3,293.884		11			11			11			11								
41	0	3,300.587	45	0		49	0		53	0		57	0								
	1	3,307.289		1			1			1			1								
	2	3,313.992		2			2			2			2								
	3	3,320.694		3			3			3			3								
	4	3,327.397		4			4			4			4								
	5	3,334.099		5			5			5			5								
	6	3,340.802		6			6			6			6								
	7	3,347.504		7			7			7			7								
	8	3,354.207		8			8			8			8								
	9	3,360.909		9			9			9			9								
	10	3,367.612		10			10			10			10								
	11	3,373.470		11			11			11			11								
42	0		46	0		50	0		54	0		58	0								
	1			1			1			1			1								
	2			2			2			2			2								
	3			3			3			3			3								
	4			4			4			4			4								
	5			5			5			5			5								
	6			6			6			6			6								
	7			7			7			7			7								
	8			8			8			8			8								
	9			9			9			9			9								
	10			10			10			10			10								
	11			11			11			11			11								
43	0		47	0		51	0		55	0		59	0								
	1			1			1			1			1								
	2			2			2			2			2								
	3			3			3			3			3								
	4			4			4			4			4								
	5			5			5			5			5								
	6			6			6			6			6								
	7			7			7			7			7								
	8			8			8			8			8								
	9			9			9			9			9								
	10			10			10			10			10								
	11			11			11			11			11								

SF - Safe Fill Height @ 42'

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Action Number P2190102940 - Exhibit G

CO-OP Refinery Complex

TANK # 16-10-082

Regina, SK

1800 Kg/m³ @ 120°C

Dome Roof Tank - Nominal Dimensions : 60 Feet X 42 Feet

Volumes in: Cubic Metres

To Increment	Incs	Gross Volume per Increment	Deadwood Volume	Net Volume	Accumulated Volume
0	1	0.000000	5.276406	5.276406	5.276406
1	1	6.687224	-0.290808	6.396416	11.672822
4	3	6.687224	0.000329	6.687554	31.735483
12	8	6.687224	0.000254	6.687478	85.235308
18	6	6.687224	0.000228	6.687452	125.360023
24	6	6.687224	0.000739	6.687963	165.487802
35	11	6.687224	0.000410	6.687634	239.051776
43	8	6.687224	0.000485	6.687709	292.553450
46	3	6.687224	0.000679	6.687903	312.617159
52	6	6.687224	0.000619	6.687843	352.744220
53	1	6.687224	0.000679	6.687903	359.432123
54	1	6.687224	0.000485	6.687709	366.119832
100	46	6.687224	-0.000026	6.687198	673.730958
101	1	6.690084	-0.000026	6.690059	680.421016
201	100	6.693597	-0.000026	6.693571	1349.778119
202	1	6.699029	-0.000026	6.699004	1356.477122
302	100	6.701349	-0.000026	6.701323	2026.609433
303	1	6.707010	-0.000026	6.706984	2033.316418
402	99	6.707547	-0.000026	6.707521	2697.361016
403	1	6.706909	-0.000026	6.706884	2704.067900
502	99	6.702486	-0.000026	6.702461	3367.611503

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CO-OP Refinery Complex
Regina, SK

General Information

Tank Number	16-10-082
Date of Strapping Data	07/02/2019
Year Built	
Product in Service	Molten Sulphur
Product Service Density	1.8 g/cc (SG)

Tank Dimensions

Nominal Diameter	60 Feet
Nominal Height	42 Feet
Measured Tank Height	12.773 Metres
Tank Tilt	0 Millimetres
Gauge Point Information	Outer side of radar Flange
Reference Gauge Height	15.360 Metres
Horizontal To Gauge	48 Inches

Roof & Bottom Survey

Roof Type	Dome
Floating Roof Shape	N/A
Floating Roof Weight	N/A
Roof Landed Height	N/A
Roof Full Floating Height	N/A
Bottom Description	Physical Survey

Report Constraints

Main Increment	Inches
Main Volume	Cubic Metres
Product at Strapping	empty
Product Strap Density	1 g/cc (SG)
Liquid Height at Strap	0 Feet
Safe Fill Height	42 Feet
Overflow Or Foamline	N/A

CO-OP Refinery Complex
Regina, SK

Strap Correction to 60°F

Shell Temperature (°F)	66.2	Master Tape Serial
Shell Material	Carbon Steel	Master Tape Span
Shell Expansion (per Foot)	0.000006450	Master Tape Tension

Certified Tape Factor	1
Tape Correction Factor	$1 + ('Shell\ Temperature' - 68) \times 'Tape\ Expansion'$
Shell Correction Factor	$1 + (60 - 'Shell\ Temperature') \times 'Shell\ Expansion'$

Correction Summary

Certified Tape Factor * Tape Correction Factor * Shell Correction Factor
Correction Factor = 0.99996001

Course	Strap Circumference Metres	Converted Circumference (Feet)	Tape Rise (Feet)	Corrected Strap Circumference (Feet)
1	57.450	188.485	0.001	188.477
2	57.450	188.485	0.001	188.477
3	57.450	188.485	0.001	188.477
4	57.450	188.485	0.001	188.477
5	57.450	188.485	0.001	188.477

Optical Circumference Corrections

Course	Average Optical Offset Millimetres	Difference Millimetres	Correction Millimetres	Corrected Circumference Metres	Corrected Circumference (Feet)
1	152.250	0.000	0.000	57.448	188.477
2	154.938	2.688	16.886	57.465	188.532
3	158.500	6.250	39.270	57.487	188.606
4	161.000	8.750	54.978	57.503	188.657
5	156.063	3.813	23.955	57.472	188.555

CO-OP Refinery Complex
Regina, SK

Tank Measurements

Course	Strap (Feet)	Plate Thickness	Course Height	Accumulated Total
1	188.477	0.625 Inches	2.554 Metres	2.554 Metres
2	188.532	0.500 Inches	2.559 Metres	5.113 Metres
3	188.606	0.375 Inches	2.560 Metres	7.673 Metres
4	188.657	0.500 Inches	2.560 Metres	10.233 Metres
5	188.555	0.500 Inches	2.544 Metres	12.777 Metres

Tank Construction

Course	Course Fit/Join	Plates per Course	Width of Tape Rise	Depth of Tape Rise
1	Butt Weld	9	1.000 Inches	1.000 Millimetres
2	Butt Weld	9	1.000 Inches	1.000 Millimetres
3	Butt Weld	9	1.000 Inches	1.000 Millimetres
4	Butt Weld	9	1.000 Inches	1.000 Millimetres
5	Butt Weld	9	1.000 Inches	1.000 Millimetres

CO-OP Refinery Complex
Regina, SK

Circumference Corrected to Empty Tank Basis

$$\frac{-W * H * C^2}{2 * \pi * E * T} \quad (\text{Correction in Feet}) \quad \text{Or} \quad \frac{-K (G * H * C^2)}{T} \quad (\text{Correction in Inches})$$

Where :

$$K = \frac{W}{24 * \pi * E} = 0.000000028492394$$

G = Observed Density of Liquid in tank.

H = height of liquid above strap, in feet.

C = measured circumference, in feet.

T = thickness of shell material, in inches.

W = weight of liquid, in pounds per cubic foot.

E = modulus of elasticity of shell material.

Correction Summary

Course	Product Weight (Lb/Ft3)	Density	Liquid Height (Feet)	Corrected Circumference (Feet)	Plate Thickness (Inches)	Empty Tank Corrected (Feet)
1.00	62.428	1.000	0	188.477	0.625	0
2.00	62.428	1.000	0	188.532	0.500	0
3.00	62.428	1.000	0	188.606	0.375	0
4.00	62.428	1.000	0	188.657	0.500	0
5.00	62.428	1.000	0	188.555	0.500	0

CO-OP Refinery Complex
Regina, SK

Circumference Deduction for Tape Rises

Butt Strap Correction (In Feet)

$$= \frac{(2 * N * T * W)}{(12 * D)} + \frac{(8 * N * T)}{(12 * 3)} * \sqrt{T/D}$$

Lap Joint Correction (In Feet)

$$= \frac{(4 * N * T)}{(12 * 3)} * \sqrt{T/(2*D)}$$

Where :

N = number of butt straps or projections per course

T = thickness of straps or projections (in inches)

W = width of straps or projections (in inches)

D = nominal diameter of tank (in inches)

Circumference Deduction for Shell Thickness

$$= \frac{(\pi * T)}{6} \quad (\text{Correction In Feet})$$

Where :

T = thickness of shell material (In Inches)

Summary of Circumference Deductions

Course	Temperature Compensated Circumference	Empty Tank (Feet)	Tape Rise (Feet)	Plate Thickness (Feet)	Inside Circumference (Feet)
1	188.477	0.000	0.001	0.000	188.477
2	188.532	0.000	0.001	0.000	188.532
3	188.606	0.000	0.001	0.000	188.606
4	188.657	0.000	0.001	0.000	188.657
5	188.555	0.000	0.001	0.000	188.555

CO-OP Refinery Complex
Regina, SK

Incremental Volume Per Course

Liquid Head Stress Correction (In Feet)

$$= \frac{K (G * H * C^2)}{T}$$

Incremental Volume (in Cubic Feet)

$$= (C / \pi / 2)^2 * (\pi / 12)$$

Where :

G = tank Service Density.

H = height of liquid (between strap & top of course), in feet.

C = circumference, in feet.

T = thickness of shell material, in inches.

Incremental Volume Per Course

Course	Inside Circumference (Feet)	Liquid Head Stress (Feet)	Stressed Circumference (Feet)	Cubic Metres Per Inch
1	188.477	0.005	188.482	6.671
2	188.532	0.015	188.547	6.676
3	188.606	0.020	188.626	6.681
4	188.657	0.015	188.672	6.685
5	188.555	0.015	188.571	6.677

CO-OP Refinery Complex
Regina, SK

Liquid Head Corrections

Volumetric Increase per Course

$$= \frac{H}{T} + \frac{K}{F}$$

Where :

H = Course Height (in inches)

T = Plate Thickness (in inches)

$$K = \frac{\pi * W * G * D^3}{4 * E}$$

W = weight of liquid, in pounds per cubic foot.

G = Specific Gravity of product to be stored.

D = Inside Diameter of the Course.

E = modulus of elasticity of shell material.

F = desired volume conversion (cubic inch per unit volume)

eg. 231 to US Gallons, 61.023744 to Litres

Gross Volume per Chart Increment

Course	Cubic Metres Per Inch	Volume Correction Cubic Metres	Incremental Correction Cubic Metres	Gross Volume @ 60°F	Gross Volume @ 248 °F 1.0024252
1	6.671	0.002	0.000	6.671	6.687
2	6.676	0.002	0.002	6.677	6.694
3	6.681	0.003	0.004	6.685	6.701
4	6.685	0.002	0.007	6.691	6.708
5	6.677	0.000	0.009	6.686	6.702

Action Number P2190102940 - Exhibit G



CO-OP Refinery Complex

TANK # 54-10-112

Regina, SK

855 Kg/m³ @ 15°C

Cone Roof Tank - Nominal Dimensions : 110 Feet X 50 Feet

INNAGE TABLE

Ref Gauge Height - 16.448m; Located 44" from shell to Benchmark on rim												Height in Inches; Capacities in Cubic Metres											
0	0**	24.747	4	0	1,096.807	8	0	2,172.031	12	0	3,248.148	16	0	4,324.318									
	1*	44.997		1	1,119.207		1	2,194.431		1	3,270.569		1	4,346.738									
	2*	66.457		2	1,141.608		2	2,216.832		2	3,292.989		2	4,369.158									
	3*	88.778		3	1,164.008		3	2,239.240		3	3,315.409		3	4,391.579									
	4	111.178		4	1,186.409		4	2,261.660		4	3,337.829		4	4,413.999									
	5	133.578		5	1,208.809		5	2,284.080		5	3,360.249		5	4,436.419									
	6	155.978		6	1,231.210		6	2,306.500		6	3,382.670		6	4,458.839									
	7	178.377		7	1,253.610		7	2,328.920		7	3,405.090		7	4,481.261									
	8	200.777		8	1,276.011		8	2,351.341		8	3,427.510		8	4,503.689									
	9	223.177		9	1,298.412		9	2,373.761		9	3,449.930		9	4,526.116									
	10	245.577		10	1,320.812		10	2,396.181		10	3,472.350		10	4,548.543									
	11	267.977		11	1,343.213		11	2,418.601		11	3,494.771		11	4,570.971									
1	0	290.377	5	0	1,365.613	9	0	2,441.021	13	0	3,517.191	17	0	4,593.398									
	1	312.777		1	1,388.014		1	2,463.442		1	3,539.611		1	4,615.825									
	2	335.177		2	1,410.414		2	2,485.862		2	3,562.031		2	4,638.253									
	3	357.578		3	1,432.815		3	2,508.282		3	3,584.451		3	4,660.680									
	4	379.978		4	1,455.215		4	2,530.702		4	3,606.872		4	4,683.107									
	5	402.378		5	1,477.616		5	2,553.122		5	3,629.292		5	4,705.535									
	6	424.779		6	1,500.016		6	2,575.543		6	3,651.712		6	4,727.962									
	7	447.180		7	1,522.417		7	2,597.963		7	3,674.132		7	4,750.389									
	8	469.581		8	1,544.817		8	2,620.383		8	3,696.552		8	4,772.817									
	9	491.983		9	1,567.218		9	2,642.803		9	3,718.973		9	4,795.244									
	10	514.384		10	1,589.618		10	2,665.223		10	3,741.393		10	4,817.671									
	11	536.786		11	1,612.019		11	2,687.644		11	3,763.813		11	4,840.099									
2	0	559.188	6	0	1,634.419	10	0	2,710.064	14	0	3,786.233	18	0	4,862.526									
	1	581.589		1	1,656.820		1	2,732.484		1	3,808.653		1	4,884.953									
	2	603.990		2	1,679.220		2	2,754.904		2	3,831.074		2	4,907.381									
	3	626.391		3	1,701.621		3	2,777.324		3	3,853.494		3	4,929.808									
	4	648.792		4	1,724.021		4	2,799.745		4	3,875.914		4	4,952.235									
	5	671.193		5	1,746.421		5	2,822.165		5	3,898.334		5	4,974.663									
	6	693.594		6	1,768.822		6	2,844.585		6	3,920.754		6	4,997.090									
	7	715.995		7	1,791.222		7	2,867.005		7	3,943.175		7	5,019.517									
	8	738.396		8	1,813.623		8	2,889.425		8	3,965.595		8	5,041.945									
	9	760.797		9	1,836.023		9	2,911.846		9	3,988.015		9	5,064.372									
	10	783.197		10	1,858.424		10	2,934.266		10	4,010.435		10	5,086.799									
	11	805.598		11	1,880.824		11	2,956.686		11	4,032.855		11	5,109.227									
3	0	827.999	7	0	1,903.225	11	0	2,979.106	15	0	4,055.276	19	0	5,131.654									
	1	850.400		1	1,925.625		1	3,001.526		1	4,077.696		1	5,154.081									
	2	872.801		2	1,948.026		2	3,023.947		2	4,100.116		2	5,176.509									
	3	895.201		3	1,970.426		3	3,046.367		3	4,122.536		3	5,198.936									
	4	917.602		4	1,992.827		4	3,068.787		4	4,144.956		4	5,221.363									
	5	940.003		5	2,015.227		5	3,091.207		5	4,167.377		5	5,243.791									
	6	962.403		6	2,037.628		6	3,113.627		6	4,189.797		6	5,266.218									
	7	984.804		7	2,060.028		7	3,136.047		7	4,212.217		7	5,288.645									
	8	1,007.204		8	2,082.429		8	3,158.468		8	4,234.637		8	5,311.073									
	9	1,029.605		9	2,104.829		9	3,180.888		9	4,257.057		9	5,333.500									
	10	1,052.005		10	2,127.230		10	3,203.308		10	4,279.478		10	5,355.927									
	11	1,074.406		11	2,149.630		11	3,225.728		11	4,301.898		11	5,378.355									

** Volume Below Strike Point. Located 1.18" Above intersection of shell & bottom.

Page 1 of 3

* Bottom volume based on Physical Survey Calculation. Average Inches not applicable

Volumes reflect a Shell Temperature of 15°C

SF - Safe Fill Height @ 48'

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Action Number P2190102940 - Exhibit G



CO-OP Refinery Complex

TANK # 54-10-112

Regina, SK

855 Kg/m³ @ 15°C

Cone Roof Tank - Nominal Dimensions : 110 Feet X 50 Feet

INNAGE TABLE

Ref Gauge Height - 16.448m; Located 44" from shell to Benchmark on rim											Height in Inches; Capacities in Cubic Metres										
20	0	5,400.782	24	0	6,477.295	28	0	7,554.835	32	0	8,632.688	36	0	9,710.967							
	1	5,423.210		1	6,499.722		1	7,577.290		1	8,655.143		1	9,733.435							
	2	5,445.637		2	6,522.149		2	7,599.746		2	8,677.598		2	9,755.903							
	3	5,468.064		3	6,544.577		3	7,622.201		3	8,700.054		3	9,778.371							
	4	5,490.492		4	6,567.004		4	7,644.656		4	8,722.509		4	9,800.839							
	5	5,512.919		5	6,589.431		5	7,667.111		5	8,744.964		5	9,823.307							
	6	5,535.346		6	6,611.859		6	7,689.567		6	8,767.419		6	9,845.774							
	7	5,557.774		7	6,634.286		7	7,712.022		7	8,789.875		7	9,868.242							
	8	5,580.201		8	6,656.713		8	7,734.477		8	8,812.330		8	9,890.710							
	9	5,602.628		9	6,679.141		9	7,756.933		9	8,834.785		9	9,913.178							
	10	5,625.056		10	6,701.568		10	7,779.388		10	8,857.240		10	9,935.646							
	11	5,647.483		11	6,723.995		11	7,801.843		11	8,879.696		11	9,958.114							
21	0	5,669.910	25	0	6,746.446	29	0	7,824.298	33	0	8,902.151	37	0	9,980.581							
	1	5,692.338		1	6,768.901		1	7,846.754		1	8,924.606		1	10,003.049							
	2	5,714.765		2	6,791.356		2	7,869.209		2	8,947.061		2	10,025.517							
	3	5,737.192		3	6,813.811		3	7,891.664		3	8,969.529		3	10,047.985							
	4	5,759.620		4	6,836.267		4	7,914.119		4	8,991.997		4	10,070.453							
	5	5,782.047		5	6,858.722		5	7,936.575		5	9,014.465		5	10,092.921							
	6	5,804.474		6	6,881.177		6	7,959.030		6	9,036.932		6	10,115.389							
	7	5,826.902		7	6,903.633		7	7,981.485		7	9,059.400		7	10,137.856							
	8	5,849.329		8	6,926.088		8	8,003.940		8	9,081.868		8	10,160.324							
	9	5,871.756		9	6,948.543		9	8,026.396		9	9,104.336		9	10,182.792							
	10	5,894.184		10	6,970.998		10	8,048.851		10	9,126.804		10	10,205.260							
	11	5,916.611		11	6,993.454		11	8,071.306		11	9,149.272		11	10,227.728							
22	0	5,939.038	26	0	7,015.909	30	0	8,093.761	34	0	9,171.739	38	0	10,250.196							
	1	5,961.466		1	7,038.364		1	8,116.217		1	9,194.207		1	10,272.663							
	2	5,983.893		2	7,060.819		2	8,138.672		2	9,216.675		2	10,295.131							
	3	6,006.320		3	7,083.275		3	8,161.127		3	9,239.143		3	10,317.599							
	4	6,028.748		4	7,105.730		4	8,183.582		4	9,261.611		4	10,340.067							
	5	6,051.175		5	7,128.185		5	8,206.038		5	9,284.079		5	10,362.535							
	6	6,073.602		6	7,150.640		6	8,228.493		6	9,306.546		6	10,385.003							
	7	6,096.030		7	7,173.096		7	8,250.948		7	9,329.014		7	10,407.470							
	8	6,118.457		8	7,195.551		8	8,273.404		8	9,351.482		8	10,429.938							
	9	6,140.884		9	7,218.006		9	8,295.859		9	9,373.950		9	10,452.406							
	10	6,163.312		10	7,240.461		10	8,318.314		10	9,396.418		10	10,474.874							
	11	6,185.739		11	7,262.917		11	8,340.769		11	9,418.886		11	10,497.342							
23	0	6,208.166	27	0	7,285.372	31	0	8,363.225	35	0	9,441.353	39	0	10,519.810							
	1	6,230.594		1	7,307.827		1	8,385.680		1	9,463.821		1	10,542.277							
	2	6,253.021		2	7,330.283		2	8,408.135		2	9,486.289		2	10,564.745							
	3	6,275.448		3	7,352.738		3	8,430.590		3	9,508.757		3	10,587.213							
	4	6,297.876		4	7,375.193		4	8,453.046		4	9,531.225		4	10,609.681							
	5	6,320.303		5	7,397.648		5	8,475.501		5	9,553.693		5	10,632.149							
	6	6,342.730		6	7,420.104		6	8,497.956		6	9,576.160		6	10,654.617							
	7	6,365.158		7	7,442.559		7	8,520.411		7	9,598.628		7	10,677.084							
	8	6,387.585		8	7,465.014		8	8,542.867		8	9,621.096		8	10,699.552							
	9	6,410.013		9	7,487.469		9	8,565.322		9	9,643.564		9	10,722.020							
	10	6,432.440		10	7,509.925		10	8,587.777		10	9,666.032		10	10,744.488							
	11	6,454.867		11	7,532.380		11	8,610.232		11	9,688.500		11	10,766.956							

SF - Safe Fill Height @ 48'

Page 2 of 3

Fractions

1/16	1.401709	9/16	12.615379
1/8	2.803418	5/8	14.017088
3/16	4.205126	11/16	15.418797
1/4	5.606835	3/4	16.820506
5/16	7.008544	13/16	18.222215
3/8	8.410253	7/8	19.623923
7/16	9.811962	15/16	21.025632
1/2	11.213670	1	22.427341

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Action Number P2190102940 - Exhibit G



CO-OP Refinery Complex

TANK # 54-10-112

Regina, SK

855 Kg/m³ @ 15°C

Cone Roof Tank - Nominal Dimensions : 110 Feet X 50 Feet

INNAGE TABLE

Ref Gauge Height - 16.448m; Located 44" from shell to Benchmark on rim											Height in Inches; Capacities in Cubic Metres										
40	0	10,789.424	44	0	11,868.095	48	0	SF	12,946.871	52	0		56	0							
	1	10,811.891		1	11,890.569		1				1			1							
	2	10,834.359		2	11,913.044		2				2			2							
	3	10,856.827		3	11,935.518		3				3			3							
	4	10,879.295		4	11,957.993		4				4			4							
	5	10,901.763		5	11,980.467		5				5			5							
	6	10,924.231		6	12,002.942		6				6			6							
	7	10,946.698		7	12,025.416		7				7			7							
	8	10,969.166		8	12,047.891		8				8			8							
	9	10,991.634		9	12,070.365		9				9			9							
	10	11,014.102		10	12,092.840		10				10			10							
	11	11,036.570		11	12,115.314		11				11			11							
41	0	11,059.038	45	0	12,137.789	49	0			53	0		57	0							
	1	11,081.505		1	12,160.263		1				1			1							
	2	11,103.973		2	12,182.738		2				2			2							
	3	11,126.441		3	12,205.212		3				3			3							
	4	11,148.910		4	12,227.687		4				4			4							
	5	11,171.385		5	12,250.161		5				5			5							
	6	11,193.859		6	12,272.636		6				6			6							
	7	11,216.334		7	12,295.110		7				7			7							
	8	11,238.808		8	12,317.585		8				8			8							
	9	11,261.283		9	12,340.059		9				9			9							
	10	11,283.757		10	12,362.534		10				10			10							
	11	11,306.232		11	12,385.008		11				11			11							
42	0	11,328.706	46	0	12,407.483	50	0			54	0		58	0							
	1	11,351.181		1	12,429.957		1				1			1							
	2	11,373.655		2	12,452.432		2				2			2							
	3	11,396.130		3	12,474.906		3				3			3							
	4	11,418.605		4	12,497.381		4				4			4							
	5	11,441.079		5	12,519.856		5				5			5							
	6	11,463.554		6	12,542.330		6				6			6							
	7	11,486.028		7	12,564.805		7				7			7							
	8	11,508.503		8	12,587.279		8				8			8							
	9	11,530.977		9	12,609.754		9				9			9							
	10	11,553.452		10	12,632.228		10				10			10							
	11	11,575.926		11	12,654.703		11				11			11							
43	0	11,598.401	47	0	12,677.177	51	0			55	0		59	0							
	1	11,620.875		1	12,699.652		1				1			1							
	2	11,643.350		2	12,722.126		2				2			2							
	3	11,665.824		3	12,744.601		3				3			3							
	4	11,688.299		4	12,767.075		4				4			4							
	5	11,710.773		5	12,789.550		5				5			5							
	6	11,733.248		6	12,812.024		6				6			6							
	7	11,755.722		7	12,834.499		7				7			7							
	8	11,778.197		8	12,856.973		8				8			8							
	9	11,800.671		9	12,879.448		9				9			9							
	10	11,823.146		10	12,901.922		10				10			10							
	11	11,845.620		11	12,924.397		11				11			11							

SF - Safe Fill Height @ 48'

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Action Number P2190102940 - Exhibit G

CO-OP Refinery Complex

TANK # 54-10-112

Regina, SK

855 Kg/m³ @ 15°C

Cone Roof Tank - Nominal Dimensions : 110 Feet X 50 Feet

Volumes in: Cubic Metres

To Increment	Incs	Gross Volume per Increment	Deadwood Volume	Net Volume	Accumulated Volume
0	1	0.000000	24.746701	24.746701	24.746701
1	1	22.401944	-2.151515	20.250428	44.997130
2	1	22.401944	-0.942060	21.459884	66.457014
3	1	22.401944	-0.080806	22.321138	88.778152
6	3	22.401944	-0.002095	22.399848	155.977697
9	3	22.401944	-0.002187	22.399756	223.176967
11	2	22.401944	-0.001995	22.399949	267.976864
13	2	22.401944	-0.001842	22.400102	312.777067
18	5	22.401944	-0.001648	22.400296	424.778547
20	2	22.401944	-0.000661	22.401282	469.581112
23	3	22.401944	-0.000303	22.401641	536.786035
24	1	22.401944	-0.000456	22.401488	559.187523
25	1	22.401944	-0.000560	22.401384	581.588907
28	3	22.401944	-0.000752	22.401192	648.792481
37	9	22.401944	-0.001111	22.400833	850.399978
42	5	22.401944	-0.001305	22.400638	962.403170
60	18	22.401944	-0.001385	22.400558	1365.613220
98	38	22.401944	-0.001458	22.400485	2216.831664
99	1	22.409394	-0.001458	22.407936	2239.239599
198	99	22.421656	-0.001458	22.420197	4458.839130
199	1	22.423512	-0.001458	22.422054	4481.261184
299	100	22.428799	-0.001458	22.427341	6723.995283
300	1	22.451884	-0.001458	22.450426	6746.445709
398	98	22.456721	-0.001458	22.455262	8947.061412
399	1	22.468899	-0.001458	22.467440	8969.528852
495	96	22.469295	-0.001458	22.467836	11126.441135
496	1	22.470714	-0.001458	22.469255	11148.910390
599	103	22.475969	-0.001458	22.474510	13463.784951

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CO-OP Refinery Complex
Regina, SK

General Information

Tank Number	54-10-112
Date of Strapping Data	07/31/2019
Year Built	
Product in Service	Diesel
Product Service Density	0.855 g/cc (SG)

Tank Dimensions

Nominal Diameter	110 Feet
Nominal Height	50 Feet
Measured Tank Height	15.222 Metres
Tank Tilt	0 Millimetres
Gauge Point Information	Benchmark on Rim
Reference Gauge Height	16.448 Metres
Horizontal To Gauge	44 Inches

Roof & Bottom Survey

Roof Type	Cone
Floating Roof Shape	N/A
Floating Roof Weight	N/A
Roof Landed Height	N/A
Roof Full Floating Height	N/A
Bottom Description	Physical Survey

Report Constraints

Main Increment	Inches
Main Volume	Cubic Metres
Product at Strapping	empty
Product Strap Density	1 g/cc (SG)
Liquid Height at Strap	N/A
Safe Fill Height	48 Feet
Overflow Or Foamline	14.806 Metres

CO-OP Refinery Complex
Regina, SK

Strap Correction to 60°F

Shell Temperature (°F)	77.0	Master Tape Serial
Shell Material	Carbon Steel	Master Tape Span
Shell Expansion (per Foot)	0.000006450	Master Tape Tension

Certified Tape Factor	1
Tape Correction Factor	$1 + ('Shell\ Temperature' - 68) \times 'Tape\ Expansion'$
Shell Correction Factor	$1 + (60 - 'Shell\ Temperature') \times 'Shell\ Expansion'$

Correction Summary

Certified Tape Factor * Tape Correction Factor * Shell Correction Factor

Correction Factor = 0.99989035

Course	Strap Circumference Metres	Converted Circumference (Feet)	Tape Rise (Feet)	Corrected Strap Circumference (Feet)
1	105.286	345.427	0.001	345.389
2	105.286	345.427	0.001	345.389
3	105.286	345.427	0.001	345.389
4	105.286	345.427	0.001	345.389
5	105.286	345.427	0.001	345.389
6	105.286	345.427	0.001	345.389

Optical Circumference Corrections

Course	Average Optical Offset Millimetres	Difference Millimetres	Correction Millimetres	Corrected Circumference Metres	Corrected Circumference (Feet)
1	590.500	0.000	0.000	105.274	345.389
2	594.875	4.375	27.489	105.302	345.479
3	594.625	4.125	25.918	105.300	345.474
4	601.625	11.125	69.900	105.344	345.618
5	602.625	12.125	76.184	105.351	345.639
6	601.333	10.833	68.068	105.343	345.612

CO-OP Refinery Complex
Regina, SK

Tank Measurements

Course	Strap (Feet)	Plate Thickness	Course Height	Accumulated Total
1	345.389	0.563 Inches	2.505 Metres	2.505 Metres
2	345.479	0.438 Inches	2.543 Metres	5.048 Metres
3	345.474	0.375 Inches	2.551 Metres	7.599 Metres
4	345.618	0.313 Inches	2.511 Metres	10.110 Metres
5	345.639	0.313 Inches	2.483 Metres	12.593 Metres
6	345.612	0.313 Inches	2.629 Metres	15.222 Metres

Tank Construction

Course	Course Fit/Join	Plates per Course	Width of Tape Rise	Depth of Tape Rise
1	Butt Weld	13	1.000 Inches	1.000 Millimetres
2	Butt Weld	13	1.000 Inches	1.000 Millimetres
3	Butt Weld	13	1.000 Inches	1.000 Millimetres
4	Butt Weld	13	1.000 Inches	1.000 Millimetres
5	Butt Weld	13	1.000 Inches	1.000 Millimetres
6	Butt Weld	13	1.000 Inches	1.000 Millimetres

CO-OP Refinery Complex
Regina, SK

Circumference Corrected to Empty Tank Basis

$$\frac{-W * H * C^2}{2 * \pi * E * T} \quad (\text{Correction in Feet}) \quad \text{Or} \quad \frac{-K (G * H * C^2)}{T} \quad (\text{Correction in Inches})$$

Where :

$$K = \frac{W}{24 * \pi * E} = 0.000000028492394$$

G = Observed Density of Liquid in tank.

H = height of liquid above strap, in feet.

C = measured circumference, in feet.

T = thickness of shell material, in inches.

W = weight of liquid, in pounds per cubic foot.

E = modulus of elasticity of shell material.

Correction Summary

Course	Product Weight (Lb/Ft3)	Density	Liquid Height (Feet)	Corrected Circumference (Feet)	Plate Thickness (Inches)	Empty Tank Corrected (Feet)
1.00	62.428	1.000	0	345.389	0.563	0
2.00	62.428	1.000	0	345.479	0.438	0
3.00	62.428	1.000	0	345.474	0.375	0
4.00	62.428	1.000	0	345.618	0.313	0
5.00	62.428	1.000	0	345.639	0.313	0
6.00	62.428	1.000	0	345.612	0.313	0

CO-OP Refinery Complex
Regina, SK

Circumference Deduction for Tape Rises

Butt Strap Correction (In Feet)

$$= \frac{(2 * N * T * W)}{(12 * D)} + \frac{(8 * N * T)}{(12 * 3)} * \sqrt{T/D}$$

Lap Joint Correction (In Feet)

$$= \frac{(4 * N * T)}{(12 * 3)} * \sqrt{T/(2 * D)}$$

Where :

N = number of butt straps or projections per course

T = thickness of straps or projections (in inches)

W = width of straps or projections (in inches)

D = nominal diameter of tank (in inches)

Circumference Deduction for Shell Thickness

$$= \frac{(\pi * T)}{6} \quad (\text{Correction In Feet})$$

Where :

T = thickness of shell material (In Inches)

Summary of Circumference Deductions

Course	Temperature Compensated Circumference	Empty Tank (Feet)	Tape Rise (Feet)	Plate Thickness (Feet)	Inside Circumference (Feet)
1	345.389	0.000	0.001	0.000	345.389
2	345.479	0.000	0.001	0.000	345.479
3	345.474	0.000	0.001	0.000	345.474
4	345.618	0.000	0.001	0.000	345.618
5	345.639	0.000	0.001	0.000	345.639
6	345.612	0.000	0.001	0.000	345.612

CO-OP Refinery Complex
Regina, SK

Incremental Volume Per Course

Liquid Head Stress Correction (In Feet)

$$= \frac{K (G * H * C^2)}{T}$$

Incremental Volume (in Cubic Feet)

$$= (C / \pi / 2)^2 * (\pi / 12)$$

Where :

G = tank Service Density.

H = height of liquid (between strap & top of course), in feet.

C = circumference, in feet.

T = thickness of shell material, in inches.

Incremental Volume Per Course

Course	Inside Circumference (Feet)	Liquid Head Stress (Feet)	Stressed Circumference (Feet)	Cubic Metres Per Inch
1	345.389	0.008	345.397	22.402
2	345.479	0.028	345.507	22.416
3	345.474	0.032	345.506	22.416
4	345.618	0.038	345.656	22.436
5	345.639	0.038	345.677	22.438
6	345.612	0.040	345.652	22.435

CO-OP Refinery Complex
Regina, SK

Liquid Head Corrections

Volumetric Increase per Course

$$= \frac{H}{T} * \frac{K}{F}$$

Where :

H = Course Height (in inches)

T = Plate Thickness (in inches)

$$K = \frac{\pi * W * G * D^3}{4 * E}$$

W = weight of liquid, in pounds per cubic foot.

G = Specific Gravity of product to be stored.

D = Inside Diameter of the Course.

E = modulus of elasticity of shell material.

F = desired volume conversion (cubic inch per unit volume)

eg. 231 to US Gallons, 61.023744 to Litres

Gross Volume per Chart Increment

Course	Cubic Metres Per Inch	Volume Correction Cubic Metres	Incremental Correction Cubic Metres	Gross Volume @ 60°F	Gross Volume @ 59 °F 0.9999871
1	22.402	0.006	0.000	22.402	22.402
2	22.416	0.007	0.006	22.422	22.422
3	22.416	0.008	0.013	22.429	22.429
4	22.436	0.010	0.021	22.457	22.457
5	22.438	0.010	0.031	22.470	22.469
6	22.435	0.000	0.041	22.476	22.476

Action Number P2190102940 - Exhibit G



CO-OP Refinery Complex

TANK # 16-10-081

Regina, SK

1800 Kg/m3 @ 120°C

Dome Roof Tank - Nominal Dimensions : 60 Feet X 42 Feet

INNAGE TABLE

Ref Gauge Height - 15.345m; Located 48" from shell to rim of flange, toward center										Height in Inches; Capacities in Cubic Metres					
0	0	**	5.652	4	0	326.513	8	0	647.605	12	0	968.849	16	0	1,290.111
	1	*	12.093		1	333.202		1	654.295		1	975.542		1	1,296.804
	2		18.782		2	339.892		2	660.984		2	982.235		2	1,303.497
	3		25.472		3	346.582		3	667.673		3	988.928		3	1,310.190
	4		32.162		4	353.272		4	674.363		4	995.621		4	1,316.883
	5		38.851		5	359.962		5	681.052		5	1,002.314		5	1,323.576
	6		45.541		6	366.652		6	687.745		6	1,009.007		6	1,330.269
	7		52.230		7	373.342		7	694.438		7	1,015.700		7	1,336.962
	8		58.920		8	380.031		8	701.131		8	1,022.393		8	1,343.659
	9		65.610		9	386.721		9	707.824		9	1,029.086		9	1,350.359
	10		72.299		10	393.410		10	714.516		10	1,035.778		10	1,357.059
	11		78.989		11	400.099		11	721.209		11	1,042.471		11	1,363.759
1	0		85.679	5	0	406.789	9	0	727.902	13	0	1,049.164	17	0	1,370.460
	1		92.368		1	413.478		1	734.595		1	1,055.857		1	1,377.160
	2		99.058		2	420.168		2	741.288		2	1,062.550		2	1,383.860
	3		105.747		3	426.857		3	747.981		3	1,069.243		3	1,390.560
	4		112.437		4	433.546		4	754.674		4	1,075.936		4	1,397.260
	5		119.126		5	440.236		5	761.367		5	1,082.629		5	1,403.961
	6		125.816		6	446.925		6	768.060		6	1,089.322		6	1,410.661
	7		132.506		7	453.614		7	774.753		7	1,096.015		7	1,417.361
	8		139.196		8	460.304		8	781.446		8	1,102.708		8	1,424.061
	9		145.886		9	466.993		9	788.139		9	1,109.401		9	1,430.762
	10		152.576		10	473.682		10	794.832		10	1,116.094		10	1,437.462
	11		159.266		11	480.372		11	801.525		11	1,122.787		11	1,444.162
2	0		165.957	6	0	487.061	10	0	808.218	14	0	1,129.480	18	0	1,450.862
	1		172.646		1	493.750		1	814.911		1	1,136.173		1	1,457.563
	2		179.336		2	500.440		2	821.604		2	1,142.866		2	1,464.263
	3		186.026		3	507.129		3	828.297		3	1,149.559		3	1,470.963
	4		192.716		4	513.819		4	834.990		4	1,156.252		4	1,477.663
	5		199.405		5	520.508		5	841.683		5	1,162.945		5	1,484.363
	6		206.095		6	527.197		6	848.376		6	1,169.638		6	1,491.064
	7		212.785		7	533.887		7	855.069		7	1,176.331		7	1,497.764
	8		219.475		8	540.576		8	861.762		8	1,183.024		8	1,504.464
	9		226.164		9	547.265		9	868.455		9	1,189.717		9	1,511.164
	10		232.854		10	553.955		10	875.147		10	1,196.409		10	1,517.865
	11		239.544		11	560.644		11	881.840		11	1,203.102		11	1,524.565
3	0		246.234	7	0	567.333	11	0	888.533	15	0	1,209.795	19	0	1,531.265
	1		252.924		1	574.023		1	895.226		1	1,216.488		1	1,537.965
	2		259.614		2	580.712		2	901.919		2	1,223.181		2	1,544.666
	3		266.303		3	587.401		3	908.612		3	1,229.874		3	1,551.366
	4		272.993		4	594.091		4	915.305		4	1,236.567		4	1,558.066
	5		279.683		5	600.780		5	921.998		5	1,243.260		5	1,564.766
	6		286.373		6	607.469		6	928.691		6	1,249.953		6	1,571.467
	7		293.063		7	614.159		7	935.384		7	1,256.646		7	1,578.167
	8		299.753		8	620.848		8	942.077		8	1,263.339		8	1,584.867
	9		306.443		9	627.537		9	948.770		9	1,270.032		9	1,591.567
	10		313.133		10	634.227		10	955.463		10	1,276.725		10	1,598.267
	11		319.823		11	640.916		11	962.156		11	1,283.418		11	1,604.968

** Volume Below Strike Point. Located 1/4" Above intersection of shell & bottom.

Page 1 of 3

* Bottom volume based on Physical Survey Calculation. Average Inches not applicable

Volumes reflect a Shell Temperature of 15°C

SF - Safe Fill Height @ 42'

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Action Number P2190102940 - Exhibit G



