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## A1. Crude Oil and Equivalent Supply and Disposition

(thousand cubic metres per day)

	1994	1995	1996	1997	1998 (e)
<b>Supply</b>					
Canadian Production (a)	301.7	310.4	317.0	331.5	345.9
Imports (b)	98.9	93.9	108.6	121.1	122.6
<b>Total Supply (d)</b>	<b>400.6</b>	<b>404.3</b>	<b>425.6</b>	<b>452.6</b>	<b>468.5</b>
<b>Disposition</b>					
Domestic (b)	245.3	240.2	253.3	264.2	262.1
Exports (c)	157.1	168.9	178.4	193.7	209.9
<b>Total Disposition (d)</b>	<b>402.4</b>	<b>409.1</b>	<b>431.7</b>	<b>457.9</b>	<b>472.0</b>

a) Source: NEB

b) Source: Statistics Canada

c) Source: NEB Form 306 - Crude Oil Exports

d) Total supply does not equal total disposition due to inventory changes, etc.

e) Estimate

## A2. Estimated Established Reserves of Crude Oil and Bitumen as of December 31, 1997

(million cubic metres)

	Initial	Remaining
<b>Conventional Crude Oil</b>		
British Columbia (a)	110.8	23.4
Alberta (b)	2 451.7	326.9
Saskatchewan (c)	693.5	190.6
Manitoba (d)	37.1	4.7
Ontario (e)	13.7	1.8
NWT and Yukon:		
Arctic Islands & Eastern Arctic Offshore (f)	0.3	0.0
Mainland Territories	37.5	11.3
Nova Scotia (g) - Cohasset and Panuke	7.5	1.7
Newfoundland (h) - Hibernia	106.0	106.0
<b>Total</b>	<b>3 458.1</b>	<b>666.4</b>
<b>Crude Bitumen</b>		
Surface Mineable (b)	644.0	340.0
In-Situ (b)	376.7	274.0
<b>Total</b>	<b>1 020.7</b>	<b>614.0</b>
<b>Total Conventional &amp; Bitumen</b>	<b>4 478.8</b>	<b>1 280.4</b>

a) British Columbia Ministry of Energy & Mines and National Energy Board common database

b) Alberta Energy & Utilities Board and National Energy Board common database

c) Saskatchewan Energy and Mines estimate for 31 December 1996, NEB updated to 31 December 1997

d) Manitoba Energy & Mines

e) Canadian Association of Petroleum Producers

f) Bent Horn abandoned 1996

g) Canada - Nova Scotia Offshore Petroleum Board

h) Canada - Newfoundland Offshore Petroleum Board

### A3. Natural Gas Supply and Disposition

(billion cubic metres)

	1994	1995	1996	1997	1998 ©
<b>Supply</b>					
Marketable Gas Production	142.2	150.2	158.2	160.4	159.4
Imports	1.2	0.9	1.6	1.5	1.0
<b>Total Supply</b>	<b>143.4</b>	<b>151.1</b>	<b>159.8</b>	<b>161.9</b>	<b>160.4</b>
<b>Disposition</b>					
Domestic (a)	62.4	63.6	66.7	67.3	63.0
Exports	71.7	78.4	80.7	82.3	87.4
Other Uses (b)	9.3	9.1	12.4	12.3	10.0
<b>Total Disposition</b>	<b>143.4</b>	<b>151.1</b>	<b>159.8</b>	<b>161.9</b>	<b>160.4</b>

a) Source: Statistics Canada

b) Includes pipeline fuel and losses, reprocessing, shrinkage and fuel, and net storage inventory change

c) Estimate

### A4. Estimated Established Reserves of Marketable Natural Gas as of December 31, 1997

(billion cubic metres)

	Initial	Remaining
British Columbia (a)	559	229
Alberta (b)	3 717	1 284
Saskatchewan (c)	180	79
Ontario (d)	44	13
NWT and Yukon	18	8
Nova Scotia - Offshore (e)	85	85
<b>Total</b>	<b>4 603</b>	<b>1 698</b>

a) British Columbia Ministry of Energy & Mines and National Energy Board common database

b) Alberta Energy & Utilities Board and National Energy Board common database

c) Saskatchewan Energy and Mines estimate for 31 December 1996, NEB updated to 31 December 1997

d) Canadian Association of Petroleum Producers

e) Canada - Nova Scotia Offshore Petroleum Board

## A5. Natural Gas Liquids Supply and Disposition

(thousand cubic metres per day)

	1994	1995	1996	1997	1998 (e)
<b>Supply</b>					
Canadian Production (a)	80.6	86.3	91.2	93.5	93.4
Imports (b)	0.9	1.3	0.9	1.2	1.3
<b>Total Supply (d)</b>	<b>81.5</b>	<b>87.6</b>	<b>92.1</b>	<b>94.7</b>	<b>94.7</b>
<b>Disposition</b>					
Domestic (b)	54.6	57.7	60.7	63.3	60.5
Exports (c)	24.9	30.4	32.4	31.0	36.5
<b>Total Disposition (d)</b>	<b>79.5</b>	<b>88.1</b>	<b>93.1</b>	<b>94.3</b>	<b>97.0</b>

a) Source: NEB

b) Source: NEB Form 145

c) Source: NEB Form 157 and 86A

d) Total supply does not equal total disposition due to inventory changes, etc.

e) Estimate

## A6. Geophysical Activity

(active seismic crews)

	1994	1995	1996	1997	1998
January	64	87	70	79	75
February	67	72	67	78	74
March	70	62	74	78	55
April	22	20	8	31	12
May	37	32	24	33	22
June	41	30	32	39	37
July	48	38	35	35	36
August	52	40	36	39	27
September	47	38	33	26	22
October	52	33	43	39	19
November	57	41	53	42	19
December	65	48	78	64	30 (a)

a) estimated

Source: Petroleum Explorer



## A7. Exploration and Development Expenditures (\$ million)

	1994	1995	1996	1997	1998 (c)
<b>Exploration</b>					
Conventional Areas (a)	4,501	3,812	4,192	5,229	3,756
Frontier Areas (b)	3	44	91	139	114
<b>Total Canada</b>	<b>4,504</b>	<b>3,856</b>	<b>4,283</b>	<b>5,368</b>	<b>3,870</b>
<b>Development</b>					
Conventional Areas (a)	6,986	6,822	6,889	10,710	8,726
Frontier Areas (b)	1,426	1,383	897	845	692
<b>Total Canada</b>	<b>8,412</b>	<b>8,205</b>	<b>7,786</b>	<b>11,555</b>	<b>9,418</b>
<b>Total Expenditures</b>	<b>12,916</b>	<b>12,061</b>	<b>12,069</b>	<b>16,923</b>	<b>13,288</b>

a) Alberta, British Columbia, Saskatchewan, Manitoba, Ontario

b) Northwest Territories, Yukon Territory and Offshore

c) Estimate

Source: CAPP

## A8. Sales of Exploration Rights in Western Canada

	1994	1995	1996	1997	1998
<b>Area (1000 ha)</b>					
Alberta	4 768	4 339	4 680	5 150	3 015
British Columbia	738	715	565	735	483
Saskatchewan	1 557	604	1 047	944	403
Manitoba	21	23	12	50	4
<b>Total</b>	<b>7 084</b>	<b>5 681</b>	<b>6 304</b>	<b>6 878</b>	<b>3 905</b>
<b>Price (million \$)</b>					
Alberta	1,007	652	768	1,153	597
British Columbia	208	131	128	217	96
Saskatchewan	200	66	123	131	54
Manitoba	1	3	2	6	0
<b>Total</b>	<b>1,416</b>	<b>852</b>	<b>1,021</b>	<b>1,507</b>	<b>747</b>

Source: Daily Oil Bulletin

## A9. Sales of Exploration Rights in Frontier Regions

	1997	1998
<b>Nova Scotia Offshore</b>		
Licences	2	9
Expenditures (million \$)	4	97
Area (1 000 ha)	125	1 228
<b>Newfoundland Offshore</b>		
Licences	4	13
Expenditures (million \$)	98	175
Area (1 000 ha)	134	630
<b>NWT</b>		
Licences	7	0
Expenditures (million \$)	35	0
Area (1 000 ha)	577	0
<b>TOTAL</b>		
Licences	13	22
Expenditures (million \$)	137	272
Area (1 000 ha)	836	1 858

## A10. Electricity Generation and Disposition (terrawatt hours)

	1994	1995	1996	1997	1998 (b)
<b>Supply</b>					
Total Generation	539.8	542.5	558.5	553.9	546.2
Imports (a)	0.9	2.5	2	9.4	11.7
<b>Total supply</b>	<b>540.7</b>	<b>545.0</b>	<b>560.5</b>	<b>563.3</b>	<b>557.9</b>
<b>Disposition</b>					
Demand	495.9	504.5	517.4	517.9	518.4
Exports (a)	44.8	40.5	42.2	45.4	39.5
<b>Total Disposition</b>	<b>540.7</b>	<b>545.0</b>	<b>559.6</b>	<b>563.3</b>	<b>557.9</b>

a) Excludes exchanges between Canada and the United States

b) Estimate

## B1. Certificates Issued During 1998 Approving New Oil Pipeline Facilities Including Pipeline Construction Exceeding 40 Kilometres in Length

Applicant	Certificate Number	Date Issued	Facilities	Estimated Cost (\$)
Interprovincial Pipe Line Inc.	OC-45	1998/06/18	First phase of the Terrace Expansion Program: Connect existing loop sections to create a fifth pipeline between Kerrobert, Saskatchewan and Gretna, Manitoba.	610 000 000

## B2. Orders Issued During 1998 Approving New Oil Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length

Applicant	Order Number	Date Issued	Projects	Estimated Cost (\$)
Amoco Canada Petroleum Company Ltd. on behalf of Cochin Pipe Line Ltd.	XO-C18-29-98	1998/09/18	Modify piping of the Cochin Pipeline receiver trap located at Windsor Storage Facility.	14 000
CXY Energy Marketing	XO-C373-35-98	1998/11/27	Construct an oil emulsion pipeline (Hay Pipeline).	6 000 000
Enbridge Pipelines Inc.	XO-E101-34-98	1998/11/20	Construct and operate the Probe/IOL Connection to the Edmonton Terminal.	449 000
Express Pipeline Ltd.	XO-E92-26-98	1998/08/24	Construct storage building at the Hardisty Terminal.	25 000
	XO-E92-37-98	1998/11/25	Hardisty Oil Trim Blend Connections for the installation and operation of flanged trim blend connections to Express facilities in the Husky Oil terminal.	5 000
Interprovincial Pipe Line Inc.	XO-J1-1-98	1998/02/05	Install facilities for the re-allocation of tanks at the Edmonton Terminal.	645 000
	XO-J1-6-98	1998/02/11	South Saskatchewan Pipe Line connection at Regina to install meters and associated piping facilities at the Regina Terminal.	778 500
	XG-J1-7-98	1998/03/30	10 construction projects for 1998.	831 900
	XO-J1-10-98	1998/03/11	Construct 3 sending and receiving scraper traps for use on 48 inch loops upstream of the Herschel, Glenavon and Glenboro stations.	4 250 000
	XO-J1-13-98	1998/05/21	8 construction projects for 1998.	9 958 800
	XO-J1-16-98	1998/06/02	Terrace Phase I Expansion Program.	n/a

## B2. Orders Issued During 1998 Approving New Oil Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length

Applicant	Order Number	Date Issued	Projects	Estimated Cost (\$)
Interprovincial Pipe Line Inc.	XO-J1-17-98	1998/05/21	Facilities for System Expansion Program, Phase II.	n/a
	XO-J1-18-98	1998/05/22	Install a composite sampler at the Sarnia Terminal.	115 700
	XO-J1-19-98	1998/06/05	Hardisty Connection - Wild Rose Pipeline; Hardisty Lines 2 and 3 metering facilities.	20 640 000
	XO-J1-20-98	1998/06/05	Stress Corrosion Cracking Management Program - Investigate excavations; Line 2 remote sectionalizing valve at MP 742.	1 072 900
	XO-J1-27-98	1998/09/10	Improve water drainage at Bethune Station.	45 000
	XO-J1-30-98	1998/09/22	Upgrade electrical substations at St. Leon, Souris and West Souris, in Manitoba.	2 130 000
	XO-J1-32-98	1998/10/14	Replacement of Bonnie Glen Meters at Edmonton Terminal.	158 000
	XO-J1-36-98	1998/11/26	System Expansion Program Phase II at Edmonton Terminal for the modification of station piping and connections.	100 000
Interprovincial Pipe Line (NW) Ltd.	XO-J34-8-98	1998/02/19	Replace cathodic protection rectifier; replace uninterruptible power supply at Zama Terminal.	86 000
ISH Energy Ltd.	XO-J38-11-98	1998/03/23	Construct a side tap and valve assembly on the Desan Pipeline.	54 000
Montreal Pipe Line Limited	XO-M3-22-98	1998/06/18	Repair and reconditioning of leased tankage facilities in Montreal-East and install additional facilities at the same locations.	7 200 000
Novagas Canada Pipelines Ltd.	XO-N62-23-98	1998/07/03	Install and replace valves on Boundary Lake pipeline, construct tie-ins for pump station, Younger Straddle Plant, Boundary Lake and Taylor pipelines and portion of pipeline constructed under Certificate OC-43.	n/a
	XO-N62-28-98	1998/09/17	Inspect, recoat, conduct cutouts and replace line pipe at various locations on the Taylor and Boundary Lake pipelines.	200 000
	XO-N62-31-98	1998/10/01	Construct tie-ins for 2 pipelines to NCPL's pump station: an 8 inch from the Younger Straddle Plant and a 6 inch from the West Stoddart Gas Processing Plant.	75 000

## B2. Orders Issued During 1998 Approving New Oil Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length

Applicant	Order Number	Date Issued	Projects	Estimated Cost (\$)
Trans Mountain Pipe Line Company Ltd.	XO-T4-4-98	1998/02/19	30 construction projects for 1998.	7 415 000
	XO-T4-5-98	1998/02/02	Extension of the authorization pursuant to Orders XO-T4-5-97 and XO-T4-36-96 to proceed with projects that were not commenced by 31 December 1997.	673 800
	XO-T4-9-98	1998/03/04	Restorative work at the submerged crossing of the Fraser River between Km 1 135 and Km 1 136.	2 000 000
	XO-T4-12-98	1998/04/03	Install a vapour oxidizer at the Westridge Crude Oil Loading Terminal; relocation of a septic field at the Edmonton office.	1 572 000
	XO-T4-15-98	1998/06/03	Install a news mainline block valve at Km 995.	270 000
	XO-T4-24-98	1998/07/24	Remove and replace existing pipeline crossing of the Coldwater River at Km 950; replace 250 m of pipe at the Coquihalla River starting at Km 966.	770 000
	XO-T4-25-98	1998/07/30	Construct fish habitat compensation channel adjacent to the Coldwater River in British Columbia.	435 000
	XO-T4-39-98	1998/12/24	Cut-outs and replacement of sections of mainline pipe containing defects; 40 capital projects.	13 776 000
Trans-Northern Pipelines Inc.	XO-T2-21-98	1998/08/21	Dorval Tunnel hot bend replacement; Deseronto building repairs; and line segmentation valves at Cooksville Junction and Humber River in Ontario and Rivière du Chêne in Québec.	1 040 000
	XO-T2-3-98	1998/01/26	Sleeve removal and pipe replacement at 8 environmentally sensitive areas in Ontario and Quebec.	n/a
Westspur Pipeline Company Inc.	XO-W2-2-98	1998/01/23	Construct a 9.4 km pipeline from Manitoba to Saskatchewan (Pierson Lateral).	608 000
	XO-W2-14-98	1998/04/02	1998 facility additions.	1 450 000
	XO-W2-33-98	1998/11/20	Construct 1.2 km line with associated valve and pump facilities between Manitoba and Saskatchewan (Gainsborough Lateral).	145 000

