

ALBERTA MOTOR GASOLINE SURVEYS

1948

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The quality of the motor gasolines sold in the Province of Alberta has been surveyed systematically by the Research Council of Alberta since 1939. The first published report issued early in 1948, covered information compiled during the period from 1939 to 1947. This report gives detailed information on the quality of the gasoline sold during the winter of 1947-1948 and the summer of 1948.

The standard test procedures of the American Society for Testing Materials (A.S.T.M.) which have been used throughout are: Octane number, A.S.T.M. method D 357, (otherwise known as the motor method); Tetraethyl lead, A.S.T.M. method D 526; Reid vapour pressure, A.S.T.M. method D 323; Gravity at 60 degrees Fahrenheit in degrees A.P.I., A.S.T.M. method D 287; Distillation range in degrees Fahrenheit on a basis of percentage evaporation, A.S.T.M. method D 86; Sulphur content, A.S.T.M. method D 90; Gum content, A.S.T.M. method D 381; Corrosion, A.S.T.M. method D 130.

Alberta Standard Specifications for Gasoline, as listed in table 1, provide for the classification of samples into four groups, namely Premium grade, Regular grade, Summer grade and Winter grade. Test data for these groups are tabulated separately.

Table 2 and table 3 list the average, maximum and minimum values obtained on each test for both grades of gasoline and for the seasonal periods. For ease of reference, Alberta Standard Specification values are also included.

Tables 4, 5, 6, and 7, list in detail the analytical results obtained on each sample. The names of the supplying companies are omitted.

The samples from individual companies however, are grouped together and the companies are indicated by code letters. Table 8 lists those companies whose products were sampled but the order of listing bears no relationship to the order of code letters.

For comparative purposes, tables 9 and 10 show the average analysis for both grades of gasoline and seasonal periods from 1939 to 1948. The variations in octane rating and tetraethyl lead over the same period are shown graphically.

In table 4, 5, 6, and 7, values which do not conform to the requirements of the Alberta Standard Specifications for Gasoline have been underlined. Out of a total of 166 samples, 23 samples or 13.9 percent failed to comply with specifications in one or more particular requirements and a number of others may be considered as borderline cases.

The failure to comply with specification requirements was not related particularly to winter or summer gasolines. The percentage failure in the Winter grades was approximately the same as in the Summer grades. Samples of Premium grade gasolines, on the other hand, showed a lower percentage of failures than did samples of regular grade gasoline.

In many cases, solvent oil is added to gasoline as a solvent or top cylinder lubricant. In the standard A.S.T.M. gum test the solvent oil remains with the gum in the form of a mixed residue. While various procedures have been proposed for the determination of the actual gum present, some doubts exist as to the accuracy of the results obtained. Where solvent oil has been suspected of being present in any sample mentioned in this report, the results obtained are described separately as "gum plus oil."

The significant feature shown in tables 9 and 10 and the graph is the marked increase in tetraethyl lead content and the octane number of the gasoline over a period of the past twelve months.

Table 1

Alberta Specifications for Gasoline

Premium and Regular Grades

Test		Specification Value	
Octane Number	Premium	Minimum 75	
	Regular	Minimum 70	
Appearance		Clear	
Corrosion		Nil	
Reid vapour pressure lbs.	Summer	Maximum 10	
	Winter	Maximum 13	
Sulphur percent		Maximum 0.15	
Gum milligrams per 100 cc.		Maximum 7	
Freezing point degrees F.		Maximum -60	
Tetraethyl lead cc/I.g.		Maximum 3.6	
Distillation range degrees F. Distilled basis	10 percent	Summer	Maximum 155
		Winter	Maximum 140
	50 percent	Summer	Maximum 260
		Winter	Maximum 255
	90 percent		Maximum 370
Loss percent		Maximum 2.5	
Colour	Premium	Red	
	Regular	Other than red	
Time periods	Summer	May through Sept.	
	Winter	Nov. through Mar.	