CO-OP Refinery Complex

TANK # 16-10-081

Regina, SK

1800 Kg/m³ @ 120°C

Dome Roof Tank - Nominal Dimensions : 60 Feet X 42 Feet

INNAGE TABLE

Ref Gauge Height - 15.345m; Located 48" from shell to rim of flange, toward center											
Height in Inches; Capacities in Cubic Metres											
20	0	1,611.668	24	0	1,933.279	28	0	2,255.207	32	0	2,577.248
	1	1,618.368		1	1,939.979		1	2,261.916		1	2,583.958
	2	1,625.068		2	1,946.680		2	2,268.626		2	2,590.667
	3	1,631.769		3	1,953.380		3	2,275.335		3	2,597.376
	4	1,638.469		4	1,960.080		4	2,282.044		4	2,604.085
	5	1,645.169		5	1,966.780		5	2,288.753		5	2,610.794
	6	1,651.869		6	1,973.481		6	2,295.462		6	2,617.504
	7	1,658.570		7	1,980.181		7	2,302.172		7	2,624.213
	8	1,665.270		8	1,986.881		8	2,308.881		8	2,630.922
	9	1,671.970		9	1,993.581		9	2,315.590		9	2,637.631
	10	1,678.670		10	2,000.281		10	2,322.299		10	2,644.340
	11	1,685.370		11	2,006.982		11	2,329.008		11	2,651.050
21	0	1,692.071	25	0	2,013.682	29	0	2,335.718	33	0	2,657.759
	1	1,698.771		1	2,020.385		1	2,342.427		1	2,664.468
	2	1,705.471		2	2,027.095		2	2,349.136		2	2,671.177
	3	1,712.171		3	2,033.804		3	2,355.845		3	2,677.886
	4	1,718.872		4	2,040.513		4	2,362.554		4	2,684.596
	5	1,725.572		5	2,047.222		5	2,369.263		5	2,691.305
	6	1,732.272		6	2,053.931		6	2,375.973		6	2,698.014
	7	1,738.972		7	2,060.641		7	2,382.682		7	2,704.727
	8	1,745.673		8	2,067.350		8	2,389.391		8	2,711.440
	9	1,752.373		9	2,074.059		9	2,396.100		9	2,718.153
	10	1,759.073		10	2,080.768		10	2,402.809		10	2,724.867
	11	1,765.773		11	2,087.477		11	2,409.519		11	2,731.580
22	0	1,772.474	26	0	2,094.187	30	0	2,416.228	34	0	2,738.293
	1	1,779.174		1	2,100.896		1	2,422.937		1	2,745.007
	2	1,785.874		2	2,107.605		2	2,429.646		2	2,751.720
	3	1,792.574		3	2,114.314		3	2,436.355		3	2,758.433
	4	1,799.274		4	2,121.023		4	2,443.065		4	2,765.146
	5	1,805.975		5	2,127.733		5	2,449.774		5	2,771.860
	6	1,812.675		6	2,134.442		6	2,456.483		6	2,778.573
	7	1,819.375		7	2,141.151		7	2,463.192		7	2,785.286
	8	1,826.075		8	2,147.860		8	2,469.901		8	2,792.000
	9	1,832.776		9	2,154.569		9	2,476.611		9	2,798.713
	10	1,839.476		10	2,161.279		10	2,483.320		10	2,805.426
	11	1,846.176		11	2,167.988		11	2,490.029		11	2,812.140
23	0	1,852.876	27	0	2,174.697	31	0	2,496.738	35	0	2,818.853
	1	1,859.577		1	2,181.406		1	2,503.447		1	2,825.566
	2	1,866.277		2	2,188.115		2	2,510.157		2	2,832.279
	3	1,872.977		3	2,194.824		3	2,516.866		3	2,838.993
	4	1,879.677		4	2,201.534		4	2,523.575		4	2,845.706
	5	1,886.378		5	2,208.243		5	2,530.284		5	2,852.419
	6	1,893.078		6	2,214.952		6	2,536.993		6	2,859.133
	7	1,899.778		7	2,221.661		7	2,543.702		7	2,865.846
	8	1,906.478		8	2,228.370		8	2,550.412		8	2,872.559
	9	1,913.178		9	2,235.080		9	2,557.121		9	2,879.273
	10	1,919.879		10	2,241.789		10	2,563.830		10	2,885.986
	11	1,926.579		11	2,248.498		11	2,570.539		11	2,892.699

SF - Safe Fill Height @ 42'

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Fractions

1/16	0.418765	9/16	3.768881
1/8	0.837529	5/8	4.187646
3/16	1.256294	11/16	4.606411
1/4	1.675058	3/4	5.025175
5/16	2.093823	13/16	5.443940
3/8	2.512588	7/8	5.862704
7/16	2.931352	15/16	6.281469
1/2	3.350117	1	6.700234

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Action Number P2190102940 - Exhibit G



CO-OP Refinery Complex

TANK # 16-10-081

Regina, SK

1800 Kg/m³ @ 120°C

Dome Roof Tank - Nominal Dimensions : 60 Feet X 42 Feet

INNAGE TABLE

Ref Gauge Height - 15.345m; Located 48" from shell to rim of flange, toward center

Height in Inches; Capacities in Cubic Metres

40	0	3,221.651	44	0	48	0	52	0	56	0
	1	3,228.364		1		1		1		1
	2	3,235.078		2		2		2		2
	3	3,241.791		3		3		3		3
	4	3,248.504		4		4		4		4
	5	3,255.218		5		5		5		5
	6	3,261.931		6		6		6		6
	7	3,268.644		7		7		7		7
	8	3,275.358		8		8		8		8
	9	3,282.071		9		9		9		9
	10	3,288.784		10		10		10		10
	11	3,295.498		11		11		11		11
41	0	3,302.211	45	0	49	0	53	0	57	0
	1	3,308.924		1		1		1		1
	2	3,315.637		2		2		2		2
	3	3,322.351		3		3		3		3
	4	3,329.064		4		4		4		4
	5	3,335.777		5		5		5		5
	6	3,342.491		6		6		6		6
	7	3,349.204		7		7		7		7
	8	3,355.917		8		8		8		8
	9	3,362.631		9		9		9		9
	10	3,369.344		10		10		10		10
	11	3,376.057		11		11		11		11
42	0	3,379.176	46	0	50	0	54	0	58	0
	1			1		1		1		1
	2			2		2		2		2
	3			3		3		3		3
	4			4		4		4		4
	5			5		5		5		5
	6			6		6		6		6
	7			7		7		7		7
	8			8		8		8		8
	9			9		9		9		9
	10			10		10		10		10
	11			11		11		11		11
43	0		47	0	51	0	55	0	59	0
	1			1		1		1		1
	2			2		2		2		2
	3			3		3		3		3
	4			4		4		4		4
	5			5		5		5		5
	6			6		6		6		6
	7			7		7		7		7
	8			8		8		8		8
	9			9		9		9		9
	10			10		10		10		10
	11			11		11		11		11

SF - Safe Fill Height @ 42'

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Action Number P2190102940 - Exhibit G

CO-OP Refinery Complex

TANK # 16-10-081

Regina, SK

1800 Kg/m3 @ 120°C

Dome Roof Tank - Nominal Dimensions : 60 Feet X 42 Feet

Volumes in: Cubic Metres

To Increment	Incs	Gross Volume per Increment	Deadwood Volume	Net Volume	Accumulated Volume
0	1	0.000000	5.651525	5.651525	5.651525
1	1	6.689399	-0.248415	6.440984	12.092509
3	2	6.689399	0.000304	6.689703	25.471916
13	10	6.689399	0.000229	6.689628	92.368195
18	5	6.689399	0.000176	6.689575	125.816071
24	6	6.689399	0.000675	6.690074	165.956515
34	10	6.689399	0.000371	6.689770	232.854215
42	8	6.689399	0.000446	6.689845	286.372978
44	2	6.689399	0.000631	6.690030	299.753039
46	2	6.689399	0.000435	6.689834	313.132707
51	5	6.689399	0.000504	6.689903	346.582225
53	2	6.689399	0.000700	6.690099	359.962424
54	1	6.689399	0.000515	6.689914	366.652338
62	8	6.689399	0.000016	6.689416	420.167663
101	39	6.689399	-0.000053	6.689347	681.052181
102	1	6.692499	-0.000053	6.692447	687.744627
199	97	6.693011	-0.000053	6.692959	1336.961619
200	1	6.697021	-0.000053	6.696968	1343.658587
300	100	6.700286	-0.000053	6.700234	2013.681938
301	1	6.703602	-0.000053	6.703549	2020.385487
402	101	6.709245	-0.000053	6.709192	2698.013919
403	1	6.712839	-0.000053	6.712787	2704.726706
503	100	6.713357	-0.000053	6.713305	3376.057192

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CO-OP Refinery Complex
Regina, SK

General Information

Tank Number	16-10-081
Date of Strapping Data	06/24/2019
Year Built	
Product in Service	Molten Sulphur
Product Service Density	1.8 g/cc (SG)

Tank Dimensions

Nominal Diameter	60 Feet
Nominal Height	42 Feet
Measured Tank Height	12.832 Metres
Tank Tilt	0 Millimetres
Gauge Point Information	Rim of flange, toward center
Reference Gauge Height	15.345 Metres
Horizontal To Gauge	48 Inches

Roof & Bottom Survey

Roof Type	Dome
Floating Roof Shape	N/A
Floating Roof Weight	N/A
Roof Landed Height	N/A
Roof Full Floating Height	N/A
Bottom Description	Physical Survey

Report Constraints

Main Increment	Inches
Main Volume	Cubic Metres
Product at Strapping	empty
Product Strap Density	1 g/cc (SG)
Liquid Height at Strap	0 Feet
Safe Fill Height	42 Feet
Overflow Or Foamline	N/A

CO-OP Refinery Complex
Regina, SK

Strap Correction to 60°F

Shell Temperature (°F)	82.4	Master Tape Serial
Shell Material	Carbon Steel	Master Tape Span
Shell Expansion (per Foot)	0.000006450	Master Tape Tension

Certified Tape Factor	1
Tape Correction Factor	$1 + ('Shell\ Temperature' - 68) \times 'Tape\ Expansion'$
Shell Correction Factor	$1 + (60 - 'Shell\ Temperature') \times 'Shell\ Expansion'$

Correction Summary

Certified Tape Factor * Tape Correction Factor * Shell Correction Factor
Correction Factor = 0.99994839

Course	Strap Circumference Metres	Converted Circumference (Feet)	Tape Rise (Feet)	Corrected Strap Circumference (Feet)
1	57.460	188.518	0.001	188.507
2	57.460	188.518	0.001	188.507
3	57.460	188.518	0.001	188.507
4	57.460	188.518	0.001	188.507
5	57.460	188.518	0.001	188.507

Optical Circumference Corrections

Course	Average Optical Offset Millimetres	Difference Millimetres	Correction Millimetres	Corrected Circumference Metres	Corrected Circumference (Feet)
1	312.375	0.000	0.000	57.457	188.507
2	313.188	0.813	5.105	57.462	188.524
3	316.438	4.063	25.525	57.483	188.591
4	320.813	8.438	53.014	57.510	188.681
5	322.125	9.750	61.261	57.518	188.708

CO-OP Refinery Complex
Regina, SK

Tank Measurements

Course	Strap (Feet)	Plate Thickness	Course Height	Accumulated Total
1	188.507	0.625 Inches	2.569 Metres	2.569 Metres
2	188.524	0.500 Inches	2.497 Metres	5.066 Metres
3	188.591	0.375 Inches	2.570 Metres	7.636 Metres
4	188.681	0.500 Inches	2.578 Metres	10.214 Metres
5	188.708	0.500 Inches	2.574 Metres	12.788 Metres

Tank Construction

Course	Course Fit/Join	Plates per Course	Width of Tape Rise	Depth of Tape Rise
1	Butt Weld	9	1.000 Inches	1.000 Millimetres
2	Butt Weld	9	1.000 Inches	1.000 Millimetres
3	Butt Weld	9	1.000 Inches	1.000 Millimetres
4	Butt Weld	9	1.000 Inches	1.000 Millimetres
5	Butt Weld	9	1.000 Inches	1.000 Millimetres

CO-OP Refinery Complex
Regina, SK

Circumference Corrected to Empty Tank Basis

$$\frac{-W * H * C^2}{2 * \pi * E * T} \quad (\text{Correction in Feet}) \quad \text{Or} \quad \frac{-K (G * H * C^2)}{T} \quad (\text{Correction in Inches})$$

Where :

$$K = \frac{W}{24 * \pi * E} = 0.000000028492394$$

G = Observed Density of Liquid in tank.

H = height of liquid above strap, in feet.

C = measured circumference, in feet.

T = thickness of shell material, in inches.

W = weight of liquid, in pounds per cubic foot.

E = modulus of elasticity of shell material.

Correction Summary

Course	Product Weight (Lb/Ft3)	Density	Liquid Height (Feet)	Corrected Circumference (Feet)	Plate Thickness (Inches)	Empty Tank Corrected (Feet)
1.00	62.428	1.000	0	188.507	0.625	0
2.00	62.428	1.000	0	188.524	0.500	0
3.00	62.428	1.000	0	188.591	0.375	0
4.00	62.428	1.000	0	188.681	0.500	0
5.00	62.428	1.000	0	188.708	0.500	0

CO-OP Refinery Complex
Regina, SK

Circumference Deduction for Tape Rises

Butt Strap Correction (In Feet)

$$= \frac{(2 * N * T * W)}{(12 * D)} + \frac{(8 * N * T)}{(12 * 3)} * \sqrt{T/D}$$

Lap Joint Correction (In Feet)

$$= \frac{(4 * N * T)}{(12 * 3)} * \sqrt{T/(2*D)}$$

Where :

N = number of butt straps or projections per course

T = thickness of straps or projections (in inches)

W = width of straps or projections (in inches)

D = nominal diameter of tank (in inches)

Circumference Deduction for Shell Thickness

$$= \frac{(\pi * T)}{6} \quad (\text{Correction In Feet})$$

Where :

T = thickness of shell material (In Inches)

Summary of Circumference Deductions

Course	Temperature Compensated Circumference	Empty Tank (Feet)	Tape Rise (Feet)	Plate Thickness (Feet)	Inside Circumference (Feet)
1	188.507	0.000	0.001	0.000	188.507
2	188.524	0.000	0.001	0.000	188.524
3	188.591	0.000	0.001	0.000	188.591
4	188.681	0.000	0.001	0.000	188.681
5	188.708	0.000	0.001	0.000	188.708

CO-OP Refinery Complex
Regina, SK

Incremental Volume Per Course

Liquid Head Stress Correction (In Feet)

$$= \frac{K (G * H * C^2)}{T}$$

Incremental Volume (in Cubic Feet)

$$= (C / \pi / 2)^2 * (\pi / 12)$$

Where :

G = tank Service Density.

H = height of liquid (between strap & top of course), in feet.

C = circumference, in feet.

T = thickness of shell material, in inches.

Incremental Volume Per Course

Course	Inside Circumference (Feet)	Liquid Head Stress (Feet)	Stressed Circumference (Feet)	Cubic Metres Per Inch
1	188.507	0.005	188.513	6.673
2	188.524	0.015	188.539	6.675
3	188.591	0.021	188.612	6.680
4	188.681	0.015	188.697	6.686
5	188.708	0.015	188.724	6.688

CO-OP Refinery Complex
Regina, SK

Liquid Head Corrections

Volumetric Increase per Course

$$= \frac{H}{T} * \frac{K}{F}$$

Where :

H = Course Height (in inches)

T = Plate Thickness (in inches)

$$K = \frac{\pi * W * G * D^3}{4 * E}$$

W = weight of liquid, in pounds per cubic foot.

G = Specific Gravity of product to be stored.

D = Inside Diameter of the Course.

E = modulus of elasticity of shell material.

F = desired volume conversion (cubic inch per unit volume)

eg. 231 to US Gallons, 61.023744 to Litres

Gross Volume per Chart Increment

Course	Cubic Metres Per Inch	Volume Correction Cubic Metres	Incremental Correction Cubic Metres	Gross Volume @ 60°F	Gross Volume @ 248 °F 1.0024252
1	6.673	0.002	0.000	6.673	6.689
2	6.675	0.002	0.002	6.677	6.693
3	6.680	0.003	0.004	6.684	6.700
4	6.686	0.002	0.007	6.693	6.709
5	6.688	0.000	0.009	6.697	6.713

Action Number P2190102940 - Exhibit G



CO-OP Refinery Complex

TANK # 54-10-905

Regina, SK

876 Kg/m³ @ 15°C

Cone Roof Tank - Nominal Dimensions : 136 Feet X 48 Feet

INNAGE TABLE

Ref Gauge Height - 52' 6"; Located 30" from shell to Benchmark on rim hatch										Height in Inches; Capacities in Cubic Metres					
0	0	**	12.204	4	0	1,632.695	8	0	3,278.120	12	0	4,923.488	16	0	6,568.825
	1	*	34.194		1	1,666.975		1	3,312.400		1	4,957.766		1	6,603.103
	2	*	60.160		2	1,701.255		2	3,346.680		2	4,992.044		2	6,637.381
	3	*	90.786		3	1,735.535		3	3,380.959		3	5,026.322		3	6,671.659
	4	*	124.218		4	1,769.814		4	3,415.239		4	5,060.600		4	6,705.937
	5		158.473		5	1,804.094		5	3,449.519		5	5,094.878		5	6,740.215
	6		192.775		6	1,838.374		6	3,483.798		6	5,129.155		6	6,774.492
	7		227.078		7	1,872.653		7	3,518.078		7	5,163.433		7	6,808.770
	8		261.381		8	1,906.933		8	3,552.358		8	5,197.711		8	6,843.048
	9		295.684		9	1,941.213		9	3,586.637		9	5,231.989		9	6,877.326
	10		329.987		10	1,975.492		10	3,620.917		10	5,266.267		10	6,911.604
	11		364.290		11	2,009.772		11	3,655.197		11	5,300.545		11	6,945.882
1	0		398.609	5	0	2,044.052	9	0	3,689.476	13	0	5,334.823	17	0	6,980.160
	1		432.888		1	2,078.331		1	3,723.756		1	5,369.100		1	7,014.437
	2		467.168		2	2,112.611		2	3,758.036		2	5,403.378		2	7,048.715
	3		501.448		3	2,146.891		3	3,792.315		3	5,437.656		3	7,082.993
	4		535.728		4	2,181.170		4	3,826.595		4	5,471.934		4	7,117.271
	5		570.007		5	2,215.450		5	3,860.875		5	5,506.212		5	7,151.549
	6		604.288		6	2,249.730		6	3,895.153		6	5,540.490		6	7,185.827
	7		638.568		7	2,284.009		7	3,929.430		7	5,574.768		7	7,220.105
	8		672.848		8	2,318.289		8	3,963.708		8	5,609.045		8	7,254.382
	9		707.128		9	2,352.569		9	3,997.986		9	5,643.323		9	7,288.660
	10		741.408		10	2,386.848		10	4,032.264		10	5,677.601		10	7,322.938
	11		775.689		11	2,421.128		11	4,066.542		11	5,711.879		11	7,357.216
2	0		809.969	6	0	2,455.408	10	0	4,100.820	14	0	5,746.157	18	0	7,391.494
	1		844.249		1	2,489.688		1	4,135.098		1	5,780.435		1	7,425.772
	2		878.529		2	2,523.967		2	4,169.375		2	5,814.713		2	7,460.050
	3		912.810		3	2,558.247		3	4,203.653		3	5,848.990		3	7,494.327
	4		947.090		4	2,592.527		4	4,237.931		4	5,883.268		4	7,528.605
	5		981.370		5	2,626.806		5	4,272.209		5	5,917.546		5	7,562.883
	6		1,015.650		6	2,661.086		6	4,306.487		6	5,951.824		6	7,597.161
	7		1,049.931		7	2,695.366		7	4,340.765		7	5,986.102		7	7,631.439
	8		1,084.211		8	2,729.645		8	4,375.043		8	6,020.380		8	7,665.717
	9		1,118.492		9	2,763.925		9	4,409.320		9	6,054.658		9	7,699.995
	10		1,152.772		10	2,798.205		10	4,443.598		10	6,088.935		10	7,734.272
	11		1,187.053		11	2,832.484		11	4,477.876		11	6,123.213		11	7,768.580
3	0		1,221.334	7	0	2,866.764	11	0	4,512.154	15	0	6,157.491	19	0	7,802.889
	1		1,255.615		1	2,901.044		1	4,546.432		1	6,191.769		1	7,837.197
	2		1,289.895		2	2,935.323		2	4,580.710		2	6,226.047		2	7,871.506
	3		1,324.176		3	2,969.603		3	4,614.988		3	6,260.325		3	7,905.814
	4		1,358.456		4	3,003.883		4	4,649.265		4	6,294.603		4	7,940.123
	5		1,392.736		5	3,038.162		5	4,683.543		5	6,328.880		5	7,974.431
	6		1,427.016		6	3,072.442		6	4,717.821		6	6,363.158		6	8,008.740
	7		1,461.296		7	3,106.722		7	4,752.099		7	6,397.436		7	8,043.048
	8		1,495.576		8	3,141.001		8	4,786.377		8	6,431.714		8	8,077.357
	9		1,529.856		9	3,175.281		9	4,820.655		9	6,465.992		9	8,111.665
	10		1,564.135		10	3,209.561		10	4,854.933		10	6,500.270		10	8,145.974
	11		1,598.415		11	3,243.840		11	4,889.210		11	6,534.547		11	8,180.282

** Volume Below Strike Point. Located 2" Above intersection of shell & bottom.

Page 1 of 3

* Bottom volume based on Physical Survey Calculation. Average Inches not applicable

Volumes reflect a Shell Temperature of 15°C

SF - Safe Fill Height @ 44'

FL - Foam Line Height @ 46' 7"

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Action Number P2190102940 - Exhibit G



CO-OP Refinery Complex

TANK # 54-10-905

Regina, SK

876 Kg/m³ @ 15°C

Cone Roof Tank - Nominal Dimensions : 136 Feet X 48 Feet

INNAGE TABLE

Ref Gauge Height - 52' 6"; Located 30" from shell to Benchmark on rim hatch											
Height in Inches						Capacities in Cubic Metres					
20	0	8,214.591	24	0	9,861.400	28	0	11,508.209	32	0	13,155.721
	1	8,248.900		1	9,895.708		1	11,542.517		1	13,190.045
	2	8,283.208		2	9,930.017		2	11,576.826		2	13,224.369
	3	8,317.517		3	9,964.325		3	11,611.134		3	13,258.693
	4	8,351.825		4	9,998.634		4	11,645.457		4	13,293.017
	5	8,386.134		5	10,032.942		5	11,679.781		5	13,327.342
	6	8,420.442		6	10,067.251		6	11,714.105		6	13,361.666
	7	8,454.751		7	10,101.559		7	11,748.429		7	13,395.990
	8	8,489.059		8	10,135.868		8	11,782.753		8	13,430.314
	9	8,523.368		9	10,170.176		9	11,817.078		9	13,464.638
	10	8,557.676		10	10,204.485		10	11,851.402		10	13,498.963
	11	8,591.985		11	10,238.793		11	11,885.726		11	13,533.287
21	0	8,626.293	25	0	10,273.102	29	0	11,920.050	33	0	13,567.611
	1	8,660.602		1	10,307.410		1	11,954.374		1	13,601.935
	2	8,694.910		2	10,341.719		2	11,988.699		2	13,636.259
	3	8,729.219		3	10,376.027		3	12,023.023		3	13,670.583
	4	8,763.527		4	10,410.336		4	12,057.347		4	13,704.908
	5	8,797.836		5	10,444.645		5	12,091.671		5	13,739.232
	6	8,832.144		6	10,478.953		6	12,125.995		6	13,773.556
	7	8,866.453		7	10,513.262		7	12,160.319		7	13,807.880
	8	8,900.761		8	10,547.570		8	12,194.644		8	13,842.204
	9	8,935.070		9	10,581.879		9	12,228.968		9	13,876.528
	10	8,969.378		10	10,616.187		10	12,263.292		10	13,910.853
	11	9,003.687		11	10,650.496		11	12,297.616		11	13,945.177
22	0	9,037.995	26	0	10,684.804	30	0	12,331.940	34	0	13,979.501
	1	9,072.304		1	10,719.113		1	12,366.265		1	14,013.825
	2	9,106.612		2	10,753.421		2	12,400.589		2	14,048.149
	3	9,140.921		3	10,787.730		3	12,434.913		3	14,082.474
	4	9,175.229		4	10,822.038		4	12,469.237		4	14,116.798
	5	9,209.538		5	10,856.347		5	12,503.561		5	14,151.122
	6	9,243.846		6	10,890.655		6	12,537.885		6	14,185.446
	7	9,278.155		7	10,924.964		7	12,572.210		7	14,219.770
	8	9,312.463		8	10,959.272		8	12,606.534		8	14,254.094
	9	9,346.772		9	10,993.581		9	12,640.858		9	14,288.419
	10	9,381.081		10	11,027.889		10	12,675.182		10	14,322.743
	11	9,415.389		11	11,062.198		11	12,709.506		11	14,357.067
23	0	9,449.698	27	0	11,096.506	31	0	12,743.831	35	0	14,391.391
	1	9,484.006		1	11,130.815		1	12,778.155		1	14,425.715
	2	9,518.315		2	11,165.123		2	12,812.479		2	14,460.040
	3	9,552.623		3	11,199.432		3	12,846.803		3	14,494.364
	4	9,586.932		4	11,233.740		4	12,881.127		4	14,528.688
	5	9,621.240		5	11,268.049		5	12,915.451		5	14,563.012
	6	9,655.549		6	11,302.357		6	12,949.776		6	14,597.336
	7	9,689.857		7	11,336.666		7	12,984.100		7	14,631.660
	8	9,724.166		8	11,370.974		8	13,018.424		8	14,665.985
	9	9,758.474		9	11,405.283		9	13,052.748		9	14,700.309
	10	9,792.783		10	11,439.591		10	13,087.072		10	14,734.633
	11	9,827.091		11	11,473.900		11	13,121.397		11	14,768.957

Fractions

1/16	2.144282	9/16	19.298540
1/8	4.288564	5/8	21.442822
3/16	6.432847	11/16	23.587105
1/4	8.577129	3/4	25.731387
5/16	10.721411	13/16	27.875669
3/8	12.865693	7/8	30.019951
7/16	15.009976	15/16	32.164234
1/2	17.154258	1	34.308516

SF - Safe Fill Height @ 44'
FL - Foam Line Height @ 46' 7"

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Action Number P2190102940 - Exhibit G



CO-OP Refinery Complex

TANK # 54-10-905

Regina, SK

876 Kg/m³ @ 15°C

Cone Roof Tank - Nominal Dimensions : 136 Feet X 48 Feet

INNAGE TABLE

Ref Gauge Height - 52' 6"; Located 30" from shell to Benchmark on rim hatch										Height in Inches; Capacities in Cubic Metres									
40	0	16,451.465	44	0	SF	18,100.268	48	0		52	0		56	0					
	1	16,485.815		1		18,134.618		1			1			1					
	2	16,520.165		2		18,168.968		2			2			2					
	3	16,554.515		3		18,203.318		3			3			3					
	4	16,588.865		4		18,237.668		4			4			4					
	5	16,623.216		5		18,272.018		5			5			5					
	6	16,657.566		6		18,306.368		6			6			6					
	7	16,691.916		7		18,340.718		7			7			7					
	8	16,726.266		8		18,375.068		8			8			8					
	9	16,760.616		9		18,409.418		9			9			9					
	10	16,794.966		10		18,443.768		10			10			10					
	11	16,829.316		11		18,478.118		11			11			11					
41	0	16,863.666	45	0		18,512.468	49	0		53	0		57	0					
	1	16,898.016		1		18,546.818		1			1			1					
	2	16,932.366		2		18,581.168		2			2			2					
	3	16,966.716		3		18,615.518		3			3			3					
	4	17,001.066		4		18,649.868		4			4			4					
	5	17,035.416		5		18,684.218		5			5			5					
	6	17,069.766		6		18,718.568		6			6			6					
	7	17,104.116		7		18,752.918		7			7			7					
	8	17,138.466		8		18,787.268		8			8			8					
	9	17,172.816		9		18,821.619		9			9			9					
	10	17,207.166		10		18,855.969		10			10			10					
	11	17,241.516		11		18,890.319		11			11			11					
42	0	17,275.866	46	0		18,924.669	50	0		54	0		58	0					
	1	17,310.216		1		18,959.019		1			1			1					
	2	17,344.567		2		18,993.369		2			2			2					
	3	17,378.917		3		19,027.719		3			3			3					
	4	17,413.267		4		19,062.069		4			4			4					
	5	17,447.617		5		19,096.419		5			5			5					
	6	17,481.967		6		19,130.769		6			6			6					
	7	17,516.317		7	FL	19,165.119		7			7			7					
	8	17,550.667		8				8			8			8					
	9	17,585.017		9				9			9			9					
	10	17,619.367		10				10			10			10					
	11	17,653.717		11				11			11			11					
43	0	17,688.067	47	0			51	0		55	0		59	0					
	1	17,722.417		1				1			1			1					
	2	17,756.767		2				2			2			2					
	3	17,791.117		3				3			3			3					
	4	17,825.467		4				4			4			4					
	5	17,859.817		5				5			5			5					
	6	17,894.167		6				6			6			6					
	7	17,928.517		7				7			7			7					
	8	17,962.867		8				8			8			8					
	9	17,997.217		9				9			9			9					
	10	18,031.567		10				10			10			10					
	11	18,065.917		11				11			11			11					

SF - Safe Fill Height @ 44'
FL - Foam Line Height @ 46' 7"

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Action Number P2190102940 - Exhibit G

CO-OP Refinery Complex

TANK # 54-10-905

Regina, SK

876 Kg/m³ @ 15°C

Cone Roof Tank - Nominal Dimensions : 136 Feet X 48 Feet

Volumes in: Cubic Metres

To Increment	Incs	Gross Volume per Increment	Deadwood Volume	Net Volume	Accumulated Volume
0	1	0.000000	12.203966	12.203966	12.203966
1	1	34.294254	-12.304600	21.989654	34.193620
2	1	34.294254	-8.327618	25.966637	60.160257
3	1	34.294254	-3.669004	30.625251	90.785507
4	1	34.294254	-0.862221	33.432033	124.217541
5	1	34.294254	-0.038722	34.255533	158.473073
6	1	34.294254	0.007698	34.301952	192.775026
7	1	34.294254	0.008488	34.302743	227.077769
8	1	34.294254	0.008918	34.303173	261.380941
9	1	34.294254	0.008530	34.302784	295.683726
10	1	34.294254	0.008614	34.302869	329.986594
11	1	34.294254	0.008856	34.303111	364.289705
12	1	34.294254	0.024624	34.318878	398.608584
13	1	34.294254	-0.015073	34.279181	432.887765
17	4	34.294254	-0.014339	34.279916	570.007429
20	3	34.294254	-0.014174	34.280081	672.847670
21	1	34.294254	-0.014034	34.280220	707.127890
22	1	34.294254	-0.013798	34.280457	741.408347
23	1	34.294254	-0.014040	34.280215	775.688562
24	1	34.294254	-0.013871	34.280384	809.968946
30	6	34.294254	-0.014040	34.280215	1015.650234
34	4	34.294254	-0.013770	34.280485	1152.772173
35	1	34.294254	-0.012992	34.281263	1187.053435
36	1	34.294254	-0.014163	34.280091	1221.333527
37	1	34.294254	-0.013095	34.281159	1255.614686
40	3	34.294254	-0.013770	34.280485	1358.456140
41	1	34.294254	-0.014040	34.280215	1392.736355
51	10	34.294254	-0.014434	34.279820	1735.534555
112	61	34.294254	-0.014574	34.279680	3826.595056
113	1	34.294168	-0.014574	34.279594	3860.874650
226	113	34.292431	-0.014574	34.277857	7734.272496
227	1	34.322366	-0.014574	34.307792	7768.580288
339	112	34.323090	-0.014574	34.308516	11611.134051
340	1	34.337275	-0.014574	34.322701	11645.456752
455	115	34.338755	-0.014574	34.324181	15592.737536
456	1	34.341199	-0.014574	34.326625	15627.064161
572	116	34.364621	-0.014574	34.350047	19611.669588

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CO-OP Refinery Complex
Regina, SK

General Information

Tank Number	54-10-905
Date of Strapping Data	10/25/2019
Year Built	
Product in Service	DHU Diesel
Product Service Density	0.876 g/cc (SG)

Tank Dimensions

Nominal Diameter	136 Feet
Nominal Height	48 Feet
Measured Tank Height	14.628 Metres
Tank Tilt	0 Millimetres
Gauge Point Information	Benchmark on Rim Hatch
Reference Gauge Height	52' 6"
Horizontal To Gauge	30 Inches

Roof & Bottom Survey

Roof Type	Cone
Floating Roof Shape	N/A
Floating Roof Weight	N/A
Roof Landed Height	N/A
Roof Full Floating Height	N/A
Bottom Description	Physical Survey

Report Constraints

Main Increment	Inches
Main Volume	Cubic Metres
Product at Strapping	empty
Product Strap Density	1 g/cc (SG)
Liquid Height at Strap	0 Feet
Safe Fill Height	44 Feet
Foamline	46' 7" / 14.212 Metres

CO-OP Refinery Complex
Regina, SK

Strap Correction to 60°F

Shell Temperature (°F)	82.4	Master Tape Serial
Shell Material	Carbon Steel	Master Tape Span
Shell Expansion (per Foot)	0.000006450	Master Tape Tension

Certified Tape Factor	1
Tape Correction Factor	$1 + ('Shell\ Temperature' - 68) 'Tape\ Expansion'$
Shell Correction Factor	$1 + (60 - 'Shell\ Temperature') 'Shell\ Expansion'$

Correction Summary

Certified Tape Factor * Tape Correction Factor * Shell Correction Factor
Correction Factor = 0.99994839

Course	Strap Circumference Metres	Converted Circumference (Feet)	Tape Rise (Feet)	Corrected Strap Circumference (Feet)
1	130.370	427.723	0.001	427.700
2	130.370	427.723	0.001	427.700
3	130.370	427.723	0.001	427.700
4	130.370	427.723	0.001	427.700
5	130.370	427.723	0.001	427.700

Optical Circumference Corrections

Course	Average Optical Offset Millimetres	Difference Millimetres	Correction Millimetres	Corrected Circumference Metres	Corrected Circumference (Feet)
1	548.071	0.000	0.000	130.363	427.700
2	556.071	8.000	-50.265	130.313	427.535
3	554.214	6.143	-38.597	130.324	427.574
4	554.321	6.250	-39.270	130.324	427.571
5	551.429	3.357	-21.094	130.342	427.631

CO-OP Refinery Complex
Regina, SK

Tank Measurements

Course	Strap (Feet)	Plate Thickness	Course Height	Accumulated Total
1	427.700	0.688 Inches	2.869 Metres	2.869 Metres
2	427.535	0.563 Inches	2.872 Metres	5.741 Metres
3	427.574	0.438 Inches	2.872 Metres	8.613 Metres
4	427.571	0.438 Inches	2.967 Metres	11.580 Metres
5	427.631	0.438 Inches	2.971 Metres	14.551 Metres

Tank Construction

Course	Course Fit/Join	Plates per Course	Width of Tape Rise	Depth of Tape Rise
1	Butt Weld	15	0.750 Inches	1.000 Millimetres
2	Butt Weld	15	0.750 Inches	1.000 Millimetres
3	Butt Weld	15	0.750 Inches	1.000 Millimetres
4	Butt Weld	15	0.750 Inches	1.000 Millimetres
5	Butt Weld	15	0.750 Inches	1.000 Millimetres

CO-OP Refinery Complex
Regina, SK

Circumference Corrected to Empty Tank Basis

$$\frac{-W * H * C^2}{2 * \pi * E * T} \quad (\text{Correction in Feet}) \quad \text{Or} \quad \frac{-K (G * H * C^2)}{T} \quad (\text{Correction in Inches})$$

Where :

$$K = \frac{W}{24 * \pi * E} = 0.000000028492394$$

G = Observed Density of Liquid in tank.

H = height of liquid above strap, in feet.

C = measured circumference, in feet.

T = thickness of shell material, in inches.

W = weight of liquid, in pounds per cubic foot.

E = modulus of elasticity of shell material.

Correction Summary

Course	Product Weight (Lb/Ft3)	Density	Liquid Height (Feet)	Corrected Circumference (Feet)	Plate Thickness (Inches)	Empty Tank Corrected (Feet)
1.00	62.428	1.000	0	427.700	0.688	0
2.00	62.428	1.000	0	427.535	0.563	0
3.00	62.428	1.000	0	427.574	0.438	0
4.00	62.428	1.000	0	427.571	0.438	0
5.00	62.428	1.000	0	427.631	0.438	0

CO-OP Refinery Complex
Regina, SK

Circumference Deduction for Tape Rises

Butt Strap Correction (In Feet)

$$= \frac{(2 * N * T * W)}{(12 * D)} + \frac{(8 * N * T)}{(12 * 3)} * \sqrt{T/D}$$

Lap Joint Correction (In Feet)

$$= \frac{(4 * N * T)}{(12 * 3)} * \sqrt{T/(2*D)}$$

Where :

N = number of butt straps or projections per course

T = thickness of straps or projections (in inches)

W = width of straps or projections (in inches)

D = nominal diameter of tank (in inches)

Circumference Deduction for Shell Thickness

$$= \frac{(\pi * T)}{6} \quad (\text{Correction In Feet})$$

Where :

T = thickness of shell material (In Inches)

Summary of Circumference Deductions

Course	Temperature Compensated Circumference	Empty Tank (Feet)	Tape Rise (Feet)	Plate Thickness (Feet)	Inside Circumference (Feet)
1	427.700	0.000	0.001	0.360	427.340
2	427.535	0.000	0.001	0.295	427.241
3	427.574	0.000	0.001	0.229	427.345
4	427.571	0.000	0.001	0.229	427.342
5	427.631	0.000	0.001	0.229	427.402

CO-OP Refinery Complex
Regina, SK

Incremental Volume Per Course

Liquid Head Stress Correction (In Feet)

$$= \frac{K (G * H * C^2)}{T}$$

Incremental Volume (in Cubic Feet)

$$= (C / \pi / 2)^2 * (\pi / 12)$$

Where :

G = tank Service Density.

H = height of liquid (between strap & top of course), in feet.

C = circumference, in feet.

T = thickness of shell material, in inches.

Incremental Volume Per Course

Course	Inside Circumference (Feet)	Liquid Head Stress (Feet)	Stressed Circumference (Feet)	Cubic Metres Per Inch
1	427.340	0.012	427.353	34.295
2	427.241	0.038	427.279	34.283
3	427.345	0.049	427.394	34.301
4	427.342	0.051	427.393	34.301
5	427.402	0.051	427.453	34.311

CO-OP Refinery Complex
Regina, SK

Liquid Head Corrections

Volumetric Increase per Course

$$= \frac{H}{T} \times \frac{K}{F}$$

Where :

H = Course Height (in inches)

T = Plate Thickness (in inches)

$$K = \frac{\pi \times W \times G \times D^3}{4 \times E}$$

W = weight of liquid, in pounds per cubic foot.

G = Specific Gravity of product to be stored.

D = Inside Diameter of the Course.

E = modulus of elasticity of shell material.

F = desired volume conversion (cubic inch per unit volume)

eg. 231 to US Gallons, 61.023744 to Litres

Gross Volume per Chart Increment

Course	Cubic Metres Per Inch	Volume Correction Cubic Metres	Incremental Correction Cubic Metres	Gross Volume @ 60°F	Gross Volume @ 59 °F 0.9999871
1	34.295	0.010	0.000	34.295	34.294
2	34.283	0.012	0.010	34.293	34.292
3	34.301	0.016	0.022	34.324	34.323
4	34.301	0.016	0.038	34.339	34.339
5	34.311	0.000	0.054	34.365	34.365

Action Number P2190102940 - Exhibit G

Imperial Oil

TANK # 339

Sherwood Park, AB

750 Kg/m3 @ 15°C

Internal Floating Roof Tank - Nominal Dimensions : 120 Feet X 48 Feet

INNAGE TABLE

Ref Gauge Height - 56' 11 1/4": Located 35" from shell to Benchmark opposite Hinge										Height in Inches; Capacities in US Barrels									
0	0**	100.254	4	0	7,814.409	8	0	15,598.884	12	0	23,706.231	16	0	31,813.578					
1	1*	205.190	1		7,951.651	1	1	15,767.787	1	1	23,875.134	1	1	31,982.559					
2	2*	368.984	2		8,088.892	2	2	15,936.691	2	2	24,044.037	2	2	32,151.541					
3		537.692	3		8,226.133	3	3	16,105.594	3	3	24,212.940	3	3	32,320.522					
4		706.401	4		8,363.374	4	4	16,274.497	4	4	24,381.843	4	4	32,489.503					
5		875.109	5		8,500.616	5	5	16,443.400	5	5	24,550.746	5	5	32,658.485					
6		1,043.817	6		8,637.857	6	6	16,612.303	6	6	24,719.649	6	6	32,827.466					
7		1,212.526	7		8,775.098	7	7	16,781.206	7	7	24,888.552	7	7	32,996.447					
8		1,381.234	8		8,912.339	8	8	16,950.109	8	8	25,057.456	8	8	33,165.429					
9		1,549.942	9		9,049.581	9	9	17,119.012	9	9	25,226.359	9	9	33,334.410					
10		1,718.611	10		9,186.822	10	10	17,287.915	10	10	25,395.262	10	10	33,503.392					
11		1,887.271	11		9,355.560	11	11	17,456.818	11	11	25,564.165	11	11	33,672.373					
Low Critical Zone																			
1	0	2,055.925	5	0	9,524.299	9	0	17,625.721	13	0	25,733.068	17	0	33,841.354					
1	1	2,224.526	1		9,693.037	1	1	17,794.624	1	1	25,901.971	1	1	34,010.336					
2	2	2,393.128	2		9,861.776	2	2	17,963.527	2	2	26,070.874	2	2	34,179.317					
3	3	2,561.729	3		10,030.514	3	3	18,132.430	3	3	26,239.777	3	3	34,348.299					
4	4	2,730.384	4		10,199.253	4	4	18,301.333	4	4	26,408.680	4	4	34,517.280					
5	5	2,899.039	5		10,367.991	5	5	18,470.236	5	5	26,577.583	5	5	34,686.261					
6	6	3,067.695	6		10,536.730	6	6	18,639.139	6	6	26,746.486	6	6	34,855.243					
7	7	3,236.298	7		10,705.468	7	7	18,808.042	7	7	26,915.389	7	7	35,024.224					
8	8	3,404.978	8		10,874.207	8	8	18,976.946	8	8	27,084.292	8	8	35,193.205					
9	9	3,573.666	9		11,042.945	9	9	19,145.849	9	9	27,253.195	9	9	35,362.187					
10	10	3,742.354	10		11,211.684	10	10	19,314.752	10	10	27,422.098	10	10	35,531.168					
11	11	3,911.042	11		11,380.422	11	11	19,483.655	11	11	27,591.001	11	11	35,700.150					
High Critical Zone																			
2	0	4,079.730	6	0	11,549.161	10	0	19,652.558	14	0	27,759.904	18	0	35,869.131					
1	1	4,248.454	1		11,717.899	1	1	19,821.461	1	1	27,928.808	1	1	36,038.112					
2	2	4,417.178	2		11,886.638	2	2	19,990.364	2	2	28,097.711	2	2	36,207.094					
3	3	4,585.902	3		12,055.376	3	3	20,159.267	3	3	28,266.614	3	3	36,376.075					
4	4	4,754.626	4		12,224.115	4	4	20,328.170	4	4	28,435.517	4	4	36,545.056					
5	5	4,923.350	5		12,392.853	5	5	20,497.073	5	5	28,604.420	5	5	36,714.038					
6	6	5,092.074	6		12,561.592	6	6	20,665.976	6	6	28,773.323	6	6	36,883.019					
7	7	5,260.808	7		12,730.330	7	7	20,834.879	7	7	28,942.226	7	7	37,052.001					
8	8	5,429.549	8		12,899.069	8	8	21,003.782	8	8	29,111.129	8	8	37,220.982					
9	9	5,598.289	9		13,067.807	9	9	21,172.685	9	9	29,280.032	9	9	37,389.963					
10	10	5,767.029	10		13,236.546	10	10	21,341.588	10	10	29,448.935	10	10	37,558.945					
11	11	5,935.769	11		13,405.284	11	11	21,510.491	11	11	29,617.838	11	11	37,727.926					
Low Critical Zone																			
3	0	6,104.509	7	0	13,574.023	11	0	21,679.394	15	0	29,786.741	19	0	37,896.908					
1	1	6,273.250	1		13,742.761	1	1	21,848.297	1	1	29,955.644	1	1	38,065.889					
2	2	6,441.990	2		13,911.500	2	2	22,017.201	2	2	30,124.547	2	2	38,234.870					
3	3	6,579.233	3		14,080.238	3	3	22,186.104	3	3	30,293.450	3	3	38,403.852					
4	4	6,716.476	4		14,248.977	4	4	22,355.007	4	4	30,462.353	4	4	38,572.833					
5	5	6,853.719	5		14,417.715	5	5	22,523.910	5	5	30,631.256	5	5	38,741.814					
6	6	6,990.962	6		14,586.454	6	6	22,692.813	6	6	30,800.159	6	6	38,910.796					
7	7	7,128.203	7		14,755.192	7	7	22,861.716	7	7	30,969.063	7	7	39,079.777					
8	8	7,265.444	8		14,923.930	8	8	23,030.619	8	8	31,137.966	8	8	39,248.759					
9	9	7,402.686	9		15,092.669	9	9	23,199.522	9	9	31,306.869	9	9	39,417.740					
10	10	7,539.927	10		15,261.407	10	10	23,368.425	10	10	31,475.772	10	10	39,586.721					
11	11	7,677.168	11		15,430.146	11	11	23,537.328	11	11	31,644.675	11	11	39,755.703					

** Volume Below Strike Point. Located 0.9" Below intersection of shell & bottom.

Page 1 of 3

* Bottom volume based on Physical Survey Calculation. Average Inches not applicable

Volumes reflect a Shell Temperature of 15°C

Tables produced by:
Nextgen Industrial Services Inc.
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SF - Safe Fill Height @ 40' 11"



A total of 629.945 US Barrels were deducted between 38 & 58 Inches based on a weight of 75114.8965 Kilograms and a density of 750 Kg/m3. Gauged quantities above 58 Inches reflect this deduction but shall be adjusted for a differing specific gravity at 15°C according to the following formula (see page 2).