### B3. Exports of Canadian Crude Oil and Equivalent - 1997 and 1998 (cubic metres)

Consignee	1997		1998 (a)	
	Total	Daily Average	Total	Daily Average
Amoco Production Company	9 660 548	26 467	9 739 690	26 684
Arco Chemicals	190 959	523	297 691	816
Ashland Oil Inc.	3 417 481	9 363	0	0
Astra Oil	276 913	759	676 018	1 852
BP Oil	998 262	2 735	868 139	2 378
Cenex	2 104 040	5 764	2 221 448	6 086
Chevron USA	342 214	938	580 741	1 591
Clark Oil & Refining Corporation	2 846 364	7 798	2 889 662	7 917
Conoco Inc.	3 381 047	9 263	3 363 008	9 214
Crysen	13 793	38	0	0
Exxon Company, U.S.A.	817 189	2 239	894 187	2 450
Flying J.	0	0	166 227	455
Frontier Oil and Refining Company	270 502	741	551 379	1 511
J. Aron and Company	316 723	868	188 664	517
Koch Refining Company	13 093 833	35 874	13 004 233	35 628
Little America	0	0	47 997	131
Marathon Ashland Petroleum Canada, Inc.	0	0	5 621 759	15 402
Marathon Petroleum Company	1 357 420	3 719	0	0
Mobil Oil Corporation	11 200 162	30 685	10 692 567	29 295
Montana Refining Company	291 798	799	274 207	751
Murphy Oil U.S.A Inc.	1 642 388	4 500	1 897 188	5 198
PDV Midwest	2 290 891	6 276	5 777 773	15 830
Shell Oil Company	5 877 720	16 103	5 417 092	14 841
Sinclair Oil Corporation	245 859	674	206 096	565
Sun Refining and Marketing Co.	3 159 156	8 655	3 093 909	8 476
Tesoro	0	0	944 134	2 587
Texaco U.S.A. (Equiva Trading International)	893 721	2 449	1 097 887	3 008
Tosco N.W. Co.	965 256	2 645	2 032 385	5 568
Total Petroleum Inc.	628 755	1 723	346 315	949
U.S. Oil & Refining Co.	0	0	143 973	394
United Refining Company	3 353 695	9 188	3 570 730	9 783
Unocal Corp. of California	199 460	546	0	0
UNO-VEN Company	819 284	2 245	6 993	19
Wyoming Refining Co.	14 131	39	0	0
Others	21 882	60	0	0
<b>Total</b>	<b>70 691 445</b>	<b>193 675</b>	<b>76 612 092</b>	<b>209 896</b>

a) Estimate

## B4. Exports of Canadian Crude Oil and Equivalent (cubic metres per day)

	1994	1995	1996	1997	1998 (a)
Light Crude Oil and Equivalent	87 455	87 448	86 599	80 778	95 747
Heavy Crude Oil	69 680	81 460	91 837	112 897	114 149
<b>Total</b>	<b>157 135</b>	<b>168 908</b>	<b>178 436</b>	<b>193 675</b>	<b>209 896</b>

a) Estimate

## B5. Exports of Petroleum Products - 1998 (cubic metres)

Month	Motor Gasoline	Middle Distillates	Heavy Fuel Oil	Aviation Turbine Fuel	Partially Processed Oil	Total
January	549 640	585 398	172 414	22 371	7 389	1 337 212
February	474 800	620 309	178 364	18 402	6 753	1 298 627
March	562 635	550 147	195 540	764	12 192	1 321 278
April	570 879	476 545	72 342	20 817	5 911	1 146 494
May	568 391	520 395	170 186	21 876	4 593	1 285 440
June	558 636	507 629	93 871	23 648	0	1 183 784
July	581 446	458 451	143 105	14 727	8 552	1 206 280
August	500 538	545 058	161 909	18 192	0	1 225 697
September	368 644	441 495	275 266	14 647	7 109	1 107 160
October	271 941	396 196	109 035	36 464	17 105	830 740
November	300 000	370 000	130 000	2 500	20 000	822 500
December	300 000	370 000	110 000	2 500	25 000	807 500
<b>Total</b>	<b>5 607 549</b>	<b>5 841 623</b>	<b>1 812 031</b>	<b>196 906</b>	<b>114 604</b>	<b>13 572 713</b>

a) Excludes propane, butane, lubricants, greases, asphalt, petrochemicals, etc.

## B6. Exports of Petroleum Products - 1997 and 1998

(cubic metres)

Exporter	1997	1998 (a)
Chevron Canada Limited	144 332	214 559
Consumers' Co-operative Refineries Limited	41 033	45 729
Farmers Union Central Exchange, Incorp.	49 011	27 586
Four Directions Petroleum (First Nation)	631	700
Gale's Gas Bars Limited	287	250
Griffith Oil Co., Inc.	17 169	30 188
Husky Oil Marketing Ltd.	81 862	85 377
Imperial Oil Limited	1 375 248	1 182 386
Irving Oil Limited	6 732 379	5 575 466
Kildair Service Ltée	125 960	340 300
MX Petroleum Corp.	86 977	79 853
MacEwen Petroleum Inc.	62 920	45 241
Neste Oil Marketing	-	498
Neste Petroleum (Canada) Inc.	1 587	92
Northern Transportation Co. Ltd.	2 965	2 952
North Atlantic Refining Limited	4 355 837	3 934 928
NOCO Energy Canada Inc.	152 469	30 597
Northridge Petroleum Marketing Inc.	6 936	1 847
North 60 Petro Ltd.	19 209	19 805
Novacor Chemicals (Canada) Ltd.	121 170	337 743
Olco Petroleum Group Inc.	35 313	59 859
Petro-Canada Products	143 531	230 468
Pétroles Norcan Inc.	1 602	545
Shell Canada Products Limited	255 023	260 799
Statoil North America Inc.	26 269	-
Suncor Inc.	137 759	168 378
Sunoco Inc.	56 427	35 983
Ultramar Canada Inc.	1 150 390	814 834
Universal Terminals Ltd.	58 147	45 749
<b>Total</b>	<b>15 242 443</b>	<b>13 572 713</b>

a) Estimate



## C1. Certificates Issued During 1998 Approving New Gas Pipeline Facilities Including Pipeline Construction Exceeding 40 Kilometres in Length

Applicant	Certificate Number	Date Issued	Facilities	Estimated Cost (\$)
Trans Québec & Maritimes Pipeline Inc.	GC-96	1998/04/03	PNGTS Extension: Pipeline and associated facilities between Lachenaie and East Hereford, Quebec near the New Hampshire border.	273 800 000
AEC Suffield Gas Pipeline Inc.	GC-97	1998/08/31	Pipeline to transport natural gas from the Suffield area in Alberta to a point near Burstall, Saskatchewan.	22 800 000
Alliance Pipeline Ltd. on behalf of the Alliance Pipeline Limited Partnership	GC-98	1998/12/03	Natural gas transmission system between Gordondale, Alberta and a point on the international border near Elmore, Saskatchewan	2 000 000 000
TransCanada PipeLines Limited	GC-99	1998/12/16	1999 Facilities.	402 900 000

## C2. Orders Issued During 1998 Approving New Gas Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length

Applicant	Order Number	Date Issued	Projects	Estimated Cost (\$)
AEC West Ltd.	XG-A156-56-98	1998/09/17	Construct and operate 22.7 km of sour and fuel gas pipelines between wellsites in Northwest Alberta and in Northeast British Columbia, and extension from wellsites d-64-l/93-P-8 to a-82-l/93-P-8.	5 054 000
Alberta Natural Gas Company Ltd	XG-A2-14-98	1998/03/18	Asbestos removal; Halon replacement program - Phases 1 - 4; fuel valve and stepper motor upgrade; UPS batteries replacement.	453 000
	XG-A2-24-98	1998/04/22	Replace Station 1 compressor unit; continuous oil condition monitoring - Unit 2 A-B; Station 1 H and J compressor thrust balancing; heavy equipment protective shelter.	29 766 000
	XG-A2-45-98	1998/07/22	Improve right-of-way access at King Creek Forest Service Road.	32 000
Champion Pipeline Corporation Limited	XG-C17-34-98	1998/05/29	Install launchers and receivers and replace valves and sections of pipe.	490 000
Chauvco Resources Ltd.	XG-C365-6-98	1998/02/26	Change the substance within an existing pipeline from wet natural gas to dry natural gas; construct natural gas pipeline; construct a natural gas liquids pipeline.	4 100 000

## C2. Orders Issued During 1998 Approving New Gas Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length

Applicant	Order Number	Date Issued	Projects	Estimated Cost (\$)
Foothills Pipe Lines Ltd.	XG-F6-31-98	1998/05/13	Eight projects in Zones 6 and 9.	1 888 700
	XG-F6-54-98	1998/09/02	Zone 6: Cathodic anode well installation at Stations 363 and 365; Zone 9: Cathodic anode well installation at Station 392-2.	115 000
Foothills Pipe Lines Ltd. on behalf of Foothills Pipe Lines (Sask.) Ltd.	XG-F7-3-98	1998/04/08	Construct 3 loops as part of the Eastern Leg Expansion Project.	n/a
	XG-F12-41-98	1998/06/11	Install compressor and meter station facilities for the Eastern Leg Expansion Project.	n/a
Forty Mile Gas Co-op Ltd.	XG-F73-4-98	1998/02/24	Construct 3 parallel distribution pressure polyethylene pipelines to the U.S. Customs at Wildhorse, Montana.	8 100
Many Islands Pipe Lines (Canada) Limited	XG-M29-59-98	1998/09/21	Construct a natural gas hot tap-off.	312 800
Mobil Oil Canada Ltd. on behalf of the Sable Offshore Energy Project	XG-M122-2-98	1998/02/26	Goldboro Gas Plant and Slugcatcher.	n/a
Northstar Energy Corporation	XG-N150-29-98	1998/05/14	Construct and operate the Coleman Pipeline from Savanna, Alberta across the British Columbia border.	6 467 000
Pioneer Natural Resources Canada Inc.	XG-P177-66-98	1998/12/11	Construct an NPS 8 sweet natural gas pipeline between wellsite 9-11-97-13 W6M in Alberta and of the existing Chinchaga facility at c-32-H/94-H-8 in B.C.	1 380 000
St. Clair Pipelines (1996) Limited	XG-S119-49-98	1998/07/14	Construct NPS 2 site connection to existing NPS 12 Bluewater Valve site.	3 211
TransCanada PipeLines Limited	XG-T1-21-98	1998/04/08	Thirty five projects.	18 442 000
	XG-T1-27-98	1998/04/29	Replace 106 m of Lines 100-1 and 100-2 between MLVs 123 and 124 with Class 3 pipe.	865 000
	XG-T1-32-98	1998/05/15	Construct Line 2-3 looping between MLVs 204-2 and 205-2 in Ontario.	14 700 000
	XG-T1-35-98	1998/05/29	Recoat 26.16 km of Line 100-2 at 3 locations.	17 377 000
	XG-T1-39-98	1998/06/03	Welland Canal crossing.	2 781 000
	XG-T1-40-98	1998/06/09	Modifications and upgrades to Emerson II Meter Station.	1 871 000
	XG-T1-46-98	1998/07/09	Lower drain from MLV 76-1 to MLV 76A-1 and from MLV 146 to MLV 147A.	823 000

## C2. Orders Issued During 1998 Approving New Gas Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length

Applicant	Order Number	Date Issued	Projects	Estimated Cost (\$)
TransCanada Pipelines Limited	XG-T1-48-98	1998/07/10	Remove and recoat from MLV 403-1 to MLV 404-1; lower drain; remove and recoat from MLV 403-2 to MLV 404-2; install slab from MLV 403-1 to MLV 404-1 and MLV 403-2 to MLV 404-2.	2 819 000
	XG-T1-50-98	1998/07/13	Construct 2 delivery points to Union Gas Limited, the Hurkett Sales Tap and Lennox Sales Meter Station.	2 937 000
	XG-T1-53-98	1998/07/31	Lower drain; replacement; protective drain lining and slab installation from MLV 805-1 to MLV 806-1; install pig receiver at MLV 806-1.	1 762 000
	XG-T1-55-98	1998/08/19	Recoat station yard piping at 10 compressor stations.	9 709 000
	XG-T1-58-98	1998/09/01	Construct corrosion remedial facilities.	11 106 100
	XG-T1-60-98	1998/09/24	Install split casings on Lines 100-1 and 100-2; excavate, inspect and replace backfill on Line 100-3.	573 000
	XG-T1-61-98	1998/10/08	Install facilities for 1 new receipt and 4 new delivery points.	644 000
	XG-T1-64-98	1998/11/20	Install piping; add compressor plants; modify piping.	
	XG-T1-65-98	1998/11/26	Install and operate launchers and receivers; install isolation joint and isolating flange gaskets; replace mainline valves; replace 3 268 m of pipe; install intermediate mainline valves; lower 300 m of pipe.	17 340 000
Trans Québec & Maritimes Pipeline Inc.	XG-T28-57-98	1998/09/04	Construct meter station in the vicinity of Coaticook, Quebec.	304 124
Westcoast Energy Inc.	XG-W5-1-98	1998/01/30	Add casing and fill; install new waste handling and drying pad at Fort Nelson Gas Plant; install new SCADA system at Sikanni Gas Plant; replace ground bed at Mobil Sierra replacement; install ground bed and power on Shekilei pipeline; upgrade water analyzing station #31.	644 000
	XO-W5-5-98	1998/02/12	Portable blowdown scrubber.	100 000
	XG-W5-7-98	1998/02/19	Install 6 producer taps in the Fort Nelson Raw Gas Transmission System.	250 000

