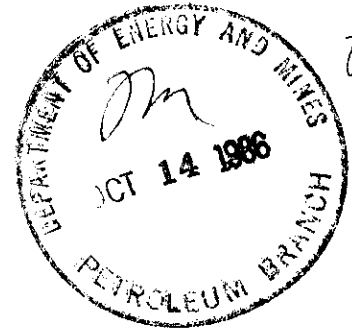


cc: Clare Mosier, Oct. 10/86  
C. Kang's office

**OMEGA**  
HYDROCARBONS LTD.  
SUITE 309, PLAZA III  
1000 - 10th Ave. N.W.  
CALGARY, ALBERTA, CANADA T2P 0Y4  
TEL. (403) 261-0743



October 6, 1986

Manitoba Oil and Natural Gas  
Conservation Board  
Room 309, Legislative Building  
Winnipeg, Manitoba

Attention: Mr. Charles S. Kang  
Chairman

Dear Sir:

Re: Waskada Unit No. 2  
Enlargement No. 2

Enclosed for the Board's files are two copies each of the revised Exhibits A and B showing the addition of tract 35 (14-22-1-26). This enlargement was approved by your department in your letter of September 29, 1986.

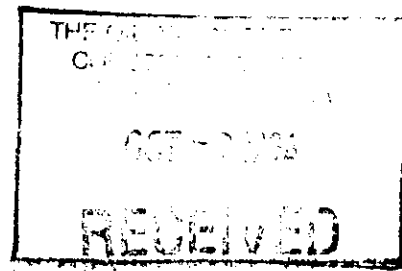
Yours truly,

OMEGA HYDROCARBONS LTD.

D. Mark Mawdsley  
Production Engineer

Encl:  
cc: Waskada Unit No. 2 File

DMM/tct



# Manitoba



The Oil and Natural Gas  
Conservation Board

Room 309  
Legislative Building  
Winnipeg, Manitoba, CANADA  
R3C 0V8

(204) 945-3130

SEP 29 1986

Omega Hydrocarbons Ltd.  
1300 Sun Life Plaza III  
112 - 4 Avenue S.W.  
Calgary, Alberta  
T2P 0H3

Attention: Mr. D. Mark Mawdsley,  
Production Engineer

Dear Sirs:

Re: Waskada Unit No. 2 - Enlargement No. 2

Further to your letter of September 24, 1986, enlargement of the subject Unit to include the tract Lsd 14 of Section 22-1-26 is hereby approved. In accordance with the terms of the Unit Agreement, inclusion of this tract is effective October 1, 1986.

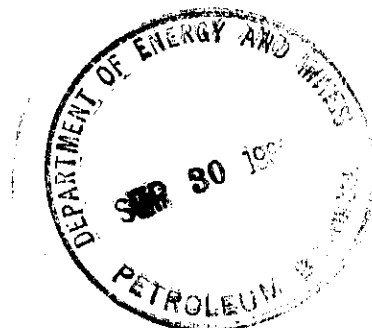
Yours sincerely,

**ORIGINAL SIGNED BY  
CHARLES S. KANG**

Charles S. Kang  
Chairman

LRD/lk

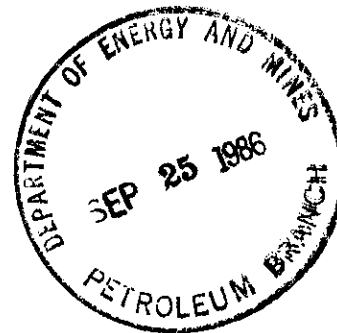
b.c. Wm. McDonald  
B. Ball  
Petroleum Branch





HYDROCARBONS LTD

1300 SUN LIFE PLAZA III  
112 4th AVENUE S.W.  
CALGARY, ALBERTA, CANADA T2P 0H3  
TELEPHONE (403) 261-0743



September 24, 1986

Manitoba Department of Energy and Mines  
Petroleum Branch  
555 - 330 Graham Avenue  
Winnipeg, Manitoba  
R3C 4E3

Attention: Mr. Bob Dubreuil

Dear Sir:

Re: Waskada Unit No. 2 - Enlargement No. 2

Enclosed is a copy of the executed execution page for the captioned Enlargement from Prairieview Resources Ltd. With this letter, Omega Hydrocarbons Ltd. requests an Effective Date for Enlargement No. 2 of October 1, 1986. Tract Factor calculation details were forwarded to your office with my letter of September 5, 1986. Thank you for your attention to this matter.

Yours truly,

OMEGA HYDROCARBONS LTD.

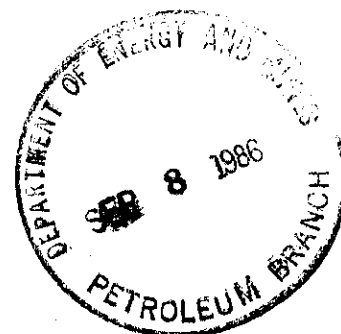
D. Mark Mawdsley  
Production Engineer

DMM/jr  
Encl.

cc: Waskada Unit No. 2 File



1300 SUN LIFE PLAZA III  
112 4th AVENUE S.W.  
CALGARY, ALBERTA, CANADA T2P 0H3  
TELEPHONE (403) 261-0743



September 5, 1986

Manitoba Department of Energy and Mines  
Petroleum Branch  
555 - 330 Graham Avenue  
Winnipeg, Manitoba  
R3C 4E3

Attention: Mr. Bob Dubreuil

Dear Sir:

Re: Waskada Unit No. 2 - Enlargement No. 2

The set of data and calculations I sent with my letter of September 4, 1986 had a small error in them. During the initial set-up of Unit No. 2, we decided that the 16-22-1-26 WPM well was on the very edge of the reservoir and this was confirmed by pressure build-up and fall-off tests. As a result we used an effective area of four hectares rather than the typical 16 hectares. I neglected to use the reduced area in my initial calculations but the attached data corrects this. Please discard my erroneous set of data and calculations.

Yours truly,

OMEGA HYDROCARBONS LTD.

D. Mark Mawdsley  
Production Engineer

DMM/jr  
Encl.

cc: Waskada Unit No. 2 File

***** PRODUCTION PERIOD # 1 *****										***** PRODUCTION PERIOD # 2 *****									
TRACT	LAND	DESCRIPTION	WATER	AREA	REC.	SW	Boi	PH	TH	86-07	*****	*****	*****	*****	*****	*****	*****	*****	*****
#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	16-22-1-26	WPM	100.00000	4	0.25	0.40	1.17	0.97	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	13-23-1-26	WPM	100.00000	16	0.25	0.40	1.17	0.78	1416.0	2211	462.5	1040.0	2584	743.4	549.2	2324	677.7	137.6	2445
3	14-23-1-26	WPM	100.00000	16	0.25	0.40	1.17	1.32	4705.5	2584	743.4	549.2	2324	677.7	137.6	2445	727.9	532.2	2011
4	3-26-1-26	WPM	100.00000	16	0.25	0.40	1.17	0.84	4156.6	2324	677.7	137.6	2445	727.9	532.2	2011	441.4	389.4	2446
5	4-26-1-26	WPM	100.00000	16	0.25	0.40	1.17	1.41	7282.9	2445	727.9	532.2	2011	441.4	389.4	2446	565.4	394.4	2184
6	1-27-1-26	WPM	100.00000	16	0.25	0.40	1.17	0.99	3391.2	2011	441.4	389.4	2446	565.4	394.4	2184	157.8	559.5	490.0
7	2-27-1-26	WPM	100.00000	16	0.25	0.40	1.17	1.10	1792.0	2446	565.4	394.4	2184	157.8	559.5	490.0	453.8	940.0	2456
8	3-27-1-26	WPM	100.00000	16	0.25	0.40	1.17	1.68	1602.3	2456	453.8	940.0	2456	487.8	1589.0	2437	897.7	1038.7	1983
9	4-27-1-26	WPM	100.00000	16	0.25	0.40	1.17	1.95	3142.6	2184	559.0	490.0	2292	1208.1	212.9	2376	834.3	105.9	1996
10	5-27-1-26	WPM	100.00000	16	0.25	0.40	1.17	1.31	1918.4	2456	453.8	940.0	2456	487.8	1589.0	2437	897.7	1038.7	1983
11	6-27-1-26	WPM	100.00000	16	0.25	0.40	1.17	1.70	8276.7	2466	487.8	1589.0	2437	897.7	1038.7	1983	729.3	333.3	2292
12	7-27-1-26	WPM	100.00000	16	0.25	0.40	1.17	1.13	2287.8	2437	897.7	1038.7	1983	729.3	333.3	2292	1208.1	212.9	2376
13	8-27-1-26	WPM	100.00000	16	0.25	0.40	1.17	1.31	8300.4	1983	729.3	333.3	2292	1208.1	212.9	2376	834.3	105.9	1996
14	5-26-1-26	WPM	100.00000	16	0.25	0.40	1.17	1.26	4452.2	2292	1208.1	212.9	2376	834.3	105.9	1996	540.7	454.7	1666
15	6-26-1-26	WPM	100.00000	16	0.25	0.40	1.17	1.87	4290.3	2376	834.3	105.9	1996	540.7	454.7	1666	639.1	142.5	2272
16	11-26-1-26	WPM	100.00000	16	0.25	0.40	1.17	1.01	3559.8	1996	540.7	454.7	1666	639.1	142.5	2272	405.1	858.2	2138
17	6-26-1-26	WPM	100.00000	16	0.25	0.40	1.17	1.13	5672.7	1666	639.1	142.5	2272	405.1	858.2	2138	799.2	1038.4	2874
18	9-27-1-26	WPM	100.00000	16	0.25	0.40	1.17	1.18	1644.7	2272	405.1	858.2	2138	799.2	1038.4	2874	446.8	2266.4	2562
19	10-27-1-26	WPM	100.00000	16	0.25	0.40	1.17	1.76	2723.3	2138	799.2	1038.4	2874	446.8	2266.4	2562	732.9	530.3	2530
20	11-27-1-26	WPM	100.00000	16	0.25	0.40	1.17	1.30	1475.9	2874	446.8	2266.4	2562	732.9	530.3	2530	576.4	991.9	2518
21	12-27-1-26	WPM	100.00000	16	0.25	0.40	1.17	1.04	5967.2	2562	732.9	530.3	2530	576.4	991.9	2518	978.7	1040.5	2518
22	13-27-1-26	WPM	100.00000	16	0.25	0.40	1.17	1.71	1431.0	2530	576.4	991.9	2518	978.7	1040.5	2518	273.2	192.7	2208
23	14-27-1-26	WPM	100.00000	16	0.25	0.40	1.17	1.29	11156.3	2518	978.7	1040.5	2518	273.2	192.7	2208	273.2	192.7	2208
24	15-27-1-26	WPM	100.00000	16	0.25	0.40	1.17	1.44	1832.7	2236	775.4	235.8	2156	519.5	822.3	1758	212.8	780.8	2603
25	16-27-1-26	WPM	100.00000	16	0.25	0.40	1.17	1.42	3092.7	2156	519.5	822.3	1758	212.8	780.8	2603	287.0	1132.6	2208
26	13-26-1-26	WPM	100.00000	16	0.25	0.40	1.17	1.10	455.7	1758	212.8	780.8	2603	287.0	1132.6	2208	273.2	192.7	2208
27	14-26-1-26	WPM	100.00000	16	0.25	0.40	1.17	1.06	1222.2	2603	287.0	1132.6	2208	273.2	192.7	2208	273.2	192.7	2208
28	2-35-1-26	WPM	100.00000	16	0.25	0.40	1.17	1.26	1110.0	2208	273.2	192.7	2208	273.2	192.7	2208	273.2	192.7	2208
29	3-35-1-26	WPM	100.00000	16	0.25	0.40	1.17	1.80	395.5	2983	100.9	1363.6	2148	164.3	662.5	1758	192.8	757.4	2671
30	2-34-1-26	WPM	100.00000	16	0.25	0.40	1.17	1.59	543.9	2148	164.3	662.5	1758	192.8	757.4	2671	90.5	2369.9	2451
31	8-34-1-26	WPM	100.00000	16	0.25	0.40	1.17	1.22	1154.1	1758	192.8	757.4	2671	90.5	2369.9	2451	864.8	365.5	2151
32	5-35-1-26	WPM	100.00000	16	0.25	0.40	1.17	1.20	627.8	2671	90.5	2369.9	2451	864.8	365.5	2151	261.5	804.0	76674
33	6-35-1-26	WPM	100.00000	16	0.25	0.40	1.17	0.81	3053.2	2451	864.8	365.5	2151	261.5	804.0	76674	17807.7	25322.1	0
34	12-35-1-26	WPM	100.00000	16	0.25	0.40	1.17	1.04	535.8	2151	261.5	804.0	76674	17807.7	25322.1	0	0.0	0.0	0.0
***** SUBTOTALS: *****										*****									
35	14-22-1-26	WPM	100.00000	16	0.25	0.40	1.17	1.28	320.1	2639	137.3	68.4	79313	17945.0	25390.5	0	0.0	0.0	0.0
***** TOTALS: *****										*****									

MASKADA UNIT NO. 2 ENLARGEMENT TRACT FACTOR CALCULATIONS

8

REMAINING	RR OIL	OIL RATE	OIL CUT	OIL RATE	OIL CUT	UN-ADJ.	ORIGINAL	ADJUSTED	TRACT	LAND
RECOVERABLE	FACTOR	FACTOR	FACTOR	FACTOR	FACTOR	TRACT	TRACT	TRACT	TRACT	DESCRIPTION
OIL (M3)	1	1	2	2	2	FACTOR	TRACT	TRACT	TRACT	
5,031	0.4203	0.0000	0.0000	0.0000	0.0000	0.0000	0.4203	0.5076	0.4912	16-22-1-26 WPM
14,766	1.2336	0.2978	0.0000	0.0000	0.0000	0.0000	1.9726	2.1676	2.0977	13-23-1-26 WPM
22,480	1.8948	0.4095	0.0000	0.0000	0.0000	0.0000	3.1286	3.2457	3.1411	14-23-1-26 WPM
13,271	1.1087	0.4151	0.0000	0.0000	0.0000	0.0000	2.7152	3.4591	3.3476	3-26-1-26 WPM
21,970	1.8355	0.4238	0.0000	0.0000	0.0000	0.0000	3.0873	3.3714	3.2628	4-26-1-26 WPM
16,948	1.4159	0.3124	0.0000	0.0000	0.0000	0.0000	2.3421	2.4717	2.3920	1-27-1-26 WPM
21,029	1.7569	0.3291	0.0000	0.0000	0.0000	0.0000	2.9304	2.8915	2.7983	2-27-1-26 WPM
33,252	2.7781	0.0838	0.0000	0.0000	0.0000	0.0000	3.1773	3.1628	3.0609	3-27-1-26 WPM
37,313	3.1173	0.3844	0.0000	0.0000	0.0000	0.0000	4.2456	4.2502	4.1132	4-27-1-26 WPM
25,260	2.1104	0.2630	0.0000	0.0000	0.0000	0.0000	2.8401	2.7887	2.6795	5-27-1-26 WPM
26,993	2.2552	0.2816	0.0000	0.0000	0.0000	0.0000	2.8735	3.4038	3.2941	6-27-1-26 WPM
21,156	1.7675	0.5244	0.0000	0.0000	0.0000	0.0000	2.9584	2.8883	2.7759	7-27-1-26 WPM
18,878	1.5772	0.5235	0.0000	0.0000	0.0000	0.0000	3.0845	3.3881	3.2789	8-27-1-26 WPM
21,689	1.8120	0.7503	0.0000	0.0000	0.0000	0.0000	3.7809	3.3263	3.2191	5-26-1-26 WPM
34,506	2.8828	0.4998	0.0000	0.0000	0.0000	0.0000	4.6545	4.6467	4.4970	6-26-1-26 WPM
17,394	1.4532	0.3856	0.0000	0.0000	0.0000	0.0000	2.6174	2.6172	2.5329	11-26-1-26 WPM
17,771	1.4847	0.5461	0.0000	0.0000	0.0000	0.0000	3.2028	3.5327	3.4189	12-26-1-26 WPM
22,836	1.9079	0.2538	0.0000	0.0000	0.0000	0.0000	2.6214	2.5838	2.5005	9-27-1-26 WPM
33,791	2.8231	0.4866	0.0000	0.0000	0.0000	0.0000	3.9331	3.8900	3.7646	10-27-1-26 WPM
25,495	2.1300	0.2213	0.0000	0.0000	0.0000	0.0000	2.5874	2.9035	2.8099	11-27-1-26 WPM
15,409	1.3041	0.4072	0.0000	0.0000	0.0000	0.0000	2.5429	2.7659	2.6758	12-27-1-26 WPM
34,046	2.8444	0.5243	0.0000	0.0000	0.0000	0.0000	3.6955	3.9087	3.7827	13-27-1-26 WPM
15,407	1.3039	0.5533	0.0000	0.0000	0.0000	0.0000	2.5520	3.2365	3.1322	14-27-1-26 WPM
28,043	2.3429	0.4936	0.0000	0.0000	0.0000	0.0000	3.9356	3.8554	3.7312	15-27-1-26 WPM
24,368	2.2029	0.3430	0.0000	0.0000	0.0000	0.0000	3.1009	3.0818	2.9825	16-27-1-26 WPM
22,366	1.8686	0.1723	0.0000	0.0000	0.0000	0.0000	2.3479	2.2622	2.1893	13-26-1-26 WPM
20,769	1.7352	0.1569	0.0000	0.0000	0.0000	0.0000	2.1819	2.1450	2.0759	14-26-1-26 WPM
25,031	2.0912	0.1761	0.0000	0.0000	0.0000	0.0000	3.1078	3.1189	3.0184	2-35-1-26 WPM
16,202	1.3536	0.0498	0.0000	0.0000	0.0000	0.0000	1.5022	1.4970	1.4391	3-35-1-26 WPM
32,443	2.7105	0.1089	0.0000	0.0000	0.0000	0.0000	3.1042	3.0609	2.9622	2-34-1-26 WPM
24,157	2.0182	0.1561	0.0000	0.0000	0.0000	0.0000	2.4651	2.4688	2.4086	8-34-1-26 WPM
24,268	2.0275	0.0492	0.0000	0.0000	0.0000	0.0000	2.1284	2.0913	2.0239	5-35-1-26 WPM
13,752	1.1489	0.5023	0.0000	0.0000	0.0000	0.0000	2.6388	2.7704	2.6811	6-35-1-26 WPM
21,041	1.7578	0.1731	0.0000	0.0000	0.0000	0.0000	2.2827	2.2705	2.1973	12-35-1-26 WPM
771,731	64,4748	11.0370	21.2655	0.0000	0.0000	0.0000	96.7773	100.0000	96.7773	
26,236	2.1919	0.0741	0.9567	0.0000	0.0000	0.0000	3.2227		3.2227	14-22-1-26 WPM
797,987	66,6667	11.1111	22.2222	0.0000	0.0000	0.0000	100.0000		100.0000	

# Waskada Unit No. 2-Enlargement No. 2

	$\phi$ -Marc <sub>1</sub>	$\phi$ -Omega <sub>2</sub>	Adj. Tract F.-Omega <sub>3</sub>	$\frac{1}{2}$	$\frac{1}{3}$	
14-22-1-26	0.69	1.28	3.22	.54	0.21+	similar to values calculated for all 3 wells for Unit No. 3- Enlargement No. 4.



