



# CADAM - Stability drawing

By Martin Leclerc, M. Ing.

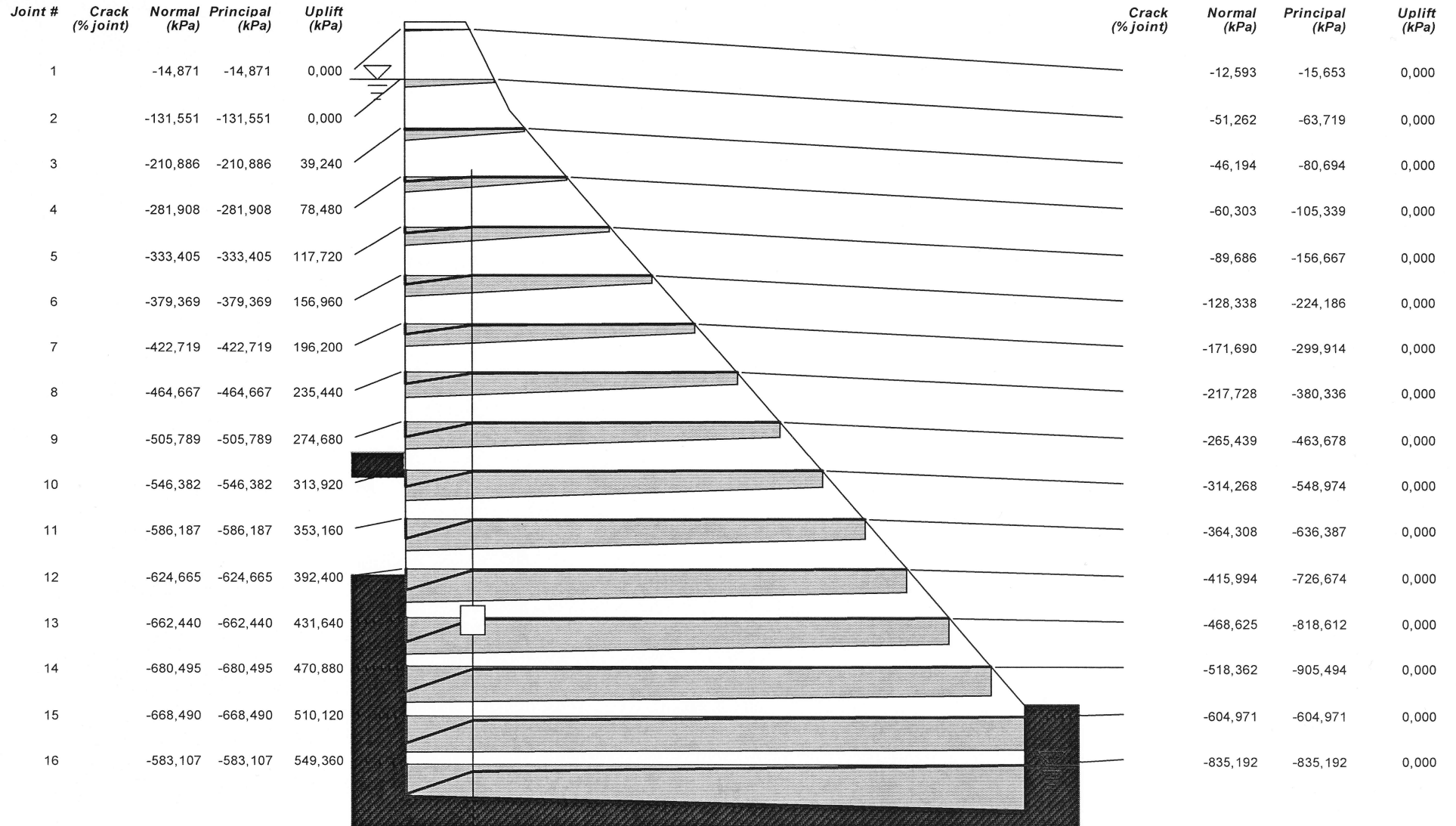
NSERC / Hydro-Quebec / Alcan Industrial Chair on Structural Safety of Concrete Dams, École Polytechnique de Montréal, Canada

Project: Diploma  
 Dam: Moste  
 Owner:

Dam location: Kavčke  
 Date: 23.8.2012

Analysis performed by:  
 Project engineer: Mateja Klun

## Usual combination (effective stress analysis)





# CADAM - Stability drawing

By Martin Leclerc, M. Ing.