Table 2

Summary of Analytical Data

Winter Gasolines 1947-1948

TEST	Premium Grade Gasoline				Regular Grade Gasoline			
	Spec.	Ave.	Max.	Min.	Spec.	Ave.	Max.	Min.
	Total Samples 47				Total Samples 36			
Octane Number	Min. 75	77.3	78.2	75.5	Min. 70	73.5	75.4	71.7
Tetraethyl Lead	Max. 3.6	2.98	3.61	1.37	Max. 3.6	1.98	3.64	0.63
Vapour Pressure	Max. 13	9.8	11.3	6.5	Max. 13	10.1	11.8	7.8
Gravity		62.0	64.1	59.0		61.8	64.6	59.2
Distillation Range I.B.P.		94	104	87		93	110	85
10%	Max. 140	128	145	115	Max. 140	128	145	113
50%	Max. 255	235	255	219	Max. 255	241	265	215
90%	Max. 370	339	363	305	Max. 370	339	361	323
E.P.		391	431	352		391	412	371
Sulphur	Max. 0.15	0.06	0.10	0.02	Max. 0.15	0.06	0.10	0.03
Gum	Max. 7	2.6	6.8	0.4	Max. 7	2.1	6.4	0.2
Gum plus Oil		20.6	125.2	5.0		22	151.4	6.8
Corrosion	Neg.	Neg.			Neg.	Neg.		
Freezing Pt.	Max. -60	Pass			Max. -60	Pass		
Colour	Red	Red			Yellow			

Table 3
Summary of Analytical Data
Summer Gasolines 1948

TEST	Premium Grade Gasoline				Regular Grade Gasoline			
	Spec.	Ave.	Max.	Min.	Spec.	Ave.	Max.	Min.
	Total Samples 46				Total Samples 37			
Octane Number	Min. 75	77.5	81.2	75.4	Min. 70	73.9	75.9	71.0
Tetraethyl Lead	Max. 3.6	3.13	3.79	2.27	Max. 3.6	2.12	3.07	1.29
Vapour Pressure	Max. 10	8.5	10.6	6.5	Max. 10	8.5	10.2	6.3
Gravity		60.6	62.5	57.7		60.3	62.0	57.7
Distillation Range I.B.P.		98	114	87		96	105	90
10%	Max. 155	133	160	119	Max. 155	132	148	121
50%	Max. 260	236	255	214	Max. 260	247	279	229
90%	Max. 370	339	364	308	Max. 370	345	364	320
E.P.		391	412	376		397	412	380
Sulphur	Max. 0.15	0.06	0.10	0.02	Max. 0.15	0.06	0.11	0.02
Gum	Max. 7	3.9	8.4	0.2	Max. 7	3.4	6.8	0.2
Gum plus Oil		9.0	31.4	6.0		11.1	33.6	6.0
Corrosion	Neg.	Neg.			Neg.	Neg.		
Colour	Red	Red				Yellow		

