

**SNC-Lavalin: Muskrat Falls
Lower Churchill River
Structural Concrete Summaries
SUMMARY - Powerhouse & Intakes, Spillway, Transitions**

Estimator JD
Date 11-15-11

	Quantity	Unit	U.C.	Direct	Indirect	U.C.	Total	
				U.C.	Total		U.C.	Total
Powerhouse & Intakes (Incl. South Transition)	328,029	m3	901	295,529,122	415	135,978,962	1315	431,508,084
Spillway	62,631	m3	735	46,044,895	365	22,880,992	1101	68,925,887
Transitions North Abutment North Transition Centre Transition	47,641	m3	573	27,295,200	273	13,015,898	846	40,311,098
Subtotals	438,301	m3	842	368,869,217	392	171,875,852	1234	540,745,069
Overbreak Concrete	15,930	m3	287	4,567,058	0	0	287	4,567,058
Totals (neatline)	438,301	m3	852	373,436,275	392	171,875,852	1244	545,312,127

46% of Direct

Concrete
- Powerhouse
- Spillway
- transitions

print date : 2011-12-08

SUMMARY - WHOLE WORKS

Project	SNC-Lavalin: Muskrat Falls		Estimator	JD														
Location	Lower Churchill River		Date	11-2-11														
Description	Structural Concrete Summaries																	
SUMMARY - WHOLE WORKS - Spillway, Intakes, Powerhouse, Transitions																		
Description	Quantity	Unit	Equipment		Services, Tools, Supplies		Labor Expense				Permanent Materials		Subcontracts		Total		Note	
			U.C.	Total	U.C.	Total	MH	Labor		U.C.	Total	U.C.	Total	U.C.	Total	U.C.		Total
Fine Grade for Slab	22,500	m2	3.93	88,452	0.00	0	0.50	11341	31.90	717,641	0.00	0	0.00	0	35.83	806,093	Underneath only (no scaling included)	
Falsework Fab	17,700	m2	57.14	1,011,365	430.52	7,620,140	1.68	29761	108.25	1,916,001	0.00	0	0.00	0	595.90	10,547,506	72% of place & strip	
Falsework Place & Strip	24,674	m2	119.89	2,958,216	11.07	273,108	2.75	67939	177.38	4,376,609	0.00	0	0.00	0	308.34	7,607,933		
Form Fab	67,705	m2	64.44	4,363,106	298.31	20,197,045	1.88	127574	121.15	8,202,171	0.00	0	0.00	0	483.90	32,762,322	27% of place & strip	
Form Refurbish	16,510	m2	18.69	308,580	35.12	579,854	0.55	9081	35.41	584,607	0.00	0	0.00	0	89.22	1,473,041	7% of place & strip	
Form Place & Strip	251,900	m2	104.44	26,308,240	11.01	2,772,594	2.53	637566	163.05	41,071,616	0.00	0	0.00	0	278.49	70,152,450	Total f/w & forms 3.46mh/m2; \$486/m2	
Waterstop	80,595	m	0.00	0	0.00	0	0.50	40299	32.26	2,599,673	15.00	1,208,925	0.00	0	47.26	3,808,598		
Rebar Template	6,444	m	8.34	53,744	3.30	21,266	0.20	1288	12.88	83,019	0.00	0	0.00	0	24.52	158,029		
Concrete Furnish & Transport	438,301	m3	14.41	6,316,481	0.00	0	0.12	54787	7.91	3,466,969	235.00	103,000,735	0.00	0	257.32	112,784,185	PM plugged @ \$235/m3	
Concrete Place	438,301	m3	15.72	6,890,386	5.23	2,294,396	0.36	159805	23.19	10,165,984	0.00	0	0.00	0	44.15	19,350,766	Pumped	
Wet Finish	46,726	m2	2.79	130,145	1.02	47,638	0.50	23427	31.99	1,494,604	0.00	0	0.00	0	35.79	1,672,387		
CJ Prep	222,778	m2	5.00	1,113,890	1.10	245,056	0.50	111390	31.64	7,049,142	0.00	0	0.00	0	37.74	8,408,088	Hydroblast	
Cure	407,192	m2	0.00	0	1.10	447,911	0.03	13437	2.09	850,367	0.00	0	0.00	0	3.19	1,298,278		
Dry Finish	217,082	m2	12.63	2,740,852	0.88	191,534	0.44	95167	27.97	6,071,704	0.00	0	0.00	0	41.48	9,004,090		
Expansion Joint Filler (Liquid)	13,303	m2	0.00	0	0.00	0	0.06	756	3.60	47,871	11.37	151,283	0.00	0	14.97	199,154		
Tower Crane Setups	3	ea	0.00	0	300000.00	900,000	0.00	0	0.00	0	0.00	0	0.00	0	300000.00	900,000	Tower cranes figured for Intakes (only)	
Temporary Building & Utilities	2	ls	0.00	0	8937000.00	17,874,000	0.00	0	0.00	0	0.00	0	0.00	0	8937000.00	17,874,000	Winter Protection for PH & Intakes	
			-	-	-	-	-	-	-	-	-	-	-	-	-	0		
			-	-	-	-	-	-	-	-	-	-	-	-	-	0		
Subtotals - Concrete Directs	438,301	m3	119.29	52,283,457	121.98	53,464,542	3.16	1383618	202.37	88,697,978	238.10	104,360,943	0.00	0	681.74	298,806,920		
	251,900	m2	207.56		212.25		5.49		352.12		414.30		0.00		1186.21			
	0.57	F/R							64.11	per MH								
Subtotals - Rebar Directs	23,963,100	kg	0.18	4,372,850	0.05	1,198,155	0.01	239631	0.69	16,565,092	2.00	47,926,200	0.00	0	2.92	70,062,297	PM plugged @ \$2.00/kg	
	438,301	m3	9.98		2.73		0.55		37.79		109.35		0.00		159.85			
	54.7	kg/m3							69.13	per MH								
Totals - Concrete & Rebar Directs	438,301	m3	129.26	56,656,307	124.71	54,662,697	3.70	1623249	240.16	105,263,070	347.45	152,287,143	0.00	0	841.59	368,869,217		
									64.85	per MH								
Indirects (w/ 15% Markup on Cost)	438,301	m3	65.74	28,814,018	201.21	88,188,500	2.14	939920	120.08	52,633,334	0.00	0	5.11	2,240,000	392.14	171,875,852	15% markup on total cost in STS column	
					(incl. m/u)		mh/m3		56.00	per MH					46.6%	of direct		
TOTALS	438,301	m3	195.00	85,470,325	325.92	142,851,197	5.85	2563169	360.25	157,896,404	347.45	152,287,143	5.11	2,240,000	1233.73	540,745,069		
					(incl. m/u)		mh/m3		61.60	per MH								
(plus Overbreak Concrete)	15,930	m3	25.88	412,293	2.00	31,860	0.38	5974	23.81	379,355	235.00	3,743,550	0.00	0	286.70	4,567,058	0.5m underneath and 0.3m alongside	
	438,301	m3	0.94		0.07		0.01		0.87		8.54		0.00		10.42			
		on neatline																
																545,312,127	Total Estimate (Checks)	

