

McDaniel & Associates Consultants Ltd.

Summary of Price Forecasts

January 1, 2024

Year	Crude Oil Price Forecasts							Liquids Price Forecasts					Gas Price Forecasts								US/CAN Exchange Rate \$US/\$CAN
	WTI Crude Oil	Brent Crude Oil	Edmonton Light Crude Oil	Alberta Bow River Hardisty Crude Oil	Western Canadian Select Crude Oil	Alberta Heavy Crude Oil	Sask Cromer Medium Crude Oil	Edmonton Ethane	Edmonton Propane	Edmonton Butanes	Edmonton Cond. & Natural Gasolines	U.S. Henry Hub Gas Price	Alberta AECO Spot Price	Alberta Average Plantgate	Alberta Aggregator Plantgate	Empress	Sask. Prov. Gas Plantgate	British Columbia Average Plantgate	British Columbia Station 2	Inflation %	
	\$/bbl	\$/bbl	\$/bbl	\$/bbl	\$/bbl	\$/bbl	\$/bbl	\$/bbl	\$/bbl	\$/bbl	\$/bbl	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	%	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)					(8)	(9)								
History																					
2013	97.95	108.60	93.05	76.55	75.25	65.25	88.25		38.90	69.40	104.65	3.75	3.20	3.00	3.00	3.10	3.10	2.95	3.10	0.95	0.970
2014	93.00	99.00	93.50	80.40	79.10	71.20	87.80		45.05	69.60	102.40	4.35	4.40	4.20	4.20	4.55	4.40	4.05	4.20	1.90	0.905
2015	48.80	52.35	57.75	46.10	44.80	39.55	51.45		6.60	36.50	60.30	2.60	2.80	2.60	2.60	3.00	2.70	2.00	2.10	1.10	0.785
2016	43.30	43.55	53.90	40.45	39.15	33.35	49.10		13.15	34.35	56.15	2.50	2.10	1.90	1.90	2.30	2.20	1.55	1.65	1.45	0.755
2017	50.90	54.25	62.85	52.00	50.70	45.20	59.85		28.90	44.60	66.85	3.00	2.40	2.20	2.20	2.85	2.40	1.80	1.95	1.60	0.770
2018	64.95	71.05	69.65	51.25	49.95	40.00	70.20		27.55	32.80	79.20	3.05	1.55	1.35	1.35	3.00	1.60	1.20	1.40	2.25	0.770
2019	57.00	64.35	69.00	60.00	58.70	54.80	68.00		17.40	23.55	70.30	2.55	1.60	1.40	1.40	2.75	1.75	1.00	1.15	2.00	0.755
2020	39.25	41.75	45.00	36.50	35.40	30.70	43.75		16.40	22.15	49.15	2.05	2.25	2.05	2.05	2.30	2.45	2.05	2.20	0.75	0.745
2021	68.00	70.70	80.35	69.40	68.85	63.15	77.75		43.10	51.15	85.50	3.90	3.55	3.35	3.35	3.90	3.95	3.30	3.45	3.40	0.800
2022	94.80	100.80	120.75	99.25	99.10	90.95	114.30		50.30	61.15	123.00	6.40	5.55	5.35	5.35	6.70	5.85	5.00	5.15	6.80	0.770