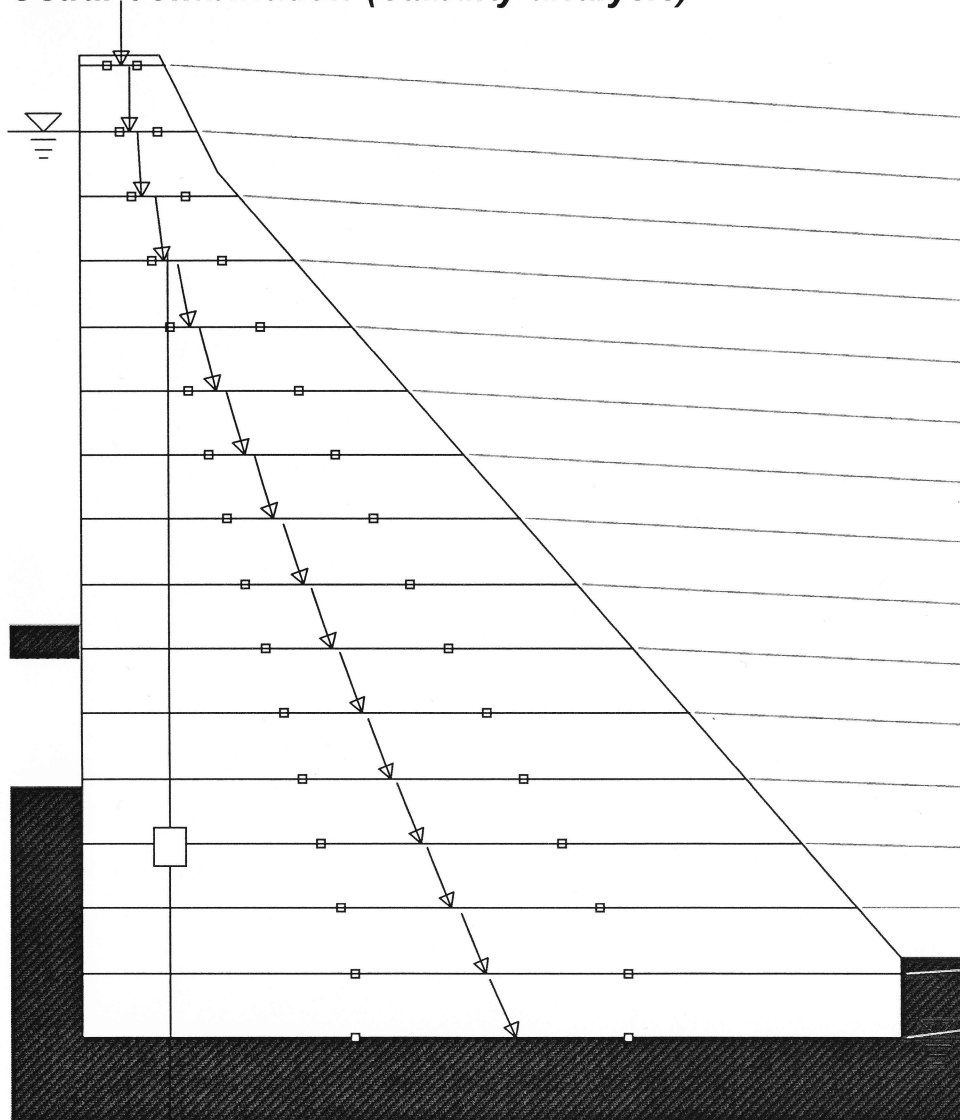
NSERC / Hydro-Quebec / Alcan Industrial Chair on Structural Safety of Concrete Dams, École Polytechnique de Montréal, Canada

Project: Diploma  
 Dam: Moste  
 Owner:

Dam location: Kavčke  
 Date: 23.8.2012

Analysis performed by:  
 Project engineer: Mateja Klun

## Usual combination (stability analysis)



Joint #	SSF (peak)	SSF (residual)	OSF (U/S <)	OSF (-> D/S)	USF	Normal (kN)	Shear (kN)	Moment (kN-m)	Res. Pos. (% joint)
1	> 100	> 100	> 100	> 100	> 100	-72,7	0,0	-5,3	48,617
2	> 100	> 100	> 100	> 100	> 100	-664,3	0,0	-353,4	42,680
3	43,522	32,493	8,729	6,504	7,551	-1259,2	78,5	-1317,1	39,323
4	17,886	14,629	17,170	5,972	9,427	-2267,7	313,9	-3243,6	39,207
5	11,584	10,090	20,050	5,156	9,564	-3534,9	706,3	-5670,9	40,399
6	8,849	8,088	23,338	4,722	10,065	-5119,4	1255,7	-8507,7	41,759
7	7,275	6,946	26,535	4,450	10,683	-7021,0	1962,0	-11674,3	42,961
8	6,294	6,184	29,475	4,264	11,336	-9239,7	2825,3	-15090,8	43,969
9	5,635	5,618	32,111	4,129	11,993	-11775,5	3845,5	-18677,5	44,806
10	5,158	5,158	34,447	4,026	12,638	-14628,4	5027,1	-22352,2	45,505
11	4,765	4,765	36,520	3,942	13,265	-17798,3	6416,2	-25933,1	46,109
12	4,435	4,435	38,374	3,867	13,870	-21285,3	8025,0	-29099,4	46,658
13	4,229	4,229	40,022	3,803	14,452	-25089,4	9692,2	-31788,6	47,144
14	4,011	4,011	26,072	3,535	11,899	-28665,3	11497,2	-30897,7	47,746
15	3,787	3,787	17,883	3,187	9,465	-32154,9	13459,2	-13498,9	49,169
16	3,986	3,442	15,516	2,802	8,313	-35812,1	15578,2	53573,3	52,962
	<b>3,000</b>	<b>1,500</b>	<b>1,200</b>	<b>1,200</b>	<b>1,200</b>				



# CADAM - Stability drawing

By Martin Leclerc, M. Ing.