SUMMARY - PH & Intakes

Project	SNC-Lavalin: Muskrat Falls						Estimator	JD											
Location	Lower Churchill River						Date	11-2-11											
Description	Structural Concrete Summaries																		
	SUMMARY - Powerhouse & Intakes (without Overbreak Concrete)																		
Description	Quantity	Unit	Equipment		Services, Tools, Supplies		Labor Expense				Permanent Materials		Subcontracts		Total		Note		
			U.C.	Total	U.C.	Total	MH		Labor		U.C.	Total	U.C.	Total	U.C.	Total			
							Unit	Total	U.C.	Total	U.C.	Total	U.C.	Total	U.C.	Total			
Fine Grade for Slab	14,645	m2	3.95	57,818	0.00	0	0.51	7413	32.03	469,093	0.00	0	0.00	0	35.98	526,911	Underneath only (no scaling included)		
Falsework Fab	16,219	m2	58.64	951,130	435.27	7,059,690	1.73	27988	111.10	1,801,884	0.00	0	0.00	0	605.01	9,812,704	70% of place & strip		
Falsework Place & Strip	23,078	m2	114.99	2,653,806	11.07	255,552	2.62	60391	168.58	3,890,393	0.00	0	0.00	0	294.64	6,799,751			
Form Fab	55,194	m2	64.66	3,568,857	304.28	16,794,228	1.89	104328	121.52	6,707,326	0.00	0	0.00	0	490.46	27,070,411	28% of place & strip		
Form Refurbish	12,533	m2	18.69	234,246	33.00	413,589	0.55	6893	35.41	443,785	0.00	0	0.00	0	87.10	1,091,620	6% of place & strip		
Form Place & Strip	200,258	m2	102.81	20,587,990	11.01	2,204,532	2.48	495737	159.47	31,935,035	0.00	0	0.00	0	273.29	54,727,557	Total f/w & forms 3.47mh/m2; \$497/m2		
Waterstop	63,312	m	0.00	0	0.00	0	0.50	31657	32.26	2,042,192	15.00	949,680	0.00	0	47.26	2,991,872			
Rebar Template	5,548	m	8.38	46,516	3.30	18,309	0.20	1109	12.88	71,476	0.00	0	0.00	0	24.57	136,301			
Concrete Furnish & Transport	328,029	m3	14.41	4,727,320	0.00	0	0.12	41003	7.91	2,594,716	235.00	77,086,815	0.00	0	257.32	84,408,851	PM plugged @ \$235/m3		
Concrete Place	328,029	m3	16.42	5,385,797	4.94	1,619,538	0.38	124183	24.08	7,899,922	0.00	0	0.00	0	45.44	14,905,257	Pumped		
Wet Finish	37,899	m2	2.57	97,573	1.03	39,184	0.49	18480	31.11	1,179,016	0.00	0	0.00	0	34.72	1,315,773			
CJ Prep	178,177	m2	5.00	890,885	1.10	195,995	0.50	89089	31.64	5,637,877	0.00	0	0.00	0	37.74	6,724,757	Hydroblast		
Cure	321,144	m2	0.00	0	1.10	353,258	0.03	10598	2.09	670,667	0.00	0	0.00	0	3.19	1,023,925			
Dry Finish	173,291	m2	12.16	2,107,442	0.86	149,792	0.42	73174	26.94	4,668,531	0.00	0	0.00	0	39.97	6,925,765			
Expansion Joint Filler (Liquid)	11,477	m2	0.00	0	0.00	0	0.06	656	3.62	41,515	11.43	131,197	0.00	0	15.05	172,712			
Tower Crane Setups	3	ea	0.00	0	300000.00	900,000	0.00	0	0.00	0	0.00	0	0.00	0	300000.00	900,000	Tower cranes figured for Intakes (only)		
Temporary Building & Utilities	2	ls	0.00	0	8937000.00	17,874,000	0.00	0	0.00	0	0.00	0	0.00	0	8937000.00	17,874,000	Winter Protection for PH & Intakes		
			-	-	-	-	-	-	-	-	-	-	-	-	-	0			
			-	-	-	-	-	-	-	-	-	-	-	-	-	0			
Subtotals - Concrete Directs	328,029	m3	125.93	41,309,380	145.96	47,877,667	3.33	1092699	213.56	70,053,428	238.30	78,167,692	0.00	0	723.74	237,408,167			
	200,258	m2	206.28		239.08		5.46		349.82		390.33		0.00		1185.51				
	0.61	F/R							64.11	per MH									
Subtotals - Rebar Directs	19,870,000	kg	0.18	3,651,821	0.05	993,500	0.01	198700	0.69	13,735,634	2.00	39,740,000	0.00	0	2.93	58,120,955	PM plugged @ \$2.00/kg		
	328,029	m3	11.13		3.03		0.61		41.87		121.15		0.00		177.18				
	60.6	kg/m3							69.13	per MH									
Totals - Concrete & Rebar Directs	328,029	m3	137.06	44,961,201	148.98	48,871,167	3.94	1291399	255.43	83,789,062	359.44	117,907,692	0.00	0	900.92	295,529,122			
							mh/m3		64.88	per MH									
Indirects (w/ 15% Markup on Cost)	328,029	m3	69.17	22,689,815	212.69	69,769,200	2.30	754288	128.77	42,239,947	0.00	0	3.90	1,280,000	414.53	135,978,962	15% markup on total cost in STS column		
						(incl. m/u)	mh/m3		56.00	per MH					46.0%	of direct			
TOTALS	328,029	m3	206.23	67,651,016	361.68	118,640,367	6.24	2045687	384.20	126,029,009	359.44	117,907,692	3.90	1,280,000	1315.46	431,508,084			
						(incl. m/u)	mh/m3		61.61	per MH									