2023	77.55	82.35	100.40	79.80	79.60	71.45	92.55		29.40	45.55	103.40	2.55	2.95	2.75	2.75	3.10	3.25	2.30	2.45	3.85	0.740
Forecast																					
2024	72.50	77.00	92.00	75.44	74.98	65.32	84.64	8.20	29.44	43.24	95.00	2.75	2.25	2.05	2.05	2.50	2.65	1.75	2.00	0.0	0.750
2025	73.95	78.03	93.84	76.95	76.48	66.63	86.33	11.42	30.03	44.10	96.90	3.32	3.06	2.86	2.86	3.32	3.47	2.55	2.81	2.0	0.750
2026	75.43	79.59	95.72	78.49	78.01	67.00	88.06	14.77	30.63	44.99	98.84	3.90	3.90	3.69	3.69	4.16	4.32	3.38	3.64	2.0	0.750
2027	76.94	81.18	97.63	80.06	79.57	68.34	89.82	15.07	31.24	45.89	100.81	3.98	3.98	3.77	3.77	4.24	4.40	3.45	3.71	2.0	0.750
2028	78.48	82.81	99.58	81.66	81.16	69.71	91.62	15.37	31.87	46.80	102.83	4.06	4.06	3.84	3.84	4.33	4.49	3.52	3.79	2.0	0.750
2029	80.05	84.46	101.58	83.29	82.78	71.10	93.45	15.68	32.50	47.74	104.89	4.14	4.14	3.92	3.92	4.42	4.58	3.59	3.86	2.0	0.750
2030	81.65	86.15	103.61	84.96	84.44	72.52	95.32	15.99	33.15	48.70	106.99	4.22	4.22	4.00	4.00	4.50	4.67	3.66	3.94	2.0	0.750
2031	83.28	87.87	105.68	86.66	86.13	73.98	97.22	16.31	33.82	49.67	109.13	4.31	4.31	4.08	4.08	4.59	4.77	3.73	4.02	2.0	0.750
2032	84.95	89.63	107.79	88.39	87.85	75.45	99.17	16.64	34.49	50.66	111.31	4.39	4.39	4.16	4.16	4.69	4.86	3.81	4.10	2.0	0.750
2033	86.64	91.42	109.95	90.16	89.61	76.96	101.15	16.97	35.18	51.68	113.53	4.48	4.48	4.24	4.24	4.78	4.96	3.88	4.18	2.0	0.750
2034	88.38	93.25	112.15	91.96	91.40	78.50	103.18	17.31	35.89	52.71	115.80	4.57	4.57	4.33	4.33	4.88	5.06	3.96	4.27	2.0	0.750
2035	90.14	95.12	114.39	93.80	93.23	80.07	105.24	17.66	36.60	53.76	118.12	4.66	4.66	4.41	4.41	4.97	5.16	4.04	4.35	2.0	0.750
2036	91.95	97.02	116.68	95.68	95.09	81.67	107.34	18.01	37.34	54.84	120.48	4.76	4.76	4.50	4.50	5.07	5.26	4.12	4.44	2.0	0.750
2037	93.79	98.96	119.01	97.59	96.99	83.31	109.49	18.37	38.08	55.94	122.89	4.85	4.85	4.59	4.59	5.17	5.37	4.20	4.53	2.0	0.750
2038	95.66	100.94	121.39	99.54	98.93	84.97	111.68	18.74	38.85	57.05	125.35	4.95	4.95	4.68	4.68	5.28	5.48	4.29	4.62	2.0	0.750
Thereafter	+2%/yr	+2%/yr	+2%/yr	+2%/yr	+2%/yr	+2%/yr	+2%/yr	+2%/yr	+2%/yr	+2%/yr	+2%/yr	+2%/yr	+2%/yr	+2%/yr	+2%/yr	+2%/yr	+2%/yr	+2%/yr	+2%/yr	2.0	0.750

