



July 22, 2010

CQI Report to Stakeholders

Report on May 2010 Results and Results to Date Summary Report

The following is our monthly report on the results of the Heavy Crude Quality Testing Project. Included is our report on all data to date, with highlights on how the current month's samples fit in with the ongoing picture that is being developed. Also included are references to all data reports relevant to the samples taken in May 2010

The results have been organized according to crude grade. Included in this report are analyses of:

- Heavy low resid** (Suncor Synthetic H)
- Heavy Sour – Conventional** (Bow River North, Bow River South, Fosterton, Lloyd Blend, Lloyd Kerrobert, Western Canadian Blend)
- Heavy Sour – Diluent-bitumen blends** (Access Western Blend, Cold Lake, Peace Heavy, Seal Heavy, Smiley-Coleville, Wabasca Heavy, Western Canadian Select)
- Heavy Sour – Diluent-synthetic-bitumen blends** (Albian Heavy Synthetic)
- Heavy Sour – Synthetic-bitumen blends** (Long Lake Heavy Synbit, Surmont Heavy Blend)
- Light Sour** (Light Sour Blend, SLE)
- Medium Sour** (Midale, Mixed Sour Blend, SHE)

Headlines

- MCR for the May sample of Suncor Synthetic H (OSH) was within typical range for this stream, though still slightly above the 0.75 wt% spec. MCR was noted at levels well higher than average multiple times over the period from 3Q2009 to April 2010
- notable shifts in various light ends and bulk properties observed for SHE in 1Q and 2Q2010
- pentanes in AHS once again notably above average
- Bow River South and Fosterton reports for May will be available in the June 2010 report
- some general and slight variations in diluent contents consistent with seasonal adjustments

Observations

General: Individual stream observations are included below. All data are available from crudemonitor.ca or can be forwarded individually by request to crudequality@gmail.com.

Heavy Low Resid (20° API, MCR <0.75 wt%)

Suncor Synthetic H (OSH, Hardisty)

Slight increases in C6s x C7s, C10s and density and a decrease in salt were observed for the May sample of OSH. MCR, which was notably elevated from 3Q09 to April 2010, was in-line with the typical range for OSH. At 0.86 wt%, though, the sample's MCR was still higher than the 0.75 wt% specification. The simulated distillation results reflected a



slight increase in gas oil and a decrease in the distillate component.

Heavy (20-23° API) – Conventional

Bow River North (BR, BRN, Hardisty)

The May sample of Bow River North had slightly increased C10s and TAN and lower than average metals and MCR.

Bow River South (BR, BRS, Milk River)

Samples of Bow River South are gathered monthly, and shipped quarterly. As such, results for May will be available in the June 2010 report.

Fosterton (F, Regina)

Samples of Fosterton are gathered monthly, and shipped quarterly. Results for May will be available in the June 2010 report.

Lloyd Blend (LLB, Hardisty)

Decreased C5s x C6s were observed for the May sample of LLB. The sample's TAN value was also marginally higher than average (0.88 mgKOH/g versus 0.75 mgKOH/g average) while sediment was lower than typically observed. Simulated distillation results were received for this sample.

Lloyd Kerrobert (LLK, Kerrobert)

Slight increases in C10s and TAN were observed for the May sample of LLK.

Western Canadian Blend (WCB, Hardisty)

The May sample of WCB had typical light ends and bulk properties.

Heavy (20-23° API) Diluent Bitumen Blends (Dilbits)

Access Western Blend (AWB, Edmonton)

The May sample of AWB has increased C4s (0.96 vol% versus 0.70 vol% average). The balance of the light ends and bulk properties results were consistent with historical averages.

Cold Lake (CL, Edmonton, Hardisty)

Two samples of Cold Lake were received for testing in May. The first, sampled at Hardisty, had typical light ends and bulk properties. The second, sampled at Edmonton, contained slightly higher than average C4s. Typical simulated distillation results were received for this sample.

Peace River Heavy (PH, Edmonton)

No samples of Peace Heavy were analyzed in May.



Seal Heavy (SH, Edmonton)

The May sample of Seal Heavy had slightly increased TAN and salt along with marginally increased metals.

Smiley-Coleville (SC, Kerrobert)

Apart from a increase in salt, the May sample of Smiley-Coleville had typical light ends and bulk properties. The sample's simulated distillation distribution was consistent with historical averages for this stream.

Wabasca Heavy (WH, Edmonton)

Apart from a notable increase in salt, the May sample of Wabasca Heavy had typical light ends and bulk properties.

Western Canadian Select (WCS, Hardisty)

Two samples of WCS were analyzed in May. The first, from May 14th, had decreased C9s x C10s. The second, from May 26th, contained increased C9s x C10s, ethyl benzene, and toluene. Sulphur and MCR were slightly decreased, as was the latter sample's density.

Heavy (20-23° API) Diluent-Synthetic-Bitumen Blends (Dilsynbits)

Albian Heavy (AHS, Edmonton)

Slight increases in sulphur, TAN, and nickel were observed for the May sample of Albian Heavy Synthetic. Petanes were noted at a higher than average level (5.05 vol% versus 3.32 vol% average), while C4s and C8s x C10s were marginally lower than average.

Heavy (20-23° API) Synthetic-Bitumen Blend (Synbit)

Long Lake Heavy Synbit (PSH, Hardisty)

Slight decreases in sulphur, MCR, and metals, along with marginally increased TAN, were observed for the May sample of PSH.

Surmont Heavy Blend (SHB, Hardisty)

The May sample of SHB had light ends and bulk properties that were consistent with historical averages for this stream.

Light Sour (36°+ API)

Light Sour Blend (LSB, Cromer)

The May sample of LSB had increased C4s x C8s and C10s. As a result, density was lower than average as was the sulphur content. The simulated distillation results were consistent with the shift in lights ends; increased naphtha and distillate were present, while the gas oil and residuum components were decreased.

The density for LSB has shifted significantly since 3Q 2006, as illustrated in figure 1 (see below).

Between 2006 and 2007, the density for this stream averaged around the 845-850 kg/m³ range. In 2008, density started shifting downwards towards the ~830kg/m³ average observed for 2009 and 2010 to date.

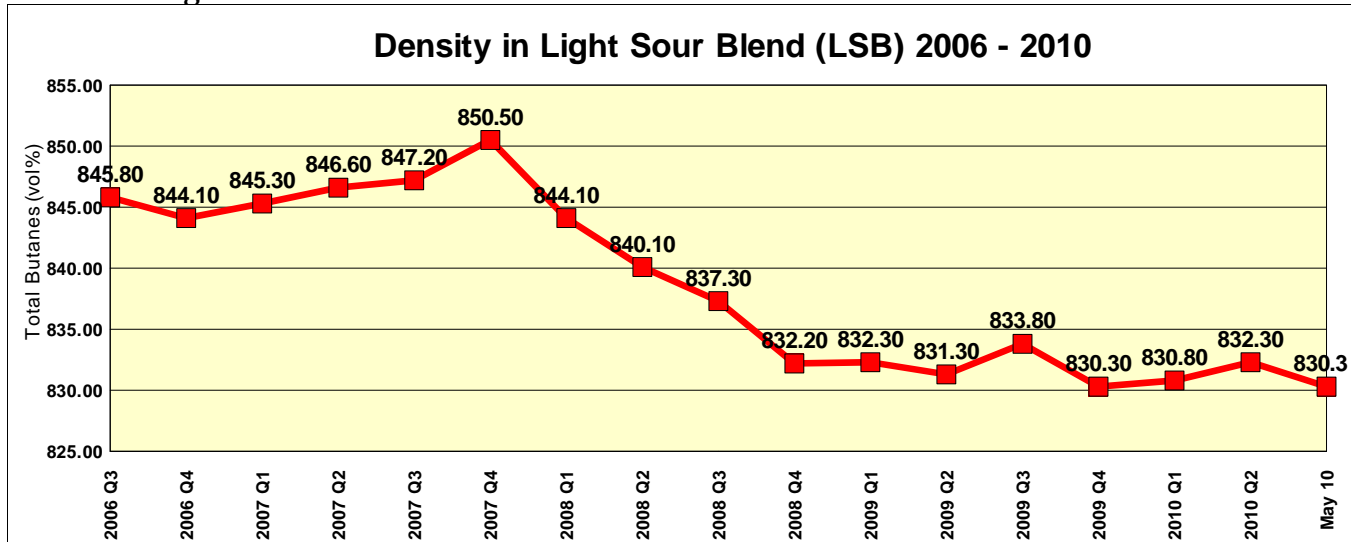


Figure 1: Density in LSB, 2006 Q3 to 2010 Q2

Sour Low Edmonton (SLE, Edmonton)

Increased C4s (5.09 vol% versus 2.63 vol% average) and toluene and slightly decreased C5s and C10s were observed for the May sample of SLE. Density, MCR, and metals were also elevated.

Medium Sour (30-35° API)

Midale (MSM, Cromer)

Increased C5s x C9s and BTEX were present in the May sample of Midale. Density, sulphur, and sediment were all slightly lower than average.

Mixed Sour (MSO, SO, Hardisty)

Two samples of Mixed Sour Blend were received for testing in May. The first, from May 12th, contained slightly increased butanes while the latter, from May 25th, exhibited marginally decreased C8s x C9s. The sample's simulated distillation distribution reflected a decrease in naphtha along with an increase in gas oil.

Sour High Edmonton (SHE, Edmonton => MSO)

The May sample of SHE contained increased C4s (4.29 vol% versus 2.05 vol% average). C7s, toluene, MCR, and TAN (0.64 mgKOH/g versus 0.27 mgKOH/g average).

Should you require additional information on the items contained in this report, please contact Crude Quality Inc. directly. Thank you for your continuing support of the Heavy Crude Quality Testing Project.

Heavy Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: Heavy Low Resid											
OSH Suncor Synthetic H											
	2006 Q2	3	3.05	19.8	933.6	314	0.4	5.6	3.35	3.4	7.8
	2006 Q3	2	3.01	19.9	933.0	553		2.7	2.91	2.3	6.3
	2006 Q4	1	3.07	19.9	932.9		0.5		3.42	3.7	9.8
	2007 Q1	2	3.02	20.0	932.4	113	0.6	4.4	3.36	2.3	6.4
	2007 Q2	1	3.09	19.6	935.6		1.0		3.39	3.5	10.7
	2007 Q3	3	3.00	20.1	932.3	80	0.8	5.8	3.54	4.3	10.8
	2007 Q4	1	2.92	20.1	932.9		0.3		3.70	2.6	6.9
	2008 Q1	3	3.05	19.9	933.7		0.5		3.39	2.3	6.0
	2008 Q2	3	3.04	20.1	932.3	84	0.3	2.9	3.61	1.9	4.8
	2008 Q3	3	3.02	19.8	934.7	254	0.7	5.4	3.58	3.0	7.8
	2008 Q4	2	2.96	19.9	934.1		0.3		3.74	1.4	3.7
	2009 Q1	3	3.04	19.7	935.2	200	0.6	2.1	3.64	2.6	8.0
	2009 Q2	3	3.04	19.7	935.1	220	0.8	5.6	3.68	4.3	10.0
	2009 Q3	2	3.00	19.9	933.5		0.9		3.38	3.5	8.0
	2009 Q4	3	3.02	20.0	933.1	129	0.9	3.8	3.60	4.0	9.5
	2010 Q1	3	3.08	20.0	933.6	184	1.3	3.7	3.45	7.2	18.3
	2010 Q2	2	3.08	19.4	937.0	106	1.1	2.7	3.63	5.5	13.8
	5/17/2010	OSH-660	3.07	19.5	936.2	106	0.86	2.7	3.7	4.3	11.5
	Average		3.03	19.9	933.8	203	0.7	4.1	3.52	3.5	8.8
	Std Dev		0.05	0.3	2.0	132	0.4	1.3	0.20	1.8	4.2
	Avg + StdDev		3.09	20.2	935.8	335	1.1	5.4	3.72	5.3	13.0
	Avg - StdDev		2.98	19.6	931.8	72	0.3	2.8	3.31	1.7	4.6

Heavy Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: Heavy Sour - Conventional											
BRN Bow River North											
	2005 Q1	7	2.82	21.1	926.2	348	8.5	31.4	0.83	36.7	88.3
	2005 Q2	4	2.96	20.3	931.1		9.1		0.70	38.9	90.8
	2005 Q3	6	3.02	19.3	937.2	204	9.2	42.0	0.93	39.7	92.9
	2005 Q4	6	2.93	20.2	932.3	292	8.6	37.6	0.75	37.6	89.6
	2006 Q1	5	2.87	21.1	926.6	539	8.3	35.3	0.72	35.9	86.4
	2006 Q2	6	3.09	20.8	927.4	309	8.6	36.3	0.65	36.2	83.8
	2006 Q3	3	2.86	20.7	928.4	316	8.4	13.6	0.73	37.9	87.0
	2006 Q4	3	2.84	21.1	925.9	385	8.5	28.4	0.69	36.0	86.2
	2007 Q1	3	2.82	21.7	922.6	280	8.5	19.6	0.74	34.4	84.1
	2007 Q2	2	2.85	21.1	926.5	398	8.6	9.7	0.64	35.2	84.2
	2007 Q3	3	3.08	19.4	937.2	374	8.7	28.3	0.96	39.5	94.7
	2007 Q4	2	2.96	20.3	931.4	330	8.5	24.4	0.98	36.8	91.6
	2008 Q1	3	2.88	21.4	924.9	303	8.5	20.0	0.86	37.4	93.5
	2008 Q2	3	2.95	20.2	931.7	480	8.4	25.5	0.88	38.0	90.1
	2008 Q3	3	2.84	20.2	931.7	132	8.3	30.6	0.84	36.7	86.4
	2008 Q4	3	2.74	21.3	925.2		8.2		0.79	34.2	81.6
	2009 Q1	3	2.57	22.5	918.0	340	7.6	36.8	0.80	35.5	88.1
	2009 Q2	3	2.39	23.4	912.6	730	7.4	36.8	0.81	31.0	71.6
	2009 Q3	3	2.36	23.7	911.2	230	7.7	41.4	0.67	32.7	73.1
	2009 Q4	3	2.51	22.7	916.8	395	8.0	26.5	0.76	35.7	81.8
	2010 Q1	3	2.47	23.6	911.3	268	7.4	35.7	0.77	30.9	70.8
	2010 Q2	1	2.70	22.2	919.6		6.7		1.04	27.4	65.3
	5/17/2010	BRN-156	2.7	22.2	919.6		6.69		1.04	27.4	65.3
	Average		2.83	21.1	926.3	343	8.3	29.4	0.79	35.9	85.1
	Std Dev		0.24	1.3	7.7	132	0.6	11.1	0.13	4.5	10.6
	Avg + StdDev		3.07	22.4	934.0	476	8.9	40.5	0.92	40.4	95.7
	Avg - StdDev		2.58	19.8	918.5	211	7.7	18.2	0.66	31.3	74.5

Heavy Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: Heavy Sour - Conventional											
BRS Bow River South											
	2005 Q1	3	2.78	22.6	917.5	150	8.4	9.5	0.28	28.7	77.6
	2005 Q2	3	2.88	22.5	917.8	194	8.6	6.5	0.23	32.5	90.8
	2005 Q3	3	2.90	22.1	920.3	176	8.5	13.3	0.27	31.2	84.7
	2005 Q4	3	2.96	23.0	914.9	69	8.5	3.6	0.32	30.6	84.8
	2006 Q1	3	2.81	23.1	914.7	146	8.4	12.7	0.34	35.1	86.0
	2006 Q2	3	2.75	23.7	910.7	246	8.0	15.5	0.32	32.2	85.4
	2006 Q3	3	2.77	23.3	912.9	201	7.9	13.0	0.26	35.6	86.4
	2006 Q4	3	2.75	23.7	910.9	144	7.8	14.0	0.38	35.1	88.2
	2007 Q1	3	2.77	24.1	908.5	216	7.5	14.0	0.34	33.1	85.0
	2007 Q2	3	2.84	23.7	910.7	251	8.3	14.1	0.40	34.6	91.0
	2007 Q3	3	2.83	23.0	914.8	280	8.1	9.0	0.40	36.5	97.6
	2007 Q4	3	2.79	23.9	909.9	305	7.9	15.5	0.52	34.9	89.4
	2008 Q1	3	2.82	23.3	913.6	297	8.5	19.2	0.40	35.7	94.2
	2008 Q2	3	2.83	23.2	913.8	213	8.2	15.1	0.53	36.1	94.5
	2008 Q3	3	2.94	22.7	916.7	72	8.2	12.7	0.53	34.5	92.7
	2008 Q4	3	2.93	22.9	915.9		8.2		0.51	35.3	95.2
	2009 Q1	3	2.97	23.2	914.1	340	8.3	22.8	0.47	33.5	88.8
	2009 Q2	3	2.92	23.2	913.9	220	8.4	17.5	0.43	36.7	95.1
	2009 Q3	3	2.93	22.7	916.9	300	8.2	15.7	0.44	35.9	97.0
	2009 Q4	3	2.93	22.8	916.3	151	8.4	20.6	0.43	32.9	89.5
	2010 Q1	3	2.78	23.7	910.7	195	7.9	8.2	0.34	28.9	78.1
	Average		2.85	23.2	914.1	207	8.2	13.0	0.39	33.8	89.1
	Std Dev		0.11	0.7	4.1	70	0.3	4.6	0.10	3.2	7.5
	Avg + StdDev		2.96	23.9	918.1	277	8.5	17.5	0.49	36.9	96.7
	Avg - StdDev		2.75	22.5	910.0	137	7.9	8.4	0.29	30.6	81.6

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Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: Heavy Sour - Conventional											
F	Fosterton										
	2005 Q1	3	3.00	20.7	928.9	300	9.5	11.4	0.13	45.3	101.8
	2005 Q2	3	3.17	20.3	931.7	254	9.9	6.5	0.13	40.7	93.3
	2005 Q3	3	3.21	19.8	934.5	192	10.0	6.1	0.09	43.1	100.7
	2005 Q4	3	3.19	20.0	933.2	113	9.7	6.3	0.22	42.6	100.3
	2006 Q1	3	3.16	20.7	928.7	232	10.1	9.0	0.10	46.5	103.8
	2006 Q2	3	3.20	20.1	932.8	320	9.6	12.7	0.18	42.9	97.8
	2006 Q3	3	3.20	20.0	933.2	198	8.4	7.3	0.11	47.3	105.2
	2006 Q4	3	3.16	20.1	932.7	267	9.3	8.4	0.14	44.3	101.8
	2007 Q1	3	3.18	20.7	928.8	144	9.7	11.0	0.19	42.5	100.2
	2007 Q2	3	3.10	20.9	928.0	178	9.3	7.7	0.20	43.1	102.8
	2007 Q3	3	3.24	19.9	934.1	196	9.6	6.2	0.18	46.0	109.8
	2007 Q4	3	3.21	19.8	934.4	280	9.8	10.0	0.26	41.2	94.5
	2008 Q1	3	3.16	20.7	928.7	210	9.6	13.5	0.20	41.2	94.5
	2008 Q2	3	3.18	20.2	931.9	228	9.6	11.3	0.19	51.7	118.6
	2008 Q3	3	3.27	19.8	934.5	98	9.7	9.3	0.22	49.9	116.8
	2008 Q4	3	3.20	20.3	931.2		9.2		0.24	49.2	115.2
	2009 Q1	3	3.14	21.6	923.7	290	9.2	13.6	0.20	43.8	117.6
	2009 Q2	3	3.25	20.6	929.8	190	9.7	9.3	0.19	49.2	114.6
	2009 Q3	3	3.28	20.1	932.5	273	9.9	18.8	0.20	46.0	106.6
	2009 Q4	3	3.25	20.2	932.2	268	9.8	14.3	0.22	44.7	112.5
	2010 Q1	3	3.25	21.0	927.1	220	9.7	13.6	0.16	44.9	98.8
	Average		3.19	20.4	931.1	221	9.6	9.7	0.18	45.3	105.7
	Std Dev		0.07	0.5	3.3	67	0.4	3.2	0.05	3.6	8.9
	Avg + StdDev		3.26	20.9	934.4	288	10.0	12.9	0.23	48.9	114.6
	Avg - StdDev		3.12	19.8	927.7	154	9.2	6.4	0.13	41.7	96.9

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Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: Heavy Sour - Conventional											
LLB Lloyd Blend											
	2005 Q1	6	3.25	21.6	923.3	498	9.6	52.5	0.73	48.7	108.1
	2005 Q2	4	3.36	20.9	927.7		9.7		0.64	43.7	117.1
	2005 Q3	6	3.58	19.8	934.3	271	9.9	33.3	0.75	50.0	113.9
	2005 Q4	6	3.47	20.9	927.4	402	9.6	13.2	0.69	58.7	131.1
	2006 Q1	6	3.39	21.8	922.3	342	9.9	30.8	0.68	56.5	122.4
	2006 Q2	6	3.44	21.2	925.3	369	9.6	18.2	0.64	55.6	121.6
	2006 Q3	3	3.52	20.0	932.4	469	9.8	30.1	0.59	61.2	129.5
	2006 Q4	3	3.47	20.7	928.2	285	9.4	47.0	0.72	57.5	123.5
	2007 Q1	3	3.41	21.8	921.9		9.4		0.76	55.5	124.0
	2007 Q2	3	3.44	21.2	926.2	345	9.4	29.8	0.75	53.9	116.3
	2007 Q3	3	3.56	19.6	935.5	436	9.7	59.8	0.88	58.8	126.8
	2007 Q4	3	3.46	20.7	928.8	371	9.5	27.0	0.78	57.9	126.3
	2008 Q1	3	3.43	21.6	923.4	412	9.2	63.5	0.76	59.8	133.5
	2008 Q2	3	3.47	20.9	927.7	366	9.7	60.0	0.76	59.4	131.6
	2008 Q3	3	3.55	19.8	934.4		9.7		0.80	58.7	130.5
	2008 Q4	3	3.47	21.2	925.8	410	9.3	55.5	0.77	57.2	129.4
	2009 Q1	3	3.35	21.6	923.1	260	9.3	71.0	0.78	57.8	143.6
	2009 Q2	3	3.47	20.8	928.4	270	9.0	82.0	0.77	56.3	122.0
	2009 Q3	3	3.62	19.8	934.3	490	10.0	70.0	0.77	63.4	141.0
	2009 Q4	3	3.54	20.9	927.9	269	9.7	65.9	0.82	59.4	133.3
	2010 Q1	3	3.44	21.6	923.6	384	9.4	60.8	0.78	55.9	129.1
	2010 Q2	2	3.42	21.0	926.6	113	9.4	57.9	0.89	55.1	121.3
	5/29/2010	LLB-833	3.43	20.7	928.9	113	9.36	57.9	0.88	55.2	120
	Average		3.45	20.9	927.5	369	9.6	47.7	0.75	56.6	126.4
	Std Dev		0.11	0.8	4.8	101	0.4	18.8	0.09	6.0	12.5
	Avg + StdDev		3.56	21.7	932.2	469	9.9	66.5	0.84	62.6	138.9
	Avg - StdDev		3.34	20.1	922.7	268	9.2	29.0	0.66	50.6	113.9