SUMMARY - Spillway

Project	SNC-Lavalin: Muskrat Falls		Estimator	JD													
Location	Lower Churchill River		Date	11-2-11													
Description	Structural Concrete Summaries																
	SUMMARY - Spillway (without Overbreak Concrete)																
			Equipment		Services, Tools, Supplies		Labor Expense				Permanent Materials		Subcontracts		Total		Note
							MH		Labor								
Description	Quantity	Unit	U.C.	Total	U.C.	Total	Unit	Total	U.C.	Total	U.C.	Total	U.C.	Total	U.C.	Total	
Fine Grade for Slab	5,129	m2	3.90	20,003	0.00		0.50	2565	31.64	162,292	0.00		0.00		35.54	182,295	Underneath only (no scaling included)
Falsework Fab	631	m2	45.10	28,460	443.66	279,950	1.33	838	85.45	53,921	0.00		0.00		574.22	362,331	85% of place & strip
Falsework Place & Strip	746	m2	97.47	72,712	11.00	8,206	2.42	1803	155.69	116,142	0.00		0.00		264.16	197,060	
Form Fab	6,893	m2	62.62	431,617	285.95	1,971,057	1.83	12648	118.02	813,544	0.00		0.00		466.59	3,216,218	19% of place & strip
Form Refurbish	3,312	m2	18.69	61,904	43.57	144,320	0.55	1822	35.41	117,275	0.00		0.00		97.67	323,499	9% of place & strip
Form Place & Strip	37,145	m2	107.20	3,981,889	11.00	408,595	2.66	98728	171.22	6,360,019	0.00		0.00		289.42	10,750,503	Total f/w & forms 3.12mh/m2; \$400/m2
Waterstop	13,100	m	0.00		0.00		0.50	6550	32.26	422,554	15.00	196,500	0.00		47.26	619,054	
Rebar Template	896	m	8.07	7,228	3.30	2,957	0.20	179	12.88	11,543	0.00		0.00		24.25	21,728	
Concrete Furnish & Transport	62,631	m3	14.41	902,593	0.00		0.13	7829	7.91	495,412	235.00	14,718,285	0.00		257.32	16,116,290	PM plugged @ \$235/m3
Concrete Place	62,631	m3	13.63	853,840	3.93	246,089	0.31	19497	19.80	1,240,287	0.00		0.00		37.37	2,340,216	Pumped
Wet Finish	6,496	m2	3.88	25,193	0.94	6,091	0.55	3549	34.86	226,423	0.00		0.00		39.67	257,707	
CJ Prep	22,680	m2	5.00	113,400	1.10	24,948	0.50	11340	31.64	717,641	0.00		0.00		37.74	855,989	Hydroblast
Cure	52,913	m2	0.00		1.10	58,204	0.03	1746	2.09	110,502	0.00		0.00		3.19	168,706	
Dry Finish	31,721	m2	14.27	452,705	0.94	29,933	0.50	15719	31.62	1,002,866	0.00		0.00		46.83	1,485,504	
Expansion Joint Filler (Liquid)	1,826	m2	0.00		0.00		0.05	100	3.48	6,356	11.00	20,086	0.00		14.48	26,442	
Tower Crane Setups	0	ea	-		-		-		-		-		-		-	0	
Temporary Building & Utilities	0	ls	-		-		-		-		-		-		-	0	
			-		-		-		-		-		-		-	0	
			-		-		-		-		-		-		-	0	
Subtotals - Concrete Directs	62,631	m3	110.99	6,951,544	50.78	3,180,350	2.95	184913	189.31	11,856,777	238.46	14,934,871	0.00	0	589.54	36,923,542	
	37,145	m2	187.15		85.62		4.98		319.20		402.07		0.00		994.04		
	0.59	F/R							64.12	per MH							
Subtotals - Rebar Directs	3,126,500	kg	0.18	550,757	0.05	156,325	0.01	31265	0.69	2,161,271	2.00	6,253,000	0.00	0	2.92	9,121,353	PM plugged @ \$2.00/kg
	62,631	m3	8.79		2.50		0.50		34.51		99.84		0.00		145.64		
	49.9	kg/m3							69.13	per MH							
Totals - Concrete & Rebar Directs	62,631	m3	119.79	7,502,301	53.28	3,336,675	3.45	216178	223.82	14,018,048	338.30	21,187,871	0.00	0	735.18	46,044,895	
								mh/m3	64.84	per MH							
Indirects (w/ 15% Markup on Cost)	62,631	m3	52.99	3,318,553	188.02	11,775,900	2.00	124952	112.19	7,026,539	0.00	0	12.13	760,000	365.33	22,880,992	15% markup on total cost in STS column
						(incl. m/u)		mh/m3	56.23	per MH					49.7%	of direct	
TOTALS	62,631	m3	172.77	10,820,854	241.30	15,112,575	5.45	341130	336.01	21,044,587	338.30	21,187,871	12.13	760,000	1100.51	68,925,887	
						(incl. m/u)		mh/m3	61.69	per MH							

SUMMARY - Transitions

Project	SNC-Lavalin: Muskrat Falls		Estimator		JD												
Location	Lower Churchill River		Date		11-2-11												
Description	Structural Concrete Summaries																
	SUMMARY - Transition Structures (including North Abutment; not including South Transition Structure) - without Overbreak Concrete																
Description	Quantity	Unit	Equipment		Services, Tools, Supplies		Labor Expense				Permanent Materials		Subcontracts		Total		Note
			U.C.	Total	U.C.	Total	MH		Labor		U.C.	Total	U.C.	Total	U.C.	Total	
							Unit	Total	U.C.	Total	U.C.	Total	U.C.	Total	U.C.	Total	
Fine Grade for Slab	2,726	m2	3.90	10,631	0.00		0.50	1363	31.64	86,256	0.00		0.00		35.54	96,887	Underneath only (no scaling included)
Falsework Fab	850	m2	37.38	31,775	330.00	280,500	1.10	935	70.82	60,196	0.00		0.00		438.20	372,471	100% of place & strip
Falsework Place & Strip	850	m2	272.59	231,698	11.00	9,350	6.76	5745	435.38	370,074	0.00		0.00		718.97	611,122	
Form Fab	5,618	m2	64.55	362,632	254.85	1,431,760	1.89	10598	121.27	681,301	0.00		0.00		440.67	2,475,693	39% of place & strip
Form Refurbish	665	m2	18.69	12,430	33.00	21,945	0.55	366	35.41	23,547	0.00		0.00		87.10	57,922	5% of place & strip
Form Place & Strip	14,497	m2	119.91	1,738,361	11.00	159,467	2.97	43101	191.53	2,776,562	0.00		0.00		322.44	4,674,390	Total f/w & forms 4.19mh/m2; \$565/m2
Waterstop	4,183	m	0.00		0.00		0.50	2092	32.26	134,927	15.00	62,745	0.00		47.26	197,672	
Rebar Template	0	m	-		-		-		-		-		-		-	0	
Concrete Furnish & Transport	47,641	m3	14.41	686,568	0.00		0.12	5955	7.91	376,841	235.00	11,195,635	0.00		257.32	12,259,044	PM plugged @ \$235/m3
Concrete Place	47,641	m3	13.66	650,749	9.00	428,769	0.34	16125	21.53	1,025,775	0.00		0.00		44.19	2,105,293	Pumped
Wet Finish	2,331	m2	3.17	7,379	1.01	2,363	0.60	1398	38.25	89,165	0.00		0.00		42.43	98,907	
CJ Prep	21,921	m2	5.00	109,605	1.10	24,113	0.50	10961	31.64	693,624	0.00		0.00		37.74	827,342	Hydroblast
Cure	33,135	m2	0.00		1.10	36,449	0.03	1093	2.09	69,198	0.00		0.00		3.19	105,647	
Dry Finish	12,070	m2	14.97	180,705	0.98	11,809	0.52	6274	33.17	400,307	0.00		0.00		49.12	592,821	
Expansion Joint Filler (Liquid)		m2	-		-		-		-		-		-		-	0	
Tower Crane Setups		ea	-		-		-		-		-		-		-	0	
Temporary Building & Utilities		ls	-		-		-		-		-		-		-	0	
			-		-		-		-		-		-		-	0	
			-		-		-		-		-		-		-	0	
Subtotals - Concrete Directs	47,641	m3	84.43	4,022,533	50.51	2,406,525	2.23	106006	142.48	6,787,773	236.32	11,258,380	0.00	0	513.74	24,475,211	
	14,497	m2	277.47		166.00		7.31		468.22		776.60		0.00		1688.29		
	0.30	F/R							64.03	per MH							
Subtotals - Rebar Directs	966,600	kg	0.18	170,272	0.05	48,330	0.01	9666	0.69	668,187	2.00	1,933,200	0.00	0	2.92	2,819,989	PM plugged @ \$2.00/kg
	47,641	m3	3.57		1.01		0.20		14.03		40.58		0.00		59.19		
	20.3	kg/m3							69.13	per MH							
Totals - Concrete & Rebar Directs	47,641	m3	88.01	4,192,805	51.53	2,454,855	2.43	115672	156.50	7,455,960	276.90	13,191,580	0.00	0	572.94	27,295,200	
								mh/m3	64.46	per MH							
Indirects (w/ 15% Markup on Cost)	47,641	m3	58.89	2,805,650	139.45	6,643,400	1.27	60680	70.67	3,366,848	0.00	0	4.20	200,000	273.21	13,015,898	15% markup on total cost in STS column
						(incl. m/u)		mh/m3	55.49	per MH					47.7%	of direct	
TOTALS	47,641	m3	146.90	6,998,455	190.98	9,098,255	3.70	176352	227.17	10,822,808	276.90	13,191,580	4.20	200,000	846.14	40,311,098	
						(incl. m/u)		mh/m3	61.37	per MH							