## C2. Orders Issued During 1998 Approving New Gas Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length

Applicant	Order Number	Date Issued	Projects	Estimated Cost (\$)
Westcoast Energy Inc.	XO-W5-8-98	1998/02/24	Fort Nelson Gas Plant: Relocate and upgrade the effluent plant laboratory; install smoke detectors; refit brine pit and modify controls; install pressure transmitters on the acid gas line condensers; install 2 stack igniters at the 20 inch Pointed Mountain sending and receiving barrels.	334 000
	XG-W5-9-98	1998/03/13	Provision for Fort St. John producer taps; add densometer to combined field pig loop; install control system link at the McMahon Gas Plant.	566 000
	XG-W5-10-98	1998/03/06	Install electronic flow measurement and communications equipment at the following three receipt points on the Fort Nelson raw gas transmission system: RP 433 North Helmut Leg, RP 36 East Helmut Leg, and RP 498 Helmut Peggo Compressor.	100 000
	XG-W5-11-98	1998/03/19	Replace the W92 Unit at Station 8A with a refurbished Spey gas turbine driver.	6 657 000
	XG-W5-12-98	1998/07/07	Construct 7.35 km of 36 inch loop on the Fort Nelson Mainline.	13 100 000
	XG-W5-13-98	1998/03/12	Install a propane powered thermal electric generator and a ground bed system for the cathodic protection of the Silver Dahl, Umbach, Dahl and Silver pipelines.	28 000
	XG-W5-15-98	1998/03/26	Monitor and replace pipe at Tributary and Bougie Creek; replace Fort Nelson Mainline at Jackfish Creek.	6 350 000
	XG-W5-16-98	1998/03/18	Install or expand Westcoast's digital microwave system at the following locations: Radar Hill, Cabin Lake, Mobil Sahtaneh, Pesh, Compressor Station N-2 and Hossitl.	1 300 000
	XG-W5-18-98	1998/04/22	Upgrade effluent plant at McMahon Plant.	720 000
	XG-W5-20-98	1998/03/27	Six projects in the Fort St. John Field Service area.	736 000
	XG-W5-22-98	1998/03/30	Eight projects in the Transmission North, Central and South areas.	3 491 000
	XG-W5-23-98	1998/03/30	Eight projects in the Grizzly Valley Field Services area.	1 987 000

## C2. Orders Issued During 1998 Approving New Gas Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length

Applicant	Order Number	Date Issued	Projects	Estimated Cost (\$)
Westcoast Energy Inc.	XG-W5-25-98	1998/04/29	Add casing pipe to existing casings at MP 31.8 on the Alberta Mainline and at MP 24.5 of the Boundary Mainline; upgrade road crossings in the Transmission North area; upgrade road crossings in the Transmission Central area; upgrade road crossings in the Transmission South area.	190 000
	XG-W5-26-98	1998/04/20	Install emergency shut down blowdown valve at the Siphon Station.	90 000
	XG-W5-28-98	1998/04/28	Replace the ground bed at Aitken Creek.	11 000
	XG-W5-30-98	1998/05/19	Install producer taps in the Grizzly Valley Raw Gas Transmission System.	250 000
	XG-W5-33-98	1998/06/11	Pipe clean fuel to burner pilots; emergency generator replacement.	250 000
	XG-W5-36-98	1998/05/28	Fourteen projects in the Fort St. John Field Services area.	1 033 000
	XG-W5-37-98	1998/05/29	Fence 2 crossover sites at Katz Indian Reserve and Loon Lake; install temperature transmitters on the 10 Northwest Pipeline meter runs at Huntington; install an inlet scrubber at Compressor Station N4.	491 000
	XG-W5-38-98	1998/06/02	Replace the existing Tank Farm MCC transformer at McMahan Plant.	109 000
	XG-W5-42-98	1998/06/19	Tie-in 3 new sales taps near compressor Station 8A.	35 000
	XG-W5-43-98	1998/06/19	Replace the station generator at the Nig Station.	200 000
	XG-W5-12-98	1998/07/16	Construct a 7.35 km (4.57 mile) loop on the Fort Nelson Mainline between compressor stations N4 and N5.	13 100 000
	XG-W5-47-98	1998/07/13	Relocate Chamberlain receiving barrel piping.	30 000
	XG-W5-51-98	1998/07/20	Construct a rock revetment at Milepost 580.5 of the Fort St. John loop line crossing of the Coquihalla River.	60 000
	XG-W5-62-98	1998/10/08	Upgrade Meter Station 66 for increased volume of gas to and from expanded Solex Straddle Plant.	627 000
	XG-W5-63-98	1998/10/21	Relocate sending barrel from Km 0.0 to Km 2.0 on the North Jedney Extension Pipeline.	60 000

### C3. Licences and Long-Term Orders to Export Natural Gas as of 31 December 1998

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volumes		
			From	To	Daily (10 <sup>3</sup> m <sup>3</sup> )	Annual (10 <sup>6</sup> m <sup>3</sup> )	Term (10 <sup>6</sup> m <sup>3</sup> )
Abitibi-Consolidated Corporation	GOL-1-98 (a)	Sprague, Man.	1998-03-01	2002-10-31	-	-	-
AG-Energy L.P.	GL-182	Iroquois, Ont.	1993-11-01 2008-11-01	2008-10-31 2008-12-31	467.0 467.0	170.6 28.5	2 587.0
Alberta Northeast Gas, Limited and AEC Oil and Gas Company	GL-105	Iroquois, Ont.	1991-12-01 1992-11-01 2006-11-01	1992-10-31 2006-10-31 2007-03-31	399.0 533.0 533.0	146.4 194.7 80.5	2 714.0
Alberta Northeast Gas, Limited and ATCOR Ltd.	GL-104	Iroquois, Ont.	1991-12-01 1992-11-01 2006-11-01	1992-10-31 2006-10-31 2007-03-31	790.0 1 057.0 1 057.0	289.9 386.1 159.7	5 428.0
Alberta Northeast Gas, Limited and ProGas Limited	GL-103	Iroquois, Ont.	1991-12-01 1992-11-01 2006-11-01	1992-10-31 2006-10-31 2007-03-31	1 399.0 1 870.0 1 870.0	513.4 683.0 282.6	10 236.0
Alberta Northeast Gas, Limited and TransCanada Pipelines Limited	GL-102	Iroquois & Niagara Falls, Ont. combined maximum	1991-11-01 1992-11-01 2006-11-01	1992-10-31 2006-10-31 2007-02-28	5 830.3 7 790.3 7 790.3	2 139.1 2 845.3 935.5	42 646.0
		Maximum permitted at Iroquois, Ont. as part of combined Iroquois/ Niagara Falls volume	1991-11-01 1992-11-01 2006-11-01	1992-10-31 2006-10-31 2007-02-28	5 547.0 7 507.0 7 507.0	2 035.7 2 741.9 901.5	
		Maximum permitted at Niagara Falls, Ont. as part of combined Iroquois/ Niagara Falls volume	1991-11-01 2006-11-01	2006-10-31 2007-02-28	283.3 283.3	103.4 34.0	
Amoco Canada Petroleum Company Ltd.	GL-112	Huntingdon, B.C.	1989-07-24 1989-11-01	1989-10-31 2004-10-31	704.0 704.0	70.4 257.0	3 856.0
	GL-176	Emerson, Man.	1992-11-01	2002-10-31	424.9	155.1	1 551.0
Amoco Canada Resources Limited and Consolidated Edison Company	GL-127	Niagara Falls, Ont.	1992-04-30 1992-11-01	1992-10-31 2005-10-31	873.0 873.0	160.8 319.0	4 778.0
BC Gas Utility Ltd.	GOL-6-93 (b)	Huntingdon, B.C.	1993-09-01	2000-04-30	-	-	-
	GOL-3-95 (c)	Huntingdon, B.C.	1995-05-01	2000-04-30	-	-	-
Brooklyn Navy Yard Cogen Partners, L.P.	GL-232	Iroquois, Ont.	Date of 1st deliveries for a 15-year term		750.0	274.0	4 110.0
Canadian Hunter Marketing Ltd.	GL-107	Iroquois & Niagara Falls, Ont.	1990-11-01	2010-10-31	845.0	254.0	3 381.0

### C3. Licences and Long-Term Orders to Export Natural Gas as of 31 December 1998

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volumes		
			From	To	Daily (10 <sup>3</sup> m <sup>3</sup> )	Annual (10 <sup>6</sup> m <sup>3</sup> )	Term (10 <sup>6</sup> m <sup>3</sup> )
Canadian Occidental Petroleum Ltd.	GL-177	Emerson, Man.	1992-11-01	2002-10-31	212.5	77.5	775.0
CanWest Gas Supply Inc.	GL-189	Huntingdon, B.C.	1993-01-28	1993-10-31	2 606.0	722.5	11 415.0
			1993-11-01	2003-11-01	2 606.0	952.0	
	GL-218	Huntingdon, B.C.	1993-11-01	2008-10-31	273.2	100.0	1 495.0
	GL-230	Huntingdon, B.C.	Date of 1st deliveries for a 20-year term		300.5	109.7	2 194.0
Centra Gas Ontario, Inc.	GOL-15-93 (d)	Sprague, Man.	1993-12-01	2018-11-30	-	-	-
Chevron Canada Resources Limited	GL-250	Kingsgate, B.C.	Date of 1st deliveries for a 15-year term		585.8	214.4	3 210.0
CoEnergy Trading Company	GL-276	East Hereford, Que. Emerson, Man. combined maximum	Date of 1st deliveries for a 10-year term		2 266.2	827.2	8 272.0
		GOL-5-98 (e)	Emerson, Man.	1998-11-01	2008-11-31	-	-
Cornerstone Gas Marketing	GOL-3-97 (f)	Emerson, Man.	1997-11-01	2008-11-31	-	-	-
CoWest Energy	GOL-1-97 (g)	St. Clair, Niagara, Chippewa, Blue Water, Windsor, Ont. & Emerson, Sask.	1997-02-04	2022-02-03	-	-	-
		GOL-2-97 (h)	St. Clair, Niagara, Chippewa, Blue Water, Windsor, Ont. Emerson, Man.	1997-02-04	2022-02-03	-	-
Crestar Energy Marketing Corporation	GL-108	Emerson, Man.	1993-11-01	2001-10-31	422.5	154.0	1 504.0
	GL-257	Monchy, Sask.	1996-11-01	2001-10-31	179.8	65.6	328.1
Dartmouth Power Associates Limited Partnership	GL-164	Iroquois, Ont.	1992-11-01	2007-10-31	400.9	146.4	2 196.0
Direct Energy Marketing Limited	GL-188	Highwater, Que.	1992-10-29	1992-10-31	171.0	.5	936.2
			1992-11-01	2006-10-31	171.0	62.4	
Duke Energy Marketing Canada Ltd.	GL-145	Huntingdon, B.C.	1991-01-24	1991-10-31	327.5	92.0	1 195.5
			1991-11-01	2000-10-31	327.5	119.5	
			1991-01-24	1991-10-31	272.9	76.7	1 843.0
			1991-11-01	1992-10-31	272.9	99.6	
			1992-11-01	2003-10-31	409.4	149.4	
	GL-269	Niagara Falls, Ont.	1997-11-01	2007-10-31	246.5	90.0	899.7
ENCO Gas, Ltd.	GL-203	Huntingdon, B.C.	1993-08-01	1993-10-31	155.1	7.2	3 258.0
			1993-11-01	1994-10-31	429.1	156.6	
			1994-11-01	2008-10-31	601.3	219.5	

### C3. Licences and Long-Term Orders to Export Natural Gas as of 31 December 1998

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volumes		
			From	To	Daily (10 <sup>3</sup> m <sup>3</sup> )	Annual (10 <sup>6</sup> m <sup>3</sup> )	Term (10 <sup>6</sup> m <sup>3</sup> )
Encogen Four Partners, L.P.	GL-152	Niagara Falls, Ont. & Chippawa, Ont. combined maximum	1993-09-01	1993-10-31	424.9	26.4	2 326.6
			1993-11-01	2007-10-31	424.9	155.1	
			2007-11-01	2008-08-31	424.9	129.2	
Encogen Northwest, L.P.	GL-190	Huntingdon, B.C.	1993-11-01	2008-10-31	271.6	99.1	1 441.3
Engage Energy Canada, L.P. as agent for Westcoast Gas Services Inc. and Coastal Gas Marketing Company	GL-166	Monchy, Sask.	1992-04-30	1992-10-31	2 820.0	527.7	10 300.0
			1992-11-01	2001-10-31	2 820.0	1 030.0	
Engage Energy Canada, L.P. as agent for Westcoast Gas Services Inc. and Coastal Gas Marketing Company	GL-183	Huntingdon, B.C.	1992-11-01	2002-10-31	273.9	100.0	1 000.3
	GL-221	Kingsgate, B.C.	1993-11-01	1999-10-31	396.6	74.2	868.6
	GL-222	Kingsgate, B.C.	1994-11-01	1999-10-31	136.5	49.8	249.0
	GL-223	Kingsgate, B.C.	1994-11-01	1999-10-31	115.4	42.1	210.5
	GL-224	Kingsgate, B.C.	1994-11-01	1999-10-31	115.4	42.1	210.5
	GL-225	Huntingdon & Kingsgate, B.C.	1993-12-15	1994-10-31	2 581.5	533.2	13 691.1
			1994-11-01	2004-10-31	2 581.5	1 040.8	
	GL-226	Huntingdon & Kingsgate, B.C.	1993-12-15	1994-10-31	988.6	317.5	4 746.8
			1994-11-01	2004-10-31	988.6	360.8	
	GL-227	Huntingdon & Kingsgate, B.C.	1993-12-15	1994-10-31	570.3	183.2	2 738.6
			1994-11-01	2004-10-31	570.3	360.8	
	GL-228	Huntingdon & Kingsgate, B.C.	1993-12-15	1994-10-31	114.4	36.8	549.0
			1994-11-01	2004-10-31	114.4	41.8	
	GL-259	Chippawa, Ont.	1997-11-01	2007-10-31	1367.5	500	500.0
	GL-260	Emerson, Man.	1997-11-01	2007-10-31	199.1	73.0	730.0
GL-261	Emerson, Man.	1997-11-01	2007-10-31	313.5	114.4	1 144.0	
GL-267	Iroquois, Ont.	1997-11-01	2007-10-31	396.6	145.0	1 450.0	
GL-274	Emerson, Man.	1998-11-01	2008-10-31	864 000.0	316.0	3 160.0	
GL-275	St. Clair, Ont.	1998-11-01	2008-10-31	1 400.0	511.0	5 110.0	
Engage Energy Canada, L.P.	GOL-1-94 (i)	Iroquois, Ont. & Niagara Falls, Ont.	1994-03-01	2002-09-15	-	-	-
	GOL-2-94 (c)	Huntingdon & Kingsgate B.C.	1994-03-01	2002-09-15	-	-	-
	GOL-3-94 (j)	Monchy, Sask. & St. Clair, Ont.	1994-03-01	2002-09-15	-	-	-
	GOL-4-94 (i)	Emerson, Man.	1994-03-01	2002-09-15	-	-	-
	GOL-5-94 (j)	Cardston, Alta.	1994-03-01	2002-09-15	-	-	-
	GO-16-96	-	1996-03-07	2000-09-19	30.0	-	-