Heavy Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: Heavy Sour - Conventional											
LLK Lloyd Kerrobert											
	2005 Q1	6	2.87	21.4	925.0	300	8.9	35.6	0.88	33.7	81.7
	2005 Q2	4	3.04	20.9	927.5	400	9.3	31.5	0.84	39.2	93.0
	2005 Q3	6	3.17	19.4	936.6	277	9.6	33.7	0.85	35.3	89.8
	2005 Q4	6	3.09	20.5	930.3	293	9.4	30.1	0.97	42.0	97.4
	2006 Q1	6	3.01	21.2	925.6	245	9.4	28.8	0.74	44.4	102.2
	2006 Q2	6	3.07	20.8	927.4	551	9.2	18.6	0.78	42.4	96.4
	2006 Q3	6	3.20	19.7	934.4	365	9.4	19.5	0.94	48.7	104.8
	2006 Q4	6	3.17	20.6	929.1	279	9.3	134.0	0.85	47.3	99.6
	2007 Q1	6	3.14	21.5	923.6	225	9.3	31.5	0.85	44.9	100.3
	2007 Q2	6	3.17	20.9	927.6	320	9.2	24.3	0.85	44.2	96.3
	2007 Q3	6	3.26	19.4	936.8	333	9.5	44.3	0.90	46.8	104.1
	2007 Q4	6	3.19	20.4	930.6	358	9.3	35.0	0.91	49.3	104.2
	2008 Q1	6	3.16	21.4	925.3	321	9.2	47.0	0.89	49.7	110.6
	2008 Q2	6	3.22	20.9	927.6	287	9.2	44.8	0.89	47.8	102.0
	2008 Q3	6	3.36	19.7	935.2		9.5		0.94	47.3	109.6
	2008 Q4	6	3.35	20.7	928.8	370	9.0	41.5	0.94	47.1	109.4
	2009 Q1	5	3.27	21.3	925.2	310	9.1	60.6	0.96	50.8	115.7
	2009 Q2	4	3.30	20.8	928.2	220	9.4	46.0	1.06	49.5	112.5
	2009 Q3	3	3.39	19.4	936.7	466	9.8	49.2	0.94	49.3	113.5
	2009 Q4	3	3.29	20.6	929.5	352	9.3	52.7	0.94	46.9	108.0
	2010 Q1	3	3.20	21.4	924.7	213	9.0	46.6	0.96	46.4	106.2
	2010 Q2	2	3.31	21.3	925.2	303	9.2	44.9	1.03	46.5	105.5
	5/25/2010	LLK-495	3.31	21.1	926.4	303	9.08	44.9	1.02	45.3	99.7
	Average		3.18	20.6	929.3	322	9.3	40.7	0.90	45.5	103.0
	Std Dev		0.14	0.8	4.6	85	0.3	22.1	0.09	5.7	10.6
	Avg + StdDev		3.32	21.4	933.9	408	9.6	62.7	1.00	51.2	113.6
	Avg - StdDev		3.04	19.9	924.6	237	9.0	18.6	0.81	39.8	92.3

Heavy Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: Heavy Sour - Conventional											
WCB Western Canadian Blend											
	2005 Q1	3	2.92	21.4	924.4	540	8.3	133.0	0.60	37.0	80.3
	2005 Q2	2	3.00	20.8	928.3	406	8.6	54.3	0.50	39.5	84.0
	2005 Q3	3	3.09	19.6	935.6	448	8.8	85.4	0.64	43.8	92.5
	2005 Q4	3	3.06	20.7	928.9	299	8.7	26.9	0.66	46.1	95.2
	2006 Q1	3	3.03	21.6	923.7	197	8.8	47.9	0.66	46.2	94.5
	2006 Q2	3	3.06	21.0	926.4	558	8.2	18.6	0.53	42.9	88.8
	2006 Q3	3	3.12	19.9	933.3	272	8.5	11.5	0.65	46.5	94.9
	2006 Q4	3	3.05	20.8	927.8		8.4		0.58	49.2	100.3
	2007 Q1	3	2.95	21.6	923.1	277	8.1	40.0	0.62	40.9	85.6
	2007 Q2	3	3.06	21.0	927.3	236	8.1	45.1	0.58	41.8	77.9
	2007 Q3	3	3.11	19.8	934.4	347	8.2	56.5	0.76	42.9	88.5
	2007 Q4	3	3.03	20.7	929.3		8.5		0.72	44.4	94.1
	2008 Q1	3	3.02	21.4	924.6		8.5		0.64	45.6	99.8
	2008 Q2	3	3.17	20.8	928.2	120	8.6	85.0	0.71	48.0	102.4
	2008 Q3	3	3.21	19.7	934.9	285	8.8	75.0	0.78	44.4	96.2
	2008 Q4	3	3.18	20.9	927.6	250	8.5	66.5	0.72	47.8	106.1
	2009 Q1	3	3.20	21.5	924.2	350	8.4	99.0	0.75	46.8	117.7
	2009 Q2	3	3.23	20.7	929.1	320	8.7	117.5	0.73	46.3	98.7
	2009 Q3	3	3.33	19.5	936.1	155	9.0	89.4	0.68	49.3	108.5
	2009 Q4	3	3.29	20.7	929.0	179	8.8	67.9	0.71	47.4	99.3
	2010 Q1	3	3.24	21.4	924.9	398	8.8	61.2	0.70	42.6	96.8
	2010 Q2	2	3.25	20.9	928.0		8.6		0.75	44.0	96.0
	5/18/2010	WCB-645	3.24	20.5	930.3		8.81		0.78	44.8	95.9
	Average		3.12	20.7	928.6	307	8.5	60.7	0.67	44.8	95.5
	Std Dev		0.12	0.7	4.5	127	0.3	30.9	0.10	5.1	12.3
	Avg + StdDev		3.23	21.5	933.1	433	8.9	91.6	0.77	49.9	107.9
	Avg - StdDev		3.00	20.0	924.1	180	8.2	29.7	0.57	39.7	83.2

Heavy Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: Heavy Sour - Dilbit											
AWB Access Western Blend											
	2008 Q3	6	3.94	22.7	917.1	193	10.8	7.9	1.83	70.7	193.7
	2008 Q4	6	3.98	22.4	918.9	216	10.7	7.0	1.75	70.4	191.3
	2009 Q1	6	3.82	22.5	918.1	980	10.0	5.2	1.55	64.6	189.9
	2009 Q2	6	3.97	21.7	923.0	180	10.9	5.3	1.76	71.4	183.6
	2009 Q3	3	4.07	20.5	930.4	100	11.2	5.6	1.70	78.6	205.5
	2009 Q4	3	3.95	21.7	923.0	644	10.7	8.7	1.67	71.6	190.8
	2010 Q1	3	3.84	22.4	918.6	72	10.4	7.5	1.62	67.8	183.1
	2010 Q2	2	3.86	21.8	922.4	120	10.4	5.7	1.65	69.7	187.4
	5/27/2010	AWB-766	3.9	21.5	924.2		10.5		1.7	69.3	190.9
	Average		3.93	22.1	920.7	253	10.6	7.1	1.70	70.6	191.1
	Std Dev		0.11	0.8	4.8	214	0.5	1.5	0.12	5.4	9.5
	Avg + StdDev		4.04	22.9	925.4	467	11.2	8.5	1.83	76.1	200.6
	Avg - StdDev		3.83	21.3	915.9	39	10.1	5.6	1.58	65.2	181.6

Heavy Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: Heavy Sour - Dilbit											
CL	Cold Lake										
	2005 Q1	6	3.44	21.5	923.7	200	10.2	14.4	0.79	54.5	143.3
	2005 Q2	4	3.50	20.8	928.1		10.7		0.75	51.4	135.8
	2005 Q3	6	3.76	19.4	936.7		10.7		0.84	54.1	147.1
	2005 Q4	6	3.73	20.6	929.7	262	10.7	11.4	0.86	64.4	164.8
	2006 Q1	6	3.58	21.6	923.6	182	10.6	9.2	0.85	64.2	171.8
	2006 Q2	5	3.63	21.0	926.2	209	10.4	10.3	0.70	64.6	164.8
	2006 Q3	6	3.76	19.9	933.2	242	10.5	18.0	0.82	68.0	171.4
	2006 Q4	6	3.74	19.9	933.0	129	10.4	11.8	0.73	68.3	172.9
	2007 Q1	6	3.65	21.7	922.9	130	9.9	10.8	0.87	61.9	160.2
	2007 Q2	6	3.72	21.0	927.3		10.6		0.92	62.8	165.6
	2007 Q3	6	3.80	19.7	935.1	144	10.7	17.0	1.01	65.3	161.8
	2007 Q4	6	3.72	20.5	929.9	151	10.5	8.8	0.95	64.4	162.8
	2008 Q1	6	3.68	21.7	923.1	159	10.2	11.6	0.94	65.0	169.0
	2008 Q2	6	3.75	21.1	926.7	102	10.3	9.4	1.01	65.8	170.2
	2008 Q3	6	3.83	19.9	933.9		10.4		1.02	64.9	170.4
	2008 Q4	6	3.76	21.2	925.8	125	10.2	8.7	0.99	65.3	173.9
	2009 Q1	6	3.74	21.7	922.9	190	10.3	11.1	0.92	65.6	179.0
	2009 Q2	6	3.82	20.8	928.1	290	10.7	11.3	1.03	65.5	168.5
	2009 Q3	6	3.91	19.8	934.8	190	11.0	13.9	0.97	67.0	174.0
	2009 Q4	6	3.84	20.9	927.5	492	10.6	12.4	0.98	65.1	172.2
	2010 Q1	6	3.74	21.8	922.3	71	10.5	12.8	0.97	63.3	167.1
	2010 Q2	4	3.76	21.3	925.4	235	10.5	10.6	0.93	61.9	162.3
	5/25/2010	CL(H)-779	3.78	21	927.4		10.5		0.92	62	164.1
	5/25/2010	CL(E)-749	3.78	21	926.9		10.6		0.97	60.2	157.6
	Average		3.72	20.8	928.2	192	10.5	11.8	0.93	64.2	167.0
	Std Dev		0.12	0.8	5.1	103	0.4	2.5	0.11	5.4	13.1
	Avg + StdDev		3.85	21.6	933.3	295	10.8	14.3	1.03	69.6	180.1
	Avg - StdDev		3.60	20.0	923.2	89	10.1	9.3	0.82	58.8	153.8

Heavy Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: Heavy Sour - Dilbit											
PH	Peace River Heavy										
	2005 Q3	3	4.91	20.0	933.4	148	9.3	6.8	3.09	45.0	141.0
	2005 Q4	1	4.94	20.0	933.1		9.4		3.12	53.9	155.0
	2006 Q1	2	4.92	20.2	931.9	131	9.8	14.7	2.86	59.0	174.0
	2006 Q2	2	4.87	20.5	929.4	130	9.6	6.0	2.93	51.8	154.7
	2006 Q3	1	4.96	20.3	931.0	298	9.1	6.8	2.48	65.6	194.4
	2006 Q4	2	4.52	20.7	928.3	146	8.8	10.5	2.86	56.2	159.1
	2007 Q1	1	3.49	22.3	919.2		9.8		1.52	44.2	120.3
	2007 Q2	2	4.76	20.8	928.5	113	8.9	9.9	2.80	53.0	153.6
	2007 Q3	1	4.82	20.0	933.2	208	8.8	11.2	2.78	50.5	141.5
	2007 Q4	2	4.76	19.6	935.5	140	9.7	7.6	3.12	61.0	166.4
	2008 Q1	1	4.81	20.6	929.6		9.8		3.30	73.1	231.0
	2008 Q2	2	4.90	21.4	925.0	300	8.9	11.0	2.61	53.3	154.0
	2008 Q3	1	4.98	20.5	930.3	230	8.5	9.1	2.26	50.6	151.8
	2008 Q4	2	5.09	21.0	926.9	490	8.7	64.9	2.23	55.5	170.2
	2009 Q1	1	5.20	21.2	926.0	190	9.3	30.4	2.09	52.0	177.9
	2009 Q2	2	5.10	21.0	927.0	110	9.1	15.0	2.29	57.1	168.3
	2009 Q3	1	5.22	19.9	933.9	267	9.0	16.5	2.18	54.8	170.0
	2009 Q4	2	5.09	21.1	926.6	106	9.1	18.7	2.38	55.5	165.1
	2010 Q1	1	5.07	21.2	925.7	95	9.3	18.2	2.61	57.6	181.3
	2010 Q2	1	5.13	21.0	927.3		9.4		2.61	57.2	167.0
	Average		4.88	20.6	929.3	187	9.2	15.2	2.66	54.8	162.7
	Std Dev		0.31	0.6	3.9	99	0.4	13.4	0.43	6.8	20.9
	Avg + StdDev		5.19	21.3	933.2	285	9.7	28.6	3.08	61.6	183.6
	Avg - StdDev		4.57	20.0	925.3	88	8.8	1.8	2.23	48.1	141.8

Heavy Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: Heavy Sour - Dilbit											
SH	Seal Heavy										
	2005 Q4	10	4.73	20.4	930.6	203	10.0	15.0	2.11	66.4	188.7
	2006 Q1	12	4.53	21.2	925.9	212	9.5	14.8	1.83	62.0	171.9
	2006 Q2	12	4.62	21.0	926.3	296	9.4	15.9	1.79	62.6	178.4
	2006 Q3	6	4.38	20.2	931.3	349	9.5	11.8	1.40	64.0	173.9
	2006 Q4	6	4.58	20.4	930.5	143	9.3	19.0	1.69	65.2	174.4
	2007 Q1	5	4.54	20.8	927.9		9.2	22.4	1.71	56.9	162.9
	2007 Q2	6	4.50	21.0	927.0	215	8.9	19.1	1.81	55.3	149.8
	2007 Q3	3	4.69	19.6	935.6	202	9.2	18.2	2.06	54.0	147.9
	2007 Q4	3	4.57	19.7	935.3	176	9.3	12.8	1.93	54.4	148.4
	2008 Q1	3	4.58	20.7	928.7	136	9.2	22.0	1.93	56.3	157.9
	2008 Q2	3	4.63	20.9	927.7		9.1		1.89	54.6	152.0
	2008 Q3	3	4.71	19.9	934.1	159	9.1	17.9	2.03	55.1	157.3
	2008 Q4	3	4.58	21.1	926.9	183	9.1	18.3	1.90	52.9	151.1
	2009 Q1	3	4.56	21.3	925.0	420	9.0	21.9	1.90	53.6	154.5
	2009 Q2	3	4.65	20.6	929.9	120	9.5	21.0	1.86	55.1	155.1
	2009 Q3	3	4.73	19.4	937.2	296	9.6	21.0	1.81	57.1	160.0
	2009 Q4	3	4.78	20.3	931.4	189	9.7	31.4	2.02	55.9	158.2
	2010 Q1	3	4.60	21.8	922.6	112	9.3	23.9	1.87	53.3	154.9
	2010 Q2	2	4.86	20.4	930.6	116	9.5	23.0	2.04	53.7	152.4
	5/29/2010	SH-936	4.77	20.2	931.7	116	9.38	23	2.15	51.2	145.5
	Average		4.60	20.7	929.0	218	9.4	17.6	1.85	58.6	164.7
	Std Dev		0.16	0.7	4.2	105	0.5	5.0	0.24	5.9	16.7
	Avg + StdDev		4.76	21.3	933.2	323	9.9	22.6	2.09	64.5	181.3
	Avg - StdDev		4.45	20.0	924.8	113	8.9	12.6	1.61	52.8	148.0

Heavy Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: Heavy Sour - Dilbit											
SC	Smiley-Coleville										
	2005 Q1	3	2.85	20.7	929.2	676	9.1	22.7	0.85	30.0	86.2
	2005 Q2	2	2.89	20.2	931.9	124	9.2	22.9	0.82	29.9	85.7
	2005 Q3	4	3.04	19.0	939.5	177	9.5	16.6	0.93	30.5	87.6
	2005 Q4	3	3.02	19.6	935.3	225	9.5	14.9	0.90	34.1	95.3
	2006 Q1	3	2.94	20.9	928.0	243	9.3	16.6	0.75	34.7	96.7
	2006 Q2	3	2.99	20.3	930.9	189	9.0	14.8	0.77	33.8	92.7
	2006 Q3	3	3.02	19.2	937.7	405	9.5	12.6	0.94	36.6	97.1
	2006 Q4	3	2.96	19.8	933.5	238	9.4	18.6	0.90	36.3	96.1
	2007 Q1	3	2.91	20.8	928.4	223	9.1	20.2	0.86	34.6	95.5
	2007 Q2	3	2.90	20.6	929.8	236	9.1	24.4	0.92	34.0	98.1
	2007 Q3	3	3.03	19.2	938.3	245	9.4	21.6	1.03	35.7	95.2
	2007 Q4	3	2.96	19.8	934.1	192	9.3	17.0	1.01	35.1	91.8
	2008 Q1	3	2.93	20.7	928.6	288	9.2	22.0	0.93	36.4	101.1
	2008 Q2	3	2.93	20.2	931.9		9.2		0.95	35.5	93.7
	2008 Q3	3	3.03	19.2	938.0	261	9.4	20.1	1.02	36.9	99.3
	2008 Q4	3	3.01	20.0	933.3	313	9.3	20.4	1.01	35.7	98.2
	2009 Q1	3	2.94	20.6	929.9	250	9.4	22.7	0.96	34.3	94.8
	2009 Q2	3	2.92	20.3	931.5	200	9.5	23.2	1.04	35.0	94.8
	2009 Q3	3	3.07	19.0	939.7	376	9.8	19.6	0.96	37.1	99.2
	2009 Q4	3	2.96	19.8	934.6	201	9.4	23.2	0.97	34.7	95.3
	2010 Q1	3	2.90	20.6	929.7	131	9.0	22.6	0.98	33.9	92.7
	2010 Q2	2	2.94	20.1	932.5	236	9.2	27.0	0.96	33.0	88.8
	5/23/2010	SC-296	2.91	19.9	933.7	236	9.17	27	0.93	32.3	85.4
	Average		2.96	20.0	933.1	243	9.3	19.5	0.93	34.6	94.7
	Std Dev		0.07	0.7	4.2	107	0.3	4.0	0.09	2.9	6.2
	Avg + StdDev		3.03	20.7	937.3	349	9.6	23.5	1.02	37.5	100.9
	Avg - StdDev		2.89	19.3	929.0	136	9.0	15.5	0.84	31.7	88.5

Heavy Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: Heavy Sour - Dilbit											
WH	Wabasca Heavy										
	2005 Q1	13	3.64	21.4	924.7	381	8.4	19.0	0.75	45.3	125.3
	2005 Q2	4	3.79	21.0	927.1	284	8.4	7.8	0.72	46.2	124.1
	2005 Q3	7	4.02	19.9	933.7	94	8.6	7.3	0.75	44.0	122.4
	2005 Q4	7	4.01	19.9	933.5	94	8.8	8.4	0.78	49.9	135.6
	2006 Q1	6	3.88	20.8	928.6	107	8.8	9.8	0.73	52.6	144.3
	2006 Q2	6	4.05	20.8	928.0	154	8.7	9.5	0.79	52.1	140.8
	2006 Q3	3	4.05	19.8	933.6	389	8.8	9.2	0.89	54.8	143.5
	2006 Q4	3	4.09	20.1	932.0	150	8.3	10.0	1.04	54.7	146.5
	2007 Q1	3	3.95	20.8	928.4	156	8.5	8.8	0.93	50.9	143.5
	2007 Q2	3	3.93	20.5	929.9	332	8.6	9.2	0.96	50.2	138.5
	2007 Q3	3	4.12	19.0	939.6	212	8.8	11.1	1.05	52.9	140.8
	2007 Q4	3	4.12	19.7	935.0	159	8.8	7.8	1.10	52.3	137.4
	2008 Q1	3	4.08	20.6	929.5		8.9		1.04	53.1	145.7
	2008 Q2	3	4.05	20.3	931.2	190	8.5	6.7	1.00	52.2	139.6
	2008 Q3	3	4.07	19.7	935.1	140	9.0	15.0	1.04	51.1	139.3
	2008 Q4	3	4.06	20.8	928.2	206	8.7	11.3	1.06	49.9	137.4
	2009 Q1	6	4.07	21.0	927.4	253	8.6	15.4	0.97	52.3	143.8
	2009 Q2	6	4.15	20.6	929.6	167	8.7	15.0	1.02	53.7	142.0
	2009 Q3	3	4.24	19.3	937.2	201	9.1	13.7	1.09	55.0	152.1
	2009 Q4	3	4.13	20.3	931.2	355	8.7	13.9	1.02	54.1	147.1
	2010 Q1	3	4.09	21.2	925.7	65	8.8	13.4	0.99	51.3	140.3
	2010 Q2	2	4.12	20.1	933.0	113	8.6	41.5	0.99	50.1	139.8
	5/27/2010	WH-610	4.17	20.1	932.7	105	8.66	71.1	0.92	50.3	140.9
	Average		3.99	20.5	930.2	198	8.7	13.2	0.92	50.8	138.2
	Std Dev		0.22	0.7	4.5	120	0.3	9.5	0.16	4.9	11.9
	Avg + StdDev		4.20	21.2	934.7	318	9.0	22.7	1.08	55.7	150.1
	Avg - StdDev		3.77	19.7	925.7	78	8.3	3.7	0.76	45.9	126.3

Heavy Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: Heavy Sour - Dilbit											
WCS Western Canadian Select											
	2005 Q1	12	2.99	21.0	926.8	424	8.7	55.6	0.81	43.7	111.1
	2005 Q2	8	3.14	20.4	930.6	362	8.9	41.1	0.78	44.4	110.6
	2005 Q3	11	3.34	19.4	937.0	272	9.5	40.3	0.81	47.2	116.7
	2005 Q4	12	3.25	20.5	929.9	309	9.3	34.2	0.83	51.8	127.3
	2006 Q1	12	3.25	21.4	924.4	330	9.4	24.9	0.72	54.3	131.6
	2006 Q2	12	3.29	20.8	928.0	450	9.3	27.6	0.70	56.9	131.9
	2006 Q3	6	3.42	19.5	935.8	697	9.4	24.0	0.87	57.6	133.1
	2006 Q4	6	3.34	20.6	928.9	357	9.1	41.5	0.83	55.9	131.9
	2007 Q1	6	3.24	21.3	924.8	328	8.8	39.0	0.89	51.7	125.3
	2007 Q2	6	3.38	21.0	927.1	314	9.5	47.0	0.88	52.6	132.2
	2007 Q3	6	3.40	19.4	936.7	324	9.6	54.0	0.94	55.0	129.8
	2007 Q4	6	3.41	20.5	930.3	453	9.6	39.5	0.85	56.0	129.5
	2008 Q1	6	3.36	21.4	924.4	523	9.4	42.5	0.87	58.2	140.4
	2008 Q2	6	3.32	20.7	929.1		9.2		0.92	53.3	127.3
	2008 Q3	6	3.52	19.6	936.0	305	9.6	40.5	0.96	56.4	136.0
	2008 Q4	6	3.47	20.7	928.9	468	9.3	47.7	0.97	55.7	136.9
	2009 Q1	6	3.43	21.4	924.4	400	9.2	52.5	0.93	58.5	162.8
	2009 Q2	6	3.49	20.6	929.8	390	9.5	62.3	1.00	58.4	141.8
	2009 Q3	6	3.60	19.5	936.5	355	10.1	46.7	0.90	58.7	143.6
	2009 Q4	6	3.52	20.6	929.7	391	9.7	46.1	0.88	58.6	139.1
	2010 Q1	6	3.48	21.4	924.6	301	9.6	40.3	0.94	54.2	130.1
	2010 Q2	4	3.34	21.5	924.0		9.1		0.90	50.3	119.3
	5/14/2010	WCS-846	3.41	21.1	926.6		9.31		0.96		
	5/26/2010	WCS-863	3.15	22.5	917.8		8.83		0.8	47.9	113.8
	Average		3.34	20.6	929.4	372	9.4	40.3	0.86	53.7	129.9
	Std Dev		0.16	0.8	4.9	95	0.4	12.5	0.11	6.0	13.0
	Avg + StdDev		3.50	21.4	934.3	467	9.8	52.8	0.97	59.7	142.9
	Avg - StdDev		3.17	19.8	924.6	277	9.0	27.8	0.76	47.7	116.9