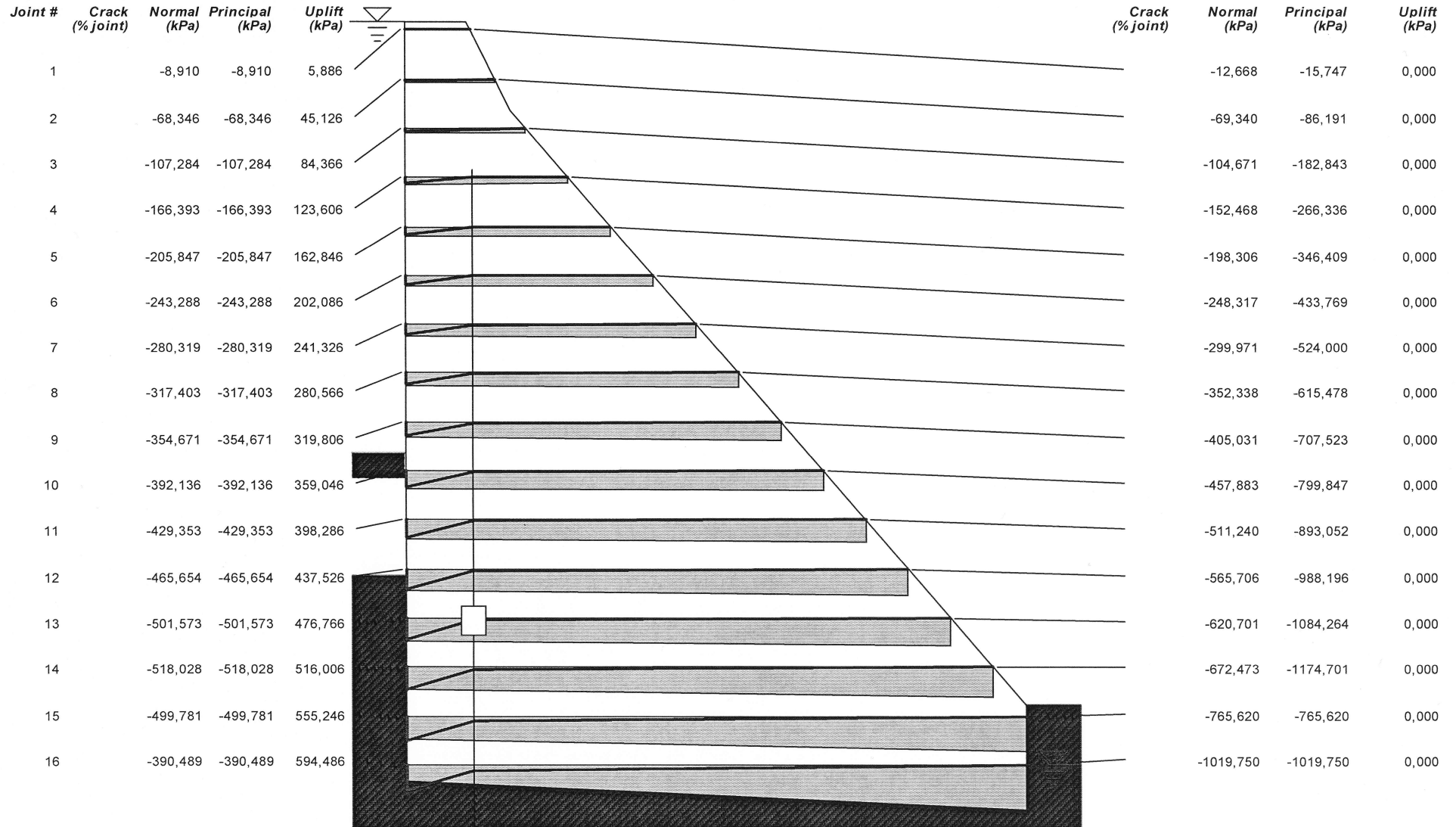
NSERC / Hydro-Quebec / Alcan Industrial Chair on Structural Safety of Concrete Dams, École Polytechnique de Montréal, Canada

Project: Diploma  
Dam: Moste  
Owner:

Dam location: Kavčke  
Date: 23.8.2012

Analysis performed by:  
Project engineer: Mateja Klun

## Flood combination (effective stress analysis)





# CADAM - Stability drawing

By Martin Leclerc, M. Ing.