Action Number P2190102940 - Exhibit G

Imperial Oil

TANK # 339

Sherwood Park, AB

750 Kg/m³ @ 15°C

Internal Floating Roof Tank - Nominal Dimensions : 120 Feet X 48 Feet

INNAGE TABLE

Ref Gauge Height - 56' 11 1/4": Located 35" from shell to Benchmark opposite Hinge										Height in Inches: Capacities in US Barrels				
20	0	39,924.684	24	0	48,035.790	28	0	56,149.457	32	0	64,263.123	36	0	72,380.888
	1	40,093.665		1	48,204.825		1	56,318.491		1	64,432.243		1	72,550.009
	2	40,262.647		2	48,373.860		2	56,487.526		2	64,601.363		2	72,719.129
	3	40,431.628		3	48,542.895		3	56,656.561		3	64,770.483		3	72,888.249
	4	40,600.610		4	48,711.929		4	56,825.595		4	64,939.603		4	73,057.369
	5	40,769.591		5	48,880.964		5	56,994.630		5	65,108.723		5	73,226.489
	6	40,938.572		6	49,049.999		6	57,163.665		6	65,277.843		6	73,395.609
	7	41,107.554		7	49,219.033		7	57,332.699		7	65,446.963		7	73,564.729
	8	41,276.535		8	49,388.068		8	57,501.734		8	65,616.084		8	73,733.849
	9	41,445.517		9	49,557.103		9	57,670.769		9	65,785.204		9	73,902.969
	10	41,614.498		10	49,726.138		10	57,839.804		10	65,954.324		10	74,072.090
	11	41,783.479		11	49,895.172		11	58,008.838		11	66,123.444		11	74,241.210
21	0	41,952.461	25	0	50,064.207	29	0	58,177.873	33	0	66,292.564	37	0	74,410.330
	1	42,121.442		1	50,233.242		1	58,346.908		1	66,461.684		1	74,579.450
	2	42,290.423		2	50,402.276		2	58,515.942		2	66,630.804		2	74,748.570
	3	42,459.405		3	50,571.311		3	58,684.977		3	66,799.924		3	74,917.690
	4	42,628.386		4	50,740.346		4	58,854.012		4	66,969.045		4	75,086.810
	5	42,797.368		5	50,909.381		5	59,023.047		5	67,138.165		5	75,255.930
	6	42,966.349		6	51,078.415		6	59,192.081		6	67,307.285		6	75,425.051
	7	43,135.330		7	51,247.450		7	59,361.116		7	67,476.405		7	75,594.171
	8	43,304.312		8	51,416.485		8	59,530.151		8	67,645.525		8	75,763.291
	9	43,473.293		9	51,585.519		9	59,699.185		9	67,814.645		9	75,932.411
	10	43,642.275		10	51,754.554		10	59,868.220		10	67,983.765		10	76,101.531
	11	43,811.256		11	51,923.589		11	60,037.255		11	68,152.885		11	76,270.651
22	0	43,980.237	26	0	52,092.623	30	0	60,206.290	34	0	68,322.005	38	0	76,439.771
	1	44,149.219		1	52,261.658		1	60,375.324		1	68,491.126		1	76,608.891
	2	44,318.200		2	52,430.693		2	60,544.359		2	68,660.246		2	76,778.012
	3	44,487.181		3	52,599.728		3	60,713.394		3	68,829.366		3	76,947.132
	4	44,656.163		4	52,768.762		4	60,882.428		4	68,998.486		4	77,116.252
	5	44,825.144		5	52,937.797		5	61,051.463		5	69,167.606		5	77,285.372
	6	44,994.126		6	53,106.832		6	61,220.498		6	69,336.726		6	77,454.492
	7	45,163.107		7	53,275.866		7	61,389.533		7	69,505.846		7	77,623.612
	8	45,332.088		8	53,444.901		8	61,558.567		8	69,674.966		8	77,792.732
	9	45,501.070		9	53,613.936		9	61,727.602		9	69,844.087		9	77,961.852
	10	45,670.051		10	53,782.971		10	61,896.637		10	70,013.207		10	78,130.973
	11	45,839.032		11	53,952.005		11	62,065.671		11	70,182.327		11	78,300.093
23	0	46,008.014	27	0	54,121.040	31	0	62,234.706	35	0	70,351.447	39	0	78,469.213
	1	46,176.995		1	54,290.075		1	62,403.741		1	70,520.567		1	78,638.333
	2	46,345.977		2	54,459.109		2	62,572.775		2	70,689.687		2	78,807.453
	3	46,514.958		3	54,628.144		3	62,741.810		3	70,858.807		3	78,976.573
	4	46,683.939		4	54,797.179		4	62,910.845		4	71,027.927		4	79,145.693
	5	46,852.921		5	54,966.214		5	63,079.880		5	71,197.048		5	79,314.813
	6	47,021.902		6	55,135.248		6	63,248.914		6	71,366.168		6	79,483.933
	7	47,190.884		7	55,304.283		7	63,417.949		7	71,535.288		7	79,653.054
	8	47,359.865		8	55,473.318		8	63,586.984		8	71,704.408		8	79,822.174
	9	47,528.846		9	55,642.352		9	63,756.018		9	71,873.528		9	79,991.294
	10	47,697.828		10	55,811.387		10	63,925.053		10	72,042.648		10	80,160.414
	11	47,866.809		11	55,980.422		11	64,094.088		11	72,211.768		11	80,329.534

SF - Safe Fill Height @ 40' 11"

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Fractions

1/16	10.561336	9/16	95.052027
1/8	21.122673	5/8	105.613364
3/16	31.684009	11/16	116.174700
1/4	42.245345	3/4	126.736036
5/16	52.806682	13/16	137.297373
3/8	63.368018	7/8	147.858709
7/16	73.929355	15/16	158.420045
1/2	84.490691	1	168.981382

Tables produced by:
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Displacement Correction (US Barrel) = 75114.8965 Kilograms / Kilograms/Cubic Metre - 100.153 Cubic Metres * 6.2898

Action Number P2190102940 - Exhibit G

Imperial Oil

TANK # 339

Sherwood Park, AB

750 Kg/m³ @ 15°C

Internal Floating Roof Tank - Nominal Dimensions : 120 Feet X 48 Feet

INNAGE TABLE

Ref Gauge Height - 56' 11 1/4": Located 35" from shell to Benchmark opposite Hinge												Height in Inches; Capacities in US Barrels											
40	0	80,498.654	44	0	88,619.636	48	0		52	0		56	0										
	1	80,667.841		1	88,788.823		1			1			1										
	2	80,837.028		2	88,958.010		2			2			2										
	3	81,006.216		3	89,127.197		3			3			3										
	4	81,175.403		4	89,296.384		4			4			4										
	5	81,344.590		5	89,465.571		5			5			5										
	6	81,513.777		6	89,634.758		6			6			6										
	7	81,682.964		7	89,803.945		7			7			7										
	8	81,852.151		8	89,973.133		8			8			8										
	9	82,021.338		9	90,142.320		9			9			9										
	10	82,190.525		10	90,311.507		10			10			10										
	11	SF 82,359.712		11	90,480.694		11			11			11										
41	0	82,528.900	45	0	90,649.881	49	0		53	0		57	0										
	1	82,698.087		1	90,819.068		1			1			1										
	2	82,867.274		2	90,988.255		2			2			2										
	3	83,036.461		3	91,157.442		3			3			3										
	4	83,205.648		4	91,326.629		4			4			4										
	5	83,374.835		5	91,495.817		5			5			5										
	6	83,544.022		6	91,665.004		6			6			6										
	7	83,713.209		7	91,834.191		7			7			7										
	8	83,882.396		8	92,003.378		8			8			8										
	9	84,051.584		9	92,172.565		9			9			9										
	10	84,220.771		10	92,341.752		10			10			10										
	11	84,389.958		11	92,510.939		11			11			11										
42	0	84,559.145	46	0	92,680.126	50	0		54	0		58	0										
	1	84,728.332		1	92,849.313		1			1			1										
	2	84,897.519		2	93,018.501		2			2			2										
	3	85,066.706		3	93,187.688		3			3			3										
	4	85,235.893		4	93,356.875		4			4			4										
	5	85,405.081		5	93,526.062		5			5			5										
	6	85,574.268		6	FL 93,695.249		6			6			6										
	7	85,743.455		7			7			7			7										
	8	85,912.642		8			8			8			8										
	9	86,081.829		9			9			9			9										
	10	86,251.016		10			10			10			10										
	11	86,420.203		11			11			11			11										
43	0	86,589.390	47	0		51	0		55	0		59	0										
	1	86,758.577		1			1			1			1										
	2	86,927.765		2			2			2			2										
	3	87,096.952		3			3			3			3										
	4	87,266.139		4			4			4			4										
	5	87,435.326		5			5			5			5										
	6	87,604.513		6			6			6			6										
	7	87,773.700		7			7			7			7										
	8	87,942.887		8			8			8			8										
	9	88,112.074		9			9			9			9										
	10	88,281.261		10			10			10			10										
	11	88,450.449		11			11			11			11										

SF - Safe Fill Height @ 40' 11"

FL - Foam Line Height @ 46' 6"

Page 3 of 3

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Action Number P2190102940 - Exhibit G

Imperial Oil

TANK # 339

Sherwood Park, AB

750 Kg/m3 @ 15°C

Internal Floating Roof Tank - Nominal Dimensions : 120 Feet X 48 Feet

Volumes in: US Barrels

To Increment	Incs	Gross Volume per Increment	Deadwood Volume	Net Volume	Accumulated Volume
0	1	0.000000	100.254028	100.254028	100.254028
1	1	168.739538	-63.803958	104.935580	205.189608
2	1	168.739538	-4.945067	163.794471	368.984080
8	6	168.739538	-0.031209	168.708329	1381.234056
9	1	168.739538	-0.032081	168.707457	1549.941513
10	1	168.739538	-0.069610	168.669928	1718.611441
11	1	168.739538	-0.079857	168.659682	1887.271123
12	1	168.739538	-0.085747	168.653791	2055.924914
14	2	168.739538	-0.138173	168.601365	2393.127644
15	1	168.739538	-0.138350	168.601188	2561.728832
18	3	168.739538	-0.084283	168.655255	3067.694598
19	1	168.739538	-0.136614	168.602925	3236.297523
20	1	168.739538	-0.058783	168.680755	3404.978277
24	4	168.739538	-0.051708	168.687830	4079.729598
30	6	168.739538	-0.015461	168.724077	5092.074060
31	1	168.739538	-0.005214	168.734324	5260.808384
38	7	168.739538	0.000676	168.740214	6441.989886
42	4	168.739538	-31.496556	137.242982	6990.961814
58	16	168.739538	-31.498283	137.241255	9186.821898
96	38	168.739538	-0.001051	168.738488	15598.884427
192	96	168.904106	-0.001051	168.903056	31813.577788
288	96	168.982432	-0.001051	168.981382	48035.790434
384	96	169.035760	-0.001051	169.034710	64263.122582
480	96	169.121172	-0.001051	169.120121	80498.654221
574	94	169.188164	-0.001051	169.187113	96402.242880

Tables produced by:
Nextgen Industrial Services Inc.
(306) 596-8330
www.nextgenis.net



Imperial Oil
Sherwood Park, AB

General Information

Tank Number	339
Date of Strapping Data	11/27/2019
Year Built	
Product in Service	Gasoline
Product Service Density	0.750 g/cc (SG)

Tank Dimensions

Nominal Diameter	120 Feet
Nominal Height	48 Feet
Measured Tank Height	14.600 Metres
Tank Tilt	0 Millimetres
Gauge Point Information	Benchmark opposite side of Hinge
Reference Gauge Height	56" 11-1/4" 17.355 Metres
Horizontal To Gauge	35 Inches

Roof & Bottom Survey

Roof Type	Internal Floating
Floating Roof Shape	Angled Pontoon
Floating Roof Weight	165,600 Pounds 75114.9 Kilograms
Roof Landed Height	38 Inches
Roof Full Floating Height	58 Inches
Bottom Description	Physical Survey

Report Constraints

Main Increment	Inches
Main Volume	US Barrels
Product at Strapping	empty
Product Strap Density	1 g/cc (SG)
Liquid Height at Strap	N/A
Safe Fill Height	40' 11"
Foamline	46' 6" 14.183 Metres

Imperial Oil
Sherwood Park, AB

Strap Correction to 60°F

Shell Temperature (°F)	10.4	Master Tape Serial
Shell Material	Carbon Steel	Master Tape Span
Shell Expansion (per Foot)	0.000006450	Master Tape Tension

Certified Tape Factor	1
Tape Correction Factor	$1 + ('Shell\ Temperature' - 68) 'Tape\ Expansion'$
Shell Correction Factor	$1 + (60 - 'Shell\ Temperature') 'Shell\ Expansion'$

Correction Summary

Certified Tape Factor * Tape Correction Factor * Shell Correction Factor
Correction Factor = 0.99994828

Course	Strap Circumference Metres	Converted Circumference (Feet)	Tape Rise (Feet)	Corrected Strap Circumference (Feet)
1	115.330	378.379	0.001	378.359
2	115.330	378.379	0.001	378.359
3	115.330	378.379	0.001	378.359
4	115.330	378.379	0.001	378.359
5	115.330	378.379	0.001	378.359
6	115.330	378.379	0.001	378.359

Optical Circumference Corrections

Course	Average Optical Offset Millimetres	Difference Millimetres	Correction Millimetres	Corrected Circumference Metres	Corrected Circumference (Feet)
1	506.188	0.000	0.000	115.324	378.359
2	505.844	-0.344	2.160	115.326	378.366
3	505.719	-0.469	2.945	115.327	378.369
4	509.250	3.063	-19.242	115.305	378.296
5	508.406	2.219	-13.941	115.310	378.313
6	508.563	2.375	-14.923	115.309	378.310

Imperial Oil
Sherwood Park, AB

Tank Measurements

Course	Strap (Feet)	Plate Thickness	Course Height	Accumulated Total
1	378.359	0.750 Inches	8.000 Feet	8.000 Feet
2	378.366	0.500 Inches	8.000 Feet	16.000 Feet
3	378.369	0.438 Inches	8.000 Feet	24.000 Feet
4	378.296	0.313 Inches	8.000 Feet	32.000 Feet
5	378.313	0.313 Inches	8.000 Feet	40.000 Feet
6	378.310	0.313 Inches	8.000 Feet	48.000 Feet

Tank Construction

Course	Course Fit/Join	Plates per Course	Width of Tape Rise	Depth of Tape Rise
1	Butt Weld	12	0.750 Inches	1.000 Millimetres
2	Butt Weld	12	0.750 Inches	1.000 Millimetres
3	Butt Weld	12	0.750 Inches	1.000 Millimetres
4	Butt Weld	12	0.750 Inches	1.000 Millimetres
5	Butt Weld	12	0.750 Inches	1.000 Millimetres
6	Butt Weld	12	0.750 Inches	1.000 Millimetres

Imperial Oil
Sherwood Park, AB

Circumference Corrected to Empty Tank Basis

$$\frac{-W * H * C^2}{2 * \pi * E * T} \quad (\text{Correction in Feet}) \quad \text{Or} \quad \frac{-K (G * H * C^2)}{T} \quad (\text{Correction in Inches})$$

Where :

$$K = \frac{W}{24 * \pi * E} = 0.000000028492394$$

G = Observed Density of Liquid in tank.

H = height of liquid above strap, in feet.

C = measured circumference, in feet.

T = thickness of shell material, in inches.

W = weight of liquid, in pounds per cubic foot.

E = modulus of elasticity of shell material.

Correction Summary

Course	Product Weight (Lb/Ft3)	Density	Liquid Height (Feet)	Corrected Circumference (Feet)	Plate Thickness (Inches)	Empty Tank Corrected (Feet)
1.00	62.428	1.000	0	378.359	0.750	0
2.00	62.428	1.000	0	378.366	0.500	0
3.00	62.428	1.000	0	378.369	0.438	0
4.00	62.428	1.000	0	378.296	0.313	0
5.00	62.428	1.000	0	378.313	0.313	0
6.00	62.428	1.000	0	378.310	0.313	0

Imperial Oil
Sherwood Park, AB

Circumference Deduction for Tape Rises

Butt Strap Correction (In Feet)

$$= \frac{(2 * N * T * W)}{(12 * D)} + \frac{(8 * N * T)}{(12 * 3)} * \sqrt{T/D}$$

Lap Joint Correction (In Feet)

$$= \frac{(4 * N * T)}{(12 * 3)} * \sqrt{T/(2 * D)}$$

Where :

N = number of butt straps or projections per course

T = thickness of straps or projections (in inches)

W = width of straps or projections (in inches)

D = nominal diameter of tank (in inches)

Circumference Deduction for Shell Thickness

$$= \frac{(\pi * T)}{6} \quad (\text{Correction In Feet})$$

Where :

T = thickness of shell material (In Inches)

Summary of Circumference Deductions

Course	Temperature Compensated Circumference	Empty Tank (Feet)	Tape Rise (Feet)	Plate Thickness (Feet)	Inside Circumference (Feet)
1	378.359	0.000	0.001	0.393	377.966
2	378.366	0.000	0.001	0.262	378.104
3	378.369	0.000	0.001	0.229	378.140
4	378.296	0.000	0.001	0.164	378.132
5	378.313	0.000	0.001	0.164	378.150
6	378.310	0.000	0.001	0.164	378.147

Imperial Oil
Sherwood Park, AB

Incremental Volume Per Course

Liquid Head Stress Correction (In Feet)

$$= \frac{K (G * H * C^2)}{T}$$

Incremental Volume (in Cubic Feet)

$$= (C / \pi / 2)^2 * (\pi / 12)$$

Where :

G = tank Service Density.

H = height of liquid (between strap & top of course), in feet.

C = circumference, in feet.

T = thickness of shell material, in inches.

Incremental Volume Per Course

Course	Inside Circumference (Feet)	Liquid Head Stress (Feet)	Stressed Circumference (Feet)	US Barrel Per Inch
1	377.966	0.011	377.977	168.742
2	378.104	0.024	378.129	168.877
3	378.140	0.028	378.168	168.912
4	378.132	0.039	378.171	168.915
5	378.150	0.039	378.189	168.931
6	378.147	0.039	378.186	168.928

Imperial Oil
Sherwood Park, AB

Liquid Head Corrections

Volumetric Increase per Course

$$= \frac{H}{T} \times \frac{K}{F}$$

Where :

H = Course Height (in inches)

T = Plate Thickness (in inches)

$$K = \frac{\pi \times W \times G \times D^3}{4 \times E}$$

W = weight of liquid, in pounds per cubic foot.

G = Specific Gravity of product to be stored.

D = Inside Diameter of the Course.

E = modulus of elasticity of shell material.

F = desired volume conversion (cubic inch per unit volume)

eg. 231 to US Gallons, 61.023744 to Litres

Gross Volume per Chart Increment

Course	US Barrel Per Inch	Volume Correction US Barrel	Incremental Correction US Barrel	Gross Volume @ 60°F	Gross Volume @ 59 °F 0.9999871
1	168.742	0.029	0.000	168.742	168.740
2	168.877	0.044	0.029	168.906	168.904
3	168.912	0.050	0.073	168.985	168.982
4	168.915	0.070	0.123	169.038	169.036
5	168.931	0.070	0.193	169.123	169.121
6	168.928	0.000	0.262	169.190	169.188

Action Number P2190102940 - Exhibit G



CO-OP Refinery Complex

TANK # 88-10-704

Regina, SK

735 Kg/m3 @ 15°C

Internal Floating Roof Tank - Nominal Dimensions : 150 Feet X 49.5 Feet

INNAGE TABLE

Ref Gauge Height - 53' 10-3/4"; Located 46" from shell to Tab in Hatch										Height in Inches; Capacities in Cubic Metres					
0	0	**	13.291	4	0	1,865.263	8	0	3,870.658	12	0	5,877.184	16	0	7,883.741
	1	*	31.483		1	1,907.039		1	3,912.461		1	5,918.986		1	7,925.554
	2	*	56.330		2	1,948.816		2	3,954.263		2	5,960.789		2	7,967.367
	3	*	88.378		3	1,990.593		3	3,996.066		3	6,002.592		3	8,009.181
	4	*	127.504		4	2,032.370		4	4,037.869		4	6,044.394		4	8,050.994
	5	*	168.346		5	2,074.146		5	4,079.671		5	6,086.197		5	8,092.807
	6		210.122		6	2,115.923		6	4,121.474		6	6,128.000		6	8,134.620
	7		251.897		7	2,157.700		7	4,163.276		7	6,169.802		7	8,176.434
	8		293.673		8	2,199.477		8	4,205.079		8	6,211.605		8	8,218.247
	9		335.448		9	2,241.254		9	4,246.882		9	6,253.407		9	8,260.060
	10		377.224		10	2,283.030		10	4,288.684		10	6,295.210		10	8,301.874
	11		418.999		11	2,324.807		11	4,330.487		11	6,337.013		11	8,343.687
1	0		460.774	5	0	2,366.584	9	0	4,372.290	13	0	6,378.815	17	0	8,385.500
	1		502.549		1	2,408.361		1	4,414.092		1	6,420.618		1	8,427.314
	2		544.324		2	2,450.138		2	4,455.895		2	6,462.421		2	8,469.127
	3		586.098		3	2,491.915		3	4,497.697		3	6,504.223		3	8,510.940
	4		627.843		4	2,533.692		4	4,539.500		4	6,546.026		4	8,552.753
	5		669.589		5	2,575.469		5	4,581.303		5	6,587.828		5	8,594.567
	6		711.334		6	2,617.246		6	4,623.105		6	6,629.631		6	8,636.380
	7		753.110		7	2,659.023		7	4,664.908		7	6,671.434		7	8,678.193
	8		794.885		8	2,700.801		8	4,706.711		8	6,713.236		8	8,720.007
	9		836.659		9	2,742.578		9	4,748.513		9	6,755.039		9	8,761.820
	10		878.434		10	2,784.355		10	4,790.316		10	6,796.841		10	8,803.633
	11		920.210		11	2,826.132		11	4,832.118		11	6,838.644		11	8,845.447
2	0		961.985	6	0	2,867.909	10	0	4,873.921	14	0	6,880.447	18	0	8,887.260
	1		1,003.760		1	2,909.686		1	4,915.724		1	6,922.249		1	8,929.073
	2		1,045.535		2	2,951.463		2	4,957.526		2	6,964.052		2	8,970.887
	3		1,087.311		3	2,993.240		3	4,999.329		3	7,005.855		3	9,012.700
	4		1,129.086		4	3,035.017		4	5,041.131		4	7,047.657		4	9,054.513
	5		1,170.862		5	3,076.794		5	5,082.934		5	7,089.460		5	9,096.326
	6		1,212.637		6	3,118.573		6	5,124.737		6	7,131.262		6	9,138.140
	7		1,254.414		7	3,160.352		7	5,166.539		7	7,173.065		7	9,179.953
	8		1,296.191		8	3,202.130		8	5,208.342		8	7,214.868		8	9,221.766
	9		1,337.968		9	3,243.909		9	5,250.145		9	7,256.670		9	9,263.580
	10		1,379.745		10	3,285.688		10	5,291.947		10	7,298.473		10	9,305.393
	11		1,421.522		11	3,327.467		11	5,333.750		11	7,340.276		11	9,347.206
3	0		1,463.299	7	0	3,369.245	11	0	5,375.552	15	0	7,382.078	19	0	9,389.020
	1		1,505.076		1	3,411.024		1	5,417.355		1	7,423.881		1	9,430.833
	2		1,546.853		2	3,452.803		2	5,459.158		2	7,465.683		2	9,472.646
	3		1,588.630		3	3,494.581		3	5,500.960		3	7,507.486		3	9,514.459
	4		1,630.407		4	3,536.360		4	5,542.763		4	7,549.289		4	9,556.273
	5		1,672.183		5	3,578.139		5	5,584.566		5	7,591.091		5	9,598.086
	6		1,699.766		6	3,619.918		6	5,626.368		6	7,632.894		6	9,639.899
	7		1,727.349		7	3,661.696		7	5,668.171		7	7,674.697		7	9,681.713
	8		1,754.932		8	3,703.475		8	5,709.973		8	7,716.499		8	9,723.526
	9		1,782.514		9	3,745.254		9	5,751.776		9	7,758.302		9	9,765.339
	10		1,810.097		10	3,787.053		10	5,793.579		10	7,800.114		10	9,807.153
	11		1,837.680		11	3,828.856		11	5,835.381		11	7,841.927		11	9,848.966

** Volume Below Strike Point. Located 4.5" Above intersection of shell & bottom.

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* Bottom volume based on Physical Survey Calculation. Average Inches not applicable

Volumes reflect a Shell Temperature of 15°C

SF - Safe Fill Height @ 46'

FL - Foam Line Height @ 48'

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Action Number P2190102940 - Exhibit G



CO-OP Refinery Complex

TANK # 88-10-704

Regina, SK

735 Kg/m³ @ 15°C

Internal Floating Roof Tank - Nominal Dimensions : 150 Feet X 49.5 Feet

INNAGE TABLE

Ref Gauge Height - 53' 10-3/4"; Located 46" from shell to Tab in Hatch											Height in Inches; Capacities in Cubic Metres										
20	0	9,890.779	24	0	11,897.918	28	0	13,906.704	32	0	15,915.538	36	0	17,925.122							
	1	9,932.592		1	11,939.768		1	13,948.554		1	15,957.404		1	17,966.989							
	2	9,974.406		2	11,981.618		2	13,990.403		2	15,999.271		2	18,008.855							
	3	10,016.219		3	12,023.467		3	14,032.253		3	16,041.137		3	18,050.721							
	4	10,058.032		4	12,065.317		4	14,074.103		4	16,083.003		4	18,092.588							
	5	10,099.846		5	12,107.167		5	14,115.953		5	16,124.870		5	18,134.454							
	6	10,141.659		6	12,149.017		6	14,157.802		6	16,166.736		6	18,176.320							
	7	10,183.472		7	12,190.866		7	14,199.652		7	16,208.602		7	18,218.187							
	8	10,225.286		8	12,232.716		8	14,241.502		8	16,250.469		8	18,260.053							
	9	10,267.099		9	12,274.566		9	14,283.351		9	16,292.335		9	18,301.919							
	10	10,308.912		10	12,316.415		10	14,325.201		10	16,334.201		10	18,343.786							
	11	10,350.725		11	12,358.265		11	14,367.051		11	16,376.068		11	18,385.652							
21	0	10,392.539	25	0	12,400.115	29	0	14,408.900	33	0	16,417.934	37	0	18,427.518							
	1	10,434.352		1	12,441.965		1	14,450.750		1	16,459.800		1	18,469.385							
	2	10,476.165		2	12,483.814		2	14,492.600		2	16,501.667		2	18,511.251							
	3	10,517.979		3	12,525.664		3	14,534.450		3	16,543.533		3	18,553.117							
	4	10,559.792		4	12,567.514		4	14,576.299		4	16,585.399		4	18,594.984							
	5	10,601.605		5	12,609.363		5	14,618.149		5	16,627.266		5	18,636.850							
	6	10,643.419		6	12,651.213		6	14,659.999		6	16,669.132		6	18,678.716							
	7	10,685.232		7	12,693.063		7	14,701.848		7	16,710.998		7	18,720.583							
	8	10,727.045		8	12,734.912		8	14,743.698		8	16,752.865		8	18,762.449							
	9	10,768.858		9	12,776.762		9	14,785.548		9	16,794.731		9	18,804.315							
	10	10,810.672		10	12,818.612		10	14,827.397		10	16,836.597		10	18,846.182							
	11	10,852.485		11	12,860.462		11	14,869.247		11	16,878.464		11	18,888.048							
22	0	10,894.298	26	0	12,902.311	30	0	14,911.097	34	0	16,920.330	38	0	18,929.914							
	1	10,936.112		1	12,944.161		1	14,952.947		1	16,962.196		1	18,971.781							
	2	10,977.925		2	12,986.011		2	14,994.796		2	17,004.063		2	19,013.647							
	3	11,019.738		3	13,027.860		3	15,036.646		3	17,045.929		3	19,055.513							
	4	11,061.552		4	13,069.710		4	15,078.496		4	17,087.795		4	19,097.380							
	5	11,103.365		5	13,111.560		5	15,120.345		5	17,129.662		5	19,139.246							
	6	11,145.178		6	13,153.409		6	15,162.195		6	17,171.528		6	19,181.112							
	7	11,186.991		7	13,195.259		7	15,204.045		7	17,213.394		7	19,222.979							
	8	11,228.805		8	13,237.109		8	15,245.894		8	17,255.261		8	19,264.845							
	9	11,270.618		9	13,278.959		9	15,287.744		9	17,297.127		9	19,306.711							
	10	11,312.431		10	13,320.808		10	15,329.594		10	17,338.994		10	19,348.578							
	11	11,354.245		11	13,362.658		11	15,371.444		11	17,380.860		11	19,390.444							
23	0	11,396.058	27	0	13,404.508	31	0	15,413.293	35	0	17,422.726	39	0	19,432.311							
	1	11,437.871		1	13,446.357		1	15,455.143		1	17,464.593		1	19,474.177							
	2	11,479.685		2	13,488.207		2	15,496.993		2	17,506.459		2	19,516.043							
	3	11,521.498		3	13,530.057		3	15,538.842		3	17,548.325		3	19,557.910							
	4	11,563.311		4	13,571.906		4	15,580.692		4	17,590.192		4	19,599.776							
	5	11,605.124		5	13,613.756		5	15,622.542		5	17,632.058		5	19,641.642							
	6	11,646.938		6	13,655.606		6	15,664.391		6	17,673.924		6	19,683.509							
	7	11,688.751		7	13,697.456		7	15,706.241		7	17,715.791		7	19,725.375							
	8	11,730.564		8	13,739.305		8	15,748.091		8	17,757.657		8	19,767.241							
	9	11,772.378		9	13,781.155		9	15,789.941		9	17,799.523		9	19,809.108							
	10	11,814.219		10	13,823.005		10	15,831.805		10	17,841.390		10	19,850.974							
	11	11,856.069		11	13,864.854		11	15,873.672		11	17,883.256		11	19,892.840							

Fractions

1/16	2.613331	9/16	23.519982
1/8	5.226663	5/8	26.133313
3/16	7.839994	11/16	28.746644
1/4	10.453325	3/4	31.359976
5/16	13.066657	13/16	33.973307
3/8	15.679988	7/8	36.586638
7/16	18.293319	15/16	39.199970
1/2	20.906650	1	41.813301

SF - Safe Fill Height @ 46'
FL - Foam Line Height @ 48'

Page 2 of 3

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Action Number P2190102940 - Exhibit G



CO-OP Refinery Complex

TANK # 88-10-704

Regina, SK

735 Kg/m³ @ 15°C

Internal Floating Roof Tank - Nominal Dimensions : 150 Feet X 49.5 Feet

INNAGE TABLE

Ref Gauge Height - 53' 10-3/4"; Located 46" from shell to Tab in Hatch											Height in Inches; Capacities in Cubic Metres										
40	0	19,934.707	44	0	21,944.799	48	0	FL	23,954.963	52	0		56	0							
	1	19,976.573		1	21,986.677		1				1			1							
	2	20,018.439		2	22,028.556		2				2			2							
	3	20,060.306		3	22,070.434		3				3			3							
	4	20,102.172		4	22,112.313		4				4			4							
	5	20,144.038		5	22,154.191		5				5			5							
	6	20,185.905		6	22,196.070		6				6			6							
	7	20,227.784		7	22,237.948		7				7			7							
	8	20,269.662		8	22,279.826		8				8			8							
	9	20,311.541		9	22,321.705		9				9			9							
	10	20,353.419		10	22,363.583		10				10			10							
	11	20,395.297		11	22,405.462		11				11			11							
41	0	20,437.176	45	0	22,447.340	49	0			53	0		57	0							
	1	20,479.054		1	22,489.219		1				1			1							
	2	20,520.933		2	22,531.097		2				2			2							
	3	20,562.811		3	22,572.975		3				3			3							
	4	20,604.690		4	22,614.854		4				4			4							
	5	20,646.568		5	22,656.732		5				5			5							
	6	20,688.446		6	22,698.611		6				6			6							
	7	20,730.325		7	22,740.489		7				7			7							
	8	20,772.203		8	22,782.367		8				8			8							
	9	20,814.082		9	22,824.246		9				9			9							
	10	20,855.960		10	22,866.124		10				10			10							
	11	20,897.839		11	22,908.003		11				11			11							
42	0	20,939.717	46	0	SF	22,949.881	50	0		54	0		58	0							
	1	20,981.595		1		22,991.760		1			1			1							
	2	21,023.474		2		23,033.638		2			2			2							
	3	21,065.352		3		23,075.516		3			3			3							
	4	21,107.231		4		23,117.395		4			4			4							
	5	21,149.109		5		23,159.273		5			5			5							
	6	21,190.987		6		23,201.152		6			6			6							
	7	21,232.866		7		23,243.030		7			7			7							
	8	21,274.744		8		23,284.909		8			8			8							
	9	21,316.623		9		23,326.787		9			9			9							
	10	21,358.501		10		23,368.665		10			10			10							
	11	21,400.380		11		23,410.544		11			11			11							
43	0	21,442.258	47	0	23,452.422	51	0			55	0		59	0							
	1	21,484.136		1	23,494.301		1				1			1							
	2	21,526.015		2	23,536.179		2				2			2							
	3	21,567.893		3	23,578.058		3				3			3							
	4	21,609.772		4	23,619.936		4				4			4							
	5	21,651.650		5	23,661.814		5				5			5							
	6	21,693.529		6	23,703.693		6				6			6							
	7	21,735.407		7	23,745.571		7				7			7							
	8	21,777.285		8	23,787.450		8				8			8							
	9	21,819.164		9	23,829.328		9				9			9							
	10	21,861.042		10	23,871.206		10				10			10							
	11	21,902.921		11	23,913.085		11				11			11							

SF - Safe Fill Height @ 46'
FL - Foam Line Height @ 48'

Page 3 of 3

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Action Number P2190102940 - Exhibit G

CO-OP Refinery Complex

TANK # 88-10-704

Regina, SK

735 Kg/m3 @ 15°C

Internal Floating Roof Tank - Nominal Dimensions : 150 Feet X 49.5 Feet

Volumes in: Cubic Metres

To Increment	Incs	Gross Volume per Increment	Deadwood Volume	Net Volume	Accumulated Volume
0	1	0.000000	13.291148	13.291148	13.291148
1	1	41.781422	-23.589110	18.192312	31.483460
2	1	41.781422	-16.934581	24.846841	56.330301
3	1	41.781422	-9.733559	32.047863	88.378164
4	1	41.781422	-2.655679	39.125743	127.503907
5	1	41.781422	-0.939144	40.842278	168.346185
7	2	41.781422	-0.005895	41.775527	251.897239
9	2	41.781422	-0.006088	41.775334	335.447908
10	1	41.781422	-0.004877	41.776545	377.224453
12	2	41.781422	-0.006582	41.774840	460.774132
15	3	41.781422	-0.006721	41.774701	586.098234
16	1	41.781422	-0.036196	41.745226	627.843461
17	1	41.781422	-0.036050	41.745372	669.588832
18	1	41.781422	-0.035854	41.745568	711.334400
20	2	41.781422	-0.006074	41.775348	794.885097
21	1	41.781422	-0.007815	41.773607	836.658704
23	2	41.781422	-0.006009	41.775413	920.209531
24	1	41.781422	-0.006189	41.775233	961.984764
26	2	41.781422	-0.006089	41.775333	1045.535431
27	1	41.781422	-0.006180	41.775242	1087.310673
30	3	41.781422	-0.005971	41.775451	1212.637025
31	1	41.781422	-0.004032	41.777390	1254.414415
33	2	41.781422	-0.004420	41.777002	1337.968418
36	3	41.781422	-0.004532	41.776890	1463.299089
38	2	41.781422	-0.004384	41.777038	1546.853166
39	1	41.781422	-0.004796	41.776626	1588.629792
41	2	41.781422	-0.004694	41.776728	1672.183247
44	3	41.781422	-14.198635	27.582787	1754.931607
45	1	41.781422	-14.198741	27.582681	1782.514288
48	3	41.781422	-14.198680	27.582743	1865.262516
60	12	41.781422	-0.004633	41.776789	2366.583986
77	17	41.781422	-0.004353	41.777069	3076.794165
93	16	41.781422	-0.002691	41.778731	3745.253856
94	1	41.801728	-0.002691	41.799036	3787.052892
189	95	41.805311	-0.002691	41.802619	7758.301743
190	1	41.815031	-0.002691	41.812340	7800.114083
285	95	41.815992	-0.002691	41.813301	11772.377666
286	1	41.844020	-0.002691	41.841329	11814.218995
381	95	41.852392	-0.002691	41.849701	15789.940583
382	1	41.867368	-0.002691	41.864676	15831.805259
485	103	41.869031	-0.002691	41.866340	20144.038293
486	1	41.869756	-0.002691	41.867065	20185.905358
591	105	41.881113	-0.002691	41.878422	24583.139622

CO-OP Refinery Complex
Regina, SK

Strap Correction to 60°F

Shell Temperature (°F)	59.0	Master Tape Serial
Shell Material	Carbon Steel	Master Tape Span
Shell Expansion (per Foot)	0.000006450	Master Tape Tension

Certified Tape Factor	1
Tape Correction Factor	$1 + ('Shell\ Temperature' - 68) \times 'Tape\ Expansion'$
Shell Correction Factor	$1 + (60 - 'Shell\ Temperature') \times 'Shell\ Expansion'$

Correction Summary

Certified Tape Factor * Tape Correction Factor * Shell Correction Factor

Correction Factor = 0.99994840

Course	Strap Circumference Metres	Converted Circumference (Feet)	Tape Rise (Feet)	Corrected Strap Circumference (Feet)
1	143.916	472.165	0.002	472.139
2	143.916	472.165	0.002	472.139
3	143.916	472.165	0.002	472.139
4	143.916	472.165	0.002	472.139
5	143.916	472.165	0.002	472.139
6	143.916	472.165	0.002	472.139

Optical Circumference Corrections

Course	Average Optical Offset Millimetres	Difference Millimetres	Correction Millimetres	Corrected Circumference Metres	Corrected Circumference (Feet)
1	583.688	0.000	0.000	143.908	472.139
2	582.531	-1.156	7.265	143.915	472.163
3	585.438	1.750	-10.996	143.897	472.103
4	581.906	-1.781	11.192	143.919	472.176
5	584.969	1.281	-8.050	143.900	472.113
6	586.938	3.250	-20.420	143.888	472.072

CO-OP Refinery Complex
Regina, SK

Tank Measurements

Course	Strap (Feet)	Plate Thickness	Course Height	Accumulated Total
1	472.139	0.875 Inches	93.150 Inches	93.150 Inches
2	472.163	0.750 Inches	95.940 Inches	189.090 Inches
3	472.103	0.625 Inches	96.140 Inches	285.230 Inches
4	472.176	0.500 Inches	95.870 Inches	381.100 Inches
5	472.113	0.375 Inches	104.84 Inches	485.940 Inches
6	472.072	0.375 Inches	105.12 Inches	591.060 Inches

Tank Construction

Course	Course Fit/Join	Plates per Course	Width of Tape Rise	Depth of Tape Rise
1	Butt Weld	14	0.625 Inches	0.080 Inches
2	Butt Weld	14	0.625 Inches	0.080 Inches
3	Butt Weld	14	0.625 Inches	0.080 Inches
4	Butt Weld	14	0.625 Inches	0.080 Inches
5	Butt Weld	14	0.625 Inches	0.080 Inches
6	Butt Weld	14	0.625 Inches	0.080 Inches

CO-OP Refinery Complex
Regina, SK

Circumference Corrected to Empty Tank Basis

$$\frac{-W * H * C^2}{2 * \pi * E * T} \quad (\text{Correction in Feet}) \quad \text{Or} \quad \frac{-K (G * H * C^2)}{T} \quad (\text{Correction in Inches})$$

Where :

$$K = \frac{W}{24 * \pi * E} = 0.000000028492394$$

G = Observed Density of Liquid in tank.