Heavy Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: Heavy Sour - Dilsynbit											
AHS Albian Heavy Synthetic											
	2005 Q1	11	2.54	19.7	935.0	759	11.0	11.7	0.51	47.4	105.2
	2005 Q2	4	2.63	19.6	935.5		11.9		0.41	36.8	85.7
	2005 Q3	6	2.54	19.4	937.3	606	11.0	10.4	0.33	39.1	84.1
	2005 Q4	7	2.58	19.4	937.0	558	11.0	9.2	0.49	41.1	89.7
	2006 Q1	7	2.58	19.4	937.1	304	10.5	7.5	0.51	41.8	88.2
	2006 Q2	5	2.78	19.6	934.8	411	10.6	6.1	0.45	46.5	91.7
	2006 Q3	7	2.73	19.3	936.6	138	10.5	6.8	0.61	44.9	103.5
	2006 Q4	6	2.65	19.3	937.1	614	11.2	9.9	0.40	44.6	89.9
	2007 Q1	3	2.54	19.2	937.8	620	10.5	10.0	0.53	38.7	82.6
	2007 Q2	3	2.40	19.5	936.4	772	11.8	11.4	0.57	40.1	78.4
	2007 Q3	3	2.47	19.1	939.0	904	11.9	11.8	0.57	37.5	71.8
	2007 Q4	3	2.56	19.0	939.5	972	10.6	9.1	0.74	41.6	84.6
	2008 Q1	3	2.45	19.4	936.6	522	10.1	9.0	0.54	39.0	89.0
	2008 Q2	3	2.31	19.6	935.9	660	10.8	10.4	0.45	30.6	54.8
	2008 Q3	3	2.29	19.2	938.4	621	11.2	10.4	0.43	38.4	73.8
	2008 Q4	3	2.56	19.2	937.9		11.8		0.50	44.8	99.8
	2009 Q1	3	2.23	19.2	938.6	850	11.2	10.2	0.39	42.0	83.8
	2009 Q2	3	2.49	18.9	939.9	790	12.4	12.7	0.54	46.0	93.3
	2009 Q3	3	2.40	18.8	941.0	640	12.6	14.6	0.45	49.6	94.9
	2009 Q4	3	2.37	18.9	940.2	1348	12.1	15.8	0.49	45.7	95.5
	2010 Q1	3	2.28	19.0	939.3	1084	12.4	13.7	0.41	50.7	91.9
	2010 Q2	2	2.89	19.2	938.0	730	10.8	12.1	0.69	48.8	100.2
	5/15/2010	AHS-635	2.9	19.1	938.5		10.5		0.67	51.7	101
	Average		2.54	19.3	937.2	682	11.2	10.5	0.50	42.6	88.4
	Std Dev		0.20	0.4	2.2	253	1.1	2.3	0.13	6.8	14.7
	Avg + StdDev		2.74	19.7	939.5	935	12.3	12.8	0.63	49.4	103.1
	Avg - StdDev		2.34	19.0	935.0	429	10.1	8.1	0.37	35.8	73.7

Heavy Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: Heavy Sour - Synbit											
PSH	Long Lake Heavy										
	2008 Q2	2	2.90	20.1	932.4		7.4		1.64	48.9	129.5
	2008 Q3	6	3.02	19.5	936.4	580	7.3	6.5	1.92	48.8	131.2
	2008 Q4	6	2.72	20.6	929.4	220	6.4	4.7	2.01	42.4	116.3
	2009 Q1	6	2.73	21.5	923.8	180	6.7	6.7	1.94	45.4	125.8
	2009 Q2	6	2.84	22.1	920.7	100	7.2	8.6	2.28	44.9	120.5
	2009 Q3	3	3.06	20.5	929.9	169	7.7	5.8	2.07	50.6	138.4
	2009 Q4	3	3.00	20.4	930.6	203	7.6	6.7	2.19	49.6	133.5
	2010 Q1	3	3.18	21.0	927.4	60	8.1	9.4	2.04	50.9	138.2
	2010 Q2	2	2.79	21.3	925.0	109	6.7	7.7	2.31	43.8	118.8
	5/11/2010	PSH-778	2.58	21.5	923.9	109	6.34	7.7	2.37	39.4	105.3
	Average		2.89	20.8	928.1	244	7.1	7.0	2.04	47.3	128.4
	Std Dev		0.25	1.1	6.5	253	0.7	1.4	0.21	4.4	12.6
	Avg + StdDev		3.14	21.9	934.6	498	7.9	8.3	2.25	51.7	141.0
	Avg - StdDev		2.64	19.8	921.6	0	6.4	5.6	1.83	42.9	115.8

Heavy Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: Heavy Sour - Synbit											
SHB Surmont Heavy Blend											
	2009 Q1	5	2.80	20.3	931.3	400	6.7	6.4	1.34	49.4	136.0
	2009 Q2	3	2.92	19.7	935.4	210	7.3	5.0	1.39	47.3	124.0
	2009 Q3	2	3.05	19.1	939.2	97	7.7	5.5	1.36	52.8	145.9
	2009 Q4	3	2.92	19.4	937.0	98	7.2	6.5	1.35	50.7	139.2
	2010 Q1	3	2.88	20.0	933.5	106	7.1	4.1	1.32	47.1	132.2
	2010 Q2	2	2.94	19.6	935.9		7.2		1.34	50.0	137.4
	5/29/2010	SHB-969	2.93	19.3	937.5		7.21		1.36	48	129.8
	Average		2.90	19.8	934.7	219	7.1	5.6	1.35	49.3	135.1
	Std Dev		0.10	0.5	3.1	193	0.4	0.9	0.12	2.8	9.4
	Avg + StdDev		2.99	20.3	937.8	411	7.5	6.5	1.47	52.1	144.5
	Avg - StdDev		2.80	19.3	931.6	26	6.8	4.8	1.23	46.5	125.7

Heavy Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: Light Sour											
LSB Light Sour Blend											
	2006 Q3	6	1.23	35.6	845.8	677	3.1	2.7	0.14	5.7	7.8
	2006 Q4	6	1.22	36.0	844.1	437	2.5	58.0	0.13	5.8	8.6
	2007 Q1	6	1.24	35.8	845.3	556	3.1	183.0	0.12	4.9	8.8
	2007 Q2	6	1.26	35.5	846.6	493	3.3	220.0	0.18	5.0	9.6
	2007 Q3	6	1.20	35.4	847.2	614	3.3	152.0	0.15	5.5	8.9
	2007 Q4	6	1.35	34.7	850.5	431	3.7	50.0	0.19	8.4	15.1
	2008 Q1	6	1.22	36.0	844.1		3.5			10.1	18.8
	2008 Q2	6	1.07	36.8	840.1		2.8		0.15	5.6	8.9
	2008 Q3	3	0.93	37.3	837.3		2.6		0.26	4.3	6.9
	2008 Q4	3	0.83	38.4	832.2		2.4		0.16	4.1	7.0
	2009 Q1	6	0.87	38.4	832.3	555	2.2	237.5	0.14	4.2	8.3
	2009 Q2	1	0.80	38.6	831.3		2.3		0.17	6.6	7.5
	2009 Q3	5	0.90	38.0	833.8	450	2.5	107.0		7.4	10.3
	2009 Q4	4	0.83	38.8	830.3	791	2.5	80.8	0.15	4.6	6.8
	2010 Q1	3	0.91	38.7	830.8	459	2.6	80.9	0.28	5.4	8.3
	2010 Q2	2	0.91	38.3	832.3	430	2.6	68.5	0.11	4.6	7.4
	5/24/2010	LSB-798	0.84	38.8	830.3		2.5			4.4	7.6
	Average		1.10	36.6	840.8	525	2.9	117.9	0.16	5.7	9.4
	Std Dev		0.19	1.4	7.1	120	0.5	76.6	0.07	2.0	4.1
	Avg + StdDev		1.29	38.1	847.9	645	3.4	194.5	0.23	7.7	13.5
	Avg - StdDev		0.90	35.2	833.7	405	2.4	41.3	0.09	3.7	5.3

Heavy Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: Light Sour											
SLE	SLE										
	2006 Q2	6	1.01	36.4	842.2		2.9			11.0	20.5
	2006 Q3	5	1.12	37.7	835.5		2.9			12.0	28.2
	2006 Q4	6	1.10	37.2	838.0		2.8			13.4	30.6
	2007 Q1	5	1.15	37.3	837.8		3.0			11.2	27.6
	2007 Q2	6	1.09	36.9	839.4		3.0			8.8	27.4
	2007 Q3	3	1.09	35.5	846.8		3.5			12.3	28.1
	2007 Q4	3	0.89	38.4	832.2		2.3			4.9	11.4
	2008 Q1	3	0.81	39.8	825.4		1.6			4.2	13.0
	2008 Q2	3	0.81	39.9	825.0		1.5			3.2	7.3
	2008 Q3	3	0.91	39.0	829.4		2.4			4.1	9.8
	2008 Q4	3	0.91	39.1	828.5		2.4			5.8	13.8
	2009 Q1	3	0.88	38.9	829.5		2.3		0.20	6.1	15.4
	2009 Q2	3	0.80	39.5	826.8		2.1		0.22	5.9	10.5
	2009 Q3	3	0.70	40.5	821.9		1.9		0.20	5.3	10.3
	2009 Q4	3	0.93	39.3	827.9		2.8		0.35	9.3	20.1
	2010 Q1	3	0.88	38.0	833.9		2.6		0.27	7.4	16.4
	2010 Q2	2	1.02	36.8	840.1		3.1		0.30	11.7	27.3
	5/25/2010	SLE-951	1.09	36	843.8		3.4		0.3	15.8	38.5
	Average		0.97	38.0	834.1		2.6		0.24	8.0	18.5
	Std Dev		0.15	1.6	8.0		0.6		0.07	3.7	9.3
	Avg + StdDev		1.12	39.6	842.0		3.2		0.31	11.6	27.8
	Avg - StdDev		0.83	36.4	826.1		2.0		0.17	4.3	9.2

Heavy Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: Medium Sour											
MSM Midale											
	2005 Q1	6	2.42	29.4	879.0	545	6.0	41.1	0.19	16.7	33.3
	2005 Q2	4	2.35	29.3	879.1	542	5.9	8.4	0.13	12.2	24.1
	2005 Q3	6	2.34	29.4	878.7	195	5.8	28.6	0.21	14.0	28.1
	2005 Q4	6	2.38	29.5	878.2	631	6.0	35.5	0.31	15.4	29.1
	2006 Q1	6	2.33	29.8	876.4	175	5.9	31.4	0.30	15.3	27.0
	2006 Q2	6	2.28	29.9	875.9	724	5.0	4.3	0.09	14.2	25.7
	2006 Q3	4	2.26	29.6	877.3	613	5.6	17.6	0.09	14.3	26.1
	2006 Q4	6	2.26	29.8	876.5	130	5.2	42.0	0.15	15.0	27.1
	2007 Q1	5	2.27	30.4	873.3	575	5.3	89.2	0.14	14.6	28.8
	2007 Q2	6	2.25	30.5	872.8	363	5.7	63.3	0.24	14.5	28.5
	2007 Q3	6	2.27	30.1	874.9	353	5.6	42.8	0.22	15.5	30.6
	2007 Q4	6	2.22	30.2	874.5	629	5.5	24.0	0.24	14.3	26.5
	2008 Q1	6	2.26	30.1	875.0		5.8			21.4	43.7
	2008 Q2	6	2.03	30.2	874.5		5.7		0.22	15.4	29.8
	2008 Q3	2	2.05	30.0	875.4		5.7		0.24	15.4	31.2
	2008 Q4	2	1.74	30.9	870.8		5.3		0.17	12.9	25.4
	2009 Q1	3	2.06	30.1	875.0	490	5.3	90.3	0.18	14.5	33.0
	2009 Q2	2	1.95	30.6	871.9	460	5.7	102.0	0.17	15.5	29.8
	2009 Q3	2	1.81	31.4	867.8	87	5.3	72.0	0.13	14.5	26.8
	2009 Q4	3	2.04	31.2	869.3	229	5.4	69.0	0.15	15.4	29.9
	2010 Q1	3	1.99	31.4	867.7	261	5.3	66.7	0.20	11.7	22.4
	2010 Q2	2	1.80	30.7	871.7	110	5.3	12.5	0.13	12.8	24.5
	5/27/2010	MSM-269	1.89	31	870.2	110	5.3	12.5		12.4	24.1
	Average		2.21	30.1	875.1	415	5.5	44.9	0.19	14.9	28.9
	Std Dev		0.19	0.6	3.4	209	0.3	34.3	0.08	2.6	5.6
	Avg + StdDev		2.41	30.7	878.5	624	5.9	79.2	0.27	17.5	34.5
	Avg - StdDev		2.02	29.4	871.8	206	5.2	10.6	0.12	12.3	23.3

Heavy Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: Medium Sour											
SO Mixed Sour Blend											
	2006 Q3	3	1.66	30.8	870.8	298	5.0	9.5	0.28	19.4	39.3
	2006 Q4	3	1.73	31.6	866.9	413	5.4	23.0	0.34	23.4	49.4
	2007 Q1	6	1.59	31.1	869.4	272	5.1	16.4	0.28	18.3	40.2
	2007 Q2	6	1.82	31.0	870.1	314	6.0	16.5	0.45	20.0	45.5
	2007 Q3	6	1.82	29.4	878.8	304	5.9	24.6	0.38	22.3	45.6
	2007 Q4	6	1.96	29.0	880.9	341	6.0	6.4	0.50	24.5	51.5
	2008 Q1	6	1.69	30.2	874.5		5.4			24.6	53.9
	2008 Q2	6	1.61	30.6	872.1		5.1		0.42	19.1	38.7
	2008 Q3	6	1.53	31.8	866.0		4.9		0.54	16.4	35.0
	2008 Q4	6	1.40	33.5	857.1		4.8		0.32	14.8	33.1
	2009 Q1	4	1.27	34.2	853.3	510	4.3	19.6	0.24	12.8	37.5
	2009 Q2	4	1.27	34.7	850.6	390	4.5	9.6	0.39	20.9	36.6
	2009 Q3	4	1.35	36.6	840.9		4.8		0.30	16.9	35.9
	2009 Q4	2	1.55	32.8	860.5		5.3			18.0	39.4
	2010 Q1	1	1.61	30.9	870.3	277	5.7	19.6		20.2	43.2
	2010 Q2	4	1.56	30.8	871.1		5.1		0.31	23.2	50.3
	5/12/2010	SO-706	1.69	30.4	873.2		5.5			27.7	61.4
	5/25/2010	SO-707	1.49	30	875.2		5.1				
	Average		1.61	31.6	866.9	336	5.2	16.3	0.39	19.6	42.2
	Std Dev		0.22	2.2	11.5	72	0.6	7.2	0.12	4.9	9.7
	Avg + StdDev		1.82	33.8	878.4	408	5.8	23.5	0.50	24.5	51.9
	Avg - StdDev		1.39	29.4	855.4	264	4.6	9.1	0.27	14.8	32.5

Heavy Crude Quality Project Analyses Summary (May 2010)

Crude	Sample Date	No. Samples or Batch #	Sulphur (wt%)	API Density (degree)	Absolute Density (kg/m3)	Sediment (ppmw)	MCR (wt%)	Salt (ptb)	TAN (mgKOH/g)	Nickel (mg/L)	Vanadium (mg/L)
Crude Grade: Medium Sour											
SHE	SHE										
	2005 Q1	6	2.00	32.6	861.3	664	4.4	42.0	0.28	16.2	45.5
	2005 Q2	2	1.97	32.8	860.5	450	4.3	7.0	0.28	17.0	48.6
	2005 Q3	3	1.80	33.6	856.4	232	4.0	14.9	0.21	14.6	43.6
	2005 Q4	3	1.89	33.6	856.5	522	4.4	33.2	0.20	19.3	55.7
	2006 Q1	3	1.77	33.6	856.2	368	4.0	31.2	0.17	17.3	47.4
	2006 Q2	6	1.61	35.5	846.9	232	3.3	4.4	0.08	15.3	40.1
	2006 Q3	5	1.60	35.5	846.6	72	3.5	4.6	0.09	12.6	32.7
	2006 Q4	6	1.67	34.9	849.5	621	3.5	6.6	0.16	20.1	52.0
	2007 Q1	6	1.73	36.3	842.6		3.6		0.18	16.9	48.2
	2007 Q2	6	1.75	33.9	855.0	249	4.1	36.7	0.31	15.6	46.0
	2007 Q3	3	1.89	32.8	860.7	180	4.3	10.5	0.26	18.1	48.6
	2007 Q4	3	1.85	32.8	860.6	188	4.4	27.0	0.28	18.7	50.8
	2008 Q1	3	1.70	33.5	856.8		4.5			20.7	57.5
	2008 Q2	3	1.71	34.7	850.7		3.9		0.29	19.7	52.9
	2008 Q3	2	1.63	34.2	853.2		4.0		0.31	15.7	45.0
	2008 Q4	3	1.32	37.3	837.5		3.2		0.19	12.8	39.5
	2009 Q1	3	1.10	38.1	833.7		2.6		0.20	8.9	27.5
	2009 Q2	3	1.05	38.7	830.8		2.7		0.35	10.0	24.3
	2009 Q3	3	1.26	37.9	834.8		3.4		0.22	13.4	35.7
	2009 Q4	3	2.01	38.7	830.6		5.4		0.83	31.5	80.0
	2010 Q1	3	2.42	33.5	857.2		6.3		0.93	33.4	94.3
	2010 Q2	2	1.99	34.1	853.7		5.3		0.64	26.1	71.1
	5/17/2010	SHE-930	1.92	33.3	857.9		5		0.64	24	65.2
	Average		1.71	34.9	849.6	366	4.0	20.7	0.27	17.9	49.4
	Std Dev		0.33	2.1	10.8	187	0.9	15.3	0.20	6.7	17.2
	Avg + StdDev		2.04	37.1	860.4	552	4.8	36.0	0.47	24.5	66.5
	Avg - StdDev		1.39	32.8	838.8	179	3.1	5.4	0.07	11.2	32.2

Heavy Crude Quality Project Light Ends Summary (May 2010)

Crude Sample Date	Count of Batches or Batch No.	Ethane (vol%)	Propane (vol%)	Butanes (vol%)	Pentanes (vol%)	Hexanes (vol%)	Heptanes (vol%)	Octanes (vol%)	Nonanes (vol%)	Decanes (vol%)	Benzene (vol%)	Toluene (vol%)	Ethyl Benzene (vol%)	Xylenes (vol%)
Crude Grade: Heavy Low Resid														
OSH Suncor Synthetic H														
2006 Q2	3			0.81	1.73	2.12	1.84	2.04	1.39	0.67	0.03	0.11	0.05	0.20
2006 Q3	2			0.73	1.61	2.04	1.77	2.00	1.40	0.70	0.03	0.11	0.05	0.20
2006 Q4	1			0.75	1.91	2.27	1.94	2.23	1.66	0.67	0.03	0.12	0.06	0.24
2007 Q1	2			0.98	1.77	2.16	1.87	2.12	1.47	0.78	0.03	0.13	0.06	0.23
2007 Q2	1		0.02	0.90	1.90	2.19	1.86	2.09	1.48		0.03	0.13	0.05	0.24
2007 Q3	3			0.73	1.68	1.98	1.67	1.97	1.45	0.71	0.03	0.11	0.06	0.22
2007 Q4	1			0.63	1.35	1.88	1.74	2.14	1.64	0.84	0.02	0.12	0.06	0.23
2008 Q1	3			0.50	1.27	1.74	1.67	2.05	1.65	0.90	0.02	0.11	0.05	0.22
2008 Q2	3			0.68	1.52	2.06	1.82	2.30	1.79	0.89	0.02	0.12	0.06	0.25
2008 Q3	3			0.41	1.21	1.60	1.46	1.81	1.48	0.80	0.02	0.10	0.05	0.19
2008 Q4	2			0.45	1.27	1.67	1.41	1.60	1.11	0.59	0.03	0.10	0.04	0.16
2009 Q1	3		0.02	0.47	1.29	1.75	1.64	2.02	1.48	0.77	0.02	0.10	0.05	0.21
2009 Q2	3		0.02	0.62	1.35	1.73	1.60	1.92	1.42	0.74	0.02	0.11	0.05	0.22
2009 Q3	2		0.02	0.68	1.49	1.97	1.72	1.94	1.43	0.72	0.03	0.11	0.05	0.22
2009 Q4	3		0.02	0.76	1.67	2.18	1.87	2.19	1.64	0.85	0.03	0.13	0.05	0.25
2010 Q1	3			0.60	1.95	2.28	1.80	1.81	1.36	0.76	0.04	0.12	0.04	0.20
2010 Q2	2		0.02	0.65	1.69	2.21	1.93	2.12	1.50	0.83	0.03	0.13	0.06	0.24
5/17/2010	OSH-660			0.69	1.68	2.27	1.96	2.21	1.57	0.91	0.03	0.13	0.06	0.25
Average			0.02	0.65	1.54	1.97	1.73	2.01	1.49	0.77	0.03	0.11	0.05	0.22
Std Dev			0.00	0.16	0.31	0.29	0.20	0.21	0.19	0.11	0.01	0.01	0.01	0.03
Avg + StdDev			0.02	0.81	1.85	2.26	1.92	2.22	1.68	0.88	0.03	0.13	0.06	0.25
Avg - StdDev			0.02	0.48	1.23	1.68	1.53	1.80	1.30	0.66	0.02	0.10	0.04	0.19

Heavy Crude Quality Project Light Ends Summary (May 2010)