### C3. Licences and Long-Term Orders to Export Natural Gas as of 31 December 1998

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volumes		
			From	To	Daily (10 <sup>3</sup> m <sup>3</sup> )	Annual (10 <sup>6</sup> m <sup>3</sup> )	Term (10 <sup>6</sup> m <sup>3</sup> )
Enron Capital & Trade Resources Corp.	GL-258	Iroquois, Ont.	1996-11-01	2006-10-31	425.0	155.0	1 550.0
	GL-268	Niagara Falls, Ont.	1997-11-01	2007-11-01	435.9	159.0	1 590.0
	GL-277	Monchy, Sask.	1998-11-01	2008-11-01	1 185.2	432.7	4 327.3
	GL-278	Emerson, Man. St. Clair, Ont. combined maximum	1998-11-01	2008-11-01	901.0	329.7	3 296.6
			1998-11-01	2008-11-01	901.0	329.7	
GL-279	Niagara Falls, Ont.	1998-11-01	2008-11-01	256.4	93.6	936.0	
Forty Mile gas Co-op Ltd.	GO-21-98	-	1998-05-01	43220	30.0	-	-
Fulton Cogeneration Associates	GL-154	Niagara Falls, Ont.	1992-08-27	1992-10-31	170.0	11.2	868.0
			1992-11-01	2005-10-31		170.0	62.0
Gaz Métropolitain, Inc.	GOL-16-93 (i)	St. Clair & Windsor, Ont.	1993-12-01	2003-11-30	-	-	-
	GL-114	Emerson, Man.	1989-08-24	1989-10-31	424.9	29.3	2 246.4
			1989-11-01	2004-10-31	424.9	155.1	
	GL-144	Cornwall/Iroquois, Ont.	1992-08-01	1992-10-31	566.6	52.1	3 154.0
1992-11-01			2007-11-01	566.6	206.8		
GL-247	Huntingdon, B.C.	Date of 1st deliveries for a 15-year term		398.0	145.3	2 179.1	
Interenergy Sheffield Processing Company	GO-59-96	-	Date of 1st deliveries for a 10-year term		30.0	-	-
Imperial Oil Resources Limited	GL-151	Iroquois, Ont.	1991-11-01	2006-10-31	991.5	362.0	5 432.0
Indeck-Yerkes Limited Partnership	GL-215	Niagara Falls, Ont.	1993-03-16	1993-10-31	341.0	77.7	1 115.9
			1993-11-01	2005-10-31	341.0	123.4	
Kamine Beaver Falls Cogen Co., Inc.	GL-198	Iroquois, Ont.	1993-11-01	2008-10-31	456.1	167.1	2 494.9
Kamine Carthage Cogen Co., Inc.	GL-158	Chippawa, Ont.	1991-11-01	2006-10-31	402.2	139.5	2 093.7
Kamine Natural Dam Cogen Co., Inc.	GL-191	Iroquois, Ont.	1993-11-01	2008-10-31	348.4	117.8	1 767.1
Kamine South Glens Falls Cogen Co., Inc.	GL-159	Emerson, Ont.	1991-11-01	2006-10-31	402.3	139.5	2 093.7
Kamine Syracuse Cogen Co., Inc.	GL-199	Chippawa, Ont.	1993-11-01	2008-10-31	461.7	168.5	2 506.8
Midland Cogeneration Venture Limited Partnership	GOL-9-96 (k)	St. Clair, Windsor, Sarnia & Blue Water, Ont.	1996-12-18	2006-12-31	-	-	-

### C3. Licences and Long-Term Orders to Export Natural Gas as of 31 December 1998

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volumes		
			From	To	Daily (10 <sup>3</sup> m <sup>3</sup> )	Annual (10 <sup>6</sup> m <sup>3</sup> )	Term (10 <sup>6</sup> m <sup>3</sup> )
Mobil Oil Canada, Ltd.	GL-146	Huntingdon, B.C.	1991-01-24	1991-10-31	136.5	38.4	1 145.6
			1991-11-01	1992-10-31	136.5	49.8	
			1992-11-01	1995-10-31	272.9	99.6	
			1995-11-01	2000-10-31	409.4	149.4	
Morgan Hydrocarbons Inc. & Coastal Marketing Company	GL-262	Iroquois, Ont.	1996-11-01	2006-10-31	283.3	104.0	1 040.0
National Steel Corporation	GOL-8-96 (i)	Windsor, Ont.	1996-12-18	2000-12-17	-	-	-
New England Power Company	GL-160	Iroquois & Niagara Falls, Ont.	1991-11-01	2006-11-01	1 700.0	621.0	9 308.0
New York State Electric & Gas Corporation	GL-195	Chippawa, Iroquois, & Niagara Falls, Ont. & Napierville, Que.	1993-11-01	2005-10-31	225.0	93.1	1 117.0
			1993-12-01	1994-10-31	283.3	95.0	
			1994-11-01	2003-10-31	283.3	103.5	
	GL-220	Chippawa, Ont.	2003-11-01	2003-11-30	283.3	8.5	1 035.0
			1992-04-30	1992-10-31	917.8	168.9	
			1992-12-01	2002-10-31	-	-	
Northern Minnesota Utilities	GL-171	Sprague, Man.	1992-04-30	1992-10-31	917.8	168.9	3 685.0
	GOL-17-93 (d)	Fort Francis, Ont.	1992-12-01	2002-10-31	-	-	-
Pan-Alberta Gas Ltd.	GL-95	Emerson, Man. & Niagara Falls, Ont. combined maximum	1987-11-01	1996-10-31	4 332.5	1 581.4	16 604.7
			1996-11-01	1997-10-31	3 249.4	1 186.0	
			1997-11-01	1998-10-31	2 166.2	790.7	
			1998-11-01	1999-10-31	1 083.1	395.4	
	Maximum permitted at Niagara Falls, Ont. as part of combined Emerson/Niagara Falls volumes	1987-11-01	1996-10-31	1 442.7	526.6		
		1996-11-01	1997-10-31	1 082.1	394.9		
		1997-11-01	1998-10-31	721.3	263.3		
		1998-11-01	1999-10-31	360.7	131.7		
	GL-97	Monchy, Sask.	1984-12-20	1985-10-31	24 928.5	7 582.8	75 296.7
			1985-11-01	2001-10-31	24 928.5	8 294.4	
GL-106	Kingsgate, B.C.	1988-11-01	2012-10-31	7 478.6	2 488.3	37 324.5	
Paramount Resources Ltd.	GL-266	Huntingdon, B.C.	1997-11-01	2016-12-31	78.9	28.8	575.9
Pawtucket Power Associates Limited Partnership	GL-149	Iroquois, Ont.	1991-11-01	2006-10-31	362.5	132.4	1 986.0
Petro-Canada Inc.	GL-186	Huntingdon, B.C.	1994-04-01	1994-10-31	409.6	87.5	2 580.9
			1994-11-01	2011-10-31	409.6	150.0	
Pittsfield Generating Company, L.P.	GL-256	Niagara Falls, Ont.	1996-04-01	2011-10-31	895	326.7	4 844.3

### C3. Licences and Long-Term Orders to Export Natural Gas as of 31 December 1998

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volumes				
			From	To	Daily (10 <sup>3</sup> m <sup>3</sup> )	Annual (10 <sup>6</sup> m <sup>3</sup> )	Term (10 <sup>6</sup> m <sup>3</sup> )		
Poco Petroleum Ltd.	GL-117	Emerson, Man.	1989-08-24	1989-10-31	708.2	48.9	1 706.1		
			1989-11-01	1990-11-07	708.2	258.5			
			1990-11-08	1991-10-31	424.9	152.1			
			1991-11-01	2000-10-31	424.9	155.1			
	GL-118	Emerson, Man.	1989-08-24	1989-10-31	708.2	48.9	2 248.9		
			1989-11-01	1990-11-07	708.2	258.5			
			1990-11-08	1991-10-31	424.9	152.1			
			1991-11-01	1992-10-28	424.9	153.8			
			1992-10-29	1992-10-31	424.9	1.3			
	GL-173	Huntingdon, B.C.	1992-06-11	1992-10-31	424.9	60.8	1 138.4		
			1992-11-01	2000-10-31	424.9	155.1			
			2000-11-01	2001-08-11	424.9	120.7			
	GL-174	Huntingdon & Kingsgate, B.C.	1992-06-11	1992-10-31	566.6	81.0	1 583.0		
			1992-11-01	2000-10-31	566.6	206.8			
			2000-11-01	2001-06-10	566.6	126.4			
GL-205	Kingsgate, B.C.	1993-11-01	2002-10-31	445.1	138.8	869.5			
		2002-11-01	2003-09-30	445.1	126.6				
ProGas Limited	GL-98	Emerson, Man. & Monchy, Sask. combined maximum	1986-08-13	1986-10-31	9 440.9	2 583.2	30 064.3		
			1986-11-01	1987-10-31	7 552.7	2 480.0			
			1987-11-01	1993-10-31	9 440.9	3 100.0			
			1993-11-01	1994-10-31	5 211.1	1 560.3			
			1994-11-01	1995-02-28	5 211.1	380.5			
			1995-03-01	1995-07-31	4 788.7	584.2			
			1995-08-01	1995-10-31	4 515.0	328.5			
			1995-11-01	1997-10-31	4 515.0	1 303.5			
			1997-11-01	2000-10-31	4 741.4	1 386.1			
			2000-11-01	2001-10-31	1 416.4	517.3			
			Maximum permitted at Monchy, Sask as part of combined Emerson/Monchy volumes	1986-08-13	1986-10-31	6 797.4		2 480.0	8 718.7
				1986-11-01	1987-10-31	3 776.3		1 240.0	
	1987-11-01	1993-10-31		2 124.6	899.0				
	1993-11-01	1994-10-31		2 124.6	775.5				
	1994-11-01	1995-02-28		2 124.6	255.0				
	1995-03-01	1995-07-31		2 124.6	325.1				
	1995-08-01	1995-10-31		2 124.6	195.5				
	GL-101	Niagara Falls, Ont.	1989-05-01	1989-10-31	1 420.0	260.6	10 340.0		
			1989-11-01	2009-10-31	1 420.0	517.0			
GL-109	Iroquois & Niagara Falls, Ont.	1991-05-01	1991-10-31	708.2	130.3	5 170.0			
		1991-11-01	2011-10-31	708.2	258.5				

### C3. Licences and Long-Term Orders to Export Natural Gas as of 31 December 1998

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volumes		
			From	To	Daily (10 <sup>3</sup> m <sup>3</sup> )	Annual (10 <sup>6</sup> m <sup>3</sup> )	Term (10 <sup>6</sup> m <sup>3</sup> )
	GL-129	Niagara Falls, Ont.	1990-07-27	1990-10-31	2 861.1	277.5	19 015.3
			1990-11-01	1992-10-31	2 861.1	1 044.3	
			1992-11-01	2006-10-31	2 521.1	920.2	
			2006-11-01	2013-10-31	2 039.6	744.4	
	GL-161	Iroquois, Ont.	1992-11-01	2010-10-31	708.2	258.4	4 800.4
			2010-11-01	2011-04-30	708.2	128.2	
	GL-178	Niagara Falls, Ont.	1992-11-01	2007-10-31	339.9	124.1	1 861.1
	GL-179	Emerson, Man.	1992-11-01	2002-10-31	212.5	77.5	775.5
	GL-231	Emerson, Man.	1993-11-01	2003-10-31	2 407.9	879.0	8 651.9
	GL-233	Emerson, Man.	1994-05-01	1994-10-31	75.7	13.9	179.8
			1994-11-01	2000-10-31	75.7	27.5	
	GL-234	Emerson, Man.	1994-05-01	1994-10-31	84.8	15.6	294.3
			1994-11-01	2003-10-31	84.8	31.0	
	GL-235	Emerson, Man.	1994-05-01	1994-10-31	807.1	148.5	1 916.0
			1994-11-01	2000-10-31	807.1	294.6	
	GL-236	Emerson, Man.	1994-05-01	1994-10-31	304.0	55.9	1 054.6
			1994-11-01	2003-10-31	304.0	111.0	
	GL-237	Emerson, Man.	1994-05-01	1994-10-31	95.9	17.7	332.8
			1994-11-01	2003-10-31	95.9	35.0	
	GL-238	Emerson, Man.	1994-05-01	1994-10-31	313.8	57.7	1 088.5
			1994-11-01	2003-10-31	313.8	114.5	
	GL-240	Emerson, Man.	1994-05-01	1994-10-31	187.4	34.5	581.7
			1994-11-01	2002-10-31	187.4	68.4	
	GL-270	Emerson, Man.	1997-05-01	2012-10-31	2 255.0	41.4	2 071.3
	GL-271	Emerson, Man.	1997-05-01	2012-10-31	67.0	12.3	378.3
	GL-272	Iroquois, Ont.	1997-11-01	2007-10-31	458.0	167.2	1 672.0
	GL-286	Emerson, Man.	1998-11-01	2008-10-31	849.6	310.3	620.6
	GL-287	Monchy, Sask.	1998-11-01	2008-10-31	849.6	310.3	620.6
	GL-288	Kingsgate, B.C.	1998-07-01	2007-03-01	222.3	26.7	703.4