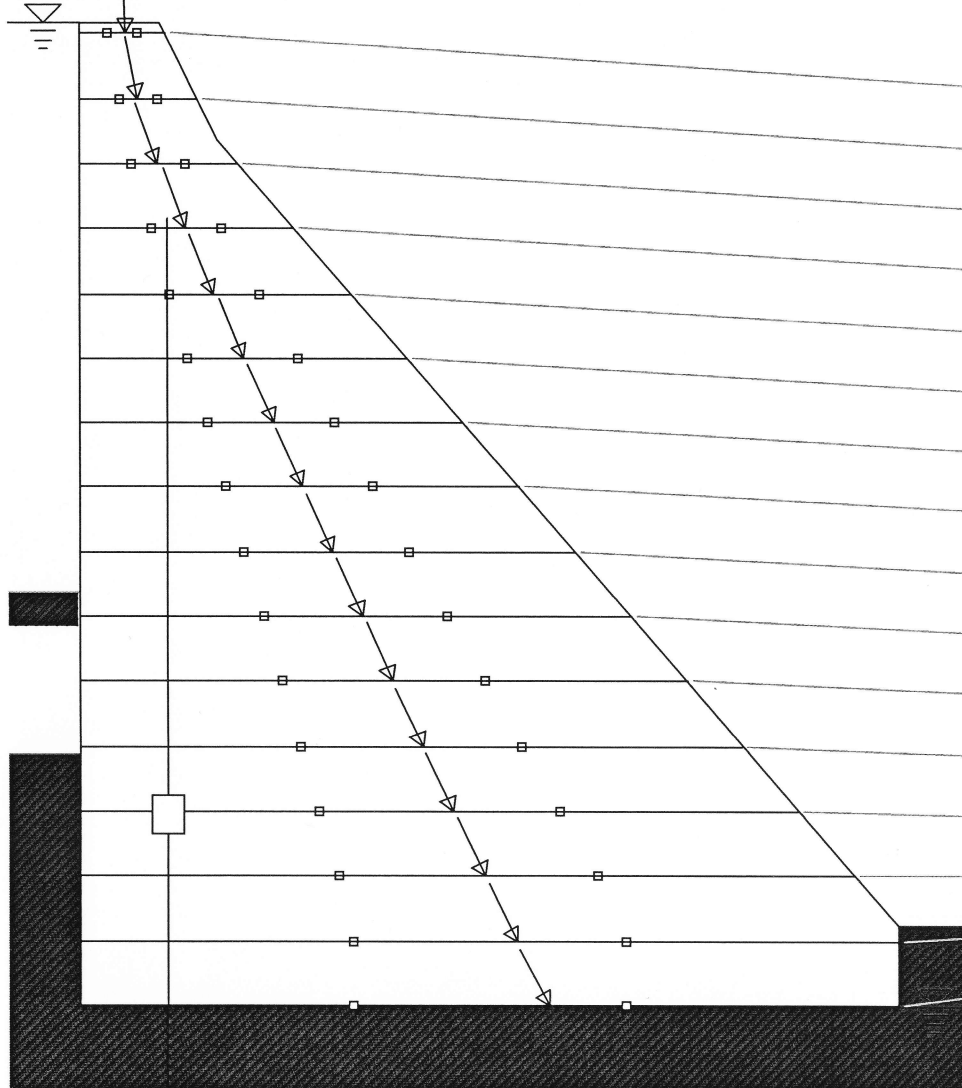
NSERC / Hydro-Quebec / Alcan Industrial Chair on Structural Safety of Concrete Dams, École Polytechnique de Montréal, Canada

Project: Diploma  
 Dam: Moste  
 Owner:

Dam location: Kavčke  
 Date: 23.8.2012

Analysis performed by:  
 Project engineer: Mateja Klun

## Flood combination (stability analysis)



Joint #	SSF (peak)	SSF (residual)	OSF (U/S <)	OSF (-> D/S)	USF	Normal (kN)	Shear (kN)	Moment (kN·m)	Res. Pos. (% joint)
1	92,489	65,525	6,818	3,573	4,666	-57,1	1,8	8,8	52,903
2	13,779	9,762	5,588	2,902	4,051	-500,3	103,8	4,4	50,120
3	8,180	5,795	4,753	2,366	3,512	-1038,2	362,8	-20,9	49,795
4	7,488	5,495	13,022	2,835	5,985	-2112,9	778,7	-203,8	49,272
5	6,068	5,059	17,180	2,857	6,914	-3376,7	1351,6	-175,5	49,689
6	5,260	4,823	21,184	2,882	7,818	-4957,0	2081,5	170,4	50,170
7	4,742	4,676	24,854	2,907	8,685	-6854,2	2968,3	913,9	50,564
8	4,381	4,381	28,132	2,931	9,513	-9068,4	4012,1	2135,0	50,869
9	4,116	4,116	31,022	2,953	10,301	-11599,5	5212,8	3913,4	51,105
10	3,911	3,911	33,554	2,972	11,049	-14447,7	6575,0	6331,4	51,289
11	3,727	3,727	35,778	2,988	11,762	-17612,9	8144,5	9570,8	51,451
12	3,560	3,560	37,750	2,998	12,439	-21095,1	9933,8	13952,4	51,617
13	3,460	3,460	39,493	3,006	13,084	-24894,4	11781,5	19538,7	51,769
14	3,333	3,333	26,655	2,873	11,059	-28465,5	13767,1	29432,8	52,162
15	3,189	3,189	18,617	2,658	8,984	-31951,4	15909,6	56496,5	53,501
16	3,394	2,932	16,257	2,373	7,981	-35608,5	18209,0	133731,1	57,437
	<b>2,000</b>	<b>1,300</b>	<b>1,100</b>	<b>1,100</b>	<b>1,100</b>				





# CADAM - Stability drawing

By Martin Leclerc, M. Ing.