Table 4

Data of Gasoline Survey Analysis
Premium Gasoline Winter 1947-48

Co.	Octane No.	Tetra-ethyl Lead	Vapour Pressure	Gravity	Distillation Range					Sulphur	Gum	Gum + Oil	Corrosion
					I.B.P.	10%	50%	90%	E.P.				
					Alberta Specifications								
	Min. 75	Max. 3.6	Max. 13		Max. 140	Max. 255	Max. 370		Max. 0.15	Max. 7		Neg.	
A	75.9	3.59	8.7	59.8	90	126	253	356	398	0.08	2.0	Neg.	
A	75.9	2.99	9.9	62.9	98	128	232	348	404	0.09	0.4	Neg.	
C	76.7	3.37	8.6	61.2	95	133	242	347	394	0.08	1.0	Neg.	
C	75.9	3.17	9.0	62.7	94	133	234	337	392	0.07	125.2	Neg.	
C	76.7	3.40	9.6	62.5	104	144	241	346	396	0.08	7.0	Neg.	
C	76.4	2.96	9.0	61.1	98	134	245	346	402	0.08	88.8	Neg.	
C	77.5	2.86	10.0	61.4	92	122	235	336	382	0.06	9.0	Neg.	
C	77.3	3.57	9.7	61.7	94	123	243	352	398	0.08	1.4	Neg.	
C	77.1	3.28	9.7	62.4	89	123	240	348	397	0.08	2.4	Neg.	
C	76.1	3.04	10.0	62.7	92	127	231	350	404	0.08	1.0	Neg.	
D	77.8	3.33	9.1	61.5	94	133	227	332	405	0.06	1.4	Neg.	
E	76.8	2.98	9.7	63.7	92	124	231	326	388	0.05	6.8	Neg.	
E	77.8	3.02	11.2	63.0	91	118	230	334	397	0.05	12.0	Neg.	
E	78.0	2.99	11.0	63.0	87	115	228	330	391	0.04	6.0	Neg.	
E	77.9	3.01	11.0	62.8	93	123	230	339	383	0.04	6.4	Neg.	
F	77.9	2.24	9.6	62.1	97	127	230	319	369	0.08	2.2	Neg.	
F	78.2	1.37	10.9	64.0	90	120	219	305	358	0.08	2.6	Neg.	
F	77.7	1.39	11.0	63.6	98	124	223	308	368	0.09	2.6	Neg.	
F	77.4	1.63	11.1	64.1	90	121	221	312	352	0.07	3.0	Neg.	
G	77.0	3.18	10.8	62.2	96	126	235	336	392	0.05	1.6	Neg.	
H	76.8	2.96	9.8	62.9	92	121	228	335	385	0.05	12.4	Neg.	
H	77.0	2.55	10.7	61.0	90	120	239	362	431	0.06	14.4	Neg.	
H	78.1	3.09	11.3	62.6	94	120	235	334	382	0.04	4.0	Neg.	
H	76.7	3.53	6.5	59.0	99	145	242	339	391	0.05	8.6	Neg.	
I	77.0	2.80	9.9	62.3	96	124	231	336	386	0.05	4.6	Neg.	
I	77.7	3.19	8.9	60.3	92	136	234	334	393	0.05	4.6	Neg.	
I	77.1	3.08	11.0	62.9	94	131	231	342	391	0.03	1.4	Neg.	
J	77.3	3.11	9.5	62.6	100	130	225	340	402	0.09	0.8	Neg.	
K	75.9	3.18	9.6	60.5	98	134	241	356	425	0.03	1.0	Neg.	
K	76.0	3.33	8.6	60.0	102	144	247	346	394	0.06	3.2	Neg.	
K	75.5	2.67	9.3	60.7	95	134	242	341	397	0.02	1.0	Neg.	
L	76.4	2.55	9.2	62.6	96	126	225	336	382	0.04	7.8	Neg.	
L	76.7	2.94	9.0	62.2	103	127	230	337	383	0.06	13.6	Neg.	
L	76.9	3.31	10.6	61.7	93	135	240	363	399	0.05	0.8	Neg.	
L	78.0	3.07	10.4	62.8	91	121	232	335	391	0.06	6.8	Neg.	
L	77.0	2.84	8.5	61.9	95	127	228	334	383	0.06	22.6	Neg.	
L	77.6	3.00	10.7	62.5	92	122	235	338	386	0.05	7.0	Neg.	
L	76.9	2.90	9.6	62.1	94	126	239	340	394	0.06	9.8	Neg.	
L	78.1	3.20	11.0	62.4	88	118	229	333	388	0.04	19.0	Neg.	
L	78.1	3.09	11.3	62.7	90	115	230	333	386	0.06	7.0	Neg.	
L	76.2	3.61	7.7	59.2	96	140	255	356	400	0.10	5.0	Neg.	
M	75.5	2.94	9.0	61.5	94	134	247	348	394	0.08	9.8	Neg.	
M	75.9	2.97	9.9	62.5	95	128	228	354	402	0.08	2.2	Neg.	
N	78.0	2.91	10.4	62.4	94	124	237	334	382	0.03	5.0	Neg.	
O	76.0	3.36	10.1	61.5	98	134	237	340	400	0.05	1.4	Neg.	
Q	76.5	3.37	9.4	61.1	98	132	243	340	396	0.06	1.0	Neg.	
R	78.1	3.09	10.3	62.3	92	121	234	339	390	0.05	6.6	Neg.	