H = height of liquid above strap, in feet.

C = measured circumference, in feet.

T = thickness of shell material, in inches.

W = weight of liquid, in pounds per cubic foot.

E = modulus of elasticity of shell material.

Correction Summary

Course	Product Weight (Lb/Ft3)	Density	Liquid Height (Feet)	Corrected Circumference (Feet)	Plate Thickness (Inches)	Empty Tank Corrected (Feet)
1.00	62.428	1.000	0	472.139	0.875	0
2.00	62.428	1.000	0	472.163	0.750	0
3.00	62.428	1.000	0	472.103	0.625	0
4.00	62.428	1.000	0	472.176	0.500	0
5.00	62.428	1.000	0	472.113	0.375	0
6.00	62.428	1.000	0	472.072	0.375	0

CO-OP Refinery Complex
Regina, SK

Circumference Deduction for Tape Rises

Butt Strap Correction (In Feet)

$$= \frac{(2 * N * T * W)}{(12 * D)} + \frac{(8 * N * T)}{(12 * 3)} * \sqrt{T/D}$$

Lap Joint Correction (In Feet)

$$= \frac{(4 * N * T)}{(12 * 3)} * \sqrt{T/(2*D)}$$

Where :

N = number of butt straps or projections per course

T = thickness of straps or projections (in inches)

W = width of straps or projections (in inches)

D = nominal diameter of tank (in inches)

Circumference Deduction for Shell Thickness

$$= \frac{(\pi * T)}{6} \quad (\text{Correction In Feet})$$

Where :

T = thickness of shell material (In Inches)

Summary of Circumference Deductions

Course	Temperature Compensated Circumference	Empty Tank (Feet)	Tape Rise (Feet)	Plate Thickness (Feet)	Inside Circumference (Feet)
1	472.139	0.000	0.002	0.458	471.681
2	472.163	0.000	0.002	0.393	471.770
3	472.103	0.000	0.002	0.327	471.776
4	472.176	0.000	0.002	0.262	471.914
5	472.113	0.000	0.002	0.196	471.917
6	472.072	0.000	0.002	0.196	471.876

CO-OP Refinery Complex
Regina, SK

Incremental Volume Per Course

Liquid Head Stress Correction (In Feet)

$$= \frac{K (G * H * C^2)}{T}$$

Incremental Volume (in Cubic Feet)

$$= (C / \pi / 2)^2 * (\pi / 12)$$

Where :

G = tank Service Density.

H = height of liquid (between strap & top of course), in feet.

C = circumference, in feet.

T = thickness of shell material, in inches.

Incremental Volume Per Course

Course	Inside Circumference (Feet)	Liquid Head Stress (Feet)	Stressed Circumference (Feet)	Cubic Metres Per Inch
1	471.681	0.021	471.702	41.782
2	471.770	0.025	471.795	41.799
3	471.776	0.030	471.806	41.800
4	471.914	0.037	471.951	41.826
5	471.917	0.054	471.971	41.830
6	471.876	0.054	471.930	41.822

CO-OP Refinery Complex
Regina, SK

Liquid Head Corrections

Volumetric Increase per Course

$$= \frac{H}{T} * \frac{K}{F}$$

Where :

H = Course Height (in inches)

T = Plate Thickness (in inches)

$$K = \frac{\pi * W * G * D^3}{4 * E}$$

W = weight of liquid, in pounds per cubic foot.

G = Specific Gravity of product to be stored.

D = Inside Diameter of the Course.

E = modulus of elasticity of shell material.

F = desired volume conversion (cubic inch per unit volume)

eg. 231 to US Gallons, 61.023744 to Litres

Gross Volume per Chart Increment

Course	Cubic Metres Per Inch	Volume Correction Cubic Metres	Incremental Correction Cubic Metres	Gross Volume @ 60°F	Gross Volume @ 59 °F 0.9999871
1	41.782	0.007	0.000	41.782	41.781
2	41.799	0.009	0.007	41.806	41.805
3	41.800	0.011	0.016	41.817	41.816
4	41.826	0.013	0.027	41.853	41.852
5	41.830	0.019	0.040	41.870	41.869
6	41.822	0.000	0.059	41.882	41.881

Action Number P2190102940 - Exhibit G

Shell Canada

TANK # 9202

Sherwood Park Terminal

715 Kg/m3 @ 15°C

Internal Floating Roof Tank - Nominal Dimensions : 40.2 Metres X 14.63 Metres

INNAGE TABLE

Reference Gauge Height - 15.573 Metres; Located 1.340 Metres to Rim of Gauge Window										Height in Centimetres; Capacity in Cubic Metres		
.00**	1.480	.50	558.898	1.00	1,193.798	1.50	1,809.683	2.00	2,444.634	2.50	3,079.643	
.01*	2.825	.51	571.592	1.01	1,206.497	1.51	1,822.382	2.01	2,457.333	2.51	3,092.350	
.02*	5.015	.52	584.286	1.02	1,219.197	1.52	1,835.081	2.02	2,470.032	2.52	3,105.057	
.03*	8.179	.53	596.979	1.03	1,231.896	1.53	1,847.780	2.03	2,482.731	2.53	3,117.764	
.04*	12.575	.54	609.673	1.04	1,244.595	1.54	1,860.479	2.04	2,495.430	2.54	3,130.471	
.05*	18.049	.55	622.367	1.05	1,257.294	1.55	1,873.178	2.05	2,508.129	2.55	3,143.178	
.06*	24.536	.56	635.061	1.06	1,269.994	1.56	1,885.877	2.06	2,520.828	2.56	3,155.885	
.07*	31.990	.57	647.755	1.07	1,282.693	1.57	1,898.576	2.07	2,533.527	2.57	3,168.592	
.08*	40.328	.58	660.449	1.08	1,294.598	1.58	1,911.275	2.08	2,546.226	2.58	3,181.299	
.09*	49.444	.59	673.143	1.09	1,306.502	1.59	1,923.974	2.09	2,558.925	2.59	3,194.006	
.10*	59.218	.60	685.837	1.10	1,318.407	1.60	1,936.673	2.10	2,571.624	2.60	3,206.713	
.11*	69.594	.61	698.531	1.11	1,330.311	1.61	1,949.372	2.11	2,584.323	2.61	3,219.420	
.12*	80.443	.62	711.230	1.12	1,342.216	1.62	1,962.071	2.12	2,597.022	2.62	3,232.128	
.13*	91.762	.63	723.929	1.13	1,354.121	1.63	1,974.770	2.13	2,609.721	2.63	3,244.833	
.14*	103.478	.64	736.628	1.14	1,366.025	1.64	1,987.469	2.14	2,622.420	2.64	3,257.540	
.15*	115.560	.65	749.327	1.15	1,377.930	1.65	2,000.168	2.15	2,635.119	2.65	3,270.247	
.16*	127.871	.66	762.026	1.16	1,389.834	1.66	2,012.867	2.16	2,647.818	2.66	3,282.954	
.17*	140.334	.67	774.725	1.17	1,401.739	1.67	2,025.566	2.17	2,660.517	2.67	3,295.661	
.18*	152.899	.68	787.424	1.18	1,413.643	1.68	2,038.265	2.18	2,673.216	2.68	3,308.368	
.19*	165.527	.69	800.123	1.19	1,425.548	1.69	2,050.964	2.19	2,685.915	2.69	3,321.075	
.20*	178.191	.70	812.822	1.20	1,437.452	1.70	2,063.663	2.20	2,698.614	2.70	3,333.782	
.21*	190.874	.71	825.521	1.21	1,449.357	1.71	2,076.362	2.21	2,711.313	2.71	3,346.489	
.22	203.557	.72	838.220	1.22	1,461.261	1.72	2,089.061	2.22	2,724.012	2.72	3,359.196	
.23	216.240	.73	850.919	1.23	1,473.166	1.73	2,101.760	2.23	2,736.711	2.73	3,371.903	
.24	228.925	.74	863.618	1.24	1,485.070	1.74	2,114.459	2.24	2,749.410	2.74	3,384.609	
.25	241.610	.75	876.317	1.25	1,496.974	1.75	2,127.158	2.25	2,762.109	2.75	3,397.316	
.26	254.296	.76	889.016	1.26	1,508.879	1.76	2,139.857	2.26	2,774.808	2.76	3,410.023	
.27	266.981	.77	901.715	1.27	1,520.783	1.77	2,152.556	2.27	2,787.507	2.77	3,422.730	
.28	279.667	.78	914.414	1.28	1,532.688	1.78	2,165.255	2.28	2,800.207	2.78	3,435.437	
.29	292.353	.79	927.113	1.29	1,544.592	1.79	2,177.954	2.29	2,812.906	2.79	3,448.144	
.30	305.038	.80	939.812	1.30	1,556.497	1.80	2,190.653	2.30	2,825.605	2.80	3,460.851	
.31	317.719	.81	952.511	1.31	1,568.401	1.81	2,203.352	2.31	2,838.304	2.81	3,473.558	
.32	330.412	.82	965.210	1.32	1,581.100	1.82	2,216.051	2.32	2,851.003	2.82	3,486.265	
.33	343.106	.83	977.909	1.33	1,593.799	1.83	2,228.750	2.33	2,863.702	2.83	3,498.972	
.34	355.799	.84	990.609	1.34	1,606.498	1.84	2,241.449	2.34	2,876.401	2.84	3,511.679	
.35	368.493	.85	1,003.308	1.35	1,619.197	1.85	2,254.148	2.35	2,889.100	2.85	3,524.386	
.36	381.186	.86	1,016.007	1.36	1,631.896	1.86	2,266.847	2.36	2,901.799	2.86	3,537.092	
.37	393.879	.87	1,028.707	1.37	1,644.595	1.87	2,279.547	2.37	2,914.498	2.87	3,549.799	
.38	406.573	.88	1,041.406	1.38	1,657.294	1.88	2,292.246	2.38	2,927.197	2.88	3,562.506	
.39	419.266	.89	1,054.106	1.39	1,669.993	1.89	2,304.945	2.39	2,939.896	2.89	3,575.213	
.40	431.959	.90	1,066.805	1.40	1,682.692	1.90	2,317.644	2.40	2,952.595	2.90	3,587.920	
.41	444.653	.91	1,079.504	1.41	1,695.391	1.91	2,330.343	2.41	2,965.294	2.91	3,600.627	
.42	457.347	.92	1,092.204	1.42	1,708.090	1.92	2,343.042	2.42	2,977.993	2.92	3,613.334	
.43	470.040	.93	1,104.903	1.43	1,720.789	1.93	2,355.741	2.43	2,990.695	2.93	3,626.041	
.44	482.734	.94	1,117.602	1.44	1,733.488	1.94	2,368.440	2.44	3,003.402	2.94	3,638.748	
.45	495.428	.95	1,130.302	1.45	1,746.187	1.95	2,381.139	2.45	3,016.109	2.95	3,651.455	
.46	508.122	.96	1,143.001	1.46	1,758.887	1.96	2,393.838	2.46	3,028.816	2.96	3,664.162	
.47	520.816	.97	1,155.700	1.47	1,771.586	1.97	2,406.537	2.47	3,041.523	2.97	3,676.869	
.48	533.510	.98	1,168.399	1.48	1,784.285	1.98	2,419.236	2.48	3,054.230	2.98	3,689.575	
.49	546.204	.99	1,181.099	1.49	1,796.984	1.99	2,431.935	2.49	3,066.937	2.99	3,702.282	

** Volume Below Strike Point; Located at intersection of shell & bottom.

Page 1 of 5

* Bottom volume based on Laser Scan Calculation. Average Centimetres not applicable

Volumes reflect a Shell Temperature of 15°C

Safe Fill Height / Overflow @ 13.510 Metres

A total of 19.07 Cubic Metres were deducted between 102 & 136 Centimetres based on a weight of 13635 Kilograms and a density of 715 Kg/m3. Gauged quantities above 136 Centimetres reflect this deduction but shall be adjusted for a differing specific gravity at 15°C according to the following formula (see page 2).

Action Number P2190102940 - Exhibit G

Shell Canada

TANK # 9202

Sherwood Park Terminal

715 Kg/m³ @ 15°C

Internal Floating Roof Tank - Nominal Dimensions : 40.2 Metres X 14.63 Metres

INNAGE TABLE

Reference Gauge Height - 15.573 Metres; Located 1.340 Metres to Rim of Gauge Window											
Height in Centimetres; Capacity in Cubic Metres											
3.00	3,714.989	3.50	4,350.335	4.00	4,985.681	4.50	5,621.027	5.00	6,256.453	5.50	6,892.069
3.01	3,727.696	3.51	4,363.042	4.01	4,998.388	4.51	5,633.734	5.01	6,269.165	5.51	6,904.782
3.02	3,740.403	3.52	4,375.749	4.02	5,011.095	4.52	5,646.441	5.02	6,281.877	5.52	6,917.494
3.03	3,753.110	3.53	4,388.456	4.03	5,023.802	4.53	5,659.148	5.03	6,294.590	5.53	6,930.206
3.04	3,765.817	3.54	4,401.163	4.04	5,036.509	4.54	5,671.855	5.04	6,307.302	5.54	6,942.919
3.05	3,778.524	3.55	4,413.870	4.05	5,049.216	4.55	5,684.561	5.05	6,320.014	5.55	6,955.631
3.06	3,791.231	3.56	4,426.577	4.06	5,061.923	4.56	5,697.268	5.06	6,332.727	5.56	6,968.343
3.07	3,803.938	3.57	4,439.284	4.07	5,074.629	4.57	5,709.975	5.07	6,345.439	5.57	6,981.056
3.08	3,816.645	3.58	4,451.991	4.08	5,087.336	4.58	5,722.682	5.08	6,358.151	5.58	6,993.768
3.09	3,829.352	3.59	4,464.697	4.09	5,100.043	4.59	5,735.389	5.09	6,370.864	5.59	7,006.480
3.10	3,842.058	3.60	4,477.404	4.10	5,112.750	4.60	5,748.096	5.10	6,383.576	5.60	7,019.193
3.11	3,854.765	3.61	4,490.111	4.11	5,125.457	4.61	5,760.803	5.11	6,396.288	5.61	7,031.905
3.12	3,867.472	3.62	4,502.818	4.12	5,138.164	4.62	5,773.510	5.12	6,409.001	5.62	7,044.617
3.13	3,880.179	3.63	4,515.525	4.13	5,150.871	4.63	5,786.217	5.13	6,421.713	5.63	7,057.330
3.14	3,892.886	3.64	4,528.232	4.14	5,163.578	4.64	5,798.924	5.14	6,434.425	5.64	7,070.042
3.15	3,905.593	3.65	4,540.939	4.15	5,176.285	4.65	5,811.631	5.15	6,447.138	5.65	7,082.754
3.16	3,918.300	3.66	4,553.646	4.16	5,188.992	4.66	5,824.338	5.16	6,459.850	5.66	7,095.467
3.17	3,931.007	3.67	4,566.353	4.17	5,201.699	4.67	5,837.044	5.17	6,472.562	5.67	7,108.179
3.18	3,943.714	3.68	4,579.060	4.18	5,214.406	4.68	5,849.751	5.18	6,485.275	5.68	7,120.891
3.19	3,956.421	3.69	4,591.767	4.19	5,227.112	4.69	5,862.458	5.19	6,497.987	5.69	7,133.604
3.20	3,969.128	3.70	4,604.474	4.20	5,239.819	4.70	5,875.165	5.20	6,510.699	5.70	7,146.316
3.21	3,981.835	3.71	4,617.180	4.21	5,252.526	4.71	5,887.872	5.21	6,523.412	5.71	7,159.028
3.22	3,994.541	3.72	4,629.887	4.22	5,265.233	4.72	5,900.579	5.22	6,536.124	5.72	7,171.740
3.23	4,007.248	3.73	4,642.594	4.23	5,277.940	4.73	5,913.286	5.23	6,548.836	5.73	7,184.453
3.24	4,019.955	3.74	4,655.301	4.24	5,290.647	4.74	5,925.993	5.24	6,561.549	5.74	7,197.165
3.25	4,032.662	3.75	4,668.008	4.25	5,303.354	4.75	5,938.700	5.25	6,574.261	5.75	7,209.877
3.26	4,045.369	3.76	4,680.715	4.26	5,316.061	4.76	5,951.407	5.26	6,586.973	5.76	7,222.590
3.27	4,058.076	3.77	4,693.422	4.27	5,328.768	4.77	5,964.114	5.27	6,599.686	5.77	7,235.302
3.28	4,070.783	3.78	4,706.129	4.28	5,341.475	4.78	5,976.821	5.28	6,612.398	5.78	7,248.014
3.29	4,083.490	3.79	4,718.836	4.29	5,354.182	4.79	5,989.527	5.29	6,625.110	5.79	7,260.727
3.30	4,096.197	3.80	4,731.543	4.30	5,366.889	4.80	6,002.234	5.30	6,637.823	5.80	7,273.439
3.31	4,108.904	3.81	4,744.250	4.31	5,379.595	4.81	6,014.941	5.31	6,650.535	5.81	7,286.151
3.32	4,121.611	3.82	4,756.957	4.32	5,392.302	4.82	6,027.648	5.32	6,663.247	5.82	7,298.864
3.33	4,134.318	3.83	4,769.663	4.33	5,405.009	4.83	6,040.355	5.33	6,675.960	5.83	7,311.576
3.34	4,147.024	3.84	4,782.370	4.34	5,417.716	4.84	6,053.062	5.34	6,688.672	5.84	7,324.288
3.35	4,159.731	3.85	4,795.077	4.35	5,430.423	4.85	6,065.769	5.35	6,701.384	5.85	7,337.001
3.36	4,172.438	3.86	4,807.784	4.36	5,443.130	4.86	6,078.480	5.36	6,714.097	5.86	7,349.713
3.37	4,185.145	3.87	4,820.491	4.37	5,455.837	4.87	6,091.193	5.37	6,726.809	5.87	7,362.425
3.38	4,197.852	3.88	4,833.198	4.38	5,468.544	4.88	6,103.905	5.38	6,739.521	5.88	7,375.138
3.39	4,210.559	3.89	4,845.905	4.39	5,481.251	4.89	6,116.617	5.39	6,752.234	5.89	7,387.850
3.40	4,223.266	3.90	4,858.612	4.40	5,493.958	4.90	6,129.330	5.40	6,764.946	5.90	7,400.562
3.41	4,235.973	3.91	4,871.319	4.41	5,506.665	4.91	6,142.042	5.41	6,777.658	5.91	7,413.275
3.42	4,248.680	3.92	4,884.026	4.42	5,519.372	4.92	6,154.754	5.42	6,790.371	5.92	7,425.987
3.43	4,261.387	3.93	4,896.733	4.43	5,532.078	4.93	6,167.467	5.43	6,803.083	5.93	7,438.699
3.44	4,274.094	3.94	4,909.440	4.44	5,544.785	4.94	6,180.179	5.44	6,815.795	5.94	7,451.412
3.45	4,286.801	3.95	4,922.146	4.45	5,557.492	4.95	6,192.891	5.45	6,828.508	5.95	7,464.124
3.46	4,299.507	3.96	4,934.853	4.46	5,570.199	4.96	6,205.604	5.46	6,841.220	5.96	7,476.836
3.47	4,312.214	3.97	4,947.560	4.47	5,582.906	4.97	6,218.316	5.47	6,853.932	5.97	7,489.549
3.48	4,324.921	3.98	4,960.267	4.48	5,595.613	4.98	6,231.028	5.48	6,866.645	5.98	7,502.261
3.49	4,337.628	3.99	4,972.974	4.49	5,608.320	4.99	6,243.740	5.49	6,879.357	5.99	7,514.973

Displacement = 13635 Kilograms - 19.07 Cubic Metres
Correction Kilograms/Cubic Metre

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Action Number P2190102940 - Exhibit G

Shell Canada

TANK # 9202

Sherwood Park Terminal

715 Kg/m3 @ 15°C

Internal Floating Roof Tank - Nominal Dimensions : 40.2 Metres X 14.63 Metres

INNAGE TABLE

Reference Gauge Height - 15.573 Metres; Located 1.340 Metres to Rim of Gauge Window											
Height in Centimetres; Capacity in Cubic Metres											
6.00	7,527.686	6.50	8,163.302	7.00	8,798.919	7.50	9,434.609	8.00	10,070.391	8.50	10,706.174
6.01	7,540.398	6.51	8,176.014	7.01	8,811.631	7.51	9,447.324	8.01	10,083.107	8.51	10,718.889
6.02	7,553.110	6.52	8,188.727	7.02	8,824.343	7.52	9,460.040	8.02	10,095.823	8.52	10,731.605
6.03	7,565.823	6.53	8,201.439	7.03	8,837.056	7.53	9,472.756	8.03	10,108.538	8.53	10,744.321
6.04	7,578.535	6.54	8,214.151	7.04	8,849.768	7.54	9,485.471	8.04	10,121.254	8.54	10,757.036
6.05	7,591.247	6.55	8,226.864	7.05	8,862.480	7.55	9,498.187	8.05	10,133.970	8.55	10,769.752
6.06	7,603.960	6.56	8,239.576	7.06	8,875.193	7.56	9,510.903	8.06	10,146.685	8.56	10,782.468
6.07	7,616.672	6.57	8,252.288	7.07	8,887.905	7.57	9,523.618	8.07	10,159.401	8.57	10,795.183
6.08	7,629.384	6.58	8,265.001	7.08	8,900.617	7.58	9,536.334	8.08	10,172.116	8.58	10,807.899
6.09	7,642.097	6.59	8,277.713	7.09	8,913.330	7.59	9,549.050	8.09	10,184.832	8.59	10,820.615
6.10	7,654.809	6.60	8,290.425	7.10	8,926.042	7.60	9,561.765	8.10	10,197.548	8.60	10,833.330
6.11	7,667.521	6.61	8,303.138	7.11	8,938.754	7.61	9,574.481	8.11	10,210.263	8.61	10,846.046
6.12	7,680.234	6.62	8,315.850	7.12	8,951.467	7.62	9,587.197	8.12	10,222.979	8.62	10,858.762
6.13	7,692.946	6.63	8,328.562	7.13	8,964.179	7.63	9,599.912	8.13	10,235.695	8.63	10,871.477
6.14	7,705.658	6.64	8,341.275	7.14	8,976.891	7.64	9,612.628	8.14	10,248.410	8.64	10,884.193
6.15	7,718.371	6.65	8,353.987	7.15	8,989.604	7.65	9,625.344	8.15	10,261.126	8.65	10,896.909
6.16	7,731.083	6.66	8,366.699	7.16	9,002.316	7.66	9,638.059	8.16	10,273.842	8.66	10,909.624
6.17	7,743.795	6.67	8,379.412	7.17	9,015.028	7.67	9,650.775	8.17	10,286.557	8.67	10,922.340
6.18	7,756.508	6.68	8,392.124	7.18	9,027.740	7.68	9,663.490	8.18	10,299.273	8.68	10,935.056
6.19	7,769.220	6.69	8,404.836	7.19	9,040.453	7.69	9,676.206	8.19	10,311.989	8.69	10,947.771
6.20	7,781.932	6.70	8,417.549	7.20	9,053.165	7.70	9,688.922	8.20	10,324.704	8.70	10,960.487
6.21	7,794.645	6.71	8,430.261	7.21	9,065.877	7.71	9,701.637	8.21	10,337.420	8.71	10,973.202
6.22	7,807.357	6.72	8,442.973	7.22	9,078.590	7.72	9,714.353	8.22	10,350.136	8.72	10,985.918
6.23	7,820.069	6.73	8,455.686	7.23	9,091.302	7.73	9,727.069	8.23	10,362.851	8.73	10,998.634
6.24	7,832.782	6.74	8,468.398	7.24	9,104.014	7.74	9,739.784	8.24	10,375.567	8.74	11,011.349
6.25	7,845.494	6.75	8,481.110	7.25	9,116.727	7.75	9,752.500	8.25	10,388.283	8.75	11,024.065
6.26	7,858.206	6.76	8,493.823	7.26	9,129.439	7.76	9,765.216	8.26	10,400.998	8.76	11,036.781
6.27	7,870.919	6.77	8,506.535	7.27	9,142.151	7.77	9,777.931	8.27	10,413.714	8.77	11,049.496
6.28	7,883.631	6.78	8,519.247	7.28	9,154.864	7.78	9,790.647	8.28	10,426.430	8.78	11,062.212
6.29	7,896.343	6.79	8,531.960	7.29	9,167.580	7.79	9,803.363	8.29	10,439.145	8.79	11,074.928
6.30	7,909.056	6.80	8,544.672	7.30	9,180.296	7.80	9,816.078	8.30	10,451.861	8.80	11,087.643
6.31	7,921.768	6.81	8,557.384	7.31	9,193.011	7.81	9,828.794	8.31	10,464.576	8.81	11,100.359
6.32	7,934.480	6.82	8,570.097	7.32	9,205.727	7.82	9,841.510	8.32	10,477.292	8.82	11,113.075
6.33	7,947.193	6.83	8,582.809	7.33	9,218.443	7.83	9,854.225	8.33	10,490.008	8.83	11,125.790
6.34	7,959.905	6.84	8,595.521	7.34	9,231.158	7.84	9,866.941	8.34	10,502.723	8.84	11,138.506
6.35	7,972.617	6.85	8,608.234	7.35	9,243.874	7.85	9,879.657	8.35	10,515.439	8.85	11,151.222
6.36	7,985.330	6.86	8,620.946	7.36	9,256.590	7.86	9,892.372	8.36	10,528.155	8.86	11,163.937
6.37	7,998.042	6.87	8,633.658	7.37	9,269.305	7.87	9,905.088	8.37	10,540.870	8.87	11,176.653
6.38	8,010.754	6.88	8,646.371	7.38	9,282.021	7.88	9,917.803	8.38	10,553.586	8.88	11,189.369
6.39	8,023.467	6.89	8,659.083	7.39	9,294.737	7.89	9,930.519	8.39	10,566.302	8.89	11,202.084
6.40	8,036.179	6.90	8,671.795	7.40	9,307.452	7.90	9,943.235	8.40	10,579.017	8.90	11,214.800
6.41	8,048.891	6.91	8,684.508	7.41	9,320.168	7.91	9,955.950	8.41	10,591.733	8.91	11,227.515
6.42	8,061.604	6.92	8,697.220	7.42	9,332.884	7.92	9,968.666	8.42	10,604.449	8.92	11,240.231
6.43	8,074.316	6.93	8,709.932	7.43	9,345.599	7.93	9,981.382	8.43	10,617.164	8.93	11,252.947
6.44	8,087.028	6.94	8,722.645	7.44	9,358.315	7.94	9,994.097	8.44	10,629.880	8.94	11,265.662
6.45	8,099.740	6.95	8,735.357	7.45	9,371.031	7.95	10,006.813	8.45	10,642.596	8.95	11,278.378
6.46	8,112.453	6.96	8,748.069	7.46	9,383.746	7.96	10,019.529	8.46	10,655.311	8.96	11,291.094
6.47	8,125.165	6.97	8,760.782	7.47	9,396.462	7.97	10,032.244	8.47	10,668.027	8.97	11,303.809
6.48	8,137.877	6.98	8,773.494	7.48	9,409.177	7.98	10,044.960	8.48	10,680.743	8.98	11,316.525
6.49	8,150.590	6.99	8,786.206	7.49	9,421.893	7.99	10,057.676	8.49	10,693.458	8.99	11,329.241

Action Number P2190102940 - Exhibit G

Shell Canada

TANK # 9202

Sherwood Park Terminal

715 Kg/m³ @ 15°C

Internal Floating Roof Tank - Nominal Dimensions : 40.2 Metres X 14.63 Metres

INNAGE TABLE

Reference Gauge Height - 15.573 Metres; Located 1.340 Metres to Rim of Gauge Window											
						Height in Centimetres; Capacity in Cubic Metres					
9.00	11,341.956	9.50	11,977.739	10.00	12,613.679	10.50	13,249.728	11.00	13,885.777	11.50	14,521.827
9.01	11,354.672	9.51	11,990.455	10.01	12,626.400	10.51	13,262.449	11.01	13,898.498	11.51	14,534.548
9.02	11,367.388	9.52	12,003.170	10.02	12,639.121	10.52	13,275.170	11.02	13,911.219	11.52	14,547.269
9.03	11,380.103	9.53	12,015.886	10.03	12,651.842	10.53	13,287.891	11.03	13,923.940	11.53	14,559.990
9.04	11,392.819	9.54	12,028.601	10.04	12,664.563	10.54	13,300.612	11.04	13,936.661	11.54	14,572.711
9.05	11,405.535	9.55	12,041.317	10.05	12,677.284	10.55	13,313.333	11.05	13,949.382	11.55	14,585.432
9.06	11,418.250	9.56	12,054.033	10.06	12,690.005	10.56	13,326.054	11.06	13,962.103	11.56	14,598.153
9.07	11,430.966	9.57	12,066.748	10.07	12,702.726	10.57	13,338.775	11.07	13,974.824	11.57	14,610.873
9.08	11,443.682	9.58	12,079.464	10.08	12,715.447	10.58	13,351.496	11.08	13,987.545	11.58	14,623.594
9.09	11,456.397	9.59	12,092.180	10.09	12,728.168	10.59	13,364.217	11.09	14,000.266	11.59	14,636.315
9.10	11,469.113	9.60	12,104.895	10.10	12,740.889	10.60	13,376.938	11.10	14,012.987	11.60	14,649.036
9.11	11,481.829	9.61	12,117.611	10.11	12,753.610	10.61	13,389.659	11.11	14,025.708	11.61	14,661.757
9.12	11,494.544	9.62	12,130.327	10.12	12,766.331	10.62	13,402.380	11.12	14,038.429	11.62	14,674.478
9.13	11,507.260	9.63	12,143.042	10.13	12,779.052	10.63	13,415.101	11.13	14,051.150	11.63	14,687.199
9.14	11,519.975	9.64	12,155.758	10.14	12,791.773	10.64	13,427.822	11.14	14,063.871	11.64	14,699.920
9.15	11,532.691	9.65	12,168.474	10.15	12,804.494	10.65	13,440.543	11.15	14,076.592	11.65	14,712.641
9.16	11,545.407	9.66	12,181.189	10.16	12,817.215	10.66	13,453.264	11.16	14,089.313	11.66	14,725.362
9.17	11,558.122	9.67	12,193.905	10.17	12,829.936	10.67	13,465.985	11.17	14,102.034	11.67	14,738.083
9.18	11,570.838	9.68	12,206.621	10.18	12,842.657	10.68	13,478.706	11.18	14,114.755	11.68	14,750.804
9.19	11,583.554	9.69	12,219.336	10.19	12,855.378	10.69	13,491.427	11.19	14,127.476	11.69	14,763.525
9.20	11,596.269	9.70	12,232.052	10.20	12,868.099	10.70	13,504.148	11.20	14,140.197	11.70	14,776.246
9.21	11,608.985	9.71	12,244.771	10.21	12,880.820	10.71	13,516.869	11.21	14,152.918	11.71	14,788.967
9.22	11,621.701	9.72	12,257.492	10.22	12,893.541	10.72	13,529.590	11.22	14,165.639	11.72	14,801.688
9.23	11,634.416	9.73	12,270.213	10.23	12,906.262	10.73	13,542.311	11.23	14,178.360	11.73	14,814.409
9.24	11,647.132	9.74	12,282.934	10.24	12,918.983	10.74	13,555.032	11.24	14,191.081	11.74	14,827.130
9.25	11,659.848	9.75	12,295.655	10.25	12,931.704	10.75	13,567.753	11.25	14,203.802	11.75	14,839.851
9.26	11,672.563	9.76	12,308.376	10.26	12,944.425	10.76	13,580.474	11.26	14,216.523	11.76	14,852.572
9.27	11,685.279	9.77	12,321.097	10.27	12,957.146	10.77	13,593.195	11.27	14,229.244	11.77	14,865.293
9.28	11,697.995	9.78	12,333.818	10.28	12,969.867	10.78	13,605.916	11.28	14,241.965	11.78	14,878.014
9.29	11,710.710	9.79	12,346.539	10.29	12,982.588	10.79	13,618.637	11.29	14,254.686	11.79	14,890.735
9.30	11,723.426	9.80	12,359.260	10.30	12,995.309	10.80	13,631.358	11.30	14,267.407	11.80	14,903.456
9.31	11,736.142	9.81	12,371.981	10.31	13,008.030	10.81	13,644.079	11.31	14,280.128	11.81	14,916.177
9.32	11,748.857	9.82	12,384.702	10.32	13,020.751	10.82	13,656.800	11.32	14,292.849	11.82	14,928.898
9.33	11,761.573	9.83	12,397.423	10.33	13,033.472	10.83	13,669.521	11.33	14,305.570	11.83	14,941.619
9.34	11,774.288	9.84	12,410.144	10.34	13,046.193	10.84	13,682.242	11.34	14,318.291	11.84	14,954.340
9.35	11,787.004	9.85	12,422.864	10.35	13,058.914	10.85	13,694.963	11.35	14,331.012	11.85	14,967.061
9.36	11,799.720	9.86	12,435.585	10.36	13,071.635	10.86	13,707.684	11.36	14,343.733	11.86	14,979.782
9.37	11,812.435	9.87	12,448.306	10.37	13,084.356	10.87	13,720.405	11.37	14,356.454	11.87	14,992.503
9.38	11,825.151	9.88	12,461.027	10.38	13,097.077	10.88	13,733.126	11.38	14,369.175	11.88	15,005.224
9.39	11,837.867	9.89	12,473.748	10.39	13,109.798	10.89	13,745.847	11.39	14,381.896	11.89	15,017.945
9.40	11,850.582	9.90	12,486.469	10.40	13,122.519	10.90	13,758.568	11.40	14,394.617	11.90	15,030.666
9.41	11,863.298	9.91	12,499.190	10.41	13,135.240	10.91	13,771.289	11.41	14,407.338	11.91	15,043.387
9.42	11,876.014	9.92	12,511.911	10.42	13,147.960	10.92	13,784.010	11.42	14,420.059	11.92	15,056.108
9.43	11,888.729	9.93	12,524.632	10.43	13,160.681	10.93	13,796.731	11.43	14,432.780	11.93	15,068.829
9.44	11,901.445	9.94	12,537.353	10.44	13,173.402	10.94	13,809.452	11.44	14,445.501	11.94	15,081.550
9.45	11,914.161	9.95	12,550.074	10.45	13,186.123	10.95	13,822.173	11.45	14,458.222	11.95	15,094.271
9.46	11,926.876	9.96	12,562.795	10.46	13,198.844	10.96	13,834.894	11.46	14,470.943	11.96	15,106.992
9.47	11,939.592	9.97	12,575.516	10.47	13,211.565	10.97	13,847.615	11.47	14,483.664	11.97	15,119.713
9.48	11,952.308	9.98	12,588.237	10.48	13,224.286	10.98	13,860.336	11.48	14,496.385	11.98	15,132.434
9.49	11,965.023	9.99	12,600.958	10.49	13,237.007	10.99	13,873.057	11.49	14,509.106	11.99	15,145.155

Action Number P2190102940 - Exhibit G

Shell Canada

TANK # 9202

Sherwood Park Terminal

715 Kg/m³ @ 15°C

Internal Floating Roof Tank - Nominal Dimensions : 40.2 Metres X 14.63 Metres

INNAGE TABLE

Reference Gauge Height - 15.573 Metres; Located 1.340 Metres to Rim of Gauge Window						Height in Centimetres; Capacity in Cubic Metres				
12.00	15,157.876	12.50	15,794.114	13.00	16,430.418	13.50	17,066.722	14.00		14.50
12.01	15,170.597	12.51	15,806.840	13.01	16,443.144	13.51	17,079.448	14.01		14.51
12.02	15,183.318	12.52	15,819.566	13.02	16,455.870	13.52		14.02		14.52
12.03	15,196.039	12.53	15,832.292	13.03	16,468.596	13.53		14.03		14.53
12.04	15,208.760	12.54	15,845.018	13.04	16,481.322	13.54		14.04		14.54
12.05	15,221.481	12.55	15,857.744	13.05	16,494.048	13.55		14.05		14.55
12.06	15,234.202	12.56	15,870.470	13.06	16,506.774	13.56		14.06		14.56
12.07	15,246.923	12.57	15,883.196	13.07	16,519.500	13.57		14.07		14.57
12.08	15,259.644	12.58	15,895.922	13.08	16,532.227	13.58		14.08		14.58
12.09	15,272.365	12.59	15,908.648	13.09	16,544.953	13.59		14.09		14.59
12.10	15,285.086	12.60	15,921.374	13.10	16,557.679	13.60		14.10		14.60
12.11	15,297.807	12.61	15,934.101	13.11	16,570.405	13.61		14.11		14.61
12.12	15,310.528	12.62	15,946.827	13.12	16,583.131	13.62		14.12		14.62
12.13	15,323.249	12.63	15,959.553	13.13	16,595.857	13.63		14.13		14.63
12.14	15,335.975	12.64	15,972.279	13.14	16,608.583	13.64		14.14		14.64
12.15	15,348.701	12.65	15,985.005	13.15	16,621.309	13.65		14.15		14.65
12.16	15,361.427	12.66	15,997.731	13.16	16,634.035	13.66		14.16		14.66
12.17	15,374.153	12.67	16,010.457	13.17	16,646.761	13.67		14.17		14.67
12.18	15,386.879	12.68	16,023.183	13.18	16,659.487	13.68		14.18		14.68
12.19	15,399.605	12.69	16,035.909	13.19	16,672.213	13.69		14.19		14.69
12.20	15,412.331	12.70	16,048.635	13.20	16,684.940	13.70		14.20		14.70
12.21	15,425.057	12.71	16,061.361	13.21	16,697.666	13.71		14.21		14.71
12.22	15,437.783	12.72	16,074.088	13.22	16,710.392	13.72		14.22		14.72
12.23	15,450.509	12.73	16,086.814	13.23	16,723.118	13.73		14.23		14.73
12.24	15,463.235	12.74	16,099.540	13.24	16,735.844	13.74		14.24		14.74
12.25	15,475.962	12.75	16,112.266	13.25	16,748.570	13.75		14.25		14.75
12.26	15,488.688	12.76	16,124.992	13.26	16,761.296	13.76		14.26		14.76
12.27	15,501.414	12.77	16,137.718	13.27	16,774.022	13.77		14.27		14.77
12.28	15,514.140	12.78	16,150.444	13.28	16,786.748	13.78		14.28		14.78
12.29	15,526.866	12.79	16,163.170	13.29	16,799.474	13.79		14.29		14.79
12.30	15,539.592	12.80	16,175.896	13.30	16,812.200	13.80		14.30		14.80
12.31	15,552.318	12.81	16,188.622	13.31	16,824.926	13.81		14.31		14.81
12.32	15,565.044	12.82	16,201.348	13.32	16,837.653	13.82		14.32		14.82
12.33	15,577.770	12.83	16,214.074	13.33	16,850.379	13.83		14.33		14.83
12.34	15,590.496	12.84	16,226.801	13.34	16,863.105	13.84		14.34		14.84
12.35	15,603.222	12.85	16,239.527	13.35	16,875.831	13.85		14.35		14.85
12.36	15,615.948	12.86	16,252.253	13.36	16,888.557	13.86		14.36		14.86
12.37	15,628.675	12.87	16,264.979	13.37	16,901.283	13.87		14.37		14.87
12.38	15,641.401	12.88	16,277.705	13.38	16,914.009	13.88		14.38		14.88
12.39	15,654.127	12.89	16,290.431	13.39	16,926.735	13.89		14.39		14.89
12.40	15,666.853	12.90	16,303.157	13.40	16,939.461	13.90		14.40		14.90
12.41	15,679.579	12.91	16,315.883	13.41	16,952.187	13.91		14.41		14.91
12.42	15,692.305	12.92	16,328.609	13.42	16,964.913	13.92		14.42		14.92
12.43	15,705.031	12.93	16,341.335	13.43	16,977.640	13.93		14.43		14.93
12.44	15,717.757	12.94	16,354.061	13.44	16,990.366	13.94		14.44		14.94
12.45	15,730.483	12.95	16,366.787	13.45	17,003.092	13.95		14.45		14.95
12.46	15,743.209	12.96	16,379.514	13.46	17,015.818	13.96		14.46		14.96
12.47	15,755.935	12.97	16,392.240	13.47	17,028.544	13.97		14.47		14.97
12.48	15,768.661	12.98	16,404.966	13.48	17,041.270	13.98		14.48		14.98
12.49	15,781.388	12.99	16,417.692	13.49	17,053.996	13.99		14.49		14.99

