

**DATOS DEL  
INFORME SUPLEMENTARIO D  
ESTUDIO DE PRODUCCION  
DE SEDIMENTOS Y EROSION**



DATA BOOK

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TABLE D.2.1(1) EXISTING COLLAPSES / DERRUMBAMIENTOS EXISTENTES

Rio Choloma (1/3)

C.P Orden de La Corriente y Numero de Cuenca 5 4 3 2 (Stream Order)	Stream Order & Drainage Number , Nombre de La Corriente	Drainage Area		Collapse / Derrumbamiento		Volume (Vc) m <sup>3</sup>	Residual Vol. (Vru) m <sup>3</sup>
		Drainage Area (DA) kd	Mountain Slope Area (A) kd	Collapsed Slope Area (Ca) m <sup>2</sup>	Occupied Ratio (Cr) %		
	2- 1	2.03	2.03	8100	0.39	8100	810
	2- 2	0.55	0.55	0	0.0	0	0
	2- 3	0.47	0.47	0	0.0	0	0
	2- 4	0.21	0.21	3000	1.42	3000	300
	3- 1 Remains	0.49	0.49	3600	0.73	3600	360
	3- 1 Sub Total (Qda. del Tamarinda)	3.75	3.75	14700	0.39	14700	1470
	2- 5	1.65	1.65	14550	0.88	14550	1455
	2- 6	0.75	0.75	3900	0.52	3900	390
	2- 7	1.30	1.30	16550	1.27	16550	1655
	3- 2 Remains	0.57	0.57	1500	0.26	1500	150
	3- 2 Sub Total (Qda. de Agua Blanco)	4.27	4.27	36500	0.85	36500	3650
	3- 1, 3- 2 Sub Total	8.02	8.02	51200	0.63	51200	5120
	2- 8	0.83	0.83	11700	1.40	11700	1170
	2- 9	0.34	0.34	4550	1.33	4550	455
	2-10	0.79	0.79	0	0.0	0	0
	4- 1 Remains	2.93	2.84	13200	0.46	13200	1320
	4- 1 Remains Sub Total	4.89	4.80	29450	0.61	29450	2945
	4- 1 Sub Total	12.91	12.82	80650	0.62	80650	8065
	2-11	0.53	0.53	2400	0.45	2400	240
	2-12	0.75	0.75	900	0.12	900	90
	2-13	1.38	1.38	8200	0.59	8200	820
	3- 3 Remains	1.19	1.19	3550	0.29	3550	355
	3- 3 Sub Total (Rio del Ocotillo)	3.85	3.85	15050	0.39	15050	1505
	2-14	0.91	0.91	12300	1.35	12300	1230
	2-15	0.65	0.65	6780	1.04	6780	678
	3- 4 Remains	0.21	0.21	1500	0.71	1500	150
	3- 4 Sub Total	1.77	1.77	20580	1.16	20580	2058
	3- 3, 3- 4 Sub Total	5.62	5.62	35630	0.63	35630	3563
	2-17	0.78	0.78	4500	0.57	4500	450
	2-18	1.53	1.53	1500	0.09	1500	150
	2-19	1.70	1.70	6000	0.35	6000	600
	3- 5 Remains	1.22	1.22	2750	0.22	2750	275
	3- 5 Sub Total (Qda. del Ocotillo)	5.23	5.23	14750	0.28	14750	1475
	2-16	1.03	1.03	9700	0.94	9700	970
	4- 2 Remains	1.63	1.63	3300	0.20	3300	330

TABLE D.2.1(1) EXISTING COLLAPSES / DERRUMBAMIENTOS EXISTENTES

Rio Choloma (2/3)

(Continued)

C.P Orden de La Corriente y Numero de Cuenca 5 4 3 2 (Stream Order)	Stream Order & Drainage Number , Nombre de La Corriente	Drainage Area		Collapse / Derrumbamiento		Volume (Vc) m <sup>3</sup>	Residual Vol. (Vru) m <sup>3</sup>
		Drainage Area (DA) kd	Mountain Slope Area (A) kd	Collapsed Slope Area (Ca) m <sup>2</sup>	Occupied Ratio (Cr) %		
	4- 2 Remains Sub Total	2.66	2.66	13000	0.48	13000	1300
	4- 2 Sub Total (Rio del Ocotillo)	13.51	13.51	63380	0.46	63380	6338
	4- 1, 4- 2 Sub Total	26.42	26.33	144030	0.54	144030	14403
	2-21	1.23	1.23	1500	0.12	1500	150
	2-22	0.19	0.19	0	0.0	0	0
	3- 6 Remains	0.37	0.37	2400	0.64	2400	240
	3- 6 Sub Total (Qda. Tino Gacho)	1.79	1.79	3900	0.21	3900	390
	2-23	1.50	1.50	5400	0.36	5400	540
	2-24	0.23	0.23	1800	0.78	1800	180
	3- 7 Remains	1.36	1.36	5500	0.40	5500	550
	3- 7 Sub Total	3.09	3.09	12700	0.41	12700	1270
	2-20	0.43	0.43	0	0.0	0	0
	5- 1- 1 Remains	2.90	1.85	3100	0.16	3100	310
	5- 1- 1 Remains Sub Total	3.33	2.28	3100	0.13	3100	310
①	5- 1- 1 Sub Total (Rio Majaine)	34.63	33.49	163730	0.48	163730	16373
	2-25	1.58	1.58	30470	1.92	30470	3047
	2-26	0.58	0.58	3700	0.63	3700	370
	2-27	0.65	0.65	0	0.0	0	0
	2-28	1.14	1.14	0	0.0	0	0
	2-29	1.56	1.56	7500	0.48	7500	750
	3- 8- 1 Remains	0.88	0.88	0	0.0	0	0
	3- 8- 1 Sub Total	6.39	6.39	41670	0.65	41670	4167
	2-30	2.40	2.37	3100	0.13	3100	310
	3- 8- 2 Remains	3.44	3.20	12300	0.38	12300	1230
	3- 8- 2 Sub Total	5.84	5.57	15400	0.27	15400	1540
	3- 8 Sub Total	12.23	11.96	57070	0.74	57070	5707
	2-31	0.99	0.99	0	0.0	0	0
	2-32	0.51	0.51	0	0.0	0	0
	3- 9 Remains	0.50	0.35	0	0.0	0	0
	3- 9 Sub Total	2.00	1.85	0	0.0	0	0
	3- 8, 3- 9 Sub Total	14.23	13.81	57070	0.41	57070	5707
	2-33	1.25	1.25	1500	0.12	1500	150
	2-34	0.25	0.25	0	0.0	0	0
	3-10 Remains	1.54	1.31	150	0.01	150	15
	3-10 Sub Total (Qda. del Cabro)	3.04	2.81	1650	0.05	1650	165

TABLE D.2.1(1) EXISTING COLLAPSES / DERRUMBAMIENTOS EXISTENTES

(Continued)

Rio Choloma (3/3)

C.P	Stream Order & Drainage Number , Orden de La Corriente y Numero de Cuenca	Stream Name Nombre de La Corriente	Drainage Area		Collapse / Derrumbamiento		Residual Vol. (Vru) m <sup>3</sup>	
			Drainage Area (DA) km <sup>2</sup>	Mountain Slope Area (A) km <sup>2</sup>	Collapsed Slope Area (Ca) m <sup>2</sup>	Occupied Ratio (Cr) %		Volume (Vc) m <sup>3</sup>
	5 4 3 2 (Stream Order)							
	2-35		0.93	0.79	2700	0.34	2700	270
	4- 3 Remains		2.19	0.88	5900	0.67	5900	590
	4- 3 Remains Sub Total		3.12	1.67	8600	0.51	8600	860
②	4- 3 Sub Total (Rio la Jutosa)		20.39	18.29	67320	0.36	67320	6732
	4- 3,5- 1- 1 Sub Total		55.02	51.78	231050	0.44	231050	23105
	2-37		1.29	1.29	6310	0.48	6310	631
	2-38		1.51	1.51	2100	0.13	2100	210
	3-11 Remains		0.86	0.68	2100	0.30	2100	210
	3-11 Sub Total (Qda. Gueno)		3.66	3.48	10510	0.30	10510	1051
	2-41		0.93	0.87	1200	0.13	1200	120
	2-42		0.86	0.66	0	0.0	0	0
	2-43		0.51	0.39	0	0.0	0	0
	3-12 Remains		0.98	0.09	0	0.0	0	0
	3-12 Sub Total		3.28	2.01	1200	0.05	1200	120
	2-36		0.83	0.51	0	0.0	0	0
	2-39		1.80	1.35	0	0.0	0	0
	2-40		0.59	0.44	7800	1.77	7800	780
	5- 1- 2 Remains		6.46	2.25	6200	0.27	6200	620
	5- 1- 2 Remains Sub Total		9.68	4.55	14000	0.30	14000	1400
	5- 1- 2 Sub Total		16.62	10.04	25710	0.26	25710	2571
△	5-1 Total (Rio Choloma)		71.64	61.82	256760	0.41	256760	25676

Note/Nota : Average collapsed depth / Profundidad promedio de derrumbamiento=1.0m  
 Residual ratio of collapsed mass deposits on the slope / Porcentaje remanente de derrumbamiento=10%  
 C.P, △ : Design control point / Punto de control de diseño  
 ① : Sub-control point & Number / Punto de sub-control y numer  
 Remains : Remains of drainage area / Restos en area de cuenca  
 DA : Area de cuenca  
 A : Area de montañosa  
 Ca : Collapsed slopa Area / Area de cuesta derrumbada  
 Cr : Radio ocupado (=Ca/A×100)  
 Vc : Volume of collapsed mass deposits / Volumen de depositos masa de derrumbamiento (=Ca×1.0m)  
 Vru : Residual unstable deposits of existing past collapsed area (=Vc×10%)  
 Depositos residuales inestables existentes del area derrumbada anteriormente

TABLE D.2.1(2) EXISTING COLLAPSES / DERRUMBAMIENTOS EXISTENTES

Rio Blanco (1/2)

C.P	Stream Order & Drainage Number , Orden de La Corriente y Numero de Cuenca	Stream Name Nombre de La Corriente	Drainage Area		Collapse / DERRUMBAMIENTO		Residual Vol. (Vru) m <sup>3</sup>	
			Drainage Area (DA) km <sup>2</sup>	Mountain Slope Area (A) km <sup>2</sup>	Collapsed Slope Area (Ca) m <sup>2</sup>	Occupied Ratio (Cr) %		Volume (Vc) m <sup>3</sup>
	5 4 3 2 (Stream Order)							
	2- 1		2.22	2.22	21100	0.95	21100	2110
	2- 2		0.77	0.77	19400	2.51	19400	1940
	2- 3		1.01	1.01	24950	2.47	24950	2495
	2- 4		0.74	0.74	6500	0.87	6500	650
	3- 1- 1 Remains		1.00	1.00	4800	0.48	4800	480
	3- 1- 1 Remains Sub Total		5.74	5.74	76750	1.33	76750	76750
	2- 5		1.56	1.56	9100	0.58	9100	910
	2- 6		0.43	0.43	0	0.0	0	0
	3- 1- 2 Remains		3.33	3.33	41050	1.23	41050	4105
	3- 1- 2 Remains Sub Total		5.32	5.32	50150	0.94	50150	5015
	3- 1 Sub Total (Rio del Chorreron)		11.06	11.06	126900	1.14	126900	12690
	2- 7		1.13	1.13	7550	0.66	7550	755
	2- 8		2.18	2.18	17300	0.79	17300	1730
	3- 2 Remains		0.46	0.46	3350	0.72	3350	335
	3- 2 Sub Total (Qda. la Coronilla)		3.77	3.77	28200	0.74	28200	2820
	3- 1,3- 2 Sub Total		14.83	14.83	155100	1.04	155100	15510
	2- 9		0.66	0.66	2400	0.36	2400	240
	4- 1 -1 Remains		2.43	2.43	8250	0.33	8250	825
	4- 1 -1 Remains Sub Total		3.09	3.09	10650	0.34	10650	1065
①	4- 1 -1 Sub Total		17.92	17.92	165750	0.92	165750	16575
	4- 1- 2 Remains		2.01	0.14	500	0.35	500	50
	4- 1- 2 Remains Sub Total		2.01	0.14	500	0.35	500	50
	4- 1 Sub Total (Rio del Zapotal)		19.93	18.06	166250	0.92	166250	16625
	2-10		2.21	2.21	20900	0.94	20900	2090
	2-11		1.13	1.13	3650	0.32	3650	365
	2-12		1.90	1.90	7500	0.39	7500	750
	3- 3- 1 Remains		3.78	3.78	15400	0.40	15400	1540
②	3- 3- 1 Sub Total		9.02	9.02	47450	0.52	47450	4745
	3- 3- 2 Remains		0.29	0.00	0	-	0	0
	3- 3- 2 Remains Sub Total		0.29	0.00	0	-	0	0
	3- 3 Sub Total		9.31	9.02	47450	0.52	47450	47450
	2-13		2.43	2.17	1900	0.08	1900	190
	2-14		0.62	0.49	700	0.14	700	70
	2-15		1.05	0.64	0	0.0	0	0
	3- 4 Remains		0.10	0.00	0	-	0	0

TABLE D.2.1(2) EXISTING COLLAPSES / DERRUMBAMIENTOS EXISTENTES

Stream Order & Drainage Number , Stream Name C.P Orden de La Corriente y Numero de Cuenca Nombre de La Corriente		Drainage Area		Collapse / DERRUMBAMIENTO		Rio Blanco (2/2)	
		Drainage Area (DA) kd	Mountain Slope Area (A) kd	Collapsed Slope Area (Ca) m <sup>2</sup>	Occupied Ratio (Cr) %	Volume (Vc) m <sup>3</sup>	Residual Vol. (Vru) m <sup>3</sup>
5 4 3 2 (Stream Order)							
	3- 4 Sub Total (Qda. de Penas)	4.20	3.30	2600	0.07	2600	260
	3- 3, 3- 4 Sub Total	13.51	12.32	50050	0.40	50050	5005
	4- 2 Remains	0.37	0.00	0	-	0	0
	4- 2 Remains Sub Total	0.37	0.00	0	-	0	0
	4- 2 Sub Total (Rio de Armenta)	13.88	12.32	50050	0.40	50050	5005
	4- 1, 4- 2 Sub Total	33.81	30.38	216300	0.71	216300	21630
	2-16	0.72	0.72	0	0.0	0	0
	2-17	0.76	0.76	0	0.0	0	0
	2-18	1.03	1.03	600	0.05	600	60
	2-19	1.08	0.96	0	0.0	0	0
	3- 5 Remains	1.65	1.51	2100	0.13	2100	210
	3- 5 Sub Total	5.24	4.98	2700	0.05	2700	270
	2-20	0.35	0.35	0	0.0	0	0
	2-21	0.84	0.84	0	0.0	0	0
	3- 6 Remains	1.04	0.81	0	0.0	0	0
	3- 6 Sub Total	2.23	2.00	0	0.0	0	0
③	3- 5, 3- 6 Sub Total	7.47	6.98	2700	0.03	2700	270
	4- 3 Remains	2.50	1.85	0	0.0	0	0
	4- 3 Remains Sub Total	2.50	1.85	0	0.0	0	0
	4- 3 Sub Total (Rio Chiquito)	9.97	8.83	2700	0.03	2700	270
	4- 1, 4- 2, 4- 3 Sub Total	43.78	39.21	219000	0.55	219000	21900
	5- 1 Remains	0.12	0.00	0	-	0	0
	5- 1 Remains Sub Total	0.12	0.00	0	-	0	0
△	5- 1 Total (Rio Blanco)	43.90	39.21	219000	0.55	219000	21900

Note/Nota : Refer to the note of table for the Rio Choloma  
Referirse a la de la tabla para el Rio Choloma

TABLE D.2.1(3) EXISTING COLLAPSES / DERRUMBAMIENTOS EXISTENTES

Stream Order & Drainage Number , Stream Name C.P Orden de La Corriente y Numero de Cuenca Nombre de La Corriente		Drainage Area		Collapse / Derrumbamiento		Rio Santa Ana , Rio El Sauce (1/1)	
		Drainage Area (DA) kd	Mountain Slope Area (A) kd	Collapsed Slope Area (Ca) m <sup>2</sup>	Occupied Ratio (Cr) %	Volume (Vc) m <sup>3</sup>	Residual Vol. (Vru) m <sup>3</sup>
5 4 3 2 (Stream Order)							
	2- 1	3.11	3.11	45050	1.45	45050	4505
	2- 2	1.28	1.28	35500	2.77	35500	3550
	2- 3	0.52	0.52	350	0.07	350	35
	2- 4	1.20	1.20	3200	0.27	3200	320
	2- 5	2.43	2.43	5350	0.22	5350	535
	3- 1 Remains	0.90	0.90	0	0.0	0	0
	3- 1 Sub Total (Rio Santa Ana)	9.44	9.44	89450	0.95	89450	8945
	2- 6	2.61	2.61	6450	0.25	6450	645
	2- 7	0.42	0.42	5580	1.33	5580	558
	2- 8	0.55	0.55	0	0.0	0	0
	3- 2 Remains	0.15	0.15	0	0.0	0	0
	3- 2 Sub Total (Qda. del Intierno)	3.73	3.73	12030	0.32	12030	1203
	3- 1, 3- 2 Sub Total	13.17	13.17	101480	0.78	101480	10148
	2- 9	3.47	3.47	19400	0.60	19400	1940
	2-10	1.72	1.72	1050	0.06	1050	105
	4- 1 -1 Remains	4.03	4.03	3700	0.09	3700	370
	4- 1 -1 Remains Sub Total	9.22	9.22	24150	0.26	24150	2415
①	4- 1- 1 Sub Total	22.39	22.39	125630	0.56	125630	12563
	2-11 Remains	1.08	1.06	0	0.0	0	0
	2-12 (Qda. del Comercio)	2.24	1.98	1900	0.10	1900	190
	2-13 (Qda. de Agua Prieta)	6.42	2.20	3350	0.15	3350	335
	4- 1- 2 Remains	5.50	0.96	0	0.0	0	0
	4- 1- 2 Remains Sub Total	15.24	6.20	5250	0.08	5250	525
△	4- 1 Total (Rio Santa Ana , Rio El Sauce)	37.63	28.59	130880	0.46	130880	13088

Note/Nota : Refer to the note of table for the Rio Choloma  
Referirse a la nota de la tabla para el Rio Choloma

TABLE D.2.1(4) EXISTING COLLAPSES / DERRUMBAMIENTOS EXISTENTES

Rio Piedras, Rio El Sauce(1/1)

Stream Order & Drainage Number, C.P. Orden de La Corriente y Numero de Cuenca 5 4 3 2 (Stream Order)	Stream Name Nombre de La Corriente	Drainage Area		Collapse / Derrumbamiento		Volume (Vc) m <sup>3</sup>	Residual Vol. (Vru) m <sup>3</sup>
		Drainage Area (DA) km <sup>2</sup>	Mountain Slope Area (A) km <sup>2</sup>	Collapsed Slope Area (Ca) m <sup>2</sup>	Occupied Ratio (Cr) %		
	2- 1	1.86	1.85	0	0.0	0	0
	2- 2	0.86	0.86	1200	0.14	1200	120
	2- 3	0.75	0.75	0	0.0	0	0
	2- 4	0.71	0.71	0	0.0	0	0
	2- 5	2.14	2.14	4200	0.20	4200	420
	2- 6	0.81	0.81	0	0.0	0	0
	3- 1- 1 Remains	3.16	3.16	5800	0.18	5800	580
	3- 1- 1 Sub Total	10.28	10.28	11200	0.11	11200	1120
	2- 7	1.39	1.39	0	0.0	0	0
	2- 8	0.94	0.94	2800	0.30	2800	280
	3- 1- 2 Remains	7.48	7.48	2400	0.03	2400	240
	3- 1- 2 Sub Total	9.81	9.81	5200	0.05	5200	520
①	3- 1- 1, 3- 1- 2 Sub Total	20.09	20.09	16400	0.08	16400	1640
	2- 9	1.57	1.57	600	0.04	600	60
	3- 1- 3 Remains	0.86	0.45	0	0.0	0	0
	3- 1- 3 Sub Total	2.43	2.02	600	0.03	600	60
②	3- 1 Sub Total (Rio Piedras)	22.52	22.11	17000	0.07	17000	1700
	2-10	0.57	0.57	0	0.0	0	0
	2-11	0.82	0.82	600	0.07	600	60
	3- 2 Remains	4.09	3.07	0	0.0	0	0
③	3- 2 Sub Total (Qda. Santa Ana)	5.48	4.46	600	0.01	600	60
	4- 1 Remains	2.87	0.20	0	0	0	0
	4- 1 Remains Sub Total	2.87	0.20	0	0	0	0
△	4- 1 Total (Rio Piedras, Rio El Sauce)	30.87	26.77	17600	0.07	17600	1760

Note/Nota : Refer to the note of table for the Rio Choloma  
Referirse a la nota de la tabla para el Rio Choloma.