NOTE: Values underlined do not conform to Alberta Specifications

Table 5

Data of Gasoline Survey Analysis
Regular Gasoline Winter 1947-48

Co.	Octane No	Tetra-ethyl Lead	Vapour Pressure	Gravity	Distillation Range					Sulphur	Gum	Corrosion			
					I.B.P.	10%	50%	90%	E.P.				Oil	+	ion
Min.	Max.	Max.		Max.	Max.	Max.		Max.	Max.	Neg.					
70	3.6	13		140	255	370		0.15	7						
A	71.7	3.21	9.7	59.8	89	132	263	360	404	0.07	1.6	Neg.			
C	72.3	2.90	7.8	60.7	99	145	256	345	398	0.07	0.8	Neg.			
C	75.4	<u>3.64</u>	9.8	60.8	96	<u>128</u>	<u>245</u>	346	402	0.08	2.4	Neg.			
C	73.0	<u>2.67</u>	9.0	62.2	98	138	247	342	394	0.06	0.8	Neg.			
C	73.9	3.12	9.6	60.5	86	129	265	358	403	0.08	1.0	Neg.			
C	72.4	2.07	10.5	62.5	91	122	<u>241</u>	351	403	0.05	0.4	Neg.			
D	73.1	1.85	9.6	64.6	96	133	215	326	412	0.07	8.6	Neg.			
E	73.4	1.65	9.5	63.5	96	128	235	333	393	0.04	9.2	Neg.			
E	73.9	1.70	10.5	62.5	88	114	234	328	389	0.04	6.4	Neg.			
E	73.8	1.72	10.4	62.4	85	121	234	336	385	0.05	13.8	Neg.			
E	74.2	1.61	11.5	62.2	91	113	236	334	387	0.04	9.2	Neg.			
F	73.6	0.63	10.5	62.5	92	124	233	323	374	0.07	2.4	Neg.			
F	73.7	0.67	10.2	62.0	92	122	235	326	378	0.08	3.6	Neg.			
F	73.7	0.90	10.3	62.0	86	127	233	324	379	0.06	151.4	Neg.			
F	73.6	0.66	10.6	62.3	86	125	233	328	371	0.09	2.0	Neg.			
H	73.8	1.69	10.7	62.2	91	129	236	337	383	0.05	26.2	Neg.			
I	73.3	1.70	9.8	62.8	98	130	227	330	384	0.04	5.8	Neg.			
I	74.2	2.00	10.6	61.6	92	128	<u>244</u>	342	387	0.06	3.0	Neg.			
I	73.3	1.56	8.8	60.5	100	<u>141</u>	243	352	401	0.07	2.0	Neg.			
I	74.0	1.67	11.2	62.7	87	<u>120</u>	237	338	394	0.04	8.0	Neg.			
I	73.9	1.62	11.0	62.7	90	121	235	334	388	0.05	8.8	Neg.			
J	73.5	1.83	11.7	63.0	93	122	234	351	401	0.05	0.6	Neg.			
K	73.0	1.92	9.0	60.9	102	138	247	344	386	0.04	1.2	Neg.			
K	72.7	1.44	10.8	62.3	95	136	232	333	383	0.04	0.2	Neg.			
K	71.8	1.54	9.0	60.4	92	135	246	345	399	0.06	0.8	Neg.			
L	73.6	1.75	10.5	62.1	90	122	239	332	388	0.04	10.0	Neg.			
L	74.5	2.60	10.4	63.5	94	134	237	336	390	0.06	3.4	Neg.			
L	73.6	1.69	10.8	62.5	89	122	227	328	390	0.04	9.6	Neg.			
L	74.4	1.58	11.5	63.2	90	117	236	332	385	0.04	6.8	Neg.			
L	73.0	3.07	9.0	60.5	98	134	265	361	402	0.10	4.6	Neg.			
M	73.2	3.25	8.4	59.2	110	140	<u>265</u>	354	398	0.08	0.2	Neg.			
M	73.5	3.10	10.0	60.3	93	131	<u>262</u>	357	401	0.08	1.0	Neg.			
N	74.5	1.81	11.7	62.7	90	120	<u>243</u>	326	372	0.03	25.4	Neg.			
O	74.4	1.30	11.8	63.0	89	116	236	341	387	0.04	3.2	Neg.			
Q	73.6	3.03	9.4	61.2	96	130	253	350	396	0.08	1.0	Neg.			
R	74.3	2.11	8.4	61.0	97	133	240	334	399	0.05	8.8	Neg.			