September 18, 1986

Omega Hydrocarbons Ltd.  
1300 SunLife Plaza III  
112 - 4th Avenue S.W.  
CALGARY, Alberta  
T2P 0H3

Attention: Mr. Mark Mawdsley  
Production Engineer

Dear Sir:

Re: Waskada Unit No. 2 - Enlargement No. 2

Your letter of September 5, 1986 to the Petroleum Division with respect to the enlargement of Waskada Unit No. 2 is acknowledged.

The Division has reviewed the porosity thickness and adjusted tract factor calculations for the proposed unit enlargement well, Omega Waskada 14-22-1-26 (WPM), and finds these to be acceptable. Please note that before the enlargement of Unit No. 2 can be approved, The Oil and Natural Gas Conservation Board requires an executed copy of the signature page from the affected royalty owner.

Yours sincerely,

L.R. Dubreuil  
Chief Petroleum Engineer  
Petroleum Division

LRD:dah





WASKADA LA UNIT 2 TRACT FACTOR CALCULATIONS

TRACT	LAND	PH1th (a)	104-85 CUM.	MONTH 1 PROD. (m <sup>3</sup> )			MONTH 2 PROD. (m <sup>3</sup> )			MONTH 3 PROD. (m <sup>3</sup> )			MONTH 4 PROD. (m <sup>3</sup> )														
	DESCRIPTION		OIL (m <sup>3</sup> )	HRS	OIL	WATER	HRS	OIL	WATER	HRS	OIL	WATER	HRS	OIL	WATER												
1	16-22-1-26	0.97	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0												
2	13-23-1-26	0.78	1141.3	129	50.5	33.5	648	160.9	190.4	744	192.6	379.2	690	58.5	436.9												
3	14-23-1-26	1.32	3500.4	444	140.7	60.7	720	212.9	91.9	676	188.2	110.5	744	201.6	286.1												
4	3-26-1-26	0.84	3253.5	312	88.0	34.4	744	193.1	59.4	672	212.4	23.3	596	184.2	20.5												
5	4-26-1-26	1.41	4928.3	296	107.3	54.2	668	187.3	80.1	737	147.0	159.1	744	286.3	238.8												
6	1-27-1-26	0.99	2193.3	143	31.8	55.6	744	99.6	301.3	516	110.0	131.0	608	200.0	101.5												
7	2-27-1-26	1.10	1435.2	312	76.8	34.0	742	185.1	117.6	744	164.2	156.4	648	139.3	86.4												
8	3-27-1-26	1.68	971.0	552	56.4	92.1	664	35.5	140.7	744	22.8	201.0	720	43.1	125.7												
9	4-27-1-26	1.95	1926.5	582	142.5	140.2	712	193.9	137.2	240	59.6	45.8	650	163.0	166.8												
10	5-27-1-26	1.31	1918.4	344	149.6	82.2	720	112.1	292.1	648	79.6	275.8	744	112.5	289.9												
11	6-27-1-26	1.70	5067.0	338	81.9	128.0	690	112.4	415.1	706	126.5	477.3	732	167.0	568.6												
12	7-27-1-26	1.13	2287.8	487	198.0	119.3	694	398.1	126.1	648	205.0	384.5	608	96.6	408.8												
13	8-27-1-26	1.31	5762.2	528	177.5	76.4	528	215.3	92.3	411	136.4	64.5	516	200.1	100.1												
14	5-26-1-26	1.26	4452.2	504	327.1	137.6	744	344.5	49.2	672	338.9	17.8	732	338.9	17.8												
15	6-26-1-26	1.87	3168.7	216	111.4	47.8	744	272.4	13.1	744	232.9	20.8	672	217.6	24.2												
16	11-26-1-26	1.01	3520.4	288	110.4	29.8	744	203.1	148.0	672	145.7	178.2	292	81.5	98.7												
17	12-26-1-26	1.13	3558.5	18	8.5	0.1	536	182.4	16.3	416	155.1	31.9	696	293.1	94.2												
18	9-27-1-26	1.18	1370.6	344	139.4	113.1	744	115.4	376.7	588	42.1	271.4	596	108.2	97.0												
19	10-27-1-26	1.76	2180.0	350	194.5	108.8	744	187.9	358.1	636	164.9	365.3	608	251.9	206.2												
20	11-27-1-26	1.30	1077.7	738	164.1	240.9	720	143.6	532.5	744	82.6	752.7	672	56.5	740.3												
21	12-27-1-26	1.04	4356.0	432	173.0	77.2	742	256.6	134.6	716	213.9	156.5	672	89.4	162.0												
22	13-27-1-26	1.71	1431.0	404	154.8	123.7	696	211.5	238.0	686	79.8	196.1	744	130.3	434.1												
23	14-27-1-26	1.29	5414.6	342	129.6	108.4	720	175.2	281.0	744	381.0	236.5	712	292.9	414.6												
24	15-27-1-26	1.44	1832.7	149	61.1	13.9	737	248.8	79.9	696	230.9	74.0	654	234.6	68.0												
25	16-27-1-26	1.42	2574.1	45	9.4	2.0	683	129.0	436.1	720	186.7	233.3	708	194.4	150.9												
26	13-26-1-26	1.10	455.7	390	50.3	214.1	306	41.9	117.5	384	39.0	153.0	678	81.6	296.2												
27	14-26-1-26	1.06	1021.3	577	63.1	292.1	706	9.8	404.6	744	117.8	288.2	576	96.3	147.7												
SUBTOTALS:																9264	2997.7	2420.1	17840	4628.3	5229.8	16648	4055.6	5384.1	17012	4319.4	5782.0
28	2-35-1-26	1.26	1013.3	120	44.2	6.1	744	101.6	71.5	672	69.2	77.6	672	58.2	37.5												
29	3-35-1-26	0.80	246.9	740	11.2	192.1	720	41.5	367.8	740	34.8	410.5	683	13.4	393.2												
30	2-34-1-26	1.59	441.9	208	16.7	105.4	566	70.1	203.3	668	38.0	197.1	706	39.5	156.7												
31	8-34-1-26	1.22	482.7	328	37.6	149.4	264	22.2	86.8	464	44.0	177.9	702	89.0	343.3												
32	5-35-1-26	1.20	588.8	482	22.6	254.7	701	27.6	451.5	744	21.9	823.2	744	18.4	840.5												
33	6-35-1-26	0.81	2592.1	424	142.8	60.3	617	220.7	92.6	666	236.8	99.7	744	264.5	112.9												
34	12-35-1-26	1.04	410.0	15	8.8	1.6	720	165.6	291.7	672	47.5	267.3	744	39.6	243.4												
TOTALS:																11581	3281.6	3189.7	22172	5277.6	6795.0	21274	4547.8	7437.4	22007	4842.0	7909.5



1300 SUN LIFE PLAZA III  
112 - 4TH AVENUE S.W.  
CALGARY, ALBERTA, CANADA T2P 0H3  
TELEPHONE (403) 261-0743



September 16, 1985

Royalty Interest Owners  
Waskada Unit No. 2  
(Addressee list attached)

Dear Sirs:

Re: Waskada Unit No. 2 - Enlargement No. 1

We have received approval from the Manitoba Conservation Board for the enlargement of Waskada Unit No. 2. The effective date of the enlargement is September 1, 1985.

In accordance with Section 205 of the Unit Agreement, we enclose one copy each of Exhibit "A" and Exhibit "B" for your records.

Yours truly,

Omega Hydrocarbons Ltd.

R.A. Beamish  
Manager - Engineering

RAB:vb

c.c. Acct. w/attach.  
Land w/attach.  
Conservation Board (2)

EXHIBIT "A"

Attached to and made part of an agreement entitled

"Unit Agreement - Waskada Unit No.2"

TRACT PARTICIPATIONS

In this Exhibit the names of some Parties have been abbreviated as follows:

Working Interest Owners

Omega	Omega Hydrocarbons Ltd.
-------	-------------------------

Royalty Interest Owners

63785 Ltd.	63785 Manitoba Ltd.
J.W. Hainsworth	John Wilfred Hainsworth
H.B.O.G.	Hudson's Bay Oil and Gas Company Ltd.
Manitoba Dept. of Energy & Mines	Department of Energy and Mines Winnipeg, Manitoba
Moamco Ent.Ltd.	Moamco Enterprises Ltd.
C.M. Thomas	Catherine Mary Thomas
N.L. Goede	Nancy Louise Goede

Effective:  
As of the effective date of  
Enlargement No.1

WASKADA UNIT NO. 2 ENLARGEMENT NO. 1

ROYALTY INTEREST OWNER

ADDRESSEE LIST

Manitoba Department of Energy & Mines  
Mineral Resources Division  
Petroleum Branch  
555 - 330 Graham Avenue  
Winnipeg, Manitoba  
R3C 4E3

Lee Oil Limited  
Box 656  
Carman, Manitoba  
R0G 0J0

Moamco Enterprises Ltd.  
Unit 3, 1920 - 31 Street S.W.  
Calgary, Alberta  
T3E 2M8

John Wilfred Hainsworth  
2826 Harding Street  
Regina, Saskatchewan  
S4V 0V9

Olive Hainsworth  
2826 Harding Street  
Regina, Saskatchewan  
S4V 0V9

Catherine Mary Thomas  
134 Ryerson Road  
Lethbridge, Alberta  
T1K 4N7

Nancy Louise Goede  
24 Sundance  
87 Street & 100th Avenue  
Edmonton, Alberta  
T5H 4V4

63785 Manitoba Ltd.  
c/o Mrs. Jean Olson  
Spy Hill, Saskatchewan  
S0A 3W0

Pop's Oil Limited  
c/o Mr. James Kirkup  
Box 250  
Pierson, Manitoba  
R0M 1S0

Hudson's Bay Oil & Gas Co. Ltd.  
P.O. Box 200  
Calgary, Alberta  
T2P 2H8

Attached to and made part of an Agreement entitled  
" Unit Agreement - Waskada Unit No. 2"

[illegible]

Unit Outline  
18 Tract Number  
(27) Section Number

As of the effective  
date of enlargement No.1

EXHIBIT "A"

TRACT No.	Land Description (Lsd)	Excepted Zone	Working Interest		Royalty Interests		Tract Participation (%)
			Working Interest Owner	Share of Working Interest (%)	Royalty Interest Owner	Share of Royalty Interest (%)	
30	2-34-1-26 WPM	Mission Canyon	Omega	100	Manitoba Dept. of Energy & Mines	100	3.0609
31	8-34-1-26 WPM	Mission Canyon	Omega	100	Manitoba Dept. of Energy & Mines	100	2.4888
32	5-35-1-26 WPM	Mission Canyon	Omega	100	Moamco Ent. Ltd. H.B.O.G. (1)	100	2.0913
33	6-35-1-26 WPM	Mission Canyon	Omega	100	Moamco Ent. Ltd. H.B.O.G. (1)	100	2.7704
34	12-35-1-26 WPM	Mission Canyon	Omega	100	Lee Oil Ltd. H.B.O.G. (1)	100	2.2705
							100.0000

NOTES:

(1) Gross overriding royalty interest.

Effective:  
As of the effective date  
of Enlargement No. 1

EXHIBIT "A"

TRACT No.	Land Description (Lsd)	Excepted Zone	Working Interest		Royalty Interests		Tract Participation (%)
			Working Interest Owner	Share of Working Interest (%)	Royalty Interest Owner	Share of Royalty Interest (%)	
21	12-27-1-26 WPM	Mission Canyon	Omega	100	Pop's Oil Ltd.	100	2.7659
22	13-27-1-26 WPM	Mission Canyon	Omega	100	Pop's Oil Ltd.	100	3.9087
23	14-27-1-26 WPM	Mission Canyon	Omega	100	Pop's Oil Ltd.	100	3.2365
24	15-27-1-26 WPM	Mission Canyon	Omega	100	Pop's Oil Ltd.	100	3.8554
25	16-27-1-26 WPM	Mission Canyon	Omega	100	Pop's Oil Ltd.	100	3.0818
26	13-26-1-26 WPM	Mission Canyon	Omega	100	63785 Ltd.	100	2.2622
27	14-26-1-26 WPM	Mission Canyon	Omega	100	63785 Ltd.	100	2.1450
28	2-35-1-26 WPM	Mission Canyon	Omega	100	Moamco Ent. Ltd. H.B.O.G. (1)	100	3.1189
29	3-35-1-26 WPM	Mission Canyon	Omega	100	Moamco Ent. Ltd. H.B.O.G. (1)	100	1.4870

Effective:  
As of the effective date  
of Enlargement No. 1



EXHIBIT "A"

TRACT No.	Land Description (Lsd)	Excepted Zone	Working Interest		Royalty Interests		Tract Participation (%)
			Working Interest Owner	Share of Working Interest (%)	Royalty Interest Owner	Share of Royalty Interest (%)	
11	6-27-1-26 WPM	Mission Canyon	Omega	100	Pop's Oil Ltd.	100	3.4038
12	7-27-1-26 WPM	Mission Canyon	Omega	100	Pop's Oil Ltd.	100	2.8683
13	8-27-1-26 WPM	Mission Canyon	Omega	100	Pop's Oil Ltd.	100	3.3881
14	5-26-1-26 WPM	Mission Canyon	Omega	100	63785 Ltd.	100	3.3263
15	6-26-1-26 WPM	Mission Canyon	Omega	100	63785 Ltd.	100	4.6467
16	11-26-1-26 WPM	Mission Canyon	Omega	100	63785 Ltd.	100	2.6172
17	12-26-1-26 WPM	Mission Canyon	Omega	100	63785 Ltd.	100	3.5327
18	9-27-1-26 WPM	Mission Canyon	Omega	100	Pop's Oil Ltd.	100	2.5838
19	10-27-1-26 WPM	Mission Canyon	Omega	100	Pop's Oil Ltd.	100	3.8900
20	11-27-1-26 WPM	Mission Canyon	Omega	100	Pop's Oil Ltd.	100	2.9035

Effective:  
As of the effective date  
of Enlargement No. 1

## EXHIBIT "A"

TRACT No.	Land Description (Lsd)	Excepted Zone	Working Interest		Royalty Interests		Tract Participation (%)
			Working Interest Owner	Share of Working Interest (%)	Royalty Interest Owner	Share of Royalty Interest (%)	
1	16-22-1-26 WPM	Mission Canyon	Omega	100	Manitoba Dept. of Energy & Mines	100	0.5076
2	13-23-1-26 WPM	Mission Canyon	Omega	100	J.W.Hainsworth Olive Hainsworth C.M. Thomas N.L. Goede	25 25 25 25	2.1676
3	14-23-1-26 WPM	Mission Canyon	Omega	100	J.W.Hainsworth Olive Hainsworth C.M. Thomas N.L. Goede	25 25 25 25	3.2457
4	3-26-1-26 WPM	Mission Canyon	Omega	100	63785 Ltd.	100	3.4591
5	4-26-1-26 WPM	Mission Canyon	Omega	100	63785 Ltd.	100	3.3714
6	1-27-1-26 WPM	Mission Canyon	Omega	100	Pop's Oil Ltd.	100	2.4717
7	2-27-1-26 WPM	Mission Canyon	Omega	100	Pop's Oil Ltd.	100	2.8915
8	3-27-1-26 WPM	Mission Canyon	Omega	100	Pop's Oil Ltd.	100	3.1628
9	4-27-1-26 WPM	Mission Canyon	Omega	100	Pop's Oil Ltd.	100	4.2502
10	5-27-1-26 WPM	Mission Canyon	Omega	100	Pop's Oil Ltd.	100	2.7687

Effective:  
As of the effective date  
of Enlargement No. 1



The Oil and Natural Gas  
Conservation Board

Room 309  
Legislative Building  
Winnipeg, Manitoba, CANADA  
R3C 0V8

(204) 945-3130

August 22, 1985

Omega Hydrocarbons Ltd.  
1300 Sun Life Plaza III  
112 - 4th Avenue S.W.  
Calgary, Alberta  
T2P 0H3

Attention: Mr. R. A. Beamish,  
Manager - Engineering

Dear Sirs:

Re: Waskada Unit No. 2 - Enlargement No. 1

The Board acknowledges receipt of your letter dated August 16, 1985 together with enclosed counterpart execution pages and copies of Exhibits "A" and "B".

It is understood that you will be submitting information to clarify the interest of Moamco Enterprises Ltd. in the subject Unit at your earliest convenience.

With this understanding, the Board hereby approves the enlargement of Waskada Unit No. 2, pursuant to Section 74 of The Mines Act, effective September 1, 1985.

Yours sincerely,

**ORIGINAL SIGNED BY  
CHARLES S. KANG**

Charles S. Kang  
Chairman

HCM/lk

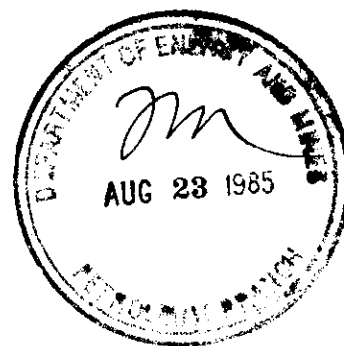
c.c. Petroleum Branch ✓



1300 SUN LIFE PLAZA III  
112 - 4th AVENUE S.W.  
CALGARY, ALBERTA, CANADA T2P 0H3  
TELEPHONE (403) 261-0743

August 21, 1985

Manitoba Energy & Mines  
Petroleum Branch,  
555 - 330 Graham Avenue,  
Winnipeg,  
Manitoba  
R3C 4E3



Attention: Mr. H. Clare Moster

Dear Sir,

Re: Waskada Unit No. 2 - Enlargement No.1

Royalty Ownership S/2 35-1-26 WPM

As discussed by phone, enclosed herewith is the land  
information showing the chain of title for the south half of Section  
35-1-26 WPM.

Yours truly,  
OMEGA HYDROCARBONS LTD.

A handwritten signature in cursive script, which appears to read "R.A. Beamish".