Overbreak Concrete

Project	SNC-Lavalin: Muskrat Falls		Estimator	JD													
Location	Lower Churchill River		Date	11-2-11													
Description	Structural Concrete Summaries																
	<u>Overbreak Concrete (All)</u>																
			Equipment		Services, Tools, Supplies		Labor Expense				Permanent Materials		Subcontracts		Total		Note
							MH		Labor								
Description	Quantity	Unit	U.C.	Total	U.C.	Total	Unit	Total	U.C.	Total	U.C.	Total	U.C.	Total	U.C.	Total	
Concrete Furnish & Transport	15,930	m3	14.41	229,572	0.00		0.12	1991	7.91	126,007	235.00	3,743,550	0.00		257.32	4,099,129	3.6% of total neatline quantity
Concrete Place	15,930	m3	11.47	182,721	2.00	31,860	0.25	3983	15.90	253,348	0.00		0.00		29.37	467,929	0.5m underneath and 0.3m alongside
			-	-	-	-	-	-	-	-	-	-	-	-	-	0	
			-	-	-	-	-	-	-	-	-	-	-	-	-	0	
			-	-	-	-	-	-	-	-	-	-	-	-	-	0	
			-	-	-	-	-	-	-	-	-	-	-	-	-	0	
			-	-	-	-	-	-	-	-	-	-	-	-	-	0	
			-	-	-	-	-	-	-	-	-	-	-	-	-	0	
			-	-	-	-	-	-	-	-	-	-	-	-	-	0	
			-	-	-	-	-	-	-	-	-	-	-	-	-	0	
			-	-	-	-	-	-	-	-	-	-	-	-	-	0	
			-	-	-	-	-	-	-	-	-	-	-	-	-	0	
			-	-	-	-	-	-	-	-	-	-	-	-	-	0	
			-	-	-	-	-	-	-	-	-	-	-	-	-	0	
			-	-	-	-	-	-	-	-	-	-	-	-	-	0	
			-	-	-	-	-	-	-	-	-	-	-	-	-	0	
			-	-	-	-	-	-	-	-	-	-	-	-	-	0	
			-	-	-	-	-	-	-	-	-	-	-	-	-	0	
			-	-	-	-	-	-	-	-	-	-	-	-	-	0	
			-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Totals	15,930	m3	25.88	412,293	2.00	31,860	0.38	5974	23.81	379,355	235.00	3,743,550	0.00	0	286.70	4,567,058	
	0	m2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	0.00	F/R															

Rebar

Project	SNC-Lavalin: Muskrat Falls		Estimator		JD												
Location	Lower Churchill River		Date		11-2-11												
Description	Structural Concrete Summaries																
	Rebar (All)																
Description	Quantity	Unit	Equipment		Services, Tools, Supplies		Labor Expense				Permanent Materials		Subcontracts		Total		Note
			U.C.	Total	U.C.	Total	MH		Labor		U.C.	Total	U.C.	Total	U.C.	Total	
							Unit	Total	U.C.	Total	U.C.	Total	U.C.	Total	U.C.	Total	
Rebar - Spillway	3,126,500	kg	0.18	550,757	0.05	156,325	0.0100	31265	0.69	2,161,271	2.00	6,253,000	0.00		2.92	9,121,353	
Rebar - Powerhouse & Intakes	19,870,000	kg	0.18	3,651,821	0.05	993,500	0.01	198700	0.69	13,735,634	2.00	39,740,000	0.00		2.93	58,120,955	
Rebar - Transition Structures	966,600	sg	0.18	170,272	0.05	48,330	0.01	9666	0.69	668,187	2.00	1,933,200	0.00		2.92	2,819,989	
			-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
			-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
			-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
			-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
			-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
			-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
			-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
			-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
			-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
			-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
			-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
			-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
			-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
			-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
			-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
			-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Subtotals - Rebar Directs	23,963,100	kg	0.18	4,372,850	0.05	1,198,155	0.01	239631	0.69	16,565,092	2.00	47,926,200	0.00	0	2.92	70,062,297	
	23,963	tonne	182.48		50.00		10.00		691.28		2000.00		0.00		2923.76		