Overflow @ 13.510 Metres

Page 5 of 5

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Action Number P2190102940 - Exhibit G

Shell Canada

TANK # 9202

Sherwood Park Terminal

715 Kg/m3 @ 15°C

Internal Floating Roof Tank - Nominal Dimensions : 40.2 Metres X 14.63 Metres

Volumes in: Cubic Metres

To Increment	Incs	Gross Volume per Increment	Deadwood Volume	Net Volume	Accumulated Volume
0	1		1.479633	1.479633	1.479633
1	1	12.699451	-11.354568	1.344883	2.824517
2	1	12.699451	-10.508684	2.190768	5.015284
3	1	12.699451	-9.535444	3.164007	8.179291
4	1	12.699451	-8.303890	4.395561	12.574852
5	1	12.699451	-7.225433	5.474018	18.048870
6	1	12.699451	-6.212630	6.486821	24.535692
7	1	12.699451	-5.245140	7.454311	31.990003
8	1	12.699451	-4.361715	8.337737	40.327739
9	1	12.699451	-3.582968	9.116483	49.444223
10	1	12.699451	-2.925720	9.773732	59.217954
11	1	12.699451	-2.323400	10.376051	69.594006
12	1	12.699451	-1.850154	10.849297	80.443303
13	1	12.699451	-1.380826	11.318626	91.761928
14	1	12.699451	-0.982882	11.716569	103.478497
15	1	12.699451	-0.617534	12.081917	115.560415
16	1	12.699451	-0.388811	12.310641	127.871056
17	1	12.699451	-0.236851	12.462600	140.333656
18	1	12.699451	-0.134448	12.565003	152.898659
19	1	12.699451	-0.071602	12.627849	165.526508
20	1	12.699451	-0.035245	12.664206	178.190714
21	1	12.699451	-0.016454	12.682997	190.873712
22	1	12.699451	-0.016442	12.683009	203.556721
23	1	12.699451	-0.016473	12.682978	216.239699
26	3	12.699451	-0.014116	12.685335	254.295704
30	4	12.699451	-0.013816	12.685635	305.038245
31	1	12.699451	-0.018874	12.680578	317.718822
35	4	12.699451	-0.005981	12.693471	368.492705
36	1	12.699451	-0.006234	12.693218	381.185923
40	4	12.699451	-0.006139	12.693313	431.959174
41	1	12.699451	-0.005893	12.693558	444.652732
45	4	12.699451	-0.005640	12.693812	495.427978
61	16	12.699451	-0.005516	12.693935	698.530946
82	21	12.699451	-0.000458	12.698993	965.209801
92	10	12.699451	-0.000057	12.699394	1092.203742
107	15	12.699451	-0.000162	12.699289	1282.693077
117	10	12.699451	-0.794867	11.904585	1401.738923
131	14	12.699451	-0.795007	11.904444	1568.401140
242	111	12.699451	-0.000427	12.699024	2977.992853
243	1	12.702608	-0.000427	12.702182	2990.695035
485	242	12.707344	-0.000427	12.706917	6065.768974
486	1	12.711673	-0.000427	12.711246	6078.480221
727	241	12.712756	-0.000427	12.712329	9142.151455
728	1	12.713420	-0.000427	12.712993	9154.864449
970	242	12.716077	-0.000427	12.715651	12232.051885
971	1	12.719277	-0.000427	12.718850	12244.770735
1213	242	12.721409	-0.000427	12.720983	15323.248516
1423	210	12.726511	-0.000427	12.726085	17995.726276
1424	1	3.817953	-0.000427	3.817527	17999.543802

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Shell Canada
Sherwood Park Terminal

General Information

Tank Number	9202
Date of Strapping Data	06/02/2019
Year Built	1982
Product in Service	CBOB (Gasoline)
Product Service Density	0.715 g/cc (SG)

Tank Dimensions

Nominal Diameter	40.200 Metres
Nominal Height	14.630 Metres
Measured Tank Height	14.630 Metres
Tank Tilt	0 Millimetres
Gauge Point Information	At Marks Inside of Radar Gauge Extension
Reference Gauge Height	15.573 Metres
Horizontal To Gauge	1.340 Metres

Roof & Bottom Survey

Roof Type	Internal Floating
Floating Roof Shape	Flat Pan
Floating Roof Weight	13635 Kilograms
Roof Landed Height	107 Centimetres
Roof Full Floating Height	131 Centimetres
Bottom Description	Liquid Calibrated

Report Constraints

Main Increment	Centimetres
Main Volume	Cubic Metres
Product at Strapping	Empty
Product Strap Density	1 g/cc (SG)
Liquid Height at Strap	
Safe Fill Height	
Overflow Or Foamline	13.510 Metres

Shell Canada
Sherwood Park Terminal

Strap Correction to 60°F

Shell Temperature (°F)	75.2	Master Tape Serial
Shell Material	Carbon Steel	Master Tape Span
Shell Expansion (per Foot)	0.000006450	Master Tape Tension

Certified Tape Factor	1
Tape Correction Factor	$1 + ('Shell\ Temperature' - 68) 'Tape\ Expansion'$
Shell Correction Factor	$1 + (60 - 'Shell\ Temperature') 'Shell\ Expansion'$

Correction Summary

Certified Tape Factor * Tape Correction Factor * Shell Correction Factor

Correction Factor = 0.99990196

Course	Strap Circumference Metres	Converted Circumference (Feet)	Tape Rise (Feet)	Corrected Strap Circumference (Feet)
1	126.336	414.488	0.000	414.447
2	126.365	414.583	0.000	414.542
3	126.379	414.628	0.000	414.587
4	126.379	414.630	0.000	414.589
5	126.388	414.660	0.000	414.620
6	126.397	414.687	0.000	414.646

Optical Circumference Corrections

Course	Average Optical Offset Millimetres	Difference Millimetres	Correction Millimetres	Corrected Circumference Metres	Corrected Circumference (Feet)
1	0.000	0.000	0.000	126.324	414.447
2	0.000	0.000	0.000	126.352	414.542
3	0.000	0.000	0.000	126.366	414.587
4	0.000	0.000	0.000	126.367	414.589
5	0.000	0.000	0.000	126.376	414.620
6	0.000	0.000	0.000	126.384	414.646

Shell Canada
Sherwood Park Terminal

Tank Measurements

Course	Strap (Feet)	Plate Thickness	Course Height	Accumulated Total
1	414.447	0.652 Inches	2.426 Metres	2.426 Metres
2	414.542	0.534 Inches	2.426 Metres	4.852 Metres
3	414.587	0.415 Inches	2.426 Metres	7.278 Metres
4	414.589	0.353 Inches	2.426 Metres	9.704 Metres
5	414.620	0.353 Inches	2.426 Metres	12.130 Metres
6	414.646	0.353 Inches	2.426 Metres	14.556 Metres

Tank Construction

Course	Course Fit/Join	Plates per Course	Width of Tape Rise	Depth of Tape Rise
1	Butt Weld	8	1.000 Inches	0.000 Millimetres
2	Butt Weld	8	1.000 Inches	0.000 Millimetres
3	Butt Weld	8	1.000 Inches	0.000 Millimetres
4	Butt Weld	8	1.000 Inches	0.000 Millimetres
5	Butt Weld	8	1.000 Inches	0.000 Millimetres
6	Butt Weld	8	1.000 Inches	0.000 Millimetres

Shell Canada
Sherwood Park Terminal

Circumference Corrected to Empty Tank Basis

$$\frac{-W * H * C^2}{2 * \pi * E * T} \quad (\text{Correction in Feet}) \quad \text{Or} \quad \frac{-K (G * H * C^2)}{T} \quad (\text{Correction in Inches})$$

Where :

$$K = \frac{W}{24 * \pi * E} = 0.000000028550919$$

G = Observed Density of Liquid in tank.

H = height of liquid above strap, in feet.

C = measured circumference, in feet.

T = thickness of shell material, in inches.

W = weight of liquid, in pounds per cubic foot.

E = modulus of elasticity of shell material.

Correction Summary

Course	Product Weight (Lb/Ft3)	Density	Liquid Height (Feet)	Corrected Circumference (Feet)	Plate Thickness (Inches)	Empty Tank Corrected (Feet)
1.00	62.428	1.000	0	414.447	0.652	0
2.00	62.428	1.000	0	414.542	0.534	0
3.00	62.428	1.000	0	414.587	0.415	0
4.00	62.428	1.000	0	414.589	0.353	0
5.00	62.428	1.000	0	414.620	0.353	0
6.00	62.428	1.000	0	414.646	0.353	0

Shell Canada
Sherwood Park Terminal

Circumference Deduction for Tape Rises

Butt Strap Correction (In Feet)

$$= \frac{(2 * N * T * W)}{(12 * D)} + \frac{(8 * N * T)}{(12 * 3)} * \sqrt{T/D}$$

Lap Joint Correction (In Feet)

$$= \frac{(4 * N * T)}{(12 * 3)} * \sqrt{T/(2*D)}$$

Where :

N = number of butt straps or projections per course

T = thickness of straps or projections (in inches)

W = width of straps or projections (in inches)

D = nominal diameter of tank (in inches)

Circumference Deduction for Shell Thickness

$$= \frac{(\pi * T)}{6} \quad (\text{Correction In Feet})$$

Where :

T = thickness of shell material (In Inches)

Summary of Circumference Deductions

Course	Temperature Compensated Circumference	Empty Tank (Feet)	Tape Rise (Feet)	Plate Thickness (Feet)	Inside Circumference (Feet)
1	414.447	0.000	0.000	0.000	414.447
2	414.542	0.000	0.000	0.000	414.542
3	414.587	0.000	0.000	0.000	414.587
4	414.589	0.000	0.000	0.000	414.589
5	414.620	0.000	0.000	0.000	414.620
6	414.646	0.000	0.000	0.000	414.646

Shell Canada
Sherwood Park Terminal

Incremental Volume Per Course

Liquid Head Stress Correction (In Feet)

$$= \frac{K (G * H * C^2)}{T}$$

Incremental Volume (in Cubic Feet)

$$= (C / \pi / 2)^2 * (\pi / 12)$$

Where :

G = tank Service Density.

H = height of liquid (between strap & top of course), in feet.

C = circumference, in feet.

T = thickness of shell material, in inches.

Incremental Volume Per Course

Course	Inside Circumference (Feet)	Liquid Head Stress (Feet)	Stressed Circumference (Feet)	Cubic Metres Per Centimetre
1	414.447	0.015	414.463	12.700
2	414.542	0.019	414.561	12.706
3	414.587	0.024	414.612	12.709
4	414.589	0.028	414.618	12.709
5	414.620	0.028	414.648	12.711
6	414.646	0.028	414.675	12.713

Shell Canada
Sherwood Park Terminal

Liquid Head Corrections

Volumetric Increase per Course

$$= \frac{H}{T} * \frac{K}{F}$$

Where :

H = Course Height (in inches)

T = Plate Thickness (in inches)

$$K = \frac{\pi * W * G * D^3}{4 * E}$$

W = weight of liquid, in pounds per cubic foot.

G = Specific Gravity of product to be stored.

D = Inside Diameter of the Course.

E = modulus of elasticity of shell material.

F = desired volume conversion (cubic inch per unit volume)

eg. 231 to US Gallons, 61.023744 to Litres

Gross Volume per Chart Increment

Course	Cubic Metres Per Centimetre	Volume Correction Cubic Metres	Incremental Correction Cubic Metres	Gross Volume @ 60°F	Gross Volume @ 59 °F 0.9999871
1	12.700	0.002	0.000	12.700	12.699
2	12.706	0.002	0.002	12.708	12.707
3	12.709	0.003	0.004	12.713	12.713
4	12.709	0.003	0.007	12.716	12.716
5	12.711	0.003	0.011	12.722	12.721
6	12.713	0.000	0.014	12.727	12.727

Action Number P2190102940 - Exhibit G

E. Gruben's Transport Ltd

TANK # 1

Tuktoyaktuk, NT

814 Kg/m3 @ 15°C

Cone Roof Tank - Nominal Dimensions : 10.21 Metres X 4.88 Metres

INNAGE TABLE

Reference Gauge Height- 5.326 Metres; 4.95 Metres to Gauge in middle of Tank						Height in Centimetres; Capacity in Litres					
.00**	1,740.727	.50	42,511.124	1.00	83,374.720	1.50	124,257.985	2.00	165,141.179	2.50	206,026.083
.01*	2,537.451	.51	43,327.731	1.01	84,192.386	1.51	125,075.651	2.01	165,958.844	2.51	206,844.015
.02*	3,352.272	.52	44,144.339	1.02	85,010.051	1.52	125,893.316	2.02	166,776.510	2.52	207,661.946
.03	4,167.815	.53	44,960.946	1.03	85,827.716	1.53	126,710.981	2.03	167,594.175	2.53	208,479.877
.04	4,983.359	.54	45,777.553	1.04	86,645.381	1.54	127,528.647	2.04	168,411.840	2.54	209,297.809
.05	5,798.902	.55	46,594.160	1.05	87,463.047	1.55	128,346.312	2.05	169,229.506	2.55	210,115.740
.06	6,614.445	.56	47,410.767	1.06	88,280.712	1.56	129,163.977	2.06	170,047.171	2.56	210,933.672
.07	7,429.989	.57	48,227.378	1.07	89,098.377	1.57	129,981.643	2.07	170,864.836	2.57	211,751.603
.08	8,245.518	.58	49,044.158	1.08	89,916.043	1.58	130,799.308	2.08	171,682.502	2.58	212,569.534
.09	9,061.617	.59	49,860.937	1.09	90,733.708	1.59	131,616.973	2.09	172,500.167	2.59	213,387.466
.10	9,877.715	.60	50,677.717	1.10	91,551.373	1.60	132,434.638	2.10	173,317.832	2.60	214,205.397
.11	10,693.645	.61	51,494.497	1.11	92,369.039	1.61	133,252.304	2.11	174,135.498	2.61	215,023.328
.12	11,509.575	.62	52,311.277	1.12	93,186.704	1.62	134,069.969	2.12	174,953.163	2.62	215,841.260
.13	12,325.437	.63	53,128.057	1.13	94,004.369	1.63	134,887.634	2.13	175,770.828	2.63	216,659.191
.14	13,141.299	.64	53,944.836	1.14	94,822.034	1.64	135,705.300	2.14	176,588.493	2.64	217,477.123
.15	13,956.970	.65	54,761.616	1.15	95,639.700	1.65	136,522.965	2.15	177,406.159	2.65	218,295.054
.16	14,772.642	.66	55,578.396	1.16	96,457.365	1.66	137,340.630	2.16	178,223.824	2.66	219,112.985
.17	15,588.858	.67	56,395.176	1.17	97,275.030	1.67	138,158.296	2.17	179,041.489	2.67	219,930.917
.18	16,405.074	.68	57,211.956	1.18	98,092.696	1.68	138,975.961	2.18	179,859.155	2.68	220,748.848
.19	17,221.289	.69	58,028.735	1.19	98,910.361	1.69	139,793.626	2.19	180,676.820	2.69	221,566.779
.20	18,037.505	.70	58,845.515	1.20	99,728.026	1.70	140,611.291	2.20	181,494.485	2.70	222,384.711
.21	18,853.855	.71	59,662.295	1.21	100,545.692	1.71	141,428.957	2.21	182,312.151	2.71	223,202.642
.22	19,670.204	.72	60,479.075	1.22	101,363.357	1.72	142,246.622	2.22	183,129.816	2.72	224,020.574
.23	20,486.553	.73	61,296.779	1.23	102,181.022	1.73	143,064.287	2.23	183,947.481	2.73	224,838.505
.24	21,301.977	.74	62,114.484	1.24	102,998.688	1.74	143,881.953	2.24	184,765.146	2.74	225,656.436
.25	22,117.402	.75	62,932.188	1.25	103,816.353	1.75	144,699.618	2.25	185,582.812	2.75	226,474.368
.26	22,932.826	.76	63,749.893	1.26	104,634.018	1.76	145,517.283	2.26	186,400.477	2.76	227,292.299
.27	23,748.251	.77	64,567.597	1.27	105,451.683	1.77	146,334.949	2.27	187,218.142	2.77	228,110.231
.28	24,563.689	.78	65,385.301	1.28	106,269.349	1.78	147,152.614	2.28	188,035.808	2.78	228,928.162
.29	25,379.294	.79	66,203.006	1.29	107,087.014	1.79	147,970.279	2.29	188,853.473	2.79	229,746.093
.30	26,194.899	.80	67,020.710	1.30	107,904.679	1.80	148,787.944	2.30	189,671.138	2.80	230,564.025
.31	27,010.503	.81	67,838.415	1.31	108,722.345	1.81	149,605.610	2.31	190,488.804	2.81	231,381.956
.32	27,826.108	.82	68,656.119	1.32	109,540.010	1.82	150,423.275	2.32	191,306.469	2.82	232,199.887
.33	28,641.712	.83	69,473.823	1.33	110,357.675	1.83	151,240.940	2.33	192,124.134	2.83	233,017.819
.34	29,457.317	.84	70,291.528	1.34	111,175.341	1.84	152,058.606	2.34	192,941.799	2.84	233,835.750
.35	30,272.921	.85	71,109.232	1.35	111,993.006	1.85	152,876.271	2.35	193,759.465	2.85	234,653.682
.36	31,088.526	.86	71,926.937	1.36	112,810.671	1.86	153,693.936	2.36	194,577.130	2.86	235,471.613
.37	31,903.997	.87	72,744.641	1.37	113,628.336	1.87	154,511.602	2.37	195,394.795	2.87	236,289.544
.38	32,719.469	.88	73,562.346	1.38	114,446.002	1.88	155,329.267	2.38	196,212.461	2.88	237,107.476
.39	33,534.940	.89	74,380.050	1.39	115,263.667	1.89	156,146.932	2.39	197,030.126	2.89	237,925.407
.40	34,350.412	.90	75,197.754	1.40	116,081.332	1.90	156,964.598	2.40	197,847.791	2.90	238,743.338
.41	35,165.947	.91	76,015.459	1.41	116,898.998	1.91	157,782.263	2.41	198,665.457	2.91	239,561.270
.42	35,981.483	.92	76,833.163	1.42	117,716.663	1.92	158,599.914	2.42	199,483.122	2.92	240,379.201
.43	36,797.018	.93	77,650.868	1.43	118,534.328	1.93	159,417.565	2.43	200,300.787	2.93	241,197.133
.44	37,612.554	.94	78,468.572	1.44	119,351.994	1.94	160,235.216	2.44	201,118.495	2.94	242,015.064
.45	38,428.089	.95	79,286.276	1.45	120,169.659	1.95	161,052.867	2.45	201,936.426	2.95	242,832.995
.46	39,244.696	.96	80,103.981	1.46	120,987.324	1.96	161,870.518	2.46	202,754.358	2.96	243,650.927
.47	40,061.303	.97	80,921.685	1.47	121,804.989	1.97	162,688.183	2.47	203,572.289	2.97	244,468.858
.48	40,877.910	.98	81,739.390	1.48	122,622.655	1.98	163,505.849	2.48	204,390.221	2.98	245,286.789
.49	41,694.517	.99	82,557.055	1.49	123,440.320	1.99	164,323.514	2.49	205,208.152	2.99	246,104.721

** Volume Below Strike Point; Located at intersection of shell & bottom.

Page 1 of 2

* Bottom volume based on Liquid Calibrated Calculation. Average Centimetres not applicable

Volumes reflect a Shell Temperature of 15°C

Tables produced by:
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Action Number P2190102940 - Exhibit G

E. Gruben's Transport Ltd

TANK # 1

Tuktoyaktuk, NT

814 Kg/m³ @ 15°C

Cone Roof Tank - Nominal Dimensions : 10.21 Metres X 4.88 Metres

INNAGE TABLE

Reference Gauge Height- 5.326 Metres; 4.95 Metres to Gauge in middle of Tank								Height in Centimetres; Capacity in Litres	
3.00	246,922.652	3.50	287,819.221	4.00	328,715.790	4.50	369,612.359	5.00	5.50
3.01	247,740.584	3.51	288,637.152	4.01	329,533.721	4.51	370,430.290	5.01	5.51
3.02	248,558.515	3.52	289,455.084	4.02	330,351.653	4.52	371,248.221	5.02	5.52
3.03	249,376.446	3.53	290,273.015	4.03	331,169.584	4.53	372,066.153	5.03	5.53
3.04	250,194.378	3.54	291,090.947	4.04	331,987.515	4.54	372,884.084	5.04	5.54
3.05	251,012.309	3.55	291,908.878	4.05	332,805.447	4.55	373,702.016	5.05	5.55
3.06	251,830.240	3.56	292,726.809	4.06	333,623.378	4.56	374,519.947	5.06	5.56
3.07	252,648.172	3.57	293,544.741	4.07	334,441.310	4.57	375,337.878	5.07	5.57
3.08	253,466.103	3.58	294,362.672	4.08	335,259.241	4.58	376,155.810	5.08	5.58
3.09	254,284.035	3.59	295,180.603	4.09	336,077.172	4.59	376,973.741	5.09	5.59
3.10	255,101.966	3.60	295,998.535	4.10	336,895.104	4.60	377,791.673	5.10	5.60
3.11	255,919.897	3.61	296,816.466	4.11	337,713.035	4.61	378,609.604	5.11	5.61
3.12	256,737.829	3.62	297,634.398	4.12	338,530.966	4.62	379,427.535	5.12	5.62
3.13	257,555.760	3.63	298,452.329	4.13	339,348.898	4.63	380,245.467	5.13	5.63
3.14	258,373.691	3.64	299,270.260	4.14	340,166.829	4.64	381,063.398	5.14	5.64
3.15	259,191.623	3.65	300,088.192	4.15	340,984.761	4.65	381,881.329	5.15	5.65
3.16	260,009.554	3.66	300,906.123	4.16	341,802.692	4.66	382,699.261	5.16	5.66
3.17	260,827.486	3.67	301,724.054	4.17	342,620.623	4.67	383,517.192	5.17	5.67
3.18	261,645.417	3.68	302,541.986	4.18	343,438.555	4.68	384,335.124	5.18	5.68
3.19	262,463.348	3.69	303,359.917	4.19	344,256.486	4.69	385,153.055	5.19	5.69
3.20	263,281.280	3.70	304,177.849	4.20	345,074.417	4.70	385,970.986	5.20	5.70
3.21	264,099.211	3.71	304,995.780	4.21	345,892.349	4.71	386,788.918	5.21	5.71
3.22	264,917.142	3.72	305,813.711	4.22	346,710.280	4.72	387,606.849	5.22	5.72
3.23	265,735.074	3.73	306,631.643	4.23	347,528.212	4.73	388,424.780	5.23	5.73
3.24	266,553.005	3.74	307,449.574	4.24	348,346.143	4.74	389,242.712	5.24	5.74
3.25	267,370.937	3.75	308,267.505	4.25	349,164.074	4.75	390,060.643	5.25	5.75
3.26	268,188.868	3.76	309,085.437	4.26	349,982.006	4.76	390,878.575	5.26	5.76
3.27	269,006.799	3.77	309,903.368	4.27	350,799.937	4.77	391,696.506	5.27	5.77
3.28	269,824.731	3.78	310,721.300	4.28	351,617.868	4.78	392,514.437	5.28	5.78
3.29	270,642.662	3.79	311,539.231	4.29	352,435.800	4.79	393,332.369	5.29	5.79
3.30	271,460.593	3.80	312,357.162	4.30	353,253.731	4.80	394,150.300	5.30	5.80
3.31	272,278.525	3.81	313,175.094	4.31	354,071.663	4.81	394,968.231	5.31	5.81
3.32	273,096.456	3.82	313,993.025	4.32	354,889.594	4.82	395,786.163	5.32	5.82
3.33	273,914.388	3.83	314,810.956	4.33	355,707.525	4.83	396,604.094	5.33	5.83
3.34	274,732.319	3.84	315,628.888	4.34	356,525.457	4.84	397,422.026	5.34	5.84
3.35	275,550.250	3.85	316,446.819	4.35	357,343.388	4.85	398,239.957	5.35	5.85
3.36	276,368.182	3.86	317,264.751	4.36	358,161.319	4.86	399,057.888	5.36	5.86
3.37	277,186.113	3.87	318,082.682	4.37	358,979.251	4.87	399,875.820	5.37	5.87
3.38	278,004.045	3.88	318,900.613	4.38	359,797.182	4.88	400,693.751	5.38	5.88
3.39	278,821.976	3.89	319,718.545	4.39	360,615.114	4.89		5.39	5.89
3.40	279,639.907	3.90	320,536.476	4.40	361,433.045	4.90		5.40	5.90
3.41	280,457.839	3.91	321,354.407	4.41	362,250.976	4.91		5.41	5.91
3.42	281,275.770	3.92	322,172.339	4.42	363,068.908	4.92		5.42	5.92
3.43	282,093.701	3.93	322,990.270	4.43	363,886.839	4.93		5.43	5.93
3.44	282,911.633	3.94	323,808.202	4.44	364,704.770	4.94		5.44	5.94
3.45	283,729.564	3.95	324,626.133	4.45	365,522.702	4.95		5.45	5.95
3.46	284,547.496	3.96	325,444.064	4.46	366,340.633	4.96		5.46	5.96
3.47	285,365.427	3.97	326,261.996	4.47	367,158.565	4.97		5.47	5.97
3.48	286,183.358	3.98	327,079.927	4.48	367,976.496	4.98		5.48	5.98
3.49	287,001.290	3.99	327,897.859	4.49	368,794.427	4.99		5.49	5.99

Average Millimetres

1	81.793	6	490.759
2	163.586	7	572.552
3	245.379	8	654.345
4	327.173	9	736.138
5	408.966	10	817.931

Tables produced by:
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Cone Roof Tank - Nominal Dimensions : 10.21 Metres X 4.88 Metres

Volumes in: Litres					
To Increment	Incs	Gross Volume per Increment	Deadwood Volume	Net Volume	Accumulated Volume
0	1	0.000000	1742.799418	1740.727159	1740.727159
1	1	818.066007	-21.342529	796.723478	2537.450637
2	1	818.066007	-3.244695	814.821311	3352.271948
7	5	818.066007	-2.522653	815.543354	7429.988716
8	1	818.066007	-2.536906	815.529101	8245.517817
10	2	818.066007	-1.967286	816.098721	9877.715259
12	2	818.066007	-2.136013	815.929994	11509.575247
14	2	818.066007	-2.204177	815.861830	13141.298908
16	2	818.066007	-2.394634	815.671373	14772.641653
20	4	818.066007	-1.850058	816.215949	18037.505449
23	3	818.066007	-1.716908	816.349099	20486.552745
27	4	818.066007	-2.641508	815.424499	23748.250741
28	1	818.066007	-2.627255	815.438752	24563.689493
36	8	818.066007	-2.461441	815.604566	31088.526018
40	4	818.066007	-2.594591	815.471416	34350.411681
45	5	818.066007	-2.530482	815.535525	38428.089305
56	11	818.066007	-1.458976	816.607031	47410.766643
57	1	818.066007	-1.454921	816.611086	48227.377728
72	15	818.066007	-1.286194	816.779812	60479.074915
98	26	818.066007	-0.361594	817.704412	81739.389637
196	98	818.066007	-0.414977	817.651030	161870.517961
243	47	818.066007	-0.400704	817.665303	200300.787200
244	1	818.108579	-0.400704	817.707875	201118.495075
487	243	818.332081	-0.400704	817.931377	399875.819684
488	1	556.465815	-0.400704	556.065111	400431.884795

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E. Gruben's Transport Ltd
Tuktoyaktuk, NT

General Information

Tank Number	1
Date of Strapping Data	07/24/2019
Year Built	1972
Product in Service	Jet-A1
Product Service Density	0.814 g/cc (SG)

Tank Dimensions

Nominal Diameter	33.5 Feet
Nominal Height	16 Feet
Measured Tank Height	16.050 Feet
Tank Tilt	0 Millimetres
Gauge Point Information	Top of Benchmark in Hatch
Reference Gauge Height	5.326 Metres
Horizontal Distance To Gauge	16.25 Feet

Roof & Bottom Survey

Roof Type	Cone
Floating Roof Shape	N/A
Floating Roof Weight	N/A
Roof Landed Height	N/A
Roof Full Floating Height	N/A
Bottom Description	Laser Scan

Report Constraints

Main Increment	Centimetres
Main Volume	Litres
Product at Strapping	empty
Product Strap Density	1 g/cc (SG)
Liquid Height at Strap	N/A
Safe Fill Height	N/A
Overflow Or Foamline	N/A

E. Gruben's Transport Ltd
Tuktoyaktuk, NT

Strap Correction to 60°F

Shell Temperature (°F)	48.2	Master Tape Serial
Shell Material	Carbon Steel	Master Tape Span
Shell Expansion (per Foot)	0.000006450	Master Tape Tension

Certified Tape Factor	1
Tape Correction Factor	$1 + ('Shell\ Temperature' - 68) \times 'Tape\ Expansion'$
Shell Correction Factor	$1 + (60 - 'Shell\ Temperature') \times 'Shell\ Expansion'$

Correction Summary

Certified Tape Factor * Tape Correction Factor * Shell Correction Factor
Correction Factor = 1.00007611

Course	Strap Circumference Metres	Converted Circumference (Feet)	Tape Rise (Feet)	Corrected Strap Circumference (Feet)
1	32.059	105.181	0.000	105.189
2	32.062	105.190	0.000	105.198

Optical Circumference Corrections

Course	Average Optical Offset Millimetres	Difference Millimetres	Correction Millimetres	Corrected Circumference Metres	Corrected Circumference (Feet)
1	0.000	0.000	0.000	32.062	105.189
2	0.000	0.000	0.000	32.064	105.198

E. Gruben's Transport Ltd
Tuktoyaktuk, NT

Tank Measurements

Course	Strap (Feet)	Plate Thickness	Course Height	Accumulated Total
1	105.189	0.250 Inches	8.000 Feet	8.000 Feet
2	105.198	0.250 Inches	8.000 Feet	16.000 Feet

Tank Construction

Course	Course Fit/Join	Plates per Course	Width of Tape Rise	Depth of Tape Rise
1	Butt Weld	4	0.000 Millimetres	0.000 Millimetres
2	Butt Weld	4	0.000 Millimetres	0.000 Millimetres

E. Gruben's Transport Ltd
Tuktoyaktuk, NT

Circumference Corrected to Empty Tank Basis

$$\frac{-W * H * C^2}{2 * \pi * E * T} \quad (\text{Correction in Feet}) \quad \text{Or} \quad \frac{-K (G * H * C^2)}{T} \quad (\text{Correction in Inches})$$

Where :

$$K = \frac{W}{24 * \pi * E} = 0.000000028492394$$

G = Observed Density of Liquid in tank.

H = height of liquid above strap, in feet.

C = measured circumference, in feet.

T = thickness of shell material, in inches.

W = weight of liquid, in pounds per cubic foot.

E = modulus of elasticity of shell material.

Correction Summary

Course	Product Weight (Lb/Ft3)	Density	Liquid Height (Feet)	Corrected Circumference (Feet)	Plate Thickness (Inches)	Empty Tank Corrected (Feet)
1.00	62.428	1.000	0	105.189	0.250	0
2.00	62.428	1.000	0	105.198	0.250	0

E. Gruben's Transport Ltd
Tuktoyaktuk, NT

Circumference Deduction for Tape Rises

Butt Strap Correction (In Feet)

$$= \frac{(2 * N * T * W)}{(12 * D)} + \frac{(8 * N * T)}{(12 * 3)} * \sqrt{T/D}$$

Lap Joint Correction (In Feet)

$$= \frac{(4 * N * T)}{(12 * 3)} * \sqrt{T/(2*D)}$$

Where :

N = number of butt straps or projections per course

T = thickness of straps or projections (in inches)

W = width of straps or projections (in inches)

D = nominal diameter of tank (in inches)

Circumference Deduction for Shell Thickness

$$= \frac{(\pi * T)}{6} \quad (\text{Correction In Feet})$$

Where :

T = thickness of shell material (In Inches)

Summary of Circumference Deductions

Course	Temperature Compensated Circumference	Empty Tank (Feet)	Tape Rise (Feet)	Plate Thickness (Feet)	Inside Circumference (Feet)
1	105.189	0.000	0.000	0.000	105.189
2	105.198	0.000	0.000	0.000	105.198

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Incremental Volume Per Course

Liquid Head Stress Correction (In Feet)

$$= \frac{K (G * H * C^2)}{T}$$

Incremental Volume (in Cubic Feet)

$$= (C / \pi / 2)^2 * (\pi / 12)$$

Where :

G = tank Service Density.

H = height of liquid (between strap & top of course), in feet.

C = circumference, in feet.

T = thickness of shell material, in inches.

Incremental Volume Per Course

Course	Inside Circumference (Feet)	Liquid Head Stress (Feet)	Stressed Circumference (Feet)	Litres Per Centimetre
1	105.189	0.004	105.193	818.077
2	105.198	0.004	105.202	818.215

E. Gruben's Transport Ltd
Tuktoyaktuk, NT

Liquid Head Corrections

Volumetric Increase per Course

$$= \frac{H}{T} * \frac{K}{F}$$

Where :

H = Course Height (in inches)

T = Plate Thickness (in inches)

$$K = \frac{\pi * W * G * D^3}{4 * E}$$

W = weight of liquid, in pounds per cubic foot.

G = Specific Gravity of product to be stored.

D = Inside Diameter of the Course.

E = modulus of elasticity of shell material.

F = desired volume conversion (cubic inch per unit volume)

eg. 231 to US Gallons, 61.023744 to Litres

Gross Volume per Chart Increment

Course	Litres Per Centimetre	Volume Correction Litres	Incremental Correction Litres	Gross Volume @ 60°F	Gross Volume @ 59 °F 0.9999871
1	818.077	0.128	0.000	818.077	818.066
2	818.215	0.000	0.128	818.343	818.332

Action Number P2190102940 - Exhibit G

E. Gruben's Transport Ltd

TANK # 2

Tuktoyaktuk, NT

814 Kg/m³ @ 15°C

Cone Roof Tank - Nominal Dimensions : 10.21 Metres X 4.88 Metres

INNAGE TABLE

Reference Gauge Height- 5.003 Metres; 0.61 Metres from Shell to Gauge Point						Height in Centimetres; Capacity in Litres					
.00**	870.770	.50	41,281.684	1.00	82,120.309	1.50	122,989.582	2.00	163,858.785	2.50	204,729.456
.01*	1,492.380	.51	42,098.120	1.01	82,937.695	1.51	123,806.968	2.01	164,676.170	2.51	205,547.069
.02*	2,204.848	.52	42,914.556	1.02	83,755.080	1.52	124,624.353	2.02	165,493.555	2.52	206,364.681
.03*	2,973.326	.53	43,730.991	1.03	84,572.465	1.53	125,441.739	2.03	166,310.941	2.53	207,182.293
.04*	3,765.728	.54	44,547.427	1.04	85,389.851	1.54	126,259.124	2.04	167,128.326	2.54	207,999.906
.05*	4,570.796	.55	45,363.862	1.05	86,207.236	1.55	127,076.510	2.05	167,945.712	2.55	208,817.518
.06*	5,384.157	.56	46,180.298	1.06	87,024.622	1.56	127,893.895	2.06	168,763.097	2.56	209,635.131
.07	6,199.641	.57	46,996.738	1.07	87,842.007	1.57	128,711.281	2.07	169,580.483	2.57	210,452.743
.08	7,015.112	.58	47,813.177	1.08	88,659.393	1.58	129,528.666	2.08	170,397.868	2.58	211,270.356
.09	7,831.152	.59	48,629.617	1.09	89,476.778	1.59	130,346.052	2.09	171,215.254	2.59	212,087.968
.10	8,647.192	.60	49,446.057	1.10	90,294.164	1.60	131,163.437	2.10	172,032.639	2.60	212,905.581
.11	9,463.232	.61	50,262.497	1.11	91,111.549	1.61	131,980.823	2.11	172,850.025	2.61	213,723.193
.12	10,278.999	.62	51,078.936	1.12	91,928.935	1.62	132,798.208	2.12	173,667.410	2.62	214,540.805
.13	11,094.698	.63	51,895.376	1.13	92,746.320	1.63	133,615.594	2.13	174,484.796	2.63	215,358.418
.14	11,910.396	.64	52,711.816	1.14	93,563.706	1.64	134,432.979	2.14	175,302.181	2.64	216,176.030
.15	12,726.095	.65	53,528.255	1.15	94,381.091	1.65	135,250.364	2.15	176,119.567	2.65	216,993.643
.16	13,541.382	.66	54,344.695	1.16	95,198.477	1.66	136,067.750	2.16	176,936.952	2.66	217,811.255
.17	14,357.213	.67	55,161.135	1.17	96,015.862	1.67	136,885.135	2.17	177,754.337	2.67	218,628.868
.18	15,173.044	.68	55,977.574	1.18	96,833.247	1.68	137,702.521	2.18	178,571.723	2.68	219,446.480
.19	15,988.876	.69	56,794.014	1.19	97,650.633	1.69	138,519.906	2.19	179,389.108	2.69	220,264.092
.20	16,804.707	.70	57,610.454	1.20	98,468.018	1.70	139,337.292	2.20	180,206.494	2.70	221,081.705
.21	17,620.672	.71	58,426.893	1.21	99,285.404	1.71	140,154.677	2.21	181,023.879	2.71	221,899.317
.22	18,436.636	.72	59,243.333	1.22	100,102.789	1.72	140,972.063	2.22	181,841.265	2.72	222,716.930
.23	19,252.601	.73	60,059.773	1.23	100,920.175	1.73	141,789.448	2.23	182,658.650	2.73	223,534.542
.24	20,068.565	.74	60,876.212	1.24	101,737.560	1.74	142,606.834	2.24	183,476.036	2.74	224,352.155
.25	20,884.530	.75	61,692.652	1.25	102,554.946	1.75	143,424.219	2.25	184,293.421	2.75	225,169.767
.26	21,700.494	.76	62,509.092	1.26	103,372.331	1.76	144,241.605	2.26	185,110.807	2.76	225,987.380
.27	22,516.459	.77	63,325.531	1.27	104,189.717	1.77	145,058.990	2.27	185,928.192	2.77	226,804.992
.28	23,332.438	.78	64,141.971	1.28	105,007.102	1.78	145,876.376	2.28	186,745.578	2.78	227,622.604
.29	24,148.582	.79	64,958.411	1.29	105,824.488	1.79	146,693.761	2.29	187,562.963	2.79	228,440.217
.30	24,964.727	.80	65,774.850	1.30	106,641.873	1.80	147,511.147	2.30	188,380.349	2.80	229,257.829
.31	25,780.872	.81	66,591.290	1.31	107,459.259	1.81	148,328.532	2.31	189,197.734	2.81	230,075.442
.32	26,597.016	.82	67,407.730	1.32	108,276.644	1.82	149,145.917	2.32	190,015.120	2.82	230,893.054
.33	27,413.161	.83	68,224.169	1.33	109,094.030	1.83	149,963.303	2.33	190,832.505	2.83	231,710.667
.34	28,229.305	.84	69,041.594	1.34	109,911.415	1.84	150,780.688	2.34	191,649.890	2.84	232,528.279
.35	29,045.450	.85	69,859.019	1.35	110,728.800	1.85	151,598.074	2.35	192,467.276	2.85	233,345.892
.36	29,861.595	.86	70,676.443	1.36	111,546.186	1.86	152,415.459	2.36	193,284.661	2.86	234,163.504
.37	30,677.606	.87	71,493.868	1.37	112,363.571	1.87	153,232.845	2.37	194,102.047	2.87	234,981.116
.38	31,492.633	.88	72,311.292	1.38	113,180.957	1.88	154,050.230	2.38	194,919.432	2.88	235,798.729
.39	32,307.659	.89	73,128.717	1.39	113,998.342	1.89	154,867.616	2.39	195,736.818	2.89	236,616.341
.40	33,122.686	.90	73,946.141	1.40	114,815.728	1.90	155,685.001	2.40	196,554.203	2.90	237,433.954
.41	33,938.050	.91	74,763.566	1.41	115,633.113	1.91	156,502.387	2.41	197,371.589	2.91	238,251.566
.42	34,753.414	.92	75,580.991	1.42	116,450.499	1.92	157,319.758	2.42	198,188.974	2.92	239,069.179
.43	35,568.778	.93	76,398.415	1.43	117,267.884	1.93	158,137.129	2.43	199,006.360	2.93	239,886.791
.44	36,384.142	.94	77,215.840	1.44	118,085.270	1.94	158,954.500	2.44	199,823.781	2.94	240,704.403
.45	37,199.506	.95	78,033.264	1.45	118,902.655	1.95	159,771.871	2.45	200,641.394	2.95	241,522.016
.46	38,015.942	.96	78,850.689	1.46	119,720.041	1.96	160,589.243	2.46	201,459.006	2.96	242,339.628
.47	38,832.378	.97	79,668.114	1.47	120,537.426	1.97	161,406.628	2.47	202,276.619	2.97	243,157.241
.48	39,648.813	.98	80,485.538	1.48	121,354.812	1.98	162,224.014	2.48	203,094.231	2.98	243,974.853
.49	40,465.249	.99	81,302.924	1.49	122,172.197	1.99	163,041.399	2.49	203,911.844	2.99	244,792.466