R.A. Beamish, P. Eng.,  
Manager - Engineering

RAB:ad  
Encls.

117-1

# Hanson & Smeltz

BARRISTERS & SOLICITORS  
NOTARIES PUBLIC

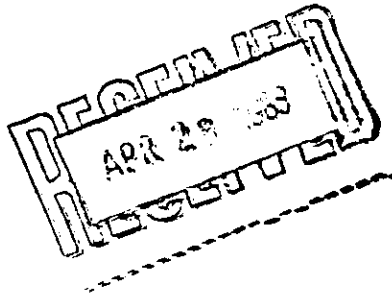
GARY E. HANSON\*  
MORRIS H. SMELTZ, Q.C. (Man.)  
(also of the Manitoba Bar)

#410, 301 - 14 Street N.W.  
Calgary, Alberta  
T2N 2A1  
(403) 283-8438  
ADX BOX 40

\*Denotes Professional Corporation

OUR FILE: MS 2236

YOUR FILE:



April 27, 1983

Omega Hydrocarbons Ltd.  
630, 330 - 5th Avenue S.W.  
Calgary, Alberta  
T2P 0L4

Attention: Sharon Van Middlesworth

Dear Sirs:

Re: Marvin George Rowe and  
Moamco Enterprises Ltd.;  
Mines and Minerals in S 1/2 35-1-26 WPM

Further to our telephone conversation of April 25, 1983, this will confirm that Mr. Rowe has now transferred his mines and minerals in the above 1/2 section of land to his newly formed company, Moamco Enterprises Ltd. A photocopy of the relevant transfer of land is enclosed herewith for your records.

Would you now amend your records so that all future royalty payments are made directly to Moamco Enterprises Ltd. In return, we will of course provide you with a photocopy of the relevant title as soon as it issues from the Land Titles Office.

If you require anything further please advise.

Yours truly,

HANSON & SMELTZ

Per:

M. H. SMELTZ

MHS/kg  
Encl.

sm

# Manitoba Transfer of Land

I, MARVIN GEORGE ROWE, of the City of Okotoks, in the Province of Alberta, Farmer, formerly of the Postal District of Waskada, in the Province of Manitoba, Farmer,

being registered owner

of an estate in fee simple in possession, subject, however, to such encumbrances, liens and interests as are notified by memorandum underwritten or endorsed hereon, in all that land described as follows:

PARCEL I: All mines and minerals within, upon or under the South East Quarter of Section Thirty-five, in Township One and Range Twenty-six, West of the Principal Meridian, in the Province of Manitoba, together with the right to enter thereon to work and remove the said mines and minerals.

PARCEL II: All mines and minerals within, upon or under the South West Quarter of Section Thirty-five, in Township One and Range Twenty-six, West of the Principal Meridian, in Manitoba, together with the right to enter thereon to work and remove said mines and minerals as set forth in Transfer registered in the Boissevain Land Titles Office as No. 64838.

do hereby in consideration of the sum of -----Forty-eight Thousand-----  
paid to ----- (\$48,000.00) ----- Dollars  
me by

MOAMCO ENTERPRISES LTD.

the receipt of which sum I hereby acknowledge, transfer to the said

MOAMCO ENTERPRISES LTD.

all my estate and interest in the said land.

IN WITNESS WHEREOF I have hereunto subscribed my name, this 18  
day of APRIL A.D. 19 83.

SIGNED by the said

MARVIN GEORGE ROWE

in the presence of

 } M. G. Rowe.

Encumbrances referred to: as to Parcel I: Caveat Nos. 83907, 86636, and 95644  
as to Parcel II: Caveat Nos. 83906 and 97547

Address of the Transferor as Melita, Manitoba  
ROM 1L0

To be signed by wife who transfers homestead and by husband when wife transfers homestead.

I, \_\_\_\_\_, the \_\_\_\_\_, the transferor named in the transfer within written, hereby consent to the making of the same by \_\_\_\_\_

DATED this \_\_\_\_\_ day of \_\_\_\_\_ A.D. 19 \_\_\_\_\_

WITNESS

Required when wife consents to lease of homestead.

The above consent was acknowledged before me by \_\_\_\_\_ wife of \_\_\_\_\_, apart from her husband, to have been voluntarily executed by her of her own free will and accord and without any compulsion on the part of her husband. She has further acknowledged that she is aware of the nature and effect of the same.

DATED at the \_\_\_\_\_ of \_\_\_\_\_ in the Province of Manitoba, this \_\_\_\_\_ day of \_\_\_\_\_ A.D. 19 \_\_\_\_\_

A \_\_\_\_\_ in and for the Province of Manitoba.  
CANADA } I,  
PROVINCE OF MANITOBA } of the \_\_\_\_\_ of  
TO WIT: } in the Province of Manitoba.

make oath and say:

1. THAT I was personally present and did see \_\_\_\_\_ husband of \_\_\_\_\_ execute his consent to the within transfer.

2. THAT I know the said \_\_\_\_\_ and am satisfied that he is of the full age of eighteen years.

3. THAT the said consent was executed at \_\_\_\_\_ aforesaid and that I am a subscribing witness thereto.

SWORN before me at the \_\_\_\_\_ of \_\_\_\_\_ in the Province of Manitoba, this \_\_\_\_\_ day of \_\_\_\_\_ A.D. 19 \_\_\_\_\_

A \_\_\_\_\_ in and for the Province of Manitoba.  
CANADA } I, MORRIS HARVEY SMELTZ  
PROVINCE OF MANITOBA } of the \_\_\_\_\_ City \_\_\_\_\_ of Calgary  
TO WIT: } in the Province of Manitoba, Alberta, Barrister,

make oath and say:

1. THAT I was personally present and did see MARVIN GEORGE ROWE, the within named transferor, execute the within transfer.

2. THAT I know the said MARVIN GEORGE ROWE and am satisfied that he is \_\_\_\_\_ of the full age of eighteen years.

3. THAT the said transfer was executed at CALGARY, ALBERTA and that I am a subscribing witness thereto.

SWORN before me at the CITY OF of ALBERTA in the Province of MANITOBA, this 15 day of APRIL A.D. 1983.

Gary Hanson  
Commissioner for Oath

GARY E. HANSON  
BARRISTER & SOLICITOR

~~in and for the Province of Manitoba, Alberta~~  
~~My Commission Expires~~ NO EXPIRY DATE

CANADA  
PROVINCE OF MANITOBA

I, MARVIN GEORGE ROWE

of the City of Okotoks

TO WIT: in the Province of ~~Manitoba~~ Alberta

(severally) make oath and say:

1. THAT I am (~~one of~~) the within named transferor and that I am of the full age of eighteen years.
2. THAT I am (~~one of~~) the (~~person entitled to be~~) registered owner of the within described lands.
3. ~~THAT I have no~~ wife.  
husband.
4. ~~THAT the person who consents as~~ wife  
husband ~~to the instrument within written is the~~ wife  
of me, ~~(one of) the transferor~~ husband
5. ~~THAT my co-transferor is the husband of me,~~  
~~one of the transferors.~~
6. ~~THAT my co-transferor is the wife of me,~~  
~~one of the transferors.~~
7. THAT no part of the land referred to in the instrument within written is the homestead of me the transferor within the meaning of "The Dower Act."

(Severally) SWORN before me at the 15<sup>th</sup> of

Alberta

(ALBERTA) in the Province of ~~Manitoba~~

this 15 day of April A.D. 19 83.

A Notary Public

MORRIS H. SMELTZ  
Notary Public in and for the Province of ~~Manitoba~~ Alberta.  
Province of AlbertaCANADA  
PROVINCE OF MANITOBA

I, MARVIN GEORGE ROWE

of the City of Okotoks

TO WIT: in the Province of ~~Manitoba~~ Alberta,

(severally) make oath and say:

1. THAT I am the President and/ Secretary of the transferee named in the within transfer.
2. THAT the within described land, together with all buildings and other improvements thereon, is in my opinion of the value of ---Forty-eight Thousand-----  
-----(\$48,000.00)----- Dollars and no more.
3. THAT the true, correct and full name of the said transferee(s) is (are):  
MOAMCO ENTERPRISES LTD.
4. ~~That there has been no production or development of the within described~~  
~~mines and minerals or within the vicinity thereof.~~

(Severally) SWORN before me at the 15<sup>th</sup> of

Alberta

(ALBERTA) in the Province of ~~Manitoba~~

this 15 day of April A.D. 19 83.

A Notary Public

MORRIS H. SMELTZ  
Notary Public in and for the Province of ~~Manitoba~~ Alberta.  
Province of Alberta

Note: Where applicable, clauses are required for (a) proof of correct name of transferee, (b) basis of agent's opinion of value and/or (c) power of corporation to acquire land.



L.T.O. USE ONLY

DATED April 18 A.D. 19 83

MARVIN GEORGE ROWE

TO

MOAMCO ENTERPRISES LTD.

Transfer of Land

R.P. ACT

Cert. of Title No. s 45813 and 51418

MEMORIAL OF REGISTRATION  
TRANSFER OF LAND

REGISTERED

AT

No.

I Certify that the within Instrument was registered in the Land Titles Office at  
at the time mentioned therein, and that a memorial  
thereof has been entered in the Register Book on Certificate No.

District Registrar

SWELTZ & HOLMES  
BARRISTERS & SOLICITORS  
BOX 397  
MELITA, MAN.  
ROM 1LO

# This Assignment

made in this 15<sup>th</sup> day of March 19 83

BETWEEN HOWARD ROWE, of the Town of Melita, in Manitoba,  
Retired Farmer,  
hereinafter called "THE ASSIGNOR"

and MARVIN GEORGE ROWE, of the Post Office of Waskada,  
in the Province of Manitoba, hereinafter called "THE ASSIGNEE"  
Farmer,

WHEREAS by a lease bearing date the 19th day of December  
A.D. 19 77, made between the Assignor, as Lessor, and HUDSON'S BAY OIL AND GAS COMPANY LIMITED  
as Lessee,

the Assignor leased to the said HUDSON'S BAY OIL AND GAS COMPANY LIMITED  
the following described lands:

All mines and minerals within, upon or under the South West  
Quarter of Section Thirty-five, in Township One and Range Twenty-  
six, West of the Principal Meridian, in Manitoba, together with  
the right to enter thereon to work and remove said mines and minerals  
as set forth in Transfer registered in the Boissevain Land Titles  
Office as No. 64838.

for the term, and at the rental, and upon the conditions therein set out;

AND WHEREAS title to the said land is now in the name of the Assignee, who has requested the Assignor  
to assign, transfer and set over said lease to him;

NOW, THEREFORE, THIS ASSIGNMENT WITNESSES that in consideration of the premises and  
-----ONE DOLLAR AND OTHER GOOD AND VALUABLE CONSIDERATION-----(\$1.00)-----  
(the receipt whereof is hereby acknowledged) the Assignor does hereby assign, transfer and set over unto  
the Assignee, the said lease, all rent or moneys due or to accrue due thereunder, and all his rights, benefits,  
powers and remedies thereunder, express or implied, with the intent the Assignee shall be entitled to enjoy  
all rights, benefits and powers thereunder, and be competent to enforce all remedies thereunder, to the same  
extent as the Assignor.

THE ASSIGNOR COVENANTS with the Assignee:

1. That he has not previously assigned said lease or the rent or moneys payable thereunder, or in  
any way dealt with said lease or the rent or moneys payable thereunder.
2. That said lease still subsists without variation.
3. That he has the right to enter into this assignment.
4. That the Lessee above mentioned has not any unsatisfied claim under said lease.

THE ASSIGNEE COVENANTS with the Assignor that he will observe and perform all covenants con-  
tained in said lease on the part of the Lessor, and will indemnify and save him harmless from any loss,  
damage, charge or expense thereunder.

THE PROVISIONS hereof shall enure to the benefit of and be binding upon each of the parties hereto,  
and their respective heirs, executors, administrators, successors or assigns, and the singular and masculine  
shall be read and construed as the plural, or the feminine or neuter wherever the context so requires.

IN WITNESS WHEREOF the parties hereto have hereunto set their hands and seals the day and year  
first above written.

SIGNED, SEALED AND DELIVERED  
IN THE PRESENCE OF

*[Signature]*

*Howard Rowe*



xx HUDSON'S BAY OIL AND GAS COMPANY LIMITED  
the Lessee named in the within Assignment, HEREBY ACKNOWLEDGES receipt of a duplicate original thereof, and admit I have not any unsatisfied claim under said lease, and agree with the assignee to observe and perform all conditions and covenants therein contained on my part.

DATED this 13th day of April A.D. 19 83 .

HUDSON'S BAY OIL AND GAS COMPANY LIMITED

Vice-President

Secretary

CANADA  
PROVINCE OF

I, RICHARD ALLEN HOLMES,  
of the Town of Melita,  
in the Province of Manitoba, Barrister-at-Law,

make oath and say:

1. THAT I was personally present and did see the within instrument duly signed, sealed and executed by HOWARD ROWE one of the parties thereto.
2. THAT the said instrument was executed at Melita, Manitoba;
3. THAT I know the said parties and am satisfied that each is of the full age of 18 years.
4. THAT I am a subscribing witness to the said instrument.

SWORN before me at the Town of  
Melita in the Province of Manitoba  
this 15th day of March A.D. 19 83 .

Richard A. Shannon  
A Commissioner for Oaths  
in and for the Province of Manitoba.  
My Commission expires: October 1, 1983.

Dated March A.D. 19 83

HOWARD ROWE

TO

MARVIN GEORGE ROWE

Assignment of Lease

BY LESSOR

SMELTZ & HOLMES  
BARRISTERS & SOLICITORS  
BOX 397  
MELITA, MANITOBA  
R0M 1L0

RAH/ds  
File No:

August 12, 1945

Omega Hydrocarbons Ltd.  
1300 Sun Life Plaza III  
112 - 4th Ave. S.W.  
CALGARY, Alberta  
T2P 0H3

ATTENTION: G.E. Patey  
Vice-President - Production

Dear George:

Re: Waskada Unit No. 2 - Unit Agreement

Enclosed is a copy of the Waskada Unit No. 2 Unit Agreement which has been executed by the Minister of Energy and Mines on behalf of the Crown as a royalty owner.

Yours sincerely,

L.R. Dubreuil  
Chief Petroleum Engineer  
Petroleum Branch

LBD:dah

encl



MANITOBA

ON MATTERS OF STATE

Order in Council

No. 916

To The Honourable the Lieutenant Governor in Council

The undersigned, the Minister of Energy and Mines

submits for approval of Council a report setting forth that:

WHEREAS

Section 75 of "The Mines Act", being Chapter M160 of the Revised Statutes of Manitoba, provides as follows:

"75(1) Where the Crown is a working interest owner or royalty owner of a tract of land, the Lieutenant Governor in Council may authorize the minister, on behalf of the Crown, to enter into a unitization agreement for the unit operation of the pool or field, or part thereof, within which the tract is situated.

75(2) Notwithstanding any other provision of this Act or of an agreement or other disposition made under this Act, the Lieutenant Governor in Council may authorize the minister, on behalf of the Crown, to enter into an agreement for the calculation of the royalty payable to the Crown on the oil and gas produced from a unit area that includes a tract that is subject to the payment of a royalty to the Crown."

AND WHEREAS Omega Hydrocarbons Ltd. is the holder of Crown Oil and Natural Gas Lease No. L792-063 covering the South East quarter of Section 34, in Township 1, Range 26, WPM;

AND WHEREAS Omega Hydrocarbons Ltd. is proposing to unitize its operations in part of the Waskada Lower Amaranth A Pool as Waskada Unit No.2, which unit includes the tracts described as Legal subdivisions 2 and 8 of Section 34, in Township 1, Range 26, WPM;

AND WHEREAS Omega Hydrocarbons Ltd. has requested agreement for the proposed unitization from the Crown as the royalty owner of the subject tracts;

AND WHEREAS in order to accomplish the more efficient and economical development and production of the oil and gas resources of the Waskada Lower Amaranth A Pool, it is deemed advisable for the Crown to enter into the said unitization agreement;

THEREFORE, he, the Minister, recommends:

THAT the Minister of Energy and Mines be authorized to enter into the Unit Agreement for Waskada Unit No. 2 in the form hereto annexed and marked as Schedule "A", or any form to the like effect.

Initiating Department/Agency	
Department/Agency	Authorized Officer "C.S. Kang" C.S.C.
Approved By C.S.C.	Finance
Approved as to form by:	
Name	L. SILVER
Civil-Litigation-Branch- or Legislative Counsel:	Initials J.S.

Signature

IN THE EXECUTIVE COUNCIL CHAMBER, WINNIPEG

Upon consideration of the foregoing report and recommendation Council advises that it be done as recommended.