TABLE D.2.2(1) RIVERBED DEPOSITS DATA / DEPOSITOS EN EL LECHO DEL CAUCE

RIO CHOLOMA (1/8)

STO & #	STO & #	ST.L m	ST.W m	DD m	VOL m <sup>3</sup>
2-1	1 53	340	3	0.5	510
	1 59	570	3	0.5	855
	1 60	510	3	0.5	765
	1 61	410	3	0.5	615
	1 62	560	5	0.8	2240
	1 total	2390			4985
	2 total	1580			11060
Total	2 total	3970			16045
2-2	1 63	330	3	0.5	495
	1 64	540	5	0.8	2160
	1 total	870			2655
	2 total	240			960
Total	2 total	1110			3615
2-3	1 65	520	3	0.5	780
	1 66	500	3	0.5	750
	1 total	1020			1530
	2 total	360			1440
Total	2 total	1380			2970
2-4	1 67	430	3	0.5	645
	1 68	240	3	0.5	360
	1 total	670			1005
	2 total	80			320
Total	2 total	750			1325
R3-1	3 total	1250	7	1.0	8750
Total	3 total	1250			8750
2-5	1 69	670	5	0.8	2680
	1 70	490	5	0.8	1960
	1 71	490	5	0.8	1960
	1 72	310	3	0.5	465
	1 73	260	3	0.5	390
	1 total	2220			7455
	2 total	1320			5240
Total	2 total	3540			16695
2-6	1 74	620	5	0.8	2480
	1 75	470	5	0.8	1880
	1 76	410	3	0.5	615
	1 total	1500			4975
	2 total	410			1640
Total	2 total	1910			6615
2-7	1 77	450	3	0.5	675
	1 78	780	5	0.8	3120
	1 79	560	5	0.8	2200
	1 total	1780			5995
	2 total	1040			7280
Total	2 total	2820			13275

RIO CHOLOMA (2/8)

STO & #	STO & #	ST.L m	ST.W m	DD m	VOL m <sup>3</sup>
R3-2	1 80	490	5	0.8	1960
	1 total	490			1960
	3 total	1000			7000
Total	3 total	1000			7000
2-8	1 83	1000	5	0.8	4000
	1 84	330	3	0.5	495
	1 total	1330			4495
	2 total	600			4200
Total	2 total	1930			8695
2-9	1 85	240	3	0.5	360
	1 86	650	5	0.8	2600
	1 total	890			2960
	2 total	220			880
Total	2 total	1110			3840
2-10	1 91	220	3	0.5	330
	1 92	210	3	0.5	315
	1 total	430			645
	2 total	1160			4640
Total	2 total	1590			5285
R4-1	1 81	670	5	0.8	2680
	1 82	570	5	0.8	2280
	1 87	200	3	0.5	300
	1 88	330	3	0.5	495
	1 89	530	3	0.5	795
	1 90	680	5	0.8	2720
	1 total	2980			9270
	4 total	3450			52100
Total	4 total	6430			71370
2-11	1 93	380	5	0.8	1520
	1 94	260	5	0.8	1040
	1 total	640			2560
	2 total	470			1880
Total	2 total	1110			4440
2-12	1 95	190	5	0.8	760
	1 96	400	5	0.8	1600
	1 97	500	5	0.8	2000
	1 total	1090			4360
	2 total	530			2120
Total	2 total	1620			6480
2-13	1 101	190	3	0.5	285
	1 102	370	5	0.8	1480
	1 103	320	5	0.8	1280
	1 104	880	5	0.8	3520
	1 total	1760			6565
	2 total	1310			9170
Total	2 total	3070			15735

RIO CHOLOMA (3/8)

STO & #	STO & #	ST.L m	ST.W m	DD m	VOL m <sup>3</sup>
R3-3	1 98	500	5	0.8	2000
	1 99	490	5	0.8	1960
	1 100	370	5	0.8	1480
	1 total	1360			5440
	3 total	1860			7980
Total	3 total	3520			14400
2-14	1 105	650	5	0.8	2600
	1 106	310	3	0.5	465
	1 107	300	3	0.5	450
	1 total	1260			3515
	2 total	790			5830
Total	2 total	2050			9045
2-15	1 108	300	3	0.5	450
	1 109	450	5	0.8	1800
	1 110	350	3	0.5	525
	1 total	1100			2775
	2 total	760			5320
Total	2 total	1860			8095
R3-4	3 total	420			3360
Total	3 total	420			3360
2-17	1 115	230	3	0.5	345
	1 116	1140	5	0.8	4560
	1 117	500	5	0.8	2000
	1 total	1870			6905
	2 total	620			2480
Total	2 total	2490			9385
2-18	1 118	280	3	0.5	420
	1 119	570	5	0.8	2280
	1 120	740	5	0.8	2960
	1 121	420	3	0.5	630
	1 total	2010			6290
	2 total	940			5580
Total	2 total	2950			11870
2-19	1 125	220	5	0.8	880
	1 126	280	5	0.8	1120
	1 127	370	5	0.8	1480
	1 128	440	5	0.8	1760
	1 129	1050	5	0.8	4200
	1 total	2360			9440
	2 total	1320			9240
Total	2 total	3680			18680
R3-5	1 122	410	3	0.5	615
	1 123	440	3	0.5	660
	1 124	390	3	0.5	585
	1 130	340	3	0.5	510
	1 total	1580			2370
	3 total	1590			19080
Total	3 total	3170			21450

RIO CHOLOMA (5/8)

STO # & N	STO & N	ST.L	ST.W	DD	VOL
		m	m	m	m <sup>3</sup>
R3-8-2	1 14	650	5	0.8	2600
	1 15	640	5	0.8	2560
	1 16	510	3	0.5	765
	1 17	720	5	0.8	2880
	1 18	530	3	0.5	795
	1 19	430	3	0.5	645
	1 20	670	5	0.8	2680
	1 21	880	5	0.8	3520
	1 30	720	5	0.8	2880
	1 31	900	5	0.3	3500
	1 total	6650			22925
	3 total	3090	10	1.5	46350
Total		9740			69275
2-31	1 32	340	3	0.5	510
	1 33	750	3	0.5	1125
	1 34	750	5	0.8	3000
	1 total	1840			4635
	2 total	710	5	0.8	2840
	2 total	710			2840
Total		2550			7475
2-32	1 35	530	3	0.5	795
	1 36	470	3	0.5	705
	1 total	1000			1500
	2 total	620	5	0.8	2480
	2 total	620			2480
Total		1620			3980
R3-9	3 total	1020	7	1.0	7140
Total		1020			7140
2-33	1 38	610	5	0.8	2440
	1 39	350	5	0.8	3400
	1 total	1460			5840
	2 total	250	5	0.8	1000
	2 total	250			1000
Total		1710			6840
2-34	1 40	310	3	0.5	465
	1 41	240	3	0.5	360
	1 total	550			825
	2 total	480	5	0.8	1920
	2 total	480			1920
Total		1030			2745
R3-10	1 42	710	5	0.8	2840
	1 43	360	3	0.5	540
	1 44	520	5	0.8	2080
	1 45	350	5	0.8	1400
	1 total	1940			6860
	3 total	1650	7	1.0	11550
	3 total	3590			13410
Total		270	3	0.5	405
2-35	1 47	330	3	0.5	495
	1 48	330	3	0.5	495
	1 49	400	3	0.5	600
	1 50	340	3	0.5	510
	1 total	1340			2010
	2 total	1160	7	1.0	8120
	2 total	1160			8120
Total		2500			10130

RIO CHOLOMA (5/8)

STO # & N	STO & N	ST.L	ST.W	DD	VOL
		m	m	m	m <sup>3</sup>
R5-1-1	1 141	1130	5	0.8	4520
	1 total	1130			4520
	5 total	3070	20	1.0	61400
	5 total	3070			61400
Total		4200			65920
2-25	1 1	510	5	0.8	2040
	1 2	470	3	0.5	705
	1 3	910	5	0.8	3640
	1 total	1890			6385
	2 total	1280	7	1.0	8960
	2 total	1280			8960
Total		3170			15345
2-26	1 4	360	3	0.5	540
	1 5	230	3	0.5	345
	1 total	590			885
	2 total	760	5	0.8	3040
	2 total	760			3040
Total		1350			3925
2-27	1 8	1040	5	0.8	4160
	1 9	230	3	0.5	345
	1 total	1270			4505
	2 total	350	5	0.8	1400
	2 total	350			1400
Total		1620			5905
2-28	1 10	1200	5	0.8	4800
	1 11	940	5	0.8	3760
	1 total	2140			8560
	2 total	310	5	0.8	1240
	2 total	310			1240
Total		2450			9800
2-29	1 12	1020	5	0.8	4080
	1 13	1060	5	0.8	4240
	1 total	2080			8320
	2 total	620	7	1.0	4340
	2 total	620			4340
Total		2700			12660
R3-8-1	1 6	340	3	0.5	510
	1 7	260	3	0.5	390
	1 total	600			900
	3 total	1730	10	1.0	17300
	3 total	1730			17300
Total		2330			18200
2-30	1 22	240	3	0.5	360
	1 23	320	3	0.5	480
	1 24	960	5	0.8	3840
	1 25	190	3	0.5	285
	1 26	230	3	0.5	330
	1 27	400	3	0.5	600
	1 28	790	5	0.8	3160
	1 29	460	3	0.5	690
	1 total	3580			9745
	2 total	2550	7	1.0	17850
	2 total	2550			17850
Total		6130			27595

RIO CHOLOMA (4/8)

STO # & N	STO & N	ST.L	ST.W	DD	VOL
		m	m	m	m <sup>3</sup>
2-16	1 111	190	3	0.5	285
	1 112	490	5	0.8	1960
	1 113	430	3	0.5	645
	1 total	1110			2890
	2 total	1370	7	1.0	9590
	2 total	1370			9590
Total		2480			12480
R4-2	1 114	700	5	0.8	2800
	1 total	700			2800
	4 total	2650	10	1.2	31800
	4 total	2650			31800
Total		3350			34600
2-21	1 133	290	3	0.5	435
	1 134	330	3	0.5	495
	1 135	570	5	0.8	2280
	1 136	530	5	0.8	2120
	1 137	370	5	0.8	1480
	1 total	2090			6810
	2 total	1570	7	1.0	10990
	2 total	1570			10990
Total		3660			17800
2-22	1 138	170	3	0.5	255
	1 139	180	3	0.5	270
	1 total	350			525
	2 total	480	5	0.8	1920
	2 total	480			1920
Total		830			2445
R3-6	1 140	530	5	0.8	2120
	1 total	530			2120
	3 total	760	5	1.0	3800
	3 total	760			3800
Total		1290			5920
2-23	1 51	540	3	0.5	810
	1 52	420	3	0.5	630
	1 53	430	3	0.5	645
	1 54	540	3	0.5	810
	1 total	1930			2895
	2 total	1150	5	0.8	4600
	2 total	1150			4600
Total		3080			7495
2-24	1 55	330	3	0.5	495
	1 56	400	3	0.5	600
	1 total	730			1095
	2 total	340	5	0.8	1360
	2 total	340			1360
Total		1070			2455
R3-7	1 57	570	5	0.8	2280
	1 total	570			2280
	3 total	2350	7	0.8	13160
	3 total	2350			13160
Total		2920			15440
2-20	1 131	630	5	0.8	2520
	1 132	570	5	0.8	2280
	1 total	1200			4800
	2 total	470	5	0.8	1880
	2 total	470			1880
Total		1670			6680

TABLE D.2.2(2) RIVERBED DEPOSITS DATA  
DEPOSITOS EN EL LECHO DEL CAUCE

RIO DEL BLANCO (1/4)

STO & N	STO & N	ST.L m	ST.W m	DD m	VOL m <sup>3</sup>
2-1	1	300	3	0.5	450
	1	390	3	0.5	585
	1	620	3	0.5	930
	1	400	5	0.8	1600
	1	320	5	0.8	1280
	1	2030			4845
	2	1440	7	1.0	10080
	2	1440			10080
	2	3470			14925
Total					
2-2	1	340	3	0.5	510
	1	350	3	0.5	525
	1	340	3	0.5	510
	1	1030			1545
	2	650	5	0.8	2600
	2	650			2600
	2	1680			4145
Total					
2-3	1	420	3	0.5	630
	1	700	5	0.8	2800
	1	1120			3430
	2	640	7	1.0	4480
	2	640			4480
	2	1760			7910
Total					
2-4	1	250	3	0.5	375
	1	280	3	0.5	420
	1	360	3	0.5	540
	1	390			1335
	2	570	5	0.8	2280
	2	570			2280
	2	1480			3615
Total					
R3-1-1	1	340	3	0.5	510
	1	340			510
	3	1170	7	1.0	8190
	3	1170			8190
	3	1510			8700
Total					
2-5	1	420	5	0.8	1680
	1	840	5	0.8	3360
	1	1260			5040
	2	840	7	1.0	5880
	2	840			5880
	2	2100			10920
Total					
2-6	1	300	3	0.5	450
	1	310	3	0.5	465
	1	610			915
	2	340	5	0.8	1360
	2	340			1360
	2	950			2275
Total					
R3-1-2	1	1200	3	0.5	1800
	1	960	3	0.5	1440
	1	2160			3240
	3	2360	10	1.0	23600
	3	2360			23600
	3	4520			26840
Total					

STO & N : STREAM ORDER AND NUMBER  
ST.L : STREAM LENGTH, ST.W : STREAM BED WIDTH  
DD : THICKNESS OF STREAM BED DEPOSITS  
VOL : STREAM BED DEPOSITS VOLUME  
R : REMAINS

RIO CHOLOMA (8/8)

STO & N	STO & N	ST.L m	ST.W m	DD m	VOL m <sup>3</sup>
2-39	1	159	3	0.5	720
	1	160	5	0.8	3280
	1	1300			4000
	2	1010	7	1.0	7070
	2	1010			7070
	2	2310			11070
Total					
2-40	1	182	5	0.8	3280
	1	163	3	0.5	765
	1	1330			4045
	2	730	5	0.8	2920
	2	730			2920
	2	2050			5965
Total					
R5-1-2	1	158	5	0.8	6360
	1	161	5	0.8	3840
	1	184	5	0.8	4200
	1	171	5	0.8	4320
	1	4680			18720
	5	4170	40	0.0	0
	5	4170			0
	5	8850			18720
Total					

STO & N=STREAM ORDER AND DRAINAGE NUMBER  
/ / ORDEN DE LA CORRIENTE Y NUMERO DE CUENCA  
ST.L=STREAM LENGTH  
/ / LONGITUD DE LA CORRIENTE  
ST.W=STREAM BED WIDTH  
/ / ANCHO DEL LECHO DE LA CORRIENTE  
DD=THICKNESS OF STREAM BED DEPOSITS  
/ / ESPESOR DE LOS DEPOSITOS EN EL LECHO  
DE LA CORRIENTE  
VOL=STREAM BED DEPOSIT VOLUME  
/ / VOLUMEN DE LOS DEPOSITOS EN EL LECHO  
DE LA CORRIENTE  
R=REMAINS OF DRAINAGE  
/ / RESTOS EN AREA DE CUENCA

RIO CHOLOMA (7/8)

STO & N	STO & N	ST.L m	ST.W m	DD m	VOL m <sup>3</sup>
R4-3	1	37	5	0.8	4000
	1	46	5	0.8	3720
	1	1930			7720
	4	3130	20	2.0	125200
	4	3130			125200
	4	5080			132920
Total					
2-37	1	144	3	0.5	540
	1	145	3	0.5	390
	1	146	3	0.5	420
	1	147	3	0.5	515
	1	148	3	0.5	515
	1	148	5	0.8	2920
	1	149	5	0.8	2540
	1	2700			7525
	2	1720	7	1.0	12040
	2	1720			12040
	2	4420			19565
Total					
2-38	1	150	3	0.5	495
	1	151	3	0.5	345
	1	152	3	0.5	345
	1	153	5	0.8	2040
	1	154	5	0.8	2560
	1	155	3	0.5	480
	1	156	3	0.5	495
	1	2830			7120
	2	1260	7	1.0	8820
	2	1260			8820
	2	4090			15940
Total					
R3-1-1	1	157	5	0.8	2600
	1	157			2600
	3	1390	10	1.0	13900
	3	1390			13900
	3	2040			16500
Total					
2-41	1	165	5	0.8	2640
	1	166	3	0.5	435
	1	166			435
	2	1020	7	1.0	7140
	2	1020			7140
	2	1970			10215
Total					
2-42	1	167	3	0.5	375
	1	168	3	0.5	360
	1	168			360
	2	1480	7	1.0	10360
	2	1480			10360
	2	1970			11095
Total					
2-43	1	169	3	0.5	435
	1	170	3	0.5	330
	1	170			330
	2	1480	5	0.8	2360
	2	1480			2360
	2	1180			3245
Total					
R3-1-2	3	2560	10	1.0	25600
	3	2560			25600
	3	2560			25600
Total					
2-36	1	142	5	0.8	4120
	1	143	5	0.8	2880
	1	1750			7000
	2	850	5	0.8	3400
	2	850			3400
	2	2500			10400
Total					