### C3. Licences and Long-Term Orders to Export Natural Gas as of 31 December 1998

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volumes		
			From	To	Daily (10 <sup>3</sup> m <sup>3</sup> )	Annual (10 <sup>6</sup> m <sup>3</sup> )	Term (10 <sup>6</sup> m <sup>3</sup> )
Ranger Oil Limited	GL-280	Niagara Falls, Ont.	1997-11-01	2007-10-31	141.6	51.7	517.0
Renaissance Energy Ltd.	GL-251	Monchy, Sask.	1995-01-31	1995-10-31	140.0	42.6	460.0
			1995-11-01	2003-10-31	140.0	51.1	
	GL-252	Niagara Falls, Ont.	1995-11-01	2005-10-31	180.0	66.0	660.0
	GL-253	Niagara Falls, Ont.	1995-11-01	2005-10-31	28.0	10.1	101.0
	GL-255	Niagara Falls, Ont.	1995-10-17	1995-10-31	79.3	1.2	265.5
			1995-11-01	2004-10-31	79.3	28.9	
	GL-263	Niagara Falls, Ont.	1997-11-01	2002-11-01	281.9	102.9	514.5
GL-292	Niagara Falls, Ont.	1998-11-01	2008-11-01	663.0	242.0	2 421.0	
Rochester Gas and Electric Corporation	GOL-12-92 (I)	Chippawa, Ont.	1993-11-01	2008-10-31	-	-	-
San Diego Gas & Electric Company & Husky Oil Operations	GL-208	Kingsgate, B.C.	1993-11-01	2001-10-31	609.9	222.6	2 226.0
San Diego Gas & Electric Company & Summit Resources Ltd.	GL-209	Kingsgate, B.C.	1993-11-01	2003-10-31	195.1	71.2	570.0
Saranac Power Partners L.P. & Shell Canada Limited	GL-197	Napierville, Que.	1993-11-01	2008-10-31	1 445.0	529.0	7 125.0
Selkirk Cogen Partners, L.P.	GL-157	Iroquois & Niagara Falls, Ont.	1992-11-01	2007-10-31	651.5	237.8	3 685.9
			2007-11-01	2008-10-30	651.5	117.9	
Selkirk Cogen Partners, L.P. & Atcor Ltd.	GL-192	Iroquois, Ont.	1994-11-01	2009-10-31	479.0	176.0	2 712.0
Selkirk Cogen Partners, L.P. & Imperial Oil Resources Ltd.	GL-193	Iroquois, Ont.	1994-11-01	2009-10-31	538.2	196.6	3 031.0
Selkirk Cogen Partners, L.P. & PanCanadian Petroleum Ltd.	GL-194	Iroquois, Ont.	1994-11-01	2009-10-31	538.2	196.6	3 031.0
Shell Canada Limited	GL-119	Emerson, Man.	1989-08-24	1989-10-31	424.9	29.3	2 234.0
			1989-11-01	2003-10-31	424.9	155.1	
	GL-120	Emerson, Man.	1989-08-24	1989-10-31	424.9	29.3	2 250.0
			1989-11-01	2004-10-31	424.9	155.1	
	GL-134	Niagara Falls, Ont.	1990-07-27	1990-10-31	450.0	43.7	2 755.0
			1990-11-01	2010-10-31	450.0	145.0	
			2010-11-01	2011-08-31	450.0	95.9	

### C3. Licences and Long-Term Orders to Export Natural Gas as of 31 December 1998

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volumes		
			From	To	Daily (10 <sup>3</sup> m <sup>3</sup> )	Annual (10 <sup>6</sup> m <sup>3</sup> )	Term (10 <sup>6</sup> m <sup>3</sup> )
	GL-180	Monchy, Sask.	1992-08-27	1992-10-31	278.0	18.3	1 014.0
			1992-11-01	2001-10-31	278.0	102.0	
			2001-11-01	2002-08-26	278.0	83.1	
	GL-181	Monchy, Sask.	1992-08-27	1992-10-31	580.0	38.3	3 181.0
			1992-11-01	2006-10-31	580.0	212.0	
			2006-11-01	2007-08-26	580.0	173.4	
	GL-241	Huntingdon, B.C.	1994-07-19	1994-10-31	609.0	64.2	2 001.3
			1994-11-01	2009-10-31	609.0	223.0	
Sithe/Independence Power Partners, L.P.	GL-219	Chippawa, Ont.	1995-03-01	1995-10-31	805.0	196.0	2 940.0
			1995-11-01	2004-10-31			
	GOL-13-92 (i)	Chippawa, Ont.	1993-02-01	2014-12-31			
St. Lawrence Gas Company, Inc.	GL-264	Cornwall & Iroquois, Ont.	1996-11-01	1997-06-30	574.3	106.2	637.2
			1997-07-01	1997-10-31	531.8	30.6	484.5
			1997-10-01	2002-10-31	531.8	100.0	
Summit Resources Limited	GL-214	Kingsgate, B.C.	1993-11-01	1994-03-31	219.2	21.8	300.0
			1994-04-01	1994-09-30	141.3	26.5	
			1994-10-01	1994-10-31	219.2	4.5	
			1994-11-01	1995-03-31	219.2	21.8	
			1995-04-01	1995-09-30	141.3	26.5	
			1995-10-01	1995-10-31	219.2	4.5	
			1995-11-01	1996-03-31	219.2	21.8	
			1996-04-01	1996-09-30	141.3	26.5	
			1996-10-01	1996-10-31	219.2	4.5	
			1996-11-01	1997-03-31	219.2	21.8	
			1997-04-01	1997-09-30	141.3	26.5	
			1997-10-01	1997-10-31	219.2	4.5	
			1997-11-01	1998-03-31	219.2	21.8	
			1998-04-01	1998-09-30	141.3	26.5	
			1998-10-01	1998-10-31	219.2	4.5	
			1998-11-01	1999-03-31	219.2	21.8	
			1998-04-01	1998-09-30	141.3	26.5	
			1999-10-01	1999-10-31	219.2	4.5	
			1999-11-01	2000-03-31	219.2	21.8	
			2000-04-01	2000-09-30	141.3	26.5	
			2000-10-01	2000-10-31	219.2	4.5	
			2000-11-01	2001-03-31	219.2	21.8	
			2001-04-01	2001-09-30	141.3	26.5	
			2001-10-01	2001-10-31	219.2	4.5	
Talisman Energy Inc.	GL-196	Huntingdon, B.C.	1993-10-01	2011-10-31	504.1	184.0	3 128.0
	GL-265	Huntingdon, B.C.	1997-01-01	2016-12-31	74.7	27.3	545.5
	GL-266	Huntingdon, B.C.	1997-01-01	2016-12-31	78.9	28.8	575.9

### C3. Licences and Long-Term Orders to Export Natural Gas as of 31 December 1998

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volumes		
			From	To	Daily (10 <sup>3</sup> m <sup>3</sup> )	Annual (10 <sup>6</sup> m <sup>3</sup> )	Term (10 <sup>6</sup> m <sup>3</sup> )
Tennessee Gas Pipeline Company	GOL-11-92 (i)	Niagara Falls	1992-11-01	2002-10-31	-	-	-
TransCanada Gas Services Limited	GL-128	Cornwall, Ont.	1990-07-27 1990-11-01	1990-10-31 2005-10-31	331.0 331.0	32.1 121.3	1 820.0
	GL-141	Emerson, Man.	1990-11-08 1991-11-01	1991-10-31 2005-10-31	424.9 424.9	152.1 155.1	2 326.5
	GL-163	Niagara Falls, Ont.	1992-11-01	2007-10-31	283.0	103.7	1 552.0
	GL-167	Emerson, Man.	1992-05-01 1992-11-01	1992-10-31 2001-10-31	1 346.0 1 346.0	247.7 492.0	4 920.0
	GL-169	Monchy, Sask.	1992-05-01 1992-11-01	1992-10-31 2001-10-31	708.0 708.0	130.3 259.0	2 590.0
	GL-170	Emerson, Man.	1992-05-01 1992-11-01 2000-11-01	1992-10-31 2000-10-31 2001-05-01	283.0 283.0 283.0	52.1 103.0 51.2	978.2
	GL-172	Philipsburg, Que.	1992-04-30 1992-11-01	1992-10-31 2006-10-31	906.0 906.0	166.7 332.0	4 980.0
	GL-175	Iroquois, Ont.	1992-08-27 1992-11-01	1992-10-31 2005-10-31	1 445.0 1 445.0	95.4 529.0	7 910.0
	GL-200	Niagara Falls, Ont.	1994-02-01 1994-11-01 2009-11-01	1994-10-31 2008-10-31 2009-01-31	509.0 509.0 509.0	139.6 186.6 47.0	2 800.0
	GL-202	Emerson, Man.	1993-02-23 1993-11-01	1993-10-31 2000-10-31	4 853.0 4 853.0	1 221.3 1 776.0	13 892.0
	GL-242	Emerson, Man.	1994-05-01 1994-11-01	1994-10-31 2003-10-31	2 533.0 2 533.0	467.3 927.0	8 811.5
	GL-243	Emerson, Man.	1994-05-01 1993-11-01 1994-11-01	1994-10-31 2010-10-31 2003-10-31	776.0 504.1 776.0	142.7 184.0 283.0	2 689.5
	GL-244	Emerson, Man.	1994-05-01 1994-11-01	1994-10-31 2003-10-31	752.0 752.0	138.6 275.0	2 613.9
	GL-245	Emerson, Man.	1994-05-01 1994-11-01	1994-10-31 2003-10-31	237.0 237.0	43.7 86.7	824.1
	GL-246	Emerson, Man.	1994-05-01 1994-11-01	1994-10-31 2003-10-31	210.0 210.0	38.7 76.8	730.0
GL-254	Emerson, Man.	1995-01-31 1995-11-01	1995-10-31 2003-10-31	205.0 205.0	56.5 75.0	675.0	

### C3. Licences and Long-Term Orders to Export Natural Gas as of 31 December 1998

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volumes		
			From	To	Daily (10 <sup>3</sup> m <sup>3</sup> )	Annual (10 <sup>6</sup> m <sup>3</sup> )	Term (10 <sup>6</sup> m <sup>3</sup> )
TransCanada Gas Services as agent for CanStates Gas Marketing	GL-248	Kingsgate, B.C.	Date of 1st deliveries for a 15-year term		841.5	307.1	4 606.9
	GL-249	Kingsgate, B.C.	Date of 1st deliveries for a 15-year term		420.7	153.5	2 303.2
TransCanada Gas Services as agent for CanStates Gas Marketing and Transco Energy Marketing Company	GL-136	Niagara Falls, Ont.	1992-08-27	1992-10-31	2 125.0	140.3	9 307.5
			1992-11-01	2002-10-31	2 125.0	775.6	
	GL-137	Niagara Falls, Ont.	1990-11-08	1991-10-31	1 371.1	450.5	5 593.8
			1991-11-01	2000-10-31	1 371.1	459.3	
			2000-11-01	2002-10-31	1 371.1	500.4	
TransCanada Pipelines Limited	GL-110	Iroquois & Niagara Falls, Ont.	1991-05-01	1991-10-31	708.2	130.3	5 443.2
			1991-11-01	2012-10-31	708.2	258.5	
	GL-121	Emerson, Man.	1989-08-24	1989-10-31	424.9	29.3	2 326.5
			1989-11-01	2003-10-31	424.9	155.1	
	GL-122	Emerson, Man.	1989-08-24	1989-10-31	424.9	29.3	2 326.5
1989-11-01			2004-10-31	424.9	155.1		
GL-187	Emerson, Man.	1992-08-27	1992-10-31	2 785.0	183.8	12 035.0	
			1992-11-01	2005-10-31	2 785.0	875.0	
	GOL-2-91 (m)	Emerson, Man.	1991-11-01	2005-10-31	-	-	-
UMC Petroleum Corporation	GOL-12-95 (n)	Emerson, Man.	1995-09-22	2008-12-31	-	-	-
Union Gas Limited	GOL-5-97 (k)	St. Clair, Windsor, Sarnia, & Blue Water, Ont.	1997-06-25	2002-06-24	-	-	-
	GOL-6-97 (p)	Emerson, Man. & Monchy, Sask.	1997-06-25	2002-06-24	-	-	-
Union Pacific Resources as agent for Norcen Energy Resources Limited	GL-116	Emerson, Man.	1990-05-03	1990-10-31	184.1	33.5	1 034.0
			1990-11-01	1994-10-31	184.1	67.2	
			1994-11-01	2001-10-31	283.3	104.8	
GL-143	Emerson, Man.	1990-11-08	1991-10-31	283.3	101.4	1 068.8	
		1991-11-01	2000-10-31	283.3	103.4		
United States Gypsum Company	GL-273	Emerson, Man.	1997-11-01	2007-11-01	382.4	139.6	1 395.8
	GL-281	Chippawa, Ont.	1998-11-01	2008-11-01	384.2	140.2	1 402.3
		Niagara Falls, Ont. combined maximum	1998-11-01	2008-11-01	384.2	140.2	



### C3. Licences and Long-Term Orders to Export Natural Gas as of 31 December 1998

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volumes		
			From	To	Daily (10 <sup>3</sup> m <sup>3</sup> )	Annual (10 <sup>6</sup> m <sup>3</sup> )	Term (10 <sup>6</sup> m <sup>3</sup> )
WasCana Energy Inc.	GL-77	Niagara Falls, Ont.	1987-11-01	1993-10-31	3 540.0	1 292.1	11 175.9
			1993-11-01	1993-12-14	3 540.0	155.1	
			1993-12-15	1994-10-31	2 831.8	909.6	
			1994-11-01	2001-10-31	2 831.8	1 033.3	
	GL-229	Niagara Falls, Ont.	1993-12-15	1994-10-31	708.2	227.5	2 391.1
			1994-11-01	2002-10-31	708.2	258.5	
WasCana Energy Inc. Rock-Tenn Company, Mill	GL-290	Philipsburg, Que.	1998-11-01	2008-10-31	61.2	22.3	223.4
Washington Water Power Company	GL-204	Kingsgate, B.C.	1993-11-01	1994-10-31	1 013.0	277.0	3 357.0
			1994-11-01	1995-10-31	1 100.0	302.0	
			1995-11-01	1996-10-31	1 190.0	328.0	
			1996-11-01	1997-10-31	1 285.0	356.0	
			1997-11-01	1998-10-31	1 380.0	382.0	
			1998-11-01	1999-10-31	1 471.0	408.0	
			1999-11-01	2000-10-31	1 563.0	434.0	
			2000-11-01	2001-10-31	1 145.0	275.0	
			2001-11-01	2002-10-31	1 201.0	290.0	
			2002-11-01	2003-10-31	1 258.0	305.0	

- a) This order authorizes an export of natural gas for subsequent import near Rainy River, Ont.
  - b) This order authorizes an export of natural gas for storage in the U.S. and for subsequent import near Huntingdon, B.C. through exchange arrangements with other exporters.
  - c) This order authorizes an export of natural gas for subsequent import near Huntingdon, B.C.
  - d) This order authorizes the re-export of natural gas that was imported near Rainy River, Ont.
  - e) This order authorizes an export of natural gas for subsequent import near St. Clair, Ont.
  - f) This order authorizes the re-export of natural gas that was imported near Loomis, Sask.
  - g) This order authorizes the re-export of natural gas that was imported near St. Clair, Windsor, and Blue Water, Ont.
  - h) This order authorizes the re-export of natural gas that was imported near Willow Creek and Loomis, Sask.
  - i) This order authorizes the re-export of natural gas that was imported near St. Clair and/or Windsor, Ont.
  - j) This order authorizes an export of natural gas for subsequent import near Willow Creek, Sask.
  - k) This order authorizes the re-export of natural gas that was imported near St. Clair, Windsor, Sarnia, and Blue Water, Ont.
  - l) This order authorizes the re-export of natural gas that was imported near Sarnia, Ont.
  - m) This order authorizes an export of natural gas for subsequent import near Sarnia and Sault Ste. Marie, Ont.
  - n) This order authorizes an export of natural gas for subsequent import near Willow Creek and Loomis, Sask.
  - o) This order authorizes an export of natural gas for subsequent import near St. Clair, Windsor, Sarnia, S.S. Marie, and Blue Water, Ont.
- Not Specified