7 August 1985  
Date

Howard Lawley  
President or Presiding Member

AT GOVERNMENT HOUSE IN THE CITY OF WINNIPEG

Approved and Ordered this 7th day of August A.D. 1985

Gene McLaughlin  
Lieutenant Governor

## WASKADA L4a UNIT 2 TRACT FACTOR CALCULATIONS

TRACT	LAND	PH14H (m)	104-85 CUR.1	MONTH 1 PROD. (m <sup>3</sup> )	MONTH 2 PROD. (m <sup>3</sup> )	MONTH 3 PROD. (m <sup>3</sup> )	MONTH 4 PROD. (m <sup>3</sup> )
	DESCRIPTION		OIL (m <sup>3</sup> ) HRS	OIL WATER HRS	OIL WATER HRS	OIL WATER HRS	OIL WATER HRS
1	16-22-1-26	0.97	0.0	0.0	0.0	0.0	0.0
2	13-23-1-26	0.78	1141.3	129	648	160.9	190.4
3	14-23-1-26	1.32	3500.4	444	140.7	60.7	91.9
4	3-26-1-26	0.84	3253.5	312	88.0	34.4	59.4
5	4-26-1-26	1.41	4928.3	296	107.3	54.2	68.8
6	1-27-1-26	0.99	2193.3	143	31.8	55.6	74.4
7	2-27-1-26	1.10	1435.2	312	76.8	34.0	74.2
8	3-27-1-26	1.68	971.0	552	56.4	92.1	64.4
9	4-27-1-26	1.95	1926.5	582	142.5	140.2	712
10	5-27-1-26	1.31	1918.4	344	149.6	82.2	720
11	6-27-1-26	1.70	5067.0	338	81.9	128.0	690
12	7-27-1-26	1.13	2287.8	487	198.0	119.3	694
13	8-27-1-26	1.31	5762.2	528	177.5	76.4	528
14	5-26-1-26	1.26	4452.2	504	327.1	137.6	744
15	6-26-1-26	1.87	3168.7	216	111.4	47.8	744
16	11-26-1-26	1.01	3520.4	288	110.4	29.8	744
17	12-26-1-26	1.13	3558.5	18	8.5	0.1	536
18	9-27-1-26	1.18	1370.6	344	139.4	113.1	744
19	10-27-1-26	1.76	2180.0	350	194.5	108.8	744
20	11-27-1-26	1.30	1077.7	738	164.1	240.9	720
21	12-27-1-26	1.04	4356.0	432	173.0	77.2	742
22	13-27-1-26	1.71	1431.0	404	154.8	123.7	696
23	14-27-1-26	1.29	5414.6	342	129.6	108.4	720
24	15-27-1-26	1.44	1832.7	149	61.1	13.9	737
25	16-27-1-26	1.42	2574.1	45	9.4	2.0	683
26	13-26-1-26	1.10	455.7	390	50.3	214.1	306
27	14-26-1-26	1.06	1021.3	577	63.1	292.1	706
SUBTOTALS:				9264	2997.7	2420.1	17840
28	2-35-1-26	1.26	1013.3	120	44.2	6.1	744
29	3-35-1-26	0.80	246.9	740	11.2	192.1	720
30	2-34-1-26	1.59	441.9	208	16.7	105.4	566
31	8-34-1-26	1.22	482.7	328	37.6	149.4	264
32	5-35-1-26	1.20	588.8	482	22.6	254.7	701
33	6-35-1-26	0.81	2592.1	424	142.8	60.3	617
34	12-35-1-26	1.04	410.0	15	8.8	1.6	720
TOTALS:				11581	3281.6	3189.7	22172
					5277.6	6795.0	21274
					4547.8	7437.4	22007
					4842.0	7909.5	

## WASKADA LA UNIT 2 TRACT FACTOR CALCULATIONS

TRACT	LAND	PH1th (a)	104-85 CUM.	MONTH 1 PROD. (m <sup>3</sup> )	MONTH 2 PROD. (m <sup>3</sup> )	MONTH 3 PROD. (m <sup>3</sup> )	MONTH 4 PROD. (m <sup>3</sup> )																	
	DESCRIPTION		OIL (m <sup>3</sup> )	HRS	OIL	HRS	OIL	HRS	OIL	HRS	OIL	HRS	OIL	HRS										
1	16-22-1-26	0.97	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0										
2	13-23-1-26	0.78	1141.3	129	50.5	33.5	648	160.9	190.4	744	192.6	379.2	690	58.5	436.9									
3	14-23-1-26	1.32	3500.4	444	140.7	60.7	720	212.9	91.9	676	188.2	110.5	744	201.6	286.1									
4	3-26-1-26	0.84	3253.5	312	88.0	34.4	744	193.1	59.4	672	212.4	23.3	596	184.2	20.5									
5	4-26-1-26	1.41	4928.3	296	107.3	54.2	668	187.3	80.1	737	147.0	159.1	744	286.3	238.8									
6	1-27-1-26	0.99	2193.3	143	31.8	55.6	744	99.6	301.3	516	110.0	131.0	608	200.0	101.5									
7	2-27-1-26	1.10	1435.2	312	76.8	34.0	742	185.1	117.6	744	164.2	156.4	648	139.3	86.4									
8	3-27-1-26	1.68	971.0	552	56.4	92.1	664	35.5	140.7	744	22.8	201.0	720	43.1	125.7									
9	4-27-1-26	1.95	1926.5	582	142.5	140.2	712	193.9	137.2	240	59.6	45.8	650	163.0	166.8									
10	5-27-1-26	1.31	1918.4	344	149.6	82.2	720	112.1	292.1	648	79.6	275.8	744	112.5	289.9									
11	6-27-1-26	1.70	5067.0	338	81.9	128.0	690	112.4	415.1	706	126.5	477.3	732	167.0	568.6									
12	7-27-1-26	1.13	2287.8	487	198.0	119.3	694	398.1	126.1	648	205.0	384.5	608	96.6	408.8									
13	8-27-1-26	1.31	5762.2	528	177.5	76.4	528	215.3	92.3	411	136.4	64.5	516	200.1	100.1									
14	5-26-1-26	1.26	4452.2	504	327.1	137.6	744	344.5	49.2	672	338.9	17.8	732	338.9	17.8									
15	6-26-1-26	1.87	3168.7	216	111.4	47.8	744	272.4	13.1	744	232.9	20.8	672	217.6	24.2									
16	11-26-1-26	1.01	3520.4	288	110.4	29.8	744	203.1	148.0	672	145.7	178.2	292	81.5	98.7									
17	12-26-1-26	1.13	3558.5	18	8.5	0.1	536	182.4	16.3	416	155.1	31.9	696	293.1	94.2									
18	9-27-1-26	1.18	1370.6	344	139.4	113.1	744	115.4	376.7	588	42.1	271.4	596	108.2	97.0									
19	10-27-1-26	1.76	2180.0	350	194.5	108.8	744	187.9	358.1	636	164.9	365.3	608	251.9	206.2									
20	11-27-1-26	1.30	1077.7	738	164.1	240.9	720	143.6	532.5	744	82.6	752.7	672	56.5	740.3									
21	12-27-1-26	1.04	4356.0	432	173.0	77.2	742	256.6	134.6	716	213.9	156.5	672	89.4	162.0									
22	13-27-1-26	1.71	1431.0	404	154.8	123.7	696	211.5	238.0	686	79.8	196.1	744	130.3	434.1									
23	14-27-1-26	1.29	5414.6	342	129.6	108.4	720	175.2	281.0	744	381.0	236.5	712	292.9	414.6									
24	15-27-1-26	1.44	1832.7	149	61.1	13.9	737	248.8	79.9	696	230.9	74.0	654	234.6	68.0									
25	16-27-1-26	1.42	2574.1	45	9.4	2.0	683	129.0	436.1	720	186.7	233.3	708	194.4	150.9									
26	13-26-1-26	1.10	455.7	390	50.3	214.1	306	41.9	117.5	384	39.0	153.0	678	81.6	296.2									
27	14-26-1-26	1.06	1021.3	577	63.1	292.1	706	9.8	404.6	744	117.8	288.2	576	96.3	147.7									
SUBTOTALS:													9264	2997.7	2420.1	17840	4628.3	5229.8	16648	4055.6	5384.1	17012	4319.4	5782.0
28	2-35-1-26	1.26	1013.3	120	44.2	6.1	744	101.6	71.5	672	69.2	77.6	672	58.2	37.5									
29	3-35-1-26	0.80	246.9	740	11.2	192.1	720	41.5	367.8	740	34.8	410.5	683	13.4	393.2									
30	2-34-1-26	1.59	441.9	208	16.7	105.4	566	70.1	203.3	668	38.0	197.1	706	39.5	156.7									
31	8-34-1-26	1.22	482.7	328	37.6	149.4	264	22.2	86.8	464	44.0	177.9	702	89.0	343.3									
32	5-35-1-26	1.20	588.8	482	22.6	254.7	701	27.6	451.5	744	21.9	823.2	744	18.4	840.5									
33	6-35-1-26	0.81	2592.1	424	142.8	60.3	617	220.7	92.6	666	236.8	99.7	744	264.5	112.9									
34	12-35-1-26	1.04	410.0	15	8.8	1.6	720	165.6	291.7	672	47.5	267.3	744	39.6	243.4									
TOTALS:													11581	3281.6	3189.7	22172	5277.6	6795.0	21274	4547.8	7457.4	22007	4842.0	7905.5



## Inter-Departmental Memo

To Charles Kang  
A/Deputy Minister of Energy & Mines  
309 Legislative Building

Date July 9, 1985  
From H. Clare Moster  
Director, Petroleum Branch

Subject Waskada Unit No. 2 Enlargement

Telephone

Omega Hydrocarbons Ltd. is proposing to enlarge the Waskada Unit No. 2 to include seven additional tracts. This proposed enlargement involves two tracts (Lsd's) for which the Crown is the royalty interest owner (i.e. mineral rights owner). Section 74 of The Mines Act states that before a Unitization agreement may be put into effect, it must be approved by The Oil and Natural Gas Conservation Board. It further states that the Board shall not approve an agreement unless the royalty owners have agreed to the Unit operation. Therefore, Omega has submitted two copies of the proposed revised Unit Agreement for the Waskada Unit No. 2 for approval (execution) by the Minister as an affected royalty owner. Note that the Minister on behalf of the Crown is already a party to the Waskada Unit No. 2 by virtue of ownership of the mineral rights underlying Lsd 16 of Section 22-1-26 (WPM) (Tract No. 11).

Section 75 of The Mines Act states that the Minister with the authorization of the Lieutenant Governor in Council, may enter such agreements on behalf of the Crown as a royalty owner.

Recommendation:

It is recommended that the Minister:

1. Request authorization from Cabinet to permit him to enter into the enlarged Waskada Unit No. 2 unitization agreement on behalf of the Crown (draft OIC attached) with respect to Lsd's 2 and 8 of Section 34-1-26 (WPM).
2. Execute the attached two copies of the Unit Agreement for the Waskada Unit No. 2 as a royalty owner.

Discussion:

The two tracts in the proposed enlargement of the Waskada Unit No. 2 which contain Crown owned mineral rights are Lsd's 2 and 8 of Section 34-1-26. These tracts are held under Crown Oil and Natural Gas Lease No. L-792-063 covering the Southeast Quarter of Section 34 by Omega Hydrocarbons Ltd. Omega has drilled three wells (in Lsd. 1, 2 and 8) on these lands. Currently, two of these wells are producing from the Waskada Lower Amaranth A Pool at a combined rate of



approximately 12 m<sup>3</sup> per month at a water oil ratio of about 35 m<sup>3</sup> per m<sup>3</sup>. At such rates, both wells are probably uneconomic.

With the proposed Unit enlargement and planned expansion of pressure maintenance operations in the area, there is some chance that the productivity of these wells may be enhanced in the future. On this basis, inclusion of these tracts in the Unit is recommended.

By inclusion of these tracts in the Unit, the Crown will receive royalties based on allocated Unit production. The Branch has reviewed the Tract Participation Factors proposed for the tracts and feels they are reasonable.

The proposed enlarged Unit Agreement is of the same format as the existing Unit Agreement for Waskada Unit No. 2.

Clause 1301 of the proposed Unit Agreement specifically states that the execution of the agreement by the Minister is strictly as a Royalty Interest (similar to any freehold mineral owner). Therefore, by such execution, the Minister is not approving the Unit Agreement. Such approval may only be done by the Board pursuant to Section 74 of The Mines Act.

*for* H. Clare Moster

LRD/lk



1300 SUN LIFE PLAZA III  
112 - 4th AVENUE S.W.  
CALGARY, ALBERTA, CANADA T2P 0H3  
TELEPHONE (403) 261-0743



May 27, 1985

To: Royalty Interest Owners  
Waskada Unit No. 2  
(Addressee List Attached)

Dear Sir/Madam:

Re: Waskada Unit No. 2  
Enlargement No. 1

Omega Hydrocarbons Ltd. has had considerable success in finding and producing oil in the Waskada area. In an effort to maximise oil recovery Omega has formed units and initiated waterflood projects. At this time encouraging results of waterflooding have been obtained and we are proposing to expand our waterflood project for Unit No. 2 to areas in which you have a royalty interest.

In order to expand the waterflood in this area of the Pool we must enlarge the unit and receive the written approval of all parties affected. This is done by having all Working and Royalty Interest Owners in the enlarged area approve by signing a Unit Agreement, and by successfully applying to Manitoba Oil and Natural Gas Conservation Board for technical approval of the plan.

Omega, as operator of the Unit, expects to realize long term benefits through waterflooding by increasing the ultimate oil recovery. The Royalty Interest Owners for the Unit share directly in these benefits. Unitization is required for a pressure maintenance project such as waterflooding so that the owners of any tracts whose well is converted to water injection are properly compensated for the subsequent lack of oil production from such injection wells, which contribute to the increased recovery from the surrounding producers.

Please signify your approval by signing the enclosed two copies of the Unit Agreement on page 21 before an appropriate witness (a Commissioner for Oaths, etc.) One copy of the signed Unit Agreement is to be returned to Omega as soon as possible, and the other copy is for your file.

The original Unit No. 2 contained 27 Tracts and the enlarged unit will contain 34 tracts, as shown on the map entitled Exhibit "B". Tract participations have been calculated in the same manner as done for the original unit, that is, on the basis of remaining recoverable oil in place and well productivity. Tract participations are shown on Exhibit "A".

Those for the original 27 tracts are now smaller than before, without changing their original proportion to each other, as the lands to be added by this enlargement increase the expanded unit's oil reserve and production rate.

If you have any questions regarding this matter, please call me or Mr. Richard Brekke collect at (403) 261-0743. An impartial third party opinion may be obtained by contacting Mr. Bob Dubreuil of the Manitoba Petroleum Branch at (204) 945-6574.

Yours truly,  
OMEGA HYDROCARBONS LTD.



R.A. Beamish, P. Eng.,  
Manager - Engineering

RAB:ad  
Encls.

WASKADA UNIT NO 2. EXPANSION #1  
WORKING AND ROYALTY INTEREST OWNER

ADDRESSEE LIST

Manitoba Department of Energy & Mines  
Mineral Resources Division  
Petroleum Branch  
555 - 330 Graham Avenue  
Winnipeg, Manitoba  
R3C 4E3

Lee Oil Limited  
Box 656  
Carman,  
Manitoba  
ROG OJO

Moamco Enterprises Ltd.  
Unit 3, 1920 - 31st Street S.W.,  
Calgary, Alberta  
T2P OH3

Hudson's Bay Oil & Gas Co. Ltd.,  
P. O. Box 200  
Calgary,  
Alberta  
T2P 2H8

WASKADA LAB UNIT 2 TRACT FACTOR CALCULATIONS

24-May-95

Total Fluids  
m<sup>3</sup>/day

46/c

TRACT	LAND	DESCRIPTION	PHI*H (m)	104-85 CUR.	101 (m <sup>3</sup> )	MONTH 1 PROD. (m <sup>3</sup> )	MONTH 2 PROD. (m <sup>3</sup> )	MONTH 3 PROD. (m <sup>3</sup> )	MONTH 4 PROD. (m <sup>3</sup> )	Total Fluids (m <sup>3</sup> )	Total hrs.	Total Fluids m <sup>3</sup> /day	Total Fluids m <sup>3</sup> /day
					HRS	OIL	WATER	HRS	OIL	WATER	HRS	OIL	WATER
1	16-22-1-26		0.97073	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
2	13-23-1-26		0.78060	1141.3	129	50.5	33.5	648	160.9	190.4	744	192.6	379.2
3	14-23-1-26		1.32092	3500.4	444	140.7	60.7	720	212.9	91.9	676	188.2	110.5
4	3-26-1-26		0.84065	3253.5	312	88.0	34.4	744	193.1	59.4	672	212.4	23.3
5	4-26-1-26		1.41052	4928.3	296	107.3	54.2	668	187.3	80.1	737	147.0	159.1
6	1-27-1-26		0.99073	2193.3	143	31.8	55.6	744	99.6	301.3	516	110.0	131.0
7	2-27-1-26		1.10037	1435.2	312	76.8	34.0	742	185.1	117.6	744	164.2	156.4
8	3-27-1-26		1.68744	971.0	552	56.4	92.1	664	35.5	140.7	744	22.8	201.0
9	4-27-1-26		1.95799	1926.5	582	142.5	140.2	712	193.9	137.2	240	59.6	45.8
10	5-27-1-26		1.31177	1918.4	344	149.6	82.2	720	112.1	292.1	648	79.6	275.8
11	6-27-1-26		1.70081	5067.0	338	81.9	128.0	690	112.4	415.1	706	126.5	477.3
12	7-27-1-26		1.13050	2287.8	487	198.0	119.3	694	398.1	126.1	648	205.0	384.5
13	8-27-1-26		1.31068	5762.2	528	177.5	76.4	528	215.3	92.3	411	136.4	64.5
14	5-26-1-26		1.26061	4452.2	504	327.1	137.6	744	344.5	49.2	672	338.9	17.8
15	6-26-1-26		1.87063	3168.7	216	111.4	47.8	744	272.4	13.1	744	232.9	20.8
16	11-26-1-26		1.01073	3520.4	288	110.4	29.8	744	203.1	148.0	672	145.7	178.2
17	12-26-1-26		1.13022	3558.5	18	8.5	0.1	536	182.4	16.3	416	155.1	31.9
18	9-27-1-26		1.18097	1370.6	344	139.4	113.1	744	115.4	376.7	588	42.1	271.4
19	10-27-1-26		1.76458	2180.0	350	194.5	108.8	744	187.9	358.1	636	164.9	365.3
20	11-27-1-26		1.30422	1077.7	738	164.1	240.9	720	143.6	532.5	744	82.6	752.7
21	12-27-1-26		1.04069	4356.0	432	173.0	77.2	742	256.6	134.6	716	213.9	156.5
22	13-27-1-26		1.71074	1431.0	404	154.8	123.7	696	211.5	238.0	686	79.8	196.1
23	14-27-1-26		1.29068	5414.6	342	129.6	108.4	720	175.2	281.0	744	381.0	236.5
24	15-27-1-26		1.44090	1832.7	149	61.1	13.9	737	248.8	79.9	696	230.9	74.0
25	16-27-1-26		1.42107	2574.1	45	9.4	2.0	683	129.0	436.1	720	186.7	233.3
26	13-26-1-26		1.10093	455.7	390	50.3	214.1	306	41.9	117.5	384	39.0	153.0
27	14-26-1-26		1.06058	1021.3	577	63.1	292.1	706	9.8	404.6	744	117.8	288.2
SUBTOTALS:													5782.0
28	2-35-1-26		1.26624	1013.3	120	44.2	6.1	744	101.6	71.5	672	69.2	77.6
29	3-35-1-26		0.80097	246.9	740	11.2	192.1	720	41.5	367.8	740	34.8	410.5
30	2-34-1-26		1.59407	441.9	208	16.7	105.4	566	70.1	203.3	648	38.0	197.1
31	8-34-1-26		1.22046	482.7	328	37.6	149.4	264	22.2	86.8	464	44.0	177.9
32	5-35-1-26		1.20495	588.8	482	22.6	254.7	701	27.6	451.5	744	21.9	823.2
33	6-35-1-26		0.81093	2592.1	424	142.8	60.3	617	220.7	92.6	666	235.8	99.7
34	12-35-1-26		1.04075	410.0	15	8.8	1.6	720	165.6	291.7	672	47.5	267.3
TOTALS:													7909.5
*****													*****
28													466
29													1474
30													827
31													850
32													2460
33													1230
34													1066
*****													*****
28													228
29													2883
30													2148
31													1758
32													2671
33													2461
34													2151
*****													*****
28													5.1
29													12.3
30													9.2
31													13.0
32													22.1
33													12.9
34													11.9
*****													*****

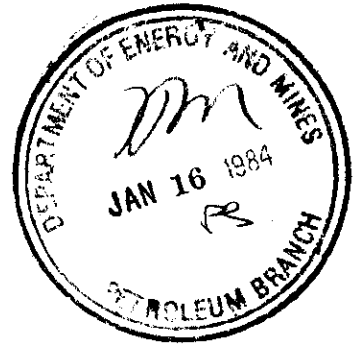
① Read  
(Post reports)      ② → Col-  
file



**HYDROCARBONS Ltd.**

TELEPHONE: (403) 261-0743

630-330 FIFTH AVENUE S.W., CALGARY, ALBERTA T2P 0L4



January 12, 1984

TO: All Royalty Interest Owners  
Waskada Unit No. 2  
(Addressee List Attached)

Dear Sir/Madam:

Re: Effective Date

This is to inform you that Waskada Unit No. 2 has been approved by all parties and became effective under Clause 1401 of the Unit Agreement on January 1st, 1984. The Manitoba Oil and Natural Gas Conservation Board approved the Unitization Agreement in December, 1983 and water injection was commenced in unit well 16-22-1-26 WPM on December 21st, 1983. Work is on going to convert the remaining six proposed water injections wells and is anticipated to be completed by the end of January.