RIO DEL BLANCO (4/4)

STO & N	STO & N	ST. L	ST. W	DD	VOL
		m	m	m	m <sup>3</sup>
2-19	1 65	330	5	0.8	1320
	1 66	270	5	0.8	1080
	1 67	870	5	0.8	3480
	1 total	1470			5880
	2 total	1270	7	1.0	8890
	2 total	1270			8890
Total		2740			14770
R3-5	1 58	310	5	0.8	1240
	1 59	900	5	0.8	3600
	1 63	1110	5	0.8	4440
	1 64	450	5	0.8	1800
	1 total	2770			11080
	3 total	2500	10	1.0	25000
	3 total	2500			25000
Total		5270			36080
2-20	1 68	280	5	0.8	1120
	1 69	470	5	0.8	1880
	1 total	750			3000
	2 total	500	7	1.0	3500
	2 total	500			3500
Total		1250			6500
2-21	1 70	500	5	0.8	2000
	1 71	610	5	0.8	2460
	1 72	750	5	0.8	3000
	1 total	1920			7460
	2 total	170	7	1.0	1190
	2 total	170			1190
Total		2090			8650
R3-6	1 73	1420	5	0.8	5680
	1 total	1420			5680
	3 total	970	7	1.0	6790
	3 total	970			6790
Total		2390			12470
R4-3	1 74	380	5	0.8	1520
	1 total	380			1520
	4 total	3450	10	0.0	0
	4 total	3450			0
Total		4830			3520
R5-1	5 total	350	20	0.0	0
5 total	5 total	350			0
Total		350			0

STREAM BED DEPOSITS DATA=DATOS DE DEPOSITOS EN EL LECHO DEL CAUCE

STO & N=NUMERO Y ORDEN DE LA CORRIENTE

ST.L=LONGITUD DE LA CORRIENTE

ST.W=ANCHO DEL LECHO DE LA CORRIENTE

DD=ESPESOR DE LOS DEPOSITOS EN EL LECHO DE LA CORRIENTE

VOL=VOLUMEN DE LOS DEPOSITOS EN EL LECHO DE LA CORRIENTE

R=RESTOS EN AREA DE DRENAGE

RIO DEL BLANCO (3/4)

STO & N	STO & N	ST. L	ST. W	DD	VOL
		m	m	m	m <sup>3</sup>
R3-3-1	1 40	1150	3	0.5	1725
	1 41	490	3	0.5	735
	1 42	1450	3	0.5	2175
	1 46	450	5	0.8	1800
	1 total	3540			6435
	3 total	3250	10	1.0	32500
	3 total	3250			32500
Total		6790			38935
R3-3-2	3 total	1200	20	0.0	0
	3 total	1200			0
Total		1200			0
2-13	1 47	1120	5	0.8	4480
	1 48	860	5	0.8	3440
	1 49	940	5	0.8	3760
	1 total	2920			11680
	2 total	1000	5	0.8	4000
	2 total	1000			4000
Total		3920			15680
2-14	1 50	920	5	0.8	3680
	1 51	450	5	0.8	1800
	1 total	1370			5480
	2 total	1080	7	0.0	0
	2 total	1080			0
Total		2450			5480
2-15	1 52	1050	5	0.8	4200
	1 53	850	5	0.8	3400
	1 total	1900			7600
	2 total	860	7	0.0	0
	2 total	860			0
Total		2760			7600
R3-4	3 total	470	7	0.0	0
	3 total	470			0
Total		470			0
R4-2	4 total	700	20	0.0	0
	4 total	700			0
Total		700			0
2-16	1 54	790	5	0.8	3160
	1 55	550	5	0.8	2200
	1 total	1340			5360
	2 total	480	7	1.0	3360
	2 total	480			3360
Total		1820			8720
2-17	1 56	520	5	0.8	2080
	1 57	660	5	0.8	2640
	1 total	1180			4720
	2 total	180	7	1.0	1260
	2 total	180			1260
Total		1360			5980
2-18	1 60	260	3	0.5	390
	1 61	270	3	0.5	405
	1 62	550	3	0.5	825
	1 total	1080			1620
	2 total	1430	7	1.0	10010
	2 total	1430			10010
Total		2510			11630

RIO DEL BLANCO (2/4)

STO & N	STO & N	ST. L	ST. W	DD	VOL
		m	m	m	m <sup>3</sup>
2-7	1 21	460	5	0.8	1840
	1 22	600	5	0.8	2400
	1 total	1060			4240
	2 total	1400	5	0.8	5600
	2 total	1400			5600
Total		2460			9840
2-8	1 23	380	5	0.8	1520
	1 24	270	5	0.8	1080
	1 25	400	5	0.8	1600
	1 26	1100	5	0.8	4400
	1 27	1500	5	0.8	6000
	1 total	3650			14500
	2 total	1250	7	1.0	8750
	2 total	1250			8750
Total		4900			23350
R3-2	3 total	520	15	1.0	7800
	3 total	520			7800
Total		520			7800
2-9	1 30	520	3	0.5	780
	1 31	410	3	0.5	615
	1 total	930			1395
	2 total	670	7	1.0	4690
	2 total	670			4690
Total		1600			6085
R4-1-1	1 28	960	5	0.8	3840
	1 29	640	5	0.8	2560
	1 total	1600			6400
	4 total	3180	25	1.0	79500
	4 total	3180			79500
Total		4780			85900
R4-1-2	4 total	3400	25	0.0	0
	4 total	3400			0
Total		3400			0
2-10	1 32	420	5	0.8	1680
	1 33	300	3	0.5	450
	1 34	430	3	0.5	645
	1 35	340	3	0.5	510
	1 36	1580	5	0.8	6320
	1 total	3070			9605
	2 total	2260	7	1.0	15820
	2 total	2260			15820
Total		5330			25425
2-11	1 37	780	5	0.8	3120
	1 38	400	3	0.5	600
	1 39	220	3	0.5	330
	1 total	1400			4050
	2 total	1190	7	1.0	8330
	2 total	1190			8330
Total		2590			12380
2-12	1 43	400	3	0.5	600
	1 44	400	3	0.5	600
	1 45	300	3	0.5	450
	1 total	1100			1770
	2 total	1430	7	1.0	10010
	2 total	1430			10010
Total		2610			11780

TABLE D.2.2(3) RIVERBED DEPOSITS DATA / DEPOSITOS EN EL LECHO DEL CAUCE

RIO SANTA ANA (2/2)

STO & M	STO & M	ST.L	ST.W	DD	VOL
		m	m	m	m <sup>3</sup>
2-8	1 23	390	5	1.5	2925
	1 24	360	3	1.0	1080
	1 total	750			4005
	2 770	770	5	1.0	3850
	2 total	770			3850
Total		1520			7855
R3-2	3 610	610	7	1.5	6405
	3 total	610			6405
Total		610			6405
2-9	1 25	670	5	1.5	5025
	1 26	530	3	1.0	1590
	1 27	750	5	1.5	5625
	1 total	1950			12240
	2 2060	2060	7	1.5	21630
	2 total	2060			21630
Total		4010			33870
2-10	1 29	210	5	1.5	1575
	1 30	370	3	1.0	1110
	1 31	520	3	1.0	1560
	1 total	1100			4245
	2 12075	1150	7	1.5	12075
	2 total	1150			12075
Total		2250			18320
R4-1-1	1 28	850	5	1.5	6375
	1 total	850			6375
	4 97200	4320	15	1.5	97200
	4 total	4320			97200
Total		5170			103575
2-11	1 33	310	3	1.0	930
	1 34	330	5	1.5	2475
	1 35	400	5	1.5	3000
	1 total	1040			6405
	2 920	920	7	1.5	9580
	2 total	920			9580
Total		1960			16985
2-12	1 37	410	3	1.0	1230
	1 38	440	3	1.0	1320
	1 39	310	5	1.5	2325
	1 40	280	3	1.0	840
	1 41	190	3	1.0	570
	1 42	230	5	1.5	1725
	1 total	1630			8010
	2 1570	1570	7	1.5	16485
	2 total	1570			16485
Total		3200			24495
2-13	1 43	860	5	1.5	6450
	1 44	370	3	1.0	1110
	1 45	1480	5	1.5	11100
	1 46	1930	5	1.5	14475
	1 total	4870			33135
	2 800	800	7	1.5	3400
	2 total	800			3400
Total		5670			41535
R4-1-2	1 32	860	3	1.0	2580
	1 36	1080	5	1.5	3100
	1 total	1940			10680
	4 4030	4030	15	0.0	0
	4 total	4030			0
Total		5970			10680

STO & M : STREAM ORDER AND NUMBER  
 ST.L : STREAM LENGTH, ST.W : STREAM BED WIDTH  
 DD : THICKNESS OF STREAM BED DEPOSITS  
 VOL : STREAM BED DEPOSITS VOLUME  
 R : REMAINS

RIO SANTA ANA (1/2)

STO & M	STO & M	ST.L	ST.W	DD	VOL
		m	m	m	m <sup>3</sup>
2-1	1 1	1880	5	1.5	14100
	1 2	360	3	1.0	1080
	1 3	500	3	1.0	1500
	1 4	850	5	1.5	6375
	1 5	730	5	1.5	5475
	1 total	4320			28530
	2 1250	1250	7	1.5	13125
	2 total	1250			13125
Total		5570			41655
2-2	1 6	710	5	1.5	5325
	1 7	340	3	1.0	1020
	1 total	1050			6345
	2 1400	1400	7	1.5	14700
	2 total	1400			14700
Total		2450			21045
2-3	1 8	290	5	1.5	2175
	1 9	270	5	1.5	2025
	1 total	560			4200
	2 370	370	7	1.5	3885
	2 total	370			3885
Total		930			8085
2-4	1 10	1060	3	1.0	3180
	1 11	440	3	1.0	1320
	1 total	1500			4500
	2 370	370	5	1.0	4350
	2 total	870			4350
Total		2370			8850
2-5	1 12	430	3	1.0	1290
	1 13	400	5	1.5	3000
	1 14	410	3	1.0	1230
	1 15	420	3	1.0	1260
	1 total	1660			6780
	2 1940	1940	5	1.0	9700
	2 total	1940			9700
Total		3600			16480
R3-1	3 2400	2400	7	1.5	25200
	3 total	2400			25200
Total		2400			25200
2-6	1 16	230	3	1.0	690
	1 17	180	3	1.0	540
	1 18	270	3	1.0	810
	1 19	390	3	1.0	1170
	1 20	1020	3	1.0	3060
	1 total	2090			6270
	2 2380	2380	7	1.5	24990
	2 total	2380			24990
Total		4470			31260
2-7	1 21	150	3	1.0	450
	1 22	230	3	1.0	690
	1 total	380			1140
	2 800	800	5	1.0	4000
	2 total	800			4000
Total		1180			5140

TABLE D.2.2(4) RIVERBED DEPOSITS DATA / DEPOSITOS EN EL LECHO DEL CAUCE

RIO PIEDRAS (1/2)

STO & N	ST.L m	ST.W m	DD m	VOL m <sup>3</sup>
2-8	1 23	470	3	1410
	1 24	520	3	1860
	1 total	1090		3270
	2	800	7	8400
	2 total	800		8400
Total	1890			11670
R3-1-2	1 17	340	3	2520
	1 18	970	3	2910
	1 21	610	5	4575
	1 22	1490	3	11175
	1 25	1590	5	11925
	1 26	900	5	6750
	1 27	660	5	4950
	1 total	7060		44805
	3 total	3610	10	72200
Total	10670			117005
2-9	1 28	590	3	1770
	1 29	370	3	1110
	1 total	960		2880
	2	1780	7	18890
	2 total	1780		18890
Total	2740			21570
R3-1-3	3 total	2180	50	0
Total	2180			0
2-10	1 32	600	5	4500
	1 33	330	3	990
	1 total	930		5490
	2	100	5	500
	2 total	100		500
Total	1030			5990
2-11	1 30	330	3	990
	1 31	340	3	1020
	1 total	670		2010
	2	730	5	3650
	2 total	730		3650
Total	1400			5660
R3-2	1 34	510	3	1530
	1 35	1040	5	7800
	1 total	1550		9330
	3	2570	7	17990
	3 total	2570		17990
Total	4120			27320
R4-1	4 total	2400	50	0
Total	2400			0

STREAM BED DEPOSITS DATA-DATOS DE DEPOSITOS EN EL LECHO DEL CAUCE

STO & N=NUMERO Y ORDEN DE LA CORRIENTE  
 ST.L=LONGITUD DE LA CORRIENTE  
 ST.W=ANCHO DEL LECHO DE LA CORRIENTE  
 DD=ESPESOR DE LOS DEPOSITOS EN EL LECHO DE LA CORRIENTE  
 VOL=VOLUMEN DE LOS DEPOSITOS EN EL LECHO DE LA CORRIENTE  
 R=RESTOS EN AREA DE DRAINAGE

TABLE D.2.2(4) RIVERBED DEPOSITS DATA / DEPOSITOS EN EL LECHO DEL CAUCE

RIO PIEDRAS (1/2)

STO & N	ST.L m	ST.W m	DD m	VOL m <sup>3</sup>
2-1	1	740	3	2220
	1	430	3	1290
	1	570	5	4275
	1	500	3	1500
	1 total	2240		9285
	2	580	5	3400
	2 total	580		3400
Total	2920			12685
2-2	1	450	3	1350
	1	550	3	1650
	1 total	1000		3000
	2	540	5	2700
	2 total	540		2700
Total	1540			5700
2-3	1	500	3	1500
	1	310	3	930
	1 total	810		2430
	2	580	5	2900
	2 total	580		2900
Total	1390			5330
2-4	1	430	3	1290
	1	400	3	1200
	1 total	830		2490
	2	740	5	3700
	2 total	740		3700
Total	1570			6190
2-5	1	1030	5	8100
	1	790	5	5925
	1 total	1870		14025
	2	520	5	2600
	2 total	520		2600
Total	2390			16625
2-6	1	470	3	1410
	1	230	3	690
	1 total	700		2100
	2	1040	5	5200
	2 total	1040		5200
Total	1740			7300
R3-1-1	1	7	5	7500
	1	8	3	1500
	1 total	1500		9000
	3	2670	10	53400
	3 total	2670		53400
Total	4170			62400
2-7	1	750	5	5625
	1	380	5	2850
	1 total	1130		8475
	2	1280	7	13440
	2 total	1280		13440
Total	2410			21915

STO & N : STREAM ORDER AND NUMBER  
 ST.L : STREAM LENGTH, ST.W : STREAM BED WIDTH  
 DD : THICKNESS OF STREAM BED DEPOSITS  
 VOL : STREAM BED DEPOSITS VOLUME  
 R : REMAINS

TABLE D.2.3(1) RIVERBED DEPOSITS  
DEPOSITOS EN EL CAUCE

Rio Choloma (1/3)			
C.P	Stream Order & Drainage Number (STO & DN)	Stream Name (STN)	Riverbed Deposits (Vbu)
5 4 3 2	(Stream Order)	(STO)	mf
	2-1		2.03 16045
	2-2		0.55 3615
	2-3		0.47 2970
	2-4		0.21 1325
	3-1 Remains		0.49 8750
	3-1 Sub Total (Qda. Tamarinda)		3.75 32705
	2-5		1.65 16695
	2-6		0.75 6615
	2-7		1.30 13275
	3-2 Remains		0.57 8960
	3-2 Sub Total		4.27 45545
	3-1,3-2 Sub Total		8.02 78250
	2-8		0.83 8695
	2-9		0.34 3840
	2-10		0.79 5285
	4-1 Remains		2.93 71370
	4-1 Remains Sub Total		4.89 89190
	4-1 Sub Total		12.91 167440
	2-11		0.53 4440
	2-12		0.75 6480
	2-13		1.38 15735
	3-3 Remains		1.19 35320
	3-3 Sub Total		3.85 61975
	2-14		0.91 9045
	2-15		0.65 8095
	3-4 Remains		0.21 3360
	3-4 Sub Total		1.77 20500
	3-3,3-4 Sub Total		5.62 82475
	2-17		0.78 9385
	2-18		1.53 12870
	2-19		1.70 18680
	3-5 Remains		1.22 21450
	3-5 Sub Total (Qda. Ocotillo)		5.23 62385
	2-16		1.03 12480
	4-2 Remains		1.63 34600

TABLE D.2.3(1) RIVERBED DEPOSITOS EN EL CAUCE

Rio Choloma (2/3)			
C.P	Stream Order & Drainage Number (STO & DN)	Stream Name (STN)	Riverbed Deposits (Vbu)
5 4 3 2	(Stream Order)	(STO)	mf
	4-2 Remains Sub Total		2.66 47080
	4-2 Sub Total (Rio del Ocotillo)		13.51 191940
	4-1,4-2 Sub Total		26.42 359380
	2-21		1.23 17800
	2-22		0.19 2445
	3-6 Remains		0.37 5920
	3-6 Sub Total (Qda. Tino Gacho)		1.79 26165
	2-23		1.50 7495
	2-24		0.23 2455
	3-7 Remains		1.36 15440
	3-7 Sub Total		3.09 25390
	2-20		0.43 6680
	5-1-1 Remains		2.90 65920
	5-1-1 Remains Sub Total		3.33 72600
①	5-1-1 Sub Total (Rio Wajaine)		34.63 483535
	2-25		1.58 15345
	2-26		0.58 3925
	2-27		0.65 5905
	2-28		1.14 9800
	2-29		1.56 12660
	3-8-1 Remains		0.88 18200
	3-8-1 Sub Total		6.39 65835
	2-30		2.40 27595
	3-8-2 Remains		3.44 69275
	3-8-2 Sub Total		5.84 96870
	3-8 Sub Total		12.23 162705
	2-31		0.99 7475
	2-32		0.51 3980
	3-9 Remains		0.50 7140
	3-9 Sub Total		2.00 18595
	3-8,3-9 Sub Total		14.23 181300
	2-33		1.25 6840
	2-34		0.25 2745
	3-10 Remains		1.54 18410
	3-10 Sub Total (Qda. del Cabro)		3.04 27995