(1) West Texas Intermediate at Cushing Oklahoma 40 degrees API, 0.5% sulphur

(2) North Sea Brent Blend 37 degrees API, 1.0% sulphur

(3) Edmonton Light Sweet 40 degrees API, 0.3% sulphur

(4) Bow River at Hardisty, Alberta (Heavy stream)

(5) Western Canadian Select at Hardisty, Alberta

(6) Heavy crude oil 12 degrees API at Hardisty, Alberta (after deduction of blending costs to reach pipeline quality)

(7) Midale Cromer crude oil 29 degrees API, 2.0% sulphur

(8) Historical prices based on AECO 7A (near month prices). 5A (daily price) expected to be equal to 7A over long term. 2023 historical prices: 7A \$2.93/MMBtu, 5A \$2.72/MMBtu

(9) This forecast also applies to direct sales contracts and the Alberta gas reference price used in the Crown royalty calculations

McDaniel & Associates Consultants Ltd.

Summary of Price Forecasts (Real Prices - 2024 \$)

January 1, 2024

Year	Crude Oil Price Forecasts							Liquids Price Forecasts					Gas Price Forecasts								US/CAN Exchange Rate	
	WTI Crude Oil	Brent Crude Oil	Edmonton Light Crude Oil	Alberta Bow River Hardisty Crude Oil	Western Canadian Select Crude Oil	Alberta Heavy Crude Oil	Sask Cromer Medium Crude Oil	Edmonton Ethane	Edmonton Propane	Edmonton Butanes	Edmonton Cond. & Natural Gasolines	U.S. Henry Hub Gas Price	Alberta AECO Spot Price	Alberta Average Plantgate	Alberta Aggregator Plantgate	Empress	Sask. Prov. Gas Plantgate	British Columbia Average Plantgate	British Columbia Station 2	Inflation %		
	\$/bbl	\$/bbl	\$/bbl	\$/bbl	\$/bbl	\$/bbl	\$/bbl	\$/bbl	\$/bbl	\$/bbl	\$/bbl	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu		%
	(1)	(2)	(3)	(4)	(5)	(6)	(7)					(8)	(9)									
History																						
2013	97.95	108.60	93.05	76.55	75.25	65.25	88.25		38.90	69.40	104.65	3.75	3.20	3.00	3.00	3.10	3.10	2.95	3.10	0.95	0.970	
2014	93.00	99.00	93.50	80.40	79.10	71.20	87.80		45.05	69.60	102.40	4.35	4.40	4.20	4.20	4.55	4.40	4.05	4.20	1.90	0.905	
2015	48.80	52.35	57.75	46.10	44.80	39.55	51.45		6.60	36.50	60.30	2.60	2.80	2.60	2.60	3.00	2.70	2.00	2.10	1.10	0.785	
2016	43.30	43.55	53.90	40.45	39.15	33.35	49.10		13.15	34.35	56.15	2.50	2.10	1.90	1.90	2.30	2.20	1.55	1.65	1.45	0.755	
2017	50.90	54.25	62.85	52.00	50.70	45.20	59.85		28.90	44.60	66.85	3.00	2.40	2.20	2.20	2.85	2.40	1.80	1.95	1.60	0.770	
2018	64.95	71.05	69.65	51.25	49.95	40.00	70.20		27.55	32.80	79.20	3.05	1.55	1.35	1.35	3.00	1.60	1.20	1.40	2.25	0.770	