## C4. Licences and Long-Term Orders to Import Natural Gas as of 31 December 1998

Importer	Licence or Order Number	Point of Import	Term of Licence or Order		Maximum Volumes		
			From	To	Daily (10 <sup>3</sup> m <sup>3</sup> )	Annual (10 <sup>6</sup> m <sup>3</sup> )	Term (10 <sup>6</sup> m <sup>3</sup> )
B.C. Gas Utility Ltd.	GOL-6-93 (a)	Huntingdon, B.C.	1992-08-11	2000-04-30	-	-	-
	GOL-3-95 (b)	Huntingdon, B.C.	1995-05-01	2000-04-30	-	-	-
Bearpaw Gathering Systems, Inc.	GOL-12-94 (c)	Loomis, Sask.	1994-11-01	1999-10-31	-	-	-
CoWest Energy	GOL-1-97 (d)	St. Clair, Windsor, & Blue Water, Ont.	1997-02-04	2022-02-03	-	-	-
	GOL-2-97 (e)	St. Clair, Windsor, & Blue Water, Ont.	1997-02-04	2022-02-03	-	-	-
Cornerstone Gas Marketing	GOL-3-97 (c)	Loomis, Sask.	1997-08-08	2008-10-31	-	-	-
Engage Energy Canada, L.P.	GOL-1-94 (f)	Windsor & St. Clair, Ont.	1994-03-01	2002-09-15	-	-	-
	GOL-2-94 (a)	Huntingdon, B.C.	1994-03-01	2002-09-15	-	-	-
	GOL-3-94 (g)	Windsor & St. Clair, Ont.	1994-03-01	2002-09-15	-	-	-
	GOL-4-94 (c)	Windsor & St. Clair, Ont.	1994-03-01	2002-09-15	-	-	-
	GOL-5-94 (h)	Willow Creek, Sask.	1994-03-01	2002-09-15	-	-	-
Gaz Métropolitain, Inc.	GOL-14-93 (i)	St. Clair & Windsor, Ont.	1993-12-01	2003-11-30	-	-	-
	GOL-16-93 (j)	Windsor & St. Clair, Ont.	1993-12-01	2003-11-30	-	-	-
Midland Cogeneration Venture Limited Partnership	GOL-9-96 (k)	St. Clair, Windsor, Sarnia & Blue Water, Ont.	1996-12-18	2006-12-31	-	-	-
National Steel Corporation	GOL-8-96 (l)	Windsor, Ont.	1996-12-18	2000-12-17	-	-	-
Northern Minnesota Utilities	GOL-17-93 (m)	Rainy River, Ont.	1992-12-01	2002-10-31	-	-	-
Ocean Energy, Inc.	GOL-12-95 (c)	Willow Creek &	1995-09-22	2008-12-31	-	-	-
Rochester Gas and Electric Corporation	GOL-12-92 (n)	Sarnia, Ont.	1993-11-01	2008-10-31	-	-	-
Sithe/Independence Power Partners, L.P.	GOL-13-92 (n)	Sarnia & Windsor, Ont.	1993-02-01	2014-12-31	-	-	-
Tennessee Gas Pipeline Company	GOL-11-92 (o)	St. Clair, Ont.	1992-11-01	2002-10-31	-	-	-
TransCanada Pipelines Limited	GOL-2-91 (p)	Sarnia & SS Marie, Ont. Loomis, Sask.	1991-11-01	2005-10-31	-	-	-

## C4. Licences and Long-Term Orders to Import Natural Gas as of 31 December 1998

Importer	Licence or Order Number	Point of Import	Term of Licence or Order		Maximum Volumes		
			From	To	Daily (10 <sup>3</sup> m <sup>3</sup> )	Annual (10 <sup>6</sup> m <sup>3</sup> )	Term (10 <sup>6</sup> m <sup>3</sup> )
Union Gas Limited	GOL-15-93 (q)	Sprague, Man.	1993-12-01	2018-11-30	-	-	-
	GOL-5-97 (b)	St. Clair, Windsor, Sarnia, & Blue Water, Ont.	1997-06-25	2002-06-24	-	-	-
	GOL-6-97 (p)	St. Clair, Windsor, Sarnia, & Blue Water, Ont.	1997-06-25	2002-06-24	-	-	-

- a) This order authorizes the re-import of natural gas that was exported near Kingsgate and Huntingdon, B.C.
  - b) This order authorizes an import of natural gas for subsequent export near Huntingdon, B.C.
  - c) This order authorizes an import of natural gas for subsequent export near Emerson, Man.
  - d) This order authorizes an import of natural gas for subsequent export near St. Clair, Niagara, Chippewa, Blue Water, Windsor, Ont. and Emerson, Man.
  - e) This order authorizes the re-import of natural gas that was exported near St. Clair, Niagara, Chippewa, Blue Water, Windsor, Ont. and Emerson, Man.
  - f) This order authorizes an import of natural gas for subsequent export near Iroquois and Niagara Falls, Ont.
  - g) This order authorizes the re-import of natural gas that was exported near Monchy, Sask. and St. Clair, Ont.
  - h) This order authorizes the re-import of natural gas for that was exported near Cardston, Alta.
  - i) This order authorizes an import of natural gas for subsequent export near St. Clair and Windsor, Ont.
  - j) This order authorizes the re-import of natural gas that was exported near St. Clair and/or Windsor, Ont.
  - k) This order authorizes an import of natural gas for subsequent export near St. Clair, Windsor, Sarnia, and Blue Water, Ont.
  - l) This order authorizes an import of natural gas for subsequent export near Windsor, Ont.
  - m) This order authorizes an import of natural gas for subsequent export near Fort Francis, Ont.
  - n) This order authorizes an import of natural gas for subsequent export near Chippawa, Ont.
  - o) This order authorizes an import of natural gas for subsequent export near Niagara Falls, Ont.
  - p) This order authorizes the re-import of natural gas that was exported near Emerson, Man. and/or Monchy, Sask.
  - q) This order authorizes the re-import of natural gas that was exported near Rainy River, Ont.
- Not Specified

## C5. Natural Gas Exports by Export Point

(million cubic metres)

Export Point	1994	1995	1996	1997	1998 (a)
Huntingdon	7 910	8 989	10 693	10 313	11 958
Kingsgate	20 451	22 199	22 545	23 986	24 168
Monchy	14 782	15 633	15 528	15 395	15 600
Emerson	11 029	11 298	11 944	12 108	13 651
Niagara Falls	7 407	7 700	7 609	8 147	8 523
Iroquois	7 128	7 986	8 072	8 305	8 654
Other	2 962	4 596	4 334	4 065	4 821
<b>Total</b>	<b>71 669</b>	<b>78 401</b>	<b>80 725</b>	<b>82 319</b>	<b>87 374</b>

a) Estimate

## C6. Total Net Exports of Propane and Butanes, 1997 - 1998 (cubic metres)

Exporter	Propane		Butane	
	1997 Actual	1998 Preliminary	1997 Actual	1998 Preliminary
Amoco Canada Petroleum Company Ltd.	3 355 552	3 839 400	1 294 034	1 438 100
Anderson Exploration	474	0	2 385	0
Burnwell Gas of Canada Ltd.	109 590	114 300	N/A	N/A
Canada Imperial Oil Limited	489 915	574 700	21 931	9 600
Canadian Enterprise Gas Products Ltd.	49 641	92 600	1 058	5 200
CANPET Energy Group Inc.	99 192	113 400	20 663	36 200
CENEX, Inc.	0	218 200	N/A	N/A
Centennial Gas Liquids, L.L.C.	0	1 700	N/A	N/A
Chevron Canada Resources	19 154	0	0	0
Chevron Standard Ltd.	221 768	200 700	N/A	0
Consumers' Co-operative Refineries Limited	2 633	8 500	0	0
Dow Chemical Canada Inc.	3 175	30 300	0	0
Dynegy Midstream Services, L.P.	28 904	50 200	0	20 600
Elbow River Resources Ltd.	25 713	48 900	171 104	233 000
Energy Transportation Inc.	180 332	161 900	0	0
enerkon Resources (Canada)	914	600	811	0
ENRON Capital & Trade Resources Canada Corp.	8 785	0	0	0
Factor Gas Liquids Inc.	4 694	23 600	2 460	0
Farmland Industries, Inc.	20 817	27 600	N/A	N/A
Ferrellgas L.P.	81 083	113 000	N/A	N/A
Gas Supply Resources, Inc.	N/A	212 700	N/A	N/A
Gibson Gas Liquids Ltd.	0	0	5 268	800
Great Western Resources Inc.	15 084	8 100	0	0
Gulf Canada Resources Limited	54 513	58 800	27 609	22 500
Husky Oil Operations Ltd.	547	N/A	0	0
Irving Oil Limited	26 142	33 100	0	0
Kinetic Resources (LPG)	962 323	1 157 500	408 933	412 500
Level Energy Inc.	305	0	N/A	N/A
Link Petroleum Services Ltd.	6 026	6 100	1 065	2 400
M-P Oils	197 329	192 100	0	0
Mapco Canada Energy Inc.	28 819	35 200	0	0
Mobil Canada Products Ltd.	34 562	32 500	9 762	11 300
Mobil Oil Canada	66 329	97 600	15 384	11 300
NGL Supply Co. Ltd.	121 457	203 800	130 519	190 700
Norcal Gas Liquids Ltd.	11 306	1 200	16 336	5 900
Northridge Gas Liquids Marketing Inc.	34 748	56 200	7 973	0
Petro-Canada Hydrocarbons Inc.	353 379	301 200	269 530	184 000
Petrogas Marketing Ltd.	82 223	110 000	36 658	25 200
Petromont and Company Limited Partnership	30 127	12 600	0	0
Pratt's Wholesale Group	4 313	0	N/A	N/A
Quadra Energy Trading Ltd.	47 952	105 900	10 542	8 900
Quality Energy Inc.	2 166	0	0	0
Resource Energy Marketing Ltd.	18 372	49 100	22 330	40 000
Rivecal Energy Ltd.	6 962	2 100	0	0

## C6. Total Net Exports of Propane and Butanes, 1997 - 1998 (cubic metres)

Exporter	Propane		Butane	
	1997 Actual	1998 Preliminary	1997 Actual	1998 Preliminary
Shell Canada Limited	272 795	238 200	99 868	101 100
Stittco Energy Limited	17 956	20 200	1 714	1 200
Suburban Propane, L.P.	5 915	800	N/A	N/A
Sunoco Inc.	131 400	125 300	0	47 900
Texaco Canada Petroleum Inc.	71 567	65 700	0	155 600
Texaco Products Inc.	0	0	188 704	0
Triangle Three Service Ltd.	795	900	361	0
Ultramar Canada Inc.	17 343	400	0	0
<b>Total</b>	<b>7 325 091</b>	<b>8 746 900</b>	<b>2 767 002</b>	<b>2 964 000</b>

N/A - not applicable

## D1. Certificates Issued During 1998 Approving New Commodity Pipeline Facilities Including Pipeline Construction Exceeding 40 Kilometres in Length

Applicant	Certificate Number	Date Issued	Facilities	Estimated Cost (\$)
Souris Valley Pipeline Limited	CC-1	1998/12/03	61 kilometres of carbon dioxide transmission pipeline in southern Saskatchewan.	13 600 000

## E1. Financial Information – Group 1 Oil Pipeline Companies with Multi-Year Incentive Toll Settlements

1998 (a)	Enbridge Pipelines Inc.	Trans Mountain Pipe Line Company Ltd.	Trans-Northern Pipelines Inc.
<b>Operations (\$000)</b>			
Revenues	406,174	113,655	27,337
Fuel & Power	76,239	6,622	3,089
Depreciation	62,641	13,848	2,895
Operating & Maintenance	115,332 (b)	61,700 (f)	14,777 (g)
Net Income	78,082	15,324	3,553
<b>Throughput Statistics</b>			
Throughput (m <sup>3</sup> /day)	275,100	40,160	28,639
Throughput-Km (000 m <sup>3</sup> *km)	91,500,000	14,561,574	1,468,521
<b>Performance Statistics</b>			
Average Revenue (\$/m <sup>3</sup> )	4.05	7.750	2.615
Revenue per m <sup>3</sup> - km (\$)	0.004	0.008	0.019
Expenses per m <sup>3</sup> - km (\$)	0.002 (c)	0.004	0.010
Net Income over/(under) Earnings Threshold (\$000)	16,776	2,734	852
Negotiated Incentives (\$000) (d)	14,633	3,958	770
Other Adjustments (\$000) (e)	(2,223)	2,157	(26)

Notes:

- a) Data may be based on preliminary estimates.
- b) Sum of Salaries & Wages, Other Operating & Maintenance and Taxes Other than Income.
- c) Sum of Fuel & Power and Operating & Maintenance, divided by Throughput-Km.
- d) Shippers' share of 1998 incentives. This amount will be deducted from the 1999 revenue requirement.
- e) Shippers' share of the adjustments under the incentive agreement (e.g., starting point inflation, tax allowance, non-routine adjustment, deferred amount adjustment, non-performance penalty deferral and transportation revenue). The net amount will be subtracted from (added to) the 1999 revenue requirement.
- f) Sum of Maintenance, Transportation, Administration and Other Income Charges.
- g) Sum of Maintenance, Transportation, Administration and Other Income Charges (i.e., all expenses except Depreciation and Power).

## E2. Financial Information – Group 1 Oil Pipeline Companies with Tolls Based on Cost of Service

1998 (a)	Cochin Pipe Lines (Ltd.) (b) (c)	Enbridge Pipelines (NW) Inc.
<b>Revenue Requirement (\$000)</b>		
Cost of Debt	7,564	6,557
Return on Equity	8,317	10,944
Fuel & Power	5,360	683
Depreciation	2,750	8,991
Wages & Benefits	1,875	3,634
Other Operations & Maintenance	7,956	6,422 (f)
Income Taxes	6,771	9,137
Other Taxes	1,412	-
<b>Total</b>	<b>42,005</b>	<b>46,368</b>
<b>Return on Common Equity (%)</b>		
Approved	10.21	10.21
Actual	7.6 (d)	10.21
<b>Utility Rate Base (\$000)</b>		
	<b>At 31 December</b>	<b>At 31 December</b>
Net Plant in Service	106,622	193,831
Working Capital	3,297	895
Other	-	-
<b>Total</b>	<b>109,919</b>	<b>194,726</b>
<b>Capitalization of Rate Base (\$000)</b>		
Debt	-	58,442
Deferred Taxes	-	29,192
Common Equity	109,919 (e)	107,108
<b>Total</b>	<b>109,919</b>	<b>194,742</b>
<b>Annual Throughput (10<sup>3</sup>m<sup>3</sup>)</b>	<b>6,038</b>	<b>1,839</b>

Notes:

- a) Data may be based on preliminary estimates.
- b) Canadian section only.
- c) Data are based on a semi-depreciated rate base, pursuant to Board Order RH-5-80.
- d) Based on a 13-month average.
- e) Joint venture capital accounts.
- f) Includes Maintenance, Transportation excluding Fuel & Power, Administration and Other Income Charges.