TABLE D.2.3(1) RIVERBED DEPOSITS  
DEPOSITOS EN EL CAUCE

Rio Choloma (3/3)			
C.P	Stream Order & Drainage Number (STO & DN)	Stream Name (STN)	Riverbed Deposits (Vbu)
5 4 3 2	(Stream Order)	(STO)	mf
	2-35		0.93 10130
	4-3 Remains		2.19 132920
	4-3 Remains Sub Total		3.12 143050
②	4-3 Sub Total (Rio La Jutosa)		20.39 352345
	4-3,5-1-1 Sub Total		55.02 835880
	2-37		1.29 19565
	2-38		1.51 15940
	3-11 Remains		0.86 16500
	3-11 Sub Total (Qda. Gueno)		3.66 52005
	2-41		0.93 10215
	2-42		0.86 11095
	2-43		0.51 3245
	3-12 Remains		0.98 25600
	3-12 Sub Total		3.28 50155
	2-36		0.93 10400
	2-39		1.80 11070
	2-40		0.59 6965
	5-1-2 Remains		6.46 18720
	5-1-2 Remains Sub Total		9.68 47155
	5-1-2 Sub Total		16.62 149315
△	5-1 Total (Rio Choloma)		71.64 985195

Note/Nota :  
 C.P, △ : Design control point / Punto de control de diseño  
 ① : Sub-control point & number / Punto de sub-control y numero  
 STO & DN : Orden de la corriente y numero de cuenca  
 STN : Nombre de la corriente  
 Remains : Remains of drainage area / Restos en area de cuenca  
 DA : Area de cuenca  
 Vbu : Unstable riverbed deposits  
 Depositos inestables en el lecho del rio

TABLE D.2.3(2) RIVERBED DEPOSITS  
DEPOSITOS EN EL CAUCE

Rio Blanco (1/2)			
C.P	Stream Order & Drainage Number (STO & DN)	Stream Name (STN)	Riverbed Deposits (Vbu)
5 4 3 2	(Stream Order)	(STO)	(Vbu)
		Drainage Area (DA) (km <sup>2</sup> )	(m <sup>2</sup> )
	2-1	2.22	14925
	2-2	0.77	4145
	2-3	1.01	7910
	2-4	0.74	3615
	3-1-1 Remains	1.00	8700
	3-1-1 Remains Sub Total	5.74	39295
	2-5	1.56	10920
	2-6	0.43	2275
	3-1-2 Remains	3.33	26840
	3-1-2 Remains Sub Total	5.32	40035
	3-1 Sub Total (Rio Chorreron)	11.06	79330
	2-7	1.13	9840
	2-8	2.18	23350
	3-2 Remains	0.46	7800
	3-2 Sub Total (Qda. Coronilla)	3.77	40990
	3-1,3-2 Sub Total	14.83	120320
	2-9	0.66	6085
	4-1-1 Remains	2.43	85900
	4-1-1 Remains Sub Total	3.09	91985
	4-1-1 Sub Total	17.92	212305
	4-1-2 Remains	2.01	0
	4-1-2 Remains Sub Total	2.01	0
	4-1 Sub Total (Rio del Zapotal)	19.93	212305
	2-10	2.21	25425
	2-11	1.13	12380
	2-12	1.90	11780
	3-3-1 Remains	3.78	38935
	3-3-1 Sub Total	3.02	88520
	3-3-2 Remains	0.29	0
	3-3-2 Remains Sub Total	0.29	0
	3-3 Sub Total	9.31	88520
	2-13	2.43	15680
	2-14	0.62	5480
	2-15	1.05	7600
	3-4 Remains	0.10	0

TABLE D.2.3(2) RIVERBED DEPOSITS  
DEPOSITOS EN EL CAUCE

(Continued)

Rio Blanco (2/2)			
C.P	Stream Order & Drainage Number (STO & DN)	Stream Name (STN)	Riverbed Deposits (Vbu)
5 4 3 2	(Stream Order)	(STO)	(Vbu)
		Drainage Area (DA) (km <sup>2</sup> )	(m <sup>2</sup> )
	3-4 Sub Total (Qda. de Penas)	4.20	28760
	3-3,3-4 Sub Total	13.51	117280
	4-2 Remains	0.37	0
	4-2 Remains Sub Total	0.37	0
	4-2 Sub Total (Rio de Armenta)	13.88	117280
	4-1,4-2 Sub Total	33.81	329585
	2-16	0.72	8720
	2-17	0.76	5980
	2-18	1.03	11630
	2-19	1.08	14770
	3-5 Remains	1.65	36080
	3-5 Sub Total	5.24	77180
	2-20	0.35	6500
	2-21	0.84	8870
	3-6 Remains	1.04	12470
	3-6 Sub Total	2.23	27840
	3-5,3-6 Sub Total	7.47	105020
	4-3 Remains	2.50	3920
	4-3 Remains Sub Total	2.50	3920
	4-3 Sub Total (Rio Chiquito)	9.97	108940
	4-1,4-2,4-3 Sub Total	43.78	438525
	5-1 Remains	0.12	0
	5-1 Remains Sub Total	0.12	0
	5-1 Total (Rio Blanco)	43.90	438525

Note/Nota : Refer to the note of table for the Rio Choloma  
Referirse a la nota de la tabla para el Rio Choloma

TABLE D.2.3(3) RIVERBED DEPOSITS  
DEPOSITOS EN EL CAUCE

Rio Santa Ana , Rio El Sauce (1/1)			
C.P	Stream Order & Drainage Number (STO & DN)	Stream Name (STN)	Riverbed Deposits (Vbu)
5 4 3 2	(Stream Order)	(STO)	(Vbu)
		Drainage Area (DA) (km <sup>2</sup> )	(m <sup>2</sup> )
	2-1	3.11	41655
	2-2	1.28	21045
	2-3	0.52	8085
	2-4	1.20	8850
	2-5	2.43	16480
	3-1 Remains	0.90	25200
	3-1 Sub Total (Rio Santa Ana)	9.44	121315
	2-6	2.61	31260
	2-7	0.42	5140
	2-8	0.55	7855
	3-2 Remains	0.15	6405
	3-2 Sub Total (Qda. Intierno)	3.73	50660
	3-1,3-2 Sub Total	13.17	171975
	2-9	3.47	33870
	2-10	1.72	16320
	4-1-1 Remains	4.03	103575
	4-1-1 Remains Sub Total	9.22	153765
	4-1-1 Sub Total	22.39	325740
	2-11 Remains	1.08	16065
	2-12 (Qda. del Comercio)	2.24	24570
	2-13 (Qda. de Agua Prieta)	6.42	41460
	4-1-2 Remains	5.50	10680
	4-1-2 Remains Sub Total	15.24	92775
	4-1 Total (Rio Santa Ana)	37.63	418515

Note/Nota : Refer to the note of table for the Rio Choloma  
Referirse a la nota de la tabla para el Rio Choloma

TABLE D.2.3(4) RIVERBED DEPOSITS  
DEPOSITOS EN EL CAUCE

Rio Piedras , Rio El Sauce(1/1)			
C.P	Stream Order & Drainage Number (STO & DN)	Stream Name (STN)	Riverbed Deposits (Vbu)
5 4 3 2	(Stream Order)	(STO)	(Vbu)
		Drainage Area (DA) (km <sup>2</sup> )	(m <sup>2</sup> )
	2-1	1.85	12685
	2-2	0.86	5700
	2-3	0.75	5330
	2-4	0.71	6190
	2-5	2.14	16625
	2-6	0.81	7300
	3-1-1 Remains	3.16	62400
	3-1-1 Sub Total	10.28	116230
	2-7	1.39	21915
	2-8	0.94	11670
	3-1-2 Remains	7.48	117005
	3-1-2 Sub Total	9.81	150590
	3-1-1,3-1-2 Sub Total	20.09	266820
	2-9	1.57	21570
	3-1-3 Remains	0.86	0
	3-1-3 Sub Total	2.43	21570
	3-1 Sub Total (Rio Piedras)	22.52	288390
	2-10	0.57	5990
	2-11	0.82	5660
	3-2 Remains	4.09	27320
	3-2 Sub Total (Qda. Santa Ana)	5.48	38970
	4-1 Remains	2.87	0
	4-1 Remains Sub Total	2.87	0
	4-1 Total (Rio Piedras)	30.87	327360

Note/Nota : Refer to the note of table for the Rio Choloma  
Referirse a la nota de la tabla para el Rio Choloma



TABLE D.2.4(1) UNSTABLE DEPOSITS ALONG THE RIVER COURSE  
DEPOSITOS INESTABLES A LO LARGO DEL CURSO DEL RIO

Stream Order & Drainage Number C.P Orden de La Corriente y Numero de Cuenca		Stream Name Nombre de La Corriente	Drainage Area (DA) kd	Length of Unstable Deposit Area (Lu) m	Width of Unstable Deposit Area (Wu) m	Thickness of Unstable Deposits (Tu) m	Unstable Dep. along the River Course (Vcu) m <sup>3</sup>
①	2- 1		2.03	670	8	1.0	5360
	3- 1 Remains		0.49	1250	18	1.5	19170
	2- 5		1.65	400	13	1.5	24375
	3- 2 remains		0.57	1000	8	1.0	3200
	2- 8		0.83	400	18	1.5	27000
	4- 1 Remains		2.93	400	13	2.0	10400
					25	2.0	128500
					65	2.5	143000
	4- 1 Sub Total Rio Majaine Upstream		12.91	-	-	-	361005
	2-11		0.53	620	15	1.8	16740
	2-12		0.75	760	15	1.8	20520
	2-13		1.38	620	8	1.5	7440
	1-104		-	300	3	1.8	1620
	3- 3 Remains		1.19	1100	23	2.5	2750
					8	2.0	8960
	3- 5 Remains		1.22	370	30	3.0	33300
					25	2.5	18750
	4- 2 Remains		1.63	530	5	2.5	6625
					60	2.7	100440
	4- 2 Sub Total Rio del Ocotillo		13.51	-	-	-	277645
	3- 6 Remains		0.37	650	25	2.5	40625
	2-23		1.50	1150	10	1.8	20700
	1-52		-	160	7	1.2	1344
	3- 7 Remains		1.36	2350	33	1.8	139590
	1-57		-	430	5	1.5	3225
	5- 1- 1 Remains		2.90	3070	130	2.0	798200
	1-141		-	460	3	1.5	2070
	5- 1- 1 Remains Sub Total		8.21	-	-	-	1005754
	6- 1- 1 Sub Total Rio Majaine		34.63	-	-	-	1644404
	2-26		0.58	460	5	1.5	3450
	2-27		0.65	280	5	1.5	2100
	3- 8- 1 Remains		0.88	1610	10	1.7	27370
	2-30		2.40	490	8	1.5	5880

TABLE D.2.4(1) UNSOUND DEPOSITS ALONG THE RIVER COURSE  
DEPOSITOS INESTABLES A LO LARGO DEL CURSO DEL RIO

Stream Order & Drainage Number C.P Orden de La Corriente y Numero de Cuenca		Stream Name Nombre de La Corriente	Drainage Area (DA) kd	Length of Unstable Deposit Area (Lu) m	Width of Unstable Deposit Area (Wu) m	Thickness of Unstable Deposits (Tu) m	Unstable Dep. along the River Course (Vcu) m <sup>3</sup>
②				1160	8	1.5	13920
	3- 8- 2 Remains		3.44	450	53	4.0	95400
	2-31		0.99	630	70	5.0	1004500
	3- 9 Remains		0.50	710	10	1.3	8190
					93	4.0	264120
					8	1.5	3720
	2-33		1.25	320	15	1.5	7200
	1-39		-	170	5	1.3	1105
	2-34		0.25	240	7	1.5	2520
	3-10 Remains		1.54	1650	18	1.5	44550
	2-35		0.93	530	8	2.0	8480
	1-49		-	150	7	1.5	1575
	1-50		-	230	7	1.5	2415
	4- 3 Remains		2.19	3130	230	4.5	3239550
	1-37		-	530	25	1.6	21200
	1-46		-	700	5	1.6	5600
	4- 3 Sub Total Rio La Jutosa		20.39	-	-	-	4762845
	4- 3,5- 1- 1 Sub Total		55.02	-	-	-	6407249
	2-37		1.29	1200	8	1.5	14400
	2-38		1.51	260	8	1.5	3120
					33	1.5	7425
	3-11 Remains		0.86	1390	70	2.5	243250
	1-157		-	330	5	2.0	3300
	2-41		0.93	850	12	1.5	15300
	2-42		0.86	130	3	1.5	585
					8	2.0	11360
	2-43		0.51	590	10	1.5	8850
	3-12 Remains		0.98	950	15	2.0	28500
	2-36		0.83	530	5	1.5	3975
	1-142		-	530	5	1.5	3975
	1-143		-	560	5	1.5	4200
	2-39		1.80	730	15	2.0	21900
	1-159		-	310	5	1.0	1550

TABLE D.2.4(1) UNSOUND DEPOSITS ALONG THE RIVER COURSE  
DEPOSITOS INESTABLES A LO LARGO DEL CURSO DEL RIO

Rio Choloma(3/3)

Stream Order & Drainage Number C.P Orden de La Corriente y Numero de Cuenca	Stream Name Nombre de La Corriente	Drainage Area (DA) km	Length of Unstable Deposit Area (Lu) m	Width of Unstable Deposit Area (Wu) m	Thickness of Unstable Deposits (Tu) m	Unstable Dep. along the River Course (Vcu) m <sup>2</sup>
1-160		-	580	5	1.5	4350
2-40		0.59	430	15	1.5	9675
1-162		-	170	5	1.5	1275
1-163		-	190	8	1.2	1824
5- 1- 2 Remains		6.46	4170	810	2.0	6755400
1-158		-	310	3	1.5	1395
1-161		-	550	10	1.5	8250
1-164		-	500	10	1.5	7500
1-171		-	590	10	2.0	11800
5- 1- 2 Remains Sub Total		16.62	-	-	-	7173159
5- 1 Total (Rio Choloma)		71.64	-	-	-	13550408

Note / Nota :

- C.P, Δ : Design control point / Punto de control de diseño  
 ① : Sub-control point & number / Punto de sub-control y numero  
 Remains : Remains of drainage area / Restos en area de cuenca  
 DA : Area de cuenca  
 Lu : Length of unstable deposits area along the river  
 Longitud inestable de area de depositos a lo largo del rio  
 Wu : Width of unstable deposits area  
 Ancho de area de depositos inestables  
 Tu : Thickness of unstable deposits  
 Profundidad de depositos inestables  
 Vcu : Unstable deposits along the river course  
 Depositos inestables a lo largo del curso del rio

TABLE D.2.4(2) UNSTABLE DEPOSITS ALONG THE RIVER COURSE  
DEPOSITOS INESTABLES A LO LARGO DEL CURSO DEL RIO

Rio Blanco

Stream Order & Drainage Number C.P Orden de La Corriente y Numero de Cuenca	Stream Name Nombre de La Corriente	Drainage Area (DA) km	Length of Unstable Deposit Area (Lu) m	Width of Unstable Deposit Area (Wu) m	Thickness of Unstable Deposits (Tu) m	Unstable Dep. along the River Course (Vcu) m <sup>2</sup>
3- 1- 1 Remains		1.00	530	13	1.0	6890
3- 1- 2 Remains		3.33	2550	10	1.5	38250
4- 1- 1 Remains		2.43	1160	5	1.5	8700
4- 1- 1 Sub Total		17.92	-	-	-	725490
4- 1- 2 Remains		2.01	800	100	3.0	240000
4- 1- 2 Sub Total		2600	400	400	4.5	4680000
4- 1 Sub Total Rio del Zapotal		19.93	-	-	-	5645490
2-12		1.90	600	18	2.0	21600
3- 3- 1 Remains		3.78	1170	15	2.0	35100
3- 3- 1		9.02	200	60	4.0	48000
3- 3- 2 Remains		0.29	1200	60	2.0	144000
2-13		2.43	1100	35	3.0	115500
4- 2 Remains		0.37	1250	200	2.0	500000
4- 2 Sub Total Rio de Armenta		13.88	700	180	3.0	378000
2-16		0.72	100	8	2.5	2000
2-17		0.76	460	8	2.5	9200
2-18		1.03	400	8	1.5	4800
2-19		1.08	620	28	1.0	17360
3- 5 Remains		1.65	450	5	1.5	3375
3- 6 Remains		1.04	1670	20	2.5	83500
3- 5,3- 6 Sub Total		7.47	770	13	1.5	15015
4- 3 remains		2.50	-	-	-	135250
4- 3 Sub Total Rio Chiquito		5.97	3450	55	1.5	284625
5- 1 Remains		0.12	-	-	-	419785
5- 1 Remains Sub Total		0.12	350	80	1.0	28000
5- 1 Total (Rio Blanco)		43.90	-	-	-	28000
5- 1 Total (Rio Blanco)		43.90	-	-	-	7335565

Note/Nota : Refer to the note of table for the Rio Choloma  
Referirse a la nota de la tabla para el Rio Choloma

TABLE D.2.4(3) UNSTABLE DEPOSITS ALONG THE RIVER COURSE  
DEPOSITOS INESTABLES A LO LARGO DEL CURSO DEL RIO

Stream Order & Drainage Number C.P Orden de La Corriente y Numero de Cuenca		Stream Name Nombre de La Corriente	Drainage Area (DA) kd	Length of Unstable Deposit Area (Lu) m	Width of Unstable Deposit Area (Wu) m	Thickness of Unstable Deposits (Tu) m	Unstable Dep. along the River Course (Vcu) m <sup>2</sup>
①	2- 5		2.43	450	15	1.5	10125
	3- 1 Remains		0.90	550	23	2.0	25300
	2- 6		2.64	750	18	2.0	27000
	3- 2 Remains		0.15	170	23	2.0	7820
	4- 1- 1 Remains		4.03	2150	15	2.0	64500
				750	15	2.0	22500
	4- 1- 1 Sub Total		22.39	-	-	-	157245
	2-11		1.08	450	50	2.0	45000
	2-12		2.24	680	8	2.0	10880
				970	63	2.5	152775
	2-13		6.42	730	50	1.5	54750
	4- 1- 2 Remains		5.50	4030	45	1.0	181350
				370	30	2.5	27750
	4- 1- 2 Remains Sub Total		15.24	-	-	-	472505
△	4- 1 Total (Rio Santa Ana)		37.63	-	-	-	629750

Note/Nota : Refer to the note of table for the Rio Choloma  
Referirse a la nota de la tabla para el Rio Choloma

TABLE D.2.4(4) UNSTABLE DEPOSITS ALONG THE RIVER COURSE  
DEPOSITOS INESTABLES A LO LARGO DEL CURSO DEL RIO

Stream Order & Drainage Number C.P Orden de La Corriente y Numero de Cuenca		Stream Name Nombre de La Corriente	Drainage Area (DA) kd	Length of Unstable Deposit Area (Lu) m	Width of Unstable Deposit Area (Wu) m	Thickness of Unstable Deposits (Tu) m	Unstable Dep. along the River Course (Vcu) m <sup>2</sup>
①	3- 1- 1 Remains		3.16	250	30	3.5	26250
	3- 1- 2 Remains		7.48	80	30	3.5	8400
				300	50	4.0	60000
				3200	70	3.5	784000
	3- 1- 1, 3- 1- 2 Sub Total		20.09	-	-	-	878650
	2- 9		1.57	830	13	3.0	323700
	3- 1- 3 Remains		0.86	2180	20	1.0	43600
	3- 1- 3 Sub Total		2.43	-	-	-	367300
	3- 1 Sub Total		22.52	-	-	-	1245950
	②	3- 2 Remains		4.09	800	23	3.0
				1300	63	4.0	327600
③	3- 2 Sub Total		5.48	-	-	-	382800
④	4- 1 Remains		2.87	2400	20	1.0	48000
	4- 1 Remains Sub Total		2.87	-	-	-	48000
△	4- 1 Total (Rio Piedras)		30.87	-	-	-	1676750