NOTE: Values underlined do not conform to Alberta Specifications

Table 6

Data of Gasoline Survey Analysis
Premium Gasoline Summer 1948

Co.	Octane No.	Tetra-ethyl Lead	Vapour Pressure	Gravity	Distillation Range				Sulphur	Gum	Gum + Oil	Corrosion
					I.B.P.	10%	50%	90% E.P.				
Min. 75	Max. 3.6	Max. 10	Max. 155	Max. 260	Max. 370	Max. 0.15	Max. 7	Neg.				
A	75.5	2.53	7.7	60.3	98	141	244	353	402	0.08	3.0	Neg.
C	75.4	2.98	8.4	60.7	100	134	253	364	412	0.07	0.2	Neg.
C	77.3	3.55	6.5	58.8	109	151	248	356	401	0.09	31.4	Pos.
C	77.5	2.41	7.6	59.1	97	137	244	348	409	0.08	4.6	Neg.
C	76.1	3.79	5.6	57.7	114	160	248	352	399	0.08	25.0	Neg.
E	77.9	<u>3.10</u>	9.9	61.6	100	<u>124</u>	233	333	384	0.04	16.8	Neg.
E	78.0	3.22	10.0	62.0	94	126	233	339	392	0.05	6.8	Neg.
E	77.5	3.11	9.9	62.2	93	121	228	338	390	0.05	5.2	Neg.
E	77.7	2.76	8.4	61.7	98	131	231	333	389	0.05	6.0	Neg.
F	77.8	2.74	7.3	59.6	102	142	245	333	376	0.10	3.2	Neg.
F	77.0	2.57	7.3	60.0	100	136	244	344	392	0.06	4.2	Neg.
F	78.5	2.88	7.6	60.1	100	138	240	333	376	0.08	4.0	Neg.
F	77.9	3.07	7.0	59.5	102	142	243	338	380	0.08	4.0	Neg.
F	77.4	3.28	7.5	60.0	101	141	241	342	394	0.09	4.2	Neg.
F	77.7	3.02	7.5	59.4	97	140	246	342	389	0.07	14.2	Neg.
F	76.7	3.15	7.2	59.1	99	143	245	338	386	0.08	5.2	Neg.
F	81.2	2.27	7.9	61.0	100	136	214	308	392	0.10	3.8	Neg.
G	77.8	3.16	9.6	60.6	95	123	237	338	381	0.05	11.4	Neg.
H	78.6	3.23	<u>10.6</u>	62.5	92	119	224	335	387	0.06	8.8	Neg.
H	77.6	3.12	<u>8.9</u>	61.4	96	128	235	335	388	0.06	5.0	Neg.
H	77.8	3.21	9.7	61.8	92	124	235	336	383	0.04	3.0	Neg.
H	77.3	3.32	9.8	60.2	94	125	238	335	391	0.06	12.6	Neg.
H	77.3	3.06	9.6	62.2	96	127	229	331	383	0.05	4.0	Neg.
I	77.0	3.34	8.9	60.4	101	132	236	338	396	0.05	7.6	Neg.
I	77.3	3.30	9.2	61.7	96	134	232	344	402	0.02	3.2	Neg.
I	77.7	3.28	8.5	61.2	98	140	233	348	399	0.03	0.4	Neg.
I	77.0	3.13	9.0	61.1	92	128	234	336	385	0.03	<u>8.4</u>	Neg.
I	77.3	3.17	9.1	61.4	94	123	234	335	386	0.06	6.6	Neg.
K	77.3	3.44	8.8	60.6	100	139	221	341	394	0.05	1.0	Neg.
K	77.7	<u>3.76</u>	7.6	59.7	103	140	239	337	391	0.05	2.8	Neg.
L	76.2	<u>3.04</u>	8.1	60.5	102	134	239	339	391	0.05	3.4	Neg.
L	77.5	3.19	9.0	61.2	95	127	239	338	387	0.05	3.2	Neg.
L	77.4	3.26	9.2	61.2	93	125	235	335	386	0.06	23.8	Neg.
L	77.9	3.33	9.6	61.6	92	124	229	337	392	0.07	5.4	Neg.
L	76.7	3.06	8.8	60.5	95	128	236	339	387	0.06	3.8	Neg.
L	76.5	3.20	8.0	59.4	97	136	237	336	388	0.06	15.6	Neg.
L	77.7	3.24	9.4	61.4	96	124	234	338	393	0.07	4.2	Neg.
L	77.6	3.23	9.5	61.5	94	124	235	335	389	0.04	4.8	Neg.
L	77.6	3.19	9.2	61.2	87	123	234	331	386	0.05	9.0	Neg.
L	77.7	3.20	9.5	61.5	91	126	235	332	383	0.06	9.0	Neg.
L	78.0	3.18	9.1	61.2	90	125	238	332	387	0.05	6.8	Neg.
L	78.0	3.14	8.6	60.6	94	130	238	333	383	0.06	2.0	Neg.
L	77.3	3.40	7.9	59.9	107	140	245	338	388	0.05	28.0	Neg.
L	77.9	3.09	9.2	60.3	98	129	226	344	404	0.05	9.4	Neg.
M	77.1	2.69	7.1	59.8	98	139	244	354	407	0.06	10.0	Neg.
M	77.0	3.50	6.9	58.9	104	145	255	356	403	0.07	5.4	Neg.