Intakes

Project	SNC-Lavalin: Muskrat Falls		Estimator		JD												
Location	Lower Churchill River		Date		11-2-11												
Description	Structural Concrete Summaries																
	Intakes (without Rebar & Overbreak Concrete)																
Description	Quantity	Unit	Equipment		Services, Tools, Supplies		Labor Expense				Permanent Materials		Subcontracts		Total		Note
			U.C.	Total	U.C.	Total	MH	Labor		U.C.	Total	U.C.	Total	U.C.	Total	U.C.	
Fine Grade for Slab	3,135	m2	4.12	12,929	0.00		0.53	1658	33.46	104,893	0.00		0.00		37.58	117,822	
Falsework Fab	2,396	m2	57.63	138,072	420.49	1,007,490	1.70	4063	109.17	261,570	0.00		0.00		587.28	1,407,132	
Falsework Place & Strip	4,673	m2	94.29	440,635	11.00	51,403	2.65	12402	170.97	798,926	0.00		0.00		276.26	1,290,964	
Form Fab	16,661	m2	60.47	1,007,431	282.90	4,713,467	1.77	29456	113.67	1,893,854	0.00		0.00		457.04	7,614,752	
Form Refurbish	5,501	m2	18.69	102,818	33.00	181,533	0.55	3026	35.41	194,787	0.00		0.00		87.10	479,138	
Form Place & Strip	79,268	m2	96.16	7,622,429	11.00	871,948	2.71	214539	174.35	13,820,444	0.00		0.00		281.51	22,314,821	Total f/w & forms 3.32mh/m2; \$418/m2
Waterstop	27,343	m	0.00		0.00		0.50	13672	32.26	881,976	15.00	410,145	0.00		47.26	1,292,121	
Rebar Template	1,882	m	7.11	13,373	3.30	6,211	0.20	376	12.88	24,247	0.00		0.00		23.29	43,831	
Concrete Furnish & Transport	128,594	m3	14.41	1,853,203	0.00		0.12	16074	7.91	1,017,180	235.00	30,219,590	0.00		257.32	33,089,973	
Concrete Place	128,594	m3	15.71	2,020,333	5.19	667,003	0.36	46794	23.15	2,976,781	0.00		0.00		44.05	5,664,117	
Wet Finish	7,454	m2	2.96	22,101	0.96	7,151	0.56	4186	35.83	267,059	0.00		0.00		39.75	296,311	
CJ Prep	75,779	m2	5.00	378,895	1.10	83,357	0.50	37890	31.64	2,397,799	0.00		0.00		37.74	2,860,051	
Cure	130,723	m2	0.00		1.10	143,795	0.03	4314	2.09	272,996	0.00		0.00		3.19	416,791	
Dry Finish	68,469	m2	12.07	826,272	0.83	57,125	0.42	28690	26.73	1,830,414	0.00		0.00		39.64	2,713,811	
Expansion Joint Filler (Liquid)	6,097	m2	0.00		0.00		0.05	335	3.48	21,222	11.00	67,067	0.00		14.48	88,289	
Tower Crane Setups	3	ea	0.00		300000.00	900,000	0.00		0.00		0.00		0.00		300000.00	900,000	
Temporary Building & Utilities	1	ls	0.00		7176000.00	7,176,000	0.00		0.00		0.00		0.00		7176000.00	7,176,000	
			-		-		-		-		-		-		-	0	
			-		-		-		-		-		-		-	0	
Subtotals - Concrete Directs	128,594	m3	112.28	14,438,491	123.38	15,866,483	3.25	417475	208.13	26,764,148	238.71	30,696,802	0.00	0	682.50	87,765,924	
	79,268	m2	182.15		200.16		5.27		337.64		387.25		0.00		1107.20		
	0.62	F/R							64.11	per MH							

Powerhouse - Area of Units

Project	SNC-Lavalin: Muskrat Falls		Estimator	JD													
Location	Lower Churchill River		Date	11-2-11													
Description	Structural Concrete Summaries																
	Powerhouse - Area of Units (without Rebar & Overbrake Concrete)																
Description	Quantity	Unit	Equipment		Services, Tools, Supplies		Labor Expense				Permanent Materials		Subcontracts		Total		Note
			U.C.	Total	U.C.	Total	MH		Labor		U.C.	Total	U.C.	Total	U.C.	Total	
							Unit	Total	U.C.	Total	U.C.	Total	U.C.	Total	U.C.	Total	
Fine Grade for Slab	6,964	m2	3.90	27,160	0.00		0.50	3482	31.64	220,355	0.00		0.00		35.54	247,515	
Falsework Fab	13,315	m2	59.64	794,067	446.15	5,940,440	1.75	23366	112.98	1,504,338	0.00		0.00		618.76	8,238,845	
Falsework Place & Strip	16,646	m2	124.91	2,079,325	11.10	184,800	2.71	45087	174.49	2,904,500	0.00		0.00		310.50	5,168,625	
Form Fab	34,078	m2	69.20	2,358,284	325.15	11,080,465	2.02	68952	130.09	4,433,144	0.00		0.00		524.44	17,871,893	
Form Refurbish	5,646	m2	18.69	105,524	33.00	186,318	0.55	3105	35.41	199,921	0.00		0.00		87.10	491,763	
Form Place & Strip	101,732	m2	109.22	11,111,605	11.02	1,120,746	2.37	240997	152.61	15,524,892	0.00		0.00		272.85	27,757,243	Total f/w & forms 3.75mh/m2; \$585/m2
Waterstop	31,707	m	0.00		0.00		0.50	15854	32.26	1,022,741	15.00	475,605	0.00		47.26	1,498,346	
Rebar Template	2,946	m	9.00	26,503	3.30	9,722	0.20	589	12.88	37,953	0.00		0.00		25.18	74,178	
Concrete Furnish & Transport	181,584	m3	14.41	2,616,859	0.00		0.13	22698	7.91	1,436,333	235.00	42,672,240	0.00		257.32	46,725,432	
Concrete Place	181,584	m3	16.26	2,952,243	4.79	869,513	0.37	67980	23.82	4,324,560	0.00		0.00		44.86	8,146,316	
Wet Finish	21,308	m2	2.57	54,803	1.05	22,387	0.49	10379	31.08	662,209	0.00		0.00		34.70	739,399	
CJ Prep	95,470	m2	5.00	477,350	1.10	105,017	0.50	47735	31.64	3,020,862	0.00		0.00		37.74	3,603,229	
Cure	162,882	m2	0.00		1.10	179,170	0.03	5375	2.09	340,159	0.00		0.00		3.19	519,329	
Dry Finish	86,781	m2	12.83	1,113,400	0.91	79,031	0.45	38659	28.42	2,466,465	0.00		0.00		42.16	3,658,896	
Expansion Joint Filler (Liquid)	5,380	m2	0.00		0.00		0.06	321	3.77	20,293	11.92	64,130	0.00		15.69	84,423	
Tower Crane Setups	0	ea	-		-		-		-		-		-		-	0	
Temporary Building & Utilities	1	ls	0.00		10698000.00	10,698,000	0.00		0.00		0.00		0.00		10698000.00	10,698,000	
			-		-		-		-		-		-		-	0	
			-		-		-		-		-		-		-	0	
Subtotals - Concrete Directs	181,584	m3	130.61	23,717,123	167.83	30,475,609	3.27	594579	209.92	38,118,725	237.97	43,211,975	0.00	0	746.34	135,523,432	
	101,732	m2	233.13		299.57		5.84		374.70		424.76		0.00		1332.16		
	0.56	F/R							64.11	per MH							