Note/Nota : Refer to the note of table for the Rio Choloma  
Referirse a la nota de la tabla para el Rio Choloma

TABLE D.2.5(1) UNSTABLE DEPOSITS / DEPOSITOS INESTABLES

Rio Choloma (1/3)

Stream Order & Drainage Number , C.P. Orden de la Corriente y Numero de Cuenca 5 4 3 2 (Stream Order)	Stream Name Nombre de La Corriente	DA km	Vru x10 <sup>3</sup> m <sup>3</sup>	Vbu x10 <sup>3</sup> m <sup>3</sup>	Vcu x10 <sup>3</sup> m <sup>3</sup>
2-1		2.03	0.8	16.0	24.5
2-2		0.55	0.0	3.6	0.0
2-3		0.47	0.0	3.0	0.0
2-4		0.21	0.3	1.3	0.0
3-1 Remains		0.49	0.4	8.8	24.4
3-1 Sub Total (Qda. del Tamarindo)		3.75	1.5	32.7	48.9
2-5		1.65	1.5	16.7	3.2
2-6		0.75	0.4	6.6	0.0
2-7		1.30	1.7	13.3	0.0
3-2 Remains		0.57	0.2	9.0	27.0
3-2 Sub Total (Qda. de Agua Blanco)		4.27	3.8	45.6	30.2
3-1,3-2 Sub Total		8.02	5.3	78.3	79.1
2-8		0.83	1.2	8.7	10.4
2-9		0.34	0.5	3.8	0.0
2-10		0.79	0.0	5.3	0.0
4-1 Remains		2.93	1.3	71.4	271.5
4-1 Remains Sub Total		4.89	3.0	89.2	281.9
4-1 Sub Total		12.91	8.3	167.5	361.0
2-11		0.53	0.2	4.4	16.7
2-12		0.75	0.1	6.5	20.5
2-13		1.38	0.8	15.7	9.0
3-3 Remains		1.19	0.4	35.3	72.3
3-3 Sub Total ((Rio del Ocotillo)		3.85	1.5	61.9	118.5
2-14		0.91	1.2	9.0	0.0
2-15		0.65	0.7	8.1	0.0
3-4 Remains		0.21	0.2	3.4	0.0
3-4 Sub Total		1.77	2.1	20.5	0.0
3-3,3-4 Sub Total		5.62	3.6	82.4	118.5
2-17		0.78	0.5	9.4	0.0
2-18		1.53	0.2	12.9	0.0
2-19		1.70	0.6	18.7	0.0
3-5 Remains		1.22	0.3	21.5	52.1
3-5 Sub Total (Qda. del Ocotillo)		5.23	1.6	62.5	52.1
2-16		1.03	1.0	12.5	0.0
4-2 Remains		1.63	0.3	34.6	107.1

TABLE D.2.5(1) UNSTABLE DEPOSITS / DEPOSITOS INESTABLES

Rio Choloma (2/3)

Stream Order & Drainage Number , C.P. Orden de la Corriente y Numero de Cuenca 5 4 3 2 (Stream Order)	Stream Name Nombre de La Corriente	DA km	Vru x10 <sup>3</sup> m <sup>3</sup>	Vbu x10 <sup>3</sup> m <sup>3</sup>	Vcu x10 <sup>3</sup> m <sup>3</sup>
4-2 Remains Sub Total		2.66	1.3	47.1	107.1
4-2 Sub Total (Rio del Ocotillo)		13.51	6.5	192.0	277.7
4-1,4-2 Sub Total		26.42	14.8	359.5	638.7
2-21		1.23	0.2	17.8	0.0
2-22		0.19	0.0	2.4	0.0
3-6 Remains		0.37	0.2	5.9	40.6
3-6 Sub Total (Qda. Tino Gacho)		1.79	0.4	26.1	40.6
2-23		1.50	0.5	7.5	22.0
2-24		0.23	0.2	2.5	0.0
3-7 Remains		1.36	0.6	15.4	142.8
3-7 Sub Total		3.09	1.3	25.4	164.8
2-20		0.43	0.0	6.7	0.0
5-1-1 Remains		2.90	0.3	65.9	800.3
5-1-1 Remains Sub Total		3.33	0.3	72.6	800.3
5-1-1 Sub Total (Rio Majaine)		34.63	16.8	483.6	1644.4
2-25		1.58	3.0	15.3	0.0
2-26		0.58	0.4	3.9	3.5
2-27		0.65	0.0	5.9	2.1
2-28		1.14	0.0	9.8	0.0
2-29		1.56	0.8	12.7	0.0
3-8-1 Remains		0.88	0.0	18.2	27.4
3-8-1 Sub Total		6.39	4.2	65.8	33.0
2-30		2.40	0.3	27.6	115.2
3-8-2 Remains		3.44	1.2	69.3	1004.5
3-8-2 Sub Total		5.84	1.5	96.9	1119.7
3-8 Sub Total		12.23	5.7	162.7	1152.7
2-31		0.99	0.0	7.5	8.2
2-32		0.51	0.0	4.0	0.0
3-9 Remains		0.50	0.0	7.1	267.8
3-9 Sub Total		2.00	0.0	18.6	276.0
3-8,3-9 Sub Total		14.2	5.7	181.3	1428.7
2-33		1.25	0.2	6.8	5.9
2-34		0.25	0.0	2.7	2.5
3-10 Remains		1.54	0.0	18.4	44.6
3-10 Sub Total (Qda. del Cabro)		3.04	0.2	27.9	53.0

TABLE D.2.5(1) UNSTABLE DEPOSITS / DEPOSITOS INESTABLES

Rio Choloma (3/3)

(Continued)

C,P	Stream Order & Drainage Number , Orden de la Corriente y Numero de Cuenca	Stream Name Nombre de La Corriente	DA	Vru	Vbu	Vcu
	5 4 3 2 (Stream Order)		km <sup>2</sup>	x10 <sup>3</sup> m <sup>2</sup>	x10 <sup>3</sup> m <sup>2</sup>	x10 <sup>3</sup> m <sup>2</sup>
	2-35		0.93	0.3	10.1	12.5
	4- 3 Remains		2.19	0.6	132.9	3266.4
	4- 3 Remains Sub Total		3.12	0.9	143.0	3278.9
⊙	4- 3 Sub Total (Rio la Jutosa)		20.39	6.8	352.2	4760.6
	4- 3-5- 1- 1 Sub Total		55.02	23.6	835.8	5404.9
	2-37		1.29	0.6	19.6	14.4
	2-38		1.51	0.2	15.9	10.5
	3-11 Remains		0.86	0.2	16.5	246.6
	3-11 Sub Total (Qda. Gueno)		3.66	1.0	52.0	271.5
	2-41		0.93	0.1	10.2	10.2
	2-42		0.86	0.0	11.1	11.9
	2-43		0.51	0.0	3.2	8.9
	3-12 Remains		0.98	0.0	25.6	28.5
	3-12 Sub Total		3.28	0.1	50.1	59.5
	2-36		0.83	0.0	10.4	12.2
	2-39		1.80	0.0	11.1	27.8
	2-40		0.59	0.8	7.0	12.8
	5- 1- 2 Remains		6.46	0.6	18.7	6784.3
	5- 1- 2 Remains Sub Total		9.68	1.4	47.2	6837.1
	5- 1- 2 Sub Total		16.62	2.5	149.3	7168.1
△	5-1 Total (Rio Choloma)		71.64	26.1	985.1	13572.9

Note/Nota :

- C,P,△ : Design control point / Punto de control de diseño  
 ⊙ : Sub-control point & number / Punto de sub-control y numero  
 Remains : Remains of drainage area / Restos en area de cuenca  
 DA : Drainage area / Area de cuenca  
 Vru : Residual unstable deposits of existing past collapsed area  
 Depositos residuales inestables existentes del area derrumbada anteriormente  
 Vbu : Unstable riverbed deposits  
 Depositos inestables en el lecho del rio  
 Vcu : Unstable deposits along the river course  
 Depositos inestables a lo largo del curso del rio

TABLE D.2.5(2) UNSTABLE DEPOSITS / DEPOSITOS INESTABLES

Rio Blanco (1/2)

C,P	Stream Order & Drainage Number , Orden de la Corriente y Numero de Cuenca	Stream Name Nombre de La Corriente	DA	Vru	Vbu	Vcu
	5 4 3 2 (Stream Order)		km <sup>2</sup>	x10 <sup>3</sup> m <sup>2</sup>	x10 <sup>3</sup> m <sup>2</sup>	x10 <sup>3</sup> m <sup>2</sup>
	2- 1		2.22	2.1	14.9	0.0
	2- 2		0.77	1.9	4.1	0.0
	2- 3		1.01	2.5	7.9	0.0
	2- 4		0.74	0.7	3.6	0.0
	3- 1- 1 Remains		1.00	0.5	8.7	6.9
	3- 1- 1 Remains Sub Total		5.74	7.7	39.2	6.9
	2- 5		1.56	0.9	10.9	0.0
	2- 6		0.43	0.0	2.3	0.0
	3- 1- 2 Remains		3.33	4.1	26.8	38.2
	3- 1- 2 Remains Sub Total		5.32	5.0	40.0	38.2
	3- 1 Sub Total (Rio del Chorreron)		11.06	12.7	79.2	45.1
	2- 7		1.13	0.8	9.8	0.0
	2- 8		2.18	1.7	23.4	0.0
	3- 2 Remains		0.46	0.3	7.8	0.0
	3- 2 Sub Total (Qda. la Coronilla)		3.77	2.8	41.0	0.0
	3- 1,3- 2 Sub Total		14.83	15.5	120.2	45.1
	2- 9		0.66	0.2	6.1	0.0
	4- 1- 1 Remains		2.43	0.8	85.9	680.4
	4- 1- 1 Remains Sub Total		3.09	1.0	92.0	680.4
⊙	4- 1- 1 Sub Total		17.92	16.5	212.2	725.5
	4- 1- 2 Remains		2.01	0.1	0.0	4920.0
	4- 1- 2 Remains Sub Total		2.01	0.1	0.0	4920.0
	4- 1 Sub Total (Rio del Zapotal)		19.93	16.6	212.2	5645.5
	2-10		2.21	2.1	25.4	0.0
	2-11		1.13	0.4	12.4	0.0
	2-12		1.90	0.8	11.8	21.6
	3- 3- 1 Remains		3.78	1.5	38.9	75.9
	3- 3- 1 Sub Total		9.02	4.8	88.5	97.5
	3- 3- 2 Remains		0.29	0.0	0.0	144.0
	3- 3- 2 Remains Sub Total		0.29	0.0	0.0	144.0
	3- 3 Sub Total		9.31	4.8	88.5	241.5
	2-13		2.43	0.2	15.7	615.5
	2-14		0.62	0.1	5.5	0.0
	2-15		1.05	0.0	7.6	0.0
	3- 4 Remains		0.10	0.0	0.0	0.0

TABLE D.5.2(2) UNSTABLE DEPOSITS / DEPOSITOS INESTABLES

Rio Blanco (2/2)

(Continued)

Stream Order & Drainage Number , Stream Name C.P Orden de la Corriente Nombre de y Numero de Cuenca La Corriente		DA	Vru	Vbu	Vcu
5 4 3 2 (Stream Order)		km	x10 <sup>1</sup> m <sup>3</sup>	x10 <sup>1</sup> m <sup>3</sup>	x10 <sup>1</sup> m <sup>3</sup>
	3- 4 Sub Total (Qda. de Penas)	4.20	0.3	28.8	615.5
	3- 3, 3- 4 Sub Total	13.51	4.8	117.3	857.0
	4- 2 Remains	0.37	0.0	0.0	378.0
	4- 2 Remains Sub Total	0.37	0.0	0.0	378.0
	4- 2 Sub Total (Rio de Armenta)	13.88	4.8	117.3	1235.0
	4- 1, 4- 2 Sub Total	33.81	21.4	329.5	6880.5
	2-16	0.72	0.0	8.7	2.0
	2-17	0.76	0.0	6.0	9.2
	2-18	1.03	0.1	11.6	4.8
	2-19	1.08	0.0	14.8	17.4
	3- 5 Remains	1.65	0.2	36.1	64.4
	3- 5 Sub Total	5.24	0.3	77.2	97.8
	2-20	0.35	0.0	6.5	0.0
	2-21	0.84	0.0	8.9	0.0
	3- 6 Remains	1.04	0.0	12.5	15.0
	3- 6 Sub Total	2.23	0.0	27.9	15.0
③	3- 5, 3- 6 Sub Total	7.47	0.3	105.1	112.8
	4- 3 Remains	2.50	0.3	3.9	284.6
	4- 3 Remains Sub Total	2.50	0.3	3.9	284.6
	4- 3 Sub Total (Rio Chiquito)	9.97	0.3	109.0	397.4
	4- 1, 4- 2, 4- 3 Sub Total	43.78	22.0	438.5	7278.0
	5- 1 Remains	0.12	0.0	0.0	28.0
	5- 1 Remains Sub Total	0.12	0.0	0.0	28.0
Δ	5- 1 Total (Rio Blanco)	43.90	22.0	438.5	7305.9

Note/Nota : Refer to the note of table for the Rio Choloma  
Referirse a la nota de la tabla para el Rio Choloma

TABLE D.2.5(3) UNSTABLE DEPOSITS / DEPOSITOS INESTABLES

Rio Santa Ana , Rio El Sauce(1/1)

Stream Order & Drainage Number , Stream Name C.P Orden de la Corriente Nombre de y Numero de Cuenca La Corriente		DA	Vru	Vbu	Vcu
5 4 3 2 (Stream Order)		km	x10 <sup>1</sup> m <sup>3</sup>	x10 <sup>2</sup> m <sup>3</sup>	x10 <sup>1</sup> m <sup>3</sup>
	2- 1	3.11	4.5	41.7	0.0
	2- 2	1.28	3.6	21.0	0.0
	2- 3	0.52	0.0	8.1	0.0
	2- 4	1.20	0.3	8.9	0.0
	2- 5	2.43	0.5	16.5	10.1
	3- 1 Remains	0.90	0.0	25.2	25.3
	3- 1 Sub Total (Rio Santa Ana)	9.44	8.9	121.4	35.4
	2- 6	2.61	0.6	31.3	27.0
	2- 7	0.42	0.6	5.1	0.0
	2- 8	0.55	0.0	7.9	0.0
	3- 2 Remains	0.15	0.0	6.4	7.8
	3- 2 Sub Total (Qda. del Intierno)	3.73	1.2	50.7	34.8
	3- 1, 3- 2 Sub Total	13.17	10.1	172.1	70.2
	2- 9	3.47	1.9	33.9	0.0
	2-10	1.72	0.1	16.3	0.0
	4- 1 -1 Remains	4.03	0.4	103.6	87.0
	4- 1 -1 Remains Sub Total	9.22	2.4	153.8	87.0
①	4- 1- 1 Sub Total	22.39	12.5	325.9	157.2
	2-11 Remains	1.08	0.0	16.1	45.0
	2-12 (Qda. del Comercio)	2.24	0.2	24.6	163.6
	2-13 (Qda. de Agua Prieta)	6.42	0.3	41.5	54.8
	4- 1- 2 Remains	5.50	0.0	10.7	209.1
	4- 1- 2 Remains Sub Total	15.24	0.5	92.9	472.5
Δ	4- 1 Total (Rio Santa Ana , Rio El Sauce)	37.63	13.0	418.8	629.7

Note/Nota : Refer to the note of table for the Rio Choloma  
Referirse a la nota de la tabla para al Rio Choloma

TABLE D.2.5(4) UNSTABLE DEPOSITS / DEPOSITOS INESTABLES

Rio Piedras, Rio El Sauce (1/1)

Stream Order & Drainage Number, Stream Name C.P. Orden de la Corriente y Numero de Cuenca y Nombre de La Corriente		DA	Vru	Vbu	Vcu
5 4 3 2 (Stream Order)		km	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>
①	2-1	1.85	0.0	12.7	0.0
	2-2	0.86	0.1	5.7	0.0
	2-3	0.75	0.0	5.3	0.0
	2-4	0.71	0.0	6.2	0.0
	2-5	2.14	0.4	16.6	0.0
	2-6	0.81	0.0	7.3	0.0
	3-1-1 Remains	3.16	0.6	62.4	34.7
	3-1-1 Sub Total	10.28	1.1	116.2	34.7
	2-7	1.39	0.0	21.9	0.0
	2-8	0.94	0.3	11.7	0.0
	3-1-2 Remains	7.48	0.2	117.0	844.0
	3-1-2 Sub Total	9.81	0.5	150.6	844.0
②	3-1-1, 3-1-2 Sub Total	20.09	1.6	266.8	878.7
2-9	1.57	0.1	21.6	323.7	
3-1-3 Remains	0.86	0.0	0.0	43.6	
3-1-3 Sub Total	2.43	0.1	21.6	367.3	
③	3-1 Sub Total (Rio Piedras)	22.52	1.7	288.4	1246.0
2-10	0.57	0.0	6.0	0.0	
2-11	0.82	0.1	5.7	0.0	
3-2 Remains	4.09	0.0	27.3	382.8	
3-2 Sub Total (Qda. Santa Ana)	5.48	0.1	39.0	382.8	
④	4-1 Remains	2.87	0.0	0.0	48.0
4-1 Remains Sub Total	2.87	0.0	0.0	48.0	
△	4-1 Total (Rio Piedras, Rio El Sauce)	30.87	1.8	327.4	1676.8

Note/Nota : Refer to the note of table for the Rio Choloma  
Referirse a la nota de la tabla para al Rio Choloma

TABLE D.3.1(1) SEDIMENT YIELD OF NEWLY AND EXPANDING COLLAPSED AREA  
 PRODUCCION DE SEDIMENTOS EN AREAS NUEVAS Y AREAS DERRUMBADOS EN EXPANSION

Rio Choloma (1/3)