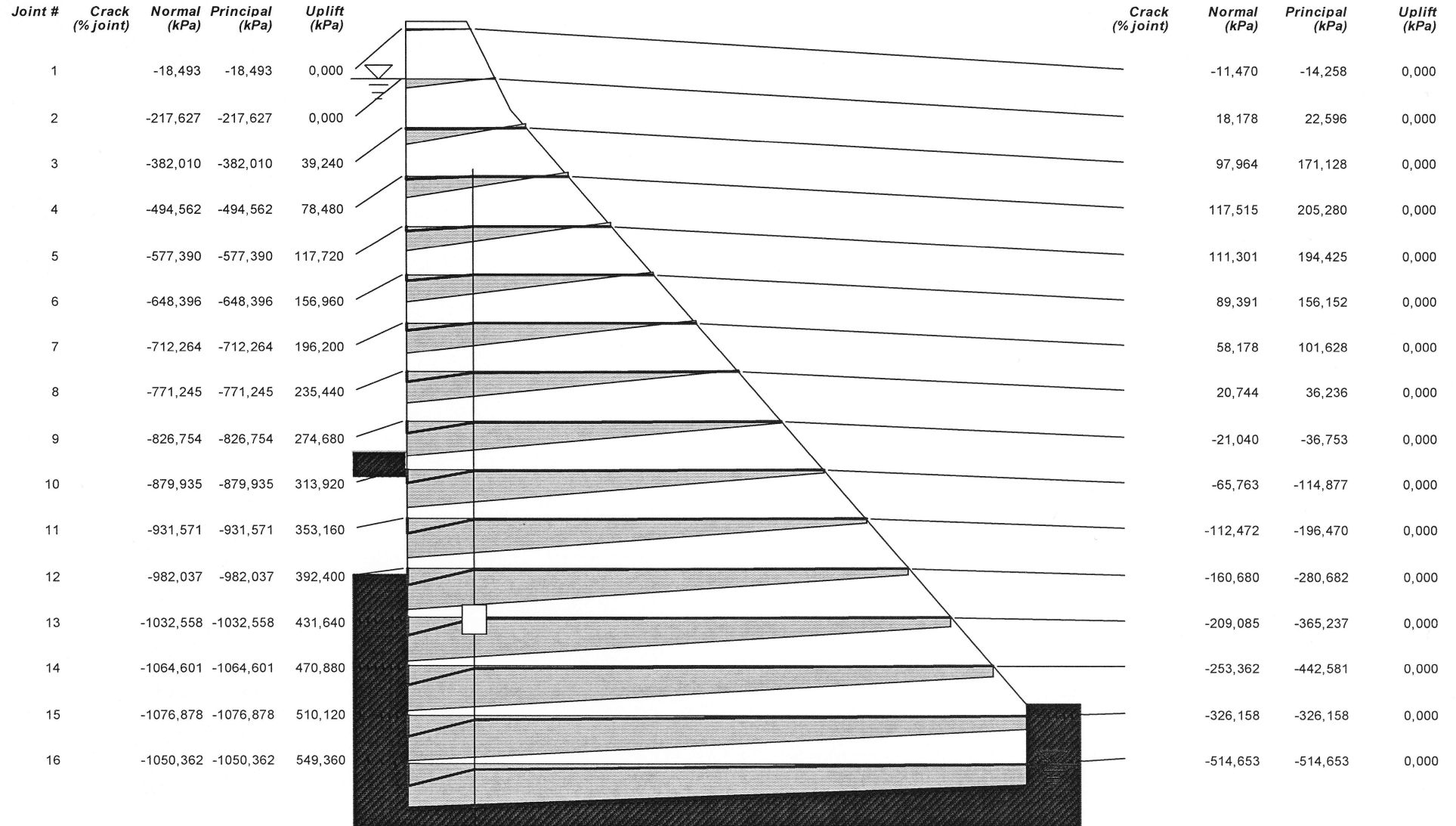
NSERC / Hydro-Quebec / Alcan Industrial Chair on Structural Safety of Concrete Dams, École Polytechnique de Montréal, Canada

Project: Diploma  
 Dam: Moste  
 Owner:

Dam location: Kavčke  
 Date: 23.8.2012

Analysis performed by:  
 Project engineer: Mateja Klun

## Seismic #1 combination - Peak accelerations (stress analysis) (effective stress analysis)





# CADAM - Stability drawing

By Martin Leclerc, M. Ing.