Crude Sample Date	Count of Batches or Batch No.	Ethane (vol%)	Propane (vol%)	Butanes (vol%)	Pentanes (vol%)	Hexanes (vol%)	Heptanes (vol%)	Octanes (vol%)	Nonanes (vol%)	Decanes (vol%)	Benzene (vol%)	Toluene (vol%)	Ethyl Benzene (vol%)	Xylenes (vol%)	
Crude Grade: Heavy Sour - Conventional															
BRN Bow River North															
2006 Q1	5	0.03	0.09	1.05	4.56	3.83	2.31	2.20	1.92	0.86	0.12	0.18	0.07	0.29	
2006 Q2	6	0.03	0.09	1.03	4.11	2.95	2.11	1.96	1.84	0.79	0.08	0.12	0.06	0.18	
2006 Q3	3	0.03	0.11	0.97	3.96	2.80	2.09	1.98	1.83	0.82	0.07	0.12	0.07	0.19	
2006 Q4	3	0.03	0.11	1.29	4.22	3.07	2.26	2.20	1.95	0.85	0.08	0.15	0.08	0.27	
2007 Q1	3	0.03	0.14	1.55	4.80	3.42	2.38	2.18	1.92	0.88	0.09	0.16	0.08	0.25	
2007 Q2	2	0.03	0.14	1.32	4.34	3.05	2.20	2.00	1.75	0.81	0.08	0.15	0.07	0.21	
2007 Q3	3	0.03	0.09	1.13	3.58	2.45	1.79	1.63	1.44	0.62	0.07	0.13	0.06	0.17	
2007 Q4	2		0.08	0.93	3.86	2.67	1.91	1.90	1.80	0.80	0.07	0.13	0.07	0.23	
2008 Q1	3		0.10	1.29	4.56	3.10	2.38	2.30	2.01	0.87	0.09	0.17	0.09	0.26	
2008 Q2	3		0.08	1.10	3.68	2.53	2.07	2.04	1.88	0.81	0.06	0.14	0.07	0.22	
2008 Q3	3		0.11	1.18	2.64	2.33	2.15	2.16	1.92	0.88	0.06	0.15	0.08	0.25	
2008 Q4	3	0.03	0.12	1.38	2.98	2.64	2.34	2.30	1.91	0.86	0.07	0.17	0.08	0.24	
2009 Q1	3	0.03	0.16	1.90	3.66	3.18	2.71	2.63	2.22	0.94	0.08	0.18	0.09	0.28	
2009 Q2	3		0.15	1.80	3.54	3.69	3.30	3.20	2.52	1.13	0.10	0.27	0.11	0.40	
2009 Q3	3	0.03	0.16	1.82	3.60	3.77	3.32	3.11	2.42	1.10	0.11	0.28	0.10	0.40	
2009 Q4	3	0.03	0.14	1.90	3.44	3.29	2.86	2.68	2.18	0.97	0.08	0.21	0.09	0.32	
2010 Q1	3	0.03	0.15	2.10	3.55	3.31	3.01	2.95	2.52	1.15	0.08	0.20	0.09	0.32	
2010 Q2	1		0.09	1.59	3.13	3.05	2.77	2.73	2.21	1.10	0.08	0.19	0.08	0.31	
5/17/2010	BRN-156		0.09	1.59	3.13	3.05	2.77	2.73	2.21	1.10	0.08	0.19	0.08	0.31	
Average		0.03	0.12	1.38	3.85	3.09	2.42	2.32	2.00	0.89	0.08	0.17	0.08	0.26	
Std Dev		0.00	0.04	0.43	0.99	0.72	0.52	0.47	0.33	0.16	0.04	0.06	0.02	0.08	
Avg + StdDev		0.03	0.15	1.81	4.84	3.82	2.94	2.79	2.33	1.05	0.12	0.23	0.10	0.34	
Avg - StdDev		0.03	0.08	0.95	2.86	2.37	1.90	1.84	1.68	0.73	0.05	0.11	0.06	0.19	

Heavy Crude Quality Project Light Ends Summary (May 2010)

Crude Sample Date	Count of Batches or Batch No.	Ethane (vol%)	Propane (vol%)	Butanes (vol%)	Pentanes (vol%)	Hexanes (vol%)	Heptanes (vol%)	Octanes (vol%)	Nonanes (vol%)	Decanes (vol%)	Benzene (vol%)	Toluene (vol%)	Ethyl Benzene (vol%)	Xylenes (vol%)
Crude Grade: Heavy Sour - Conventional														
BRS Bow River South														
2006 Q1	3	0.03	0.15	1.12	3.53	3.42	2.87	3.00	2.59	1.22	0.10	0.24	0.13	0.37
2006 Q2	3	0.03	0.17	1.17	3.54	3.41	3.04	3.20	2.79	1.30	0.10	0.24	0.13	0.36
2006 Q3	3	0.03	0.16	1.18	2.93	3.28	3.15	3.41	2.86	1.39	0.11	0.27	0.14	0.42
2006 Q4	3	0.03	0.17	1.36	3.10	3.55	3.35	3.58	2.96	1.38	0.12	0.31	0.15	0.49
2007 Q1	3	0.03	0.20	1.51	3.23	3.76	3.37	3.50	2.87	1.31	0.13	0.32	0.15	0.47
2007 Q2	3	0.03	0.14	1.36	3.53	3.50	3.03	2.93	2.49	1.18	0.12	0.29	0.13	0.41
2007 Q3	3	0.03	0.17	1.13	3.06	2.99	2.63	2.84	2.31	1.09	0.10	0.25	0.14	0.40
2007 Q4	3	0.03	0.16	1.37	3.77	3.60	3.05	3.19	3.13	1.83	0.12	0.28	0.14	0.43
2008 Q1	3		0.11	1.03	3.20	3.54	3.24	3.48	2.92	1.41	0.12	0.31	0.15	0.45
2008 Q2	3	0.03	0.14	1.09	3.54	3.30	2.84	3.01	2.58	1.14	0.11	0.26	0.14	0.41
2008 Q3	3	0.03	0.13	1.04	3.14	3.15	2.79	2.96	2.48	1.21	0.10	0.26	0.13	0.38
2008 Q4	3	0.03	0.12	0.98	3.04	3.03	2.56	2.67	2.18	1.12	0.10	0.24	0.12	0.34
2009 Q1	3	0.03	0.09	0.90	3.65	3.73	3.23	3.49	2.95	1.42	0.12	0.27	0.14	0.42
2009 Q2	3	0.03	0.12	1.19	3.88	3.71	3.16	3.29	2.74	1.33	0.12	0.28	0.15	0.40
2009 Q3	3	0.03	0.12	0.90	2.80	2.85	2.56	2.83	2.33	1.19	0.09	0.23	0.13	0.38
2009 Q4	3	0.03	0.19	1.35	3.76	3.50	3.00	3.16	2.60	1.27	0.10	0.25	0.14	0.40
2010 Q1	3	0.04	0.21	1.08	3.44	3.43	3.10	3.44	2.87	1.43	0.10	0.28	0.16	0.44
Average		0.03	0.15	1.16	3.36	3.40	3.00	3.17	2.68	1.31	0.11	0.27	0.14	0.41
Std Dev		0.00	0.04	0.20	0.40	0.28	0.28	0.34	0.38	0.30	0.01	0.03	0.02	0.05
Avg + StdDev		0.03	0.19	1.37	3.76	3.68	3.28	3.52	3.07	1.61	0.12	0.30	0.15	0.46
Avg - StdDev		0.03	0.11	0.96	2.96	3.11	2.71	2.83	2.30	1.00	0.10	0.24	0.12	0.36

Heavy Crude Quality Project Light Ends Summary (May 2010)

Crude Sample Date	Count of Batches or Batch No.	Ethane (vol%)	Propane (vol%)	Butanes (vol%)	Pentanes (vol%)	Hexanes (vol%)	Heptanes (vol%)	Octanes (vol%)	Nonanes (vol%)	Decanes (vol%)	Benzene (vol%)	Toluene (vol%)	Ethyl Benzene (vol%)	Xylenes (vol%)
Crude Grade: Heavy Sour - Conventional														
F Fosterton														
2006 Q1	3		0.07	0.43	1.73	2.46	2.47	3.11	3.04	1.32	0.05	0.14	0.16	0.31
2006 Q2	3		0.06	0.42	1.36	2.13	2.19	2.91	2.76	1.25	0.03	0.09	0.14	0.27
2006 Q3	3		0.07	0.43	1.08	2.03	2.25	3.17	2.81	1.45	0.02	0.10	0.17	0.33
2006 Q4	3		0.07	0.37	1.07	2.06	2.37	3.35	3.37	1.49	0.02	0.10	0.18	0.35
2007 Q1	3	0.03	0.07	0.47	1.68	2.48	2.47	3.15	2.96	1.48	0.05	0.15	0.16	0.33
2007 Q2	3		0.06	0.40	1.27	2.16	2.23	2.98	2.92	1.39	0.04	0.12	0.16	0.30
2007 Q3	3		0.05	0.34	0.91	1.77	1.97	2.67	2.57	1.16	0.02	0.09	0.15	0.25
2007 Q4	3		0.06	0.36	1.02	1.91	2.12	2.96	2.85	1.29	0.03	0.11	0.16	0.28
2008 Q1	3		0.04	0.33	1.53	2.24	2.38	3.13	3.05	1.28	0.04	0.14	0.16	0.31
2008 Q2	3		0.04	0.82	0.85	1.42	1.53	2.19	2.16	0.94	0.02	0.07	0.12	0.25
2008 Q3	3		0.05	0.46	0.71	1.50	1.87	2.73	2.81	1.34	0.01	0.09	0.15	0.26
2008 Q4	3		0.06	0.81	0.81	1.69	2.08	2.92	2.82	1.39	0.03	0.11	0.16	0.28
2009 Q1	3		0.06	1.87	0.76	1.74	2.17	3.26	3.60	1.96	0.02	0.09	0.17	0.29
2009 Q2	3		0.07	1.58	0.91	1.81	2.15	3.05	2.99	1.28	0.02	0.11	0.17	0.29
2009 Q3	3		0.05	0.45	0.89	1.89	2.19	3.10	2.90	1.39	0.02	0.12	0.16	0.34
2009 Q4	3		0.07	0.80	0.89	1.88	2.20	3.14	2.95	1.36	0.02	0.12	0.17	0.31
2010 Q1	3		0.07	1.63	0.91	1.83	2.14	3.08	2.91	1.38	0.02	0.11	0.16	0.31
Average		0.03	0.06	0.70	1.08	1.94	2.16	2.99	2.91	1.36	0.03	0.11	0.16	0.30
Std Dev		0.00	0.01	0.52	0.34	0.31	0.24	0.28	0.32	0.22	0.01	0.02	0.01	0.03
Avg + StdDev		0.03	0.07	1.23	1.42	2.25	2.40	3.28	3.22	1.59	0.04	0.13	0.17	0.33
Avg - StdDev		0.03	0.05	0.18	0.74	1.63	1.92	2.71	2.59	1.14	0.01	0.09	0.14	0.27

Heavy Crude Quality Project Light Ends Summary (May 2010)

Crude Sample Date	Count of Batches or Batch No.	Ethane (vol%)	Propane (vol%)	Butanes (vol%)	Pentanes (vol%)	Hexanes (vol%)	Heptanes (vol%)	Octanes (vol%)	Nonanes (vol%)	Decanes (vol%)	Benzene (vol%)	Toluene (vol%)	Ethyl Benzene (vol%)	Xylenes (vol%)
Crude Grade: Heavy Sour - Conventional														
LLB Lloyd Blend														
2006 Q1	6		0.07	2.07	5.56	5.10	3.13	2.14	1.48	0.67	0.23	0.32	0.04	0.26
2006 Q2	6		0.07	2.06	4.98	4.44	3.28	2.26	1.47	0.67	0.21	0.37	0.05	0.30
2006 Q3	3		0.06	2.06	3.97	3.75	2.90	2.07	1.30	0.60	0.18	0.33	0.05	0.29
2006 Q4	3		0.05	1.87	4.68	4.56	3.42	2.45	1.58	0.75	0.22	0.39	0.06	0.37
2007 Q1	3		0.07	2.27	5.51	5.39	3.38	2.38	1.51	0.71	0.25	0.40	0.06	0.36
2007 Q2	3		0.05	2.19	5.42	4.59	3.09	2.06	1.48	0.72	0.23	0.38	0.05	0.33
2007 Q3	3		0.04	1.96	4.24	3.69	2.74	1.96	1.41	0.66	0.19	0.33	0.05	0.30
2007 Q4	3		0.05	1.78	4.87	4.59	3.44	2.56	1.74	0.80	0.22	0.40	0.07	0.38
2008 Q1	3		0.04	1.50	4.92	4.77	3.45	2.58	1.84	0.88	0.23	0.42	0.07	0.39
2008 Q2	3		0.05	1.84	4.38	4.40	3.15	2.31	1.60	0.70	0.23	0.41	0.06	0.37
2008 Q3	3		0.03	1.40	3.09	3.34	2.54	2.04	1.61	0.80	0.17	0.31	0.06	0.30
2008 Q4	3		0.03	1.51	4.22	4.07	2.85	2.01	1.37	0.68	0.20	0.36	0.05	0.32
2009 Q1	3		0.05	1.93	4.89	4.70	3.39	2.44	1.73	0.81	0.22	0.38	0.06	0.34
2009 Q2	3		0.03	1.95	4.57	4.17	2.84	2.01	1.39	0.66	0.19	0.34	0.05	0.30
2009 Q3	3		0.04	1.85	3.85	3.68	2.61	1.91	1.34	0.61	0.17	0.31	0.05	0.29
2009 Q4	3		0.07	2.16	4.53	4.30	3.21	2.50	1.68	0.76	0.20	0.37	0.07	0.36
2010 Q1	3		0.06	2.15	4.42	4.23	3.13	2.33	1.57	0.75	0.21	0.40	0.06	0.37
2010 Q2	2		0.07	1.88	4.16	4.14	3.27	2.48	1.67	0.85	0.20	0.42	0.07	0.40
5/29/2010	LLB-833		0.06	1.90	3.72	3.71	3.00	2.30	1.49	0.75	0.18	0.37	0.06	0.36
Average			0.05	1.93	4.65	4.38	3.11	2.24	1.53	0.72	0.21	0.37	0.06	0.33
Std Dev			0.02	0.30	0.72	0.60	0.34	0.27	0.21	0.11	0.03	0.06	0.01	0.06
Avg + StdDev			0.07	2.23	5.37	4.98	3.44	2.51	1.74	0.83	0.24	0.42	0.07	0.39
Avg - StdDev			0.03	1.63	3.93	3.78	2.77	1.97	1.33	0.61	0.18	0.31	0.04	0.27

Heavy Crude Quality Project Light Ends Summary (May 2010)

Crude Sample Date	Count of Batches or Batch No.	Ethane (vol%)	Propane (vol%)	Butanes (vol%)	Pentanes (vol%)	Hexanes (vol%)	Heptanes (vol%)	Octanes (vol%)	Nonanes (vol%)	Decanes (vol%)	Benzene (vol%)	Toluene (vol%)	Ethyl Benzene (vol%)	Xylenes (vol%)
Crude Grade: Heavy Sour - Conventional														
LLK Lloyd Kerrobert														
2006 Q1	6		0.08	2.05	4.69	4.40	2.79	2.06	1.57	0.68	0.22	0.32	0.05	0.30
2006 Q2	6		0.06	1.74	5.36	3.15	2.48	1.89	1.50	0.68	0.15	0.28	0.05	0.26
2006 Q3	6		0.06	1.71	5.39	2.25	1.86	1.49	1.20	0.57	0.11	0.21	0.04	0.22
2006 Q4	6		0.07	1.77	5.16	3.74	2.74	2.04	1.46	0.68	0.19	0.33	0.05	0.33
2007 Q1	6		0.07	1.89	5.96	4.81	2.93	1.97	1.34	0.61	0.26	0.35	0.05	0.30
2007 Q2	6		0.06	1.63	4.89	4.19	2.90	2.15	1.48	0.65	0.20	0.36	0.06	0.33
2007 Q3	6		0.05	1.62	3.84	3.08	2.31	1.65	1.20	0.53	0.16	0.29	0.05	0.27
2007 Q4	6		0.05	1.55	4.90	3.16	2.34	1.69	1.20	0.55	0.16	0.27	0.05	0.25
2008 Q1	6		0.04	1.61	5.58	4.16	2.60	1.64	1.19	0.54	0.20	0.27	0.04	0.21
2008 Q2	6		0.05	1.58	6.89	2.69	1.77	1.31	1.09	0.51	0.14	0.20	0.04	0.19
2008 Q3	6		0.04	1.42	6.18	1.67	1.20	1.03	0.94	0.43	0.07	0.10	0.03	0.12
2008 Q4	6		0.05	1.46	5.73	2.83	2.00	1.42	1.05	0.49	0.15	0.24	0.04	0.20
2009 Q1	5		0.05	1.93	5.45	3.89	2.53	1.76	1.21	0.52	0.21	0.28	0.05	0.23
2009 Q2	4		0.06	2.06	6.99	2.78	1.83	1.32	1.07	0.51	0.14	0.20	0.04	0.18
2009 Q3	3		0.06	2.14	5.15	2.07	1.55	1.25	1.07	0.51	0.09	0.16	0.04	0.17
2009 Q4	3		0.07	2.15	5.45	3.32	2.45	1.92	1.41	0.64	0.16	0.29	0.05	0.28
2010 Q1	3		0.07	1.94	4.35	3.52	2.43	1.72	1.22	0.56	0.18	0.30	0.05	0.26
2010 Q2	2		0.05	1.94	6.25	3.30	2.22	1.58	1.23	0.64	0.15	0.25	0.04	0.23
5/25/2010	LLK-495		0.05	1.94	6.30	3.30	2.26	1.72	1.37	0.72	0.15	0.26	0.05	0.25
Average			0.06	1.75	5.44	3.31	2.30	1.67	1.25	0.57	0.16	0.26	0.05	0.24
Std Dev			0.02	0.30	0.98	0.95	0.56	0.38	0.23	0.10	0.05	0.08	0.01	0.07
Avg + StdDev			0.07	2.05	6.42	4.26	2.86	2.05	1.48	0.67	0.22	0.34	0.06	0.31
Avg - StdDev			0.04	1.44	4.45	2.36	1.73	1.30	1.02	0.47	0.11	0.19	0.03	0.17

Heavy Crude Quality Project Light Ends Summary (May 2010)

Crude Sample Date	Count of Batches or Batch No.	Ethane (vol%)	Propane (vol%)	Butanes (vol%)	Pentanes (vol%)	Hexanes (vol%)	Heptanes (vol%)	Octanes (vol%)	Nonanes (vol%)	Decanes (vol%)	Benzene (vol%)	Toluene (vol%)	Ethyl Benzene (vol%)	Xylenes (vol%)
Crude Grade: Heavy Sour - Conventional														
WCB Western Canadian Blend														
2006 Q1	3	0.03	0.05	0.86	4.48	3.71	2.69	2.16	1.84	0.75	0.12	0.15	0.05	0.21
2006 Q2	3	0.03	0.04	0.70	3.94	3.27	2.64	2.19	1.93	0.88	0.09	0.15	0.06	0.19
2006 Q3	3	0.03	0.05	0.63	3.30	3.04	2.58	2.26	1.88	0.85	0.09	0.16	0.06	0.24
2006 Q4	3	0.03	0.05	0.63	3.67	3.24	2.69	2.37	2.00	0.88	0.11	0.17	0.06	0.29
2007 Q1	3	0.03	0.05	0.76	4.47	3.81	2.82	2.39	1.94	0.94	0.13	0.20	0.07	0.29
2007 Q2	3	0.03	0.04	0.74	3.86	3.15	2.56	2.20	1.87	0.85	0.10	0.18	0.06	0.26
2007 Q3	3	0.03	0.04	0.63	2.77	2.43	2.14	2.01	1.78	0.78	0.06	0.13	0.06	0.21
2007 Q4	3		0.04	0.62	3.52	3.09	2.62	2.34	1.92	0.85	0.10	0.18	0.07	0.27
2008 Q1	3		0.04	0.68	3.98	3.46	2.83	2.47	2.10	0.98	0.12	0.21	0.07	0.30
2008 Q2	3		0.04	0.62	3.55	3.04	2.55	2.35	2.11	0.97	0.09	0.18	0.07	0.29
2008 Q3	3		0.03	0.59	2.57	2.44	2.19	2.03	1.83	0.84	0.06	0.11	0.06	0.20
2008 Q4	3		0.03	0.57	3.50	2.94	2.40	2.09	1.78	0.90	0.10	0.18	0.06	0.25
2009 Q1	3		0.03	0.59	4.27	3.49	2.73	2.29	1.87	0.82	0.12	0.20	0.07	0.28
2009 Q2	3		0.04	0.57	3.88	3.12	2.42	2.05	1.70	0.78	0.09	0.16	0.05	0.23
2009 Q3	3		0.04	0.62	2.94	2.61	2.21	1.97	1.65	0.74	0.08	0.16	0.05	0.23
2009 Q4	3		0.04	0.72	4.25	3.26	2.59	2.29	1.86	0.85	0.10	0.19	0.07	0.26
2010 Q1	3		0.05	0.75	4.80	3.69	2.75	2.25	1.79	0.81	0.13	0.21	0.07	0.28
2010 Q2	2		0.06	0.61	4.34	3.40	2.64	2.18	1.73	0.80	0.11	0.19	0.06	0.26
5/18/2010	WCB-645		0.06	0.64	3.96	3.06	2.63	2.21	1.75	0.82	0.11	0.20	0.06	0.26
Average		0.03	0.04	0.66	3.77	3.17	2.56	2.22	1.87	0.85	0.10	0.17	0.06	0.25
Std Dev		0.00	0.01	0.10	0.69	0.49	0.29	0.21	0.18	0.11	0.03	0.04	0.01	0.05
Avg + StdDev		0.03	0.05	0.76	4.47	3.67	2.84	2.43	2.05	0.96	0.13	0.21	0.07	0.30
Avg - StdDev		0.03	0.03	0.56	3.08	2.68	2.27	2.00	1.69	0.74	0.07	0.13	0.05	0.21

Heavy Crude Quality Project Light Ends Summary (May 2010)

Crude Sample Date	Count of Batches or Batch No.	Ethane (vol%)	Propane (vol%)	Butanes (vol%)	Pentanes (vol%)	Hexanes (vol%)	Heptanes (vol%)	Octanes (vol%)	Nonanes (vol%)	Decanes (vol%)	Benzene (vol%)	Toluene (vol%)	Ethyl Benzene (vol%)	Xylenes (vol%)
Crude Grade: Heavy Sour - Dilbit														
AWB Access Western Blend														
2008 Q3	6		0.02	0.57	9.21	6.95	4.34	2.42	1.28	0.63	0.28	0.42	0.04	0.30
2008 Q4	6		0.02	0.65	9.43	7.20	4.37	2.39	1.20	0.53	0.30	0.45	0.05	0.32
2009 Q1	6		0.03	0.67	8.69	7.35	4.75	2.81	1.32	0.51	0.30	0.50	0.06	0.40
2009 Q2	6		0.02	0.64	8.01	6.49	4.13	2.58	1.23	0.55	0.28	0.48	0.05	0.40
2009 Q3	3		0.03	0.67	6.82	5.76	3.82	2.42	1.17	0.50	0.26	0.48	0.05	0.39
2009 Q4	3		0.03	0.83	8.11	6.81	4.47	2.92	1.39	0.55	0.29	0.53	0.06	0.43
2010 Q1	3		0.05	0.93	7.67	6.57	4.68	3.13	1.49	0.58	0.31	0.60	0.07	0.52
2010 Q2	2		0.05	0.94	7.84	6.70	4.75	3.25	1.59	0.68	0.29	0.57	0.08	0.52
5/27/2010	AWB-766		0.05	0.96	8.27	6.80	4.76	3.21	1.51	0.63	0.29	0.56	0.07	0.51
Average			0.03	0.70	8.44	6.82	4.40	2.66	1.30	0.56	0.29	0.49	0.06	0.39
Std Dev			0.01	0.14	1.20	0.69	0.44	0.39	0.22	0.12	0.03	0.07	0.01	0.08
Avg + StdDev			0.04	0.84	9.65	7.51	4.84	3.05	1.52	0.68	0.31	0.56	0.07	0.47
Avg - StdDev			0.02	0.56	7.24	6.13	3.95	2.27	1.08	0.44	0.26	0.42	0.04	0.30

Heavy Crude Quality Project Light Ends Summary (May 2010)