NOTE: Values underlined do not conform to Alberta Specifications.

Table 7

Data of Gasoline Survey Analysis
Regular Gasoline Summer 1948

Co.	Octane No.	Tetra-ethyl Lead	Vapour Pressure	Gravity	Distillation Range				Sulphur	Gum	Gum + Oil	Corrosion
					I.B.P.	10%	50%	90% E.P.				
Alberta					Specifications							
	Min. 70	Max. 3.6	Max. 10		Max. 155	Max. 260	Max. 370		Max. 0.15	Max 7		Neg.
A	73.0	2.30	8.0	60.0	102	<u>141</u>	257	357	405	0.06	1.6	Neg.
C	72.6	2.66	7.7	60.1	100	134	<u>261</u>	355	396	0.07	1.0	Neg.
C	73.2	2.74	7.3	59.6	104	136	<u>261</u>	355	402	0.07	2.6	Neg.
C	74.4	2.60	7.5	58.2	104	142	<u>265</u>	361	406	0.08	17.2	Neg.
C	71.0	2.56	6.3	58.3	102	148	<u>264</u>	358	407	0.08	4.0	Neg.
C	73.1	2.97	8.0	57.7	94	146	<u>279</u>	362	406	0.07	7.2	Neg.
E	74.4	1.75	<u>10.2</u>	61.7	98	126	<u>241</u>	337	392	0.04	33.6	Neg.
E	74.4	1.70	<u>10.0</u>	61.9	92	123	<u>241</u>	338	397	0.05	7.6	Neg.
E	74.0	2.13	8.2	61.2	97	127	250	347	398	0.06	3.0	Neg.
E	74.0	1.72	9.0	62.0	96	126	230	330	384	0.06	5.6	Neg.
F	74.1	2.25	8.1	58.6	98	138	259	361	412	0.10	8.2	Neg.
F	73.6	1.67	7.5	59.6	92	129	247	351	400	0.08	4.0	Neg.
F	73.4	2.04	7.5	58.7	102	141	257	363	410	0.07	3.2	Neg.
F	74.0	2.11	7.8	58.6	101	140	257	364	412	0.07	5.2	Neg.
F	73.7	2.15	8.0	58.8	94	133	253	362	408	0.09	4.2	Neg.
F	73.9	2.19	7.8	57.7	100	141	257	360	411	0.11	2.6	Neg.
G	75.9	2.09	9.4	61.4	94	129	241	340	382	0.05	0.2	Neg.
H	74.3	2.05	9.8	61.1	94	121	242	341	396	0.05	7.4	Neg.
H	74.1	1.97	9.0	61.1	99	128	239	337	396	0.05	3.2	Neg.
H	73.7	1.94	9.0	60.8	90	128	238	336	385	0.05	6.4	Neg.
I	74.5	2.08	9.6	61.4	96	125	243	338	400	0.06	5.6	Neg.
I	73.8	2.01	8.5	61.4	101	140	232	344	396	0.02	0.6	Neg.
I	74.4	2.03	9.3	61.3	95	126	237	337	389	0.05	5.8	Neg.
I	73.5	1.91	8.3	60.6	105	140	243	334	392	0.02	9.6	Neg.
K	74.3	2.10	9.1	60.4	96	136	253	353	406	0.06	1.4	Neg.
K	72.5	1.29	6.8	58.6	101	145	249	350	397	0.06	18.2	Neg.
K	74.0	2.10	8.8	61.0	95	128	242	342	394	0.02	3.6	Neg.
K	73.9	2.03	8.9	60.5	94	127	237	334	396	0.06	3.4	Neg.
L	74.2	1.91	9.5	61.7	92	124	233	336	388	0.05	6.0	Neg.
L	73.9	2.03	8.9	60.5	94	127	237	334	396	0.06	3.4	Neg.
L	74.1	2.01	9.2	61.1	95	126	238	336	385	0.05	2.4	Neg.
L	74.6	1.98	9.1	61.6	90	122	235	335	389	0.05	3.2	Neg.
L	73.6	1.93	9.0	61.7	90	128	235	332	391	0.04	6.2	Neg.
L	74.8	1.88	8.7	61.6	94	128	235	332	387	0.05	6.8	Neg.
L	75.1	1.76	8.6	61.6	97	124	233	332	385	0.05	6.4	Neg.
L	74.8	2.77	10.0	61.2	94	139	229	320	380	0.04	2.4	Neg.
M	72.9	3.07	7.8	58.1	90	138	<u>274</u>	361	406	0.07	6.0	Neg.