** Volume Below Strike Point; Located at intersection of shell & bottom.

Page 1 of 2

* Bottom volume based on Liquid Calibrated Calculation. Average Centimetres not applicable

Volumes reflect a Shell Temperature of 15°C

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Action Number P2190102940 - Exhibit G

E. Gruben's Transport Ltd

TANK # 2

Tuktoyaktuk, NT

814 Kg/m3 @ 15°C

Cone Roof Tank - Nominal Dimensions : 10.21 Metres X 4.88 Metres

INNAGE TABLE

Reference Gauge Height- 5.003 Metres; 0.61 Metres from Shell to Gauge Point										Height in Centimetres; Capacity in Litres	
3.00	245,610.078	3.50	286,490.700	4.00	327,371.322	4.50	368,251.944	5.00		5.50	
3.01	246,427.691	3.51	287,308.313	4.01	328,188.935	4.51	369,069.557	5.01		5.51	
3.02	247,245.303	3.52	288,125.925	4.02	329,006.547	4.52	369,887.169	5.02		5.52	
3.03	248,062.915	3.53	288,943.537	4.03	329,824.159	4.53	370,704.782	5.03		5.53	
3.04	248,880.528	3.54	289,761.150	4.04	330,641.772	4.54	371,522.394	5.04		5.54	
3.05	249,698.140	3.55	290,578.762	4.05	331,459.384	4.55	372,340.006	5.05		5.55	
3.06	250,515.753	3.56	291,396.375	4.06	332,276.997	4.56	373,157.619	5.06		5.56	
3.07	251,333.365	3.57	292,213.987	4.07	333,094.609	4.57	373,975.231	5.07		5.57	
3.08	252,150.978	3.58	293,031.600	4.08	333,912.222	4.58	374,792.844	5.08		5.58	
3.09	252,968.590	3.59	293,849.212	4.09	334,729.834	4.59	375,610.456	5.09		5.59	
3.10	253,786.203	3.60	294,666.825	4.10	335,547.447	4.60	376,428.069	5.10		5.60	
3.11	254,603.815	3.61	295,484.437	4.11	336,365.059	4.61	377,245.681	5.11		5.61	
3.12	255,421.427	3.62	296,302.049	4.12	337,182.671	4.62	378,063.293	5.12		5.62	
3.13	256,239.040	3.63	297,119.662	4.13	338,000.284	4.63	378,880.906	5.13		5.63	
3.14	257,056.652	3.64	297,937.274	4.14	338,817.896	4.64	379,698.518	5.14		5.64	
3.15	257,874.265	3.65	298,754.887	4.15	339,635.509	4.65	380,516.131	5.15		5.65	
3.16	258,691.877	3.66	299,572.499	4.16	340,453.121	4.66	381,333.743	5.16		5.66	
3.17	259,509.490	3.67	300,390.112	4.17	341,270.734	4.67	382,151.356	5.17		5.67	
3.18	260,327.102	3.68	301,207.724	4.18	342,088.346	4.68	382,968.968	5.18		5.68	
3.19	261,144.714	3.69	302,025.337	4.19	342,905.959	4.69	383,786.581	5.19		5.69	
3.20	261,962.327	3.70	302,842.949	4.20	343,723.571	4.70	384,604.193	5.20		5.70	
3.21	262,779.939	3.71	303,660.561	4.21	344,541.183	4.71	385,421.805	5.21		5.71	
3.22	263,597.552	3.72	304,478.174	4.22	345,358.796	4.72	386,239.418	5.22		5.72	
3.23	264,415.164	3.73	305,295.786	4.23	346,176.408	4.73	387,057.030	5.23		5.73	
3.24	265,232.777	3.74	306,113.399	4.24	346,994.021	4.74	387,874.643	5.24		5.74	
3.25	266,050.389	3.75	306,931.011	4.25	347,811.633	4.75	388,692.255	5.25		5.75	
3.26	266,868.002	3.76	307,748.624	4.26	348,629.246	4.76	389,509.868	5.26		5.76	
3.27	267,685.614	3.77	308,566.236	4.27	349,446.858	4.77	390,327.480	5.27		5.77	
3.28	268,503.226	3.78	309,383.848	4.28	350,264.470	4.78	391,145.093	5.28		5.78	
3.29	269,320.839	3.79	310,201.461	4.29	351,082.083	4.79	391,962.705	5.29		5.79	
3.30	270,138.451	3.80	311,019.073	4.30	351,899.695	4.80	392,780.317	5.30		5.80	
3.31	270,956.064	3.81	311,836.686	4.31	352,717.308	4.81	393,597.930	5.31		5.81	
3.32	271,773.676	3.82	312,654.298	4.32	353,534.920	4.82	394,415.542	5.32		5.82	
3.33	272,591.289	3.83	313,471.911	4.33	354,352.533	4.83	395,233.155	5.33		5.83	
3.34	273,408.901	3.84	314,289.523	4.34	355,170.145	4.84	396,050.767	5.34		5.84	
3.35	274,226.514	3.85	315,107.136	4.35	355,987.758	4.85	396,868.380	5.35		5.85	
3.36	275,044.126	3.86	315,924.748	4.36	356,805.370	4.86	397,685.992	5.36		5.86	
3.37	275,861.738	3.87	316,742.360	4.37	357,622.982	4.87	398,503.604	5.37		5.87	
3.38	276,679.351	3.88	317,559.973	4.38	358,440.595	4.88	399,059.449	5.38		5.88	
3.39	277,496.963	3.89	318,377.585	4.39	359,258.207	4.89		5.39		5.89	
3.40	278,314.576	3.90	319,195.198	4.40	360,075.820	4.90		5.40		5.90	
3.41	279,132.188	3.91	320,012.810	4.41	360,893.432	4.91		5.41		5.91	
3.42	279,949.801	3.92	320,830.423	4.42	361,711.045	4.92		5.42		5.92	
3.43	280,767.413	3.93	321,648.035	4.43	362,528.657	4.93		5.43		5.93	
3.44	281,585.026	3.94	322,465.648	4.44	363,346.270	4.94		5.44		5.94	
3.45	282,402.638	3.95	323,283.260	4.45	364,163.882	4.95		5.45		5.95	
3.46	283,220.250	3.96	324,100.872	4.46	364,981.494	4.96		5.46		5.96	
3.47	284,037.863	3.97	324,918.485	4.47	365,799.107	4.97		5.47		5.97	
3.48	284,855.475	3.98	325,736.097	4.48	366,616.719	4.98		5.48		5.98	
3.49	285,673.088	3.99	326,553.710	4.49	367,434.332	4.99		5.49		5.99	

Average Millimetres

1	81.761	6	490.567
2	163.522	7	572.329
3	245.284	8	654.090
4	327.045	9	735.851
5	408.806	10	817.612

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Cone Roof Tank - Nominal Dimensions : 10.21 Metres X 4.88 Metres

Volumes in: Litres

To Increment	Incs	Gross Volume per Increment	Deadwood Volume	Net Volume	Accumulated Volume
0	1	0.000000	872.632018	870.770005	870.770005
1	1	817.797198	-196.187663	621.609534	1492.379539
2	1	817.797198	-105.328633	712.468564	2204.848104
3	1	817.797198	-49.319098	768.478100	2973.326203
4	1	817.797198	-25.395146	792.402051	3765.728255
5	1	817.797198	-12.729160	805.068038	4570.796292
6	1	817.797198	-4.436808	813.360390	5384.156682
7	1	817.797198	-2.312407	815.484791	6199.641473
8	1	817.797198	-2.326659	815.470538	7015.112012
11	3	817.797198	-1.757039	816.040159	9463.232487
12	1	817.797198	-2.030493	815.766705	10278.999192
15	3	817.797198	-2.098657	815.698541	12726.094814
16	1	817.797198	-2.510386	815.286811	13541.381625
20	4	817.797198	-1.965810	815.831388	16804.707175
27	7	817.797198	-1.832660	815.964538	22516.458938
28	1	817.797198	-1.818407	815.978790	23332.437729
36	8	817.797198	-1.652593	816.144604	29861.594563
37	1	817.797198	-1.785743	816.011454	30677.606017
40	3	817.797198	-2.770643	815.026554	33122.685680
45	5	817.797198	-2.433080	815.364117	37199.506267
56	11	817.797198	-1.361575	816.435623	46180.298121
83	27	817.797198	-1.357520	816.439678	68224.169430
98	15	817.797198	-0.372620	817.424578	80485.538100
196	98	817.797198	-0.426002	817.371195	160589.242658
243	47	817.797198	-0.411729	817.385469	199006.359682
244	1	817.833513	-0.411729	817.421784	199823.781466
487	243	818.024169	-0.411729	817.612440	398503.604477
488	1	556.256435	-0.411729	555.844706	399059.449183

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E. Gruben's Transport Ltd
Tuktoyaktuk, NT

General Information

Tank Number	2
Date of Strapping Data	07/24/2019
Year Built	1972
Product in Service	Jet-A1
Product Service Density	0.814 g/cc (SG)

Tank Dimensions

Nominal Diameter	33.5 Feet
Nominal Height	16 Feet
Measured Tank Height	16.050 Feet
Tank Tilt	0 Millimetres
Gauge Point Information	Top of Benchmark in Hatch
Reference Gauge Height	5.003 Metres
Horizontal Distance To Gauge	24 Inches

Roof & Bottom Survey

Roof Type	Cone
Floating Roof Shape	N/A
Floating Roof Weight	N/A
Roof Landed Height	N/A
Roof Full Floating Height	N/A
Bottom Description	Laser Scan

Report Constraints

Main Increment	Centimetres
Main Volume	Litres
Product at Strapping	empty
Product Strap Density	1 g/cc (SG)
Liquid Height at Strap	N/A
Safe Fill Height	N/A
Overflow Or Foamline	N/A

E. Gruben's Transport Ltd
Tuktoyaktuk, NT

Strap Correction to 60°F

Shell Temperature (°F)	48.2	Master Tape Serial
Shell Material	Carbon Steel	Master Tape Span
Shell Expansion (per Foot)	0.000006450	Master Tape Tension

Certified Tape Factor	1
Tape Correction Factor	$1 + ('Shell\ Temperature' - 68) \times 'Tape\ Expansion'$
Shell Correction Factor	$1 + (60 - 'Shell\ Temperature') \times 'Shell\ Expansion'$

Correction Summary

Certified Tape Factor * Tape Correction Factor * Shell Correction Factor
Correction Factor = 1.00007611

Course	Strap Circumference Metres	Converted Circumference (Feet)	Tape Rise (Feet)	Corrected Strap Circumference (Feet)
1	32.054	105.164	0.000	105.172
2	32.056	105.170	0.000	105.178

Optical Circumference Corrections

Course	Average Optical Offset Millimetres	Difference Millimetres	Correction Millimetres	Corrected Circumference Metres	Corrected Circumference (Feet)
1	0.000	0.000	0.000	32.056	105.172
2	0.000	0.000	0.000	32.058	105.178

E. Gruben's Transport Ltd
Tuktoyaktuk, NT

Tank Measurements

Course	Strap (Feet)	Plate Thickness	Course Height	Accumulated Total
1	105.172	0.250 Inches	8.000 Feet	8.000 Feet
2	105.178	0.250 Inches	8.000 Feet	16.000 Feet

Tank Construction

Course	Course Fit/Join	Plates per Course	Width of Tape Rise	Depth of Tape Rise
1	Butt Weld	4	0.000 Millimetres	0.000 Millimetres
2	Butt Weld	4	0.000 Millimetres	0.000 Millimetres

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Tuktoyaktuk, NT

Circumference Corrected to Empty Tank Basis

$$\frac{-W * H * C^2}{2 * \pi * E * T} \quad (\text{Correction in Feet}) \quad \text{Or} \quad \frac{-K (G * H * C^2)}{T} \quad (\text{Correction in Inches})$$

Where :

$$K = \frac{W}{24 * \pi * E} = 0.000000028492394$$

G = Observed Density of Liquid in tank.

H = height of liquid above strap, in feet.

C = measured circumference, in feet.

T = thickness of shell material, in inches.

W = weight of liquid, in pounds per cubic foot.

E = modulus of elasticity of shell material.

Correction Summary

Course	Product Weight (Lb/Ft3)	Density	Liquid Height (Feet)	Corrected Circumference (Feet)	Plate Thickness (Inches)	Empty Tank Corrected (Feet)
1.00	62.428	1.000	0	105.172	0.250	0
2.00	62.428	1.000	0	105.178	0.250	0

E. Gruben's Transport Ltd
Tuktoyaktuk, NT

Circumference Deduction for Tape Rises

Butt Strap Correction (In Feet)

$$= \frac{(2 * N * T * W)}{(12 * D)} + \frac{(8 * N * T)}{(12 * 3)} * \sqrt{T/D}$$

Lap Joint Correction (In Feet)

$$= \frac{(4 * N * T)}{(12 * 3)} * \sqrt{T/(2*D)}$$

Where :

N = number of butt straps or projections per course

T = thickness of straps or projections (in inches)

W = width of straps or projections (in inches)

D = nominal diameter of tank (in inches)

Circumference Deduction for Shell Thickness

$$= \frac{(\pi * T)}{6} \quad (\text{Correction In Feet})$$

Where :

T = thickness of shell material (In Inches)

Summary of Circumference Deductions

Course	Temperature Compensated Circumference	Empty Tank (Feet)	Tape Rise (Feet)	Plate Thickness (Feet)	Inside Circumference (Feet)
1	105.172	0.000	0.000	0.000	105.172
2	105.178	0.000	0.000	0.000	105.178

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Tuktoyaktuk, NT

Incremental Volume Per Course

Liquid Head Stress Correction (In Feet)

$$= \frac{K (G * H * C^2)}{T}$$

Incremental Volume (in Cubic Feet)

$$= (C / \pi / 2)^2 * (\pi / 12)$$

Where :

G = tank Service Density.

H = height of liquid (between strap & top of course), in feet.

C = circumference, in feet.

T = thickness of shell material, in inches.

Incremental Volume Per Course

Course	Inside Circumference (Feet)	Liquid Head Stress (Feet)	Stressed Circumference (Feet)	Litres Per Centimetre
1	105.172	0.004	105.176	817.808
2	105.178	0.004	105.182	817.907

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Tuktoyaktuk, NT

Liquid Head Corrections

Volumetric Increase per Course

$$= \frac{H}{T} * \frac{K}{F}$$

Where :

H = Course Height (in inches)

T = Plate Thickness (in inches)

$$K = \frac{\pi * W * G * D^3}{4 * E}$$

W = weight of liquid, in pounds per cubic foot.

G = Specific Gravity of product to be stored.

D = Inside Diameter of the Course.

E = modulus of elasticity of shell material.

F = desired volume conversion (cubic inch per unit volume)

eg. 231 to US Gallons, 61.023744 to Litres

Gross Volume per Chart Increment

Course	Litres Per Centimetre	Volume Correction Litres	Incremental Correction Litres	Gross Volume @ 60°F	Gross Volume @ 59 °F 0.9999871
1	817.808	0.128	0.000	817.808	817.797
2	817.907	0.000	0.128	818.035	818.024

Action Number P2190102940 - Exhibit G

E. Gruben's Transport Ltd

TANK # 3

Tuktoyaktuk, NT

814 Kg/m3 @ 15°C

Cone Roof Tank - Nominal Dimensions : 10.688 Metres X 9.144 Metres

INNAGE TABLE

Reference Gauge Height- 9.888 Metres; 0.58 Metres to Benchmark in Hatch						Height in Centimetres; Capacity in Litres					
.00**	1,105.890	.50	41,742.413	1.00	82,620.395	1.50	123,496.349	2.00	164,372.270	2.50	205,248.084
.01*	1,779.603	.51	42,560.029	1.01	83,437.947	1.51	124,313.868	2.01	165,189.789	2.51	206,065.585
.02*	2,539.022	.52	43,377.645	1.02	84,255.465	1.52	125,131.386	2.02	166,007.307	2.52	206,883.086
.03*	3,346.932	.53	44,195.261	1.03	85,072.983	1.53	125,948.904	2.03	166,824.825	2.53	207,700.587
.04	4,164.304	.54	45,012.877	1.04	85,890.502	1.54	126,766.423	2.04	167,642.344	2.54	208,518.088
.05	4,981.676	.55	45,830.493	1.05	86,708.020	1.55	127,583.941	2.05	168,459.862	2.55	209,335.590
.06	5,799.049	.56	46,648.109	1.06	87,525.539	1.56	128,401.460	2.06	169,277.381	2.56	210,153.091
.07	6,616.421	.57	47,465.661	1.07	88,343.057	1.57	129,218.978	2.07	170,094.899	2.57	210,970.592
.08	7,433.793	.58	48,283.213	1.08	89,160.576	1.58	130,036.497	2.08	170,912.417	2.58	211,788.093
.09	8,251.165	.59	49,100.765	1.09	89,978.094	1.59	130,854.015	2.09	171,729.936	2.59	212,605.594
.10	9,068.537	.60	49,918.317	1.10	90,795.612	1.60	131,671.533	2.10	172,547.454	2.60	213,423.095
.11	9,885.909	.61	50,735.869	1.11	91,613.131	1.61	132,489.052	2.11	173,364.973	2.61	214,240.596
.12	10,703.110	.62	51,553.421	1.12	92,430.649	1.62	133,306.570	2.12	174,182.491	2.62	215,058.097
.13	11,520.311	.63	52,370.973	1.13	93,248.168	1.63	134,124.089	2.13	175,000.010	2.63	215,875.598
.14	12,337.513	.64	53,188.525	1.14	94,065.686	1.64	134,941.607	2.14	175,817.528	2.64	216,693.099
.15	13,154.714	.65	54,006.077	1.15	94,883.205	1.65	135,759.125	2.15	176,635.046	2.65	217,510.600
.16	13,971.983	.66	54,823.629	1.16	95,700.723	1.66	136,576.644	2.16	177,452.565	2.66	218,328.101
.17	14,789.251	.67	55,641.181	1.17	96,518.241	1.67	137,394.162	2.17	178,270.083	2.67	219,145.602
.18	15,606.520	.68	56,458.733	1.18	97,335.760	1.68	138,211.681	2.18	179,087.602	2.68	219,963.103
.19	16,420.009	.69	57,276.285	1.19	98,153.278	1.69	139,029.199	2.19	179,905.120	2.69	220,780.605
.20	17,233.498	.70	58,093.836	1.20	98,970.797	1.70	139,846.718	2.20	180,722.638	2.70	221,598.106
.21	18,047.119	.71	58,911.388	1.21	99,788.315	1.71	140,664.236	2.21	181,540.157	2.71	222,415.607
.22	18,860.748	.72	59,728.940	1.22	100,605.833	1.72	141,481.754	2.22	182,357.675	2.72	223,233.108
.23	19,673.920	.73	60,546.492	1.23	101,423.352	1.73	142,299.273	2.23	183,175.194	2.73	224,050.609
.24	20,490.848	.74	61,364.044	1.24	102,240.870	1.74	143,116.791	2.24	183,992.712	2.74	224,868.110
.25	21,307.776	.75	62,181.596	1.25	103,058.389	1.75	143,934.310	2.25	184,810.231	2.75	225,685.611
.26	22,124.704	.76	62,999.148	1.26	103,875.907	1.76	144,751.828	2.26	185,627.749	2.76	226,503.112
.27	22,941.703	.77	63,816.700	1.27	104,693.426	1.77	145,569.346	2.27	186,445.267	2.77	227,320.613
.28	23,758.703	.78	64,634.252	1.28	105,510.944	1.78	146,386.865	2.28	187,262.786	2.78	228,138.114
.29	24,575.703	.79	65,451.804	1.29	106,328.462	1.79	147,204.383	2.29	188,080.304	2.79	228,955.615
.30	25,392.703	.80	66,269.356	1.30	107,145.981	1.80	148,021.902	2.30	188,897.823	2.80	229,773.116
.31	26,209.727	.81	67,086.908	1.31	107,963.499	1.81	148,839.420	2.31	189,715.341	2.81	230,590.617
.32	27,027.208	.82	67,904.460	1.32	108,781.018	1.82	149,656.939	2.32	190,532.860	2.82	231,408.118
.33	27,844.689	.83	68,722.012	1.33	109,598.536	1.83	150,474.457	2.33	191,350.378	2.83	232,225.619
.34	28,662.169	.84	69,539.564	1.34	110,416.054	1.84	151,291.975	2.34	192,167.896	2.84	233,043.121
.35	29,479.650	.85	70,357.116	1.35	111,233.573	1.85	152,109.494	2.35	192,985.415	2.85	233,860.622
.36	30,297.131	.86	71,174.668	1.36	112,051.091	1.86	152,927.012	2.36	193,802.933	2.86	234,678.123
.37	31,114.478	.87	71,992.219	1.37	112,868.610	1.87	153,744.531	2.37	194,620.452	2.87	235,495.624
.38	31,931.826	.88	72,809.771	1.38	113,686.128	1.88	154,562.049	2.38	195,437.970	2.88	236,313.125
.39	32,749.173	.89	73,627.323	1.39	114,503.647	1.89	155,379.567	2.39	196,255.488	2.89	237,130.626
.40	33,566.521	.90	74,444.875	1.40	115,321.165	1.90	156,197.086	2.40	197,073.007	2.90	237,948.127
.41	34,384.103	.91	75,262.427	1.41	116,138.683	1.91	157,014.604	2.41	197,890.525	2.91	238,765.628
.42	35,201.686	.92	76,079.979	1.42	116,956.202	1.92	157,832.123	2.42	198,708.044	2.92	239,583.129
.43	36,019.268	.93	76,897.531	1.43	117,773.720	1.93	158,649.641	2.43	199,525.562	2.93	240,400.630
.44	36,836.851	.94	77,715.083	1.44	118,591.239	1.94	159,467.160	2.44	200,343.078	2.94	241,218.131
.45	37,654.433	.95	78,532.635	1.45	119,408.757	1.95	160,284.678	2.45	201,160.579	2.95	242,035.632
.46	38,472.016	.96	79,350.187	1.46	120,226.275	1.96	161,102.196	2.46	201,978.080	2.96	242,853.133
.47	39,289.598	.97	80,167.739	1.47	121,043.794	1.97	161,919.715	2.47	202,795.581	2.97	243,670.634
.48	40,107.181	.98	80,985.291	1.48	121,861.312	1.98	162,737.233	2.48	203,613.082	2.98	244,488.136
.49	40,924.797	.99	81,802.843	1.49	122,678.831	1.99	163,554.752	2.49	204,430.583	2.99	245,305.637

** Volume Below Strike Point; Located at intersection of shell & bottom.

Page 1 of 4

* Bottom volume based on Liquid Calibrated Calculation. Average Centimetres not applicable

Volumes reflect a Shell Temperature of 15°C

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Action Number P2190102940 - Exhibit G

E. Gruben's Transport Ltd

TANK # 3

Tuktoyaktuk, NT

814 Kg/m3 @ 15°C

Cone Roof Tank - Nominal Dimensions : 10.688 Metres X 9.144 Metres

INNAGE TABLE

Reference Gauge Height- 9.888 Metres; 0.58 Metres to Benchmark in Hatch						Height in Centimetres; Capacity in Litres					
3.00	246,123.138	3.50	286,998.191	4.00	327,873.245	4.50	368,748.298	5.00	409,621.409	5.50	450,488.576
3.01	246,940.639	3.51	287,815.692	4.01	328,690.746	4.51	369,565.799	5.01	410,438.752	5.51	451,305.920
3.02	247,758.140	3.52	288,633.193	4.02	329,508.247	4.52	370,383.300	5.02	411,256.095	5.52	452,123.263
3.03	248,575.641	3.53	289,450.694	4.03	330,325.748	4.53	371,200.801	5.03	412,073.439	5.53	452,940.606
3.04	249,393.142	3.54	290,268.196	4.04	331,143.249	4.54	372,018.303	5.04	412,890.782	5.54	453,757.950
3.05	250,210.643	3.55	291,085.697	4.05	331,960.750	4.55	372,835.804	5.05	413,708.125	5.55	454,575.293
3.06	251,028.144	3.56	291,903.198	4.06	332,778.251	4.56	373,653.305	5.06	414,525.469	5.56	455,392.636
3.07	251,845.645	3.57	292,720.699	4.07	333,595.752	4.57	374,470.806	5.07	415,342.812	5.57	456,209.980
3.08	252,663.146	3.58	293,538.200	4.08	334,413.253	4.58	375,288.307	5.08	416,160.156	5.58	457,027.323
3.09	253,480.647	3.59	294,355.701	4.09	335,230.754	4.59	376,105.808	5.09	416,977.499	5.59	457,844.667
3.10	254,298.148	3.60	295,173.202	4.10	336,048.255	4.60	376,923.309	5.10	417,794.842	5.60	458,662.010
3.11	255,115.649	3.61	295,990.703	4.11	336,865.757	4.61	377,740.810	5.11	418,612.186	5.61	459,479.353
3.12	255,933.151	3.62	296,808.204	4.12	337,683.258	4.62	378,558.311	5.12	419,429.529	5.62	460,296.697
3.13	256,750.652	3.63	297,625.705	4.13	338,500.759	4.63	379,375.812	5.13	420,246.872	5.63	461,114.040
3.14	257,568.153	3.64	298,443.206	4.14	339,318.260	4.64	380,193.313	5.14	421,064.216	5.64	461,931.383
3.15	258,385.654	3.65	299,260.707	4.15	340,135.761	4.65	381,010.814	5.15	421,881.559	5.65	462,748.727
3.16	259,203.155	3.66	300,078.208	4.16	340,953.262	4.66	381,828.315	5.16	422,698.902	5.66	463,566.070
3.17	260,020.656	3.67	300,895.709	4.17	341,770.763	4.67	382,645.816	5.17	423,516.246	5.67	464,383.413
3.18	260,838.157	3.68	301,713.210	4.18	342,588.264	4.68	383,463.318	5.18	424,333.589	5.68	465,200.757
3.19	261,655.658	3.69	302,530.712	4.19	343,405.765	4.69	384,280.819	5.19	425,150.932	5.69	466,018.100
3.20	262,473.159	3.70	303,348.213	4.20	344,223.266	4.70	385,098.320	5.20	425,968.276	5.70	466,835.443
3.21	263,290.660	3.71	304,165.714	4.21	345,040.767	4.71	385,915.821	5.21	426,785.619	5.71	467,652.787
3.22	264,108.161	3.72	304,983.215	4.22	345,858.268	4.72	386,733.322	5.22	427,602.962	5.72	468,470.130
3.23	264,925.662	3.73	305,800.716	4.23	346,675.769	4.73	387,550.823	5.23	428,420.306	5.73	469,287.473
3.24	265,743.163	3.74	306,618.217	4.24	347,493.270	4.74	388,368.324	5.24	429,237.649	5.74	470,104.817
3.25	266,560.664	3.75	307,435.718	4.25	348,310.772	4.75	389,185.825	5.25	430,054.993	5.75	470,922.160
3.26	267,378.166	3.76	308,253.219	4.26	349,128.273	4.76	390,003.326	5.26	430,872.336	5.76	471,739.504
3.27	268,195.667	3.77	309,070.720	4.27	349,945.774	4.77	390,820.827	5.27	431,689.679	5.77	472,556.847
3.28	269,013.168	3.78	309,888.221	4.28	350,763.275	4.78	391,638.328	5.28	432,507.023	5.78	473,374.190
3.29	269,830.669	3.79	310,705.722	4.29	351,580.776	4.79	392,455.829	5.29	433,324.366	5.79	474,191.534
3.30	270,648.170	3.80	311,523.223	4.30	352,398.277	4.80	393,273.330	5.30	434,141.709	5.80	475,008.877
3.31	271,465.671	3.81	312,340.724	4.31	353,215.778	4.81	394,090.831	5.31	434,959.053	5.81	475,826.220
3.32	272,283.172	3.82	313,158.225	4.32	354,033.279	4.82	394,908.333	5.32	435,776.396	5.82	476,643.564
3.33	273,100.673	3.83	313,975.727	4.33	354,850.780	4.83	395,725.834	5.33	436,593.739	5.83	477,460.907
3.34	273,918.174	3.84	314,793.228	4.34	355,668.281	4.84	396,543.335	5.34	437,411.083	5.84	478,278.250
3.35	274,735.675	3.85	315,610.729	4.35	356,485.782	4.85	397,360.836	5.35	438,228.426	5.85	479,095.594
3.36	275,553.176	3.86	316,428.230	4.36	357,303.283	4.86	398,178.337	5.36	439,045.769	5.86	479,912.937
3.37	276,370.677	3.87	317,245.731	4.37	358,120.784	4.87	398,995.838	5.37	439,863.113	5.87	480,730.280
3.38	277,188.178	3.88	318,063.232	4.38	358,938.285	4.88	399,813.288	5.38	440,680.456	5.88	481,547.624
3.39	278,005.679	3.89	318,880.733	4.39	359,755.786	4.89	400,630.632	5.39	441,497.799	5.89	482,364.967
3.40	278,823.181	3.90	319,698.234	4.40	360,573.288	4.90	401,447.975	5.40	442,315.143	5.90	483,182.310
3.41	279,640.682	3.91	320,515.735	4.41	361,390.789	4.91	402,265.319	5.41	443,132.486	5.91	483,999.654
3.42	280,458.183	3.92	321,333.236	4.42	362,208.290	4.92	403,082.662	5.42	443,949.830	5.92	484,816.997
3.43	281,275.684	3.93	322,150.737	4.43	363,025.791	4.93	403,900.005	5.43	444,767.173	5.93	485,634.341
3.44	282,093.185	3.94	322,968.238	4.44	363,843.292	4.94	404,717.349	5.44	445,584.516	5.94	486,451.684
3.45	282,910.686	3.95	323,785.739	4.45	364,660.793	4.95	405,534.692	5.45	446,401.860	5.95	487,269.027
3.46	283,728.187	3.96	324,603.240	4.46	365,478.294	4.96	406,352.035	5.46	447,219.203	5.96	488,086.371
3.47	284,545.688	3.97	325,420.742	4.47	366,295.795	4.97	407,169.379	5.47	448,036.546	5.97	488,903.714
3.48	285,363.189	3.98	326,238.243	4.48	367,113.296	4.98	407,986.722	5.48	448,853.890	5.98	489,721.057
3.49	286,180.690	3.99	327,055.744	4.49	367,930.797	4.99	408,804.065	5.49	449,671.233	5.99	490,538.401

Average Millimetres

1	81.750	6	490.501
2	163.500	7	572.251
3	245.250	8	654.001
4	327.000	9	735.751
5	408.751	10	817.501

Page 2 of 4

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Action Number P2190102940 - Exhibit G

E. Gruben's Transport Ltd

TANK # 3

Tuktoyaktuk, NT

814 Kg/m³ @ 15°C

Cone Roof Tank - Nominal Dimensions : 10.688 Metres X 9.144 Metres

INNAGE TABLE

Reference Gauge Height- 9.888 Metres; 0.58 Metres to Benchmark in Hatch						Height in Centimetres; Capacity in Litres					
6.00	491,355.744	6.50	532,222.912	7.00	573,090.079	7.50	613,955.145	8.00	654,816.624	8.50	695,678.103
6.01	492,173.087	6.51	533,040.255	7.01	573,907.423	7.51	614,772.374	8.01	655,633.853	8.51	696,495.333
6.02	492,990.431	6.52	533,857.598	7.02	574,724.766	7.52	615,589.604	8.02	656,451.083	8.52	697,312.562
6.03	493,807.774	6.53	534,674.942	7.03	575,542.109	7.53	616,406.833	8.03	657,268.313	8.53	698,129.792
6.04	494,625.117	6.54	535,492.285	7.04	576,359.453	7.54	617,224.063	8.04	658,085.542	8.54	698,947.021
6.05	495,442.461	6.55	536,309.628	7.05	577,176.796	7.55	618,041.292	8.05	658,902.772	8.55	699,764.251
6.06	496,259.804	6.56	537,126.972	7.06	577,994.139	7.56	618,858.522	8.06	659,720.001	8.56	700,581.481
6.07	497,077.147	6.57	537,944.315	7.07	578,811.483	7.57	619,675.752	8.07	660,537.231	8.57	701,398.710
6.08	497,894.491	6.58	538,761.658	7.08	579,628.826	7.58	620,492.981	8.08	661,354.461	8.58	702,215.940
6.09	498,711.834	6.59	539,579.002	7.09	580,446.169	7.59	621,310.211	8.09	662,171.690	8.59	703,033.169
6.10	499,529.178	6.60	540,396.345	7.10	581,263.513	7.60	622,127.440	8.10	662,988.920	8.60	703,850.399
6.11	500,346.521	6.61	541,213.689	7.11	582,080.856	7.61	622,944.670	8.11	663,806.149	8.61	704,667.629
6.12	501,163.864	6.62	542,031.032	7.12	582,898.200	7.62	623,761.900	8.12	664,623.379	8.62	705,484.858
6.13	501,981.208	6.63	542,848.375	7.13	583,715.543	7.63	624,579.129	8.13	665,440.608	8.63	706,302.088
6.14	502,798.551	6.64	543,665.719	7.14	584,532.886	7.64	625,396.359	8.14	666,257.838	8.64	707,119.317
6.15	503,615.894	6.65	544,483.062	7.15	585,350.230	7.65	626,213.588	8.15	667,075.068	8.65	707,936.547
6.16	504,433.238	6.66	545,300.405	7.16	586,167.573	7.66	627,030.818	8.16	667,892.297	8.66	708,753.777
6.17	505,250.581	6.67	546,117.749	7.17	586,984.916	7.67	627,848.048	8.17	668,709.527	8.67	709,571.006
6.18	506,067.924	6.68	546,935.092	7.18	587,802.260	7.68	628,665.277	8.18	669,526.756	8.68	710,388.236
6.19	506,885.268	6.69	547,752.435	7.19	588,619.603	7.69	629,482.507	8.19	670,343.986	8.69	711,205.465
6.20	507,702.611	6.70	548,569.779	7.20	589,436.946	7.70	630,299.736	8.20	671,161.216	8.70	712,022.695
6.21	508,519.954	6.71	549,387.122	7.21	590,254.290	7.71	631,116.966	8.21	671,978.445	8.71	712,839.924
6.22	509,337.298	6.72	550,204.465	7.22	591,071.633	7.72	631,934.195	8.22	672,795.675	8.72	713,657.154
6.23	510,154.641	6.73	551,021.809	7.23	591,888.976	7.73	632,751.425	8.23	673,612.904	8.73	714,474.384
6.24	510,971.984	6.74	551,839.152	7.24	592,706.320	7.74	633,568.655	8.24	674,430.134	8.74	715,291.613
6.25	511,789.328	6.75	552,656.495	7.25	593,523.663	7.75	634,385.884	8.25	675,247.363	8.75	716,108.843
6.26	512,606.671	6.76	553,473.839	7.26	594,341.006	7.76	635,203.114	8.26	676,064.593	8.76	716,926.072
6.27	513,424.015	6.77	554,291.182	7.27	595,158.350	7.77	636,020.343	8.27	676,881.823	8.77	717,743.302
6.28	514,241.358	6.78	555,108.526	7.28	595,975.693	7.78	636,837.573	8.28	677,699.052	8.78	718,560.532
6.29	515,058.701	6.79	555,925.869	7.29	596,793.037	7.79	637,654.803	8.29	678,516.282	8.79	719,377.761
6.30	515,876.045	6.80	556,743.212	7.30	597,610.380	7.80	638,472.032	8.30	679,333.511	8.80	720,194.991
6.31	516,693.388	6.81	557,560.556	7.31	598,427.723	7.81	639,289.262	8.31	680,150.741	8.81	721,012.220
6.32	517,510.731	6.82	558,377.899	7.32	599,245.012	7.82	640,106.491	8.32	680,967.971	8.82	721,829.450
6.33	518,328.075	6.83	559,195.242	7.33	600,062.242	7.83	640,923.721	8.33	681,785.200	8.83	722,646.679
6.34	519,145.418	6.84	560,012.586	7.34	600,879.471	7.84	641,740.950	8.34	682,602.430	8.84	723,463.909
6.35	519,962.761	6.85	560,829.929	7.35	601,696.701	7.85	642,558.180	8.35	683,419.659	8.85	724,281.139
6.36	520,780.105	6.86	561,647.272	7.36	602,513.930	7.86	643,375.410	8.36	684,236.889	8.86	725,098.368
6.37	521,597.448	6.87	562,464.616	7.37	603,331.160	7.87	644,192.639	8.37	685,054.119	8.87	725,915.598
6.38	522,414.791	6.88	563,281.959	7.38	604,148.390	7.88	645,009.869	8.38	685,871.348	8.88	726,732.827
6.39	523,232.135	6.89	564,099.302	7.39	604,965.619	7.89	645,827.098	8.39	686,688.578	8.89	727,550.057
6.40	524,049.478	6.90	564,916.646	7.40	605,782.849	7.90	646,644.328	8.40	687,505.807	8.90	728,367.287
6.41	524,866.821	6.91	565,733.989	7.41	606,600.078	7.91	647,461.558	8.41	688,323.037	8.91	729,184.516
6.42	525,684.165	6.92	566,551.332	7.42	607,417.308	7.92	648,278.787	8.42	689,140.266	8.92	730,001.746
6.43	526,501.508	6.93	567,368.676	7.43	608,234.537	7.93	649,096.017	8.43	689,957.496	8.93	730,818.975
6.44	527,318.852	6.94	568,186.019	7.44	609,051.767	7.94	649,913.246	8.44	690,774.726	8.94	731,636.205
6.45	528,136.195	6.95	569,003.363	7.45	609,868.997	7.95	650,730.476	8.45	691,591.955	8.95	732,453.434
6.46	528,953.538	6.96	569,820.706	7.46	610,686.226	7.96	651,547.705	8.46	692,409.185	8.96	733,270.664
6.47	529,770.882	6.97	570,638.049	7.47	611,503.456	7.97	652,364.935	8.47	693,226.414	8.97	734,087.894
6.48	530,588.225	6.98	571,455.393	7.48	612,320.685	7.98	653,182.165	8.48	694,043.644	8.98	734,905.123
6.49	531,405.568	6.99	572,272.736	7.49	613,137.915	7.99	653,999.394	8.49	694,860.874	8.99	735,722.353

Average Millimetres

1	81.750	6	490.501
2	163.500	7	572.251
3	245.250	8	654.001
4	327.000	9	735.751
5	408.751	10	817.501

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Action Number P2190102940 - Exhibit G

E. Gruben's Transport Ltd

TANK # 3

Tuktoyaktuk, NT

814 Kg/m3 @ 15°C

Cone Roof Tank - Nominal Dimensions : 10.688 Metres X 9.144 Metres

INNAGE TABLE

Reference Gauge Height- 9.888 Metres; 0.58 Metres to Benchmark In Hatch					Height in Centimetres; Capacity in Litres				
9.00	736,539.582	9.50	777,401.062	10.00	10.50	11.00	11.50		
9.01	737,356.812	9.51	778,218.291	10.01	10.51	11.01	11.51		
9.02	738,174.042	9.52	779,035.521	10.02	10.52	11.02	11.52		
9.03	738,991.271	9.53	779,852.750	10.03	10.53	11.03	11.53		
9.04	739,808.501	9.54	780,670.034	10.04	10.54	11.04	11.54		
9.05	740,625.730	9.55	781,487.317	10.05	10.55	11.05	11.55		
9.06	741,442.960	9.56	782,304.600	10.06	10.56	11.06	11.56		
9.07	742,260.190	9.57	783,121.883	10.07	10.57	11.07	11.57		
9.08	743,077.419	9.58	783,939.166	10.08	10.58	11.08	11.58		
9.09	743,894.649	9.59	784,756.449	10.09	10.59	11.09	11.59		
9.10	744,711.878	9.60	785,573.732	10.10	10.60	11.10	11.60		
9.11	745,529.108	9.61	786,391.015	10.11	10.61	11.11	11.61		
9.12	746,346.337	9.62	787,208.298	10.12	10.62	11.12	11.62		
9.13	747,163.567	9.63	788,025.581	10.13	10.63	11.13	11.63		
9.14	747,980.797	9.64	788,842.864	10.14	10.64	11.14	11.64		
9.15	748,798.026	9.65	789,660.148	10.15	10.65	11.15	11.65		
9.16	749,615.256	9.66	790,477.431	10.16	10.66	11.16	11.66		
9.17	750,432.485	9.67	791,294.714	10.17	10.67	11.17	11.67		
9.18	751,249.715	9.68	792,111.997	10.18	10.68	11.18	11.68		
9.19	752,066.945	9.69	792,929.280	10.19	10.69	11.19	11.69		
9.20	752,884.174	9.70	793,746.563	10.20	10.70	11.20	11.70		
9.21	753,701.404	9.71	794,563.846	10.21	10.71	11.21	11.71		
9.22	754,518.633	9.72	795,381.129	10.22	10.72	11.22	11.72		
9.23	755,335.863	9.73	796,198.412	10.23	10.73	11.23	11.73		
9.24	756,153.092	9.74	797,015.695	10.24	10.74	11.24	11.74		
9.25	756,970.322	9.75		10.25	10.75	11.25	11.75		
9.26	757,787.552	9.76		10.26	10.76	11.26	11.76		
9.27	758,604.781	9.77		10.27	10.77	11.27	11.77		
9.28	759,422.011	9.78		10.28	10.78	11.28	11.78		
9.29	760,239.240	9.79		10.29	10.79	11.29	11.79		
9.30	761,056.470	9.80		10.30	10.80	11.30	11.80		
9.31	761,873.700	9.81		10.31	10.81	11.31	11.81		
9.32	762,690.929	9.82		10.32	10.82	11.32	11.82		
9.33	763,508.159	9.83		10.33	10.83	11.33	11.83		
9.34	764,325.388	9.84		10.34	10.84	11.34	11.84		
9.35	765,142.618	9.85		10.35	10.85	11.35	11.85		
9.36	765,959.848	9.86		10.36	10.86	11.36	11.86		
9.37	766,777.077	9.87		10.37	10.87	11.37	11.87		
9.38	767,594.307	9.88		10.38	10.88	11.38	11.88		
9.39	768,411.536	9.89		10.39	10.89	11.39	11.89		
9.40	769,228.766	9.90		10.40	10.90	11.40	11.90		
9.41	770,045.995	9.91		10.41	10.91	11.41	11.91		
9.42	770,863.225	9.92		10.42	10.92	11.42	11.92		
9.43	771,680.455	9.93		10.43	10.93	11.43	11.93		
9.44	772,497.684	9.94		10.44	10.94	11.44	11.94		
9.45	773,314.914	9.95		10.45	10.95	11.45	11.95		
9.46	774,132.143	9.96		10.46	10.96	11.46	11.96		
9.47	774,949.373	9.97		10.47	10.97	11.47	11.97		
9.48	775,766.603	9.98		10.48	10.98	11.48	11.98		
9.49	776,583.832	9.99		10.49	10.99	11.49	11.99		