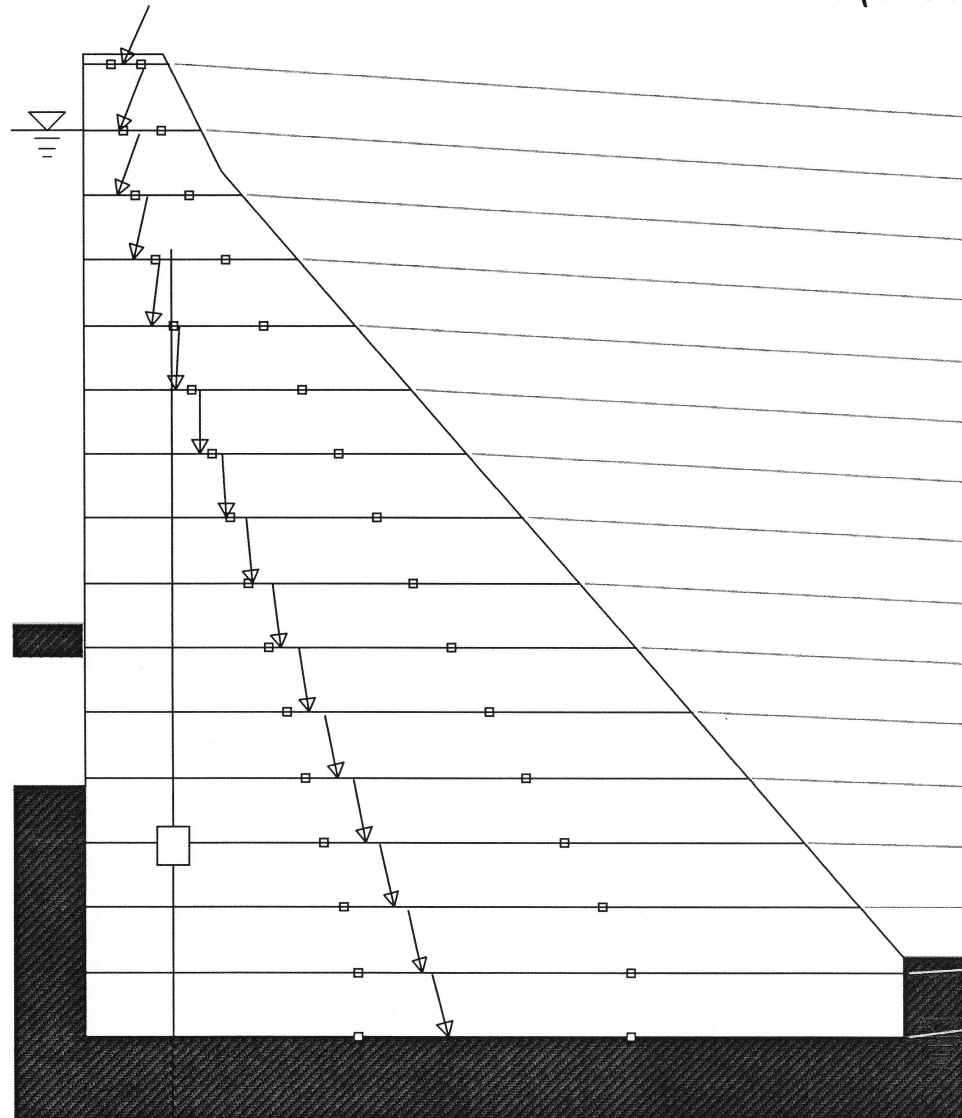
NSERC / Hydro-Quebec / Alcan Industrial Chair on Structural Safety of Concrete Dams, École Polytechnique de Montréal, Canada

Project: Diploma  
 Dam: Moste  
 Owner:

Dam location: Kavčke  
 Date: 23.8.2012

Analysis performed by:  
 Project engineer: Mateja Klun

## Seismic #1 combination - Peak accelerations (stress analysis) (stability analysis)



Joint #	SSF (peak)	SSF (residual)	OSF (U/S <-)	OSF (-> D/S)	USF	Normal (kN)	Shear (kN)	Moment (kN·m)	Res. Pos. (% joint)
1	6,393	4,529	19,268	> 100	> 100	-79,3	-35,5	-16,4	46,094
2	6,785	5,109	3,446	> 100	> 100	-724,8	-289,3	-1037,9	30,295
3	6,535	5,760	1,995	8,834	8,239	-1391,3	-493,4	-3838,5	21,837
4	9,195	8,484	2,271	7,943	10,285	-2498,5	-570,8	-8959,0	22,944
5	15,193	14,294	2,553	6,733	10,434	-3894,1	-506,0	-16024,7	25,373
6	37,019	35,236	2,906	6,066	10,981	-5636,6	-287,3	-25004,5	28,003
7	> 100	> 100	3,293	5,635	11,655	-7725,9	92,2	-35829,9	30,368
8	28,494	27,482	3,703	5,331	12,368	-10161,9	633,9	-48399,7	32,412
9	16,909	16,381	4,131	5,103	13,084	-12944,6	1332,8	-62611,4	34,161
10	12,576	12,251	4,569	4,927	13,788	-16073,9	2179,4	-78403,5	35,651
11	10,209	10,016	5,008	4,783	14,472	-19550,0	3194,2	-95735,5	36,924
12	8,688	8,596	5,433	4,658	15,132	-23372,8	4383,1	-114539,3	38,020
13	7,834	7,801	5,832	4,554	15,767	-27542,3	5605,3	-135062,1	38,946
14	7,167	7,159	5,716	4,213	12,982	-31513,1	6908,6	-154598,3	39,741
15	6,609	6,609	5,414	3,793	10,326	-35426,7	8302,2	-159543,6	41,082
16	6,873	5,920	5,279	3,354	9,069	-39516,6	9804,8	-113849,3	44,295
	<b>1,300</b>	<b>1,000</b>	<b>1,100</b>	<b>1,100</b>	<b>1,100</b>				



# CADAM - Stability drawing

By Martin Leclerc, M. Ing.