Yours truly,

OMEGA HYDROCARBONS LTD.

R.F. Emerson  
Land Manager

cc E. Wyse  
J. MacLagan  
Ian Haugh, Conservation Board

Enclo:

RFE/tt

WASKADA UNIT NO. 2  
ROYALTY INTEREST OWNER  
ADDRESSEE LIST

Department of Energy and Mines  
Mineral Resources Division  
Petroleum Branch  
989 Century Street  
Winnipeg, Manitoba  
R3H 0W4

Mary Doerfler  
c/o John Doerfler (as Committee for  
the Estate of Mary Doerfler)  
Waskada, Manitoba  
ROM 2E0

John Wilfred Hainsworth  
2826 Harding Street  
Regina, Saskatchewan  
S4V 0V9

Pop's Oil Ltd.  
Box 104  
Deloraine, Manitoba  
ROM 0M0

December 16, 1983

Omega Hydrocarbons Ltd.  
630 - 330 - Fifth Avenue S.W.  
Calgary, Alberta  
T2P 0L4

Attention: Mr. R. F. Emerson  
Land Manager

Dear Sir:

Re: Waskada Unit No. 2

A copy of correspondence from The Oil and Natural Gas Conservation Board indicates that approval of your Unit Agreement for the subject Unit has been granted.

As requested in my letter of November 24, 1983, please submit a copy of the approved Agreement to this office for the files of the Crown as a royalty owner.

Yours sincerely,

Original Signed by H. C. Moster

H. Clare Moster, P. Eng.,  
Director  
Petroleum Branch

HCM/sb





MANITOBA  
DEPARTMENT OF ENERGY AND MINES

THE OIL AND NATURAL GAS CONSERVATION BOARD  
309 LEGISLATIVE BUILDING  
WINNIPEG, MANITOBA  
R3C 0V8

December 16, 1983

Omega Hydrocarbons Ltd.  
630, 330 - 5th Avenue S.W.  
Calgary, Alberta  
T2P 0L4

Attention: Mr. R. F. Emerson  
Land Manager

Dear Sir:

Re: Waskada Unit No. 2

The Board acknowledges receipt of your letter dated December 7, 1983 requesting approval of the unit agreement for the proposed unit.

As only copies of the signed execution pages accompanied your letter it is understood that the Unit Agreement for which approval is requested is the Unit Agreement originally submitted to the Board with your letter dated October 3, 1983 and includes the revised pages that were submitted with your letter dated November 15, 1983. With this understanding the Board hereby approves the Waskada Unit No. 2 Unit Agreement, pursuant to Section 74 of The Mines Act.

Kindly provide the Board with a complete copy of the Unit Agreement containing all revised pages and notification of the effective date of the Unit.

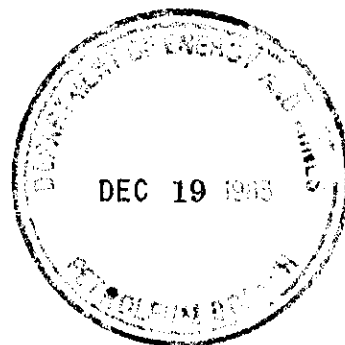
Yours sincerely,

THE OIL AND NATURAL GAS  
CONSERVATION BOARD

Ian Haugh  
Deputy Chairman

HCM/sb

cc: - Marc Kliesen  
- J. F. Radgwell  
- Petroleum Branch





**HYDROCARBONS Ltd.**

TELEPHONE: (403) 261-0743

630 - 330 FIFTH AVENUE S.W., CALGARY, ALBERTA T2P 0L4



December 7, 1983

Manitoba Department of Energy  
and Mines  
The Oil and Natural Gas Conservation Board  
309 Legislative Building  
Winnipeg, Manitoba  
R3C 1V8

Attention: Dr. Ian Haugh  
Deputy Chairman

Dear Sir:


RE: Waskada Unit No. 2

Omega Hydrocarbons Ltd. has obtained the consent of all of the royalty owners affected by Waskada Unit No. 2 and all of the said royalty owners have executed the Unit Agreement. In this connection we enclose copies of the execution page of the Unit Agreement signed by the Minister of Energy and Mines, John Doerfler (as Committee for the estate of Mary Doerfler), John Wilfred Hainsworth and Pop's Oil Limited.

Pursuant to section 74 of The Mines Act Omega Hydrocarbons Ltd. hereby requests the Boards approval of this Unit.

Yours truly,

OMEGA HYDROCARBONS LTD.

  
R. F. Emerson  
Land Manager

RFE/smp  
Enclosure

p.c. - H. Clare Moster (w/"original" attachments)  
December 15, 1983 - ra



December 2, 1983

Omega Hydrocarbons Ltd.  
630 - 330 Fifth Avenue S.W.  
Calgary, Alberta  
T2P 0L4

Attention: Mr. R. F. Emerson  
Land Manager

Re: Proposed Unit Agreements  
Waskada Unit No. 2 and  
Waskada Unit No. 3

The Board acknowledges receipt of your letter dated November 15, 1983, together with the revised pages to the proposed Unit Agreements.

One small new error has developed on the revised page 2 to both proposed Unit Agreements. In subclause 101(j), not only was Conservation capitalized but inadvertently so was The.

Yours sincerely

THE OIL AND NATURAL GAS  
CONSERVATION BOARD

ORIGINAL SIGNED BY  
IAN HAUGH

Ian Haugh  
Deputy Chairman

HCM/IH/ra  
bc: Petroleum Branch

November 24, 1983

Omega Hydrocarbons Ltd.  
630 - 330 Fifth Avenue S.W.  
Calgary, Alberta  
T2P 0L4

Attention: Mr. R. F. Emerson,  
Land Manager

Dear Sirs:

Re: Proposed Unit Agreement  
Waskada Unit No. 2

As requested, enclosed is one copy of the proposed Unit Agreement for Waskada Unit No. 2 on behalf of the Crown as a royalty owner.

I understand that some revisions to the proposed Agreement may be implemented. Please submit a copy of the final revised Agreement, or revised pages, to this office once all revisions have been finalized and approved by The Oil and Natural Gas Conservation Board.

Yours sincerely,

Original Signed by H. C. Meester

H. Clare Meester, P. Eng.  
Director, Petroleum Branch  
HCM/lk

Enclosure

c.c. The Oil and Natural Gas  
Conservation Board

10710 1500

2.45(1)

SUBMISSION TO CABINET

by the

DEPARTMENT OF ENERGY AND MINES

SUBJECT:

An agreement to unitize oil development operations in the Waskada oil field.

BACKGROUND:

The Province of Manitoba is the owner of the mines and minerals in the East half of Section 22, Township 1, Range 26 WPM which is part of the Waskada oil field. Omega Hydrocarbons Ltd. is the holder of a Crown oil and natural gas lease to the subject land and has drilled a well on the property. The well is completed in the Waskada Lower Amaranth A Pool but has produced no oil. Omega is planning to expand its waterflood pressure maintenance operations in that area of the Pool, but before proceeding, Omega must obtain the agreement of the mineral rights owners affected. As Omega wishes to include the subject well in the proposed Waskada Unit No. 2 and use it as a water injection well, it has requested the consent of the Minister of Energy and Mines on behalf of the Crown as mineral rights owner. Inclusion of the well in the proposed Unit will result in a portion of the total crude oil and natural gas produced from oil wells in the Unit being allocated to the Crown well, and the Crown will receive royalties on the allocated production.

The Mines Act specifically provides for the Minister to enter into unitization agreements on behalf of the Crown with the approval of the Lieutenant Governor in Council.

RECOMMENDATION:

It is recommended that the Minister of Energy and Mines be authorized to enter into the Unitization Agreement for Waskada Unit No. 2 on behalf of the Crown.

*Wilson D. Parasiuk*

Wilson Parasiuk  
Minister of Energy and Mines



MANITOBA

ON MATTERS OF STATE

To The Honourable the Lieutenant Governor in Council

The undersigned, the Minister of Energy and Mines

submits for approval of Council a report setting forth that:

WHEREAS section 75 of "The Mines Act", being Chapter M160 of the Revised Statutes of Manitoba, provides as follows:

"75(1) Where the Crown is a working interest owner or royalty owner of a tract of land, the Lieutenant Governor in Council may authorize the minister, on behalf of the Crown, to enter into a unitization agreement for the unit operation of the pool or field, or part thereof, within which the tract is situated.

75(2) Notwithstanding any other provision of this Act or of an agreement or other disposition made under this Act, the Lieutenant Governor in Council may authorize the minister, on behalf of the Crown, to enter into an agreement for the calculation of the royalty payable to the Crown on the oil and gas produced from a unit area that includes a tract that is subject to the payment of a royalty to the Crown."

AND WHEREAS Omega Hydrocarbons Ltd. is the holder of Crown Oil and Natural Gas Lease No. L821-268 covering the East half of Section 22, in Township 1, Range 26 WPM;

AND WHEREAS Omega Hydrocarbons Ltd. is proposing to unitize its operations in part of the Waskada Lower Amaranth A Pool as Waskada Unit No. 2, which unit includes the tract described as Legal subdivision 16 of Section 22, in Township 1, Range 26 WPM;

AND WHEREAS Omega Hydrocarbons Ltd. has requested agreement for the proposed unitization from the Crown as the royalty owner of the subject tract;

AND WHEREAS in order to accomplish the more efficient and economical development and production of the oil and gas resources of the Waskada Lower Amaranth A Pool, it is deemed advisable for the Crown to enter into the said unitization agreement;

THEREFORE, he, the Minister, recommends:

THAT the Minister of Energy and Mines be authorized to enter into the Unit Agreement for Waskada Unit No. 2 in the form hereto annexed and marked as Schedule "A", or any form to the like effect.

Initiating Department/Agency	
Department/Agency	Authorized Officer
	<i>[Signature]</i>
MCC	Approved By
	CSC
	Finance
Approved as to form by:	
Name	<i>[Signature]</i>
Civil Litigation Branch:	Initials
or Legislative Counsel:	<i>[Signature]</i>

p.c. - H. Clare Moster  
November 28, 1983 - ra

Signature

*[Signature]*

IN THE EXECUTIVE COUNCIL CHAMBER, WINNIPEG

Upon consideration of the foregoing report and recommendation Council advises that it be done as recommended.

16 November 1983

Date

*[Signature]*  
President or Presiding Member

AT GOVERNMENT HOUSE IN THE CITY OF WINNIPEG

Approved and Ordered this 16th day of November A.D. 1983

*[Signature]*  
Lieutenant Governor



**HYDROCARBONS Ltd.**

TELEPHONE: (403) 261-0743

630 - 330 FIFTH AVENUE S.W., CALGARY, ALBERTA T2P 0L4

November 15, 1983

Manitoba Department of Energy  
and Mines  
The Oil and Natural Gas Conservation Board  
309 Legislative Building  
Winnipeg, Manitoba  
R3C 0V8

Attention: Dr. Ian Haugh  
Deputy Chairman

Dear Sir:

RE: Proposed Unit Agreements  
Waskada Unit No. 2 and Waskada Unit No. 3

In reply to your letter of November 7, 1983 and further to our telephone conversation of November 14, 1983 we enclose the following for inclusion in your copy of Proposed Waskada Unit No. 2 and Waskada Unit No. 3:

WASKADA UNIT NO. 2

- 1) Revised Page 1. The word "The" has been capitalized in the Boards name in subclause 101(a).
- 2) Revised Page 2. The word "Conservation" has been capitalized in subclause 101(j).
- 3) Revised Page 3. The word "The" in the Mines Act has been capitalized in subclause 101(t).  
Reference is made to subclause 101(u) in Clause 201(c).
- 4) Revised Page 10. The word "Outside" has been capitalized on the first line of Clause 706.
- 5) Revised Page 19. The definition of time has been changed in Clause 1310. A new Clause 1311 has been added.
- 6) Revised Page 20. The spacing on this page changed due to the inclusion of Clause 1311 on Page 19.

WASKADA UNIT NO. 3

- 1) Revised Page 1. The word "The" has been capitalized in the Boards name in subclause 101(a).
- 2) Revised Page 2. The word "Conservation" has been capitalized in subclause 101(j).
- 3) Revised Page 10. The word "Outside" has been capitalized on the first line of Clause 706.
- 4) Revised Page 19. The definition of time has been changed in Clause 1310. A new clause 1311 has been added.
- 5) Revised Page 20. The spacing on this page changes due to the inclusion of Clause 1311 on Page 19.

As discussed we would prefer to leave subclause 502(b) in the Agreements to provide for the unlikely event that 100 percent of the Royalty Interest do not become Parties to the Agreement. If the Clause were removed there would not be any mechanism for indemnification by the Working Interest Owners to each other for tracts included in the Unit where the Royalty Interest are not Parties to the Agreement. We recognize that a Board Order may be required if less than 100% but more than 75% of royalty Owners consent.

We acknowledge that Section 74 of The Mines Act requires that the approval of the Board must first be obtained before a Unitization Agreement may be put into effect. We do not anticipate any problems with the Royalty Owners and will advise you as soon as all consents have been obtained.

Yours truly,

OMEGA HYDROCARBONS LTD.



R. F. Emerson  
Land Manager

RFE/smp  
Enclosures

p.c. - Petroleum Branch



November 7, 1983

Omega Hydrocarbons Ltd.  
630 - 330 Fifth Avenue S.W.  
Calgary, Alberta  
T2P 0L4

Attention: Mr. T. J. Hall  
President

Dear Sirs:

Re: Proposed Unit Agreements  
Waskada Unit No. 2 and Waskada Unit No. 3

The Board acknowledges receipt of copies of the proposed Unit Agreements for Waskada Unit No. 2 and Waskada Unit No. 3.

Having reviewed the two draft agreements, the Board requests the following corrections or changes be made in the final agreements. The revisions relate to both agreements, except for item 4, which pertains to Unit No. 2 only.

1. Page 1, subclause 101(a) - the word "The" in the Board's name should be capitalized to conform with The Mines Act.
2. Page 2, subclause 101(j) - the word "Conservation" should be capitalized to conform with definition 101(a).
3. Page 3, subclause 101(t) - the word "The" in The Mines Act should be capitalized.
4. Page 3, subclause 201(c) - reference should read "Subclause 101(u).\" (Unit No. 2 only).
5. Page 7, subclause 502(b) - the inference in this subclause that "owners of less than 100 percent of the Royalty Interests therein have become Parties" appears to conflict with Section 74 of The Mines Act, which requires the consent of all royalty owners before the Board may approve a unitization agreement. Otherwise a Board order may be necessary if less than 100% but more than 75% of royalty owners consent.

Omega Hydrocarbons Ltd.

The Board requests that a new clause be added to the Agreement as follows:

"1311. Compliance With Legislation

The provisions of The Mines Act and regulations thereunder, as amended from time to time, take precedence over this Agreement".

6. Page 10, clause 706 - the word "Outside" in the first line thereof should be capitalized.
7. Page 19, clause 1310 - change to:

"In this agreement all times are "official times" as defined in The Official Time Act of the Province of Manitoba".

As you are aware, Section 74 of The Mines Act requires that the approval of the Board must first be obtained before a unitization agreement may be put into effect. Accordingly, once the required consents have been obtained and the above revisions made, the Board will be in a position to give consideration to approval of the agreements.

Yours sincerely

THE OIL AND NATURAL GAS  
CONSERVATION BOARD

ORIGINAL SENT BY  
IAN HAUGH

Ian Haugh  
Deputy Chairman

HCM/IH/ra

bc: Marc Eliesen  
J. F. Redgwell  
Petroleum Branch

## Inter-Departmental Memo

Date November 3, 1983

To Dr. I. Haugh  
Assistant Deputy Minister  
Mineral Resources Division

From H. Clare Moster  
Director, Petroleum Branch

Subject Crown Consent to Waskada Unit No. 2

Telephone

Omega Hydrocarbons Ltd. is proposing to separately unitize certain parts of its operations in the Waskada Lower Amaranth A Pool. The proposed Unit Agreement for Waskada Unit No. 2 includes an area which takes in one tract (Lsd.) for which the Crown is the royalty interest owner (i.e. - mineral rights owner). Section 74 of The Mines Act states that before a Unitization Agreement may be put into effect it must be approved by The Oil and Natural Gas Conservation Board. It further states that the Board shall not approve an Agreement unless the royalty owners have agreed to the unit operation. Therefore, Omega has submitted two (2) copies of the proposed Unit Agreement for Waskada Unit No. 2 for the approval (execution) by the Minister as an affected royalty owner.

Section 75 of The Mines Act states that the Minister, with the authorization of the Lieutenant Governor in Council, may enter such agreements on behalf of the Crown as a royalty owner.

### Recommendation

That a recommendation be made to the Minister that he

1. Request authorization from Cabinet to permit him to enter into the Waskada Unit No. 2 unitization agreement on behalf of the Crown (draft OIC attached) with respect to Lsd. 16 of Section 22-1-26 WPM.
2. Execute the attached two (2) copies of the Unit Agreement for Waskada Unit No. 2 as a royalty owner.