Average Millimetres

1	81.750	6	490.501
2	163.500	7	572.251
3	245.250	8	654.001
4	327.000	9	735.751
5	408.751	10	817.501

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Action Number P2190102940 - Exhibit G

E. Gruben's Transport Ltd

TANK # 3

Tuktoyaktuk, NT

814 Kg/m3 @ 15°C

Cone Roof Tank - Nominal Dimensions : 10.688 Metres X 9.144 Metres

Volumes in: Litres

To Increment	Incs	Gross Volume per Increment	Deadwood Volume	Net Volume	Accumulated Volume
0	1	0.000000	1106.029943	1105.890301	1105.890301
1	1	817.571924	-143.859402	673.712522	1779.602823
2	1	817.571924	-58.152664	759.419260	2539.022083
3	1	817.571924	-9.661719	807.910204	3346.932287
11	8	817.571924	-0.199833	817.372091	9885.909014
15	4	817.571924	-0.370742	817.201182	13154.713743
18	3	817.571924	-0.303114	817.268809	15606.520171
20	2	817.571924	-4.083236	813.488687	17233.497546
21	1	817.571924	-3.950086	813.621837	18047.119383
22	1	817.571924	-3.943401	813.628523	18860.747906
23	1	817.571924	-4.400117	813.171807	19673.919713
26	3	817.571924	-0.643981	816.927943	22124.703541
30	4	817.571924	-0.571966	816.999958	25392.703371
31	1	817.571924	-0.547980	817.023944	26209.727315
36	5	817.571924	-0.091264	817.480660	30297.130615
40	4	817.571924	-0.224414	817.347510	33566.520656
48	8	817.571924	0.010604	817.582528	40107.180880
56	8	817.571924	0.044127	817.616050	46648.109284
101	45	817.571924	-0.019983	817.551941	83437.946637
243	142	817.571924	-0.053505	817.518419	199525.562108
244	1	817.569148	-0.053505	817.515643	200343.077751
487	243	817.554575	-0.053505	817.501070	398995.837874
488	1	817.504106	-0.053505	817.450601	399813.288475
731	243	817.396858	-0.053505	817.343353	598427.723253
732	1	817.342250	-0.053505	817.288745	599245.011998
953	221	817.283091	-0.053505	817.229586	779852.750481
974	21	817.283091		817.283091	797015.695389

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E. Gruben's Transport Ltd
Tuktoyaktuk, NT

General Information

Tank Number	3
Date of Strapping Data	07/23/2019
Year Built	1972
Product in Service	Jet - A1
Product Service Density	0.814 g/cc (SG)

Tank Dimensions

Nominal Diameter	36.5 Feet
Nominal Height	32 Feet
Measured Tank Height	31.956 Feet
Tank Tilt	0 Millimetres
Gauge Point Information	Benchmark in Hatch
Reference Gauge Height	9.888 Metres
Horizontal To Gauge	23 Inches

Roof & Bottom Survey

Roof Type	Cone
Floating Roof Shape	
Floating Roof Weight	
Roof Landed Height	
Roof Full Floating Height	
Bottom Description	Laser Scan

Report Constraints

Main Increment	Centimetres
Main Volume	Litres
Product at Strapping	empty
Product Strap Density	1 g/cc (SG)
Liquid Height at Strap	
Safe Fill Height	
Overflow Or Foamline	

E. Gruben's Transport Ltd
Tuktoyaktuk, NT

Strap Correction to 60°F

Shell Temperature (°F)	48.2	Master Tape Serial
Shell Material	Carbon Steel	Master Tape Span
Shell Expansion (per Foot)	0.000006450	Master Tape Tension

Certified Tape Factor	1
Tape Correction Factor	$1 + ('Shell\ Temperature' - 68) 'Tape\ Expansion'$
Shell Correction Factor	$1 + (60 - 'Shell\ Temperature') 'Shell\ Expansion'$

Correction Summary

Certified Tape Factor * Tape Correction Factor * Shell Correction Factor
Correction Factor = 1.00007611

Course	Strap Circumference Metres	Converted Circumference (Feet)	Tape Rise (Feet)	Corrected Strap Circumference (Feet)
1	32.049	105.149	0.000	105.157
2	32.047	105.140	0.000	105.148
3	32.041	105.121	0.000	105.129
4	32.036	105.106	0.000	105.114

Optical Circumference Corrections

Course	Average Optical Offset Millimetres	Difference Millimetres	Correction Millimetres	Corrected Circumference Metres	Corrected Circumference (Feet)
1	0.000	0.000	0.000	32.052	105.157
2	0.000	0.000	0.000	32.049	105.148
3	0.000	0.000	0.000	32.043	105.129
4	0.000	0.000	0.000	32.039	105.114

E. Gruben's Transport Ltd
Tuktoyaktuk, NT

Tank Measurements

Course	Strap (Feet)	Plate Thickness	Course Height	Accumulated Total
1	105.157	0.250 Inches	8.000 Feet	8.000 Feet
2	105.148	0.250 Inches	8.000 Feet	16.000 Feet
3	105.129	0.250 Inches	8.000 Feet	24.000 Feet
4	105.114	0.250 Inches	8.000 Feet	32.000 Feet

Tank Construction

Course	Course Fit/Join	Plates per Course	Width of Tape Rise	Depth of Tape Rise
1	Butt Weld	4	0.000 Millimetres	0.000 Millimetres
2	Butt Weld	4	0.000 Millimetres	0.000 Millimetres
3	Butt Weld	4	0.000 Millimetres	0.000 Millimetres
4	Butt Weld	4	0.000 Millimetres	0.000 Millimetres

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Circumference Corrected to Empty Tank Basis

$$\frac{-W * H * C^2}{2 * \pi * E * T} \quad (\text{Correction in Feet}) \quad \text{Or} \quad \frac{-K (G * H * C^2)}{T} \quad (\text{Correction in Inches})$$

Where :

$$K = \frac{W}{24 * \pi * E} = 0.000000028492394$$

G = Observed Density of Liquid in tank.

H = height of liquid above strap, in feet.

C = measured circumference, in feet.

T = thickness of shell material, in inches.

W = weight of liquid, in pounds per cubic foot.

E = modulus of elasticity of shell material.

Correction Summary

Course	Product Weight (Lb/Ft3)	Density	Liquid Height (Feet)	Corrected Circumference (Feet)	Plate Thickness (Inches)	Empty Tank Corrected (Feet)
1.00	62.428	1.000	0	105.157	0.250	0
2.00	62.428	1.000	0	105.148	0.250	0
3.00	62.428	1.000	0	105.129	0.250	0
4.00	62.428	1.000	0	105.114	0.250	0

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Circumference Deduction for Tape Rises

Butt Strap Correction (In Feet)

$$= \frac{(2 * N * T * W)}{(12 * D)} + \frac{(8 * N * T)}{(12 * 3)} * \sqrt{T/D}$$

Lap Joint Correction (In Feet)

$$= \frac{(4 * N * T)}{(12 * 3)} * \sqrt{T/(2*D)}$$

Where :

N = number of butt straps or projections per course

T = thickness of straps or projections (in inches)

W = width of straps or projections (in inches)

D = nominal diameter of tank (in inches)

Circumference Deduction for Shell Thickness

$$= \frac{(\pi * T)}{6} \quad (\text{Correction In Feet})$$

Where :

T = thickness of shell material (In Inches)

Summary of Circumference Deductions

Course	Temperature Compensated Circumference	Empty Tank (Feet)	Tape Rise (Feet)	Plate Thickness (Feet)	Inside Circumference (Feet)
1	105.157	0.000	0.000	0.000	105.157
2	105.148	0.000	0.000	0.000	105.148
3	105.129	0.000	0.000	0.000	105.129
4	105.114	0.000	0.000	0.000	105.114

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Incremental Volume Per Course

Liquid Head Stress Correction (In Feet)

$$= \frac{K (G * H * C^2)}{T}$$

Incremental Volume (in Cubic Feet)

$$= (C / \pi / 2)^2 * (\pi / 12)$$

Where :

G = tank Service Density.

H = height of liquid (between strap & top of course), in feet.

C = circumference, in feet.

T = thickness of shell material, in inches.

Incremental Volume Per Course

Course	Inside Circumference (Feet)	Liquid Head Stress (Feet)	Stressed Circumference (Feet)	Litres Per Centimetre
1	105.157	0.004	105.161	817.582
2	105.148	0.004	105.152	817.438
3	105.129	0.004	105.134	817.152
4	105.114	0.004	105.118	816.911

E. Gruben's Transport Ltd
Tuktoyaktuk, NT

Liquid Head Corrections

Volumetric Increase per Course

$$= \frac{H}{T} * \frac{K}{F}$$

Where :

H = Course Height (in inches)

T = Plate Thickness (in inches)

$$K = \frac{\pi * W * G * D^3}{4 * E}$$

W = weight of liquid, in pounds per cubic foot.

G = Specific Gravity of product to be stored.

D = Inside Diameter of the Course.

E = modulus of elasticity of shell material.

F = desired volume conversion (cubic inch per unit volume)

eg. 231 to US Gallons, 61.023744 to Litres

Gross Volume per Chart Increment

Course	Litres Per Centimetre	Volume Correction Litres	Incremental Correction Litres	Gross Volume @ 60°F	Gross Volume @ 59 °F 0.9999871
1	817.582	0.128	0.000	817.582	817.572
2	817.438	0.128	0.128	817.565	817.555
3	817.152	0.128	0.255	817.407	817.397
4	816.911	0.000	0.383	817.294	817.283

Action Number P2190102940 - Exhibit G

E. Gruben's Transport Ltd

TANK # 8

Tuktoyaktuk, NT

814 Kg/m³ @ 15°C

Cone Roof Tank - Nominal Dimensions : 10.688 Metres X 9.144 Metres

INNAGE TABLE

Reference Gauge Height- 10.035 Metres; 0.61 Metres to Top Edge of Gauge Window in Radar Hatch Height in Centimetres; Capacity in Litres											
.00**	157.296	.50	48,164.207	1.00	97,155.438	1.50	146,145.325	2.00	195,135.062	2.50	244,126.781
.01*	568.864	.51	49,144.031	1.01	98,135.263	1.51	147,125.119	2.01	196,114.856	2.51	245,106.898
.02*	1,267.456	.52	50,123.856	1.02	99,115.087	1.52	148,104.914	2.02	197,094.651	2.52	246,087.015
.03*	2,143.419	.53	51,103.680	1.03	100,094.912	1.53	149,084.709	2.03	198,074.446	2.53	247,067.131
.04*	3,092.970	.54	52,083.505	1.04	101,074.737	1.54	150,064.504	2.04	199,054.241	2.54	248,047.248
.05	4,072.765	.55	53,063.330	1.05	102,054.561	1.55	151,044.298	2.05	200,034.035	2.55	249,027.364
.06	5,052.559	.56	54,043.154	1.06	103,034.356	1.56	152,024.093	2.06	201,013.830	2.56	250,007.481
.07	6,032.354	.57	55,022.979	1.07	104,014.151	1.57	153,003.888	2.07	201,993.625	2.57	250,987.598
.08	7,012.149	.58	56,002.804	1.08	104,993.945	1.58	153,983.683	2.08	202,973.420	2.58	251,967.714
.09	7,991.944	.59	56,982.628	1.09	105,973.740	1.59	154,963.477	2.09	203,953.214	2.59	252,947.831
.10	8,971.738	.60	57,962.453	1.10	106,953.535	1.60	155,943.272	2.10	204,933.009	2.60	253,927.947
.11	9,951.533	.61	58,942.277	1.11	107,933.330	1.61	156,923.067	2.11	205,912.804	2.61	254,908.064
.12	10,931.328	.62	59,922.102	1.12	108,913.124	1.62	157,902.861	2.12	206,892.599	2.62	255,888.181
.13	11,911.123	.63	60,901.927	1.13	109,892.919	1.63	158,882.656	2.13	207,872.393	2.63	256,868.297
.14	12,890.917	.64	61,881.751	1.14	110,872.714	1.64	159,862.451	2.14	208,852.188	2.64	257,848.414
.15	13,870.712	.65	62,861.576	1.15	111,852.509	1.65	160,842.246	2.15	209,831.983	2.65	258,828.531
.16	14,850.549	.66	63,841.401	1.16	112,832.303	1.66	161,822.040	2.16	210,811.777	2.66	259,808.647
.17	15,830.387	.67	64,821.225	1.17	113,812.098	1.67	162,801.835	2.17	211,791.572	2.67	260,788.764
.18	16,810.224	.68	65,801.050	1.18	114,791.893	1.68	163,781.630	2.18	212,771.367	2.68	261,768.880
.19	17,790.062	.69	66,780.875	1.19	115,771.688	1.69	164,761.425	2.19	213,751.162	2.69	262,748.997
.20	18,769.899	.70	67,760.699	1.20	116,751.482	1.70	165,741.219	2.20	214,730.956	2.70	263,729.114
.21	19,749.736	.71	68,740.524	1.21	117,731.277	1.71	166,721.014	2.21	215,710.751	2.71	264,709.230
.22	20,729.574	.72	69,720.348	1.22	118,711.072	1.72	167,700.809	2.22	216,690.546	2.72	265,689.347
.23	21,709.411	.73	70,700.173	1.23	119,690.867	1.73	168,680.604	2.23	217,670.341	2.73	266,669.463
.24	22,689.249	.74	71,679.998	1.24	120,670.661	1.74	169,660.398	2.24	218,650.135	2.74	267,649.580
.25	23,669.086	.75	72,659.822	1.25	121,650.456	1.75	170,640.193	2.25	219,629.930	2.75	268,629.697
.26	24,648.924	.76	73,639.647	1.26	122,630.251	1.76	171,619.988	2.26	220,609.725	2.76	269,609.813
.27	25,628.718	.77	74,619.472	1.27	123,610.046	1.77	172,599.783	2.27	221,589.520	2.77	270,589.930
.28	26,608.513	.78	75,599.296	1.28	124,589.840	1.78	173,579.577	2.28	222,569.314	2.78	271,570.046
.29	27,588.308	.79	76,579.121	1.29	125,569.635	1.79	174,559.372	2.29	223,549.109	2.79	272,550.163
.30	28,568.102	.80	77,558.945	1.30	126,549.430	1.80	175,539.167	2.30	224,528.904	2.80	273,530.280
.31	29,547.897	.81	78,538.770	1.31	127,529.225	1.81	176,518.962	2.31	225,508.699	2.81	274,510.396
.32	30,527.692	.82	79,518.595	1.32	128,509.019	1.82	177,498.756	2.32	226,488.493	2.82	275,490.513
.33	31,507.487	.83	80,498.419	1.33	129,488.814	1.83	178,478.551	2.33	227,468.288	2.83	276,470.630
.34	32,487.281	.84	81,478.244	1.34	130,468.609	1.84	179,458.346	2.34	228,448.083	2.84	277,450.746
.35	33,467.076	.85	82,458.069	1.35	131,448.403	1.85	180,438.141	2.35	229,427.878	2.85	278,430.863
.36	34,446.871	.86	83,437.893	1.36	132,428.198	1.86	181,417.935	2.36	230,407.672	2.86	279,410.979
.37	35,426.666	.87	84,417.718	1.37	133,407.993	1.87	182,397.730	2.37	231,387.467	2.87	280,391.096
.38	36,406.460	.88	85,397.543	1.38	134,387.788	1.88	183,377.525	2.38	232,367.262	2.88	281,371.213
.39	37,386.255	.89	86,377.367	1.39	135,367.582	1.89	184,357.319	2.39	233,347.057	2.89	282,351.329
.40	38,366.050	.90	87,357.192	1.40	136,347.377	1.90	185,337.114	2.40	234,326.851	2.90	283,331.446
.41	39,345.845	.91	88,337.016	1.41	137,327.172	1.91	186,316.909	2.41	235,306.646	2.91	284,311.562
.42	40,325.639	.92	89,316.841	1.42	138,306.967	1.92	187,296.704	2.42	236,286.441	2.92	285,291.679
.43	41,305.434	.93	90,296.666	1.43	139,286.761	1.93	188,276.498	2.43	237,266.235	2.93	286,271.796
.44	42,285.259	.94	91,276.490	1.44	140,266.556	1.94	189,256.293	2.44	238,246.082	2.94	287,251.912
.45	43,265.083	.95	92,256.315	1.45	141,246.351	1.95	190,236.088	2.45	239,226.198	2.95	288,232.029
.46	44,244.908	.96	93,236.140	1.46	142,226.146	1.96	191,215.883	2.46	240,206.315	2.96	289,212.145
.47	45,224.733	.97	94,215.964	1.47	143,205.940	1.97	192,195.677	2.47	241,186.432	2.97	290,192.262
.48	46,204.557	.98	95,195.789	1.48	144,185.735	1.98	193,175.472	2.48	242,166.548	2.98	291,172.379
.49	47,184.382	.99	96,175.613	1.49	145,165.530	1.99	194,155.267	2.49	243,146.665	2.99	292,152.495

** Volume Below Strike Point; Located at intersection of shell & bottom.

Page 1 of 4

* Bottom volume based on Liquid Calibrated Calculation. Average Centimetres not applicable

Volumes reflect a Shell Temperature of 15°C

Tables produced by:
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Action Number P2190102940 - Exhibit G

E. Gruben's Transport Ltd

TANK # 8

Tuktoyaktuk, NT

814 Kg/m³ @ 15°C

Cone Roof Tank - Nominal Dimensions : 10.688 Metres X 9.144 Metres

INNAGE TABLE

Reference Gauge Height- 10.035 Metres; 0.61 Metres to Top Edge of Gauge Window in Radar Hatch Height in Centimetres; Capacity in Litres											
3.00	293,132.612	3.50	342,138.442	4.00	391,144.273	4.50	440,150.103	5.00	489,155.381	5.50	538,158.967
3.01	294,112.728	3.51	343,118.559	4.01	392,124.389	4.51	441,130.220	5.01	490,135.453	5.51	539,139.038
3.02	295,092.845	3.52	344,098.676	4.02	393,104.506	4.52	442,110.337	5.02	491,115.524	5.52	540,119.110
3.03	296,072.962	3.53	345,078.792	4.03	394,084.623	4.53	443,090.453	5.03	492,095.596	5.53	541,099.182
3.04	297,053.078	3.54	346,058.909	4.04	395,064.739	4.54	444,070.570	5.04	493,075.668	5.54	542,079.254
3.05	298,033.195	3.55	347,039.025	4.05	396,044.856	4.55	445,050.686	5.05	494,055.739	5.55	543,059.325
3.06	299,013.312	3.56	348,019.142	4.06	397,024.973	4.56	446,030.803	5.06	495,035.811	5.56	544,039.397
3.07	299,993.428	3.57	348,999.259	4.07	398,005.089	4.57	447,010.920	5.07	496,015.883	5.57	545,019.469
3.08	300,973.545	3.58	349,979.375	4.08	398,985.206	4.58	447,991.036	5.08	496,995.955	5.58	545,999.540
3.09	301,953.661	3.59	350,959.492	4.09	399,965.322	4.59	448,971.153	5.09	497,976.026	5.59	546,979.612
3.10	302,933.778	3.60	351,939.608	4.10	400,945.439	4.60	449,951.269	5.10	498,956.098	5.60	547,959.684
3.11	303,913.895	3.61	352,919.725	4.11	401,925.556	4.61	450,931.386	5.11	499,936.170	5.61	548,939.756
3.12	304,894.011	3.62	353,899.842	4.12	402,905.672	4.62	451,911.503	5.12	500,916.241	5.62	549,919.827
3.13	305,874.128	3.63	354,879.958	4.13	403,885.789	4.63	452,891.619	5.13	501,896.313	5.63	550,899.899
3.14	306,854.244	3.64	355,860.075	4.14	404,865.905	4.64	453,871.736	5.14	502,876.385	5.64	551,879.971
3.15	307,834.361	3.65	356,840.192	4.15	405,846.022	4.65	454,851.852	5.15	503,856.457	5.65	552,860.043
3.16	308,814.478	3.66	357,820.308	4.16	406,826.139	4.66	455,831.969	5.16	504,836.528	5.66	553,840.114
3.17	309,794.594	3.67	358,800.425	4.17	407,806.255	4.67	456,812.086	5.17	505,816.600	5.67	554,820.186
3.18	310,774.711	3.68	359,780.541	4.18	408,786.372	4.68	457,792.202	5.18	506,796.672	5.68	555,800.258
3.19	311,754.827	3.69	360,760.658	4.19	409,766.488	4.69	458,772.319	5.19	507,776.743	5.69	556,780.329
3.20	312,734.944	3.70	361,740.775	4.20	410,746.605	4.70	459,752.436	5.20	508,756.815	5.70	557,760.401
3.21	313,715.061	3.71	362,720.891	4.21	411,726.722	4.71	460,732.552	5.21	509,736.887	5.71	558,740.473
3.22	314,695.177	3.72	363,701.008	4.22	412,706.838	4.72	461,712.669	5.22	510,716.959	5.72	559,720.545
3.23	315,675.294	3.73	364,681.124	4.23	413,686.955	4.73	462,692.785	5.23	511,697.030	5.73	560,700.616
3.24	316,655.411	3.74	365,661.241	4.24	414,667.071	4.74	463,672.902	5.24	512,677.102	5.74	561,680.688
3.25	317,635.527	3.75	366,641.358	4.25	415,647.188	4.75	464,653.019	5.25	513,657.174	5.75	562,660.760
3.26	318,615.644	3.76	367,621.474	4.26	416,627.305	4.76	465,633.135	5.26	514,637.245	5.76	563,640.831
3.27	319,595.760	3.77	368,601.591	4.27	417,607.421	4.77	466,613.252	5.27	515,617.317	5.77	564,620.903
3.28	320,575.877	3.78	369,581.707	4.28	418,587.538	4.78	467,593.368	5.28	516,597.389	5.78	565,600.975
3.29	321,555.994	3.79	370,561.824	4.29	419,567.655	4.79	468,573.485	5.29	517,577.461	5.79	566,581.047
3.30	322,536.110	3.80	371,541.941	4.30	420,547.771	4.80	469,553.602	5.30	518,557.532	5.80	567,561.118
3.31	323,516.227	3.81	372,522.057	4.31	421,527.888	4.81	470,533.718	5.31	519,537.604	5.81	568,541.190
3.32	324,496.343	3.82	373,502.174	4.32	422,508.004	4.82	471,513.835	5.32	520,517.676	5.82	569,521.262
3.33	325,476.460	3.83	374,482.290	4.33	423,488.121	4.83	472,493.951	5.33	521,497.748	5.83	570,501.333
3.34	326,456.577	3.84	375,462.407	4.34	424,468.238	4.84	473,474.068	5.34	522,477.819	5.84	571,481.405
3.35	327,436.693	3.85	376,442.524	4.35	425,448.354	4.85	474,454.185	5.35	523,457.891	5.85	572,461.477
3.36	328,416.810	3.86	377,422.640	4.36	426,428.471	4.86	475,434.301	5.36	524,437.963	5.86	573,441.549
3.37	329,396.926	3.87	378,402.757	4.37	427,408.587	4.87	476,414.418	5.37	525,418.034	5.87	574,421.620
3.38	330,377.043	3.88	379,382.874	4.38	428,388.704	4.88	477,394.520	5.38	526,398.106	5.88	575,401.692
3.39	331,357.160	3.89	380,362.990	4.39	429,368.821	4.89	478,374.592	5.39	527,378.178	5.89	576,381.764
3.40	332,337.276	3.90	381,343.107	4.40	430,348.937	4.90	479,354.664	5.40	528,358.250	5.90	577,361.835
3.41	333,317.393	3.91	382,323.223	4.41	431,329.054	4.91	480,334.735	5.41	529,338.321	5.91	578,341.907
3.42	334,297.509	3.92	383,303.340	4.42	432,309.170	4.92	481,314.807	5.42	530,318.393	5.92	579,321.979
3.43	335,277.626	3.93	384,283.457	4.43	433,289.287	4.93	482,294.879	5.43	531,298.465	5.93	580,302.051
3.44	336,257.743	3.94	385,263.573	4.44	434,269.404	4.94	483,274.950	5.44	532,278.536	5.94	581,282.122
3.45	337,237.859	3.95	386,243.690	4.45	435,249.520	4.95	484,255.022	5.45	533,258.608	5.95	582,262.194
3.46	338,217.976	3.96	387,223.806	4.46	436,229.637	4.96	485,235.094	5.46	534,238.680	5.96	583,242.266
3.47	339,198.093	3.97	388,203.923	4.47	437,209.754	4.97	486,215.166	5.47	535,218.752	5.97	584,222.338
3.48	340,178.209	3.98	389,184.040	4.48	438,189.870	4.98	487,195.237	5.48	536,198.823	5.98	585,202.409
3.49	341,158.326	3.99	390,164.156	4.49	439,169.987	4.99	488,175.309	5.49	537,178.895	5.99	586,182.481

Average Millimetres

1	98.012	6	588.070
2	196.023	7	686.082
3	294.035	8	784.093
4	392.047	9	882.105
5	490.058	10	980.117

Tables produced by:
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Action Number P2190102940 - Exhibit G

E. Gruben's Transport Ltd

TANK # 8

Tuktoyaktuk, NT

814 Kg/m³ @ 15°C

Cone Roof Tank - Nominal Dimensions : 10.688 Metres X 9.144 Metres

INNAGE TABLE

Reference Gauge Height- 10.035 Metres; 0.61 Metres to Top Edge of Gauge Window in Radar Hatch Height in Centimetres; Capacity in Litres											
6.00	587,162.553	6.50	636,166.139	7.00	685,169.725	7.50	734,174.142	8.00	783,179.976	8.50	832,185.810
6.01	588,142.624	6.51	637,146.210	7.01	686,149.796	7.51	735,154.258	8.01	784,160.092	8.51	833,165.927
6.02	589,122.696	6.52	638,126.282	7.02	687,129.868	7.52	736,134.375	8.02	785,140.209	8.52	834,146.043
6.03	590,102.768	6.53	639,106.354	7.03	688,109.940	7.53	737,114.492	8.03	786,120.326	8.53	835,126.160
6.04	591,082.840	6.54	640,086.426	7.04	689,090.011	7.54	738,094.608	8.04	787,100.443	8.54	836,106.277
6.05	592,062.911	6.55	641,066.497	7.05	690,070.083	7.55	739,074.725	8.05	788,080.559	8.55	837,086.394
6.06	593,042.983	6.56	642,046.569	7.06	691,050.155	7.56	740,054.842	8.06	789,060.676	8.56	838,066.510
6.07	594,023.055	6.57	643,026.641	7.07	692,030.227	7.57	741,034.958	8.07	790,040.793	8.57	839,046.627
6.08	595,003.126	6.58	644,006.712	7.08	693,010.298	7.58	742,015.075	8.08	791,020.909	8.58	840,026.744
6.09	595,983.198	6.59	644,986.784	7.09	693,990.370	7.59	742,995.192	8.09	792,001.026	8.59	841,006.860
6.10	596,963.270	6.60	645,966.856	7.10	694,970.442	7.60	743,975.308	8.10	792,981.143	8.60	841,986.977
6.11	597,943.342	6.61	646,946.928	7.11	695,950.513	7.61	744,955.425	8.11	793,961.259	8.61	842,967.094
6.12	598,923.413	6.62	647,926.999	7.12	696,930.585	7.62	745,935.542	8.12	794,941.376	8.62	843,947.210
6.13	599,903.485	6.63	648,907.071	7.13	697,910.657	7.63	746,915.658	8.13	795,921.493	8.63	844,927.327
6.14	600,883.557	6.64	649,887.143	7.14	698,890.729	7.64	747,895.775	8.14	796,901.609	8.64	845,907.444
6.15	601,863.628	6.65	650,867.214	7.15	699,870.800	7.65	748,875.892	8.15	797,881.726	8.65	846,887.560
6.16	602,843.700	6.66	651,847.286	7.16	700,850.872	7.66	749,856.008	8.16	798,861.843	8.66	847,867.677
6.17	603,823.772	6.67	652,827.358	7.17	701,830.944	7.67	750,836.125	8.17	799,841.959	8.67	848,847.794
6.18	604,803.844	6.68	653,807.430	7.18	702,811.016	7.68	751,816.242	8.18	800,822.076	8.68	849,827.910
6.19	605,783.915	6.69	654,787.501	7.19	703,791.087	7.69	752,796.359	8.19	801,802.193	8.69	850,808.027
6.20	606,763.987	6.70	655,767.573	7.20	704,771.159	7.70	753,776.475	8.20	802,782.310	8.70	851,788.144
6.21	607,744.059	6.71	656,747.645	7.21	705,751.231	7.71	754,756.592	8.21	803,762.426	8.71	852,768.260
6.22	608,724.130	6.72	657,727.716	7.22	706,731.302	7.72	755,736.709	8.22	804,742.543	8.72	853,748.377
6.23	609,704.202	6.73	658,707.788	7.23	707,711.374	7.73	756,716.825	8.23	805,722.660	8.73	854,728.494
6.24	610,684.274	6.74	659,687.860	7.24	708,691.446	7.74	757,696.942	8.24	806,702.776	8.74	855,708.611
6.25	611,664.346	6.75	660,667.932	7.25	709,671.518	7.75	758,677.059	8.25	807,682.893	8.75	856,688.727
6.26	612,644.417	6.76	661,648.003	7.26	710,651.589	7.76	759,657.175	8.26	808,663.010	8.76	857,668.844
6.27	613,624.489	6.77	662,628.075	7.27	711,631.661	7.77	760,637.292	8.27	809,643.126	8.77	858,648.961
6.28	614,604.561	6.78	663,608.147	7.28	712,611.733	7.78	761,617.409	8.28	810,623.243	8.78	859,629.077
6.29	615,584.633	6.79	664,588.218	7.29	713,591.804	7.79	762,597.525	8.29	811,603.360	8.79	860,609.194
6.30	616,564.704	6.80	665,568.290	7.30	714,571.876	7.80	763,577.642	8.30	812,583.476	8.80	861,589.311
6.31	617,544.776	6.81	666,548.362	7.31	715,551.948	7.81	764,557.759	8.31	813,563.593	8.81	862,569.427
6.32	618,524.848	6.82	667,528.434	7.32	716,532.041	7.82	765,537.875	8.32	814,543.710	8.82	863,549.544
6.33	619,504.919	6.83	668,508.505	7.33	717,512.158	7.83	766,517.992	8.33	815,523.826	8.83	864,529.661
6.34	620,484.991	6.84	669,488.577	7.34	718,492.275	7.84	767,498.109	8.34	816,503.943	8.84	865,509.777
6.35	621,465.063	6.85	670,468.649	7.35	719,472.391	7.85	768,478.226	8.35	817,484.060	8.85	866,489.894
6.36	622,445.135	6.86	671,448.721	7.36	720,452.508	7.86	769,458.342	8.36	818,464.176	8.86	867,470.011
6.37	623,425.206	6.87	672,428.792	7.37	721,432.625	7.87	770,438.459	8.37	819,444.293	8.87	868,450.127
6.38	624,405.278	6.88	673,408.864	7.38	722,412.741	7.88	771,418.576	8.38	820,424.410	8.88	869,430.244
6.39	625,385.350	6.89	674,388.936	7.39	723,392.858	7.89	772,398.692	8.39	821,404.527	8.89	870,410.361
6.40	626,365.421	6.90	675,369.007	7.40	724,372.975	7.90	773,378.809	8.40	822,384.643	8.90	871,390.478
6.41	627,345.493	6.91	676,349.079	7.41	725,353.091	7.91	774,358.926	8.41	823,364.760	8.91	872,370.594
6.42	628,325.565	6.92	677,329.151	7.42	726,333.208	7.92	775,339.042	8.42	824,344.877	8.92	873,350.711
6.43	629,305.637	6.93	678,309.223	7.43	727,313.325	7.93	776,319.159	8.43	825,324.993	8.93	874,330.828
6.44	630,285.708	6.94	679,289.294	7.44	728,293.441	7.94	777,299.276	8.44	826,305.110	8.94	875,310.944
6.45	631,265.780	6.95	680,269.366	7.45	729,273.558	7.95	778,279.392	8.45	827,285.227	8.95	876,291.061
6.46	632,245.852	6.96	681,249.438	7.46	730,253.675	7.96	779,259.509	8.46	828,265.343	8.96	877,271.178
6.47	633,225.923	6.97	682,229.509	7.47	731,233.791	7.97	780,239.626	8.47	829,245.460	8.97	878,251.294
6.48	634,205.995	6.98	683,209.581	7.48	732,213.908	7.98	781,219.742	8.48	830,225.577	8.98	879,231.411
6.49	635,186.067	6.99	684,189.653	7.49	733,194.025	7.99	782,199.859	8.49	831,205.693	8.99	880,211.528

Average Millimetres

1	98.012	6	588.070
2	196.023	7	686.082
3	294.035	8	784.093
4	392.047	9	882.105
5	490.058	10	980.117

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Action Number P2190102940 - Exhibit G

E. Gruben's Transport Ltd

TANK # 8

Tuktoyaktuk, NT

814 Kg/m³ @ 15°C

Cone Roof Tank - Nominal Dimensions : 10.688 Metres X 9.144 Metres

INNAGE TABLE

Reference Gauge Height- 10.035 Metres; 0.61 Metres to Top Edge of Gauge Window in Radar Hatch Height in Centimetres; Capacity in Litres									
9.00	881,191.644	9.50	930,197.479	10.00		10.50		11.00	11.50
9.01	882,171.761	9.51	931,177.595	10.01		10.51		11.01	11.51
9.02	883,151.878	9.52	932,157.712	10.02		10.52		11.02	11.52
9.03	884,131.994	9.53	933,137.829	10.03		10.53		11.03	11.53
9.04	885,112.111	9.54	934,117.945	10.04		10.54		11.04	11.54
9.05	886,092.228	9.55	935,098.062	10.05		10.55		11.05	11.55
9.06	887,072.344	9.56	936,078.179	10.06		10.56		11.06	11.56
9.07	888,052.461	9.57	937,058.295	10.07		10.57		11.07	11.57
9.08	889,032.578	9.58	938,038.412	10.08		10.58		11.08	11.58
9.09	890,012.695	9.59	939,018.529	10.09		10.59		11.09	11.59
9.10	890,992.811	9.60	939,998.645	10.10		10.60		11.10	11.60
9.11	891,972.928	9.61	940,978.762	10.11		10.61		11.11	11.61
9.12	892,953.045	9.62	941,958.879	10.12		10.62		11.12	11.62
9.13	893,933.161	9.63	942,938.996	10.13		10.63		11.13	11.63
9.14	894,913.278	9.64	943,919.112	10.14		10.64		11.14	11.64
9.15	895,893.395	9.65	944,899.229	10.15		10.65		11.15	11.65
9.16	896,873.511	9.66	945,879.346	10.16		10.66		11.16	11.66
9.17	897,853.628	9.67	946,859.462	10.17		10.67		11.17	11.67
9.18	898,833.745	9.68	947,839.579	10.18		10.68		11.18	11.68
9.19	899,813.861	9.69	948,819.696	10.19		10.69		11.19	11.69
9.20	900,793.978	9.70	949,799.812	10.20		10.70		11.20	11.70
9.21	901,774.095	9.71	950,779.929	10.21		10.71		11.21	11.71
9.22	902,754.211	9.72	951,760.046	10.22		10.72		11.22	11.72
9.23	903,734.328	9.73	952,740.162	10.23		10.73		11.23	11.73
9.24	904,714.445	9.74	953,720.279	10.24		10.74		11.24	11.74
9.25	905,694.562	9.75	954,543.565	10.25		10.75		11.25	11.75
9.26	906,674.678	9.76		10.26		10.76		11.26	11.76
9.27	907,654.795	9.77		10.27		10.77		11.27	11.77
9.28	908,634.912	9.78		10.28		10.78		11.28	11.78
9.29	909,615.028	9.79		10.29		10.79		11.29	11.79
9.30	910,595.145	9.80		10.30		10.80		11.30	11.80
9.31	911,575.262	9.81		10.31		10.81		11.31	11.81
9.32	912,555.378	9.82		10.32		10.82		11.32	11.82
9.33	913,535.495	9.83		10.33		10.83		11.33	11.83
9.34	914,515.612	9.84		10.34		10.84		11.34	11.84
9.35	915,495.728	9.85		10.35		10.85		11.35	11.85
9.36	916,475.845	9.86		10.36		10.86		11.36	11.86
9.37	917,455.962	9.87		10.37		10.87		11.37	11.87
9.38	918,436.078	9.88		10.38		10.88		11.38	11.88
9.39	919,416.195	9.89		10.39		10.89		11.39	11.89
9.40	920,396.312	9.90		10.40		10.90		11.40	11.90
9.41	921,376.428	9.91		10.41		10.91		11.41	11.91
9.42	922,356.545	9.92		10.42		10.92		11.42	11.92
9.43	923,336.662	9.93		10.43		10.93		11.43	11.93
9.44	924,316.779	9.94		10.44		10.94		11.44	11.94
9.45	925,296.895	9.95		10.45		10.95		11.45	11.95
9.46	926,277.012	9.96		10.46		10.96		11.46	11.96
9.47	927,257.129	9.97		10.47		10.97		11.47	11.97
9.48	928,237.245	9.98		10.48		10.98		11.48	11.98
9.49	929,217.362	9.99		10.49		10.99		11.49	11.99

Average Millimetres

1	98.012	6	588.070
2	196.023	7	686.082
3	294.035	8	784.093
4	392.047	9	882.105
5	490.058	10	980.117

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Cone Roof Tank - Nominal Dimensions : 10.688 Metres X 9.144 Metres

Volumes in: Litres					
To Increment	Incs	Gross Volume per Increment	Deadwood Volume	Net Volume	Accumulated Volume
0	1	0.000000	157.296218	157.296218	157.296218
1	1	979.871499	-568.303285	411.568214	568.864431
2	1	979.871499	-281.280339	698.591159	1267.455591
3	1	979.871499	-103.907767	875.963731	2143.419322
4	1	979.871499	-30.320985	949.550513	3092.969835
26	22	979.871499	-0.034088	979.837411	24648.923501
105	79	979.871499	-0.046867	979.824632	102054.561255
243	138	979.871499	-0.076758	979.794741	237266.235497
244	1	979.922998	-0.076758	979.846240	238246.081737
487	243	980.193367	-0.076758	980.116610	476414.417911
488	1	980.179002	-0.076758	980.102245	477394.520156
731	243	980.148477	-0.076758	980.071719	715551.947866
732	1	980.170061	-0.076758	980.093303	716532.041169
974	242	980.193443	-0.076758	980.116686	953720.279099
975	1	823.362492	-0.076758	823.285735	954543.564834

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E. Gruben's Transport Ltd
Tuktoyaktuk, NT

General Information

Tank Number	8
Date of Strapping Data	07/23/2019
Year Built	
Product in Service	Ultra Low Sulphur Diesel
Product Service Density	0.814 g/cc (SG)

Tank Dimensions

Nominal Diameter	36' 8"
Nominal Height	32'
Measured Tank Height	9.748 Metres
Tank Tilt	0 Millimetres
Gauge Point Information	Top of Benchmark in Hatch
Reference Gauge Height	10.035 Metres
Horizontal To Gauge	24 Inches

Roof & Bottom Survey

Roof Type	Cone
Floating Roof Shape	
Floating Roof Weight	
Roof Landed Height	
Roof Full Floating Height	
Bottom Description	Laser Scan

Report Constraints

Main Increment	Centimetres
Main Volume	Litres
Product at Strapping	empty
Product Strap Density	1 g/cc (SG)
Liquid Height at Strap	
Safe Fill Height	
Overflow Or Foamline	

E. Gruben's Transport Ltd
Tuktoyaktuk, NT

Strap Correction to 60°F

Shell Temperature (°F)	50.0	Master Tape Serial
Shell Material	Carbon Steel	Master Tape Span
Shell Expansion (per Foot)	0.000006450	Master Tape Tension

Certified Tape Factor	1
Tape Correction Factor	$1 + ('Shell\ Temperature' - 68) 'Tape\ Expansion'$
Shell Correction Factor	$1 + (60 - 'Shell\ Temperature') 'Shell\ Expansion'$

Correction Summary

Certified Tape Factor * Tape Correction Factor * Shell Correction Factor
Correction Factor = 1.00006450

Course	Strap Circumference Metres	Converted Circumference (Feet)	Tape Rise (Feet)	Corrected Strap Circumference (Feet)
1	35.087	115.115	0.000	115.122
2	35.090	115.124	0.000	115.131
3	35.086	115.111	0.000	115.119
4	35.084	115.104	0.000	115.112

Optical Circumference Corrections

Course	Average Optical Offset Millimetres	Difference Millimetres	Correction Millimetres	Corrected Circumference Metres	Corrected Circumference (Feet)
1	0.000	0.000	0.000	35.089	115.122
2	0.000	0.000	0.000	35.092	115.131
3	0.000	0.000	0.000	35.088	115.119
4	0.000	0.000	0.000	35.086	115.112

E. Gruben's Transport Ltd
Tuktoyaktuk, NT

Tank Measurements

Course	Strap (Feet)	Plate Thickness	Course Height	Accumulated Total
1	115.122	0.250 Inches	8.000 Feet	8.000 Feet
2	115.131	0.250 Inches	8.000 Feet	16.000 Feet
3	115.119	0.250 Inches	8.000 Feet	24.000 Feet
4	115.112	0.250 Inches	8.000 Feet	32.000 Feet

Tank Construction

Course	Course Fit/Join	Plates per Course	Width of Tape Rise	Depth of Tape Rise
1	Butt Weld	4	0.000 Millimetres	0.000 Millimetres
2	Butt Weld	4	0.000 Millimetres	0.000 Millimetres
3	Butt Weld	4	0.000 Millimetres	0.000 Millimetres
4	Butt Weld	4	0.000 Millimetres	0.000 Millimetres

E. Gruben's Transport Ltd
Tuktoyaktuk, NT

Circumference Corrected to Empty Tank Basis

$$\frac{-W * H * C^2}{2 * \pi * E * T} \quad (\text{Correction in Feet}) \quad \text{Or} \quad \frac{-K (G * H * C^2)}{T} \quad (\text{Correction in Inches})$$

Where :

$$K = \frac{W}{24 * \pi * E} = 0.000000028492394$$

G = Observed Density of Liquid in tank.