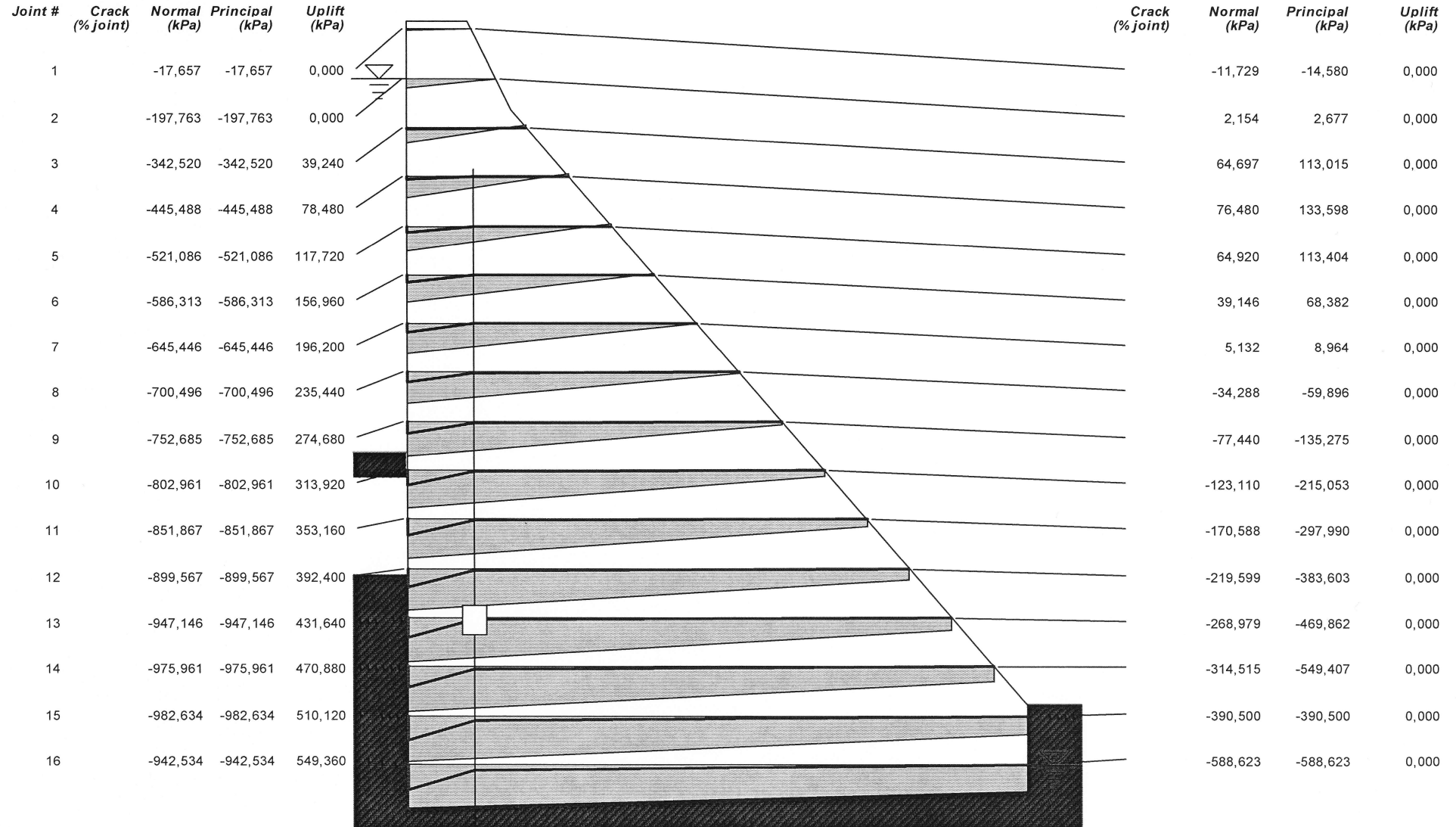
NSERC / Hydro-Quebec / Alcan Industrial Chair on Structural Safety of Concrete Dams, École Polytechnique de Montréal, Canada

Project: Diploma  
 Dam: Moste  
 Owner:

Dam location: Kavčke  
 Date: 23.8.2012

Analysis performed by:  
 Project engineer: Mateja Klun

## Seismic #1 combination - Sustained accelerations (stability analysis) (effective stress analysis)





# CADAM - Stability drawing

By Martin Leclerc, M. Ing.