Powerhouse - Service Bay

Project	SNC-Lavalin: Muskrat Falls		Estimator	JD													
Location	Lower Churchill River		Date	11-2-11													
Description	Structural Concrete Summaries																
Powerhouse - Service Bay (Including South Transition Structure) - without Rebar & Overbreak Concrete																	
Description	Quantity	Unit	Equipment		Services, Tools, Supplies		Labor Expense				Permanent Materials		Subcontracts		Total		Note
			U.C.	Total	U.C.	Total	MH		Labor		U.C.	Total	U.C.	Total	U.C.	Total	
Fine Grade for Slab	4,546	m2	3.90	17,729	0.00		0.50	2273	31.64	143,845	0.00		0.00		35.54	161,574	
Falsework Fab	508	m2	37.38	18,991	220.00	111,760	1.10	559	70.82	35,976	0.00		0.00		328.20	166,727	
Falsework Place & Strip	1,759	m2	76.09	133,846	11.00	19,349	1.65	2902	106.29	186,967	0.00		0.00		193.38	340,162	
Form Fab	4,455	m2	45.60	203,142	224.53	1,000,296	1.33	5920	85.37	380,328	0.00		0.00		355.50	1,583,766	
Form Refurbish	1,386	m2	18.69	25,904	33.00	45,738	0.55	762	35.41	49,077	0.00		0.00		87.10	120,719	
Form Place & Strip	19,258	m2	96.27	1,853,956	11.00	211,838	2.09	40201	134.47	2,589,699	0.00		0.00		241.74	4,655,493	Total f/w & forms 2.61mh/m2; \$357/m2
Waterstop	4,262	m	0.00		0.00		0.50	2131	32.26	137,475	15.00	63,930	0.00		47.26	201,405	
Rebar Template	720	m	9.22	6,640	3.30	2,376	0.20	144	12.88	9,276	0.00		0.00		25.41	18,292	
Concrete Furnish & Transport	17,851	m3	14.41	257,258	0.00		0.12	2231	7.91	141,203	235.00	4,194,985	0.00		257.32	4,593,446	
Concrete Place	17,851	m3	23.15	413,221	4.65	83,022	0.53	9409	33.53	598,581	0.00		0.00		61.33	1,094,824	
Wet Finish	9,137	m2	2.26	20,669	1.06	9,646	0.43	3915	27.33	249,748	0.00		0.00		30.65	280,063	
CJ Prep	6,928	m2	5.00	34,640	1.10	7,621	0.50	3464	31.64	219,216	0.00		0.00		37.74	261,477	
Cure	27,539	m2	0.00		1.10	30,293	0.03	909	2.09	57,512	0.00		0.00		3.19	87,805	
Dry Finish	18,041	m2	9.30	167,770	0.76	13,636	0.32	5825	20.60	371,652	0.00		0.00		30.66	553,058	
Expansion Joint Filler (Liquid)	0	m2	-		-		-		-		-		-		-	0	
Tower Crane Setups	0	ea	-		-		-		-		-		-		-	0	
Temporary Building & Utilities	0	ls	-		-		-		-		-		-		-	0	
			-		-		-		-		-		-		-	0	
			-		-		-		-		-		-		-	0	
Subtotals - Concrete Directs	17,851	m3	176.67	3,153,766	86.02	1,535,575	4.52	80645	289.65	5,170,555	238.58	4,258,915	0.00	0	790.93	14,118,811	
	19,258	m2	163.76		79.74		4.19		268.49		221.15		0.00		733.14		
	1.08	F/R							64.12	per MH							

CCE Review Global Action List		Adjustment Made		Direct Change								Indirect Change								Total Change		
Item	Ref #	Action Req'd	JD HCSS Item #	Action Taken	Transitions		Spillway		Intake		Powerhouse		Transitions		Spillway		Intake		Powerhouse		MH	\$
					MH	\$	MH	\$	MH	\$	MH	\$	MH	\$	MH	\$	MH	\$	MH	\$		
33	S2-1	Change North Abutment to RCC from reinforced concrete	23220270	Make "Concrete North Abutment" a non-add item.	(5571)	-1,290,838															(5571)	-1,290,838
35	S2-3	Remove personnel bussing cost from estimate...	99123610.10	Make "Craft Employee Bus To/From Site" a non-add activity.									(840)	-86,755							(840)	-86,755
35	S2-3	Remove personnel bussing cost from estimate...	99124110.10	Make "Craft Employee Bus To/From Site" a non-add activity.										(1512)	-156,159						(1512)	-156,159
35	S2-3	Remove personnel bussing cost from estimate...	99132210.10	Make "Craft Employee Bus To/From Site" a non-add activity.											(4032)	-416,425					(4032)	-416,425
35	S2-3	Remove personnel bussing cost from estimate...	99133110.10	Make "Craft Employee Bus To/From Site" a non-add activity.													(5376)	-555,233			(5376)	-555,233
35	S2-3	...add personnel travel time 1 way	99123610.11 (New)	Transitions - on total new craft hour requirements of 150,000mh									7500	485,835							7500	485,835
35	S2-3	...add personnel travel time 1 way	99124110.11 (New)	Spillway - on total new craft hour requirements of 267,000mh											13350	864,786					13350	864,786
35	S2-3	...add personnel travel time 1 way	99132210.11 (New)	Intakes - on total new craft hour requirements of 613,000mh													30650	1,985,446			30650	1,985,446
35	S2-3	...add personnel travel time 1 way	99133110.11 (New)	Powerhouse - on total new craft hour requirements of 885,000mh														43600	2,824,321		43600	2,824,321
37	S2-5	Add embedded parts installation cost (primary anchors, embedded guides, misc steel, pipes, etc.)	24200190 (New)	Add Spillway Gates Primary Anchors (Install Only) - quantities per Bhasker 12/2/11 e-mails			11678	1,223,299													11678	1,223,299
37	S2-5	Add embedded parts installation cost (primary anchors, embedded guides, misc steel, pipes, etc.)	24200490 (New)	Add Spillway Stoplogs Primary Anchors (Install Only) - quantities per Bhasker 12/2/11 e-mails			12740	1,334,543													12740	1,334,543
37	S2-5	Add embedded parts installation cost (primary anchors, embedded guides, misc steel, pipes, etc.)	32400190 (New)	Add Intake Gates Primary Anchors (Install Only) - quantities per Bhasker 12/2/11 e-mails					24828	2,481,540											24828	2,481,540
37	S2-5	Add embedded parts installation cost (primary anchors, embedded guides, misc steel, pipes, etc.)	32400490 (New)	Add Intake Trashracks Primary Anchors (Install Only) - quantities per Bhasker 12/2/11 e-mails					9016	901,184											9016	901,184
37	S2-5	Add embedded parts installation cost (primary anchors, embedded guides, misc steel, pipes, etc.)	32400790 (New)	Add Intake Stoplogs Primary Anchors (Install Only) - quantities per Bhasker 12/2/11 e-mails					20839	2,082,869											20839	2,082,869
37	S2-5	Add embedded parts installation cost (primary anchors, embedded guides, misc steel, pipes, etc.)	33300390 (New)	Add Draft Tubes Stoplogs Primary Anchors (Install Only) - quantities per Bhasker 12/2/11 e-mails							8302	917,649									8302	917,649
37	S2-5	Add embedded parts installation cost (primary anchors, embedded guides, misc steel, pipes, etc.)	33200290 (New)	Add Powerhouse embedded Misc. Metals (Furnish and Install) per "Hafid 11/23/11: • The breakup of misc steel quantities (angles and embeds) was given at section 33200201.01 in the BOQ Final Quantities as of 04 October. The total weight is 32 290 kg."							3229	566,808									3229	566,808
38	S2-6	Provide crew built up and demarcation - J.Mulcahy to check	-	Print "S2-6 Crew Compositions for J. Mulcahy" report and transmit.																	0	0
40	S2-8	Validate/review concreting duration vs schedule (rate of pouring per day, qty of labor on site) (add joints to PH)	-	11/16 thru 11/18/11: Performed schedule analyses and met with project team. Concluded that monthly concrete placements were aggressive but achievable, and that providing option to extend PH structural steel columns lower for earlier winter enclosure was worth pursuing. Print "S2-8 Concrete Schedule Alt Analysis" document and transmit.																	0	0
41	S2-9	Add Spillway centre pier & diversion, wall top of riverside Cofferdam	24400900 (New)	Add central pier concrete (680m3), formwork (480m2) and reinforcing steel (34,000kg)			2579	581,742													2579	581,742