Stream Order & Drainage Number , Stream Name C.P Orden de la Corriente y Numero de Cuenca y Numero de Cuenca La Corriente	D.A	A	rl	dl	V1
5 4 3 2 (Stream Order)	km	km	%	m	x10m <sup>3</sup>
2- 1	2.03	2.03	9.68	1.0	196.5
2- 2	0.55	0.55	9.68	1.0	53.2
2- 3	0.47	0.47	9.68	1.0	45.5
2- 4	0.21	0.21	9.68	1.0	20.3
3- 1 Remains	0.49	0.49	9.68	1.0	47.4
3- 1 Sub Total (Qda. del Tamarindo)	3.75	3.75	-	-	362.9
2- 5	1.65	1.65	9.68	1.0	159.7
2- 6	0.75	0.75	9.68	1.0	72.6
2- 7	1.30	1.30	9.68	1.0	125.8
3- 2 Remains	0.57	0.57	9.68	1.0	55.2
3- 2 Sub Total (Qda. de Agua Blanco)	4.27	4.27	-	-	413.3
3- 1,3- 2 Sub Total	8.02	8.02	-	-	776.2
2- 8	0.83	0.83	9.68	1.0	80.3
2- 9	0.34	0.34	9.68	1.0	32.9
2-10	0.79	0.79	9.68	1.0	76.5
4- 1 Remains	2.93	2.84	9.68	1.0	274.9
4- 1 Remains Sub Total	4.89	4.80	-	-	464.6
4- 1 Sub Total	12.91	12.82	-	-	1240.8
2-11	0.53	0.53	9.68	1.0	51.3
2-12	0.75	0.75	9.68	1.0	72.6
2-13	1.38	1.38	9.68	1.0	133.6
3- 3 Remains	1.19	1.19	9.68	1.0	115.2
3- 3 Sub Total ((Rio del Ocotillo)	3.85	3.85	-	-	372.7
2-14	0.91	0.91	9.68	1.0	88.1
2-15	0.65	0.65	9.68	1.0	62.9
3- 4 Remains	0.21	0.21	9.68	1.0	20.3
3- 4 Sub Total	1.77	1.77	-	-	171.3
3- 3,3- 4 Sub Total	5.62	5.62	-	-	544.0
2-17	0.78	0.78	9.68	1.0	75.5
2-18	1.53	1.53	9.68	1.0	148.1
2-19	1.70	1.70	9.68	1.0	164.6
3- 5 Remains	1.22	1.22	9.68	1.0	118.1
3- 5 Sub Total (Qda. del Ocotillo)	5.23	5.23	-	-	506.3
2-16	1.03	1.03	9.68	1.0	99.7
4- 2 Remains	1.63	1.63	9.68	1.0	157.8

TABLE D.3.1(1) SEDIMENT YIELD OF NEWLY AND EXPANDING COLLAPSED AREA  
 PRODUCCION DE SEDIMENTOS EN AREAS NUEVAS Y AREAS DERRUMBADOS EN EXPANSION

Rio Choloma (2/3)

(Continued)

Stream Order & Drainage Number , Stream Name C.P Orden de la Corriente y Numero de Cuenca y Numero de Cuenca La Corriente	D.A	A	rl	dl	V1
5 4 3 2 (Stream Order)	km	km	%	m	x10m <sup>3</sup>
4- 2 Remains Sub Total	2.66	2.66	-	-	257.5
4- 2 Sub Total (Rio del Ocotillo)	13.51	13.51	-	-	1307.8
4- 1,4- 2 Sub Total	26.42	26.33	-	-	2548.6
2-21	1.23	1.23	9.68	1.0	119.1
2-22	0.19	0.19	9.68	1.0	18.4
3- 6 Remains	0.37	0.37	9.68	1.0	35.8
3- 6 Sub Total (Qda. Tino Gacho)	1.79	1.79	-	-	173.3
2-23	1.50	1.50	9.68	1.0	145.2
2-24	0.23	0.23	9.68	1.0	22.3
3- 7 Remains	1.36	1.36	9.68	1.0	131.6
3- 7 Sub Total	3.09	3.09	-	-	299.1
2-20	0.43	0.43	9.68	1.0	41.6
5- 1- 1 Remains	2.90	1.85	9.68	1.0	179.1
5- 1- 1 Remains Sub Total	3.33	2.28	-	-	220.7
5- 1- 1 Sub Total (Rio Majaine)	34.63	33.49	-	-	3241.7
2-25	1.58	1.58	9.68	1.0	152.9
2-26	0.58	0.58	9.68	1.0	56.1
2-27	0.65	0.65	9.68	1.0	62.9
2-28	1.14	1.14	9.68	1.0	110.4
2-29	1.56	1.56	9.68	1.0	151.0
3- 8- 1 Remains	0.88	0.88	9.68	1.0	85.2
3- 8- 1 Sub Total	6.39	6.39	-	-	618.5
2-30	2.40	2.37	9.68	1.0	229.4
3- 8- 2 Remains	3.44	3.20	9.68	1.0	309.8
3- 8- 2 Sub Total	5.84	5.84	-	-	539.2
3- 8 Sub Total	12.23	11.96	-	-	1157.7
2-31	0.99	0.99	9.68	1.0	95.8
2-32	0.51	0.51	9.68	1.0	49.4
3- 9 Remains	0.50	0.35	9.68	1.0	33.9
3- 9 Sub Total	2.00	1.85	-	-	179.1
3- 8,3- 9 Sub Total	14.23	13.81	-	-	1336.8
2-33	1.25	1.25	9.68	1.0	121.0
2-34	0.25	0.25	9.68	1.0	24.2
3-10 Remains	1.54	1.31	9.68	1.0	126.8
3-10 Sub Total (Qda. del Cabro)	3.04	2.81	-	-	272.0



TABLE D.3.1(1) SEDIMENT YIELD OF NEWLY AND EXPANDING COLLAPSED AREA  
 PRODUCCION DE SEDIMENTOS EN AREAS NUEVAS Y AREAS DERRUMBADOS EN EXPANSION

(Continued) Rio Choloma (3/3)

Stream Order & Drainage Number, C.P. Orden de la Corriente y Numero de Cuenca	Stream Name Nombre de La Corriente	D.A km	A km	rl %	dl m	V1 x10m <sup>3</sup>
5 4 3 2 (Stream Order)						
2-35		0.33	0.79	9.68	1.0	76.5
4-3 Remains		2.19	0.88	9.68	1.0	85.2
4-3 Remains Sub Total		3.12	1.67	-	-	161.7
4-3 Sub Total (Rio la Jutosa)		20.39	18.29	-	-	1770.5
4-3,5-1-1 Sub Total		55.02	51.78	-	-	5012.2
2-37		1.29	1.29	9.68	1.0	124.9
2-38		1.51	1.51	9.68	1.0	146.2
3-11 Remains		0.86	0.68	9.68	1.0	65.8
3-11 Sub Total (Qda. Gueno)		3.66	3.48	-	-	336.9
2-41		0.93	0.87	9.68	1.0	84.2
2-42		0.86	0.66	9.68	1.0	63.9
2-43		0.51	0.39	9.68	1.0	37.8
3-12 Remains		0.98	0.09	9.68	1.0	8.7
3-12 Sub Total		3.28	2.01	-	-	194.6
2-36		0.83	0.51	9.68	1.0	49.4
2-39		1.80	1.35	9.68	1.0	130.7
2-40		0.59	0.44	9.68	1.0	42.6
5-1-2 Remains		6.46	2.25	9.68	1.0	217.8
5-1-2 Remains Sub Total		9.68	4.55	-	-	440.5
5-1-2 Sub Total		16.62	16.62	-	-	972.0
5-1 Total (Rio Choloma)		71.64	61.82	-	-	5984.2

Note/Nota :

- C.P, Δ : Design control point / Punto de control de diseño  
 ⊙ : Sub-control point & number / Punto de sub-control y numero  
 Remains : Remains of drainage area / Restos en area de cuenca  
 D.A : Drainage area / Area de cuenca  
 A : Mountain slope area / Area montañosa  
 rl : Ratio of collapsed area occurred in 1974 / Porcentaje de area de derrumbadas ocurrio en 1974  
 dl : Average collapsed depth / Profundidad promedio de pendiente derrumbadas  
 V1 : Sediment yield of newly and expanding collapsed area (V1=A×rl×dl)  
 / Produccion de sedimentos en areas nuevas y areas derrumbados expansion

TABLE D.3.1(2) SEDIMENT YIELD OF NEWLY AND EXPANDING COLLAPSED AREA  
 PRODUCCION DE SEDIMENTOS EN AREAS NUEVAS Y AREAS DERRUMBADOS EN EXPANSION

Rio Blanco (1/2)

Stream Order & Drainage Number, C.P. Orden de la Corriente y Numero de Cuenca	Stream Name Nombre de La Corriente	D.A km	A km	rl %	dl m	V1 x10m <sup>3</sup>
5 4 3 2 (Stream Order)						
2-1		2.22	2.22	9.68	1.0	214.9
2-2		0.77	0.77	9.68	1.0	74.5
2-3		1.01	1.01	9.68	1.0	97.8
2-4		0.74	0.74	9.68	1.0	71.6
3-1-1 Remains		1.00	1.00	9.68	1.0	96.8
3-1-1 Remains Sub Total		5.74	5.74	-	-	555.6
2-5		1.56	1.56	9.68	1.0	151.0
2-6		0.43	0.43	9.68	1.0	41.6
3-1-2 Remains		3.33	3.33	9.68	1.0	322.3
3-1-2 Remains Sub Total		5.32	5.32	-	-	514.9
3-1 Sub Total (Rio del Chorreron)		11.06	11.06	-	-	1070.5
2-7		1.13	1.13	9.68	1.0	109.4
2-8		2.18	2.18	9.68	1.0	211.0
3-2 Remains		0.46	0.46	9.68	1.0	44.5
3-2 Sub Total (Qda. la Coronilla)		3.77	3.77	-	-	364.9
3-1,3-2 Sub Total		14.83	14.83	-	-	1435.4
2-9		0.66	0.66	9.68	1.0	63.9
4-1-1 Remains		2.43	2.43	9.68	1.0	235.2
4-1-1 Remains Sub Total		3.09	3.09	-	-	299.1
4-1-1 Sub Total		17.92	17.92	-	-	1734.5
4-1-2 Remains		2.01	0.14	9.68	1.0	13.6
4-1-2 Remains Sub Total		2.01	0.14	-	-	13.6
4-1 Sub Total (Rio del Zapotal)		19.93	18.06	-	-	1748.1
2-10		2.21	2.21	9.68	1.0	213.9
2-11		1.13	1.13	9.68	1.0	109.4
2-12		1.90	1.90	9.68	1.0	183.9
3-3-1 Remains		3.78	3.78	9.68	1.0	365.9
3-3-1 Sub Total		9.02	9.02	-	-	873.1
3-3-2 Remains		0.29	0.00	9.68	1.0	0.0
3-3-2 Remains Sub Total		0.29	0.00	9.68	1.0	0.0
3-3 Sub Total		9.31	9.02	-	-	873.1
2-13		2.43	2.17	9.68	1.0	210.1
2-14		0.62	0.49	9.68	1.0	47.4
2-15		1.05	0.64	9.68	1.0	62.0
3-4 Remains		0.10	0.00	9.68	1.0	0.0

TABLE D.3.1(2) SEDIMENT YIELD OF NEWLY AND EXPANDING COLLAPSED AREA  
 PRODUCCION DE SEDIMENTOS EN AREAS NUEVAS Y AREAS DERRUMBADOS EN EXPANSION

(Continued)

Rio Blanco (2/2)

C.P	Stream Order & Drainage Number , Orden de la Corriente y Numero de Cuenca	Stream Name Nombre de La Corriente	D.A	A	r1	d1	V1
	5 4 3 2 (Stream Order)		km	km	%	m	x10m <sup>3</sup>
	3- 4 Sub Total (Qda. de Penas)		4.20	3.30	-	-	319.5
	3- 3, 3- 4 Sub Total		13.51	12.32	-	-	1192.6
	4- 2 Remains		0.37	0.00	9.68	1.0	0.0
	4- 2 Remains Sub Total		0.37	0.00	-	-	0.0
	4- 2 Sub Total (Rio de Armenta)		13.88	12.32	-	-	1192.6
	4- 1, 4- 2 Sub Total		33.81	30.33	-	-	2940.7
	2-16		0.72	0.72	9.68	1.0	69.7
	2-17		0.76	0.76	9.68	1.0	73.6
	2-18		1.03	1.03	9.68	1.0	99.7
	2-19		1.08	0.96	9.68	1.0	92.9
	3- 5 Remains		1.65	1.51	9.68	1.0	146.2
	3- 5 Sub Total		5.24	4.98	-	-	482.1
	2-20		0.35	0.35	9.68	1.0	33.9
	2-21		0.84	0.84	9.68	1.0	81.3
	3- 6 Remains		1.04	0.81	9.68	1.0	78.4
	3- 6 Sub Total		2.23	2.00	-	-	193.6
	3- 5, 3- 6 Sub Total		7.47	6.98	-	-	675.7
	4- 3 Remains		2.50	1.85	9.68	1.0	179.1
	4- 3 Remains Sub Total		2.50	1.85	-	-	179.1
	4- 3 Sub Total (Rio Chiquito)		9.97	8.83	-	-	854.8
	4- 1, 4- 2, 4- 3 Sub Total		43.78	39.21	-	-	3795.5
	5- 1 Remains		0.12	0.00	9.68	1.0	0.0
	5- 1 Remains Sub Total		0.12	0.00	-	-	0.0
	5- 1 Total (Rio Blanco)		43.90	39.21	-	-	3795.5

Note/Nota : Refer to the note of table for the Rio Choloma  
 Referirse a la nota de la tabla para el Rio Choloma

TABLE D.3.1(3) SEDIMENT YIELD OF NEWLY AND EXPANDING COLLAPSED AREA  
 PRODUCCION DE SEDIMENTOS EN AREA NUEVAS Y AREAS DERRUMBADOS EN EXPANSION

Rio Santa Ana , Rio El Sauce (1/1)

C.P	Stream Order & Drainage Number , Orden de la Corriente y Numero de Cuenca	Stream Name Nombre de La Corriente	D.A	L0	W0	d0	V1
	5 4 3 2 (Stream Order)		km	m	m	m	x10m <sup>3</sup>
	2- 1		3.11	6250	2.0	1.0	12.5
	2- 2		1.28	1550	2.0	1.0	3.1
	2- 3		0.52	1220	2.0	1.0	2.4
	2- 4		1.20	1650	2.0	1.0	3.3
	2- 5		2.43	5420	2.0	1.0	10.8
	3- 1 Remains		0.90	750	2.0	1.0	1.5
	3- 1 Sub Total (Rio Santa Ana)		9.44	16840	-	-	33.6
	2- 6		2.61	1570	2.0	1.0	3.1
	2- 7		0.42	300	2.0	1.0	0.6
	2- 8		0.55	600	2.0	1.0	1.2
	3- 2 Remains		0.15	4950	2.0	1.0	9.9
	3- 2 Sub Total (Qda. del Intierno)		3.73	7420	-	-	14.8
	3- 1, 3- 2 Sub Total		13.17	24260	-	-	48.4
	2- 9		3.47	4200	2.0	1.0	8.4
	2-10		1.72	3400	2.0	1.0	6.8
	4- 1 -1 Remains		4.03	1900	2.0	1.0	3.8
	4- 1 -1 Remains Sub Total		9.22	9500	-	-	19.0
	4- 1 -1 Sub Total		22.39	33760	-	-	67.4
	2-11 Remains		1.08	1950	2.0	1.0	3.9
	2-12 (Qda. del Comercio)		2.24	4850	2.0	1.0	9.7
	2-13 (Qda. de Agua Prieta)		6.42	5000	2.0	1.0	10.0
	4- 1- 2 Remains		5.50	1700	2.0	1.0	3.4
	4- 1- 2 Remains Sub Total		15.24	13500	-	-	27.0
	4- 1 Total (Rio Santa Ana , Rio El Sauce)		37.63	47260	-	-	94.4

Note/Nota : Refer to the note of table for the Rio Choloma  
 Referirse a la nota de la tabla para el Rio Choloma

TABLE D.3.1(4) SEDIMENT YIELD OF NEWLY AND EXPANDING COLLAPSED AREA  
 PRODUCCION DE SEDIMENTOS EN AREA NUEVAS Y AREAS DERRUMBADOS EN EXPANSION

Rio Piedras , Rio El Sauce (1/1)

Stream Order & Drainage Number , Stream Name C,P Orden de la Corriente Nombre de y Numero de Cuenca La Corriente		D.A	L0	W0	d0	V1
5 4 3 2 (Stream Order)		km	m	m	m	x10m <sup>3</sup>
	2- 1	1.85	3240	2.0	1.0	6.5
	2- 2	0.86	700	2.0	1.0	1.4
	2- 3	0.75	1240	2.0	1.0	2.5
	2- 4	0.71	400	2.0	1.0	0.8
	2- 5	2.14	2420	2.0	1.0	4.8
	2- 6	0.81	2000	2.0	1.0	4.0
	3- 1- 1 Remains	3.16	4200	2.0	1.0	8.4
	3- 1- 1 Sub Total	10.28	14200	-	-	28.4
	2- 7	1.39	2380	2.0	1.0	4.8
	2- 8	0.94	600	2.0	1.0	1.2
	3- 1- 2 Remains	7.48	8290	2.0	1.0	16.6
	3- 1- 2 Sub Total	9.81	11270	-	-	22.6
①	3- 1- 1, 3- 1- 2 Sub Total	20.09	25470	-	-	51.0
	2- 9	1.57	3000	2.0	1.0	6.0
	3- 1- 3 Remains	0.86	0	2.0	1.0	0.0
	3- 1- 3 Sub Total	2.43	3000	-	-	6.0
②	3- 1 Sub Total (Rio Piedras)	22.52	28470	-	-	57.0
	2-10	0.57	1240	2.0	1.0	2.5
	2-11	0.82	1500	2.0	1.0	3.0
	3- 2 Remains	4.09	4940	2.0	1.0	9.9
③	3- 2 Sub Total (Qda, Santa Ana)	5.48	7680	-	-	15.4
	4- 1 Remains	2.87	0	2.0	1.0	0.0
	4- 1 Remains Sub Total	2.87	0	-	-	0.0
△	4- 1 Total (Rio Piedras , Rio El Sauce)	30.87	36150	-	-	72.4

Note/Nota : Refer to the note of table for the Rio Choloma  
 Referirse a la nota de la tabla para el Rio Choloma

TABLE D.3.2(1) SEDIMENT YIELD DUE TO RIVER BANK EROSION  
 PRODUCCION DE SEDIMENTOS DEBIDO A LA EROSION DE LA RIBERA DEL RIO

