



December 20, 2012

Manitoba Science, Technology, Energy and Mines  
Petroleum Branch  
Suite 360, 1395 Ellice Avenue  
Winnipeg, Manitoba  
R3G 3P2

**Attention: Mr. Leo Leonen, Technical Officer**

Manitoba Science, Technology, Energy and Mines  
Petroleum Branch  
Box 1359 - 227-King Street  
Virden, Manitoba Canada  
R0M 2C0

**Attention: Ms. Jennifer Abel, Chief Petroleum Engineer**

RE: **APPLICATION FOR A NEW UNIT NO. 9 AND  
NEW ENHANCED RECOVERY SCHEME IN THE BAKKEN-THREE FORKS POOL  
IN SECTION 30-007-29W1M  
IN THE DALY SINCLAIR FIELD**

Fekete Associates Inc. (Fekete) on behalf of Red River Oil Inc. (Red River) submits this response to your request for additional information by letter dated December 18, 2012:

A copy of the notice, and proof of service of the notice, to the surface owners in the project area and to the mineral owners within 0.5 km advising of the proposed project of enhanced recovery.

**Samples of the notification letters and list of non-confidential addressees were included in Exhibit 3. The confidential information identifying surface owners along with the proof of notice is included in Exhibit 12 of the original November 8, 2012 submission. Please note, one of the surface owners has never picked up their registered letter as Canada Post does not have a sign off from the surface owner.**

A copy of the proposed Unit Agreement for review.

**The Unit Calculations are included in Exhibit 4 of the November 8, 2012 submission; the revised Unit Calculations. We will provide a copy of the proposed Agreement as quickly as possible.**

Red River is using Units. 2 & 3 as analogs for Unit 9 which are farther units compared with Unit 8 and yet it will be develop and patterned after the latter. Why is Unit 8 not the analog? Why it will not be patterned after Units. 2 & 3? Please elaborate.

**Unit 8 was not used as the analogue for Unit 9 because it was very recently approved as an enhanced recovery scheme. We believe at the time of submission of the application,**

there was insufficient publicly available data to reliably analyze and evaluate the response of the Unit 8 ER scheme. Both Units 2 and 3 commenced injection in 2010 and in both cases it took approximately 6 months (after injection) before a positive response was seen in the offsetting producers. As at the time of submission of the application for the new Unit 9 ER scheme, almost a full 2 years of injection and production history were publicly available for Units 2 and 3. From that information, Red River determined the increased oil rate was sustainable and breakthrough was not evident. Hence, on the basis of the 2 years of production under ER, Red River decided to proceed with their scheme in section 30-007-29W1, assuming similar results would be seen in Unit 8 and the proposed Unit 9.

List of rock and fluid properties.

Rock properties on an LSD basis are tabulated in both Exhibits 4 and 5 of the November 8, 2012 submission. A shrinkage factor (1/Bo) of  $0.98 \text{ m}^3/\text{m}^3$  was used in the calculation.

Any plans of using produced water for re-injection? If not, why?

Bakken produced water has slightly higher chlorides and therefore higher overall salt content. Lodgepole water is easier to treat and condition for water injection and is known to be compatible with the Bakken-Three Forks Formation.

We have a mismatched 1st 90 days production figures of the four horizontal wells in the project area. I computed and arrived at the following:

Well	Branch, $\text{m}^3$	Red River, $\text{m}^3$
100/13-30-007-29W1/00	1229.8	1230.2
100/14-30-007-29W1/00	469.3	469.4
100/15-30-007-29W1/00	959.9	975.7
100/16-30-007-29W1/00	751.9	742.4
Total	3,410.9	3,417.7

If there are errors, it will affect the tract factors. There might be some things overlooked on both sides. Either case, please re-check your production figures and then coordinate with me about the results.