Lower Churchill Muskrat Falls																						
Daubersmith Post-Review Estimate Adjustments																						
JD 12/2/11																						
CCE Review Global Action List			Adjustment Made		Direct Change								Indirect Change								Total Change	
Item	Ref #	Action Req'd	JD HCSS Item #	Action Taken	Transitions		Spillway		Intake		Powerhouse		Transitions		Spillway		Intake		Powerhouse		MH	\$
41	S2-9	Add Spillway centre pier & diversion, wall top of riverside Cofferdam	23430900 (New)	Add Powerhouse Concrete Cofferdam (10,048m3) and assumed reinforcing steel required at 20kg/m3 - per Hafid 12/1/11 no reinforcing steel required. Copied estimate from North Transition Structure item (similar work and quantity). Cost is in "Cofferdams WBS", but figure associated indirects and markups to go in Transition Structures in Daubersmith estimate.	25984	5,667,293															25984	5,667,293
41	S2-9	Add Spillway centre pier & diversion, wall top of riverside Cofferdam	-	Re: wall top of riverside Cofferdam - no action req'd per "Hafid 12/1/11: After my discussion with Bhasker, the wall top of riverside cofferdam has been included in cost estimate as RCC. Given the difference between unit cost of RCC or mass conventional concrete and the small quantity for the top part, it is better to keep the same WBS code (no change)."																	0	0
43	S2-11	Add dewatering maintenance cost	99123630.50 (New)	Add water control costs (Transitions - 10mo)									6000	539,400							6000	539,400
43	S2-11	Add dewatering maintenance cost	99124130.50 (New)	Add water control costs (Spillway - 6mo)											3600	323,640					3600	323,640
43	S2-11	Add dewatering maintenance cost	99132230.50 (New)	Add water control costs (Intakes - 16mo)													9600	863,040			9600	863,040
43	S2-11	Add dewatering maintenance cost	99133130.50 (New)	Add water control costs (PH - 32mo)															19200	1,726,080	19200	1,726,080
44	S2-12	Add snow removal cost	99123630.60 (New)	Add snow control costs (Transitions - 5mo)									3000	269,700							3000	269,700
44	S2-12	Add snow removal cost	99124130.60 (New)	Add snow control costs (Spillway - 3mo)											1800	161,820					1800	161,820
44	S2-12	Add snow removal cost	99132230.60 (New)	Add snow control costs (Intakes - 8mo)													4800	431,520			4800	431,520
44	S2-12	Add snow removal cost	99133130.60 (New)	Add snow control costs (PH - 16mo)															9600	863,040	9600	863,040
45	S2-13	Review winter shelter/structure philosophic and cost	-	Edit "Basis of Estimate - Structural Concrete - Daubersmith" and transmitted (REV1). Methods were discussed by project team at 11/18/11 meeting and design options are being pursued to provide contractor flexibility.																	0	0
46	S2-14	Discussed in Session 6 - Clarify if the lower bridge of downstream spillway is included in the estimate.	24100310 (No change)	Clarify: The only work included in the Daubersmith estimate related to any Bridges is the concrete bridge decks for the Spillway upstream and downstream bridges at EL45.5 and EL20.3 respectively. No other bridges, or bridge work, is included (other than the Centre Pier added under S2-9 above).																	0	0

CCE Review Global Action List		Adjustment Made		Direct Change								Indirect Change								Total Change		
Item	Ref #	Action Req'd	JD HCSS Item #	Action Taken	Transitions		Spillway		Intake		Powerhouse		Transitions		Spillway		Intake		Powerhouse		MH	\$
					MH	\$	MH	\$	MH	\$	MH	\$	MH	\$	MH	\$	MH	\$	MH	\$		
Running Subtotals - Action Items					20413	4,376,455	26997	3,139,584	54683	5,465,593	11531	1,484,457	15660	1,208,180	17238	1,194,087	41018	2,863,581	67024	4,858,208	254564	24,590,145
		Adjust Labor Related Indirects	99123630.15	Transitions Craft Toolrooms/Dryshacks go to 150,000mh from 116,000mh										17,000							0	17,000
			99123640.25	Transitions Sanitary Facilities go to 213,000mh from 177,000mh										7,200							0	7,200
			99123650.20	Transitions Labor Related STS go to 213,000mh from 177,000mh										144,000							0	144,000
			99124130.15	Spillway Craft Toolrooms/Dryshacks go to 267,000mh from 217,000mh											25,000						0	25,000
			99124140.25	Spillway Sanitary Facilities go to 386,000mh from 342,000mh											8,800						0	8,800
			99124150.20	Spillway Labor Related STS go to 386,000mh from 342,000mh											176,000						0	176,000
			99132200.15	Intakes Craft Toolrooms/Dryshacks go to 613,000mh from 503,000mh													55,000				0	55,000
			99132240.25	Intakes Sanitary Facilities go to 896,000mh from 800,000mh													19,200				0	19,200
			99132250.20	Intakes Labor Related STS go to 896,000mh from 800,000mh													384,000				0	384,000
			99133130.15	Powerhouse Craft Toolrooms/Dryshacks go to 885,000mh from 793,000mh															46,000		0	46,000
			99133140.25	Powerhouse Sanitary Facilities go to 1,329,000mh from 1,250,000mh															15,800		0	15,800
			99133150.20	Powerhouse Labor Related STS go to 1,329,000mh from 1,250,000mh															316,000		0	316,000
Running Subtotals - Action Items & Labor Related Indirect Costs						4,376,455		3,139,584		5,465,593		1,484,457		1,376,380		1,403,887		3,321,781		5,236,008	0	25,804,145
		Adjust Markups	99123660.10	Transitions Contractor Markup @ 15% - Adjust for new cost										863,000							0	863,000
			99124160.10	Spillway Contractor Markup @ 15% - Adjust for new cost											682,000						0	682,000
			99132260.10	Intakes Contractor Markup @ 15% - Adjust for new cost													1,318,000				0	1,318,000
			99133160.10	Powerhouse Contractor Markup @ 15% - Adjust for new cost															1,008,000		0	1,008,000
TOTALS - Action Items & Labor Related Indirect Costs & Contractor Markups					20413	4,376,455	26997	3,139,584	54683	5,465,593	11531	1,484,457	15660	2,239,380	17238	2,085,887	41018	4,639,781	67024	6,244,008	254564	29,675,145

QUANTITY TAKE OFF

Tableau général des "facteurs" de coffrages et de béton
CONCRETE & FORMWORK FACTORS
 POWERHOUSES