Crude	Sample Date	Count of Batches or Batch No.	Ethane (vol%)	Propane (vol%)	Butanes (vol%)	Pentanes (vol%)	Hexanes (vol%)	Heptanes (vol%)	Octanes (vol%)	Nonanes (vol%)	Decanes (vol%)	Benzene (vol%)	Toluene (vol%)	Ethyl Benzene (vol%)	Xylenes (vol%)
Crude Grade: Heavy Sour - Dilbit															
CL Cold Lake															
	2006 Q1	6		0.05	1.01	7.49	6.14	3.43	2.37	1.50	0.66	0.28	0.38	0.05	0.32
	2006 Q2	5		0.05	1.08	6.48	5.05	3.54	2.42	1.58	0.75	0.24	0.41	0.05	0.35
	2006 Q3	6		0.05	1.11	5.61	4.67	3.04	2.13	1.43	0.71	0.21	0.34	0.05	0.32
	2006 Q4	6		0.05	1.47	6.58	5.46	3.34	2.32	1.48	0.73	0.25	0.39	0.06	0.36
	2007 Q1	6		0.05	1.49	7.07	6.15	3.57	2.60	1.55	0.78	0.27	0.40	0.06	0.37
	2007 Q2	6		0.04	1.24	7.52	5.26	2.99	1.88	1.24	0.58	0.25	0.36	0.05	0.29
	2007 Q3	6		0.05	1.19	5.87	4.58	2.93	1.94	1.33	0.65	0.22	0.35	0.05	0.30
	2007 Q4	6		0.04	1.21	6.46	5.34	3.43	2.37	1.44	0.67	0.24	0.39	0.06	0.34
	2008 Q1	6		0.04	1.15	6.43	5.74	3.65	2.51	1.54	0.72	0.27	0.42	0.06	0.37
	2008 Q2	6		0.04	1.16	6.13	5.35	3.35	2.20	1.48	0.72	0.26	0.41	0.05	0.35
	2008 Q3	6		0.02	0.87	4.91	4.53	2.93	2.03	1.41	0.75	0.22	0.34	0.05	0.30
	2008 Q4	6		0.04	1.10	6.04	5.26	3.15	2.00	1.34	0.71	0.23	0.36	0.05	0.31
	2009 Q1	6		0.04	1.28	7.20	5.84	3.49	2.26	1.38	0.64	0.25	0.38	0.05	0.32
	2009 Q2	6		0.03	1.03	6.60	5.34	3.31	2.13	1.23	0.56	0.23	0.38	0.05	0.32
	2009 Q3	6		0.02	0.90	5.75	4.74	2.92	1.90	1.09	0.50	0.20	0.33	0.04	0.28
	2009 Q4	6		0.03	1.06	6.61	5.36	3.28	2.24	1.17	0.48	0.22	0.36	0.05	0.31
	2010 Q1	6		0.04	1.24	6.82	5.76	3.47	2.32	1.21	0.52	0.25	0.40	0.06	0.34
	2010 Q2	4		0.04	1.29	6.71	5.61	3.61	2.48	1.46	0.72	0.24	0.40	0.06	0.37
	5/25/2010	CL(E)-749		0.04	1.35	6.45	5.32	3.53	2.39	1.36	0.70	0.23	0.40	0.06	0.36
	5/25/2010	CL(H)-779		0.05	1.43	6.54	5.31	3.49	2.43	1.45	0.75	0.23	0.39	0.06	0.36
	Average			0.04	1.16	6.46	5.34	3.29	2.22	1.38	0.66	0.24	0.38	0.05	0.33
	Std Dev			0.01	0.21	0.88	0.66	0.35	0.30	0.21	0.14	0.03	0.05	0.01	0.05
	Avg + StdDev			0.05	1.37	7.33	6.01	3.64	2.52	1.59	0.80	0.27	0.42	0.06	0.38
	Avg - StdDev			0.03	0.94	5.58	4.68	2.95	1.92	1.17	0.52	0.21	0.33	0.04	0.28

Heavy Crude Quality Project Light Ends Summary (May 2010)

Crude Sample Date	Count of Batches or Batch No.	Ethane (vol%)	Propane (vol%)	Butanes (vol%)	Pentanes (vol%)	Hexanes (vol%)	Heptanes (vol%)	Octanes (vol%)	Nonanes (vol%)	Decanes (vol%)	Benzene (vol%)	Toluene (vol%)	Ethyl Benzene (vol%)	Xylenes (vol%)
Crude Grade: Heavy Sour - Dilbit														
PH	Peace River Heavy													
2006 Q1	2		0.06	0.99	6.77	5.50	3.59	2.60	2.34	1.14	0.18	0.27	0.07	0.23
2006 Q2	2		0.07	0.90	7.56	5.65	3.67	2.39	1.78	0.78	0.21	0.33	0.06	0.25
2006 Q3	1		0.07	0.71	6.37	5.20	3.47	2.57	2.07	0.89	0.20	0.32	0.09	0.28
2006 Q4	2		0.08	0.76	6.97	5.76	3.75	2.64	2.05	1.00	0.23	0.36	0.09	0.34
2007 Q1	1	0.03	0.18	1.35	5.62	5.07	3.66	3.06	2.55	1.15	0.20	0.38	0.11	0.43
2007 Q2	2		0.07	0.98	7.05	5.67	3.71	2.66	2.21	1.00	0.23	0.39	0.10	0.36
2007 Q3	1		0.07	0.70	5.87	4.77	3.31	2.66	2.33	1.02	0.20	0.35	0.10	0.36
2007 Q4	2		0.07	0.75	8.39	5.59	3.19	2.07	1.53	0.73	0.23	0.34	0.07	0.28
2008 Q1	1		0.04	0.76	8.75	6.14	3.53	2.18	1.48	0.65	0.26	0.39	0.06	0.30
2008 Q2	2		0.07	0.84	6.86	5.27	3.42	2.52	1.93	0.82	0.22	0.35	0.09	0.33
2008 Q3	1		0.07	0.73	5.54	4.43	3.00	2.63	2.41	1.10	0.13	0.17	0.04	0.21
2008 Q4	2		0.05	0.56	5.52	4.03	2.69	2.06	1.60	0.74	0.17	0.28	0.07	0.28
2009 Q1	1		0.05	1.17	7.40	5.40	3.58	2.70	2.07	0.86	0.21	0.33	0.10	0.32
2009 Q2	2		0.04	0.72	7.92	6.06	3.54	2.41	1.79	0.89	0.23	0.33	0.08	0.30
2009 Q3	1		0.06	0.78	6.62	4.86	3.22	2.43	1.92	0.79	0.18	0.30	0.09	0.30
2009 Q4	2		0.06	0.94	8.35	5.95	3.74	2.59	1.83	0.78	0.23	0.35	0.09	0.32
2010 Q1	1		0.05	0.99	9.12	6.21	3.78	2.49	1.67	0.73	0.26	0.43	0.09	0.34
2010 Q2	1		0.04	0.76	8.45	6.04	3.63	2.45	1.68	0.80	0.23	0.37	0.07	0.31
Average		0.03	0.06	0.85	7.20	5.45	3.47	2.48	1.94	0.88	0.21	0.34	0.08	0.30
Std Dev		0.00	0.03	0.18	1.15	0.65	0.34	0.24	0.32	0.15	0.03	0.06	0.02	0.06
Avg + StdDev		0.03	0.09	1.03	8.35	6.10	3.81	2.73	2.26	1.03	0.25	0.40	0.10	0.36
Avg - StdDev		0.03	0.04	0.66	6.06	4.79	3.13	2.24	1.61	0.73	0.18	0.28	0.06	0.25

Heavy Crude Quality Project Light Ends Summary (May 2010)

Crude Sample Date	Count of Batches or Batch No.	Ethane (vol%)	Propane (vol%)	Butanes (vol%)	Pentanes (vol%)	Hexanes (vol%)	Heptanes (vol%)	Octanes (vol%)	Nonanes (vol%)	Decanes (vol%)	Benzene (vol%)	Toluene (vol%)	Ethyl Benzene (vol%)	Xylenes (vol%)
Crude Grade: Heavy Sour - Dilbit														
SH	Seal Heavy													
2006 Q1	12		0.12	2.16	4.33	4.92	3.96	3.40	2.96	1.23	0.18	0.38	0.10	0.44
2006 Q2	12		0.08	2.08	4.61	4.70	3.91	3.33	2.77	1.18	0.19	0.40	0.11	0.45
2006 Q3	6		0.07	1.25	3.97	4.27	3.72	3.24	2.51	1.12	0.19	0.41	0.11	0.49
2006 Q4	6		0.07	1.32	4.40	4.90	4.36	3.79	3.01	1.29	0.21	0.47	0.13	0.58
2007 Q1	5		0.09	1.89	4.64	4.84	4.10	3.51	2.78	1.25	0.21	0.44	0.12	0.51
2007 Q2	6		0.09	1.88	4.59	4.42	3.83	3.38	2.65	1.21	0.19	0.42	0.11	0.49
2007 Q3	3		0.07	1.12	4.34	4.20	3.65	3.25	2.73	1.20	0.18	0.39	0.11	0.46
2007 Q4	3		0.06	1.16	3.68	4.10	3.77	3.48	2.87	1.23	0.17	0.41	0.12	0.50
2008 Q1	3		0.06	1.84	4.50	4.46	3.70	3.18	2.51	1.04	0.19	0.39	0.11	0.45
2008 Q2	3		0.06	1.58	4.61	4.50	3.82	3.38	2.88	1.32	0.20	0.43	0.12	0.51
2008 Q3	3		0.04	0.70	4.09	4.32	3.65	3.14	2.46	1.05	0.19	0.38	0.11	0.44
2008 Q4	3		0.06	1.48	4.67	4.53	3.65	3.14	2.49	1.13	0.19	0.38	0.11	0.46
2009 Q1	3		0.07	2.05	5.33	4.79	3.78	3.20	2.56	1.06	0.19	0.37	0.11	0.44
2009 Q2	3		0.06	1.88	4.85	4.60	3.66	3.17	2.44	1.01	0.18	0.35	0.11	0.43
2009 Q3	3		0.06	1.13	4.07	3.99	3.21	2.77	2.22	0.93	0.17	0.32	0.10	0.38
2009 Q4	3		0.06	1.52	5.76	5.12	3.92	3.11	2.33	0.95	0.22	0.42	0.11	0.42
2010 Q1	3		0.06	1.18	6.42	5.68	4.30	3.39	2.48	1.03	0.25	0.50	0.11	0.50
2010 Q2	2		0.06	1.71	5.13	4.67	3.79	3.09	2.37	1.05	0.21	0.43	0.11	0.45
5/29/2010	SH-936		0.06	1.74	5.03	4.62	3.73	3.11	2.45	1.13	0.20	0.40	0.11	0.43
	Average		0.08	1.68	4.58	4.65	3.87	3.33	2.69	1.16	0.19	0.41	0.11	0.47
	Std Dev		0.02	0.49	0.68	0.43	0.32	0.31	0.32	0.16	0.02	0.06	0.02	0.08
	Avg + StdDev		0.10	2.17	5.26	5.08	4.19	3.63	3.01	1.32	0.22	0.47	0.13	0.55
	Avg - StdDev		0.05	1.19	3.90	4.23	3.55	3.02	2.36	0.99	0.17	0.34	0.09	0.39

Heavy Crude Quality Project Light Ends Summary (May 2010)

Crude Sample Date	Count of Batches or Batch No.	Ethane (vol%)	Propane (vol%)	Butanes (vol%)	Pentanes (vol%)	Hexanes (vol%)	Heptanes (vol%)	Octanes (vol%)	Nonanes (vol%)	Decanes (vol%)	Benzene (vol%)	Toluene (vol%)	Ethyl Benzene (vol%)	Xylenes (vol%)
Crude Grade: Heavy Sour - Dilbit														
SC Smiley-Coleville														
2006 Q1	3		0.07	0.81	4.29	4.46	3.27	2.86	2.36	0.96	0.21	0.37	0.11	0.43
2006 Q2	3		0.07	0.80	4.14	3.88	3.17	2.75	2.23	0.91	0.18	0.34	0.10	0.40
2006 Q3	3		0.07	0.93	3.26	3.04	2.69	2.45	1.98	0.83	0.15	0.31	0.10	0.37
2006 Q4	3		0.07	1.25	3.90	3.80	3.02	2.62	1.99	0.85	0.18	0.34	0.10	0.42
2007 Q1	3		0.08	1.43	4.64	4.54	3.03	2.53	1.93	0.78	0.21	0.36	0.10	0.40
2007 Q2	3		0.07	1.42	4.45	4.00	2.85	2.34	1.83	0.73	0.18	0.33	0.08	0.36
2007 Q3	3		0.05	1.10	3.66	3.16	2.44	2.08	1.73	0.71	0.15	0.28	0.09	0.31
2007 Q4	3		0.07	1.56	3.77	3.34	2.64	2.30	1.77	0.74	0.15	0.29	0.09	0.34
2008 Q1	3		0.05	1.47	4.53	3.92	2.87	2.39	1.86	0.76	0.17	0.31	0.09	0.34
2008 Q2	3		0.06	1.43	3.83	3.43	2.53	2.22	1.81	0.73	0.16	0.29	0.09	0.33
2008 Q3	3		0.05	1.01	2.98	2.87	2.28	2.11	1.79	0.75	0.12	0.22	0.07	0.28
2008 Q4	3		0.06	1.17	3.19	2.99	2.31	1.95	1.49	0.60	0.15	0.28	0.07	0.28
2009 Q1	3		0.07	1.35	3.64	3.71	2.91	2.55	2.06	0.83	0.17	0.31	0.10	0.35
2009 Q2	3		0.05	1.37	3.99	3.69	2.73	2.33	1.87	0.79	0.17	0.31	0.09	0.34
2009 Q3	3		0.05	1.11	3.16	2.79	2.13	1.92	1.61	0.65	0.12	0.23	0.07	0.27
2009 Q4	3		0.05	1.24	3.37	3.26	2.58	2.35	1.89	0.74	0.14	0.29	0.09	0.33
2010 Q1	3		0.07	1.25	3.47	3.46	2.75	2.40	1.90	0.81	0.17	0.33	0.09	0.36
2010 Q2	2		0.08	1.40	3.74	3.46	2.71	2.42	1.92	0.81	0.16	0.30	0.10	0.34
5/23/2010	SC-296		0.07	1.31	3.58	3.28	2.58	2.41	1.92	0.84	0.15	0.28	0.10	0.34
Average			0.06	1.23	3.78	3.55	2.72	2.36	1.89	0.78	0.16	0.30	0.09	0.35
Std Dev			0.01	0.27	0.55	0.55	0.38	0.33	0.26	0.11	0.03	0.05	0.02	0.06
Avg + StdDev			0.08	1.50	4.33	4.10	3.09	2.69	2.15	0.89	0.19	0.35	0.10	0.41
Avg - StdDev			0.05	0.96	3.23	2.99	2.34	2.04	1.63	0.66	0.13	0.26	0.07	0.29

Heavy Crude Quality Project Light Ends Summary (May 2010)

Crude	Sample Date	Count of Batches or Batch No.	Ethane (vol%)	Propane (vol%)	Butanes (vol%)	Pentanes (vol%)	Hexanes (vol%)	Heptanes (vol%)	Octanes (vol%)	Nonanes (vol%)	Decanes (vol%)	Benzene (vol%)	Toluene (vol%)	Ethyl Benzene (vol%)	Xylenes (vol%)
Crude Grade: Heavy Sour - Dilbit															
WH Wabasca Heavy															
	2006 Q1	6		0.10	2.28	2.91	3.49	3.04	3.00	2.69	1.12	0.11	0.26	0.11	0.41
	2006 Q2	6		0.09	2.25	2.98	3.31	2.96	2.98	2.52	1.05	0.12	0.27	0.13	0.43
	2006 Q3	3		0.08	1.75	2.29	2.90	2.86	2.94	2.40	1.07	0.11	0.29	0.13	0.46
	2006 Q4	3		0.08	1.89	2.99	3.49	3.26	3.23	2.70	1.24	0.13	0.32	0.13	0.51
	2007 Q1	3		0.09	2.28	2.97	3.37	3.08	3.09	2.61	1.24	0.12	0.29	0.13	0.47
	2007 Q2	3		0.07	1.93	2.87	2.92	2.67	2.75	2.37	1.23	0.10	0.27	0.12	0.42
	2007 Q3	3		0.05	1.04	2.58	2.76	2.65	2.81	2.36	0.98	0.09	0.24	0.13	0.42
	2007 Q4	3		0.07	1.57	2.57	3.01	2.93	3.03	2.62	1.22	0.11	0.28	0.13	0.46
	2008 Q1	3		0.05	1.86	2.84	3.14	2.90	2.94	2.47	1.08	0.12	0.27	0.13	0.44
	2008 Q2	3		0.06	1.70	2.70	2.93	2.74	2.87	2.44	1.08	0.11	0.27	0.13	0.46
	2008 Q3	3		0.06	1.33	2.30	2.67	2.55	2.72	2.33	1.07	0.09	0.23	0.13	0.42
	2008 Q4	3		0.05	1.74	3.06	3.21	2.79	2.72	2.32	1.09	0.12	0.27	0.12	0.41
	2009 Q1	6		0.06	1.78	3.41	3.48	3.03	2.98	2.51	1.10	0.12	0.27	0.13	0.43
	2009 Q2	6		0.07	1.98	3.30	3.32	2.84	2.85	2.38	1.04	0.12	0.26	0.13	0.42
	2009 Q3	3		0.06	1.64	2.52	2.77	2.53	2.61	2.20	0.97	0.10	0.22	0.12	0.39
	2009 Q4	3		0.05	1.71	3.21	3.18	2.76	2.72	2.25	0.97	0.11	0.25	0.13	0.40
	2010 Q1	3		0.04	1.65	3.75	3.38	2.75	2.57	2.19	1.06	0.13	0.28	0.12	0.40
	2010 Q2	2		0.07	1.92	3.39	3.26	2.91	2.89	2.29	1.04	0.12	0.28	0.13	0.45
	5/27/2010	WH-610		0.07	1.97	3.11	3.14	2.82	2.89	2.24	1.02	0.11	0.26	0.13	0.44
	Average			0.07	1.84	2.96	3.19	2.87	2.89	2.45	1.09	0.11	0.27	0.13	0.43
	Std Dev			0.02	0.36	0.52	0.37	0.28	0.26	0.25	0.15	0.02	0.05	0.02	0.06
	Avg + StdDev			0.09	2.20	3.48	3.56	3.14	3.15	2.70	1.24	0.13	0.31	0.14	0.49
	Avg - StdDev			0.05	1.49	2.44	2.82	2.59	2.63	2.19	0.94	0.09	0.22	0.11	0.37

Heavy Crude Quality Project Light Ends Summary (May 2010)

Crude Sample Date	Count of Batches or Batch No.	Ethane (vol%)	Propane (vol%)	Butanes (vol%)	Pentanes (vol%)	Hexanes (vol%)	Heptanes (vol%)	Octanes (vol%)	Nonanes (vol%)	Decanes (vol%)	Benzene (vol%)	Toluene (vol%)	Ethyl Benzene (vol%)	Xylenes (vol%)
Crude Grade: Heavy Sour - Dilbit														
WCS Western Canadian Select														
2006 Q1	12	0.03	0.09	2.16	4.32	3.80	2.81	2.38	1.86	0.86	0.17	0.27	0.07	0.31
2006 Q2	12	0.03	0.09	2.33	3.82	3.24	2.54	2.12	1.62	0.75	0.14	0.24	0.05	0.28
2006 Q3	6		0.07	2.37	3.21	2.82	2.20	1.87	1.46	0.73	0.11	0.20	0.05	0.24
2006 Q4	6		0.07	2.35	3.89	3.50	2.66	2.23	1.68	0.81	0.15	0.28	0.07	0.32
2007 Q1	6	0.03	0.09	2.50	4.41	4.06	2.81	2.36	1.68	0.81	0.17	0.29	0.07	0.33
2007 Q2	6		0.07	2.47	4.72	3.81	2.72	2.15	1.57	0.69	0.17	0.30	0.06	0.30
2007 Q3	6		0.07	2.31	3.66	3.02	2.29	1.81	1.41	0.66	0.13	0.25	0.05	0.26
2007 Q4	6		0.06	2.15	4.22	3.74	2.83	2.30	1.63	0.75	0.16	0.30	0.07	0.32
2008 Q1	6		0.05	1.94	4.45	4.09	2.94	2.40	1.75	0.83	0.18	0.32	0.07	0.33
2008 Q2	6		0.06	1.88	3.65	3.47	2.61	2.20	1.70	0.80	0.16	0.29	0.07	0.32
2008 Q3	6		0.05	1.78	3.04	3.01	2.29	1.94	1.56	0.82	0.14	0.25	0.06	0.27
2008 Q4	6		0.06	1.85	3.81	3.62	2.59	2.06	1.41	0.69	0.15	0.28	0.05	0.29
2009 Q1	6		0.05	2.00	4.60	4.22	3.06	2.46	1.75	0.80	0.17	0.30	0.06	0.31
2009 Q2	6		0.05	2.13	4.23	3.84	2.77	2.22	1.59	0.77	0.16	0.28	0.06	0.29
2009 Q3	6		0.06	2.21	3.44	3.08	2.21	1.72	1.22	0.58	0.13	0.22	0.04	0.24
2009 Q4	6		0.07	2.51	4.32	3.84	2.81	2.31	1.64	0.77	0.15	0.28	0.06	0.31
2010 Q1	6		0.06	1.88	4.36	3.92	2.78	2.15	1.42	0.66	0.17	0.31	0.06	0.31
2010 Q2	4		0.07	2.22	4.14	3.78	2.91	2.36	1.93	1.18	0.16	0.31	0.07	0.33
5/14/2010	WCS-846		0.07	2.25	4.43	3.92	2.98	2.30	1.32	0.54	0.16	0.32	0.06	0.31
5/26/2010	WCS-863		0.07	2.15	3.82	3.44	2.70	2.43	3.10	2.58	0.13	0.29	0.08	0.35
Average		0.03	0.07	2.18	4.02	3.59	2.66	2.17	1.61	0.77	0.15	0.27	0.06	0.30
Std Dev		0.00	0.02	0.30	0.59	0.56	0.33	0.29	0.27	0.21	0.02	0.04	0.01	0.04
Avg + StdDev		0.03	0.09	2.48	4.61	4.15	2.99	2.46	1.88	0.98	0.18	0.32	0.07	0.34
Avg - StdDev		0.03	0.05	1.87	3.43	3.04	2.32	1.89	1.34	0.57	0.13	0.23	0.05	0.26

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Crude Grade: Heavy Sour - Dilsynbit														
AHS Albian Heavy Synthetic														
2006 Q1	7		0.12	1.67	3.15	4.35	3.30	3.00	2.18	0.99	0.13	0.36	0.11	0.46
2006 Q2	5		0.12	1.77	2.79	3.60	2.93	2.96	2.37	1.13	0.09	0.27	0.11	0.39
2006 Q3	7		0.13	1.59	2.49	3.60	2.89	2.88	2.24	1.12	0.09	0.29	0.11	0.41
2006 Q4	6		0.24	1.88	3.31	4.37	3.47	3.34	2.51	1.24	0.12	0.34	0.13	0.50
2007 Q1	3		0.22	1.88	3.32	4.48	3.46	3.20	2.19	1.14	0.12	0.37	0.12	0.48
2007 Q2	3		0.22	2.12	3.47	4.55	3.68	3.43	2.43	1.18	0.11	0.36	0.13	0.46
2007 Q3	3		0.09	1.69	3.38	4.46	3.64	3.48	2.37	1.11	0.11	0.36	0.13	0.48
2007 Q4	3		0.18	1.45	2.98	4.05	3.45	3.19	2.23	1.10	0.11	0.37	0.12	0.48
2008 Q1	3		0.20	1.36	3.08	4.25	3.61	3.31	2.13	0.94	0.13	0.39	0.12	0.47
2008 Q2	3		0.17	1.75	3.13	4.57	4.18	3.95	2.70	1.22	0.13	0.46	0.15	0.61
2008 Q3	3		0.13	1.33	2.63	4.13	3.99	3.74	2.48	1.20	0.12	0.45	0.15	0.59
2008 Q4	3		0.19	1.33	2.82	3.92	3.62	3.44	2.07	0.91	0.12	0.40	0.13	0.48
2009 Q1	3		0.21	1.70	3.20	4.48	3.79	3.60	2.38	1.07	0.13	0.39	0.14	0.50
2009 Q2	3		0.17	1.69	3.83	5.43	4.27	3.66	2.21	0.93	0.16	0.53	0.14	0.61
2009 Q3	3		0.08	1.69	4.60	5.29	3.78	3.12	1.79	0.75	0.15	0.42	0.11	0.47
2009 Q4	3		0.20	1.69	4.64	5.35	4.05	3.57	2.05	0.87	0.15	0.45	0.13	0.52
2010 Q1	3		0.16	1.49	4.11	4.90	3.54	2.92	1.65	0.76	0.15	0.41	0.10	0.45
2010 Q2	2		0.14	1.30	5.10	4.97	3.47	2.71	1.60	0.76	0.17	0.42	0.10	0.46
5/15/2010	AHS-635		0.13	1.20	5.05	4.70	3.28	2.54	1.46	0.70	0.16	0.40	0.09	0.44
Average			0.16	1.65	3.32	4.38	3.53	3.26	2.23	1.04	0.12	0.38	0.12	0.48
Std Dev			0.06	0.31	0.78	0.75	0.55	0.47	0.35	0.21	0.03	0.08	0.02	0.08
Avg + StdDev			0.23	1.96	4.10	5.13	4.08	3.74	2.58	1.25	0.15	0.46	0.14	0.56
Avg - StdDev			0.10	1.35	2.54	3.64	2.98	2.79	1.88	0.83	0.10	0.29	0.10	0.40