2019	57.00	64.35	69.00	60.00	58.70	54.80	68.00		17.40	23.55	70.30	2.55	1.60	1.40	1.40	2.75	1.75	1.00	1.15	2.00	0.755	
2020	39.25	41.75	45.00	36.50	35.40	30.70	43.75		16.40	22.15	49.15	2.05	2.25	2.05	2.05	2.30	2.45	2.05	2.20	0.75	0.745	
2021	68.00	70.70	80.35	69.40	68.85	63.15	77.75		43.10	51.15	85.50	3.90	3.55	3.35	3.35	3.90	3.95	3.30	3.45	3.40	0.800	
2022	94.80	100.80	120.75	99.25	99.10	90.95	114.30		50.30	61.15	123.00	6.40	5.55	5.35	5.35	6.70	5.85	5.00	5.15	6.80	0.770	
2023	77.55	82.35	100.40	79.80	79.60	71.45	92.55		29.40	45.55	103.40	2.55	2.95	2.75	2.75	3.10	3.25	2.30	2.45	3.85	0.740	
Forecast																						
2024	72.50	77.00	92.00	75.44	74.98	65.32	84.64	8.20	29.44	43.24	95.00	2.75	2.25	2.05	2.05	2.50	2.65	1.75	2.00	0.0	0.750	
2025	72.50	76.50	92.00	75.44	74.98	65.32	84.64	11.20	29.44	43.24	95.00	3.25	3.00	2.80	2.80	3.25	3.40	2.50	2.75	2.0	0.750	
2026	72.50	76.50	92.00	75.44	74.98	64.40	84.64	14.20	29.44	43.24	95.00	3.75	3.75	3.55	3.55	4.00	4.15	3.25	3.50	2.0	0.750	
2027	72.50	76.50	92.00	75.44	74.98	64.40	84.64	14.20	29.44	43.24	95.00	3.75	3.75	3.55	3.55	4.00	4.15	3.25	3.50	2.0	0.750	
2028	72.50	76.50	92.00	75.44	74.98	64.40	84.64	14.20	29.44	43.24	95.00	3.75	3.75	3.55	3.55	4.00	4.15	3.25	3.50	2.0	0.750	
2029	72.50	76.50	92.00	75.44	74.98	64.40	84.64	14.20	29.44	43.24	95.00	3.75	3.75	3.55	3.55	4.00	4.15	3.25	3.50	2.0	0.750	
2030	72.50	76.50	92.00	75.44	74.98	64.40	84.64	14.20	29.44	43.24	95.00	3.75	3.75	3.55	3.55	4.00	4.15	3.25	3.50	2.0	0.750	
2031	72.50	76.50	92.00	75.44	74.98	64.40	84.64	14.20	29.44	43.24	95.00	3.75	3.75	3.55	3.55	4.00	4.15	3.25	3.50	2.0	0.750	
2032	72.50	76.50	92.00	75.44	74.98	64.40	84.64	14.20	29.44	43.24	95.00	3.75	3.75	3.55	3.55	4.00	4.15	3.25	3.50	2.0	0.750	
2033	72.50	76.50	92.00	75.44	74.98	64.40	84.64	14.20	29.44	43.24	95.00	3.75	3.75	3.55	3.55	4.00	4.15	3.25	3.50	2.0	0.750	
2034	72.50	76.50	92.00	75.44	74.98	64.40	84.64	14.20	29.44	43.24	95.00	3.75	3.75	3.55	3.55	4.00	4.15	3.25	3.50	2.0	0.750	
2035	72.50	76.50	92.00	75.44	74.98	64.40	84.64	14.20	29.44	43.24	95.00	3.75	3.75	3.55	3.55	4.00	4.15	3.25	3.50	2.0	0.750	
2036	72.50	76.50	92.00	75.44	74.98	64.40	84.64	14.20	29.44	43.24	95.00	3.75	3.75	3.55	3.55	4.00	4.15	3.25	3.50	2.0	0.750	
2037	72.50	76.50	92.00	75.44	74.98	64.40	84.64	14.20	29.44	43.24	95.00	3.75	3.75	3.55	3.55	4.00	4.15	3.25	3.50	2.0	0.750	
2038	72.50	76.50	92.00	75.44	74.98	64.40	84.64	14.20	29.44	43.24	95.00	3.75	3.75	3.55	3.55	4.00	4.15	3.25	3.50	2.0	0.750	

