

# McDaniel & Associates Consultants Ltd.

## Summary of Price Forecasts

January 1, 2021

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	%	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)					(8)	(9)								
<b>History</b>																					
2010	79.55	79.90	77.50	68.50	67.25	61.45	73.80		46.80	66.05	84.25	4.40	4.15	3.90	3.85		3.95	3.90		1.75	0.970
2011	95.10	111.25	95.05	78.55	77.10	67.90	89.05		55.15	76.50	104.20	4.00	3.70	3.50	3.75	3.50	3.55	3.30	3.40	2.90	1.010
2012	94.20	111.65	86.10	74.35	73.10	63.65	82.10		28.60	69.55	100.80	2.75	2.45	2.25	2.25	2.30	2.30	2.25	2.40	1.55	1.000
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	39.20	41.75	45.00	36.45	35.35	30.70	43.70		16.35	22.20	49.15	2.05	2.25	2.05	2.05	2.30	2.45	2.05	2.20	0.20	0.745
<b>Forecast</b>																					
2021	47.50	49.50	57.24	46.36	45.22	40.07	54.95	10.20	15.74	21.46	61.24	2.75	2.75	2.55	2.55	2.90	2.65	2.45	2.60	0.0	0.760
2022	51.00	53.55	61.74	50.01	48.77	43.22	58.34	9.79	20.06	27.78	65.82	2.81	2.65	2.45	2.45	2.81	2.55	2.35	2.50	2.0	0.760
2023	52.02	54.62	62.97	51.01	49.75	44.08	59.51	9.36	23.61	36.21	67.13	2.86	2.55	2.34	2.34	2.71	2.44	2.24	2.39	2.0	0.760
2024	53.06	55.71	64.23	52.03	50.74	44.96	60.70	9.55	24.09	36.93	68.48	2.92	2.60	2.39	2.39	2.76	2.49	2.28	2.44	2.0	0.760
2025	54.12	56.83	65.52	53.07	51.76	45.86	61.91	9.74	24.57	37.67	69.85	2.98	2.65	2.44	2.44	2.81	2.54	2.33	2.49	2.0	0.760
2026	55.20	57.96	66.83	54.13	52.79	46.78	63.15	9.94	25.06	38.42	71.24	3.04	2.70	2.48	2.48	2.87	2.59	2.37	2.54	2.0	0.760
2027	56.31	59.12	68.16	55.21	53.85	47.71	64.41	10.14	25.56	39.19	72.67	3.10	2.76	2.53	2.53	2.93	2.65	2.42	2.59	2.0	0.760
2028	57.43	60.31	69.53	56.32	54.93	48.67	65.70	10.34	26.07	39.98	74.12	3.16	2.81	2.58	2.58	2.99	2.70	2.47	2.64	2.0	0.760
2029	58.58	61.51	70.92	57.44	56.02	49.64	67.02	10.54	26.59	40.78	75.60	3.22	2.87	2.64	2.64	3.05	2.75	2.52	2.69	2.0	0.760
2030	59.75	62.74	72.33	58.59	57.14	50.63	68.36	10.76	27.13	41.59	77.11	3.29	2.93	2.69	2.69	3.11	2.81	2.57	2.75	2.0	0.760
2031	60.95	64.00	73.78	59.76	58.29	51.65	69.72	10.97	27.67	42.42	78.66	3.35	2.99	2.74	2.74	3.17	2.86	2.62	2.80	2.0	0.760
2032	62.17	65.28	75.26	60.96	59.45	52.68	71.12	11.19	28.22	43.27	80.23	3.42	3.05	2.80	2.80	3.23	2.92	2.67	2.86	2.0	0.760
2033	63.41	66.58	76.76	62.18	60.64	53.73	72.54	11.41	28.79	44.14	81.83	3.49	3.11	2.85	2.85	3.30	2.98	2.73	2.92	2.0	0.760
2034	64.68	67.91	78.30	63.42	61.85	54.81	73.99	11.64	29.36	45.02	83.47	3.56	3.17	2.91	2.91	3.36	3.04	2.78	2.98	2.0	0.760
2035	65.97	69.27	79.86	64.69	63.09	55.90	75.47	11.88	29.95	45.92	85.14	3.63	3.23	2.97	2.97	3.43	3.10	2.84	3.03	2.0	0.760
<b>Thereafter</b>	+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	0.760

(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. 2019 historical prices: 7A \$1.60/MMBTU, 5A \$1.75/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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2011	95.10	111.25	95.05	78.55	77.10	67.90	89.05		55.15	76.50	104.20	4.00	3.70	3.50	3.75	3.50	3.55	3.30	3.40	2.90	1.010
2012	94.20	111.65	86.10	74.35	73.10	63.65	82.10		28.60	69.55	100.80	2.75	2.45	2.25	2.25	2.30	2.30	2.25	2.40	1.55	1.000
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