### E3. Financial Information – Group 1 Gas Pipeline Companies

1998 (a)	Alberta Natural Gas Company Ltd.	Foothills Pipe Lines Ltd.	TransCanada PipeLines Limited	Trans Québec & Maritimes Pipeline Inc.	Westcoast Energy Inc.
<b>Revenue Requirement (\$000)</b>					
Cost of Debt	10,636	35,734	495,959	19,888	
Return on Equity	5,697	21,635	252,518	9,134	
Preferred			27,232		
Depreciation	9,211	37,605	276,600	14,076	
Fuel & Power	5,983	7,365		91	
Wages & Benefits	5,301	5,263		4,344	
Other Operations & Maintenance	8,826	18,562	692,100	2,937	
Special Charges	2,771	8,477			
Transmission by Others	27,478				
NEB Cost Recovery		1,696		428	
Amortization of the Incentive					
Rate of Return One Time Adjustment		1,032			
Other	2,855				
Income Taxes	450	(1,509)	71,600	9,929	
Other Taxes	3,227	12,567	105,900	2,847	
<b>Total</b>	<b>82,435</b>	<b>148,426</b>	<b>1,921,900</b>	<b>63,674</b>	<b>549,600 (b)</b>
<b>Capitalization of Rate Base (\$000)</b>					
	<b>At 31 December</b>	<b>At 31 December</b>	<b>At 31 December</b>	<b>At 31 December</b>	<b>At 31 December</b>
Debt	130,227	520,212	5,398,900	202,420	1,459,500
Preferred	-	-	377,600	-	31,100
Common Equity	55,811	222,948	2,475,700	86,752	802,600
IROR One Time Adjustment	n/a	8,815	-	-	-
Special Charge Equity	n/a	57,555	-	-	-
<b>Total</b>	<b>186,038</b>	<b>809,530</b>	<b>8,252,200</b>	<b>289,172</b>	<b>2,293,200</b>
<b>Return on Common Equity (%)</b>					
Approved	10.21	10.21	10.21	10.21	10.21
Actual	10.21	10.21	10.63	10.32	12.95

Notes:

- a) Data may be based on preliminary estimates.
- b) Total revenue collection.

## F1. Certificates and Permits Issued During 1998 in Respect to International Power Lines

Applicant	Certificate No.	Issued	Comments
Ontario Hydro	EPE-113	19-03-98	Authorization to operate an international power line

## F2. Amending Orders Issued During 1998 Relating to International Power Lines

Applicant	Certificate No.	Issued	Comments
Ontario Hydro	AO-2-EPE-60	19-03-98	Transfer of permit to Ontario Hydro
Ontario Hydro	AO-3-EPE-60	19-03-98	Deletion of certain conditions
Manitoba Hydro	AO-1-XE-1-79	13-11-98	Increase in operating voltage

## F3. Licences Issued During 1998 Relating to the Export of Electricity

No licences were issued during 1998.

## F4. Permits and Orders Issued During 1998 Relating to the Export of Electricity

### F4 (a) Permits Issued

Applicant	Permit No.	Class	Kilowatts	Annual Megawatt Hours	Term		Issued
					From	To	
Ontario Hydro	EPE-110	Emergency	150 000	-	19-03-98	30-06-25	19-03-98
British Columbia Power Exchange Corp.	EPE-116	Interruptible	-	40 000 000(a)	1-10-98	30-09-98	1-10-98
	EPE-117	Firm	-	20 000 000	1-10-98	30-09-98	1-10-98
	EPE-118	Interruptible	-	27 000 000(b)	1-10-98	30-09-98	1-10-98
	EPE-119	Firm	-	15 000 000	1-10-98	30-09-98	1-10-98
Citizens Power Sales	EPE-120	Interruptible	-	432 000	25-06-98	25-06-08	25-06-98
	EPE-121	Firm	400 000	2 160 000	25-06-98	25-06-08	25-06-98
Nova Scotia Power Inc.	EPE-122	Interruptible	-	1 200 000(c)	9-7-98	9-7-08	9-7-98
	EPE-123	Firm	-	1 200 000(d)	9-7-98	9-7-08	9-7-98
British Columbia Hydro and Power Authority	EPE-124	Interruptible	-	(e)	1-2-98	31-01-09	17-12-98
	EPE-125	Firm	-	(f)	1-2-98	31-01-09	17-12-98
	EPE-126	Interruptible	-	(g)	1-2-98	31-01-09	17-12-98
	EPE-127	Firm	-	(h)	1-2-98	31-01-09	17-12-98
Manitoba Hydro	EPE-128	Firm	3 000	26 780	1-10-99	30-09-04	13-11-98

#### F4 (b) Amending Orders Relating to Export Licences and Export Permits

Applicant	Order No.	Issued	Comments
Ontario Hydro	AO-37-EPE-21	14-01-98	Addition of a customer.
	AO-38-EPE-21	20-02-98	Addition of a customer.
	AO-39-EPE-21	19-03-98	Quantity included from Permit EPE-110.
	AO-40-EPE-21	19-03-98	Addition of three customers.
	AO-41-EPE-21	30-03-98	Addition of a customer.
	AO-42-EPE-21	22-04-98	Addition of a customer.
	AO-43-EPE-21	22-06-98	Addition of a customer.
	AO-44-EPE-21	27-07-98	Addition of a customer.
	AO-45-EPE-21	28-07-98	Addition of a customer.
	AO-46-EPE-21	24-08-98	Addition of two customers.
AO-47-EPE-21	27-08-98	Addition of a customer.	
British Columbia Hydro and Power Authority and British Columbia Power Exchange Corp.	AO-3-EPE-43	16-09-98	Extension of term.
	AO-3-EPE-44	16-09-98	Extension of term.
Cominco Ltd.	AO-1-EPE-55	21-12-98	Extension of term.
	AO-1-EPE-56	21-12-98	Extension of term.
	AO-1-EPE-57	21-12-98	Extension of term.
	AO-1-EPE-58	21-12-98	Extension of term.

#### F4 (c) Revoking Orders

Applicant	Order No.	Issued	Comments
The Utility-Trade Corp.	RO-1-EPE-76	16-09-98	Revocation of export permits.
	RO-1-EPE-77		

- a) Total exports should not exceed 40 000 GW.h less any amounts under EPE-117.
- b) Total exports should not exceed 27 000 GW.h less any amounts under EPE-119.
- c) Total exports should not exceed 1 200 GW.h less any amounts under EPE-123.
- d) Total exports should not exceed 1 200 GW.h less any amounts under EPE-122.
- e) Total exports should not exceed the maximum transfer limits of the International Power Lines located in British Columbia less any amounts under permits EPE-125, EPE-126 and EPE-127.
- f) Total exports should not exceed the maximum transfer limits of the International Power Lines located in British Columbia less any amounts under permits EPE-124, EPE-126 and EPE-127.
- g) Total exports should not exceed the maximum transfer limits of the International Power Lines located in British Columbia less any amounts under permits EPE-124, EPE-125 and EPE-127.
- e) Total exports should not exceed the maximum transfer limits of the International Power Lines located in British Columbia less any amounts under permits EPE-124, EPE-125 and EPE-126.

## F5. Electricity Exports - 1998 (megawatt hours)

Exporter	Permit/ Licence Number	Permit/Licence Limit		Gross Energy Exported			Value of Export (\$)	
		Firm	Interruptible	Firm	Interruptible	Exchange (a)	Firm	Interruptible
<b>New Brunswick</b>								
Fraser Paper Inc. (Canada)	EPE-102	400 000	-	316 020	-	-	20 946 490	-
Maine and New Brunswick Electrical Power Company, Limited	EL-177	200 000	-	92 365	-	-	2 534 791	-
New Brunswick Power Corporation	EPE-15	-	6 482 400(b)	-	4 098	119	-	212 099
	EPE-16	-	400 000	-	80 121	(63 322)	-	4 544 257
	EPE-17	250 000	-	-	-	52 449	-	-
	EPE-18	-	179 000	-	28 889	129	-	1 415 071
	EPE-28	1 000	-	34	-	-	4 086	-
	EPE-47	175 200	-	82 888	-	-	6 361 422	-
	EPE-48	-	32 000	-	-	-	-	-
	EPE-90	6 482 000(c)	-	9685	-	-	328 655	-
	EPE-91	-	6 482 000(d)	-	3 768 656	-	-	149 511 730
<b>Total</b>				<b>500 992</b>	<b>3 881 764</b>	<b>(10 625)</b>	<b>30 175 444</b>	<b>155 683 157</b>
<b>Nova Scotia</b>								
Nova Scotia Power Inc.	EPE-122	-	1 200 000(e)	-	-	-	-	-
	EPE-123	1 200 000(f)	-	-	-	-	-	-
<b>Total</b>				<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Quebec</b>								
Hydro-Québec	EL-151	-	11 000 000	-	-	-	-	-
	EL-156	25 000	-	-	-	-	-	-
	EL-165	-	3 000 000	-	-	-	-	-
	EL-166	-	4 000 000	-	-	-	-	-
	EL-176	9 000 000	-	5 535 093	-	-	188 474 065	-
	EL-178*	3 000 000	-	1 811 840	-	-	77 541 735	-
	EL-180	1 402 000	-	972 671	-	-	102 739 623	-
	EL-181	400 000	-	343 114	-	-	46 033 714	-
	EL-182	406 000	-	168 193	-	-	15 904 866	-
	EL-183	540 000	-	243 079	-	-	26 950 965	-
	EL-184	273 000	-	128 442	-	-	14 304 997	-
	EPE-20	18 922	-	1 248	-	-	88 289	-
	EPE-64	-	30 000 000(g)	-	630 961	390 431	-	25 993 024
	EPE-65	20 000 000(h)	-	2 718 194	-	-	110 335 894	-
James Maclaren Industries Inc.	EPE-111	-	8 760 000(i)	-	3 205	-	156 862	-
	EPE-112	8 760 000	-	-	-	-	-	-
Montwegan International	EPE-108	-	8 760 000(j)	-	-	-	-	-
Energia Resource Inc.	EPE-109	8 760 000(k)	-	-	-	-	-	-
Tractebel Energy Marketing Inc.	EPE-86	-	8 760 000(l)	-	-	-	-	-
	EPE-87	8 760 000	-	-	-	-	-	-
<b>Total</b>				<b>11 921 874</b>	<b>634 166</b>	<b>390 431</b>	<b>582 531 010</b>	<b>25 993 024</b>

## F5. Electricity Exports - 1998 (megawatt hours)

Exporter	Permit/ Licence Number	Permit/Licence Limit		Gross Energy Exported			Value of Export (\$)	
		Firm	Interruptible	Firm	Interruptible	Exchange (a)	Firm	Interruptible
<b>Ontario</b>								
Canadian Niagara Power Company Limited	EPE-84	656 000	-	287 748	-	-	8 345 871	-
	EPE-85	250 000	-	-	-	92 568	-	-
The Canadian Transit Company	EPE-29	50	-	-	-	-	-	-
Cornwall Electric	EPE-82	-	45 000	-	11 681	-	-	254 804
	EPE-83	250 000	-	-	-	255 355	-	-
Destec Power Services Inc.	EPE-80	-	1 200 000	-	-	-	-	-
	EPE-81	1 200 000	-	-	-	-	-	-
The Detroit and Windsor Subway Company	EPE-26	4 000	-	1 762	-	-	-	-
Ontario Hydro	EPE-22	-	10 000 000	-	-	2 538 631	-	-
	EPE-24	15 000	-	185	-	-	369	-
	EPE-25	200	-	38	-	-	641	-
	EPE-110	(m)	-	-	-	-	-	-
Ontario Hydro and Ontario Hydro Interconnected Markets Inc.	EPE-21	-	25 000 000	-	2 301 817	185 715	-	113 185 993
Stone-Consolidated Corporation	EPE-75	-	175 000	-	-	-	-	-
St. Clair Tunnel Company	EPE-70	6	-	-	-	-	-	-
<b>Total</b>				<b>289 733</b>	<b>2 313 359</b>	<b>2 816 914</b>	<b>8 346 881</b>	<b>113 437 688</b>
<b>Manitoba</b>								
The Manitoba Hydro- Electric Board	EL-170	3 405 000	-	3 318 319	-	-	160 796 504	-
	EPE-33	883 000	-	176 231	-	-	3 696 838	-
	EPE-34	1 766 000	-	145 900	-	-	3 210 998	-
	EPE-35	663 000	-	120 556	-	-	3 227 979	-
	EPE-45	16 650 000(n)	-	1 844 780	-	-	53 551 457	-
	EPE-46	-	16 650 000(o)	-	5 021 608	(1 100 342)	-	123 921 107
	EPE-52	177 000	-	28 264	-	-	1 595 606	-
	EPE-61	9 460	-	4 253	-	-	197 792	-
	EPE-68	294 000	-	111 651	-	-	5 997 144	-
	EPE-72	20	-	-	-	-	-	-
<b>Total</b>				<b>5 749 954</b>	<b>5 021 608</b>	<b>(1 100 342)</b>	<b>232 274 318</b>	<b>123 921 107</b>

## F5. Electricity Exports - 1998

(megawatt hours)