H = height of liquid above strap, in feet.

C = measured circumference, in feet.

T = thickness of shell material, in inches.

W = weight of liquid, in pounds per cubic foot.

E = modulus of elasticity of shell material.

Correction Summary

Course	Product Weight (Lb/Ft3)	Density	Liquid Height (Feet)	Corrected Circumference (Feet)	Plate Thickness (Inches)	Empty Tank Corrected (Feet)
1.00	62.428	1.000	0	115.122	0.250	0
2.00	62.428	1.000	0	115.131	0.250	0
3.00	62.428	1.000	0	115.119	0.250	0
4.00	62.428	1.000	0	115.112	0.250	0

E. Gruben's Transport Ltd
Tuktoyaktuk, NT

Circumference Deduction for Tape Rises

Butt Strap Correction (In Feet)

$$= \frac{(2 * N * T * W)}{(12 * D)} + \frac{(8 * N * T)}{(12 * 3)} * \sqrt{T/D}$$

Lap Joint Correction (In Feet)

$$= \frac{(4 * N * T)}{(12 * 3)} * \sqrt{T/(2*D)}$$

Where :

N = number of butt straps or projections per course

T = thickness of straps or projections (in inches)

W = width of straps or projections (in inches)

D = nominal diameter of tank (in inches)

Circumference Deduction for Shell Thickness

$$= \frac{(\pi * T)}{6} \quad (\text{Correction In Feet})$$

Where :

T = thickness of shell material (In Inches)

Summary of Circumference Deductions

Course	Temperature Compensated Circumference	Empty Tank (Feet)	Tape Rise (Feet)	Plate Thickness (Feet)	Inside Circumference (Feet)
1	115.122	0.000	0.000	0.000	115.122
2	115.131	0.000	0.000	0.000	115.131
3	115.119	0.000	0.000	0.000	115.119
4	115.112	0.000	0.000	0.000	115.112

E. Gruben's Transport Ltd
Tuktoyaktuk, NT

Incremental Volume Per Course

Liquid Head Stress Correction (In Feet)

$$= \frac{K (G * H * C^2)}{T}$$

Incremental Volume (in Cubic Feet)

$$= (C / \pi / 2)^2 * (\pi / 12)$$

Where :

G = tank Service Density.

H = height of liquid (between strap & top of course), in feet.

C = circumference, in feet.

T = thickness of shell material, in inches.

Incremental Volume Per Course

Course	Inside Circumference (Feet)	Liquid Head Stress (Feet)	Stressed Circumference (Feet)	Litres Per Centimetre
1	115.122	0.005	115.127	979.884
2	115.131	0.005	115.136	980.039
3	115.119	0.005	115.124	979.826
4	115.112	0.005	115.116	979.704

E. Gruben's Transport Ltd
Tuktoyaktuk, NT

Liquid Head Corrections

Volumetric Increase per Course

$$= \frac{H}{T} * \frac{K}{F}$$

Where :

H = Course Height (in inches)

T = Plate Thickness (in inches)

$$K = \frac{\pi * W * G * D^3}{4 * E}$$

W = weight of liquid, in pounds per cubic foot.

G = Specific Gravity of product to be stored.

D = Inside Diameter of the Course.

E = modulus of elasticity of shell material.

F = desired volume conversion (cubic inch per unit volume)

eg. 231 to US Gallons, 61.023744 to Litres

Gross Volume per Chart Increment

Course	Litres Per Centimetre	Volume Correction Litres	Incremental Correction Litres	Gross Volume @ 60°F	Gross Volume @ 59 °F 0.9999871
1	979.884	0.167	0.000	979.884	979.871
2	980.039	0.167	0.167	980.206	980.193
3	979.826	0.167	0.335	980.161	980.148
4	979.704	0.000	0.502	980.206	980.193

Action Number P2190102940 - Exhibit G

E. Gruben's Transport Ltd

TANK # 9

Tuktoyaktuk, NT

814 Kg/m³ @ 15°C

Cone Roof Tank - Nominal Dimensions : 10.688 Metres X 9.144 Metres

INNAGE TABLE

Reference Gauge Height - 9.999 Metres; 0.61 Metres to Top Edge of Gauge Window in Radar Hatch										Height in Centimetres; Capacity in Litres	
.00**	1,694.980	.50	50,564.842	1.00	99,537.597	1.50	148,509.007	2.00	197,480.268	2.50	246,453.161
.01*	2,588.907	.51	51,544.297	1.01	100,517.052	1.51	149,488.433	2.01	198,459.694	2.51	247,432.852
.02*	3,551.752	.52	52,523.752	1.02	101,496.507	1.52	150,467.858	2.02	199,439.119	2.52	248,412.542
.03	4,531.178	.53	53,503.207	1.03	102,475.962	1.53	151,447.283	2.03	200,418.544	2.53	249,392.232
.04	5,510.603	.54	54,482.662	1.04	103,455.417	1.54	152,426.708	2.04	201,397.969	2.54	250,371.922
.05	6,490.028	.55	55,462.117	1.05	104,434.873	1.55	153,406.134	2.05	202,377.395	2.55	251,351.612
.06	7,469.453	.56	56,441.572	1.06	105,414.298	1.56	154,385.559	2.06	203,356.820	2.56	252,331.302
.07	8,448.878	.57	57,421.027	1.07	106,393.723	1.57	155,364.984	2.07	204,336.245	2.57	253,310.992
.08	9,428.304	.58	58,400.482	1.08	107,373.148	1.58	156,344.409	2.08	205,315.670	2.58	254,290.683
.09	10,407.729	.59	59,379.938	1.09	108,352.573	1.59	157,323.834	2.09	206,295.095	2.59	255,270.373
.10	11,387.154	.60	60,359.393	1.10	109,331.999	1.60	158,303.260	2.10	207,274.521	2.60	256,250.063
.11	12,366.579	.61	61,338.848	1.11	110,311.424	1.61	159,282.685	2.11	208,253.946	2.61	257,229.753
.12	13,346.005	.62	62,318.303	1.12	111,290.849	1.62	160,262.110	2.12	209,233.371	2.62	258,209.443
.13	14,325.430	.63	63,297.758	1.13	112,270.274	1.63	161,241.535	2.13	210,212.796	2.63	259,189.133
.14	15,304.855	.64	64,277.213	1.14	113,249.700	1.64	162,220.961	2.14	211,192.222	2.64	260,168.823
.15	16,284.280	.65	65,256.668	1.15	114,229.125	1.65	163,200.386	2.15	212,171.647	2.65	261,148.514
.16	17,263.748	.66	66,236.123	1.16	115,208.550	1.66	164,179.811	2.16	213,151.072	2.66	262,128.204
.17	18,243.216	.67	67,215.578	1.17	116,187.975	1.67	165,159.236	2.17	214,130.497	2.67	263,107.894
.18	19,222.684	.68	68,195.034	1.18	117,167.400	1.68	166,138.661	2.18	215,109.922	2.68	264,087.584
.19	20,202.152	.69	69,174.489	1.19	118,146.826	1.69	167,118.087	2.19	216,089.348	2.69	265,067.274
.20	21,181.620	.70	70,153.944	1.20	119,126.251	1.70	168,097.512	2.20	217,068.773	2.70	266,046.964
.21	22,161.088	.71	71,133.399	1.21	120,105.676	1.71	169,076.937	2.21	218,048.198	2.71	267,026.655
.22	23,140.555	.72	72,112.854	1.22	121,085.101	1.72	170,056.362	2.22	219,027.623	2.72	268,006.345
.23	24,120.023	.73	73,092.309	1.23	122,064.527	1.73	171,035.788	2.23	220,007.048	2.73	268,986.035
.24	25,099.491	.74	74,071.764	1.24	123,043.952	1.74	172,015.213	2.24	220,986.474	2.74	269,965.725
.25	26,078.959	.75	75,051.219	1.25	124,023.377	1.75	172,994.638	2.25	221,965.899	2.75	270,945.415
.26	27,058.427	.76	76,030.674	1.26	125,002.802	1.76	173,974.063	2.26	222,945.324	2.76	271,925.105
.27	28,037.852	.77	77,010.130	1.27	125,982.227	1.77	174,953.488	2.27	223,924.749	2.77	272,904.795
.28	29,017.277	.78	77,989.585	1.28	126,961.653	1.78	175,932.914	2.28	224,904.175	2.78	273,884.486
.29	29,996.703	.79	78,969.040	1.29	127,941.078	1.79	176,912.339	2.29	225,883.600	2.79	274,864.176
.30	30,976.128	.80	79,948.495	1.30	128,920.503	1.80	177,891.764	2.30	226,863.025	2.80	275,843.866
.31	31,955.553	.81	80,927.950	1.31	129,899.928	1.81	178,871.189	2.31	227,842.450	2.81	276,823.556
.32	32,934.978	.82	81,907.405	1.32	130,879.354	1.82	179,850.614	2.32	228,821.875	2.82	277,803.246
.33	33,914.404	.83	82,886.860	1.33	131,858.779	1.83	180,830.040	2.33	229,801.301	2.83	278,782.936
.34	34,893.829	.84	83,866.315	1.34	132,838.204	1.84	181,809.465	2.34	230,780.726	2.84	279,762.626
.35	35,873.254	.85	84,845.770	1.35	133,817.629	1.85	182,788.890	2.35	231,760.151	2.85	280,742.317
.36	36,852.679	.86	85,825.225	1.36	134,797.054	1.86	183,768.315	2.36	232,739.576	2.86	281,722.007
.37	37,832.104	.87	86,804.681	1.37	135,776.480	1.87	184,747.741	2.37	233,719.002	2.87	282,701.697
.38	38,811.530	.88	87,784.136	1.38	136,755.905	1.88	185,727.166	2.38	234,698.427	2.88	283,681.387
.39	39,790.955	.89	88,763.591	1.39	137,735.330	1.89	186,706.591	2.39	235,677.852	2.89	284,661.077
.40	40,770.380	.90	89,743.046	1.40	138,714.755	1.90	187,686.016	2.40	236,657.277	2.90	285,640.767
.41	41,749.805	.91	90,722.501	1.41	139,694.180	1.91	188,665.441	2.41	237,636.702	2.91	286,620.458
.42	42,729.231	.92	91,701.956	1.42	140,673.606	1.92	189,644.867	2.42	238,616.128	2.92	287,600.148
.43	43,708.656	.93	92,681.411	1.43	141,653.031	1.93	190,624.292	2.43	239,595.553	2.93	288,579.838
.44	44,688.111	.94	93,660.866	1.44	142,632.456	1.94	191,603.717	2.44	240,575.020	2.94	289,559.528
.45	45,667.566	.95	94,640.321	1.45	143,611.881	1.95	192,583.142	2.45	241,554.711	2.95	290,539.218
.46	46,647.021	.96	95,619.777	1.46	144,591.307	1.96	193,562.568	2.46	242,534.401	2.96	291,518.908
.47	47,626.476	.97	96,599.232	1.47	145,570.732	1.97	194,541.993	2.47	243,514.091	2.97	292,498.598
.48	48,605.931	.98	97,578.687	1.48	146,550.157	1.98	195,521.418	2.48	244,493.781	2.98	293,478.289
.49	49,585.386	.99	98,558.142	1.49	147,529.582	1.99	196,500.843	2.49	245,473.471	2.99	294,457.979

** Volume Below Strike Point; Located at intersection of shell & bottom.

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* Bottom volume based on Liquid Calibrated Calculation. Average Centimetres not applicable

Volumes reflect a Shell Temperature of 15°C

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Action Number P2190102940 - Exhibit G

E. Gruben's Transport Ltd

TANK # 9

Tuktoyaktuk, NT

814 Kg/m³ @ 15°C

Cone Roof Tank - Nominal Dimensions : 10.688 Metres X 9.144 Metres

INNAGE TABLE

Reference Gauge Height - 9.999 Metres; 0.61 Metres to Top Edge of Gauge Window in Radar Hatch Height in Centimetres; Capacity in Litres											
3.00	295,437.669	3.50	344,422.176	4.00	393,406.684	4.50	442,391.191	5.00	491,377.722	5.50	540,370.441
3.01	296,417.359	3.51	345,401.866	4.01	394,386.374	4.51	443,370.881	5.01	492,357.576	5.51	541,350.295
3.02	297,397.049	3.52	346,381.557	4.02	395,366.064	4.52	444,350.572	5.02	493,337.431	5.52	542,330.149
3.03	298,376.739	3.53	347,361.247	4.03	396,345.754	4.53	445,330.262	5.03	494,317.285	5.53	543,310.004
3.04	299,356.429	3.54	348,340.937	4.04	397,325.444	4.54	446,309.952	5.04	495,297.139	5.54	544,289.858
3.05	300,336.120	3.55	349,320.627	4.05	398,305.135	4.55	447,289.642	5.05	496,276.994	5.55	545,269.712
3.06	301,315.810	3.56	350,300.317	4.06	399,284.825	4.56	448,269.332	5.06	497,256.848	5.56	546,249.567
3.07	302,295.500	3.57	351,280.007	4.07	400,264.515	4.57	449,249.022	5.07	498,236.703	5.57	547,229.421
3.08	303,275.190	3.58	352,259.698	4.08	401,244.205	4.58	450,228.712	5.08	499,216.557	5.58	548,209.276
3.09	304,254.880	3.59	353,239.388	4.09	402,223.895	4.59	451,208.403	5.09	500,196.411	5.59	549,189.130
3.10	305,234.570	3.60	354,219.078	4.10	403,203.585	4.60	452,188.093	5.10	501,176.266	5.60	550,168.984
3.11	306,214.261	3.61	355,198.768	4.11	404,183.275	4.61	453,167.783	5.11	502,156.120	5.61	551,148.839
3.12	307,193.951	3.62	356,178.458	4.12	405,162.966	4.62	454,147.473	5.12	503,135.974	5.62	552,128.693
3.13	308,173.641	3.63	357,158.148	4.13	406,142.656	4.63	455,127.163	5.13	504,115.829	5.63	553,108.547
3.14	309,153.331	3.64	358,137.838	4.14	407,122.346	4.64	456,106.853	5.14	505,095.683	5.64	554,088.402
3.15	310,133.021	3.65	359,117.529	4.15	408,102.036	4.65	457,086.544	5.15	506,075.538	5.65	555,068.256
3.16	311,112.711	3.66	360,097.219	4.16	409,081.726	4.66	458,066.234	5.16	507,055.392	5.66	556,048.111
3.17	312,092.401	3.67	361,076.909	4.17	410,061.416	4.67	459,045.924	5.17	508,035.246	5.67	557,027.965
3.18	313,072.092	3.68	362,056.599	4.18	411,041.107	4.68	460,025.614	5.18	509,015.101	5.68	558,007.819
3.19	314,051.782	3.69	363,036.289	4.19	412,020.797	4.69	461,005.304	5.19	509,994.955	5.69	558,987.674
3.20	315,031.472	3.70	364,015.979	4.20	413,000.487	4.70	461,984.994	5.20	510,974.809	5.70	559,967.528
3.21	316,011.162	3.71	364,995.669	4.21	413,980.177	4.71	462,964.684	5.21	511,954.664	5.71	560,947.382
3.22	316,990.852	3.72	365,975.360	4.22	414,959.867	4.72	463,944.375	5.22	512,934.518	5.72	561,927.237
3.23	317,970.542	3.73	366,955.050	4.23	415,939.557	4.73	464,924.065	5.23	513,914.373	5.73	562,907.091
3.24	318,950.232	3.74	367,934.740	4.24	416,919.247	4.74	465,903.755	5.24	514,894.227	5.74	563,886.945
3.25	319,929.923	3.75	368,914.430	4.25	417,898.938	4.75	466,883.445	5.25	515,874.081	5.75	564,866.800
3.26	320,909.613	3.76	369,894.120	4.26	418,878.628	4.76	467,863.135	5.26	516,853.936	5.76	565,846.654
3.27	321,889.303	3.77	370,873.810	4.27	419,858.318	4.77	468,842.825	5.27	517,833.790	5.77	566,826.509
3.28	322,868.993	3.78	371,853.501	4.28	420,838.008	4.78	469,822.515	5.28	518,813.644	5.78	567,806.363
3.29	323,848.683	3.79	372,833.191	4.29	421,817.698	4.79	470,802.206	5.29	519,793.499	5.79	568,786.217
3.30	324,828.373	3.80	373,812.881	4.30	422,797.388	4.80	471,781.896	5.30	520,773.353	5.80	569,766.072
3.31	325,808.063	3.81	374,792.571	4.31	423,777.078	4.81	472,761.586	5.31	521,753.208	5.81	570,745.926
3.32	326,787.754	3.82	375,772.261	4.32	424,756.769	4.82	473,741.276	5.32	522,733.062	5.82	571,725.780
3.33	327,767.444	3.83	376,751.951	4.33	425,736.459	4.83	474,720.966	5.33	523,712.916	5.83	572,705.635
3.34	328,747.134	3.84	377,731.641	4.34	426,716.149	4.84	475,700.656	5.34	524,692.771	5.84	573,685.489
3.35	329,726.824	3.85	378,711.332	4.35	427,695.839	4.85	476,680.347	5.35	525,672.625	5.85	574,665.344
3.36	330,706.514	3.86	379,691.022	4.36	428,675.529	4.86	477,660.037	5.36	526,652.479	5.86	575,645.198
3.37	331,686.204	3.87	380,670.712	4.37	429,655.219	4.87	478,639.727	5.37	527,632.334	5.87	576,625.052
3.38	332,665.895	3.88	381,650.402	4.38	430,634.909	4.88	479,619.470	5.38	528,612.188	5.88	577,604.907
3.39	333,645.585	3.89	382,630.092	4.39	431,614.600	4.89	480,599.324	5.39	529,592.042	5.89	578,584.761
3.40	334,625.275	3.90	383,609.782	4.40	432,594.290	4.90	481,579.178	5.40	530,571.897	5.90	579,564.615
3.41	335,604.965	3.91	384,589.472	4.41	433,573.980	4.91	482,559.033	5.41	531,551.751	5.91	580,544.470
3.42	336,584.655	3.92	385,569.163	4.42	434,553.670	4.92	483,538.887	5.42	532,531.606	5.92	581,524.324
3.43	337,564.345	3.93	386,548.853	4.43	435,533.360	4.93	484,518.741	5.43	533,511.460	5.93	582,504.179
3.44	338,544.035	3.94	387,528.543	4.44	436,513.050	4.94	485,498.596	5.44	534,491.314	5.94	583,484.033
3.45	339,523.726	3.95	388,508.233	4.45	437,492.741	4.95	486,478.450	5.45	535,471.169	5.95	584,463.887
3.46	340,503.416	3.96	389,487.923	4.46	438,472.431	4.96	487,458.305	5.46	536,451.023	5.96	585,443.742
3.47	341,483.106	3.97	390,467.613	4.47	439,452.121	4.97	488,438.159	5.47	537,430.877	5.97	586,423.596
3.48	342,462.796	3.98	391,447.304	4.48	440,431.811	4.98	489,418.013	5.48	538,410.732	5.98	587,403.450
3.49	343,442.486	3.99	392,426.994	4.49	441,411.501	4.99	490,397.868	5.49	539,390.586	5.99	588,383.305

Average Millimetres

1	97.969	6	587.814
2	195.938	7	685.783
3	293.907	8	783.752
4	391.876	9	881.721
5	489.845	10	979.690

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Action Number P2190102940 - Exhibit G

E. Gruben's Transport Ltd

TANK # 9

Tuktoyaktuk, NT

814 Kg/m³ @ 15°C

Cone Roof Tank - Nominal Dimensions : 10.688 Metres X 9.144 Metres

INNAGE TABLE

Reference Gauge Height - 9.999 Metres; 0.61 Metres to Top Edge of Gauge Window in Radar Hatch Height in Centimetres; Capacity in Litres											
6.00	589,363.159	6.50	638,355.878	7.00	687,348.596	7.50	736,346.905	8.00	785,354.748	8.50	834,362.590
6.01	590,343.014	6.51	639,335.732	7.01	688,328.451	7.51	737,327.062	8.01	786,334.904	8.51	835,342.747
6.02	591,322.868	6.52	640,315.586	7.02	689,308.305	7.52	738,307.218	8.02	787,315.061	8.52	836,322.904
6.03	592,302.722	6.53	641,295.441	7.03	690,288.159	7.53	739,287.375	8.03	788,295.218	8.53	837,303.061
6.04	593,282.577	6.54	642,275.295	7.04	691,268.014	7.54	740,267.532	8.04	789,275.375	8.54	838,283.218
6.05	594,262.431	6.55	643,255.150	7.05	692,247.868	7.55	741,247.689	8.05	790,255.532	8.55	839,263.375
6.06	595,242.285	6.56	644,235.004	7.06	693,227.723	7.56	742,227.846	8.06	791,235.689	8.56	840,243.531
6.07	596,222.140	6.57	645,214.858	7.07	694,207.577	7.57	743,208.003	8.07	792,215.846	8.57	841,223.688
6.08	597,201.994	6.58	646,194.713	7.08	695,187.431	7.58	744,188.160	8.08	793,196.002	8.58	842,203.845
6.09	598,181.848	6.59	647,174.567	7.09	696,167.286	7.59	745,168.316	8.09	794,176.159	8.59	843,184.002
6.10	599,161.703	6.60	648,154.421	7.10	697,147.140	7.60	746,148.473	8.10	795,156.316	8.60	844,164.159
6.11	600,141.557	6.61	649,134.276	7.11	698,126.994	7.61	747,128.630	8.11	796,136.473	8.61	845,144.316
6.12	601,121.412	6.62	650,114.130	7.12	699,106.849	7.62	748,108.787	8.12	797,116.630	8.62	846,124.473
6.13	602,101.266	6.63	651,093.985	7.13	700,086.703	7.63	749,088.944	8.13	798,096.787	8.63	847,104.629
6.14	603,081.120	6.64	652,073.839	7.14	701,066.557	7.64	750,069.101	8.14	799,076.944	8.64	848,084.786
6.15	604,060.975	6.65	653,053.693	7.15	702,046.412	7.65	751,049.258	8.15	800,057.100	8.65	849,064.943
6.16	605,040.829	6.66	654,033.548	7.16	703,026.266	7.66	752,029.414	8.16	801,037.257	8.66	850,045.100
6.17	606,020.683	6.67	655,013.402	7.17	704,006.121	7.67	753,009.571	8.17	802,017.414	8.67	851,025.257
6.18	607,000.538	6.68	655,993.256	7.18	704,985.975	7.68	753,989.728	8.18	802,997.571	8.68	852,005.414
6.19	607,980.392	6.69	656,973.111	7.19	705,965.829	7.69	754,969.885	8.19	803,977.728	8.69	852,985.571
6.20	608,960.247	6.70	657,952.965	7.20	706,945.684	7.70	755,950.042	8.20	804,957.885	8.70	853,965.727
6.21	609,940.101	6.71	658,932.820	7.21	707,925.538	7.71	756,930.199	8.21	805,938.042	8.71	854,945.884
6.22	610,919.955	6.72	659,912.674	7.22	708,905.392	7.72	757,910.356	8.22	806,918.198	8.72	855,926.041
6.23	611,899.810	6.73	660,892.528	7.23	709,885.247	7.73	758,890.512	8.23	807,898.355	8.73	856,906.198
6.24	612,879.664	6.74	661,872.383	7.24	710,865.101	7.74	759,870.669	8.24	808,878.512	8.74	857,886.355
6.25	613,859.518	6.75	662,852.237	7.25	711,844.956	7.75	760,850.826	8.25	809,858.669	8.75	858,866.512
6.26	614,839.373	6.76	663,832.091	7.26	712,824.810	7.76	761,830.983	8.26	810,838.826	8.76	859,846.669
6.27	615,819.227	6.77	664,811.946	7.27	713,804.664	7.77	762,811.140	8.27	811,818.983	8.77	860,826.825
6.28	616,799.082	6.78	665,791.800	7.28	714,784.519	7.78	763,791.297	8.28	812,799.139	8.78	861,806.982
6.29	617,778.936	6.79	666,771.654	7.29	715,764.373	7.79	764,771.454	8.29	813,779.296	8.79	862,787.139
6.30	618,758.790	6.80	667,751.509	7.30	716,744.227	7.80	765,751.610	8.30	814,759.453	8.80	863,767.296
6.31	619,738.645	6.81	668,731.363	7.31	717,724.082	7.81	766,731.767	8.31	815,739.610	8.81	864,747.453
6.32	620,718.499	6.82	669,711.218	7.32	718,704.081	7.82	767,711.924	8.32	816,719.767	8.82	865,727.610
6.33	621,698.353	6.83	670,691.072	7.33	719,684.238	7.83	768,692.081	8.33	817,699.924	8.83	866,707.767
6.34	622,678.208	6.84	671,670.926	7.34	720,664.395	7.84	769,672.238	8.34	818,680.081	8.84	867,687.923
6.35	623,658.062	6.85	672,650.781	7.35	721,644.552	7.85	770,652.395	8.35	819,660.237	8.85	868,668.080
6.36	624,637.917	6.86	673,630.635	7.36	722,624.709	7.86	771,632.552	8.36	820,640.394	8.86	869,648.237
6.37	625,617.771	6.87	674,610.489	7.37	723,604.866	7.87	772,612.708	8.37	821,620.551	8.87	870,628.394
6.38	626,597.625	6.88	675,590.344	7.38	724,585.023	7.88	773,592.865	8.38	822,600.708	8.88	871,608.551
6.39	627,577.480	6.89	676,570.198	7.39	725,565.179	7.89	774,573.022	8.39	823,580.865	8.89	872,588.708
6.40	628,557.334	6.90	677,550.053	7.40	726,545.336	7.90	775,553.179	8.40	824,561.022	8.90	873,568.865
6.41	629,537.188	6.91	678,529.907	7.41	727,525.493	7.91	776,533.336	8.41	825,541.179	8.91	874,549.021
6.42	630,517.043	6.92	679,509.761	7.42	728,505.650	7.92	777,513.493	8.42	826,521.335	8.92	875,529.178
6.43	631,496.897	6.93	680,489.616	7.43	729,485.807	7.93	778,493.650	8.43	827,501.492	8.93	876,509.335
6.44	632,476.751	6.94	681,469.470	7.44	730,465.964	7.94	779,473.806	8.44	828,481.649	8.94	877,489.492
6.45	633,456.606	6.95	682,449.324	7.45	731,446.120	7.95	780,453.963	8.45	829,461.806	8.95	878,469.649
6.46	634,436.460	6.96	683,429.179	7.46	732,426.277	7.96	781,434.120	8.46	830,441.963	8.96	879,449.806
6.47	635,416.315	6.97	684,409.033	7.47	733,406.434	7.97	782,414.277	8.47	831,422.120	8.97	880,429.963
6.48	636,396.169	6.98	685,388.888	7.48	734,386.591	7.98	783,394.434	8.48	832,402.277	8.98	881,410.119
6.49	637,376.023	6.99	686,368.742	7.49	735,366.748	7.99	784,374.591	8.49	833,382.433	8.99	882,390.276

Average Millimetres

1	97.969	6	587.814
2	195.938	7	685.783
3	293.907	8	783.752
4	391.876	9	881.721
5	489.845	10	979.690

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Action Number P2190102940 - Exhibit G

E. Gruben's Transport Ltd

TANK # 9

Tuktoyaktuk, NT

814 Kg/m³ @ 15°C

Cone Roof Tank - Nominal Dimensions : 10.688 Metres X 9.144 Metres

INNAGE TABLE

Reference Gauge Height - 9.999 Metres; 0.61 Metres to Top Edge of Gauge Window in Radar Hatch Height in Centimetres; Capacity in Litres									
9.00	883,370.433	9.50	932,378.276	10.00		10.50		11.00	11.50
9.01	884,350.590	9.51	933,358.433	10.01		10.51		11.01	11.51
9.02	885,330.747	9.52	934,338.590	10.02		10.52		11.02	11.52
9.03	886,310.904	9.53	935,318.746	10.03		10.53		11.03	11.53
9.04	887,291.061	9.54	936,298.903	10.04		10.54		11.04	11.54
9.05	888,271.217	9.55	937,279.060	10.05		10.55		11.05	11.55
9.06	889,251.374	9.56	938,259.217	10.06		10.56		11.06	11.56
9.07	890,231.531	9.57	939,239.374	10.07		10.57		11.07	11.57
9.08	891,211.688	9.58	940,219.531	10.08		10.58		11.08	11.58
9.09	892,191.845	9.59	941,199.688	10.09		10.59		11.09	11.59
9.10	893,172.002	9.60	942,179.844	10.10		10.60		11.10	11.60
9.11	894,152.158	9.61	943,160.001	10.11		10.61		11.11	11.61
9.12	895,132.315	9.62	944,140.158	10.12		10.62		11.12	11.62
9.13	896,112.472	9.63	945,120.315	10.13		10.63		11.13	11.63
9.14	897,092.629	9.64	946,100.472	10.14		10.64		11.14	11.64
9.15	898,072.786	9.65	947,080.629	10.15		10.65		11.15	11.65
9.16	899,052.943	9.66	948,060.786	10.16		10.66		11.16	11.66
9.17	900,033.100	9.67	949,040.942	10.17		10.67		11.17	11.67
9.18	901,013.256	9.68	950,021.099	10.18		10.68		11.18	11.68
9.19	901,993.413	9.69	951,001.256	10.19		10.69		11.19	11.69
9.20	902,973.570	9.70	951,981.413	10.20		10.70		11.20	11.70
9.21	903,953.727	9.71	952,961.570	10.21		10.71		11.21	11.71
9.22	904,933.884	9.72	953,941.727	10.22		10.72		11.22	11.72
9.23	905,914.041	9.73	954,382.755	10.23		10.73		11.23	11.73
9.24	906,894.198	9.74		10.24		10.74		11.24	11.74
9.25	907,874.354	9.75		10.25		10.75		11.25	11.75
9.26	908,854.511	9.76		10.26		10.76		11.26	11.76
9.27	909,834.668	9.77		10.27		10.77		11.27	11.77
9.28	910,814.825	9.78		10.28		10.78		11.28	11.78
9.29	911,794.982	9.79		10.29		10.79		11.29	11.79
9.30	912,775.139	9.80		10.30		10.80		11.30	11.80
9.31	913,755.296	9.81		10.31		10.81		11.31	11.81
9.32	914,735.452	9.82		10.32		10.82		11.32	11.82
9.33	915,715.609	9.83		10.33		10.83		11.33	11.83
9.34	916,695.766	9.84		10.34		10.84		11.34	11.84
9.35	917,675.923	9.85		10.35		10.85		11.35	11.85
9.36	918,656.080	9.86		10.36		10.86		11.36	11.86
9.37	919,636.237	9.87		10.37		10.87		11.37	11.87
9.38	920,616.394	9.88		10.38		10.88		11.38	11.88
9.39	921,596.550	9.89		10.39		10.89		11.39	11.89
9.40	922,576.707	9.90		10.40		10.90		11.40	11.90
9.41	923,556.864	9.91		10.41		10.91		11.41	11.91
9.42	924,537.021	9.92		10.42		10.92		11.42	11.92
9.43	925,517.178	9.93		10.43		10.93		11.43	11.93
9.44	926,497.335	9.94		10.44		10.94		11.44	11.94
9.45	927,477.492	9.95		10.45		10.95		11.45	11.95
9.46	928,457.648	9.96		10.46		10.96		11.46	11.96
9.47	929,437.805	9.97		10.47		10.97		11.47	11.97
9.48	930,417.962	9.98		10.48		10.98		11.48	11.98
9.49	931,398.119	9.99		10.49		10.99		11.49	11.99

Average Millimetres

1	97.969	6	587.814
2	195.938	7	685.783
3	293.907	8	783.752
4	391.876	9	881.721
5	489.845	10	979.690

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Action Number P2190102940 - Exhibit G

E. Gruben's Transport Ltd

TANK # 9

Tuktoyaktuk, NT

814 Kg/m3 @ 15°C

Cone Roof Tank - Nominal Dimensions : 10.688 Metres X 9.144 Metres

Volumes in: Litres

To Increment	Incs	Gross Volume per Increment	Deadwood Volume	Net Volume	Accumulated Volume
0	1	0.000000	1694.980118	1694.980118	1694.980118
1	1	979.501977	-85.574707	893.927270	2588.907388
2	1	979.501977	-16.656967	962.845010	3551.752398
26	24	979.501977	-0.034088	979.467889	27058.427032
105	79	979.501977	-0.046867	979.455110	104434.872593
243	138	979.501977	-0.076758	979.425219	239595.552880
244	1	979.544366	-0.076758	979.467608	240575.020488
487	243	979.766907	-0.076758	979.690150	478639.726827
488	1	979.819458	-0.076758	979.742701	479619.469528
731	243	979.931129	-0.076758	979.854372	717724.081809
732	1	980.076322	-0.076758	979.999564	718704.081373
972	240	980.233613	-0.076758	980.156855	953941.726675
973	1	441.105126	-0.076758	441.028368	954382.755044

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E. Gruben's Transport Ltd
Tuktoyaktuk, NT

General Information

Tank Number	9
Date of Strapping Data	07/23/2019
Year Built	
Product in Service	Ultra Low Sulphur Diesel
Product Service Density	0.81 g/cc (SG)

Tank Dimensions

Nominal Diameter	36' 8"
Nominal Height	32'
Measured Tank Height	9.725 Metres
Tank Tilt	0 Millimetres
Gauge Point Information	Top of Benchmark in Hatch
Reference Gauge Height	9.999 Metres
Horizontal To Gauge	24 Inches

Roof & Bottom Survey

Roof Type	Cone
Floating Roof Shape	
Floating Roof Weight	
Roof Landed Height	
Roof Full Floating Height	
Bottom Description	Laser Scan

Report Constraints

Main Increment	Centimetres
Main Volume	Litres
Product at Strapping	empty
Product Strap Density	1 g/cc (SG)
Liquid Height at Strap	
Safe Fill Height	
Overflow Or Foamline	

E. Gruben's Transport Ltd
Tuktoyaktuk, NT

Strap Correction to 60°F

Shell Temperature (°F)	50.0	Master Tape Serial
Shell Material	Carbon Steel	Master Tape Span
Shell Expansion (per Foot)	0.000006450	Master Tape Tension

Certified Tape Factor	1
Tape Correction Factor	$1 + ('Shell\ Temperature' - 68) \times 'Tape\ Expansion'$
Shell Correction Factor	$1 + (60 - 'Shell\ Temperature') \times 'Shell\ Expansion'$

Correction Summary

Certified Tape Factor * Tape Correction Factor * Shell Correction Factor

Correction Factor = 1.00006450

Course	Strap Circumference Metres	Converted Circumference (Feet)	Tape Rise (Feet)	Corrected Strap Circumference (Feet)
1	35.080	115.093	0.000	115.100
2	35.082	115.099	0.000	115.106
3	35.082	115.099	0.000	115.106
4	35.084	115.106	0.000	115.114

Optical Circumference Corrections

Course	Average Optical Offset Millimetres	Difference Millimetres	Correction Millimetres	Corrected Circumference Metres	Corrected Circumference (Feet)
1	0.000	0.000	0.000	35.083	115.100
2	0.000	0.000	0.000	35.084	115.106
3	0.000	0.000	0.000	35.084	115.106
4	0.000	0.000	0.000	35.087	115.114

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Tuktoyaktuk, NT

Tank Measurements

Course	Strap (Feet)	Plate Thickness	Course Height	Accumulated Total
1	115.100	0.250 Inches	8.000 Feet	8.000 Feet
2	115.106	0.250 Inches	8.000 Feet	16.000 Feet
3	115.106	0.250 Inches	8.000 Feet	24.000 Feet
4	115.114	0.250 Inches	8.000 Feet	32.000 Feet

Tank Construction

Course	Course Fit/Join	Plates per Course	Width of Tape Rise	Depth of Tape Rise
1	Butt Weld	4	0.000 Millimetres	0.000 Millimetres
2	Butt Weld	4	0.000 Millimetres	0.000 Millimetres
3	Butt Weld	4	0.000 Millimetres	0.000 Millimetres
4	Butt Weld	4	0.000 Millimetres	0.000 Millimetres

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Tuktoyaktuk, NT

Circumference Corrected to Empty Tank Basis

$$\frac{-W * H * C^2}{2 * \pi * E * T} \quad (\text{Correction in Feet}) \quad \text{Or} \quad \frac{-K (G * H * C^2)}{T} \quad (\text{Correction in Inches})$$

Where :

$$K = \frac{W}{24 * \pi * E} = 0.000000028492394$$

G = Observed Density of Liquid in tank.

H = height of liquid above strap, in feet.

C = measured circumference, in feet.

T = thickness of shell material, in inches.

W = weight of liquid, in pounds per cubic foot.

E = modulus of elasticity of shell material.

Correction Summary

Course	Product Weight (Lb/Ft3)	Density	Liquid Height (Feet)	Corrected Circumference (Feet)	Plate Thickness (Inches)	Empty Tank Corrected (Feet)
1.00	62.428	1.000	0	115.100	0.250	0
2.00	62.428	1.000	0	115.106	0.250	0
3.00	62.428	1.000	0	115.106	0.250	0
4.00	62.428	1.000	0	115.114	0.250	0

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Tuktoyaktuk, NT

Circumference Deduction for Tape Rises

Butt Strap Correction (In Feet)

$$= \frac{(2 * N * T * W)}{(12 * D)} + \frac{(8 * N * T)}{(12 * 3)} * \sqrt{T/D}$$

Lap Joint Correction (In Feet)

$$= \frac{(4 * N * T)}{(12 * 3)} * \sqrt{T/(2*D)}$$

Where :

N = number of butt straps or projections per course

T = thickness of straps or projections (in inches)

W = width of straps or projections (in inches)

D = nominal diameter of tank (in inches)

Circumference Deduction for Shell Thickness

$$= \frac{(\pi * T)}{6} \quad (\text{Correction In Feet})$$

Where :

T = thickness of shell material (In Inches)

Summary of Circumference Deductions

Course	Temperature Compensated Circumference	Empty Tank (Feet)	Tape Rise (Feet)	Plate Thickness (Feet)	Inside Circumference (Feet)
1	115.100	0.000	0.000	0.000	115.100
2	115.106	0.000	0.000	0.000	115.106
3	115.106	0.000	0.000	0.000	115.106
4	115.114	0.000	0.000	0.000	115.114

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Incremental Volume Per Course

Liquid Head Stress Correction (In Feet)

$$= \frac{K (G * H * C^2)}{T}$$

Incremental Volume (in Cubic Feet)

$$= (C / \pi / 2)^2 * (\pi / 12)$$

Where :

G = tank Service Density.

H = height of liquid (between strap & top of course), in feet.

C = circumference, in feet.

T = thickness of shell material, in inches.

Incremental Volume Per Course

Course	Inside Circumference (Feet)	Liquid Head Stress (Feet)	Stressed Circumference (Feet)	Litres Per Centimetre
1	115.100	0.005	115.105	979.515
2	115.106	0.005	115.111	979.612
3	115.106	0.005	115.111	979.609
4	115.114	0.005	115.119	979.744

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Tuktoyaktuk, NT

Liquid Head Corrections

Volumetric Increase per Course

$$= \frac{H}{T} * \frac{K}{F}$$

Where :

H = Course Height (in inches)

T = Plate Thickness (in inches)

$$K = \frac{\pi * W * G * D^3}{4 * E}$$

W = weight of liquid, in pounds per cubic foot.

G = Specific Gravity of product to be stored.

D = Inside Diameter of the Course.

E = modulus of elasticity of shell material.

F = desired volume conversion (cubic inch per unit volume)

eg. 231 to US Gallons, 61.023744 to Litres

Gross Volume per Chart Increment

Course	Litres Per Centimetre	Volume Correction Litres	Incremental Correction Litres	Gross Volume @ 60°F	Gross Volume @ 59 °F 0.9999871
1	979.515	0.167	0.000	979.515	979.502
2	979.612	0.167	0.167	979.780	979.767
3	979.609	0.167	0.335	979.944	979.931
4	979.744	0.000	0.502	980.246	980.234