Stream Order & Drainage Number C.P. Orden de La Corriente y Numero de Cuenca		Stream Name Nombre de La Corriente	Drainage Area (D.A) km <sup>2</sup>	Length of Unstable Dep. Area (Lz) m	River width of Ordinary Water Level (Wo) m	River Width of High Water Level (Wf) m	River Bank Height (Hb) m	Bank Erosion Volume (V4) m <sup>3</sup>
	2-1		2.03	710	7	18	1.0	7810
	4-1 Remains		2.93	880	15	42	1.0	23760
	3-3 Remains		1.19	1100	12	23	1.0	12100
	3-5 Remains		1.22	370	10	30	1.0	7400
	4-2 Remains		1.63	620	10	40	1.0	18600
	3-6 Remains		0.37	420	5	15	1.0	4200
	3-7 Remains		1.36	2350	7	19	1.0	28200
	5-1-1 Remains		2.90	3070	20	67	1.0	144290
①	5-1-1 Sub Total		34.63	-	-	-	-	246360
	2-30		2.40	450	7	19	1.0	5400
	3-8-2 Remains		3.44	2830	10	38	1.0	79240
	3-9 Remains		0.50	710	7	18	1.0	7810
	2-33		1.25	320	5	14	1.0	2880
	3-10 Remains		1.54	1550	7	22	1.0	23250
	4-3 Remains		2.19	3130	20	50	1.0	93900
②	4-3 Sub Total (Rio La Jutosa)		20.39	-	-	-	-	212480
	4-3-5-1-1 Sub Total		54.99	-	-	-	-	458840
	2-38		1.51	150	7	15	1.0	1200
	3-11 Remains		0.86	1390	10	12	1.0	2780
	2-41		0.93	850	7	12	1.0	4250
	2-42		0.86	710	7	12	1.0	3550
	3-12 Remains		0.98	950	10	23	1.0	12350
	1-159		-	240	3	9	1.0	1440
	1-160		-	430	5	8	1.0	1290
	2-39		1.80	730	7	19	1.0	8760
	5-1-2 Remains		6.46	4170	40	175	1.0	562950
	5-1-2 Sub Total		16.62	-	-	-	-	598570
△	5-1 Total (Rio Choloma)		71.64	-	-	-	-	1057410

Note/Nota : Refer to the note of table for the Rio Blanco  
 Referirse a la nota de la tabla para el Rio Blanco

TABLE D.3.2(2) SEDIMENT YIELD DUE TO RIVER BANK EROSION  
 PRODUCCION DE SEDIMENTOS DEBIDO A LA EROSION DE LA RIBERA DEL RIO

Stream Order & Drainage Number C.P. Orden de La Corriente y Numero de Cuenca		Stream Name Nombre de La Corriente	Drainage Area (D.A) km <sup>2</sup>	Length of Unstable Dep. Area (Lz) m	River width of Ordinary Water Level (Wo) m	River Width of High Water Level (Wf) m	River Bank Height (Hb) m	Bank Erosion Volume (V4) m <sup>3</sup>
	4-1-1 Remains		2.43	2020	25	53	1.2	67872
①	4-1-1 Sub Total		17.92	-	-	-	-	67872
	4-1-2 Remains		2.01	3400	25	55	1.2	122400
②	3-3-1 Remains		3.78	200	10	41	1.0	6200
	3-3-1 Sub Total		9.02	-	-	-	-	6200
	3-3-2 Remains		0.29	1200	20	60	1.0	48000
	4-2 Remains		0.37	700	20	60	1.0	28000
	3-5 Remains		1.65	1670	10	28	1.0	30060
	3-6 Remains		1.04	770	7	19	1.0	9240
③	3-5,3-6 Sub Total		7.47	-	-	-	-	39300
	4-3 Remains		2.50	3450	10	46	0.8	99360
	5-1 Remains		0.12	350	20	100	1.0	28000
△	5-1 Total (Rio Blanco)		43.90	-	-	-	-	439132

Note/Nota :

C.P. △ : Design control point / Punto de control de diseño  
 ① : Sub-control point & number / Punto de sub-control y numero  
 Remains : Remains of drainage area / Restos en area de cuenca

D.A : Area de cuenca

V4 : Sediment yield due to river bank erosion

Produccion de sedimentos debido a la erosion de la ribera del rio

Lz : Length of unstable deposits area along the river

Longitud de area de depositos inestables a lo largo del rio

Wo : Ancho normal del nivel de agua del rio

Wf : Ancho del nivel de agua alta en el rio

Hb : Profundidad de erosion de las riberas

TABLE D.3.2(3) SEDIMENT YIELD DUE TO RIVER BANK EROSION  
 PRODUCCION DE SEDIMENTOS DEBIDO A LA EROSION DE LA RIBERA DEL RIO

Stream Order & Drainage Number		Stream Name	Drainage Area	Length of	River width	River Width	River Bank	Bank Erosion
C.P	Orden de La Corriente y Numero de Cuenca	Nombre de La Corriente	(D.A) km <sup>2</sup>	Uustable Dep. Area (Lz) m	of Ordinary Water Level (Wo) m	of High Water Level (Wf) m	Height (Hb) m	Volume (V4) m <sup>3</sup>
	4- 1 -1 Remains		4.03	250	15	25	2.0	5000
	4- 1 -1 Sub Total		22.39	-	-	-	-	5000
①	4- 1- 2 Remains		5.50	4030	15	60	1.0	181350
△	4- 1 Total (Rio Santa Ana , Rio El Sauce)		37.63	-	-	-	-	186350

TABLE D.3.2(4) SEDIMENT YIELD DUE TO RIVER BANK EROSION  
 PRODUCCION DE SEDIMENTOS DEBIDO A LA EROSION DE LA RIBERA DEL RIO

Stream Order & Drainage Number		Stream Name	Drainage Area	Length of	River width	River Width	River Bank	Bank Erosion
C.P	Orden de La Corriente y Numero de Cuenca	Nombre de La Corriente	(D.A) km <sup>2</sup>	Uustable Dep. Area (Lz) m	of Ordinary Water Level (Wo) m	of High Water Level (Wf) m	Height (Hb) m	Volume (V4) m <sup>3</sup>
	3- 1- 2 Remains		7.48	2580	10	51	0.8	84624
	3- 1- 2 Sub Total		20.09	-	-	-	-	84624
	3- 1- 3 Remains		0.86	2180	25	50	0.8	43600
②	3- 1 Sub Total (Rio Piedras)		22.52	-	-	-	-	128224
③	3- 2 Sub Total (Qda. Santa Ana)		5.48	-	-	-	-	0
	4- 1 Remains		2.87	2400	25	50	0.8	48000
△	4- 1 Total (Rio Piedras , Rio El Sauce)		30.87	-	-	-	-	176224

Note/Nota : Refer to the note of table for the Rio Blanco  
 Referirse a la nota de la tabla para el Rio Blanco

TABLE D.3.3(1) DESIGN SEDIMENT YIELD / PRODUCCION DE SEDIMENTOS DE DISEÑO

Rio Choloma (1/3)

Stream Order & Drainage Number , Stream Name C.P Orden de La Corriente y Numero de Cuenca 5 4 3 2 (Stream Order)		D.A	V1	V2	V3	V4	V10
Nombre de La Corriente		km	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>
2- 1		2.03	196.5	0.8	16.0	7.8	221.1
2- 2		0.65	53.2	0.0	3.6	0.0	66.8
2- 3		0.47	45.5	0.0	3.0	0.0	48.5
2- 4		0.21	20.3	0.3	1.3	0.0	21.9
3- 1 Remains		0.49	47.4	0.4	8.8	0.0	56.6
3- 1 Sub Total (Qda. del Tamarindo)		3.75	362.9	1.5	32.7	7.8	404.9
2- 5		1.65	159.7	1.5	16.7	0.0	177.9
2- 6		0.75	72.6	0.4	6.6	0.0	79.6
2- 7		1.30	125.8	1.7	13.3	0.0	140.8
3- 2 Remains		0.57	55.2	0.2	9.0	0.0	64.4
3- 2 Sub Total (Qda. de Agua Blanco)		4.27	413.3	3.8	45.6	0.0	462.7
3- 1, 3- 2 Sub Total		8.02	776.2	5.3	78.3	7.8	867.6
2- 8		0.83	80.3	1.2	8.7	0.0	90.2
2- 9		0.34	32.9	0.5	3.8	0.0	37.2
2-10		0.79	76.5	0.0	5.3	0.0	81.8
4- 1 Remains		2.93	274.9	1.3	71.4	23.8	371.4
4- 1 Remains Sub Total		4.89	464.6	3.0	89.2	23.8	580.6
4- 1 Sub		12.91	1240.8	8.3	167.5	31.6	1448.2
2-11		0.53	51.3	0.2	4.4	0.0	55.9
2-12		0.75	72.6	0.1	6.5	0.0	79.2
2-13		1.38	133.6	0.8	15.7	0.0	150.1
3- 3 Remains		1.19	115.2	0.4	35.3	12.1	163.0
3- 3 Sub Total ((Rio del Ocotillo)		3.85	372.7	1.5	61.9	12.1	448.2
2-14		0.91	88.1	1.2	9.0	0.0	98.3
2-15		0.65	62.9	0.7	8.1	0.0	71.7
3- 4 Remains		0.21	20.3	0.2	3.4	0.0	23.9
3- 4 Sub Total		1.77	171.3	2.1	20.5	0.0	193.9
3- 3, 3- 4 Sub Total		5.62	544.0	3.6	82.4	12.1	642.1
2-17		0.78	75.5	0.5	9.4	0.0	85.4
2-18		1.53	148.1	0.2	12.9	0.0	161.2
2-19		1.70	164.6	0.6	18.7	0.0	183.9
3- 5 Remains		1.22	118.1	0.3	21.5	7.4	147.3
3- 5 Sub Total (Qda. del Ocotillo)		5.23	506.3	1.6	62.5	7.4	577.8
2-16		1.03	99.7	1.0	12.5	0.0	113.2
4- 2 Remains		1.63	157.8	0.3	34.6	18.6	211.3

TABLE D.3.3(1) DESIGN SEDIMENT YIELD / PRODUCCION DE SEDIMENTOS DE DISEÑO

Rio Choloma (2/3)

Stream Order & Drainage Number , Stream Name C.P Orden de La Corriente y Numero de Cuenca 5 4 3 2 (Stream Order)		D.A	V1	V2	V3	V4	V10
Nombre de La Corriente		km	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>
4- 2 Remains Sub Total		2.66	257.5	1.3	47.1	18.6	324.5
4- 2 Sub Total (Rio del Ocotillo)		13.51	1307.8	6.5	192.0	38.1	1544.4
4- 1, 4- 2 Sub Total		26.42	2548.6	14.8	359.5	69.7	2992.6
2-21		1.23	119.1	0.2	17.8	0.0	137.1
2-22		0.19	18.4	0.0	2.4	0.0	20.8
3- 6 Remains		0.37	35.8	0.2	5.9	4.2	46.1
3- 6 Sub Total (Qda. Tino Gacho)		1.79	173.3	0.4	26.1	4.2	204.0
2-23		1.50	145.2	0.5	7.5	0.0	153.2
2-24		0.23	22.3	0.2	2.5	0.0	25.0
3- 7 Remains		1.36	131.6	0.6	15.4	28.2	175.8
3- 7 Sub Total		3.09	299.1	1.3	25.4	28.2	354.0
2-20		0.43	41.6	0.0	6.7	0.0	48.3
5- 1- 1 Remains		2.90	179.1	0.3	65.9	144.3	389.6
5- 1- 1 Remains Sub Total		3.33	220.7	0.3	72.6	144.3	437.9
5- 1- 1 Sub Total (Rio Wajains)		34.63	3241.7	16.8	483.6	246.4	3988.5
2-25		1.58	152.9	3.0	15.3	0.0	171.2
2-26		0.58	56.1	0.4	3.9	0.0	60.4
2-27		0.65	62.9	0.0	5.9	0.0	68.8
2-28		1.14	110.4	0.0	9.8	0.0	120.2
2-29		1.56	151.0	0.8	12.7	0.0	164.5
3- 8- 1 Remains		0.88	85.2	0.0	18.2	0.0	103.4
3- 8- 1 Sub Total		6.39	618.5	4.2	65.8	0.0	688.5
2-30		2.40	229.4	0.3	27.6	5.4	262.7
3- 8- 2 Remains		3.44	309.8	1.2	69.3	79.2	459.5
3- 8- 2 Sub Total		5.84	539.2	1.5	96.9	84.6	722.2
3- 8 Sub Total		12.23	1157.7	5.7	162.7	84.6	1410.7
2-31		0.99	95.8	0.0	7.5	0.0	103.3
2-32		0.51	49.4	0.0	4.0	0.0	53.4
3- 9 Remains		0.50	33.9	0.0	7.1	7.8	48.8
3- 9 Sub Total		2.00	179.1	0.0	18.6	7.8	205.5
3- 8, 3- 9 Sub Total		14.2	1336.8	5.7	181.3	92.4	1616.2
2-33		1.25	121.0	0.2	6.8	2.9	130.9
2-34		0.25	24.2	0.0	2.7	0.0	26.9
3-10 Remains		1.54	126.8	0.0	18.4	23.3	168.5
3-10 Sub Total (Qda. del Cabro)		3.04	272.0	0.2	27.9	26.2	326.3

TABLE D.3.3(1) DESIGN SEDIMENT YIELD / PRODUCCION DE SEDIMENTOS DE DISEÑO

Rio Choloma (3/3)

(Continued)

Stream Order & Drainage Number C,P Orden de La Corriente y Numero de Cuenca	Stream Name Nombre de La Corriente	D.A	V1	V2	V3	V4	V10
5 4 3 2 (Stream Order)		km <sup>2</sup>	x10 <sup>4</sup> m <sup>2</sup>	x10 <sup>4</sup> m <sup>2</sup>	x10 <sup>4</sup> m <sup>2</sup>	x10 <sup>4</sup> m <sup>2</sup>	x10 <sup>4</sup> m <sup>2</sup>
2-35		0.93	76.5	0.3	10.1	0.0	86.9
4- 3 Remains		2.19	85.2	0.6	132.9	93.9	312.6
4- 3 Remains Sub Total		3.12	161.7	0.9	143.0	93.9	399.5
4- 3 Sub Total (Rio la Jutosa)		20.39	1770.5	6.8	352.2	212.5	2342.0
4- 3,5- 1- 1 Sub Total		55.02	5012.2	23.6	835.8	458.9	6330.5
2-37		1.29	124.9	0.6	19.6	0.0	145.1
2-38		1.51	146.2	0.2	15.9	1.2	163.5
3-11 Remains		0.86	65.8	0.2	16.5	2.8	85.3
3-11 Sub Total (Qda. Gueno)		3.66	336.9	1.0	52.0	4.0	393.9
2-41		0.93	84.2	0.1	10.2	4.3	98.8
2-42		0.86	63.9	0.0	11.1	3.6	78.6
2-43		0.51	37.8	0.0	3.2	0.0	41.0
3-12 Remains		0.98	8.7	0.0	25.6	12.4	46.7
3-12 Sub Total		3.28	194.6	0.1	50.1	20.3	265.1
2-36		0.83	49.4	0.0	10.4	0.0	59.8
2-39		1.80	130.7	0.0	11.1	11.5	153.3
2-40		0.59	42.6	0.8	7.0	0.0	50.4
5- 1- 2 Remains		6.46	217.8	0.6	18.7	563.0	800.1
5- 1- 2 Remains Sub Total		9.68	440.5	1.4	47.2	574.5	1063.6
5- 1- 2 Sub Total		16.62	972.0	2.5	149.3	598.8	1722.6
5-1 Total (Rio Choloma)		71.64	5984.2	26.1	985.1	1057.7	8053.1

Note/Nota :

- C,P, Δ : Design control point / Punto de control de diseño  
 Remains : Remains of drainage area / Restos en area de cuenca  
 ① : Sub-control point & number / Punto de sub-control y numero  
 D.A : Drainage area / Area de cuenca  
 V1 : Sediment yield of newly and expanding area  
 Produccion de sedimentos en areas nuevas y areas derrumbados en expansion  
 V2 : Residual collapsed sediment yield of existing past collapsed area  
 Produccion de sedimentos residuales existentes debido a areas derrumbadas anteriormente  
 V3 : Sediment yield of surrounding riverbed area  
 Produccion de sedimentos alrededor en el area de lecho del rio  
 V4 : Sediment yield due to river bank erosion  
 Produccion de sedimentos debido a la erosion de la ribera del rio  
 V10 : Design sediment yield (V10=V1+V2+V4+V4)  
 Produccion de sedimentos de diseño

TABLE D.3.3(2) DESIGN SEDIMENT YIELD / PRODUCCION DE SEDIMENTOS DE DISEÑO

Rio Blanco (1/2)

Stream Order & Drainage Number C,P Orden de La Corriente y Numero de Cuenca	Stream Name Nombre de La Corriente	D.A	V1	V2	V3	V4	V10
5 4 3 2 (Stream Order)		km <sup>2</sup>	x10 <sup>4</sup> m <sup>2</sup>	x10 <sup>4</sup> m <sup>2</sup>	x10 <sup>4</sup> m <sup>2</sup>	x10 <sup>4</sup> m <sup>2</sup>	x10 <sup>4</sup> m <sup>2</sup>
2- 1		2.22	214.9	2.1	14.9	0.0	231.9
2- 2		0.77	74.5	1.9	4.1	0.0	80.5
2- 3		1.01	97.8	2.5	7.9	0.0	108.2
2- 4		0.74	71.6	0.7	3.6	0.0	75.9
3- 1- 1 Remains		1.00	96.8	0.5	8.7	0.0	106.0
3- 1- 1 Remains Sub Total		5.74	555.6	7.7	39.2	0.0	602.5
2- 5		1.56	151.0	0.9	10.9	0.0	162.8
2- 6		0.43	41.6	0.0	2.3	0.0	43.9
3- 1- 2 Remains		3.33	322.3	4.1	26.8	0.0	353.2
3- 1- 2 Remains Sub Total		5.32	514.9	5.0	40.0	0.0	559.9
3- 1 Sub Total (Rio del Chorreron)		11.06	1070.5	12.7	79.2	0.0	1162.4
2- 7		1.13	109.4	0.8	9.8	0.0	120.0
2- 8		2.18	211.0	1.7	23.4	0.0	236.1
3- 2 Remains		0.46	44.5	0.3	7.8	0.0	52.6
3- 2 Sub Total (Qda. la Coronilla)		3.77	364.9	2.8	41.0	0.0	408.7
3- 1,3- 2 Sub Total		14.83	1435.4	15.5	120.2	0.0	1571.1
2- 9		0.66	63.9	0.2	6.1	0.0	70.2
4- 1 -1 Remains		2.43	235.2	0.8	85.9	67.9	389.8
4- 1 -1 Remains Sub Total		3.09	299.1	1.0	92.0	67.9	460.0
4- 1 -1 Sub Total		17.92	1734.5	16.5	212.2	67.9	2031.1
4- 1- 2 Remains		2.01	13.6	0.1	0.0	122.4	136.1
4- 1- 2 Remains Sub Total		2.01	13.6	0.1	0.0	122.4	136.1
4- 1 Sub Total (Rio del Zapotal)		19.93	1748.1	16.6	212.2	190.3	2167.2
2-10		2.21	213.9	2.1	25.4	0.0	241.4
2-11		1.13	109.4	0.4	12.4	0.0	122.2
2-12		1.90	183.9	0.8	11.8	0.0	196.5
3- 3- 1 Remains		3.78	365.9	1.5	38.9	6.2	412.5
3- 3- 1 Sub Total		9.02	873.1	4.8	88.5	6.2	972.6
3- 3- 2 Remains		0.29	0.0	0.0	0.0	24.0	24.0
3- 3- 2 Remains Sub Total		0.29	0.0	0.0	0.0	24.0	24.0
3- 3 Sub Total		9.31	873.1	4.8	88.5	30.2	996.6
2-13		2.43	210.1	0.2	15.7	0.0	226.0
2-14		0.62	47.4	0.1	5.5	0.0	53.0
2-15		1.05	62.0	0.0	7.6	0.0	69.6
3- 4 Remains		0.10	0.0	0.0	0.0	0.0	0.0