**Red River does not disagree with your numbers; please see the attached revised tract factor calculation tables.**

Is Red River the evaluator or appraiser of the OOIP in the project area? If not a third party, please provide reason(s). Please provide a discussion of the methodologies used in the OOIP evaluation. (Sic)

**Red River is the evaluator of the OOIP in the project area. A third party evaluator was not used because Red River feels its evaluation and interpretation of the geology and reserves in Section 30 will stand up to scrutiny by offset operators, third party evaluations or regulators. Red River believes there is sufficient well control and production history to provide a reliable and representative evaluation of the OOIP.**

**Red River used well established, standard industry log analysis evaluations and net pay mapping construction to obtain the inputs for the volumetric calculation of initial oil in place (STm<sup>3</sup>) using the standard formula**

$$N=10,000 \text{ m}^3/\text{ha-m} \cdot A \cdot h \cdot \phi \cdot (1-S_w) \cdot 1/\text{Boi}$$

Does Red River plans to expand their waterflood project beyond Unit 9 by unitizing and waterflooding nearby smaller units? If yes, how will the unit agreement for each units can adapt with the broader level of operation (smaller units forming an apparent mother unit with wells draining or injecting two or more units, etc.)?

**Until Red River has a chance to begin water injection in Unit 9, observe the response and evaluate the results, they have no plans to expand their waterflood project beyond Unit 9. However, if and when the results from the Unit 9 waterflood lead to the conclusion that expansion of the Unit 9 to offsetting lands will recover additional oil, Red River will make those applications, at that time.**

**Therefore, Red River requests that unit operations for Unit 9 allow for unit to unit or unit to non-unit operations, without having to get agreement from each unit holder to do so, pursuant to Clause 401 of the Unit Agreement.**

**The executed Unit 9 agreement is being finalized and will be sent as quickly as possible.**

We trust this additional information satisfies your requirements and your earliest attention to this application and additional information would be appreciated. Please contact the undersigned at 403-213-4250 if you have any questions or discussions regarding this application.

Yours truly,  
**FEKETE ASSOCIATES INC.**



Robyn Swanson, C.E.T., P.Eng.  
Senior Engineer

cc. Ken Frankiw, Red River  
Jennifer Abel, Manitoba Oil and Gas, Virden

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TABLE 1 REVISED OOIP

# Red River Oil Inc.

## Sinclair Unit #9

### DETERMINATION OF TRACT FACTORS BASED ON OOIP

		Bakken Silts					Lyleton A / Three Forks					Tract Factor	
Section	Lsd	Area (Ha)	Net Pay (m)	Phi	Sw	OOIP ( m <sup>3</sup> )	Area (Ha)	Net Pay (m)	Avg Phi	Sw	OOIP ( m <sup>3</sup> )	100% OOIP (%)	Tract Factor 50% OOIP (%)
30-7-29 W1M	1	16	1.7	0.14	0.5	18,667	16	4	0.16	0.4	60,235	6.508378	3.254189041
30-7-29 W1M	2	16	2.1	0.15	0.5	24,706	16	4	0.16	0.4	60,235	7.006534	3.503267128
30-7-29 W1M	3	16	2.1	0.15	0.5	24,706	16	3.5	0.15	0.4	49,412	6.113735	3.056867439
30-7-29 W1M	4	16	2.2	0.15	0.5	25,882	16	2.75	0.14	0.4	36,235	5.123892	2.561946044
30-7-29 W1M	5	16	3	0.15	0.5	35,294	16	2.75	0.14	0.4	36,235	5.900239	2.950119687
30-7-29 W1M	6	16	2.5	0.15	0.5	29,412	16	3.5	0.15	0.4	49,412	6.501909	3.25095426
30-7-29 W1M	7	16	1.5	0.14	0.5	16,471	16	4	0.16	0.4	60,235	6.327230	3.163615191
30-7-29 W1M	8	16	1	0.14	0.5	10,980	16	4	0.16	0.4	60,235	5.874361	2.937180565
30-7-29 W1M	9	16	1	0.14	0.5	10,980	16	4	0.16	0.4	60,235	5.874361	2.937180565
30-7-29 W1M	10	16	1.7	0.15	0.5	20,000	16	4	0.16	0.4	60,235	6.618361	3.309180307
30-7-29 W1M	11	16	2.5	0.15	0.5	29,412	16	3.5	0.15	0.4	49,412	6.501909	3.25095426
30-7-29 W1M	12	16	3	0.15	0.5	35,294	16	2.75	0.14	0.4	36,235	5.900239	2.950119687
30-7-29 W1M	13	16	3.4	0.15	0.5	40,000	16	3	0.14	0.4	39,529	6.560135	3.280067283
30-7-29 W1M	14	16	2.7	0.15	0.5	31,765	16	3.5	0.15	0.4	49,412	6.695995	3.347997671
30-7-29 W1M	15	16	1.7	0.15	0.5	20,000	16	4	0.16	0.4	60,235	6.618361	3.309180307
30-7-29 W1M	16	16	1	0.14	0.5	10,980	16	4	0.16	0.4	60,235	5.874361	2.937180565
<b>Total</b>		384,549					827,765					100.000000	50.000000
		1,212,313.73											