(1) West Texas Intermediate at Cushing Oklahoma 40 degrees API, 0.5% sulphur

(2) North Sea Brent Blend 37 degrees API, 1.0% sulphur

(3) Edmonton Light Sweet 40 degrees API, 0.3% sulphur

(4) Bow River at Hardisty, Alberta (Heavy stream)

(5) Western Canadian Select at Hardisty, Alberta

(6) Heavy crude oil 12 degrees API at Hardisty, Alberta (after deduction of blending costs to reach pipeline quality)

(7) Midale Cromer crude oil 29 degrees API, 2.0% sulphur

(8) Historical prices based on AECO 7A (near month prices). 5A (daily price) expected to be equal to 7A over long term. 2023 historical prices: 7A \$2.93/MMBTU, 5A \$2.72/MMBTU

(9) This forecast also applies to direct sales contracts and the Alberta gas reference price used in the Crown royalty calculations

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Summary of International Price Forecasts January 1, 2024

US and Europe Crude Oil and Natural Gas Price Forecasts													
Exchange Rates			US Crude Oil		US Natural Gas					Europe Crude Oil		Europe Natural Gas	
Year	\$US to GBP £	\$US to EUR €	WTI Oil \$/bbl	LLS Oil \$/bbl	Henry Hub Gas \$/MMBtu	CIG Gas \$/MMBtu	Chicago Gas \$/MMBtu	Houston Ship Gas \$/MMBtu	Sumas Gas \$/MMBtu	UK Brent Crude Oil \$/bbl	UK Forties Oil \$/bbl	UK NBP Gas \$/MMBtu	Dutch TTF Gas \$/MMBtu
	Forecast												
2024	1.25	1.08	72.50	75.00	2.75	2.40	2.50	2.45	3.38	77.00	77.00	12.50	12.50
2025	1.25	1.08	73.95	76.50	3.32	2.95	3.05	3.00	4.02	78.03	78.03	14.28	14.28
2026	1.25	1.08	75.43	78.03	3.90	3.55	3.65	3.60	4.68	79.59	79.59	14.57	14.57
2027	1.25	1.08	76.94	79.59	3.98	3.60	3.70	3.65	4.78	81.18	81.18	14.86	14.86
2028	1.25	1.08	78.48	81.18	4.06	3.70	3.80	3.75	4.87	82.81	82.81	15.15	15.15
2029	1.25	1.08	80.05	82.81	4.14	3.75	3.85	3.80	4.97	84.46	84.46	15.46	15.46
2030	1.25	1.08	81.65	84.46	4.22	3.85	3.95	3.90	5.07	86.15	86.15	15.77	15.77
2031	1.25	1.08	83.28	86.15	4.31	3.90	4.00	3.95	5.17	87.87	87.87	16.08	16.08
2032	1.25	1.08	84.95	87.87	4.39	4.00	4.10	4.05	5.27	89.63	89.63	16.40	16.40
2033	1.25	1.08	86.64	89.63	4.48	4.05	4.20	4.10	5.38	91.42	91.42	16.73	16.73
2034	1.25	1.08	88.38	91.42	4.57	4.15	4.25	4.20	5.49	93.25	93.25	17.07	17.07
2035	1.25	1.08	90.14	93.25	4.66	4.25	4.35	4.30	5.60	95.12	95.12	17.41	17.41
2036	1.25	1.08	91.95	95.12	4.76	4.30	4.45	4.40	5.71	97.02	97.02	17.76	17.76
2037	1.25	1.08	93.79	97.02	4.85	4.40	4.55	4.45	5.82	98.96	98.96	18.11	18.11
2038	1.25	1.08	95.66	98.96	4.95	4.50	4.60	4.55	5.94	100.94	100.94	18.47	18.47

Other International Crude Oil Price Forecasts												
Year	Africa and Middle East							Asia		Latin America		Russia
	Nigeria Bonny Light Oil \$/bbl	Algeria Saharan Blend Oil \$/bbl	Kuwait Kuwait Oil \$/bbl	Saudi Light Oil \$/bbl	Saudi Heavy Oil \$/bbl	UAE Fateh Oil \$/bbl	Iran Light Oil \$/bbl	Indonesia Minas Oil \$/bbl	Malaysia Tapis Oil \$/bbl	Mexico Maya Oil \$/bbl	Columbia Vasconia Oil \$/bbl	Urals Oil \$/bbl
Forecast												
2024	76.13	75.40	73.95	75.40	73.95	75.40	76.13	73.95	79.03	65.25	73.59	54.38
2025	77.65	76.91	75.43	76.91	75.43	76.91	77.65	75.43	80.61	66.56	75.06	55.46
2026	79.20	78.45	76.94	78.45	76.94	78.45	79.20	76.94	82.22	67.89	76.56	56.57
2027	80.78	80.02	78.48	80.02	78.48	80.02	80.78	78.48	83.86	69.24	78.09	57.70
2028	82.40	81.62	80.05	81.62	80.05	81.62	82.40	80.05	85.54	70.63	79.65	58.86
2029	84.05	83.25	81.65	83.25	81.65	83.25	84.05	81.65	87.25	72.04	81.25	60.03
2030	85.73	84.91	83.28	84.91	83.28	84.91	85.73	83.28	88.99	73.48	82.87	61.24
2031	87.44	86.61	84.95	86.61	84.95	86.61	87.44	84.95	90.77	74.95	84.53	62.46
2032	89.19	88.34	86.64	88.34	86.64	88.34	89.19	86.64	92.59	76.45	86.22	63.71
2033	90.98	90.11	88.38	90.11	88.38	90.11	90.98	88.38	94.44	77.98	87.94	64.98
2034	92.80	91.91	90.14	91.91	90.14	91.91	92.80	90.14	96.33	79.54	89.70	66.28
2035	94.65	93.75	91.95	93.75	91.95	93.75	94.65	91.95	98.26	81.13	91.50	67.61
2036	96.54	95.63	93.79	95.63	93.79	95.63	96.54	93.79	100.22	82.75	93.33	68.96
2037	98.48	97.54	95.66	97.54	95.66	97.54	98.48	95.66	102.23	84.41	95.19	70.34
2038	100.45	99.49	97.58	99.49	97.58	99.49	100.45	97.58	104.27	86.10	97.10	71.75