### Discussion

The only tract containing Crown owned mineral rights in the proposed Waskada Unit No. 2 is Lsd. 16 of Section 22-1-26 WPM. The subject tract is held under Crown Oil and Natural Gas Lease No. L821-268 covering the E<sub>1/2</sub> of Section 22 by Omega Hydrocarbons Ltd. Omega drilled one well on the Lease (Lsd. 16) in August 1982. The well was completed in the Lower Amaranth Formation but has not produced any oil. Due to its location in the Pool, the well should make a useful contribution to a waterflood in the Pool (Unit Area) as a water injection well, as proposed by Omega.

By inclusion of the Tract in the Unit, the Crown will receive royalties based on allocated Unit production. The Branch has reviewed the Tract Participation Factor proposed for the tract and feels it is reasonable.

Although the Branch has some suggested changes to certain other items in the proposed Unit Agreement, these will be presented to the Board in the near future.

Clause 1301 of the proposed Unit Agreement specifically states that execution of the Agreement by the Minister is strictly as an owner of Royalty Interest (i.e. - similar to any freehold mineral owner). Therefore, by such execution, the Minister is not approving the Unit Agreement. Such approval may only be done by the Board pursuant to Section 74 of The Mines Act.

Note: Attached is a "Schedule" of what has occurred, and what remains to be done, regarding the expanded Pressure Maintenance Operations and Unit Agreements for this project.

~~Original~~ Signed by H. C. Moster

H. Clare Moster

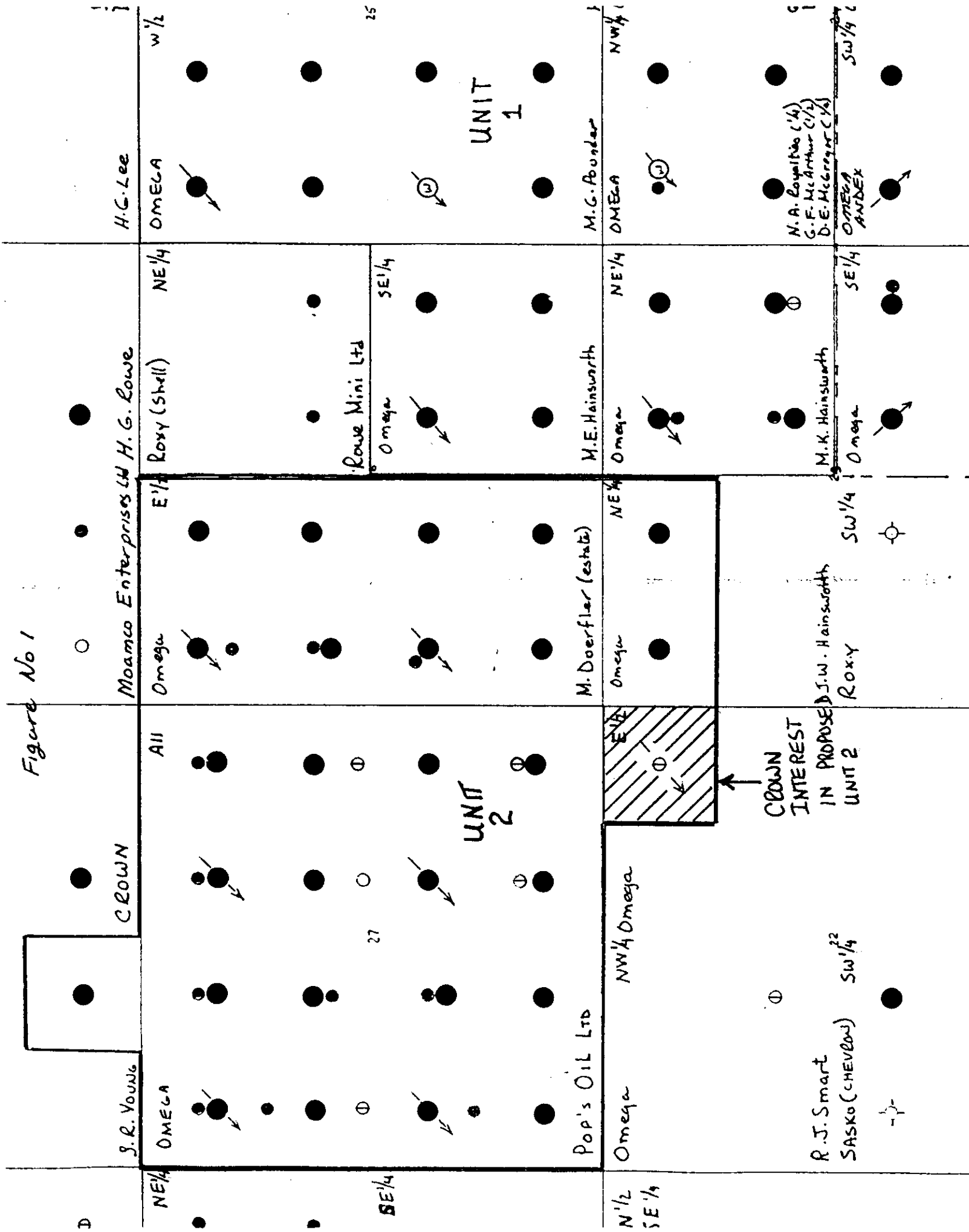
SCHEDULE  
WASKADA PM ORDER(S) & UNITIZATION AGREEMENTS

<u>PM Order</u>	<u>Date</u>	<u>Unit Agreement(s)</u>
Omega application to Board	June 23/83	
Board deficiency letter to Omega	July 12/83	
Final data submitted to Board	Aug. 8/83	
Board's request for extra copies of application	Aug. 30/83	
Omega's response	Sept. 9/83	
Board Notice	Sept. 21/83	
Objection to Gas Flood from Chevron	Oct. 4/83	
Concerns to waterflood by Tundra	Oct. 6/83	
Omega request to defer gas flood portion	Oct. 6/83	
	Oct. 7/83	Unit No. 2 Agreement submitted to Crown
	Oct. 12/83	Draft Agreements submitted to Board
Board agrees to defer gas flood portion	Oct. 14/83	
Concerns to waterflood by Roxy	Oct. 18/83	
D/L for Objections	Oct. 20/83	
Board's response to Chevron	Oct. 24/83	
Board's response to Roxy	Oct. 24/83	
Board's letter to Omega (Overproduction)	Oct. 24/83	
Draft PM Order to Board	Oct. 25/83	
Board's response to Tundra	Oct. 26/83	
		OIC (Re-Unit 2) to Minister
Discuss proposed PM "Rules" with Omega		
		Board's suggested Agreement changes to Omega
Final PM Order to Board		
		Minister's consent to Unit 2 Agreement
PM Order executed & approved		
PM order sent to Omega		
		Omega submits final amended Unit Agreements to Board for approval.
Omega applies for WIW completions		
Branch approves WIW completions		
	1st, 19	Board approves Unit Agreements Unit 2 effective date
Injection commences in Unit 2		
	1st, 19	Unit 3 effective date
Injection commences in Unit 3		

# ROYALTY OWNER'S (TOTAL TPF's)

		<u>OMEGA'S TPF'S</u>	<u>BRANCH'S TPF'S</u>
CROWN (1 Tract)	3.7%	.009205 (.004332)	.013537
DSW Hamsworth (2 Tract)	7.4%	.060364 (.023576)	.083940
M. DORFLEER (8 Tracts)	29.6%	.278340 (.036321)	.314661
POP'S OIL (16 Tracts)	59.3%	.652091 (.064229)	.587862
<hr/>		<hr/>	<hr/>
27		100%	100%

Figure No 1



November 3, 1983

The Oil and Natural Gas  
Conservation Board

H. Clare Mosier  
Director, Petroleum Branch

Marc Kliesen - Chairman  
Dr. I. Haugh - Deputy Chairman  
J. F. Rodgwell - Member

Proposed Waskada Units 2 & 3 - Unit Agreements

The attached memorandums from L. R. Dubreuil dated October 13, 1983 and November 3, 1983 briefly discuss the proposed Unit Agreements related to the proposed Waskada Units No. 2 and 3.

Recommendation:

It is recommended that:

1. The Board inform Omega Hydrocarbons Ltd. of what changes the Board wishes to see in the subject two proposed Unit Agreements before Omega submits them to the Board for approval pursuant to Subsection 74(2) of The Mines Act (draft letter attached).

Discussion:

Unit Agreement - Waskada Unit No. 2

1. Unit Name

Because of the provision provided for in the agreement to permit "vertical enlargement - Clause 902", the exclusion of any pool/formation designation in the Unit name appears desirable.

2. Pg. 1 - Subclause 101(a) - capitalise The in Board name.
3. Pg. 2 - Subclause 101(j) - capitalise Conservation
4. Pg. 3 - Subclause 101(t) - capitalise The Mines Act
5. - Subclause 201(c) - change wording to Subclause 101(u)
6. 7 - Subclause 502(b) - The wording of this subclause conflicts with the provisions of Section 74 of The Mines Act. The Act requires that the Board approve voluntary unitization agreements (it is assumed this also includes enlargements of same) and before doing so that ~~all~~ ALL ~~working interest owners~~ royalty interest owners must have agreed to the unitization agreement. The subject Subclause in the proposed Unitization Agreement appears to provide for approval by less than 100% of royalty interest owners. *DM*



It is suggested that Omega be requested to either

1. Clarify the intention of the Subclause and its apparent conflict with the Act and to provide an additional clause in the Unitization Agreement stating that the provisions of The Mines Act and regulations thereunder, as amended from time to time, takes precedence over the Agreement,

or

2. Remove the subject Subclause from the agreement.

Note: J. F. Redgwell confirmed that the subject Subclause does conflict with The Mines Act. This Subclause is in the Waskada Lower Amaranth Unit No. 1 Agreement.

7. Pg. 9 - Clause 703 and Pg. 10 - Clause 706

Both these Clauses relate to how royalties will be determined. Again, it appears desirable that the Board require a clause be included in the Agreement stating that the provisions of The Mines Act and regulations thereunder, as amended from time to time, take precedence over the Agreement.

8. Pg. 10 - Clause 706 - capitalize Outside Substance
9. Pg. 19 - Clause 1310 - change to read "In this agreement all times are "official times" as defined in The Official Time Act of the Province of Manitoba.

Unit Agreement - Waskada Unit No. 3

All comments and suggestions made with respect to the proposed Unit Agreement for Waskada Unit No. 2, except item 5, also apply to the proposed Unit Agreement for Waskada Unit No. 3. (copy of L. R. Dubreuil's comments on tract participation factors is attached).

~~Original Signed by H. C. Moster~~

H. Clare Moster

HCM/lk

BF Nov 9<sup>th</sup> / 83

PS 1-25

# MANITOBA

## Inter-Departmental Memo

To J. F. Redgwell  
Civil Litigation Branch  
Dept. of Attorney-General  
6th Floor, Woodsworth Bldg.  
405 Broadway Avenue

Date October 19, 1983  
From H. Clare Moster  
Director, Petroleum Branch  
Dept. of Energy & Mines  
975 Century Street

Telephone

Subject

Proposed Unit Agreements - Omega Hydrocarbons Ltd.

Attached is a copy of a typical Unit agreement being proposed by Omega Hydrocarbons as part of the expansion of their pressure maintenance operations in the Waskada Field.

We request that you review this document to ensure its consistency with The Mines Act. In particular, Section 502(b) relating to qualification of tracts would appear to be inconsistent with Sections 74(2) and 74(3) of The Mines Act.

Please forward your comments to this office prior to October 28, 1983.

Original Signed by H. C. Moster

H. Clare Moster

c.c. Marc Eliesen  
Dr. I. Haugh

- ① Approval of original unit agreement (unit #1) by the Board?  
② Has approval of #2 & #3 been requested?



## Inter-Departmental Memo

Date October 13, 1983

To H. Clare Moster  
Director

From L. R. Dubreuil  
Chief Petroleum Engineer

Telephone

Subject Re: PROPOSED WASKADA UNIT NO. 2 - ROYALTY OWNER CONSENT - CROWN

Attached are <sup>one</sup> two copies of the proposed Unit agreement for the Waskada Unit No. 2. Omega Hydrocarbons Ltd., as Unit Operator and Working Interest Owner, has requested that the Crown as a royalty owner in the proposed Unit, indicate it's concurrence to the agreement by signing both copies and returning one copy to Omega.

Recommendation:

It is recommended that:

1. The proposed agreement be reviewed by the Department Solicitor to ensure consistency (particularly regarding Section 502 - Qualification of Tracts) with the provisions of The Mines Act.
2. If consistency with The Mines Act is confirmed, the Crown as a royalty owner indicate it's consent by signing the attached documents and returning one copy to Omega Hydrocarbons Ltd.

Discussion:

1) Crown Interest.

The Crown royalty interest in the proposed Unit is quite minor consisting only of Lsd. 16 of Section 22-1-26 (WPM) (see attached map). The well Omega Waskada Prov. 16-22-1-26 (WPM) was drilled and completed in the Lower Amaranth over a year ago (August 1982) but has not yet become productive. Its utility to the Unit is strictly as a water injection well to push oil to producing wells in Section 23 and 26-1-26 (WPM)

The method of calculation of tract participation factors is detailed in Omega's letter of September 9, 1983 (copy attached). The method in general establishes an unadjusted factor based on pore volume and constant water saturation. This factor is adjusted for observed productivity (both oil and water rate) and further by an area reduction factor applied primarily for edge wells. Although further refinements are probably possible, this procedure provides a reasonable determination of tract factor.

Based on the above procedure, a tract participation factor of 0.6328% is calculated. In view of the limited potential of the well to become productive itself, and the peripheral location of the well, such a participation appears reasonable.

. . . (cont'd) . . .

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*10/24/83  
L.R.D.  
H.C.M.  
J.M.*

Table 1 lists unadjusted tract factors (based on pore volume) as determined by Omega and the Petroleum Branch staff. Although there are some variations in absolute values of pore volume, owing to the subjective nature of pore volume determinations, it would be very difficult for the Branch staff to justify specific modifications. As a result, Omega's proposals are viewed as being reasonably equitable.

2) Format of Agreement.

The format of the proposed agreement is very similar to that of the Waskada Lower Amaranth Unit No. 1 with the following significant changes.

- a) Section 307. Unit Name - Reference to Lower Waskada in the Unit name is deleted as there is no existing Waskada Unit 2 to distinguish this unit from.
- b) Section 902. Application for Vertical Enlargement - This clause provides for inclusion of Mission Canyon tracts underlying the Unit area. After discussion with Omega, it appears the major reason for this clause is to provide for a procedure to use the existing agreement should it become apparent that Lower Amaranth pressure maintenance operations are affecting the Mission Canyon. Although I can visualize some logistic problems in putting this into practice (tract factor calculations on an equivalent basis as for the Lower Amaranth, and evidence of this type would likely necessitate a technical review of the entire project) the clause is set up so that sufficient review of a particular situation, both by the royalty owner and by the Board (through approval of amended exhibits) is required. The clause does provide a mechanism to protect the rights of the Mission Canyon royalty owner should waterflood operations in the Lower Amaranth affect the Mission Canyon adversely. Consequently, the inclusion of this clause would appear to be acceptable.
- c) Section 1401 - Effective Date - The effective date has been redefined as the later of:
  - i) the first day of the month following Board approval of the Unit or,
  - ii) the first day of the month in which water injection commences. This avoids inappropriate tract factors if water injection is delayed a substantial period after Board approval is given.

. . . . 3 . . . .

Clause 502 - Qualification of Tracts provides for inclusion of a tract where 100% of the royalty owners have not become party to the agreement provided the working interest owner of that tract indemnifies the other Working Interest Owners of any claims by the non-consenting royalty owner. While this type of clause is a necessity, the consistency of the clause with the provisions of The Mines Act, (specifically Section 74(2) and 74(3)), is unclear. Note that this clause is also included in the Waskada Lower Amaranth Unit No. 1 agreement.

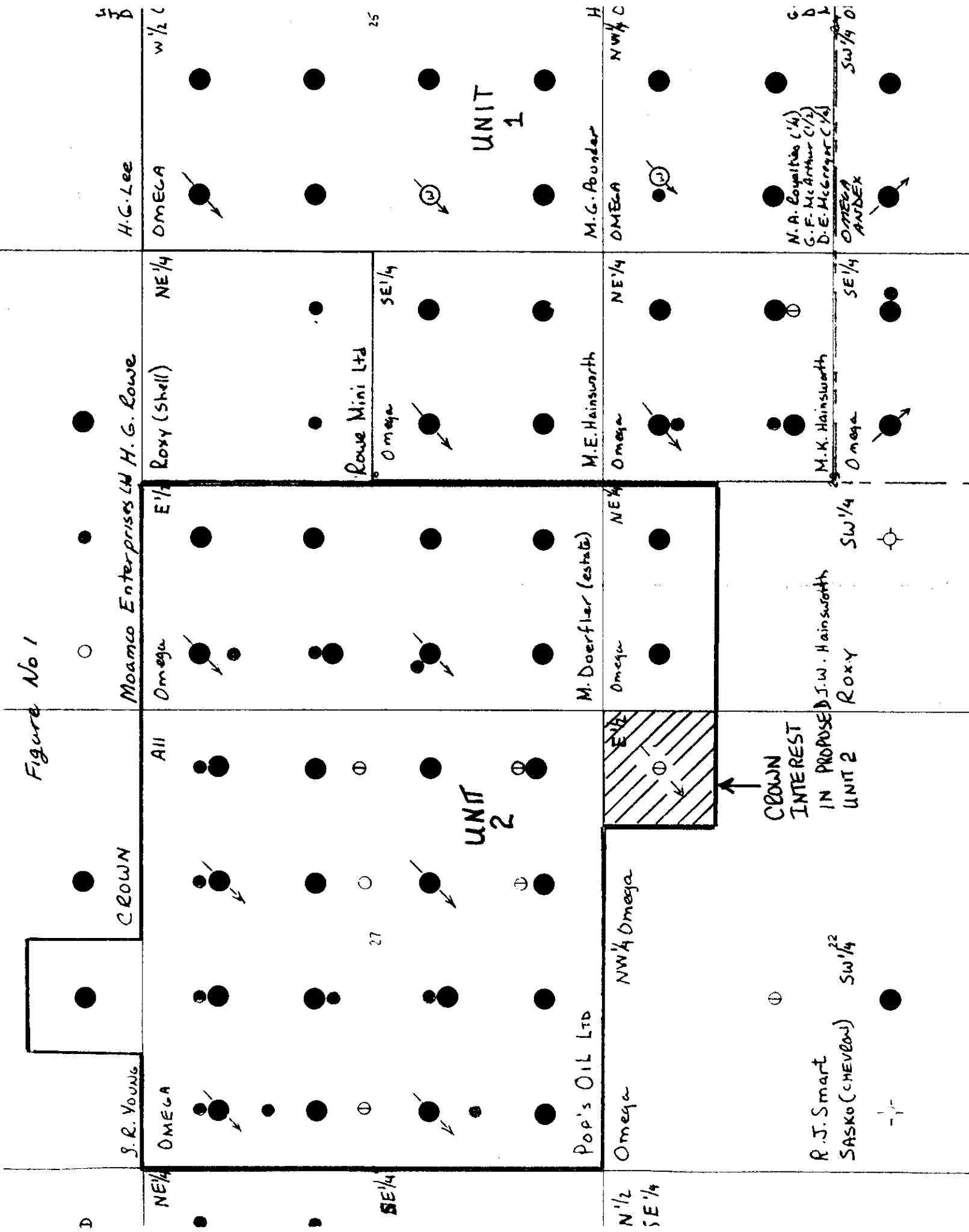

It is recommended that the proposed agreement be reviewed by the Department Solicitor, particularly with respect to Section 502, to confirm it's consistency with The Mines Act.