TABLE 2 REVISED 90 DAY TRACT FACTOR

# Red River Oil Inc.

## Sinclair Unit #9

### DETERMINATION OF TRACT FACTORS BASED ON FIRST 90 PRODUCING DAYS

Section	Lsd	Well	Oil Volume (m <sup>3</sup> )	Produced Hrs (hrs)	Produced Days (Days)	Tract Factor 100% Production (%)	Tract Factor 50% Production (%)
30-7-29 W1M	1	16-30-7-29 W1M	188.0	2160	90	5.511009	2.755504412
30-7-29 W1M	2	15-30-7-29 W1M	240.0	2160	90	7.035533	3.517766572
30-7-29 W1M	3	14-30-7-29 W1M	117.3	2160	90	3.439708	1.719853997
30-7-29 W1M	4	13-30-7-29 W1M	307.5	2160	90	9.013750	4.506875018
30-7-29 W1M	5	13-30-7-29 W1M	307.5	2160	90	9.013750	4.506875018
30-7-29 W1M	6	14-30-7-29 W1M	117.3	2160	90	3.439708	1.719853997
30-7-29 W1M	7	15-30-7-29 W1M	240.0	2160	90	7.035533	3.517766572
30-7-29 W1M	8	16-30-7-29 W1M	188.0	2160	90	5.511009	2.755504412
30-7-29 W1M	9	16-30-7-29 W1M	188.0	2160	90	5.511009	2.755504412
30-7-29 W1M	10	15-30-7-29 W1M	240.0	2160	90	7.035533	3.517766572
30-7-29 W1M	11	14-30-7-29 W1M	117.3	2160	90	3.439708	1.719853997
30-7-29 W1M	12	13-30-7-29 W1M	307.5	2160	90	9.013750	4.506875018
30-7-29 W1M	13	13-30-7-29 W1M	307.5	2160	90	9.013750	4.506875018
30-7-29 W1M	14	14-30-7-29 W1M	117.3	2160	90	3.439708	1.719853997
30-7-29 W1M	15	15-30-7-29 W1M	240.0	2160	90	7.035533	3.517766572
30-7-29 W1M	16	16-30-7-29 W1M	188.0	2160	90	5.511009	2.755504412