DESCRIPTION	PROJECT "A"						MUSKRAT FALLS- PH & Int						
	3 "KAPLAN" turbines - 255 MW						4 " KAPLAN " turbines - 205 MW						
	QTY	M-H	FACT	QTY	M-H	FACT	QTY	M-H	FACT	QTY	M-H	FACT	
	m3	m-h / m3	m2	m-h / m2	m3	m-h / m3	m2	m-h / m2	m3	m-h / m3	m2	m-h / m2	
Concrete:													
Place concrete (phase I)	54 997	12 759	0,232						328 029	165 186	0,504		
Place concrete (phase II)	11 394	2 416	0,212						-	-	#DIV/0!		
Total	66 391	15 175	0,229						328 029	165 186	0,504		
Incidentals:													
Curing:	82 023	2 953	0,036						321 144	10 598	0,033		
Green cut:	28 789	4 894	0,170						178 177	89 089	0,500		
Fdn prep Hor: (fine grade)									14 645	7 413	0,506		
Fdn prep Vert:									-	-	#DIV/0!		
Float finish:	10 841	7 100	0,655						37 899	18 480	0,488		
P & Patch F1:	13 957	656	0,047						-	-	#DIV/0!		
P & Patch F2:	25 990	10 058	0,387						-	-	#DIV/0!		
P & Patch F3:									173 291	73 174	0,422		
P & Patch F4:	3 210	1 467	0,457										
Bush Hammer:													
Sandblast:													
Total		27 128								198 754			
Erect & Strip:													
Flat form:	24 443	67 952	2,780						200 258	695 737	3,474		
Curved form:	267	1 178	4,412						-	-	#DIV/0!		
Draft-tube form:	2 177	7 990	3,670						-	-	#DIV/0!		
Block-out:	1 757	6 931	3,945						-	-	#DIV/0!		
Bulkhead:	4 221	24 060	5,700						-	-	#DIV/0!		
Soffit:	4 987	17 305	3,470						-	-	#DIV/0!		
Column:									-	-	#DIV/0!		
Beam:	1 702	3 166	1,860						-	-	#DIV/0!		
B.I.P:									-	-	#DIV/0!		
Transition form, soffit or scroll case:									-	-	#DIV/0!		
Total	39 554	128 582	3,251						200 258	695 737	3,474		
Fab Form:													
Flat form:	9 242	9 981	1,080						55 194	199 600	3,616		
Curved form:	241	424	1,759								#DIV/0!		
Draft-tube form:	1 435	10 346	7,210								#DIV/0!		
Block-out:											#DIV/0!		
Transition form, soffit or scroll case:											#DIV/0!		
Total	10 918	20 751	1,901						55 194	199 600	3,616		
Miscellaneous:													
Water stop (m.I):	7 171	4 590	0,640						6 300	3 650	0,579		
Coating (m2):											#DIV/0!		
Total		4 590								3 650			
TOTAL M - H :		196 226								1 262 927			
TOTAL MH / M3 :		2,96								3,85			
FORM RATIO M2 / M3:		0,60								0,61			
TOTAL FAB & E/S FACTOR:		3,78								4,47			
Rebar: (qty - m/h - fact)	4 249 024	46 739	0,011						19 870 000	198 700	0,010		
Indirects: (total m-h)		170 000								754 288			
Global general factor mh / m3: (without embedded & non-emb metals)		6,22								6,76			
BID PRICE:		\$ 37 M								\$ 432 M			
AVERAGE \$ / M3 :		527 \$								1 317 \$			
YEAR OF THE BID:		1986								2013			

Tableau général des "facteurs" de coffrages et de béton

CONCRETE & FORMWORK FACTORS

S P I L L W A Y

DESCRIPTION	PROJECT "A"									MUSKRAT FALLS- SPILLWAY								
	QTY	M-H	FACT	QTY	M-H	FACT	QTY	M-H	FACT	QTY	M-H	FACT	QTY	M-H	FACT			
Concrete:	m3			m3			m3			m3			m3					
Place concrete (phase I)	116 441	27 946	0,240										62 631	19 497	0,311			
Place concrete (phase II)	1 550	5 332	3,440										-	-	#DIV/0!			
Total	117 991	33 278	0,282	-	-	#DIV/0!	-	-	#DIV/0!	152 957	-	-	62 631	27 326	0,436			
Incidentals:	m2			m2			m2			m2			m2					
Curing:	93 315	2 426	0,026										52 913	1 746	0,033			
Green cut:	36 716	20 194	0,550										22 680	11 340	0,500			
Fdn prep Hor:	9 622	4 811	0,500										5 129	2 565	0,500			
Fdn prep Vert:	2 145	515	0,240															
Float finish:	6 017	3 189	0,530										6 496	3 549	0,546			
P & Patch F1:	10 572	1 374	0,130															
P & Patch F2:																		
P & Patch F3:	10 902	5 342	0,490										31 721	15 719	0,496			
P & Patch F4:	28 064	14 032	0,500															
Bush Hammer:	971	1 359	1,400															
Sandblast:	4 722	2 786	0,590															
Total		56 028											-	34 919				
Erect & Strip:	m2			m2			m2			m2			m2					
Flat form:	32 449	88 586	2,730										37 145	98 728	2,658			
Curved form:	3 651	6 754	1,850										-	-	#DIV/0!			
Draft-tube form:													-	-	#DIV/0!			
Block-out:	2 532	5 697	2,250										-	-	#DIV/0!			
Block-head:													-	-	#DIV/0!			
Soffit:	319	766	2,401										-	-	#DIV/0!			
Column:													-	-	#DIV/0!			
Beam:													-	-	#DIV/0!			
B.I.P.:	505	2 616	5,180										-	-	#DIV/0!			
Transition form, soffit or scroll case:	1 700	10 829	6,370										-	-	#DIV/0!			
Total	41 156	115 248	2,800										37 145	98 728	2,658			
Fab Form:	m2			m2			m2			m2			m2					
Flat form:	5 932	12 576	2,120										6 893	15 289	2,218			
Curved form:	391	692	1,770															
Draft-tube form:																		
Block-out:																		
Transition form, soffit or scroll case:																		
Total	6 323	13 268	2,098										6 893	15 289	2,218			
Miscellaneous:																		
Water stop (m.l):	812	1 194	1,470										13 100	6 550	0,500			
Coating (m2):	3 540	1 239	0,350															
Total		2 433												6 550				
TOTAL M - H :		220 255												182 812				
TOTAL MH / M3 :		1,87												2,92				
FORM RATIO M2 / M3 :		0,35												0,59				
TOTAL FAB & E/S FACTOR:		3,12												3,07				
Rebar: (qty - m/h - fact)	7 079 000	70 790	0,010										3 126 000	31 260	0,010			
Indirects: (total m-h)		205 000												124 950				
Global general factor mh / m3: (without embedded & non-emb metals)		4,20												5,41				
BID PRICE:														\$ 68,9 M				
AVERAGE \$ / M3 :														1 100 \$				
YEAR OF THE BID:		1990												2013				