L. R. Dubreuil

LRD/sb

Att:





**HYDROCARBONS Ltd.**

TELEPHONE: (403) 261-0743

630-330 FIFTH AVENUE S.W., CALGARY, ALBERTA T2P 0L4

September 9, 1983

Manitoba Department of Energy and Mines  
Petroleum Branch  
975 Century Street  
Winnipeg, Manitoba  
R3H 0W4

Attention: Mr. Bob Dubreuil

Dear Bob:

RE: Waskada Field - Lower Amaranth Pool  
Proposed Waskada Unit No.'s 2, 3 and 4



As discussed in our September 8 telephone conversation enclosed is a map showing the proposed unit outlines and the details of the proposed Tract Participation Factor calculations.

The following brief explanation is to help explain the calculation method. The procedure was somewhat complicated and therefore this explanation may not adequately explain the procedure or the reasons for doing it this way. Please do not hesitate to call me with any questions or comments.

#### Calculation Method

- 1) An unadjusted tract factor was calculated for each tract using the same formula used for Waskada Lower Amaranth Unit No. 1. It is based on Remaining Recoverable Oil in Place assuming consistent water saturation of 45% and recovery factor of 25%. In three tracts; 16-22-1-26, 16-11-1-26 and 14-12-1-26 the area was reduced to account for the wells' very poor performance and to accommodate the opinion that there is not a full spacing to be drained from these wells.
- 2) It was decided that a portion of the tract factor should be productivity based and that both oil rate and water cut should be considered. For the sake of a consistent comparison between tracts of the same unit the first four production months were chosen:

(2)

- a) An average oil rate was calculated for each tract and for the total unit. Each tract's oil rate was then compared to the average for the total unit by dividing the average into it. An oil rate factor is thus generated that is unity for an average well. Any well that has not yet established a production history is assigned an oil rate factor of unity.
  - b) Similarly a percent oil factor is calculated by calculating the individual tracts oil cut to the average of the unit's.
  - c) A remaining recoverable oil in place factor is calculated by dividing the Unadjusted Tract Factor by an average for the unit.
- 3) To arrive at an adjusted tract factor it was decided to base  $2/3$  on the basis of the remaining oil in place and  $1/3$  on the basis of production. Of the  $1/3$  that is production based;  $2/3$  would be based on oil cut and  $1/3$  would be based on oil rate. It was felt that oil cut needed to be weighted more heavily than oil rate because we were not able to consistently generate acceptable values for  $S_w$  for use in the calculation of remaining recoverable oil in place. The resulting weighting then was  $2/3$  on oil in place,  $2/9$  on oil cut and  $1/9$  on oil rate.

This calculation method has been discussed with the other working interest owners involved (Unit 4 only has other working interest owners) and while we are still awaiting their feed back the initial reaction was favourable. We feel this method while more complicated, more equitably allocates unit shares and tends to reduce the effects of anomalous values for oil in place.

Yours truly,

OMEGA HYDROCARBONS LTD.



Ed Wyse  
Petroleum Engineer

EW/sp

cc: George Patey  
Jack Hall



## WASKADA UNIT NO. 2 - TRACT FACTOR CALCULATIONS

REMAINING RECOVERABLE OIL IN PLACE FACTOR

<u>TRACT</u>	<u>LAND DESCRIPTION</u>	<u>POR-M</u>	<u>CUM. OIL</u> (m <sup>3</sup> )	<u>AREA</u> (ha)	<u>REM. REC. OIP</u> (m <sup>3</sup> )
1	16-22-1-26 WPM	1.22	0	4	6328
2	13-23-1-26 WPM	0.78	404	16	15778
3	14-23-1-26 WPM	1.32	1668	16	25718
4	3-26-1-26 WPM	1.24	1852	16	23874
5	4-26-1-26 WPM	1.41	2179	16	27074
6	1-27-1-26 WPM	0.99	792	16	19747
7	2-27-1-26 WPM	1.10	822	16	21999
8	3-27-1-26 WPM	1.68	214	16	34640
9	4-27-1-26 WPM	1.95	956	16	39500
10	5-27-1-26 WPM	1.31	1372	16	25806
11	6-27-1-26 WPM	1.70	194	16	35075
12	7-27-1-26 WPM	1.13	1837	16	21607
13	8-27-1-26 WPM	1.31	2943	16	24235
14	5-26-1-26 WPM	1.05	3804	16	17980
15	6-26-1-26 WPM	1.87	2078	16	36718
16	11-26-1-26 WPM	1.01	2240	16	18714
17	12-26-1-26 WPM	1.13	346	16	23098
18	9-27-1-26 WPM	1.18	789	16	23692
19	10-27-1-26 WPM	1.76	1231	16	35283
20	11-27-1-26 WPM	1.30	164	16	26807
21	12-27-1-26 WPM	1.04	1902	16	19675
22	13-27-1-26 WPM	1.71	366	16	35111
23	14-27-1-26 WPM	1.29	130	16	26633
24	15-27-1-26 WPM	1.44	541	16	29334
25	16-27-1-26 WPM	1.42	325	16	29135
26	13-26-1-26 WPM	1.10	341	16	22480
27	14-26-1-26 WPM	1.06	584	16	21407
TOTAL					687448

NOTES: (1) Remaining Recoverable Oil in Place calculated by the equation  

$$U = (0.25) (10114) * \text{Area} * (1-0.4) / 1.17 * \text{POR-M.} - \text{Cum. Oil}$$
where - Recovery Factor is assumed = 0.25  
- Water Saturation is assumed = 0.40  
- Oil formation Volume Factor measured = 1.17

(2) Cumulative oil as of August 31, 1983.

## WASKADA UNIT NO. 2 - TRACT FACTOR CALCULATIONS

OIL PRODUCTION RELATED FACTORS

TRACT	First 4 months				Rate Factor	Oil Cut Factor
	(mm)	(hrs)	(oil)	(wat)		
1	0				0	0
2	3	1521	404.0	603.1	0.97950	0.79723
3	4	2584	743.4	549.2	1.08018	1.14934
4	4	2324	677.7	137.6	1.09489	1.66116
5	4	2445	727.9	532.2	1.11779	1.15440
6	4	2011	441.4	589.4	0.82412	0.85575
7	4	2446	565.4	394.4	0.86789	1.17724
8	4	2680	157.8	559.5	0.22108	0.43964
9	4	2184	559.0	490.0	0.96101	1.06494
10	4	2456	453.8	940.0	0.69375	0.65066
11	2	1028	194.3	543.1	0.66383	0.51001
12	4	2437	897.7	1038.7	1.38307	0.92646
13	4	1983	729.3	333.3	1.38086	1.37160
14	4	2292	1208.1	212.9	1.97905	1.69902
15	4	2376	834.3	105.9	1.31839	1.77334
16	4	1996	540.7	454.7	1.01710	1.08555
17	3	970	346.0	48.3	1.31539	1.74392
18	4	2272	405.1	858.2	0.66946	0.64084
19	4	2338	799.2	1038.4	1.28345	0.86915
20	1	738	164.1	240.9	0.68716	0.73230
21	4	2562	732.9	530.3	1.07407	1.15948
22	2	1100	366.3	361.7	1.16955	0.97389
23	1	342	129.6	108.4	1.17108	0.98415
24	3	1582	540.8	167.8	1.26061	1.51675
25	3	1448	325.1	671.4	0.82794	0.64836
26	4	1758	212.8	780.8	0.45449	0.42801
27	4	2603	287.0	1132.5	0.41398	0.40405
					25.90969	26.41724

- NOTES: 1) The average oil rate for all wells after their first months of production is 7.7661 m<sup>3</sup>/op. day and the oil cut is 55.3306%.
- 2) The average oil rate for all wells after their first 2 months of production is 6.8334 m<sup>3</sup>/op. day and the oil cut is 51.6647%.
- 3) The average oil rate for all wells after their first 3 months of production is 6.5082 m<sup>3</sup>/op. day and the oil cut is 50.3179%.
- 4) The average oil rate for all wells after their first 4 months of production is 6.3921 m<sup>3</sup>/op. day and the oil cut is 50.0391%.

## WASKADA UNIT NO. 2 - TRACT FACTOR CALCULATIONS

SUMMARY

<u>TRACT</u>	<u>Land Description</u>	<u>Oil Rate Factor</u>	<u>Oil Cut Factor</u>	<u>OIP Factor</u>	<u>Total Factor</u>
1	16-22-1-26 WPM	0	0	0.6137	0.6137
2	13-23-1-26 WPM	0.4200	0.6706	1.5301	2.6207
3	14-23-1-26 WPM	0.4632	0.9668	2.4941	3.9241
4	3-26-1-26 WPM	0.4695	1.3974	2.3152	4.1821
5	4-26-1-26 WPM	0.4794	0.9711	2.6256	4.0761
6	1-27-1-26 WPM	0.3534	0.7199	1.9150	2.9883
7	2-27-1-26 WPM	0.3722	0.9903	2.1334	3.4959
8	3-27-1-26 WPM	0.0948	0.3698	3.3593	3.8239
9	4-27-1-26 WPM	0.4121	0.8958	3.8306	5.1385
10	5-27-1-26 WPM	0.2975	0.5473	2.5026	3.3474
11	6-27-1-26 WPM	0.2847	0.4290	3.4015	4.1152
12	7-27-1-26 WPM	0.5931	0.7793	2.0954	3.4678
13	8-27-1-26 WPM	0.5922	1.1538	2.3502	4.0962
14	5-26-1-26 WPM	0.8487	1.4292	1.7436	4.0215
15	6-26-1-26 WPM	0.5654	1.4917	3.5608	5.6179
16	11-26-1-26 WPM	0.4362	0.9132	1.8148	3.1642
17	12-26-1-26 WPM	0.5641	1.4670	2.2400	4.2711
18	9-27-1-26 WPM	0.2871	0.5391	2.2976	3.1238
19	10-27-1-26 WPM	0.5504	0.7311	3.4216	4.7031
20	11-27-1-26 WPM	0.2947	0.6160	2.5997	3.5104
21	12-27-1-26 WPM	0.4606	0.9754	1.9080	3.3440
22	13-27-1-26 WPM	0.5015	0.8192	3.4050	4.7257
23	14-27-1-26 WPM	0.5022	0.8279	2.5828	3.9129
24	15-27-1-26 WPM	0.5406	1.2759	2.8447	4.6612
25	16-27-1-26 WPM	0.3551	0.5454	2.8254	3.7259
26	13-26-1-26 WPM	0.1949	0.3601	2.1800	2.7350
27	14-26-1-26 WPM	0.1775	0.3399	2.0760	2.5934
		<u>11.1111</u>	<u>22.2222</u>	<u>66.6667</u>	<u>100.0000</u>

TABLE 1

WASKADA UNIT NO. 2 - TRACT FACTOR CALCULATIONS

## REMAINING RECOVERABLE OIL IN PLACE FACTOR

TRACT	LAND DESCRIPTION	POR-M		CUM. OIL (m3)	AREA (ha)	REM. REC. OIP (m3)		TRACT FACTOR	
		PET. BR.	OMEGA			PET. BR.	OMEGA	PET. BR.	OMEGA
1	16-22-1-26 WPM	1.2	1.22	0	4	6224	6328	.013537	.009205
2	13-23-1-26 WPM	.76	0.78	404	16	15364	15778	.033417	.022952
3	14-23-1-26 WPM	1.2	1.32	1668	16	23229	25718	.050523	.037412
4	3-26-1-26 WPM	.9	1.24	1852	16	16821	23874	.036586	.034728
5	4-26-1-26 WPM	.9	1.41	2179	16	16493	27074	.035872	.039384
6	1-27-1-26 WPM	.8	0.99	792	16	15806	19747	.034372	.028725
7	2-27-1-26 WPM	.6	1.10	822	16	11626	21999	.025287	.032001
8	3-27-1-26 WPM	.7	1.68	214	16	14309	34640	.031122	.050390
9	4-27-1-26 WPM	.9	1.95	956	16	17716	39500	.038532	.057459
10	5-27-1-26 WPM	.9	1.31	1372	16	17301	25806	.037630	.037539
11	6-27-1-26 WPM	.7	1.70	194	16	14329	35075	.031166	.051023
12	7-27-1-26 WPM	1.3	1.13	1837	16	25134	21607	.054667	.031431
13	8-27-1-26 WPM	1.0	1.31	2943	16	17804	24235	.038724	.035253
14	5-26-1-26 WPM	1.0	1.05	3804	16	16943	17980	.036851	.026154
15	6-26-1-26 WPM	.94	1.87	2078	16	17425	36718	.037900	.053412
16	11-26-1-26 WPM	.88	1.01	2240	16	16018	18714	.034839	.027222
17	12-26-1-26 WPM	1.10	1.13	346	16	22476	23098	.048886	.033600
18	9-27-1-26 WPM	.8	1.18	789	16	15809	23692	.034385	.034464
19	10-27-1-26 WPM	.93	1.76	1231	16	18064	35283	.039289	.051324
20	11-27-1-26 WPM	.9	1.30	164	16	18508	26807	.040255	.038996
21	12-27-1-26 WPM	.7	1.04	1902	16	12621	19675	.027451	.028620
22	13-27-1-26 WPM	.7	1.71	366	16	14157	35111	.030792	.051075
23	14-27-1-26 WPM	.7	1.29	130	16	14393	26633	.031305	.038742
24	15-27-1-26 WPM	1.0	1.44	541	16	20206	29334	.043948	.042671
25	16-27-1-26 WPM	1.1	1.42	325	16	22497	29135	.048931	.034238
26	13-26-1-26 WPM	1.1	1.10	341	16	22481	22480	.048896	.032700
27	14-26-1-26 WPM	0.8	1.06	584	16	16014	21407	.034831	.031140
TOTAL . .						459768	687448		

NOTES: Cumulative oil as of August 31, 1983.

↑ Omega tract factor 1% + higher than Petroleum Branch Tract factor.

↓ Omega tract factor 1% + lower than Petroleum Branch Tract factor.

- Omega and Petroleum Branch tract factors within 1% of each other.



$$\text{TRACT FACTOR} = \frac{2}{3} \times \text{UTF} + \frac{1}{9} \times \text{OIL RATE} + \frac{2}{9} \times \text{OIL CUT}$$

$$= \frac{2}{3} \times .051325 + \frac{1}{9} \times .049535 + \frac{2}{9} \times .032906$$

$$= .034217 + .005504 + .007312$$

$$? = .040733 \quad (\text{Omega } 4.7031\%)$$

$$.047033 \quad .047031$$

TRACT II 6-27

$$\text{UTF} = 0.051022$$

$$\text{OIL CUT RATE} = 4.536187$$

$$\text{FACTOR} = .025621$$

OIL CUT	<u>194.3</u>	<u>26.3493</u>	<u>.510006</u>
	194.3 + 543.1	51.6647	26.41724
			= 0.019306

$$.051022 \times \frac{2}{3} + . \frac{025621}{9} + 2 \times \frac{.019306}{9} = 0.041152$$

## Example of Tract Factor Calculation

- 1) Unadjusted tract factor  
based on constant  
reservoir and recovery parameters

$$\text{TRACT 19} \quad 10-27 \quad \frac{\text{Perm Res}}{\text{Perm Res}} : \frac{35283}{687448} = 0.051325$$

- 2) OIL RATE FACTOR

THE AVE DAILY OIL RATE/WEEL  
IS DETERMINED FOR ALL WELLS AFTER  
ONE MONTH OF PROD.

2 months	6.8334
3 months	6.5082
4 months	6.3921

7.7661 m<sup>3</sup>/d.

10-27 on prod for 4 months +

oil rate 8.203935

oil rate factor  $8.203935 / 6.3921 = 1.283449$   
1.283449 / 1.049535 = 0.049535

- 3) OIL CUT FACTOR

AVE OIL CUT	1 month	55.3366
	2 "	51.6647
	3 "	50.3179
	4 "	50.0319

$$10-27 \quad \frac{\text{OIL}}{\text{OIL + W.}} = \frac{799.2}{799.2 + 1038.4} = 43.4915$$

$$\text{OIL CUT FACTOR} \quad \frac{43.4915}{50.0319} = 0.869275$$

$$= 0.032906$$

## TABLE 1

WASKADA UNIT NO. 2 - TRACT FACTOR CALCULATIONS

## REMAINING RECOVERABLE OIL IN PLACE FACTOR

TRACT	LAND DESCRIPTION	POR-M		CUM. OIL (m <sup>3</sup> )	AREA (ha)	REM. REC. OIP (m <sup>3</sup> )		TRACT FACTOR	
		PET. BR.	OMEGA			PET. BR.	OMEGA	PET. BR.	OMEGA
1	16-22-1-26 WPM	1.2	1.22	0	4	6224	6328	.013537	.009205
2	13-23-1-26 WPM	.76	0.78	404	16	15364	15778	.033417	.022952
3	14-23-1-26 WPM	1.2	1.32	1668	16	23229	25718	.050523	.037412
4	3-26-1-26 WPM	.9	1.24	1852	16	16821	23874	.036586	.034728
5	4-26-1-26 WPM	.9	1.41	2179	16	16493	27074	.035872	.039384
6	1-27-1-26 WPM	.8	0.99	792	16	15806	19747	.034372	.028725
7	2-27-1-26 WPM	.6	1.10	822	16	11626	21999	.025287	.032001
8	3-27-1-26 WPM	.7	1.68	214	16	14309	34640	.031122	.050390
9	4-27-1-26 WPM	.9	1.95	956	16	17716	39500	.038532	.057459
10	5-27-1-26 WPM	.9	1.31	1372	16	17301	25806	.037630	.037539
11	6-27-1-26 WPM	.7	1.70	194	16	14329	35075	.031166	.051023
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13	8-27-1-26 WPM	1.0	1.31	2943	16	17804	24235	.038724	.035253
14	5-26-1-26 WPM	1.0	1.05	3804	16	16943	17980	.036851	.026154
15	6-26-1-26 WPM	.94	1.87	2078	16	17425	36718	.037900	.053412
16	11-26-1-26 WPM	.88	1.01	2240	16	16018	18714	.034839	.027222
17	12-26-1-26 WPM	1.10	1.13	346	16	22476	23098	.048886	.033600
18	9-27-1-26 WPM	.8	1.18	789	16	15809	23692	.034385	.034464
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26	13-26-1-26 WPM	1.1	1.10	341	16	22481	22480	.048896	.032700
27	14-26-1-26 WPM	0.8	1.06	584	16	16014	21407	.034831	.031140
TOTAL . .						459768	687448		

## NOTES:

Cumulative oil as of August 31, 1983.