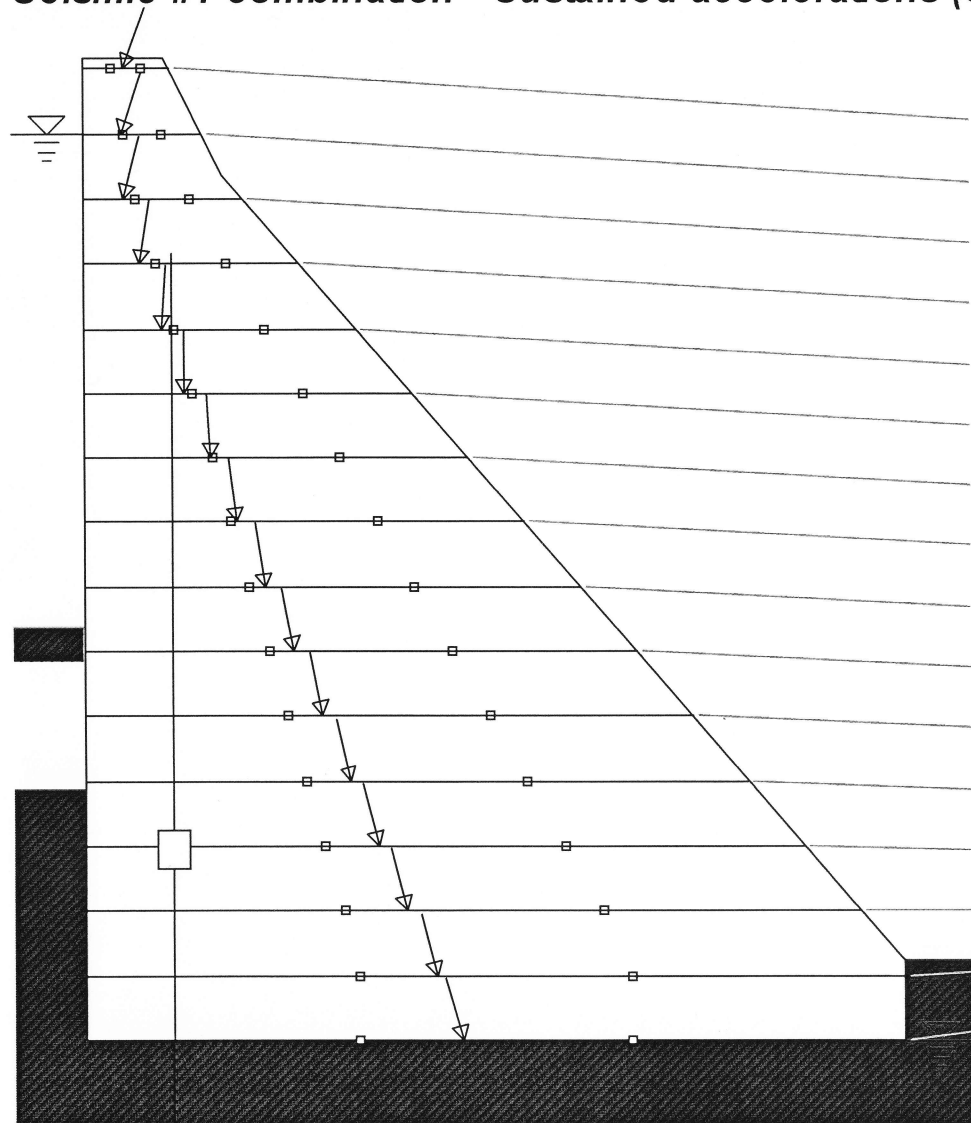
NSERC / Hydro-Quebec / Alcan Industrial Chair on Structural Safety of Concrete Dams, École Polytechnique de Montréal, Canada

Project: Diploma  
 Dam: Moste  
 Owner:

Dam location: Kavčke  
 Date: 23.8.2012

Analysis performed by:  
 Project engineer: Mateja Klun

## Seismic #1 combination - Sustained accelerations (stability analysis) (stability analysis)



Joint #	SSF (peak)	SSF (residual)	OSF (U/S <-)	OSF (-> D/S)	USF	Normal (kN)	Shear (kN)	Moment (kN-m)	Res. Pos. (% joint)
1	8,151	5,775	24,566	> 100	> 100	-77,8	-27,3	-13,9	46,638
2	8,821	6,469	4,394	> 100	> 100	-710,8	-222,5	-879,9	32,966
3	8,938	7,691	2,394	8,296	8,080	-1360,8	-361,4	-3256,6	25,571
4	14,361	13,063	2,797	7,488	10,087	-2445,2	-366,7	-7640,1	26,425
5	34,128	31,765	3,150	6,369	10,233	-3811,2	-226,3	-13635,4	28,589
6	> 100	> 100	3,591	5,756	10,770	-5517,3	68,8	-21197,6	30,949
7	27,101	25,801	4,071	5,362	11,431	-7563,2	523,7	-30255,5	33,066
8	15,947	15,296	4,578	5,085	12,130	-9949,1	1139,6	-40713,1	34,889
9	11,785	11,401	5,104	4,879	12,832	-12674,8	1912,6	-52472,8	36,443
10	9,598	9,379	5,640	4,719	13,523	-15740,4	2836,6	-65468,6	37,765
11	8,172	8,075	6,175	4,589	14,193	-19145,8	3937,7	-79627,2	38,895
12	7,180	7,149	6,693	4,476	14,840	-22891,1	5223,6	-94822,4	39,874
13	6,603	6,599	7,177	4,381	15,463	-26976,2	6548,4	-111229,8	40,706
14	6,116	6,116	6,898	4,057	12,732	-30855,9	7967,5	-126052,0	41,457
15	5,686	5,686	6,393	3,654	10,128	-34671,6	9492,3	-125841,0	42,813
16	5,941	5,120	6,174	3,227	8,895	-38661,7	11137,1	-75213,3	46,148
	<b>1,300</b>	<b>1,000</b>	<b>1,100</b>	<b>1,100</b>	<b>1,100</b>				