Heavy Crude Quality Project Light Ends Summary (May 2010)

Crude Sample Date	Count of Batches or Batch No.	Ethane (vol%)	Propane (vol%)	Butanes (vol%)	Pentanes (vol%)	Hexanes (vol%)	Heptanes (vol%)	Octanes (vol%)	Nonanes (vol%)	Decanes (vol%)	Benzene (vol%)	Toluene (vol%)	Ethyl Benzene (vol%)	Xylenes (vol%)
Crude Grade: Heavy Sour - Synbit														
PSH Long Lake Heavy														
2008 Q2	2		0.02	0.95	2.42	2.63	2.11	2.26	1.91	0.87	0.10	0.21	0.08	0.32
2008 Q3	6		0.02	0.65	1.23	1.89	1.85	2.28	2.05	1.15	0.07	0.20	0.09	0.32
2008 Q4	6		0.02	0.74	1.53	2.15	2.08	2.23	1.70	0.88	0.09	0.26	0.07	0.32
2009 Q1	6		0.02	0.76	2.14	2.89	2.93	3.38	2.74	1.29	0.11	0.32	0.11	0.45
2009 Q2	6		0.02	0.59	1.92	3.27	3.56	3.79	2.88	1.30	0.11	0.32	0.10	0.41
2009 Q3	3		0.03	0.76	1.89	2.80	2.45	2.37	1.75	0.84	0.11	0.27	0.08	0.32
2009 Q4	3		0.02	0.60	1.80	2.67	2.67	2.76	2.26	1.17	0.12	0.33	0.10	0.40
2010 Q1	3		0.02	0.52	2.19	2.96	2.95	3.29	2.58	1.15	0.09	0.23	0.08	0.33
2010 Q2	2			0.57	1.57	2.49	2.75	3.11	2.40	1.19	0.08	0.25	0.08	0.34
5/11/2010	PSH-778			0.67	1.59	2.37	2.50	2.93	2.27	1.21	0.07	0.21	0.08	0.33
Average			0.02	0.68	1.80	2.61	2.61	2.87	2.28	1.12	0.10	0.27	0.09	0.36
Std Dev			0.00	0.16	0.46	0.66	0.76	0.78	0.58	0.26	0.03	0.07	0.02	0.08
Avg + StdDev			0.02	0.84	2.26	3.27	3.37	3.65	2.87	1.37	0.13	0.34	0.11	0.44
Avg - StdDev			0.02	0.52	1.34	1.96	1.85	2.08	1.70	0.86	0.07	0.20	0.07	0.28

Heavy Crude Quality Project Light Ends Summary (May 2010)

Crude	Sample Date	Count of Batches or Batch No.	Ethane (vol%)	Propane (vol%)	Butanes (vol%)	Pentanes (vol%)	Hexanes (vol%)	Heptanes (vol%)	Octanes (vol%)	Nonanes (vol%)	Decanes (vol%)	Benzene (vol%)	Toluene (vol%)	Ethyl Benzene (vol%)	Xylenes (vol%)
Crude Grade: Heavy Sour - Synbit															
SHB Surmont Heavy Blend															
	2009 Q1	5		0.02	0.90	1.51	2.14	1.98	2.41	2.06	1.04	0.08	0.20	0.09	0.30
	2009 Q2	3		0.02	0.74	1.26	1.88	1.81	2.22	1.93	1.05	0.05	0.17	0.08	0.30
	2009 Q3	2		0.05	0.81	1.19	1.75	1.59	1.92	1.75	1.02	0.08	0.19	0.08	0.29
	2009 Q4	3		0.04	0.81	1.28	1.87	1.74	2.19	1.91	1.01	0.07	0.20	0.09	0.31
	2010 Q1	3		0.04	0.83	1.40	2.01	1.84	2.27	1.93	1.04	0.07	0.20	0.09	0.31
	2010 Q2	2		0.03	0.67	1.22	1.76	1.71	2.27	2.03	1.14	0.05	0.16	0.09	0.29
	5/29/2010	SHB-969		0.04	0.72	1.18	1.75	1.69	2.18	1.81	1.02	0.06	0.18	0.09	0.30
	Average			0.03	0.81	1.35	1.95	1.81	2.25	1.95	1.05	0.07	0.19	0.09	0.30
	Std Dev			0.01	0.11	0.19	0.21	0.18	0.21	0.18	0.10	0.02	0.03	0.01	0.03
	Avg + StdDev			0.04	0.92	1.53	2.16	1.99	2.46	2.13	1.14	0.09	0.22	0.10	0.33
	Avg - StdDev			0.02	0.70	1.16	1.73	1.64	2.04	1.77	0.95	0.05	0.16	0.08	0.27

Heavy Crude Quality Project Light Ends Summary (May 2010)

Crude Sample Date	Count of Batches or Batch No.	Ethane (vol%)	Propane (vol%)	Butanes (vol%)	Pentanes (vol%)	Hexanes (vol%)	Heptanes (vol%)	Octanes (vol%)	Nonanes (vol%)	Decanes (vol%)	Benzene (vol%)	Toluene (vol%)	Ethyl Benzene (vol%)	Xylenes (vol%)
Crude Grade: Light Sour														
LSB	Light Sour Blend													
2006 Q3	6	0.07	0.57	1.87	3.09	5.46	5.92	6.51	5.12	2.31	0.28	0.75	0.46	0.73
2006 Q4	6	0.06	0.61	1.98	3.27	5.70	6.34	7.17	5.75	2.64	0.30	0.80	0.50	0.88
2007 Q1	6	0.06	0.65	2.19	3.33	5.82	6.17	6.73	5.21	2.28	0.32	0.80	0.48	0.77
2007 Q2	6	0.06	0.58	1.96	3.05	5.48	5.83	6.33	4.92	2.28	0.30	0.79	0.45	0.73
2007 Q3	6	0.06	0.56	2.06	3.13	5.57	5.99	6.49	5.15	2.40	0.31	0.81	0.47	0.77
2007 Q4	6	0.05	0.54	2.25	3.69	5.63	5.88	6.35	4.97	2.22	0.33	0.74	0.45	0.70
2008 Q1	6	0.04	0.57	2.38	3.89	5.72	6.10	6.75	5.39	2.32	0.23	0.58	0.40	0.66
2008 Q2	6	0.05	0.55	1.89	2.89	5.27	5.98	6.71	5.52	2.55	0.24	0.66	0.44	0.73
2008 Q3	3	0.02	0.37	1.57	2.84	5.62	6.71	7.43	5.84	2.78	0.26	0.65	0.45	0.71
2008 Q4	3	0.05	0.71	2.52	3.37	5.74	6.66	7.34	5.58	2.48	0.23	0.57	0.39	0.70
2009 Q1	6	0.07	0.82	2.52	3.50	5.90	6.80	7.53	6.15	2.97	0.23	0.58	0.43	0.70
2009 Q2	1	0.05	0.66	2.47	3.22	5.83	7.00	8.06	7.03	3.62	0.22	0.55	0.44	0.71
2009 Q3	5	0.05	0.61	2.24	3.51	5.57	6.38	7.08	5.55	2.54	0.21	0.53	0.39	0.65
2009 Q4	4	0.07	0.81	2.50	3.64	5.77	6.54	7.27	5.97	2.89	0.23	0.56	0.41	0.70
2010 Q1	3	0.07	0.84	2.68	4.18	6.35	7.08	7.89	6.57	3.32	0.24	0.60	0.45	0.77
2010 Q2	2	0.06	0.77	2.73	4.12	6.39	7.19	7.84	6.02	2.91	0.24	0.62	0.43	0.78
5/24/2010	LSB-798	0.05	0.72	2.76	4.09	6.28	7.13	7.84	6.15	3.23	0.23	0.58	0.43	0.76
Average		0.05	0.63	2.19	3.38	5.68	6.28	6.93	5.52	2.55	0.27	0.68	0.44	0.73
Std Dev		0.02	0.14	0.35	0.48	0.40	0.54	0.66	0.67	0.41	0.05	0.12	0.05	0.08
Avg + StdDev		0.07	0.76	2.54	3.86	6.07	6.82	7.59	6.19	2.96	0.32	0.81	0.49	0.82
Avg - StdDev		0.04	0.49	1.84	2.91	5.28	5.74	6.26	4.85	2.14	0.22	0.56	0.40	0.65

Heavy Crude Quality Project Light Ends Summary (May 2010)

Crude Sample Date	Count of Batches or Batch No.	Ethane (vol%)	Propane (vol%)	Butanes (vol%)	Pentanes (vol%)	Hexanes (vol%)	Heptanes (vol%)	Octanes (vol%)	Nonanes (vol%)	Decanes (vol%)	Benzene (vol%)	Toluene (vol%)	Ethyl Benzene (vol%)	Xylenes (vol%)	
Crude Grade: Light Sour															
SLE	SLE														
2006 Q2	6	0.02	0.28	1.45	4.90	6.64	6.96	6.72	5.16	2.38	0.33	0.86	0.27	1.03	
2006 Q3	5	0.03	0.34	1.82	5.67	7.91	8.12	7.40	5.19	2.44	0.42	1.03	0.26	1.17	
2006 Q4	6	0.04	0.32	1.67	5.17	7.42	7.78	7.45	5.51	2.60	0.40	0.97	0.28	1.22	
2007 Q1	5	0.04	0.44	1.96	4.71	6.76	7.16	6.94	5.20	2.47	0.35	0.88	0.27	1.06	
2007 Q2	6	0.03	0.38	2.15	4.07	6.33	7.16	6.80	5.14	2.37	0.38	0.98	0.27	1.09	
2007 Q3	3	0.02	0.35	2.22	4.24	5.63	6.20	6.28	4.85	2.22	0.30	0.76	0.25	0.96	
2007 Q4	3	0.02	0.30	2.91	4.51	6.57	7.63	7.96	5.75	2.55	0.40	0.91	0.27	1.33	
2008 Q1	3	0.02	0.25	2.94	3.14	6.17	8.15	8.56	6.68	2.93	0.41	0.96	0.28	1.48	
2008 Q2	3	0.02	0.25	2.80	3.52	6.29	8.08	8.40	6.47	2.89	0.42	1.02	0.28	1.54	
2008 Q3	3		0.10	1.76	3.68	6.32	7.75	7.99	5.92	2.80	0.40	1.05	0.29	1.46	
2008 Q4	3	0.02	0.30	3.24	4.18	6.19	7.01	6.88	5.04	2.38	0.37	0.91	0.25	1.21	
2009 Q1	3	0.02	0.33	3.81	4.27	6.54	7.57	7.45	5.53	2.46	0.40	0.97	0.27	1.28	
2009 Q2	3	0.02	0.32	3.29	3.83	6.52	7.95	8.02	5.84	2.67	0.43	1.02	0.28	1.41	
2009 Q3	3	0.03	0.36	3.72	5.01	6.90	7.64	7.40	5.36	2.42	0.38	0.96	0.26	1.23	
2009 Q4	3	0.04	0.39	4.52	5.05	7.37	8.22	7.74	5.35	2.42	0.44	1.13	0.28	1.34	
2010 Q1	3	0.03	0.37	4.08	3.50	6.19	7.70	7.70	5.76	2.64	0.40	0.98	0.28	1.32	
2010 Q2	2	0.04	0.38	4.64	3.19	5.95	7.37	7.21	5.14	2.50	0.39	1.06	0.27	1.29	
5/25/2010	SLE-951	0.05	0.40	5.09	3.06	5.89	7.22	6.64	4.49	2.32	0.40	1.17	0.25	1.26	
Average		0.03	0.32	2.63	4.41	6.66	7.53	7.38	5.47	2.52	0.38	0.96	0.27	1.23	
Std Dev		0.01	0.09	1.02	0.99	0.91	0.81	0.76	0.59	0.25	0.06	0.14	0.02	0.19	
Avg + StdDev		0.04	0.42	3.65	5.40	7.57	8.33	8.14	6.07	2.77	0.45	1.10	0.29	1.42	
Avg - StdDev		0.01	0.23	1.61	3.42	5.75	6.72	6.63	4.88	2.27	0.32	0.82	0.25	1.04	

Heavy Crude Quality Project Light Ends Summary (May 2010)

Crude Sample Date	Count of Batches or Batch No.	Ethane (vol%)	Propane (vol%)	Butanes (vol%)	Pentanes (vol%)	Hexanes (vol%)	Heptanes (vol%)	Octanes (vol%)	Nonanes (vol%)	Decanes (vol%)	Benzene (vol%)	Toluene (vol%)	Ethyl Benzene (vol%)	Xylenes (vol%)
Crude Grade: Medium Sour														
MSM Midale														
2006 Q1	6	0.02	0.40	1.37	2.17	4.80	5.31	5.86	4.74	2.22	0.58	0.83	0.52	0.52
2006 Q2	6	0.02	0.40	1.46	2.43	5.10	5.30	5.63	4.46	2.06	0.64	0.90	0.53	0.51
2006 Q3	4	0.03	0.41	1.45	2.41	4.83	4.95	5.22	3.98	1.92	0.61	0.87	0.50	0.49
2006 Q4	6	0.04	0.47	1.60	2.61	5.14	5.30	5.69	4.48	2.20	0.63	0.89	0.53	0.59
2007 Q1	5	0.04	0.50	1.83	2.92	5.30	5.39	5.57	4.23	1.96	0.63	0.93	0.52	0.53
2007 Q2	6	0.04	0.43	1.82	3.06	5.20	5.13	5.33	4.22	1.90	0.60	0.86	0.49	0.52
2007 Q3	6	0.02	0.39	1.95	3.21	5.25	5.14	5.24	3.96	1.78	0.61	0.85	0.48	0.51
2007 Q4	6	0.02	0.39	1.40	2.16	4.78	5.35	5.99	4.88	2.34	0.56	0.81	0.53	0.56
2008 Q1	6	0.02	0.36	1.66	2.62	5.07	5.29	5.68	4.55	2.27	0.66	0.92	0.55	0.56
2008 Q2	6	0.02	0.32	1.74	3.13	5.11	5.18	5.55	4.59	2.39	0.63	0.89	0.53	0.58
2008 Q3	2	0.02	0.16	1.22	2.40	4.55	4.90	5.25	4.17	2.04	0.58	0.86	0.50	0.52
2008 Q4	2	0.02	0.29	1.29	2.04	4.38	4.54	4.96	4.63	2.82	0.60	0.84	0.50	0.51
2009 Q1	3	0.02	0.33	1.57	2.64	5.21	5.45	5.91	4.72	2.31	0.68	0.95	0.57	0.55
2009 Q2	2	0.02	0.33	1.86	3.04	5.50	5.54	5.82	4.68	2.33	0.71	0.97	0.55	0.55
2009 Q3	2	0.02	0.39	1.80	2.90	5.46	5.67	5.96	4.62	2.09	0.64	0.91	0.53	0.58
2009 Q4	3	0.02	0.35	1.47	2.89	5.28	5.37	5.71	4.73	2.49	0.70	0.97	0.56	0.57
2010 Q1	3	0.03	0.43	1.64	3.07	5.60	5.64	5.98	5.22	2.86	0.75	1.02	0.58	0.61
2010 Q2	2	0.02	0.35	1.37	2.92	5.43	5.65	6.03	4.68	2.43	0.75	1.04	0.59	0.61
5/27/2010	MSM-269	0.02	0.41	1.46	3.34	5.73	5.79	6.02	4.73	2.65	0.78	1.04	0.59	0.60
Average		0.03	0.39	1.61	2.70	5.10	5.27	5.62	4.50	2.20	0.63	0.89	0.53	0.55
Std Dev		0.01	0.08	0.26	0.43	0.34	0.30	0.36	0.46	0.38	0.06	0.07	0.04	0.04
Avg + StdDev		0.04	0.47	1.86	3.12	5.44	5.57	5.99	4.96	2.57	0.69	0.97	0.56	0.59
Avg - StdDev		0.01	0.31	1.35	2.27	4.75	4.97	5.26	4.04	1.82	0.57	0.82	0.49	0.50

Heavy Crude Quality Project Light Ends Summary (May 2010)

Crude Sample Date	Count of Batches or Batch No.	Ethane (vol%)	Propane (vol%)	Butanes (vol%)	Pentanes (vol%)	Hexanes (vol%)	Heptanes (vol%)	Octanes (vol%)	Nonanes (vol%)	Decanes (vol%)	Benzene (vol%)	Toluene (vol%)	Ethyl Benzene (vol%)	Xylenes (vol%)
Crude Grade: Medium Sour														
SO Mixed Sour Blend														
2006 Q3	3	0.02	0.27	2.39	4.58	4.90	4.78	4.52	3.45	1.59	0.10	0.28	0.13	0.50
2006 Q4	3	0.02	0.32	2.68	6.20	6.74	5.22	4.66	3.58	1.59	0.14	0.32	0.14	0.63
2007 Q1	6	0.02	0.41	3.14	4.58	5.29	4.85	4.64	3.55	1.62	0.11	0.27	0.13	0.54
2007 Q2	6	0.02	0.30	3.26	6.91	5.75	4.72	4.08	3.03	1.38	0.15	0.33	0.12	0.49
2007 Q3	6	0.02	0.27	2.97	4.38	4.56	4.30	4.12	3.32	1.48	0.10	0.25	0.12	0.45
2007 Q4	6	0.02	0.22	2.97	4.63	4.57	4.32	4.14	3.26	1.47	0.11	0.28	0.12	0.48
2008 Q1	6	0.02	0.29	3.56	3.26	3.97	4.31	4.57	3.74	1.67	0.07	0.25	0.14	0.52
2008 Q2	6	0.02	0.30	4.05	2.84	3.71	4.15	4.41	3.77	1.64	0.06	0.21	0.13	0.50
2008 Q3	6		0.16	3.08	2.80	4.17	4.59	4.74	3.80	1.80	0.09	0.29	0.14	0.54
2008 Q4	6	0.02	0.27	4.59	4.25	4.99	4.76	4.47	3.35	1.52	0.11	0.28	0.13	0.50
2009 Q1	4	0.02	0.31	5.17	3.82	5.15	5.28	5.16	4.22	2.01	0.10	0.29	0.15	0.58
2009 Q2	4		0.25	4.29	5.50	6.72	6.19	5.62	4.12	1.78	0.20	0.47	0.16	0.69
2009 Q3	4	0.02	0.31	4.91	8.32	8.36	6.49	5.33	3.62	1.54	0.26	0.53	0.15	0.68
2009 Q4	2	0.02	0.27	5.11	4.45	5.01	4.79	4.47	3.38	1.50	0.08	0.26	0.13	0.48
2010 Q1	1	0.02	0.38	5.28	3.43	4.76	4.79	4.69	3.69	1.71	0.06	0.24	0.13	0.54
2010 Q2	4	0.02	0.33	4.97	3.16	4.37	4.54	4.44	3.56	1.77	0.06	0.22	0.13	0.47
5/12/2010	SO-706	0.02	0.33	4.76	3.54	4.62	4.71	4.55	3.50	1.67	0.07	0.23	0.13	0.47
5/25/2010	SO-707	0.02	0.28	4.75	3.29	4.25	4.25	4.04	3.14	1.56	0.07	0.23	0.12	0.44
Average		0.02	0.29	3.75	4.52	5.07	4.80	4.58	3.57	1.62	0.11	0.29	0.13	0.53
Std Dev		0.00	0.08	0.96	1.74	1.30	0.71	0.49	0.39	0.21	0.06	0.10	0.01	0.08
Avg + StdDev		0.02	0.36	4.71	6.25	6.38	5.51	5.07	3.96	1.83	0.17	0.39	0.15	0.61
Avg - StdDev		0.02	0.21	2.79	2.78	3.77	4.09	4.09	3.17	1.41	0.05	0.20	0.12	0.45

Heavy Crude Quality Project Light Ends Summary (May 2010)

Crude	Sample Date	Count of Batches or Batch No.	Ethane (vol%)	Propane (vol%)	Butanes (vol%)	Pentanes (vol%)	Hexanes (vol%)	Heptanes (vol%)	Octanes (vol%)	Nonanes (vol%)	Decanes (vol%)	Benzene (vol%)	Toluene (vol%)	Ethyl Benzene (vol%)	Xylenes (vol%)
Crude Grade: Medium Sour															
SHE	SHE														
	2006 Q1	3	0.05	0.39	1.43	2.93	5.15	6.04	6.47	5.27	2.36	0.31	0.79	0.27	0.99
	2006 Q2	6	0.03	0.31	1.79	4.78	6.52	6.73	6.29	4.73	2.22	0.37	0.90	0.23	1.00
	2006 Q3	5	0.02	0.25	1.45	4.55	6.32	6.91	6.70	4.95	2.39	0.39	0.96	0.26	1.10
	2006 Q4	6	0.04	0.35	1.70	5.23	7.04	7.32	6.78	4.98	2.33	0.43	1.03	0.27	1.15
	2007 Q1	6	0.04	0.39	1.88	5.78	7.52	7.35	6.62	4.52	2.34	0.43	1.01	0.26	1.08
	2007 Q2	6	0.04	0.34	1.51	3.71	5.93	6.73	6.38	4.78	2.16	0.41	1.10	0.27	1.21
	2007 Q3	3	0.02	0.28	1.34	3.46	5.74	6.50	6.34	4.77	2.25	0.38	0.99	0.27	1.08
	2007 Q4	3	0.02	0.30	1.68	3.36	6.05	6.79	6.53	4.69	2.19	0.40	1.06	0.29	1.13
	2008 Q1	3	0.02	0.25	1.65	3.54	5.80	6.48	6.67	4.73	2.23	0.36	0.95	0.27	1.07
	2008 Q2	3	0.02	0.27	1.55	3.88	6.10	6.72	6.69	5.22	2.50	0.39	0.96	0.28	1.10
	2008 Q3	2	0.02	0.16	1.04	4.43	5.64	6.36	6.36	4.63	2.31	0.38	1.00	0.28	1.14
	2008 Q4	3	0.02	0.30	1.69	6.13	6.63	6.55	6.18	4.50	2.32	0.38	0.92	0.25	1.01
	2009 Q1	3	0.03	0.32	2.39	3.95	6.69	7.73	7.35	5.25	2.50	0.45	1.22	0.29	1.27
	2009 Q2	3	0.02	0.29	2.98	4.62	7.12	7.78	7.27	5.13	2.46	0.45	1.15	0.28	1.25
	2009 Q3	3	0.04	0.32	2.67	5.38	7.89	8.34	7.47	4.84	2.42	0.51	1.34	0.27	1.33
	2009 Q4	3	0.02	0.21	3.78	11.38	10.68	8.56	6.58	3.30	1.48	0.56	1.24	0.19	1.05
	2010 Q1	3	0.02	0.32	4.24	7.82	8.90	7.77	5.79	3.46	1.57	0.48	1.11	0.20	0.96
	2010 Q2	2	0.04	0.36	4.10	4.50	8.03	8.97	7.27	4.23	2.05	0.52	1.45	0.24	1.31
	5/17/2010	SHE-930	0.02	0.32	4.29	3.97	7.07	8.18	6.84	4.04	1.99	0.47	1.36	0.24	1.29
	Average		0.03	0.31	2.05	4.95	6.84	7.15	6.62	4.70	2.24	0.42	1.05	0.26	1.12
	Std Dev		0.01	0.08	0.90	2.03	1.41	1.00	0.69	0.65	0.35	0.08	0.21	0.04	0.17
	Avg + StdDev		0.04	0.39	2.94	6.99	8.25	8.14	7.31	5.35	2.59	0.50	1.26	0.30	1.29
	Avg - StdDev		0.02	0.23	1.15	2.92	5.42	6.15	5.94	4.05	1.89	0.34	0.84	0.22	0.94