↑ Omega tract factor 1% + higher than Petroleum Branch Tract factor.

↓ Omega tract factor 1% + lower than Petroleum Branch Tract factor.

— Omega and Petroleum Branch tract factors within 1% of each other.





**HYDROCARBONS Ltd.**

TELEPHONE: (403) 261-0743

630-330 FIFTH AVENUE S.W., CALGARY, ALBERTA T2P 0L4

October 3, 1983

TO: All Royalty Interest Owners  
Proposed Waskada Unit No. 2  
(Addressee List Attached)

Dear Sir/Madam:

INTRODUCTION

You are no doubt aware of the success that Omega Hydrocarbons has had in finding and producing oil in the Waskada area. In an effort to maximize oil recovery Omega formed the Waskada Lower Amaranth Unit No. 1 on January 1, 1983 and initiated a pilot water flood project. At this time, through encouraging results of the pilot project and continuing engineering and geological studies, we are preparing to expand our water-flood project to areas in which you have a royalty interest.

In order to implement our expansion plans Omega must receive the written approval of all parties affected. This is done by successfully applying to Manitoba Oil and Natural Gas Conservation Board for technical approval of the plan and by having all Working and Royalty Interest Owners approve by signing a Unit Agreement.

The necessary application has been filed with the Board in Manitoba and approval is anticipated in the coming weeks. Through this letter, and further discussion, as required; we hope to convince you that this project is to our mutual advantage. You would then indicate your approval by signing and returning one copy of the enclosed document "Unit Agreement - Waskada Unit No. 2".

BASIC PLAN

In many oil reservoirs it has already been demonstrated that oil recovery can be improved by injecting water down certain wells to push oil to neighbouring producing wells. Early results of our pilot project and our recently completed reservoir engineering studies verify that this is true for the Waskada Lower Amaranth Pool. We estimate that without waterflood we would produce only 12% of the original oil in place before the wells would become uneconomic to produce and that this recovery can be increased to approximately 28% by waterflood.



To waterflood this pool it is necessary to convert approximately every fourth producing oil well to a water injection well. Obviously if oil recovery is to be improved for the overall good in this way, it is necessary to compensate those people that have a vested interest in those oil wells that will become water injection wells which explains the need for the Unit Agreement. The Unit Agreement is the document by which all the people with interest in all the wells in the Unit agree to share the revenue from the total Unit's production. All wells get a share of production, regardless of whether they are producers or injectors, on the basis of what portion of the recoverable oil is determined to be in their individual Tract. The calculated Tract Participation Factors are determined from a combination of well log analysis, core studies and production histories and are shown in Exhibit "A" of the Unit Agreement.

Exhibit "B" shows a map of the proposed Waskada Unit No. 2 outline. There are 27 tracts in the unit representing 27 wells completed in the Lower Amaranth Pool. To waterflood we will be converting 7 of these wells into water injection; the wells located in Tracts No.'s 1, 10, 12, 14, 22, 24 and 26. These conversions will be done as soon as possible after all approvals have been received.

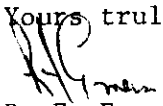
You will notice that there is a regular pattern to the location of the proposed water injection wells and this is no accident. This type of pattern is referred to in the oil industry as a nine-spot pattern (because most water injection wells are surrounded by 8 producing wells, ie. 9 wells to a pattern). The proposed Waskada Unit No. 2 is an extension of an already existing waterflood pattern in the Waskada Lower Amaranth Unit No. 1 and as such the location of the injection wells has been largely predetermined. Retaining the same pattern as Waskada Lower Amaranth Unit No. 1 should maximize the sweep efficiency of this waterflood.

#### SUMMARY

Omega Hydrocarbons expects to receive approval from the Conservation Board for this project any day now. We also hope to receive your approval as soon as possible to allow us to implement this project before the winter weather sets in at Waskada.

Please signify your approval by signing and returning one copy of the Unit Agreement. The second copy is for your records. Feel free to call us collect (403) 261-0743 if you have any questions. Either myself or Mr. Ed Wyse, our Petroleum Engineer, would be happy to try to answer them. The Chief Petroleum Engineer for the Manitoba Petroleum Branch in Winnipeg, Mr. Bob. Dubreuil, may also be consulted (204) 944-6574.

Yours truly,

  
R. F. Emerson  
Land Manager

RFE/smp

cc: E. Wyse  
J. Hall  
Ian Haugh, Conservation Board

WASKADA UNIT NO. 2  
ROYALTY INTEREST OWNER  
ADDRESSEE LIST

Department of Energy and Mines  
Mineral Resources Division  
Petroleum Branch  
989 Century Street  
Winnipeg, Manitoba  
R3H 0W4

Mary Doerfler  
c/o John Doerfler (as Committee for  
the Estate of Mary Doerfler)  
Waskada, Manitoba  
ROM 2E0

John Wilfred Hainsworth  
2826 Harding Street  
Regina, Saskatchewan  
S4V 0V9

Pop's Oil Ltd.  
Box 104  
Deloraine, Manitoba  
ROM 0M0

# WASKADA UNIT NO. 2 - TRACT FACTOR CALCULATIONS

## REMAINING RECOVERABLE OIL IN PLACE FACTOR

<u>TRACT</u>	<u>LAND DESCRIPTION</u>	<u>POR-M</u>	<u>CUM. OIL</u> (m <sup>3</sup> )	<u>AREA</u> (ha)	<u>REM. REC. OIP</u> (m <sup>3</sup> )
1	16-22-1-26 WPM	1.22	0	4	6328
2	13-23-1-26 WPM	0.78	404	16	15778
3	14-23-1-26 WPM	1.32	1668	16	25718
4	3-26-1-26 WPM	1.24	1852	16	23874
5	4-26-1-26 WPM	1.41	2179	16	27074
6	1-27-1-26 WPM	0.99	792	16	19747
7	2-27-1-26 WPM	1.10	822	16	21999
8	3-27-1-26 WPM	1.68	214	16	34640
9	4-27-1-26 WPM	1.95	956	16	39500
10	5-27-1-26 WPM	1.31	1372	16	25806
11	6-27-1-26 WPM	1.70	194	16	35075
12	7-27-1-26 WPM	1.13	1837	16	21607
13	8-27-1-26 WPM	1.31	2943	16	24235
14	5-26-1-26 WPM	1.05	3804	16	17980
15	6-26-1-26 WPM	1.87	2078	16	36718
16	11-26-1-26 WPM	1.01	2240	16	18714
17	12-26-1-26 WPM	1.13	346	16	23098
18	9-27-1-26 WPM	1.18	789	16	23692
19	10-27-1-26 WPM	1.76	1231	16	35283
20	11-27-1-26 WPM	1.30	164	16	26807
21	12-27-1-26 WPM	1.04	1902	16	19675
22	13-27-1-26 WPM	1.71	366	16	35111
23	14-27-1-26 WPM	1.29	130	16	26633
24	15-27-1-26 WPM	1.44	541	16	29334
25	16-27-1-26 WPM	1.42	325	16	29135
26	13-26-1-26 WPM	1.10	341	16	22480
27	14-26-1-26 WPM	1.06	584	16	21407
				TOTAL	687448

NOTES: (1) Remaining Recoverable Oil in Place calculated by the equation  

$$U = (0.25) (10114) * \text{Area} * (1-0.4) / 1.17 * \text{POR-M.} - \text{Cum. Oil}$$

where - Recovery Factor is assumed = 0.25  
 - Water Saturation is assumed = 0.40  
 - Oil formation Volume Factor measured = 1.17

(2) Cumulative oil as of August 31, 1983.

# WASKADA UNIT NO. 2 - TRACT FACTOR CALCULATIONS

## OIL PRODUCTION RELATED FACTORS

TRACT	First 4 months				Rate Factor	Oil Cut Factor
	(mm)	(hrs)	(oil)	(wat)		
1	0				0	0
2	3	1521	404.0	603.1	0.97950	0.79723
3	4	2584	743.4	549.2	1.08018	1.14934
4	4	2324	677.7	137.6	1.09489	1.66116
5	4	2445	727.9	532.2	1.11779	1.15440
6	4	2011	441.4	589.4	0.82412	0.85575
7	4	2446	565.4	394.4	0.86789	1.17724
8	4	2680	157.8	559.5	0.22108	0.43964
9	4	2184	559.0	490.0	0.96101	1.06494
10	4	2456	453.8	940.0	0.69375	0.65066
11	2	1028	194.3	543.1	0.66383	0.51001
12	4	2437	897.7	1038.7	1.38307	0.92646
13	4	1983	729.3	333.3	1.38086	1.37160
14	4	2292	1208.1	212.9	1.97905	1.69902
15	4	2376	834.3	105.9	1.31839	1.77334
16	4	1996	540.7	454.7	1.01710	1.08555
17	3	970	346.0	48.3	1.31539	1.74392
18	4	2272	405.1	858.2	0.66946	0.64084
19	4	2338	799.2	1038.4	1.28345	0.86915
20	1	738	164.1	240.9	0.68716	0.73230
21	4	2562	732.9	530.3	1.07407	1.15948
22	2	1100	366.3	361.7	1.16955	0.97389
23	1	342	129.6	108.4	1.17108	0.98415
24	3	1582	540.8	167.8	1.26061	1.51675
25	3	1448	325.1	671.4	0.82794	0.64836
26	4	1758	212.8	780.8	0.45449	0.42801
27	4	2603	287.0	1132.5	0.41398	0.40405
					<u>25.90969</u>	<u>26.41724</u>

- NOTES: 1) The average oil rate for all wells after their first months of production is 7.7661 m<sup>3</sup>/op. day and the oil cut is 55.3306%.
- 2) The average oil rate for all wells after their first 2 months of production is 6.8334 m<sup>3</sup>/op. day and the oil cut is 51.6647%.
- 3) The average oil rate for all wells after their first 3 months of production is 6.5082 m<sup>3</sup>/op. day and the oil cut is 50.3179%.
- 4) The average oil rate for all wells after their first 4 months of production is 6.3921 m<sup>3</sup>/op. day and the oil cut is 50.0391%.

## WASKADA UNIT NO. 2 - TRACT FACTOR CALCULATIONS

SUMMARY

<u>TRACT</u>	<u>Land Description</u>	<u>Oil Rate Factor</u>	<u>Oil Cut Factor</u>	<u>OIP Factor</u>	<u>Total Factor</u>
1	16-22-1-26 WPM	0	0	0.6137	0.6137
2	13-23-1-26 WPM	0.4200	0.6706	1.5301	2.6207
3	14-23-1-26 WPM	0.4632	0.9668	2.4941	3.9241
4	3-26-1-26 WPM	0.4695	1.3974	2.3152	4.1821
5	4-26-1-26 WPM	0.4794	0.9711	2.6256	4.0761
6	1-27-1-26 WPM	0.3534	0.7199	1.9150	2.9883
7	2-27-1-26 WPM	0.3722	0.9903	2.1334	3.4959
8	3-27-1-26 WPM	0.0948	0.3698	3.3593	3.8239
9	4-27-1-26 WPM	0.4121	0.8958	3.8306	5.1385
10	5-27-1-26 WPM	0.2975	0.5473	2.5026	3.3474
11	6-27-1-26 WPM	0.2847	0.4290	3.4015	4.1152
12	7-27-1-26 WPM	0.5931	0.7793	2.0954	3.4678
13	8-27-1-26 WPM	0.5922	1.1538	2.3502	4.0962
14	5-26-1-26 WPM	0.8487	1.4292	1.7436	4.0215
15	6-26-1-26 WPM	0.5654	1.4917	3.5608	5.6179
16	11-26-1-26 WPM	0.4362	0.9132	1.8148	3.1642
17	12-26-1-26 WPM	0.5641	1.4670	2.2400	4.2711
18	9-27-1-26 WPM	0.2871	0.5391	2.2976	3.1238
19	10-27-1-26 WPM	0.5504	0.7311	3.4216	4.7031
20	11-27-1-26 WPM	0.2947	0.6160	2.5997	3.5104
21	12-27-1-26 WPM	0.4606	0.9754	1.9080	3.3440
22	13-27-1-26 WPM	0.5015	0.8192	3.4050	4.7257
23	14-27-1-26 WPM	0.5022	0.8279	2.5828	3.9129
24	15-27-1-26 WPM	0.5406	1.2759	2.8447	4.6612
25	16-27-1-26 WPM	0.3551	0.5454	2.8254	3.7259
26	13-26-1-26 WPM	0.1949	0.3601	2.1800	2.7350
27	14-26-1-26 WPM	0.1775	0.3399	2.0760	2.5934
		11.1111	22.2222	66.6667	100.0000



**HYDROCARBONS Ltd.**

TELEPHONE: (403) 261-0743

630 - 330 FIFTH AVENUE S.W., CALGARY, ALBERTA T2P 0L4

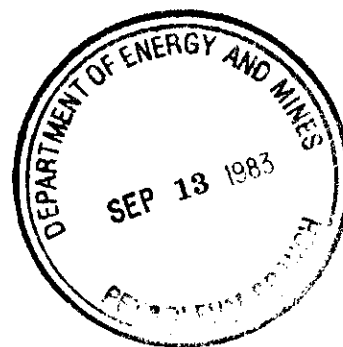
September 9, 1983

Manitoba Department of Energy and Mines  
Petroleum Branch  
975 Century Street  
Winnipeg, Manitoba  
R3H 0W4

Attention: Mr. Bob Dubreuil

Dear Bob:

RE: Waskada Field - Lower Amaranth Pool  
Proposed Waskada Unit No.'s 2, 3 and 4



As discussed in our September 8 telephone conversation enclosed is a map showing the proposed unit outlines and the details of the proposed Tract Participation Factor calculations.

The following brief explanation is to help explain the calculation method. The procedure was somewhat complicated and therefore this explanation may not adequately explain the procedure or the reasons for doing it this way. Please do not hesitate to call me with any questions or comments.

#### Calculation Method

- 1) An unadjusted tract factor was calculated for each tract using the same formula used for Waskada Lower Amaranth Unit No. 1. It is based on Remaining Recoverable Oil in Place assuming consistent water saturation of 45% and recovery factor of 25%. In three tracts; 16-22-1-26, 16-11-1-26 and 14-12-1-26 the area was reduced to account for the wells' very poor performance and to accommodate the opinion that there is not a full spacing to be drained from these wells.
- 2) It was decided that a portion of the tract factor should be productivity based and that both oil rate and water cut should be considered. For the sake of a consistent comparison between tracts of the same unit the first four production months were chosen:

- a) An average oil rate was calculated for each tract and for the total unit. Each tract's oil rate was then compared to the average for the total unit by dividing the average into it. An oil rate factor is thus generated that is unity for an average well. Any well that has not yet established a production history is assigned an oil rate factor of unity.
  - b) Similarly a percent oil factor is calculated by calculating the individual tracts oil cut to the average of the unit's.
  - c) A remaining recoverable oil in place factor is calculated by dividing the Unadjusted Tract Factor by an average for the unit.
- 3) To arrive at an adjusted tract factor it was decided to base 2/3 on the basis of the remaining oil in place and 1/3 on the basis of production. Of the 1/3 that is production based; 2/3 would be based on oil cut and 1/3 would be based on oil rate. It was felt that oil cut needed to be weighted more heavily than oil rate because we were not able to consistently generate acceptable values for  $S_w$  for use in the calculation of remaining recoverable oil in place. The resulting weighting then was 2/3 on oil in place, 2/9 on oil cut and 1/9 on oil rate.

This calculation method has been discussed with the other working interest owners involved (Unit 4 only has other working interest owners) and while we are still awaiting their feed back the initial reaction was favourable. We feel this method while more complicated, more equitably allocates unit shares and tends to reduce the effects of anomalous values for oil in place.

Yours truly,

OMEGA HYDROCARBONS LTD.



Ed Wyse  
Petroleum Engineer

EW/sp

cc: George Patey  
Jack Hall



## TRACT FACTOR CALCULATIONS FOR WASKAHIA LOWER AMARANTH UNIT NUMBER 24

BRANCH  
Re-m

TRACT	TRACT LOCN	POR-M	CUMCOIL	AREA	REM REC COIP	ADJUSTED TRACT FACTOR
1	1622001261	1.22	.0	4	6328	.008795
2	1323001261	.78	211.4	16	15971	.022199
3	1423001261	1.32	1558.5	16	25827	.035898
4	0326001261	1.24	1779.9	16	23946	.033284
5	0426001261	1.41	2067.3	16	27186	.037787
6	0127001261	.99	714.5	16	19825	.027555
7	0227001261	1.10	742.7	16	22079	.030688
8	0327001261	1.68	196.0	16	34658	.048173
9	0427001261	1.95	920.2	16	39536	.054953
10	0527001261	1.31	1125.8	16	26052	.036211
11	0627001261	1.70	81.9	16	35187	.048909
12	0727001261	1.13	1770.8	16	21673	.030124
13	0827001261	1.31	2722.8	16	24455	.033992
14	0526001261	1.05	3700.5	16	18083	.025135
15	0626001261	1.87	2022.1	16	36774	.051114
16	1126001261	1.01	1968.7	16	18985	.026389
17	1226001261	1.13	190.9	16	23253	.032320
18	0927001261	1.18	659.9	16	23821	.033110
19	1027001261	1.76	1164.0	16	35350	.049135
20	1127001261	1.30	.0	16	26971	.037488
21	1227001261	1.04	1537.4	16	20039	.027853
22	1327001261	1.71	154.8	16	35322	.049096
23	1427001261	1.29	.0	16	26763	.037200
24	1527001261	1.44	309.9	16	29565	.041094
25	1627001261	1.42	138.4	16	29322	.040756
26	1326001261	1.10	285.2	16	22536	.031324
27	1426001261	1.06	466.5	16	21525	.029919
28	0334001261	1.39	421.4	16	28416	.039497