**Total Production**

**3410.9**

**100.000000**

**50.000000**

TABLE 3 REVISED TOTAL TRACT FACTOR

# Red River Oil Inc.

## Sinclair Unit #9

### DETERMINATION OF 50% Production and 50% OOIP

Section	Lsd	Well	Tract Factor 50% OOIP	Tract Factor 50% of 90 Day Producing Oil	Tract Factor
30-7-29 W1M	1	16-30-7-29 W1M	3.254189041	2.755504412	6.009693453
30-7-29 W1M	2	15-30-7-29 W1M	3.503267128	3.517766572	7.021033700
30-7-29 W1M	3	14-30-7-29 W1M	3.056867439	1.719853997	4.776721436
30-7-29 W1M	4	13-30-7-29 W1M	2.561946044	4.506875018	7.068821062
30-7-29 W1M	5	13-30-7-29 W1M	2.950119687	4.506875018	7.456994705
30-7-29 W1M	6	14-30-7-29 W1M	3.250954260	1.719853997	4.970808258
30-7-29 W1M	7	15-30-7-29 W1M	3.163615191	3.517766572	6.681381762
30-7-29 W1M	8	16-30-7-29 W1M	2.937180565	2.755504412	5.692684978
30-7-29 W1M	9	16-30-7-29 W1M	2.937180565	2.755504412	5.692684978
30-7-29 W1M	10	15-30-7-29 W1M	3.309180307	3.517766572	6.826946879
30-7-29 W1M	11	14-30-7-29 W1M	3.250954260	1.719853997	4.970808258
30-7-29 W1M	12	13-30-7-29 W1M	2.950119687	4.506875018	7.456994705
30-7-29 W1M	13	13-30-7-29 W1M	3.280067283	4.506875018	7.786942302
30-7-29 W1M	14	14-30-7-29 W1M	3.347997671	1.719853997	5.067851668
30-7-29 W1M	15	15-30-7-29 W1M	3.309180307	3.517766572	6.826946879
30-7-29 W1M	16	16-30-7-29 W1M	2.937180565	2.755504412	5.692684978
<b>Total</b>			<b>50.000000000</b>	<b>50.000000000</b>	<b>100.000000000</b>

TABLE 4 REVISED TRACT PARTICIPATION

# Red River Oil Inc.

## Sinclair Unit #9

### Tract Participation

Tract No.	Land Description	Working Interest		Royalty Interest		Tract Participation (%)
		Owner	Share (%)	Owner	Share (%)	
1	Lsd 1-30-7-29 W1M	Red River Oil Inc.	100.000000	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100.000000	6.009693453
2	Lsd 2-30-7-29 W1M	Red River Oil Inc.	100.000000	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100.000000	7.021033700
3	Lsd 3-30-7-29 W1M	Red River Oil Inc.	100.000000	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100.000000	4.776721436
4	Lsd 4-30-7-29 W1M	Red River Oil Inc.	100.000000	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100.000000	7.068821062
5	Lsd 5-30-7-29 W1M	Red River Oil Inc.	100.000000	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100.000000	7.456994705
6	Lsd 6-30-7-29 W1M	Red River Oil Inc.	100.000000	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100.000000	4.970808258
7	Lsd 7-30-7-29 W1M	Red River Oil Inc.	100.000000	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100.000000	6.681381762
8	Lsd 8-30-7-29 W1M	Red River Oil Inc.	100.000000	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100.000000	5.692684978
9	Lsd 9-30-7-29 W1M	Red River Oil Inc.	100.000000	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100.000000	5.692684978
10	Lsd 10-30-7-29 W1M	Red River Oil Inc.	100.000000	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100.000000	6.826946879
11	Lsd 11-30-7-29 W1M	Red River Oil Inc.	100.000000	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100.000000	4.970808258
12	Lsd 12-30-7-29 W1M	Red River Oil Inc.	100.000000	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100.000000	7.456994705
13	Lsd 13-30-7-29 W1M	Red River Oil Inc.	100.000000	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100.000000	7.786942302
14	Lsd 14-30-7-29 W1M	Red River Oil Inc.	100.000000	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100.000000	5.067851668
15	Lsd 15-30-7-29 W1M	Red River Oil Inc.	100.000000	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100.000000	6.826946879
16	Lsd 16-30-7-29 W1M	Red River Oil Inc.	100.000000	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100.000000	5.692684978

100.000000000