Heavy Crude Quality Project Simulated Distillation Summary (May/10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
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Crude Grade: Heavy Low Resid
 OSH Suncor Synthetic H

2007 Q1	1	35	709	122	219	326	341	354	376	396	415	444	455
2007 Q3	2	35	683	129	241	322	337	349	370	390	411	443	457
2007 Q4	1	31	714	131	245	326	342	355	377	398	418	449	461
2008 Q2	1	37	684	142	258	327	343	355	378	399	419	450	463
2008 Q3	1	41	614	167	274	328	343	355	375	395	415	445	457
2008 Q4	1	37	701	129	262	321	337	350	373	395	416	446	458
2009 Q1	1	31	692	136	263	325	339	351	371	391	410	439	450
2009 Q2	1	34	679	118	216	315	332	347	370	391	413	446	460
2009 Q3	1	36	635	114	243	321	336	348	370	390	410	441	453
2009 Q4	1	36	617	124	244	314	329	342	364	383	403	432	446
2010 Q1	1	29	682	141	266	330	345	357	378	398	418	451	466
2010 Q2	1	36	653	133	255	329	345	357	380	401	421	452	465
5/17/2010	OSH-660	36	653	133	255	329	345	357	380	401	421	452	465
Average		35	673	132	248	323	339	351	373	394	414	445	457
Std Dev		3	32	13	16	5	5	4	4	5	5	5	5
Avg + StdDev		38	705	145	265	328	343	356	377	398	418	450	463
Avg - StdDev		32	640	119	232	318	334	347	369	389	409	439	452

Heavy Crude Quality Project Simulated Distillation Summary (May/10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
Crude Grade: Heavy Sour - Conventional															
BRN Bow River North															
	2006 Q1	2	35	715	120	198	273	302	328	380	430	481	577	614	26.2
	2007 Q1	3	44	715	86	154	249	279	307	359	412	480	609	649	30.0
	2007 Q2	1	34	713	68	158	263	296	327	387	444	506	623	664	35.0
	2007 Q3	2	35	717	92	188	281	314	344	402	456	517	636	677	33.5
	2007 Q4	1	33	718	58	156	256	290	319	374	425	477	576	614	26.2
	2008 Q1	1	35	716	98	182	280	314	346	407	464	530	649	692	35.4
	2008 Q2	1	65	718	132	191	278	306	327	388	442	501	615	658	31.1
	2008 Q3	1	35	713	101	191	277	309	339	396	450	510	629	670	32.6
	2008 Q4	1	33	720	84	162	259	293	322	379	433	491	606	648	29.6
	2009 Q1	1	34	712	76	139	250	287	319	381	435	493	605	647	29.6
	2009 Q2	1	33	718	64	130	229	262	293	351	410	468	577	619	26.3
	2009 Q3	1	34	718	86	150	249	286	316	372	423	474	588	636	27.1
	2009 Q4	1	35	714	99	152	254	290	321	381	435	492	608	654	29.6
	2010 Q1	1	34	711	73	139	240	274	306	368	428	491	614	657	30.2
	Average		38	716	90	166	261	293	322	379	433	493	608	649	30.1
	Std Dev		9	3	30	25	16	16	17	21	24	23	25	27	3.4
	Avg + StdDev		47	718	120	191	277	309	339	400	457	516	633	676	33.5
	Avg - StdDev		28	713	60	140	244	277	305	358	410	470	583	623	26.7

Heavy Crude Quality Project Simulated Distillation Summary (May/10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
Crude Grade: Heavy Sour - Conventional															
BRS Bow River South															
	2006 Q1	1	35	715	94	153	240	273	305	365	426	488	609	656	29.9
	2007 Q1	2	35	715	88	140	236	271	305	365	426	488	609	654	29.8
	2007 Q2	2	34	716	73	124	230	267	301	363	426	489	611	654	30.0
	2007 Q3	1	35	715	95	153	240	273	305	365	425	486	601	643	29.2
	2007 Q4	1	33	716	84	140	187	222	263	335	405	474	602	647	29.0
	2008 Q1	1	35	720	89	147	243	278	311	374	437	505	639	689	32.6
	2008 Q2	1	39	715	107	160	240	270	299	351	405	455	544	580	21.9
	2008 Q3	1	33	716	83	150	245	281	313	376	437	501	624	667	31.6
	2008 Q4	1	26	718	73	134	237	273	308	371	433	498	623	670	31.3
	2009 Q1	1	32	718	80	149	249	286	319	386	449	518	646	687	34.3
	2009 Q2	1	35	717	86	149	242	276	308	370	431	495	614	655	30.6
	2009 Q3	1	34	712	88	153	241	273	305	364	423	482	593	635	28.3
	2009 Q4	1	36	717	97	150	234	265	294	347	401	453	542	577	21.4
	2010 Q1	1	36	719	94	149	234	268	300	361	423	485	603	649	29.3
	Average		34	716	87	145	235	270	303	364	425	487	605	648	29.3
	Std Dev		2	2	9	10	14	14	12	12	12	16	27	30	3.3
	Avg + StdDev		36	718	96	155	249	283	314	375	437	503	632	678	32.6
	Avg - StdDev		32	714	78	134	221	256	291	352	413	471	578	618	26.1

Heavy Crude Quality Project Simulated Distillation Summary (May/10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
Crude Grade: Heavy Sour - Conventional															
F Fosterton															
	2006 Q1	2	37	713	120	177	254	285	313	368	423	477	573	612	26.1
	2007 Q1	2	35	716	99	164	252	288	320	385	448	513	639	681	33.4
	2007 Q2	2	37	716	82	145	231	268	300	360	420	479	590	632	27.9
	2007 Q3	1	38	719	129	184	267	301	331	391	448	510	634	681	32.8
	2007 Q4	1	39	711	129	182	265	299	328	387	443	503	617	656	31.3
	2008 Q1	1	37	712	119	181	265	299	330	392	453	516	639	684	33.7
	2008 Q2	1	43	716	136	189	266	299	327	385	441	499	610	652	30.6
	2008 Q3	1	36	712	132	189	269	302	333	393	450	511	627	672	32.7
	2008 Q4	1	26	713	114	171	256	290	320	381	440	501	620	669	31.3
	2009 Q1	1	32	715	114	173	254	288	319	381	440	503	625	668	31.9
	2009 Q2	1	35	716	128	180	262	294	323	382	439	498	609	647	30.4
	2009 Q3	1	37	718	128	179	259	293	323	383	441	502	620	662	31.5
	2009 Q4	1	38	713	129	180	261	293	322	378	429	489	600	641	29.1
	2010 Q1	1	35	714	114	174	259	292	323	385	445	508	625	668	32.2
	Average		36	715	116	174	256	290	320	380	438	499	613	656	30.7
	Std Dev		3	2	18	14	12	11	10	11	11	14	22	24	2.5
	Avg + StdDev		39	717	134	188	267	301	330	391	449	512	635	679	33.2
	Avg - StdDev		33	712	98	159	244	279	310	370	427	485	592	632	28.2

Heavy Crude Quality Project Simulated Distillation Summary (May/10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
Crude Grade: Heavy Sour - Conventional															
LLB Lloyd Blend															
	2006 Q1	2	34	717	70	144	257	291	320	377	430	486	582	617	27.4
	2007 Q1	2	34	715	40	85	231	278	315	383	447	514	634	671	33.2
	2007 Q2	1	34	716	69	131	266	306	341	410	475	550	664	701	41.1
	2007 Q3	2	33	715	54	133	272	310	345	413	476	551	666	702	38.1
	2007 Q4	1	37	716	45	111	252	296	332	405	473	552	671	708	38.2
	2008 Q1	1	35	715	78	150	275	313	349	418	483	560	678	715	39.2
	2008 Q2	1	60	720	125	160	268	304	325	394	459	533	662	706	36.2
	2008 Q3	1	35	716	75	171	284	319	354	420	483	557	673	709	38.9
	2008 Q4	1	32	714	56	120	262	301	335	403	465	536	651	686	36.2
	2009 Q1	1	29	717	42	101	242	288	324	396	463	538	663	703	36.6
	2009 Q2	1	33	714	50	106	254	296	331	401	466	541	661	699	37.0
	2009 Q3	1	35	716	76	144	274	312	347	414	478	552	666	703	38.3
	2009 Q4	1	35	715	56	110	253	294	329	398	462	535	647	687	36.1
	2010 Q1	1	26	717	66	138	266	305	341	410	476	553	679	717	38.5
	2010 Q2	1	34	715	70	150	270	307	341	406	468	541	661	702	36.8
	5/29/2010	LLB-833	34	715	70	150	270	307	341	406	468	541	661	702	36.8
	Average		35	716	63	129	260	300	334	401	464	536	652	690	36.1
	Std Dev		7	2	20	25	14	12	12	13	16	22	28	29	3.6
	Avg + StdDev		41	717	83	153	272	312	345	415	480	558	680	719	39.8
	Avg - StdDev		28	714	43	104	246	288	322	388	449	514	624	661	32.5

Heavy Crude Quality Project Simulated Distillation Summary (May/10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
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Crude Grade: Heavy Sour - Conventional

LLK Lloyd Kerrobert

2006 Q1	2	34	719	77	166	265	298	327	383	436	491	588	625	28.2
2007 Q1	3	34	714	41	87	205	240	272	338	401	467	583	620	27.2
2007 Q2	3	35	717	71	137	270	307	341	406	468	538	658	697	37.5
2007 Q3	3	34	715	62	160	278	313	346	410	470	540	659	700	36.7
2007 Q4	3	32	717	53	139	270	306	338	401	460	525	635	672	33.3
2008 Q1	1	35	717	82	183	289	322	355	420	481	553	677	717	38.4
2008 Q2	1	33	714	47	156	284	319	353	419	481	554	668	706	38.3
2008 Q3	2	34	717	47	197	294	327	359	422	482	553	664	703	38.2
2009 Q1	1	32	717	52	140	270	307	340	406	467	536	652	690	36.1
2009 Q2	1	34	719	43	160	279	314	347	411	470	538	648	685	36.2
2009 Q3	1	33	717	65	181	286	319	351	415	474	542	656	695	36.9
2009 Q4	1	34	715	69	144	267	304	338	403	465	535	650	688	36.0
2010 Q1	1	33	717	57	106	251	290	323	389	451	517	634	672	33.6
Average		34	716	58	146	266	301	333	397	457	525	639	677	34.5
Std Dev		1	3	16	35	37	38	39	39	39	42	47	47	5.9
Avg + StdDev		35	719	75	181	304	339	372	437	497	567	686	725	40.4
Avg - StdDev		32	713	42	111	229	263	294	358	418	483	592	630	28.7

Heavy Crude Quality Project Simulated Distillation Summary (May/10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
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**Crude Grade: Heavy Sour - Conventional
WCB Western Canadian Blend**

2006 Q1	2	35	715	88	159	268	306	340	399	451	504	599	632	28.8
2007 Q1	2	34	716	59	113	233	279	316	383	446	512	630	667	32.9
2007 Q2	2	38	716	108	168	268	302	334	396	455	522	645	684	34.5
2007 Q3	1	35	718	81	171	274	307	335	386	436	493	624	671	30.6
2007 Q4	2	33	715	98	173	269	303	334	398	459	526	643	682	34.9
2008 Q2	1	34	716	98	174	272	306	338	403	464	533	649	686	35.9
2008 Q3	1	35	716	109	192	285	317	349	410	470	542	672	716	37.2
2008 Q4	2	30	717	78	158	262	297	328	392	453	519	639	677	34.0
2009 Q1	1	33	717	84	167	271	307	340	406	469	542	658	696	37.1
2009 Q2	1	36	716	88	172	268	302	332	395	454	518	632	665	33.7
2009 Q3	1	34	714	98	183	277	310	342	405	465	532	650	691	35.7
2009 Q4	1	36	716	96	172	269	303	335	399	460	527	641	674	35.0
2010 Q1	1	34	719	66	146	255	291	322	386	447	512	628	665	32.9
Average		34	716	88	162	265	301	333	396	455	520	637	675	33.8
Std Dev		3	2	19	26	15	11	9	8	9	15	24	27	3.2
Avg + StdDev		37	718	107	189	275	311	342	404	464	535	661	702	37.0
Avg - StdDev		32	714	69	136	250	290	324	388	446	505	613	648	30.6

Heavy Crude Quality Project Simulated Distillation Summary (May/10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
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Crude Grade: Heavy Sour - Dilbit

AWB Access Western Blend

2008 Q3	4	35	716	53	87	262	324	367	441	515	602	686	703	43.9
2008 Q4	3	32	718	38	72	205	290	337	415	485	566	677	704	39.7
2009 Q1	1	35	716	42	69	176	282	332	411	481	566	689		39.7
2009 Q2	1	34	718	49	98	269	320	361	432	504	586	684	715	42.4
2009 Q3	1	34	718	44	84	253	312	354	428	500	583	683	712	41.9
2009 Q4	1	36	717	51	103	273	327	369	441	513	599	711		43.7
2010 Q1	1	35	716	49	79	210	286	333	412	484	568	686	716	40.1
2010 Q2	1	35	714	49	78	216	286	331	410	481	565	686		39.6
Average		34	717	47	82	235	306	351	426	498	582	686	709	41.7
Std Dev		2	1	9	14	41	23	20	17	20	22	14	10	2.6
Avg + StdDev		36	718	56	97	259	329	371	443	518	604	700	719	44.3
Avg - StdDev		32	715	37	68	195	283	331	409	479	560	672	699	39.1

Heavy Crude Quality Project Simulated Distillation Summary (May/10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
Crude Grade: Heavy Sour - Dilbit															
CL Cold Lake															
	2006 Q1	2	35	716	62	118	253	291	322	381	435	492	591	626	28.5
	2007 Q1	4	34	716	48	92	218	261	297	362	423	490	600	639	29.2
	2007 Q2	3	35	717	53	100	262	305	342	412	478	554	671	689	39.3
	2007 Q3	3	34	717	41	97	255	300	337	408	474	549	664	699	37.8
	2007 Q4	3	35	714	50	107	270	315	354	428	498	579	693	707	41.5
	2008 Q1	2	35	718	74	134	280	321	358	430	500	581	700		41.8
	2008 Q2	2	46	718	85	131	269	310	342	415	483	562	683	714	39.5
	2008 Q3	3	35	716	58	135	279	320	356	426	492	569	679	709	40.3
	2008 Q4	1	33	715	49	100	246	292	330	401	465	537	648	682	36.2
	2009 Q1	2	32	716	44	94	247	295	334	408	476	554	669	705	38.4
	2009 Q2	2	33	717	41	79	245	294	333	406	473	549	665	701	37.8
	2009 Q3	2	35	717	56	99	267	311	349	420	487	565	680	714	39.7
	2009 Q4	3	36	717	65	140	283	322	357	424	491	567	676	704	40.0
	2010 Q1	2	31	716	44	90	249	299	339	414	484	566	686	715	39.8
	2010 Q2	2	35	719	60	112	260	305	344	417	485	564	682	716	39.6
	5/25/2010	CL(E)-749	35	720	64	130	272	314	351	422	489	566	681	714	40.0
	Average		35	717	55	109	258	302	339	409	475	550	664	689	37.8
	Std Dev		4	2	14	23	24	24	25	27	31	37	42	43	5.3
	Avg + StdDev		39	719	69	132	282	326	363	436	506	587	706	732	43.1
	Avg - StdDev		30	715	41	86	234	278	314	382	444	514	622	646	32.5

Heavy Crude Quality Project Simulated Distillation Summary (May/10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
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Crude Grade: Heavy Sour - Dilbit

PH Peace River Heavy

2006 Q1	1	35	717	72	134	257	299	334	404	471	547	663	698	37.7
2007 Q1	1	34	717	41	90	206	254	294	357	434	528	646	677	35.5
2007 Q2	2	36	714	55	119	243	286	324	397	472	556	675	695	38.9
2007 Q4	1	31	716	38	99	241	285	323	398	472	558	675	710	38.9
2008 Q2	1	34	718	47	99	231	279	319	395	466	543	656	692	37.2
2008 Q4	1	34	715	54	105	224	268	306	376	450	529	651	688	35.7
2009 Q1	1	29	717	36	79	213	267	313	396	473	558	670	704	38.9
2009 Q3	1	36	716	68	101	241	282	318	385	458	540	658	695	36.9
2010 Q1	1	27	718	42	99	250	300	342	423	502	589	704		42.6

Average		33	716	51	104	235	281	320	393	467	550	667	695	38.1
Std Dev		3	2	12	15	16	15	15	20	20	20	18	9	2.3
Avg + StdDev		36	718	62	120	250	296	335	412	487	571	685	704	40.4
Avg - StdDev		30	715	39	89	219	265	305	373	447	530	649	685	35.8

Heavy Crude Quality Project Simulated Distillation Summary (May/10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
Crude Grade: Heavy Sour - Dilbit															
SH Seal Heavy															
	2006 Q1	5	34	718	78	130	233	275	314	390	462	540	658	691	37.0
	2007 Q1	3	34	716	53	101	206	253	294	371	445	521	641	675	34.6
	2007 Q2	2	37	718	63	126	236	281	322	402	478	564	681	705	41.3
	2007 Q3	2	34	718	68	126	235	277	316	392	466	549	670	705	38.1
	2007 Q4	2	30	717	59	120	238	282	323	403	478	563	675	707	39.5
	2008 Q1	1	35	715	64	118	243	288	329	408	482	569	693		40.3
	2008 Q2	1	35	716	81	142	259	304	346	427	506	595	710		43.4
	2008 Q3	1	33	719	68	130	250	293	333	412	486	569	684	719	40.3
	2008 Q4	1	35	719	78	126	245	290	330	410	484	568	686	719	40.3
	2009 Q1	1	34	717	52	99	214	263	306	387	462	544	665	703	37.6
	2009 Q2	1	33	719	40	86	202	250	291	367	440	513	634	666	33.7
	2009 Q3	1	30	717	52	102	241	286	328	410	487	575	687	717	41.0
	2009 Q4	1	36	720	85	138	256	300	341	421	497	583	700		42.0
	2010 Q1	1	35	714	56	88	197	249	293	373	451	536	664	700	36.8
	2010 Q2	1	35	717	61	98	224	273	318	404	484	571	684	717	40.4
	Average		34	717	65	117	230	275	316	395	470	552	670	698	38.4
	Std Dev		2	2	13	17	17	16	15	17	18	23	22	19	2.8
	Avg + StdDev		36	719	78	134	246	291	332	412	488	575	692	717	41.3
	Avg - StdDev		32	716	52	101	213	260	301	378	451	528	648	678	35.6

Heavy Crude Quality Project Simulated Distillation Summary (May/10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
Crude Grade: Heavy Sour - Dilbit															
SC Smiley-Coleville															
	2006 Q1	2	35	717	80	162	252	284	314	370	424	477	571	606	25.7
	2007 Q1	1	34	719	59	121	256	295	329	394	454	519	635	672	33.7
	2007 Q2	1	35	717	77	149	265	303	336	402	463	530	647	686	38.5
	2007 Q3	2	35	719	86	168	272	308	339	402	459	522	632	666	33.9
	2007 Q4	1	30	716	61	136	257	295	329	395	457	524	640	678	34.5
	2008 Q1	1	35	712	75	160	272	309	343	409	471	542	662	704	37.0
	2008 Q2	1	35	715	99	187	285	319	352	416	476	546	666	707	37.5
	2008 Q4	2	34	717	81	157	270	307	340	406	466	533	649	688	35.8
	2009 Q1	1	29	718	56	128	250	289	323	389	450	515	632	671	33.2
	2009 Q2	1	33	716	69	139	262	300	334	401	463	533	653	693	35.9
	2009 Q3	1	36	719	98	176	274	310	343	407	466	533	646	684	35.7
	2009 Q4	1	35	720	69	153	264	301	334	399	458	525	640	672	34.6
	2010 Q1	1	27	718	86	162	265	302	336	402	463	532	654	696	35.8
	2010 Q2	1	35	717	88	172	272	308	340	405	465	532	648	688	35.5
	5/23/2010	SC-296	35	717	88	172	272	308	340	405	465	532	648	688	35.5
	Average		33	717	78	156	265	302	334	398	458	523	637	675	34.3
	Std Dev		2	2	12	17	10	10	10	13	14	19	27	29	3.6
	Avg + StdDev		36	719	90	173	275	311	345	411	472	542	664	704	37.9
	Avg - StdDev		31	715	66	139	256	292	324	386	443	504	610	646	30.7

Heavy Crude Quality Project Simulated Distillation Summary (May/10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
Crude Grade: Heavy Sour - Dilbit															
WH Wabasca Heavy															
	2006 Q1	3	34	717	90	157	247	282	314	378	439	502	611	646	31.0
	2007 Q1	1	35	718	60	125	237	277	315	389	459	536	655	695	36.4
	2007 Q2	2	39	712	114	169	256	289	319	380	443	512	632	676	33.1
	2007 Q3	1	35	720	74	146	250	289	324	396	463	538	663	704	36.8
	2007 Q4	2	33	718	99	160	261	301	337	410	478	555	670	683	38.6
	2008 Q1	1	35	718	94	157	258	296	331	403	471	549	678	718	38.1
	2008 Q2	1	33	720	87	153	254	292	327	397	463	536	652	691	36.3
	2008 Q3	1	33	718	99	165	260	296	330	398	463	533	647	687	35.9
	2008 Q4	1	26	719	66	124	240	281	318	391	461	537	657	697	36.5
	2009 Q1	1	34	712	74	133	240	279	316	387	454	527	650	690	35.3
	2009 Q2	1	33	719	62	134	240	278	313	381	448	518	637	672	34.1
	2009 Q3	1	30	718	54	134	245	284	320	394	464	542	660	698	37.2
	2009 Q4	1	35	718	104	176	268	305	340	409	475	549	671	711	38.1
	2010 Q1	1	35	719	68	129	246	287	324	399	470	550	670	704	38.1
	2010 Q2	1	35	720	75	139	247	286	320	391	459	533	650	692	35.9
	Average		34	717	85	150	251	288	323	392	459	531	649	685	35.5
	Std Dev		3	3	18	17	10	10	11	14	17	23	26	25	3.3
	Avg + StdDev		37	720	103	166	261	298	333	406	476	554	675	710	38.9
	Avg - StdDev		31	715	66	133	240	278	312	378	441	508	622	661	32.2