NOTE: Values underlined do not conform to Alberta Specifications.

Table 8

C O M P A N I E S

Alberta Hi-Way Refineries Limited.
Bell Refining Company
British American Oil Company
Canada Western Distributors Limited.
Canadian Oil Companies Limited.
Crown Oil Sales Limited.
Gas and Oil Products Company
Great West Distributors Limited.
Imperial Oil Company
Lion Oil Company
Maple Leaf Petroleum Company
McColl-Frontenac Oil Company
North Star Oil Company
Renown Oil Company
Seventy Seven Oil Company
Totem Oil Company

Table 9
SEASONAL AVERAGE ANALYSIS
PREMIUM GASOLINE

Test	W	S	S	W	S	W	S	W	S	W	S	F	W	S	W	S	W	S
	1939 1940	1940	1941	1941 1942	1942	1942 1943	1943	1943 1944	1944	1944 1945	1945	1945	1945 1946	1946	1946 1947	1947	1947 1948	1948
Octane Number	78.3	77.4	76.6	75.6	76.2	76.3	77.0	75.4	75.3	73.9	74.1	76.4	77.1	77.2	76.1	75.9	77.3	77.5
Tetraethyl Lead															1.96	2.70	2.98	3.13
Vapour Pressure	10.5	8.5	8.5	10.6	8.8	9.9	8.5	9.2	9.1	9.4	7.1	8.5	9.1	8.7	9.9	7.7	9.8	8.5
Gravity	63.3	60.0	60.3							60.4	59.6	60.7	62.0	61.8	62.8	60.4	62.0	60.6
<u>Distillation Range</u>																		
I.B.P.	91	101	92							90	98	93	93	94	89	96	94	98
10%	127	139	133	131	142	130	138	131	131	124	138	129	125	128	120	137	128	133
50%	229	245	246	240	247	239	248	251	249	244	241	235	223	232	230	238	235	236
90%	342	350	354	340	350	353	357	364	367	356	352	350	343	338	335	341	339	339
E.P.	389	400	403							408	401	401	397	392	388	396	391	391
Sulphur	0.06	0.05	0.05	0.04	0.04	0.06	0.07	0.04	0.07	0.06	0.04	0.04	0.05	0.06	0.05	0.06	0.06	0.06
Gum	2.0	0.9	1.7	2.2	1.3	1.3	2.2	1.4	3.6	2.8	3.4	1.8	2.8	3.9	2.3	2.7	2.6	3.9

S - Summer

F - Fall

W - Winter

Table 10
SEASONAL AVERAGE ANALYSIS
REGULAR GASOLINE

Test	W	S	S	W	S	F	W	S	W	S	W	S
	1939 1940	1940	1941	1944 1945	1945	1945	1945 1946	1946	1946 1947	1947	1947 1948	1948
Octane Number	71.2	69.9	70.8	70.2	69.8	69.7	72.0	72.9	72.9	72.5	73.5	73.9
Tetraethyl Lead									1.46	1.63	1.98	2.12
Vapour Pressure	10.3	8.7	8.1	8.9	6.9	7.2	8.7	8.3	9.3	7.6	10.1	8.5
Gravity	62.3	60.0	59.1	60.1	59.1	59.4	60.6	60.9	61.4	60.5	61.8	60.3
<u>Distillation Range</u>												
I.B.P.	93	100	92	92	98	101	95	96	91	95	93	96
10%	131	141	138	127	140	140	131	131	125	137	128	132
50%	241	249	262	247	247	241	236	239	338	342	241	247
90%	356	360	362	353	355	349	347	342	340	343	339	345
E.P.	401	404	403	408	402	399	400	395	393	397	391	397
Sulphur	0.07	0.06	0.06	0.06	0.04	0.04	0.05	0.05	0.05	0.06	0.06	0.06
Gum	1.9	0.9	2.0	3.0	2.7	3.2	3.4	5.6	3.5	4.7	2.1	3.4

OCTANE RATINGS AND TETRAETHYL LEAD
PREMIUM AND REGULAR GASOLINES