Exporter	Permit/ Licence Number	Permit/Licence Limit		Gross Energy Exported			Value of Export (\$)	
		Firm	Interruptible	Firm	Interruptible	Exchange (a)	Firm	Interruptible
<b>Saskatchewan</b>								
Saskatchewan	EL-118	438 000(p)	-	-	-	66 250	-	-
Power Corporation	EL-119	-	876 000(q)	-	64 213	(30 325)	-	2 388 854
	EL-120	876 000	-	-	-	-	-	-
	EPE-88	-	7 008 000(r)	-	-	-	-	-
	EPE-89	7 008 000(s)	-	131 619	-	-	5 242 295	-
<b>Total</b>				<b>131 619</b>	<b>64 213</b>	<b>35 925</b>	<b>5 242 295</b>	<b>2 388 854</b>
<b>Alberta</b>								
Alberta Power Ltd & CU Power International Ltd.	EPE-93	-	10 600 000(t)	-	-	-	-	-
	EPE-94	10 600 000(u)	-	-	-	-	-	-
Aquila Canada Corp.	EPE-114	-	5 000 000	-	-	-	-	-
	EPE-115	5 000 000	-	-	-	-	-	-
Chandler Energy Inc.	EPE-100	-	500 000(v)	-	-	-	-	-
	EPE-101	500 000(w)	-	-	-	-	-	-
Citizens Power Sales	EPE-120	-	432 000	-	-	-	-	-
	EPE-121	2 160 000	-	-	-	-	-	-
Edmonton Power Authority	EPE-62	-	3 000 000(x)	-	-	-	-	-
	EPE-63	1 000 000	-	-	-	-	-	-
Engage Energy Canada, L.P.	EPE-96	-	3 000 000(y)	-	-	-	-	-
	EPE-97	3 000 000(z)	-	-	-	-	-	-
Enron Capital & Trade Resources Canada Corp.	EPE-98	-	5 000 000(aa)	-	887	-	-	15 504
	EPE-99	5 000 000(bb)	-	-	-	-	-	-
Sonat Power Marketing Inc. and Sonat Power Marketing L.P.	EPE-103	-	3 500 000(cc)	-	-	-	-	-
	EPE-104	3 500 000(dd)	-	-	-	-	-	-
TransAlta Energy Marketing Corp.	EPE-73	-	8 760 000(ee)	-	150	-	-	2 349
	EPE-74	8 760 000	-	60 483	-	-	1 304 316	-
TransCanada Power Corp.	EPE-78	-	2 000 000	-	-	-	-	-
	EPE-79	1 000 000	-	-	-	-	-	-
Utility-Trade Corp.	EPE-76**	-	3 000 000(ff)	-	-	-	-	-
	EPE-77**	3 000 000	-	-	-	-	-	-
<b>Total</b>				<b>165 097</b>	<b>21 500</b>		<b>2 784 824</b>	<b>523 084</b>

## F5. Electricity Exports - 1998 (megawatt hours)

Exporter	Permit/ Licence Number	Permit/Licence Limit		Gross Energy Exported			Value of Export (\$)	
		Firm	Interruptible	Firm	Interruptible	Exchange (a)	Firm	Interruptible
<b>British Columbia</b>								
British Columbia Hydro and Power Authority	EPE-41*	-	20 000 000(gg)	-	-	-	-	-
	EPE-42*	6 000 000(hh)	-	-	-	-	-	-
British Columbia Power Exchange Corp.	EPE-43	-	20 000 000(ii)	-	5 489 294	-	-	224 550 228
	EPE-44	6 000 000(jj)	-	179 632	-	-	4 912 349	-
British Columbia Hydro and Power Authority	EPE-105	1 410	-	992	-	-	58 382	-
	(kk)	-	-	-	-	330 488	-	-
British Columbia Power Exchange Corp.	EPE-71	25 951	-	25 650	-	-	1 083 626	-
	EPE-92	340 000(ll)	-	760 160	-	-	-	-
	EPE-95	176 000	-	75 585	-	-	2 940 057	-
	EPE-116	-	40 000 000(mm)	-	1 064	-	-	43 497
	EPE-117	20 000 000	-	-	-	-	-	-
	EPE-118	-	27 000 000(nn)	-	2 096 035	-	-	80 333 035
	EPE-119	15 000 000	-	64 995	-	-	1 851 459	-
Cominco Ltd.	EPE-55	50 000	-	-	-	-	-	-
	EPE-56	250 000	-	-	-	-	-	-
	EPE-57	-	1 000 000	-	237 720	-	-	8 758 829
	EPE-58	-	1 000 000	-	-	-	-	-
Inland Pacific Energy Services Ltd.	EPE-106	-	2 000 000(oo)	-	-	-	-	-
	EPE-107	2 000 000(pp)	-	-	-	-	-	-
West Kootenay Power Ltd.	EPE-13	50	-	36	-	-	2 356	-
	EPE-66	-	100 000(qq)	-	-	-	-	-
	EPE-67	100 000(rr)	-	-	-	-	-	-
<b>Total</b>				<b>830 611</b>	<b>9 039 303</b>	<b>303 369</b>	<b>3 040 793</b>	<b>219 027 565</b>
<b>Total Canada (ss)</b>				<b>19 589 880</b>	<b>20 975 913</b>	<b>2 435 672</b>	<b>864 395 565</b>	<b>640 974 479</b>

- a) Exchange includes inadvertent and circulating flow, equichange, storage, adjustment transfer, and wheeling or carrier transfer which normally do not have associated revenue.
- b) Total exports should not exceed 6 482.4 GW.h less any amounts exported pursuant to another licence or order under which the energy is transmitted over the line authorized by Certificate EC-III-8.
- c) Total exports should not exceed 6 482 GW.h less any amounts under any other electricity export authorization issued to NB Power.
- d) Total exports should not exceed 6 482 GW.h less any amounts under any other electricity export authorization issued to NB Power.
- e) Total exports should not exceed 1 200 GW.h less any amounts exported under Permit EPE-123.
- f) Total exports should not exceed 1 200 GW.h less any amounts exported under Permit EPE-122.
- g) Total exports should not exceed 30 000 GW.h less any amounts exported under Permit EPE-65.
- h) Total exports should not exceed 20 000 GW.h less any amount exported under any other electricity export authorization issued to Hydro-Québec except EPE-64.
- i) Total exports should not exceed 8 760 GW.h less any amounts exported under Permit EPE-112.
- j) Total exports should not exceed 8 760 GW.h less any amounts exported under Permit EPE-109.
- k) Total exports should not exceed 8 760 GW.h less any amounts exported under Permit EPE-108.

## F5. Electricity Exports 1998 (megawatt hours)

Exporter	Permit/ Licence Number	Permit/Licence Limit		Gross Energy Exported			Value of Export (\$)	
		Firm	Interruptible	Firm	Interruptible	Exchange (a)	Firm	Interruptible

- l) Total exports should not exceed 8 760 GW.h less any amount exported under under EPE-87.
- m) Quantity included under EPE-21.
- n) Total exports should not exceed 16 650 GW.h less any amount exported under any other electricity export authorization except border accommodations issued to Manitoba Hydro.
- o) Total exports under EPE-46 should not exceed 16 650 GW.h less any amount exported under any other electricity export authorization except border accommodations issued to Manitoba Hydro.
- p) Energy to be returned.
- q) Total exports under Licences EL-119 and EL-120 should not exceed 876 GW.h. when combined together.
- r) Total exports should not exceed 7 008 GW.h less any amounts exported under any other electricity authorization except border accommodations issued to Saskpower.
- s) Total exports should not exceed 7 008 GW.h less any amounts exported under any other electricity authorization except border accommodations issued to Saskpower.
- t) Total exports should not exceed 10 600 GW.h less any amount exported under under EPE-94
- u) Total exports should not exceed 10 600 GW.h less any amount exported under under EPE-93.
- v) Total exports should not exceed 500 GW.h less any amount exported under under EPE-101.
- w) Total exports should not exceed 500 GW.h less any amount exported under under EPE-100.
- x) Total exports should not exceed 3 000 GW.h less any amount exported under under EPE-63.
- y) Total exports should not exceed 3 000 GW.h less any amount exported under under EPE97.
- z) Total exports should not exceed 3 000 GW.h less any amount exported under under EPE-96.
- aa) Total exports should not exceed 5 000 GW.h less any amount exported under under EPE-99.
- bb) Total exports should not exceed 5 000 GW.h less any amount exported under under EPE-98.
- cc) Total exports should not exceed 3 500 GW.h less any amount exported under under EPE-104.
- dd) Total exports should not exceed 3 500 GW.h less any amount exported under under EPE-103.
- ee) Total exports should not exceed 8 760 GW.h less any amount exported under under EPE-74
- ff) Total exports should not exceed 3 000 GW.h less any amount exported under under EPE-77
- gg) Total exports should not exceed 20 000 GW.h less any amounts exported under Permits EPE-42, EPE-43 and EPE-44.
- hh) Total exports should not exceed 6 000 GW.h less any amounts exported under Permit EPE-44.
- ii) Total exports should not exceed 20 000 GW.h less any amounts exported under Permits EPE-41, EPE-42 and EPE-44.
- jj) Total exports should not exceed 6 000 GW.h less any amounts exported under Permits EPE-42.
- kk) Energy exported in accordance with the Skagit River Valley Treaty which is not under the Board's jurisdiction.
- ll) Total exports should not exceed 340 GW.h during first contract year and 770 GW.h in the following four contract years.
- mm) Total exports should not exceed 40 000 GW.h less any amounts exported under Permits EPE-117.
- nn) Total exports should not exceed 6 000 GW.h less any amounts exported under Permits EPE-119.
- oo) Total exports should not exceed 2 000 GW.h less any amounts exported under Permits EPE-107.
- pp) Total exports should not exceed 2 000 GW.h less any amounts exported under Permits EPE-106.
- qq) Total exports should not exceed 100 GW.h less any amounts under EPE-67.
- rr) Total exports should not exceed 100 GW.h less any amounts under EPE-66.
- ss) Excludes \$6,159,977 revenue for wheeling, transmission, unit rental and storage transfer charges.

\* Expired during 1998.

\*\* Revoked during 1998.



## F6. Electricity Trade Between Canada and the United States (a) (By Province, Gigawatt Hours)

Province	Region / State	Export (b)	Import (c)	Net Export (b)-(c)
<b>New Brunswick</b>	Maine	4 383	10	4 373
<b>Total New Brunswick</b>		<b>4 383</b>	<b>10</b>	<b>4 373</b>
Quebec	Vermont	2 162	61	2 101
	New England (d)	8 361	37	8 323
	New York	2 033	929	1 104
<b>Total Quebec</b>		<b>12 556</b>	<b>1 027</b>	<b>11 529</b>
<b>Ontario</b>	New York	467	744	- 278
	Pennsylvania	11	175	- 164
	Michigan	2 027	3 561	-1 534
	New England(d)	41	0	41
	Minnesota	57	67	- 10
<b>Total Ontario</b>		<b>2 603</b>	<b>4 547</b>	<b>-1 944</b>
<b>Manitoba</b>	Other(e)	142	119	22
	Minnesota	8 889	950	7 940
	North Dakota	139	11	128
	South Dakota	22	49	- 27
	Texas	738	0	738
	Wisconsin	840	33	807
<b>Total Manitoba</b>		<b>10 771</b>	<b>1 162</b>	<b>9 609</b>
<b>Saskatchewan</b>	Minnesota	7	1	7
	Montana	1	0	1
	North Dakota	84	413	- 329
	Washington	104	24	80
<b>Total Saskatchewan</b>		<b>197</b>	<b>438</b>	<b>- 249</b>
<b>Alberta</b>	Montana	0	4	- 4
	Oregon	1	113	- 112
	South Dakota	0	3	- 3
	Washington	61	67	- 6
<b>Total Alberta</b>		<b>62</b>	<b>187</b>	<b>- 125</b>
<b>British Columbia</b>	California	1 341	0	1 341
	Colorado	1	0	1
	Montana	25	0	25
	Oregon	703	0	703
	Other (e)	155	0	155
	Washington	6 704	4 311	2 393
<b>Total British Columbia</b>		<b>8 930</b>	<b>4 312</b>	<b>4 619</b>
<b>Total</b>		<b>39 502</b>	<b>11 683</b>	<b>27 819</b>

Notes:

- Sales and purchases only; excludes exchanges.
- Sales to the United States.
- Purchases from the United States.
- Trade with the New England Power Pool - quantities to each state cannot be accurately determined.
- Includes Iowa, Kansas, Missouri and Nebraska.
- Includes Alaska, Arizona, Idaho, and Utah.

## F7. Electricity Trade Between the United States and Canada (a)

(By American Region / State, Gigawatt Hours)

Region / State	Province	Import (b)	Export (c)	Net Import (b)-(c)
<b>New England</b>				
Maine	New Brunswick	4 383	10	4 373
Vermont	Quebec	2 162	61	2 101
New England (d)	Quebec	8 361	37	8 323
	Ontario	41	0	41
<b>Total New England</b>		<b>14 947</b>	<b>108</b>	<b>14 839</b>
<b>New York</b>				
New York	Quebec	2 033	929	1 104
	Ontario	467	744	- 278
<b>Total New York</b>		<b>2 500</b>	<b>1 674</b>	<b>826</b>
<b>Michigan</b>	Ontario	<b>2 027</b>	<b>3 561</b>	<b>-1 534</b>
<b>Pennsylvania</b>	Ontario	<b>11</b>	<b>175</b>	<b>- 164</b>
<b>Total Pennsylvania</b>		<b>11</b>	<b>175</b>	<b>- 164</b>
<b>Midwest</b>				
Other (e)	Manitoba	142	119	22
Minnesota	Ontario	57	67	- 10
	Manitoba	8 889	950	7 940
North Dakota	Saskatchewan	7	1	7
	Manitoba	139	11	128
South Dakota	Saskatchewan	84	413	- 329
	Alberta	0	3	- 3
Texas	Manitoba	22	49	- 27
	Manitoba	738	0	738
Wisconsin	Manitoba	840	33	807
<b>Total Midwest</b>		<b>10 920</b>	<b>1 647</b>	<b>9 273</b>
<b>Western</b>				
California	British Columbia	1 341	0	1 341
Colorado	British Columbia	1	0	1
Montana	Alberta	0	4	- 4
	British Columbia	25	0	25
Oregon	Manitoba	1	0	0
	Saskatchewan	1	0	1
	Alberta	1	113	- 112
Other (f)	British Columbia	703	0	703
	British Columbia/Alberta	155	0	155
Washington	Alberta	61	67	- 6
	British Columbia	6 704	4 311	2 393
	Saskatchewan	104	24	80
<b>Total Western</b>		<b>9 097</b>	<b>4 519</b>	<b>4 578</b>
<b>Total</b>		<b>39 502</b>	<b>11 683</b>	<b>27 819</b>

Notes:

- a) Sales and purchases only; excludes exchanges.
- b) Purchases from Canada.
- c) Sales to Canada.
- d) Trade with the New England Power Pool - quantities to each state cannot be accurately determined.
- e) Includes Iowa, Kansas, Missouri and Nebraska.
- f) Includes Alaska, Arizona, Idaho, and Utah.

# Metric Conversion Table

The National Energy Board uses the International System of Units. The energy units most commonly referred to in this report are the gigajoule and the petajoule. Combustion of a 30-litre gasoline tank expends approximately one gigajoule of energy. A petajoule is one million gigajoules. On average, Canada consumes about one petajoule of energy for all uses (heat, light and transportation) every 50 minutes.

The following conversion table is provided for the convenience of readers who may be more familiar with the Imperial System.

## Approximate Conversion Factor

metre	=	3.28 feet
kilometre	=	0.62 mile
hectare	=	2.47 acres
cubic metre of oil	=	6.3 barrels
cubic metre of natural gas	=	35.3 cubic feet
gigajoule	=	0.95 thousand cubic feet of natural gas at 1000 Btu per cubic foot or 0.165 barrels of oil, or 0.28 megawatt hours of electricity
gigajoule	=	$10^9$ joules
petajoule	=	$10^{15}$ joules
gigawatt hour	=	$10^6$ kilowatt hour
terawatt hour	=	$10^9$ kilowatt hour