Heavy Crude Quality Project Simulated Distillation Summary (May/10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
Crude Grade: Heavy Sour - Dilbit															
WCS Western Canadian Select															
	2006 Q1	5	34	718	83	172	267	299	327	384	438	496	603	641	29.7
	2007 Q1	3	34	716	41	92	217	260	295	356	417	481	594	632	27.8
	2007 Q2	3	35	718	63	150	276	313	346	412	475	550	667	696	39.0
	2007 Q3	3	34	717	57	151	274	311	343	406	467	539	661	699	36.6
	2007 Q4	3	33	716	55	140	268	308	342	408	471	541	652	667	36.4
	2008 Q1	2	35	714	78	158	276	313	347	413	477	554	678	715	38.5
	2008 Q2	1	34	719	102	182	278	310	339	397	452	511	623	658	32.5
	2008 Q3	2	34	718	85	173	281	316	349	412	471	541	659	697	36.8
	2008 Q4	1	35	720	69	126	263	302	335	401	462	533	657	698	36.0
	2009 Q1	1	34	713	50	101	247	290	325	393	456	526	650	691	35.1
	2009 Q2	1	33	719	38	87	231	276	312	377	439	506	628	663	32.3
	2009 Q3	1	30	718	54	162	277	313	348	417	485	568	690		40.0
	2009 Q4	1	35	714	47	115	258	298	333	400	462	531	648	686	35.4
	2010 Q1	1	35	715	48	80	245	296	336	411	481	562	676	708	39.4
	2010 Q2	1	35	717	68	133	261	299	331	396	459	534	654	695	36.0
	Average		34	717	64	142	263	300	333	397	457	526	643	673	34.7
	Std Dev		1	2	18	33	24	22	21	23	26	32	39	38	5.0
	Avg + StdDev		35	719	83	174	284	322	355	420	483	559	682	711	39.7
	Avg - StdDev		33	714	46	109	238	278	312	373	432	494	604	636	29.7

Heavy Crude Quality Project Simulated Distillation Summary (May/10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
Crude Grade: Heavy Sour - Dilsynbit															
AHS Albian Heavy Synthetic															
	2006 Q1	3	35	716	92	171	273	308	339	394	441	489	576	611	26.6
	2007 Q1	3	32	693	84	158	270	311	344	393	430	467	529	554	18.6
	2007 Q2	1	34	716	72	118	266	326	371	427	471	516	602	638	34.1
	2007 Q3	2	34	714	71	128	267	320	363	424	471	518	606	643	31.6
	2007 Q4	1	37	708	58	115	260	318	362	421	468	517	614	654	31.9
	2008 Q1	1	35	713	109	180	291	328	360	413	462	521	636	684	33.5
	2008 Q2	1	56	715	122	140	284	323	362	411	450	488	560	590	24.0
	2008 Q3	1	35	710	83	139	303	354	387	433	475	518	601	637	31.0
	2008 Q4	1	33	716	83	141	261	307	345	401	445	492	582	618	27.3
	2009 Q1	1	29	716	51	104	245	318	371	429	470	509	582	612	28.5
	2009 Q2	1	33	717	59	104	280	342	384	438	483	527	608	641	32.9
	2009 Q3	1	35	711	68	98	247	320	372	432	478	522	604	639	31.9
	2009 Q4	1	35	713	67	120	299	351	385	430	473	515	594	628	30.1
	2010 Q1	1	33	714	52	98	269	340	383	436	479	524	613	652	32.6
	2010 Q2	1	35	715	68	138	282	322	358	417	465	517	615	653	32.2
	5/15/2010	AHS-635	35	715	68	138	282	322	358	417	465	517	615	653	32.2
	Average		35	711	78	137	272	322	361	415	459	504	587	621	28.4
	Std Dev		5	13	25	39	20	17	18	20	23	28	41	48	7.1
	Avg + StdDev		40	724	103	176	289	339	379	435	482	532	628	669	35.6
	Avg - StdDev		30	697	53	98	252	305	342	395	435	475	546	574	21.3

Heavy Crude Quality Project Simulated Distillation Summary (May/10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
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Crude Grade: Heavy Sour - Synbit

PSH Long Lake Heavy

2008 Q2	1	36	715	139	208	284	310	334	380	427	481	631	686	30.0	
2008 Q3	4	36	716	137	203	280	308	333	380	425	476	611	667	28.6	
2008 Q4	2	31	716	112	179	260	289	313	357	399	441	536	596	21.6	
2009 Q1	1	33	720	106	164	241	271	297	344	388	434	544	615	22.7	
2009 Q2	1	36	719	99	149	247	280	308	358	409	461	601	653		
2009 Q3	1	34	711	99	175	257	286	311	359	408	460	592	645	26.8	
2009 Q4	1	38	718	128	184	264	294	320	368	415	464	594	645	27.0	
2010 Q1	1	36	720	69	133	215	250	282	340	399	459	593	645	27.3	
Average			35	716	118	182	262	292	317	365	412	462	589	646	26.5
Std Dev			3	3	22	23	20	18	16	14	13	16	32	29	3.0
Avg + StdDev			38	720	139	205	280	310	334	379	425	478	621	675	29.5
Avg - StdDev			32	713	96	159	242	274	301	351	399	446	557	617	23.5

Heavy Crude Quality Project Simulated Distillation Summary (May/10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
Crude Grade: Heavy Sour - Synbit															
SHB Surmont Heavy Blend															
	2009 Q1	2	34	714	120	189	266	294	318	364	410	459	585	640	26.1
	2009 Q2	1	36	717	133	197	272	299	321	365	411	461	590	644	
	2009 Q3	1	35	719	136	195	265	291	315	361	411	464	592	641	27.1
	2009 Q4	1	37	720	139	198	262	286	308	352	401	455	588	642	26.7
	2010 Q1	1	36	715	127	192	255	279	301	342	388	439	556	610	23.8
	Average		35	716	129	193	264	290	313	358	405	456	583	636	25.9
	Std Dev		1	3	14	8	5	6	7	8	9	8	12	12	1.2
	Avg + StdDev		36	719	143	201	270	297	320	366	414	464	595	648	27.1
	Avg - StdDev		34	714	115	186	259	284	306	350	397	448	570	625	24.8

Heavy Crude Quality Project Simulated Distillation Summary (May/10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
Crude Grade: Light Sour															
LSB Light Sour Blend															
	2007 Q1	3	34	713	49	92	171	204	235	293	348	404	497	530	16.3
	2007 Q2	3	35	704	65	99	158	186	214	268	322	379	476	517	16.0
	2007 Q3	3	34	709	58	92	146	173	201	255	309	364	459	496	12.9
	2007 Q4	3	31	705	50	91	149	177	208	263	317	375	472	511	14.7
	2008 Q1	1	34	701	70	99	149	176	205	259	312	369	465	504	13.9
	2008 Q2	1	35	716	70	100	159	187	216	268	321	380	476	517	15.5
	2008 Q3	2	34	701	75	100	146	171	197	247	297	351	444	481	11.5
	2009 Q1	1	29	718	49	87	132	157	182	233	282	334	426	462	9.7
	2009 Q3	1	35	713	67	85	115	142	169	221	271	323	412	446	7.1
	2009 Q4	1	34	697	54	80	126	152	175	225	274	325	417	453	8.8
	2010 Q1	1	33	694	46	81	132	158	179	227	279	334	431	470	11.6
	2010 Q2	1	35	711	72	100	149	170	189	235	285	338	431	468	10.7
	5/24/2010	LSB-798	35	711	72	100	149	170	189	235	285	338	431	468	10.7
	Average		33	707	59	93	149	176	204	257	310	365	460	497	13.3
	Std Dev		2	8	11	8	23	26	28	31	34	37	41	43	5.0
	Avg + StdDev		35	715	70	101	175	202	232	288	344	402	501	540	18.3
	Avg - StdDev		32	699	48	85	126	151	176	226	276	329	418	454	8.4

Heavy Crude Quality Project Simulated Distillation Summary (May/10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
Crude Grade: Light Sour															
SLE SLE															
	2007 Q1	2	34	709	44	76	124	151	178	236	293	351	450	489	12.1
	2007 Q2	3	35	709	57	99	142	167	196	256	313	371	472	515	16.3
	2007 Q3	2	35	705	55	88	148	179	210	270	326	387	488	532	16.7
	2007 Q4	2	32	711	48	83	129	154	179	237	294	351	451	492	12.9
	2008 Q1	1	34	684	68	97	136	160	183	235	287	342	440	480	12.2
	2008 Q2	1	34	696	80	101	140	161	182	231	279	329	419	453	8.0
	2008 Q3	2	34	700	55	88	133	157	182	238	292	348	448	488	12.6
	2008 Q4	2	29	707	45	78	123	147	171	226	280	337	433	470	10.4
	2009 Q1	1	34	699	57	87	128	154	177	234	290	347	446	485	12.0
	2009 Q2	1	34	702	41	92	123	141	166	220	273	329	425	462	9.7
	2009 Q3	1	33	715	50	82	127	151	174	231	286	341	435	471	10.6
	2009 Q4	1	35	711	40	82	117	139	165	230	293	354	459	502	14.3
	2010 Q1	1	34	701	61	88	136	160	187	243	298	354	449	486	11.7
	2010 Q2	1	35	718	61	82	130	156	181	239	295	352	450	488	12.0
	Average		34	706	53	87	132	157	183	240	296	353	451	491	12.8
	Std Dev		2	8	11	10	10	12	14	15	16	18	20	23	2.7
	Avg + StdDev		36	714	64	97	144	169	196	255	311	371	472	514	15.5
	Avg - StdDev		31	698	43	78	122	145	169	225	280	335	431	468	10.1

Heavy Crude Quality Project Simulated Distillation Summary (May/10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
Crude Grade: Medium Sour															
MS Midale															
	2006 Q1	2	35	711	83	114	179	210	239	296	351	409	502	543	17.3
	2007 Q1	3	32	711	66	93	166	200	231	288	344	402	502	547	17.2
	2007 Q2	3	35	690	77	98	161	194	226	287	347	409	511	556	19.7
	2007 Q3	3	33	712	59	95	164	200	234	296	356	419	523	572	20.4
	2007 Q4	3	31	713	77	109	171	200	231	291	350	413	516	564	19.7
	2008 Q1	1	35	716	82	111	181	217	249	308	369	432	540	591	22.3
	2008 Q2	1	35	710	80	114	190	224	256	316	379	442	556	610	23.9
	2008 Q3	1	33	711	69	107	178	213	243	300	357	418	514	558	19.1
	2009 Q1	1	32	710	69	107	173	201	235	295	355	417	521	570	20.3
	2009 Q2	1	34	714	71	106	165	191	221	283	344	408	513	562	19.6
	2009 Q4	1	35	710	73	107	166	191	219	278	337	400	503	548	18.3
	2010 Q1	1	35	717	70	106	166	194	223	284	343	407	509	556	19.0
	Average		33	709	72	103	170	202	233	292	351	413	515	562	19.4
	Std Dev		2	13	13	15	14	15	15	17	19	21	28	33	3.3
	Avg + StdDev		36	722	85	118	185	216	248	309	370	434	542	595	22.8
	Avg - StdDev		31	696	59	88	156	187	217	276	332	392	487	529	16.1

Heavy Crude Quality Project Simulated Distillation Summary (May/10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
Crude Grade: Medium Sour															
SO Mixed Sour Blend															
	2007 Q1	2	34	715	43	85	160	202	239	302	362	424	527	574	20.5
	2007 Q2	3	36	717	47	101	187	232	269	335	401	464	584	635	27.7
	2007 Q3	3	34	712	53	98	187	227	262	325	387	448	559	609	24.1
	2007 Q4	3	33	718	49	102	186	228	264	326	387	447	554	599	23.0
	2008 Q1	1	34	709	84	129	215	249	279	335	394	453	566	615	24.8
	2008 Q2	2	47	713	97	131	200	237	268	325	381	444	561	613	24.3
	2008 Q3	2	33	712	58	105	183	222	255	315	374	434	538	586	21.8
	2008 Q4	1	26	711	58	99	166	205	240	301	358	419	520	566	19.7
	2009 Q1	1	29	714	34	88	156	192	228	290	347	408	505	548	18.0
	2009 Q2	1	33	714	50	85	151	189	228	297	360	423	536	590	21.8
	2009 Q3	1	34	720	41	70	109	151	197	279	349	418	526	574	20.4
	2009 Q4	1	34	718	46	84	170	212	246	307	367	426	532	578	21.0
	2010 Q2	1	34	711	78	126	214	253	289	350	394	438	530	578	20.3
	5/25/2010 SO-707		34	711	78	126	214	253	289	350	394	438	530	578	20.3
	Average		35	714	56	101	179	220	255	318	379	439	548	596	22.9
	Std Dev		6	4	19	20	28	26	23	20	20	20	29	32	3.5
	Avg + StdDev		41	718	75	121	206	246	279	338	399	459	577	629	26.3
	Avg - StdDev		28	711	37	81	151	193	232	298	358	419	519	564	19.4

Heavy Crude Quality Project Simulated Distillation Summary (May/10)

Crude	Sample Date	Batch Count or No.	IBP	FBP	5% off	10% off	20% off	25% off	30% off	40% off	50% off	60% off	75% off	80% off	565+ Residue
Crude Grade: Medium Sour															
SHE SHE															
	2006 Q1	2	35	709	77	105	161	187	214	266	316	372	466	504	13.2
	2007 Q1	2	34	713	55	89	138	166	197	259	319	383	491	536	17.1
	2007 Q2	3	35	711	75	98	146	176	208	270	330	393	502	551	19.3
	2007 Q3	2	33	710	72	105	167	199	230	288	345	407	515	566	19.8
	2007 Q4	1	37	714	48	90	141	174	209	271	333	399	509	561	19.3
	2008 Q1	1	35	710	86	109	171	204	237	302	363	431	563	625	24.5
	2008 Q2	1	56	718	108	124	143	160	184	241	297	340	441	481	11.3
	2008 Q3	1	36	708	84	103	160	191	222	281	337	398	500	544	17.7
	2008 Q4	1	26	715	49	81	126	151	176	237	300	360	467	511	15.0
	2009 Q1	1	34	705	59	88	131	156	182	239	297	354	453	494	12.9
	2009 Q2	1	33	718	38	67	110	133	161	219	274	332	422	458	9.0
	2009 Q3	1	33	713	41	68	107	129	156	220	291	359	470	519	15.9
	2009 Q4	1	35	714	39	56	105	129	160	245	320	398	531	596	21.9
	2010 Q1	1	35	719	41	68	125	160	208	292	363	436	574	633	25.4
	2010 Q2	1	35	713	51	72	105	128	157	236	315	394	521	580	20.6
	Average		35	712	64	91	140	167	198	261	322	385	495	543	17.6
	Std Dev		5	4	20	18	22	25	26	25	24	27	38	45	4.3
	Avg + StdDev		40	716	84	109	165	192	224	285	346	413	533	588	21.9
	Avg - StdDev		30	708	44	73	117	142	172	236	298	358	457	498	13.2

Heavy Crude Quality Testing Project -- Typical Crude Properties

Crude	Sulphur (wt%)	API Gravity	Nickel (mg/L)	Vanadium (mg/L)	MCR (mass%)	TotalC4's (vol%)	TotalC5's (vol%)	Distillation Profile (%off at oC)					
								10%	20%	25%	50%	75%	FBP
Access Western Blend													
Average	3.93	22.1	70.62	191.15	10.63	0.70	8.44	82	235	306	498	686	717
Upper	4.14	23.7	81.52	210.15	11.67	0.98	10.85	111	317	353	537	714	720
Lower	3.72	20.5	59.73	172.15	9.59	0.42	6.04	54	154	259	459	658	714
Albian Heavy Synthetic													
Average	2.52	19.5	43.57	90.82	10.94	1.57	3.06	154	265	307	449	585	713
Upper	2.97	20.4	61.61	128.34	13.13	2.21	4.47	213	299	345	486	653	731
Lower	2.08	18.6	25.53	53.30	8.76	0.93	1.65	94	232	270	412	518	695
Bow River North													
Average	2.84	21.1	35.54	83.67	8.54	1.00	3.53	161	254	287	427	590	723
Upper	3.21	23.4	45.66	103.04	9.69	1.79	4.91	213	290	320	468	656	742
Lower	2.47	18.9	25.42	64.29	7.38	0.20	2.15	108	219	253	387	525	703
Bow River South													
Average	2.79	23.3	30.57	82.12	8.20	0.97	3.03	148	233	267	416	582	720
Upper	3.00	24.7	40.10	103.58	8.88	1.39	4.23	186	266	300	457	658	743
Lower	2.59	21.9	21.05	60.66	7.52	0.56	1.83	109	200	235	375	506	697
Cold Lake													
Average	3.61	20.8	62.45	161.14	10.62	1.01	6.79	110	249	292	459	637	721
Upper	3.93	22.5	74.06	190.28	11.42	1.49	8.59	170	311	348	517	725	751
Lower	3.30	19.0	50.83	132.00	9.81	0.54	4.98	50	188	237	401	549	690
Fosterton													
Average	3.13	20.3	44.72	103.38	9.74	0.54	1.19	178	259	292	438	608	719
Upper	3.31	21.4	52.92	122.64	10.76	1.23	1.89	206	283	316	468	665	736
Lower	2.96	19.2	36.52	84.12	8.71	0.00	0.50	149	234	268	407	552	702
Light Sour Blend													
Average	1.10	36.6	5.71	9.40	2.90	2.19	3.38	93	149	176	310	460	707
Upper	1.48	39.5	9.71	17.53	3.98	2.89	4.33	109	194	228	377	542	723
Lower	0.71	33.8	1.72	1.27	1.81	1.49	2.43	77	103	125	242	377	691
Lloyd Blend													
Average	3.36	20.9	54.82	119.21	9.68	2.13	4.79	133	261	299	460	636	722
Upper	3.59	22.5	65.94	143.96	10.48	2.65	6.00	197	295	328	510	718	743
Lower	3.13	19.3	43.70	94.46	8.89	1.60	3.57	69	228	271	410	555	702

Heavy Crude Quality Testing Project -- Typical Crude Properties

Crude	Sulphur (wt%)	API Gravity	Nickel (mg/L)	Vanadium (mg/L)	MCR (mass%)	TotalC4's (vol%)	TotalC5's (vol%)	Distillation Profile (%off at oC)					
								10%	20%	25%	50%	75%	FBP
Lloyd Kerrobert													
Average	3.08	20.6	44.03	98.52	9.38	2.90	4.37	155	268	302	452	623	721
Upper	3.35	22.2	55.95	119.49	10.04	5.09	6.49	228	317	350	506	708	740
Lower	2.81	19.0	32.10	77.55	8.71	0.72	2.25	82	219	254	397	539	702
Long Lake Heavy													
Average	2.89	20.8	47.31	128.41	7.13	0.68	1.80	182	262	292	412	589	716
Upper	3.39	23.0	56.11	153.59	8.58	1.01	2.71	228	303	327	438	653	723
Lower	2.40	18.7	38.51	103.23	5.67	0.35	0.88	135	222	256	385	526	710
Midale													
Average	2.32	29.7	15.58	29.39	5.78	1.57	2.44	112	181	214	361	524	713
Upper	2.69	31.1	21.06	39.64	6.65	1.95	3.16	146	212	246	399	589	744
Lower	1.94	28.2	10.09	19.14	4.90	1.18	1.73	78	151	182	322	459	683
Mixed Sour Blend													
Average	1.61	31.6	19.62	42.22	5.23	3.75	4.52	101	179	220	379	548	714
Upper	2.04	36.0	29.34	61.66	6.46	5.68	7.99	142	235	273	420	607	721
Lower	1.17	27.2	9.91	22.78	3.99	1.82	1.04	60	123	167	338	490	707
Peace River Heavy													
Average	4.59	20.9	52.40	152.43	8.98	0.79	6.63	119	225	265	434	622	720
Upper	5.57	22.5	68.31	206.01	10.70	1.20	10.05	172	293	337	512	724	736
Lower	3.61	19.3	36.49	98.86	7.27	0.37	3.21	66	157	193	356	519	704
Seal Heavy													
Average	4.60	20.7	58.64	164.67	9.39	1.71	4.57	119	231	275	467	666	717
Upper	4.92	22.0	70.39	197.98	10.34	2.68	5.87	150	263	305	505	716	720
Lower	4.29	19.3	46.89	131.36	8.43	0.75	3.26	88	198	245	429	616	714
SHE													
Average	1.69	34.9	17.34	47.25	3.94	1.94	4.51	98	150	178	324	490	711
Upper	2.31	38.8	30.18	80.34	5.54	3.47	8.14	130	191	223	363	555	723
Lower	1.07	31.0	4.49	14.17	2.33	0.42	0.88	66	108	132	286	425	698
SLE													
Average	0.97	38.0	7.96	18.52	2.60	2.63	4.41	87	132	157	296	451	706
Upper	1.27	41.3	15.32	37.16	3.80	4.67	6.40	107	152	181	327	492	722
Lower	0.68	34.8	0.60	0.00	1.40	0.59	2.43	68	112	133	264	411	690

Heavy Crude Quality Testing Project -- Typical Crude Properties

Crude	Sulphur (wt%)	API Gravity	Nickel (mg/L)	Vanadium (mg/L)	MCR (mass%)	TotalC4's (vol%)	TotalC5's (vol%)	Distillation Profile (%off at oC)					
								10%	20%	25%	50%	75%	FBP
Smiley-Coleville													
Average	2.95	19.9	34.25	93.39	9.37	1.02	3.79	155	260	296	448	621	722
Upper	3.11	21.3	40.59	106.83	9.96	1.53	4.69	199	294	328	487	693	739
Lower	2.79	18.5	27.91	79.94	8.79	0.52	2.89	111	227	264	410	549	705
Suncor Synthetic H													
Average	3.03	19.9	3.47	8.82	0.70	0.65	1.54	248	323	339	394	445	673
Upper	3.14	20.5	7.05	17.17	1.41	0.97	2.16	281	333	348	403	455	738
Lower	2.92	19.2	-0.11	0.46	-0.01	0.32	0.92	215	314	330	384	434	608
Surmont Heavy Blend													
Average	2.90	19.7	49.13	134.40	7.13	0.80	1.32	196	267	293	408	587	716
Upper	3.08	20.7	54.79	153.56	7.84	1.03	1.73	217	284	311	427	618	721
Lower	2.71	18.7	43.47	115.24	6.42	0.58	0.91	176	249	275	388	556	711
Wabasca Heavy													
Average	3.78	20.9	49.07	132.73	8.53	1.73	2.64	145	237	275	439	622	722
Upper	4.28	22.8	59.81	157.28	9.26	2.97	3.61	184	280	314	488	700	740
Lower	3.28	19.1	38.34	108.19	7.79	0.50	1.67	106	194	235	389	544	703
Western Canadian Blend													
Average	3.04	20.7	44.30	92.37	8.68	0.76	3.46	167	263	296	446	625	721
Upper	3.27	22.2	54.86	114.23	9.40	1.02	4.92	214	289	319	479	692	744
Lower	2.81	19.1	33.73	70.51	7.97	0.50	2.00	121	237	273	412	558	699
Western Canadian Select													
Average	3.34	20.6	53.67	129.92	9.37	2.04	3.95	157	267	303	452	634	717
Upper	3.66	22.2	65.63	155.95	10.15	2.78	5.11	227	310	340	499	708	722
Lower	3.01	19.0	41.71	103.89	8.59	1.30	2.78	87	225	266	406	559	712