TABLE D.3.3(2) DESIGN SEDIMENT YIELD / PRODUCCION DE SEDIMENTOS DE DISEÑO

Rio Blanco (2/2)

(Continued)

Stream Order & Drainage Number , Stream Name C.P Orden de La Corriente y Numero de Cuenca Nombre de La Corriente	D.A km	V1 x10 <sup>3</sup> m <sup>3</sup>	V2 x10 <sup>3</sup> m <sup>3</sup>	V3 x10 <sup>3</sup> m <sup>3</sup>	V4 x10 <sup>3</sup> m <sup>3</sup>	V10 x10 <sup>3</sup> m <sup>3</sup>
5 4 3 2 (Stream Order)						
3- 4 Sub Total (Qda. de Penas)	4.20	319.5	0.3	28.8	0.0	348.6
3- 3, 3- 4 Sub Total	13.51	1192.6	4.8	117.3	30.2	1345.2
4- 2 Remains	0.37	0.0	0.0	0.0	14.0	14.0
4- 2 Remains Sub Total	0.37	0.0	0.0	0.0	14.0	14.0
4- 2 Sub Total (Rio de Armenta)	13.88	1192.6	4.8	117.3	44.2	1359.2
4- 1, 4- 2 Sub Total	33.81	2940.7	21.4	329.5	234.5	3526.4
2-16	0.72	69.7	0.0	8.7	0.0	78.4
2-17	0.76	73.6	0.0	6.0	0.0	79.6
2-18	1.03	99.7	0.1	11.6	0.0	111.4
2-19	1.08	92.9	0.0	14.8	0.0	107.7
3- 5 Remains	1.65	146.2	0.2	36.1	30.1	212.6
3- 5 Sub Total	5.24	482.1	0.3	77.2	30.1	589.7
2-20	0.35	33.9	0.0	6.5	0.0	40.4
2-21	0.84	81.3	0.0	8.9	0.0	90.2
3- 6 Remains	1.04	78.4	0.0	12.6	9.2	100.1
3- 6 Sub Total	2.23	193.6	0.0	27.9	9.2	230.7
3- 5, 3- 6 Sub Total	7.47	675.7	0.3	105.1	39.3	820.4
4- 3 Remains	2.50	179.1	0.3	3.9	99.4	282.4
4- 3 Remains Sub Total	2.50	179.1	0.3	3.9	99.4	282.4
4- 3 Sub Total (Rio Chiquito)	9.97	854.8	0.3	109.0	138.7	1102.8
4- 1, 4- 2, 4- 3 Sub Total	43.78	3795.5	22.0	438.5	373.2	4629.2
5- 1 Remains	0.12	0.0	0.0	0.0	28.0	28.0
5- 1 Remains Sub Total	0.12	0.0	0.0	0.0	28.0	28.0
5- 1 Total (Rio Blanco)	43.90	3795.5	22.0	438.5	401.2	4657.2

Note/Nota : Refer to the note of table for the Rio Choloma  
Referirse a la nota de la tabla para el Rio Choloma

TABLE D.3.3(3) DESIGN SEDIMENT YIELD / PRODUCCION DE SEDIMENTOS DE DISEÑO

Rio Santa Ana , Rio El Sauce(1/1)

Stream Order & Drainage Number , Stream Name C.P Orden de La Corriente y Numero de Cuenca Nombre de La Corriente	D.A km	V1 x10 <sup>3</sup> m <sup>3</sup>	V2 x10 <sup>3</sup> m <sup>3</sup>	V3 x10 <sup>3</sup> m <sup>3</sup>	V4 x10 <sup>3</sup> m <sup>3</sup>	V10 x10 <sup>3</sup> m <sup>3</sup>
5 4 3 2 (Stream Order)						
2- 1	3.11	12.5	4.5	41.7	0.0	58.7
2- 2	1.28	3.1	3.6	21.0	0.0	27.7
2- 3	0.52	2.4	0.0	8.1	0.0	10.5
2- 4	1.20	3.3	0.3	8.9	0.0	12.5
2- 5	2.43	10.8	0.5	16.5	0.0	27.8
3- 1 Remains	0.90	1.5	0.0	25.2	0.0	26.7
3- 1 Sub Total (Rio Santa Ana)	9.44	33.6	8.9	121.4	0.0	163.9
2- 6	2.61	3.1	0.6	31.3	0.0	35.0
2- 7	0.42	0.6	0.6	5.1	0.0	6.3
2- 8	0.55	1.2	0.0	7.9	0.0	9.1
3- 2 Remains	0.15	9.9	0.0	6.4	0.0	16.3
3- 2 Sub Total (Qda. del Intierno)	3.73	14.8	1.2	50.7	0.0	66.7
3- 1, 3- 2 Sub Total	13.17	48.4	10.1	172.1	0.0	230.6
2- 9	3.47	8.4	1.9	33.9	0.0	44.2
2-10	1.72	6.8	0.1	16.3	0.0	23.2
4- 1 -1 Remains	4.03	3.8	0.4	103.6	5.0	112.8
4- 1 -1 Remains Sub Total	9.22	19.0	2.4	153.8	5.0	180.2
4- 1- 1 Sub Total	22.39	67.4	12.5	325.9	5.0	410.8
2-11 Remains	1.08	3.9	0.0	16.1	0.0	20.0
2-12 (Qda. del Comercio)	2.24	9.7	0.2	24.6	0.0	34.5
2-13 (Qda. de Agua Prieta)	6.42	10.0	0.3	41.5	0.0	51.8
4- 1- 2 Remains	5.50	3.4	0.0	10.7	181.4	195.5
4- 1- 2 Remains Sub Total	15.24	27.0	0.5	92.9	181.4	301.8
4- 1 Total (Rio Santa Ana , Rio El Sauce)	37.63	94.4	13.0	418.8	186.4	712.6

Note/Nota : Refer to the note of table for the Rio Choloma  
Referirse a la nota de la tabla para el Rio Choloma



TABLE D.3.3(4) DESIGN SEDIMENT YIELD / PRODUCCION DE SEDIMENTOS DE DISEÑO

Rio Piedras , Rio El Sauce (1/1)

Stream Order & Drainage Number , Stream Name C.P. Orden de La Corriente Nombre de y Numero de Cuenca La Corriente		D.A	V1	V2	V3	V4	V10
5 4 3 2 (Stream Order)		m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>
	2- 1	1.86	6.5	0.0	12.7	0.0	19.2
	2- 2	0.86	1.4	0.1	5.7	0.0	7.2
	2- 3	0.75	2.5	0.0	5.3	0.0	7.8
	2- 4	0.71	0.8	0.0	6.2	0.0	7.0
	2- 5	2.14	4.8	0.4	16.6	0.0	21.8
	2- 6	0.81	4.0	0.0	7.3	0.0	11.3
	3- 1- 1 Remains	3.16	8.4	0.6	62.4	0.0	71.4
	3- 1- 1 Sub Total	10.28	28.4	1.1	116.2	0.0	145.7
	2- 7	1.39	4.8	0.0	21.9	0.0	26.7
	2- 8	0.94	1.2	0.3	11.7	0.0	13.2
	3- 1- 2 Remains	7.48	16.6	0.2	117.0	84.6	218.4
	3- 1- 2 Sub Total	9.81	22.6	0.5	150.6	84.6	258.3
①	3- 1- 1, 3- 1- 2 Sub Total	20.09	51.0	1.6	266.8	84.6	404.0
	2- 9	1.57	6.0	0.1	21.6	0.0	27.7
	3- 1- 3 Remains	0.86	0.0	0.0	0.0	43.6	43.6
	3- 1- 3 Sub Total	2.43	6.0	0.1	21.6	43.6	71.3
②	3- 1 Sub Total (Rio Piedras)	22.52	57.0	1.7	288.4	128.2	475.3
	2-10	0.57	2.5	0.0	6.0	0.0	8.5
	2-11	0.82	3.0	0.1	5.7	0.0	8.8
	3- 2 Remains	4.09	9.9	0.0	27.3	0.0	37.2
③	3- 2 Sub Total (Qda. Santa Ana)	5.48	15.4	0.1	39.0	0.0	54.5
	4- 1 Remains	2.87	0.0	0.0	0.0	48.0	48.0
	4- 1 Remains Sub Total	2.87	0.0	0.0	0.0	48.0	48.0
Δ	4- 1 Total (Rio Piedras , Rio El Sauce)	30.87	72.4	1.8	327.4	176.2	577.8

Note/Nota : Refer to the note of table for the Rio Choloma  
Referirse a la nota de la tabla para el Rio Choloma

TABLE D.3.4(1) NATURALLY CONTROLLED SEDIMENT DISCHARGE / DESCARGA DE SEDIMENTO CONTROLADA NATURALMENTE

Rio Choloma (1/2)

C.P	Stream Order & Drainage Number Orden de La Corriente y Numero de Cuenca	Stream Name Numero de La Corriente	D.A km	le m	b m	R.A m <sup>2</sup>	d m	V20 x10 <sup>3</sup> m <sup>3</sup>
	2-1		2.03	0	0	0	0.0	0.0
	2-2		0.55	0	0	0	0.0	0.0
	2-3		0.47	0	0	0	0.0	0.0
	2-4		0.21	0	0	0	0.0	0.0
	3-1 Remains		0.49	1250	30	37500	1.0	37.5
	2-5		1.65	0	0	0	0.0	0.0
	2-6		0.75	0	0	0	0.0	0.0
	2-7		1.30	0	0	0	0.0	0.0
	3-2 Remains		0.57	1000	30	30000	1.0	30.0
	2-8		0.83	0	0	0	0.0	0.0
	2-9		0.34	0	0	0	0.0	0.0
	2-10		0.79	0	0	0	0.0	0.0
	4-1 Remains		2.93	3450	100	345000	1.5	517.5
	2-11		0.53	250	20	5000	1.0	5.0
	2-12		0.75	600	20	12000	1.0	12.0
	2-13		1.38	0	0	0	0.0	0.0
	3-3 Remains		1.19	1660	50	83000	1.5	124.5
	2-14		0.91	0	0	0	0.0	0.0
	2-15		0.65	0	0	0	0.0	0.0
	3-4 Remains		0.21	0	0	0	0.0	0.0
	2-17		0.78	0	0	0	0.0	0.0
	2-18		1.53	0	0	0	0.0	0.0
	2-19		1.70	0	0	0	0.0	0.0
	3-5 Remains		1.22	600	50	30000	1.0	30.0
	2-16		1.03	0	0	0	0.0	0.0
	4-2 Remains		1.63	1300	100	130000	1.5	195.0
	2-21		1.23	0	0	0	0.0	0.0
	2-22		0.19	0	0	0	0.0	0.0
	3-6 Remains		0.37	350	30	10500	1.0	10.5
	2-23		1.50	0	0	0	0.0	0.0
	2-24		0.23	0	0	0	0.0	0.0
	3-7 Remains		1.36	2350	100	235000	1.5	352.5
	2-20		0.43	0	0	0	0.0	0.0
	5-1-1 Remains		2.90	3070	300	921000	1.5	1381.5
①	5-1-1 Sub Total (Rio Majaime)		34.63	-	-	-	-	2696.0

TABLE D.3.4(1) NATURALLY CONTROLLED SEDIMENT DISCHARGE / DESCARGA DE SEDIMENTO CONTROLADA NATURALMENTE

Rio Choloma (2/2)

(Continued)

C.P	Stream Order & Drainage Number Orden de La Corriente y Numero de Cuenca	Stream Name Numero de La Corriente	D.A km	le m	b m	R.A m <sup>2</sup>	d m	V20 x10 <sup>3</sup> m <sup>3</sup>
	2-25		1.58	0	0	0	0.0	0.0
	2-26		0.58	400	20	8000	1.0	8.0
	2-27		0.65	0	0	0	0.0	0.0
	2-28		1.14	0	0	0	0.0	0.0
	2-29		1.56	0	0	0	0.0	0.0
	3-8-1 Remains		0.88	1280	30	38400	1.0	38.4
	2-30		2.40	1500	30	45000	1.0	45.0
	3-8-2 Remains		3.44	2600	100	260000	1.0	260.0
	2-31		0.99	0	0	0	0.0	0.0
	2-32		0.51	0	0	0	0.0	0.0
	3-9 Remains		0.50	800	50	40000	1.0	40.0
	2-33		1.25	0	0	0	0.0	0.0
	2-34		0.25	0	0	0	0.0	0.0
	3-10 Remains		1.54	1650	30	49500	1.0	49.5
	2-35		0.93	0	0	0	0.0	0.0
	4-3 Remains		2.19	3130	200	626000	1.5	939.0
②	4-3 Sub Total (Rio La Jutosa)		20.39	-	-	-	-	1379.9
	2-37		1.29	0	0	0	0.0	0.0
	2-38		1.51	0	0	0	0.0	0.0
	3-11 Remains		0.86	1390	180	250200	0.8	200.2
	2-41		0.93	0	0	0	0.0	0.0
	2-42		0.86	0	0	0	0.0	0.0
	2-43		0.51	0	0	0	0.0	0.0
	3-12 Remains		0.98	2560	100	256000	0.8	204.8
	2-36		0.83	740	100	74000	0.8	59.2
	2-39		1.80	1000	100	100000	0.8	80.0
	2-40		0.59	100	100	10000	0.8	8.0
	5-1-2 Remains		6.46	0	0	2495900	0.8	1996.7
	5-1-2 Sub Total		16.62	-	-	-	-	2548.9
△	5-1 Total (Rio Choloma)		71.64	-	-	-	-	6624.8

Note / Nota : Refer to the note of table for the Rio Blanco  
Referirse a la nota de la tabla para el Rio Blanco

TABLE D.3.4(2) NATURALLY CONTROLLED SEDIMENT DISCHARGE / DESCARGA DE SEDIMENTO CONTROLADA NATURALMENTE

Rio Blanco (1/2)

C.P	Stream Order & Drainage Number Orden de La Corriente y Numero de Cuenca	Stream Name Nombre de La Corriente	D.A kd	le m	b m	R.A m <sup>2</sup>	d m	V20 x10 <sup>3</sup> m <sup>3</sup>
	2-1		2.22	0	0	0	0.0	0.0
	2-2		0.77	0	0	0	0.0	0.0
	2-3		1.01	0	0	0	0.0	0.0
	2-4		0.74	0	0	0	0.0	0.0
	3-1-1 Remains		1.00	0	0	0	0.0	0.0
	2-5		1.56	0	0	0	0.0	0.0
	2-6		0.43	0	0	0	0.0	0.0
	3-1-2 Remains		3.33	2360	20	47200	1.0	47.2
	2-7		1.13	0	0	0	0.0	0.0
	2-8		2.18	0	0	0	0.0	0.0
	3-2 Remains		0.46	0	0	0	0.0	0.0
	2-9		0.66	0	0	0	0.0	0.0
	4-1-1 Remains		2.43	2300	90	207000	1.5	310.5
①	4-1-1 Sub Total (Rio del Zapotal)		17.92	-	-	-	-	357.7
	4-1-2 Remains		2.01	0	0	1491000	0.8	1192.8
	4-1 Sub Total (Rio Del Zapotal)		19.93	-	-	-	-	1550.5
	2-10		2.21	0	0	0	0.0	0.0
	2-11		1.13	0	0	0	0.0	0.0
	2-12		1.90	500	10	5000	1.0	5.0
	3-3-1 Remains		3.78	3200	30	96000	2.0	192.0
②	3-3-1 Sub Total (Rio de Armenta)		9.02	-	-	-	-	197.0
	3-3-2 Remains		0.29	0	0	418200	0.8	334.6
	2-13		2.43	0	0	167800	0.8	134.2
	2-14		0.62	0	0	66200	0.8	53.0
	2-15		1.05	0	0	87000	0.8	69.6
	3-4 Remains		0.10	0	0	114700	0.8	91.8
	4-2 Remains		0.37	0	0	264900	0.8	211.9
	4-2 Sub Total (Rio de Armenta)		13.88	-	-	-	-	1092.1
	2-16		0.72	0	0	0	0.0	0.0
	2-17		0.76	0	0	0	0.0	0.0
	2-18		1.03	300	10	3000	1.0	3.0
	2-19		1.08	0	0	0	0.0	0.0
	3-5 Remains		1.65	1800	200	360000	1.0	360.0
	2-20		0.35	0	0	0	0.0	0.0

TABLE D.3.4(2) NATURALLY CONTROLLED SEDIMENT DISCHARGE / DESCARGA DE SEDIMENTO CONTROLADA NATURALMENTE

(Continued)

Rio Blanco (2/2)

C.P	Stream Order & Drainage Number Orden de La Corriente y Numero de Cuenca	Stream Name Nombre de La Corriente	D.A kd	le m	b m	R.A m <sup>2</sup>	d m	V20 x10 <sup>3</sup> m <sup>3</sup>
	2-21		0.84	0	0	0	0.0	0.0
	3-6 Remains		1.04	370	230	223100	1.0	223.1
③	3-5,3-6 Sub Total (Rio Chiquito)		7.47	-	-	-	-	586.1
	4-3 Remains		2.50	0	0	645900	0.8	516.7
	4-3 Sub Total (Rio Chiquito)		9.97	-	-	-	-	1102.8
	5-1 Remains		0.12	0	0	139000	0.8	111.2
△	5-1 Total (Rio Blanco)		43.90	-	-	-	-	3856.6

Note/Nota :

C.P, △ : Design control point / Punto de control de diseño

Remains : Remains of drainage area / Restos en area de cuenca

① : Sub-control point & number / Punto de sub-control y numero

D.A : Drainage area / Area de cuenca

le : Storage section length along the river course

/ Longitud de la seccion de almacenaje a lo largo del curso del rio

b : Storage section width / Anchura de la seccion de almacenaje

R.A : Storage area / Area de almacenaje (=le x b)

d : Deposit thickness / Espesor del depositos

V20 : Naturally controlled sediment discharge along the river course

/ Descarga de sedimento controlada naturalmente a lo largo de los cursos del rio

TABLE D.3.4(3) NATURALLY CONTROLLED SEDIMENT DISCHARGE / DESCARGA DE SEDIMENTO CONTROLADA NATURALMENTE  
Rio Santa Ana , Rio El Sauce(1/1)

Stream Order & Drainage Number , C.P Orden de La Corriente y Numero de Cuenca	Stream Name Nombre de La Corriente	D.A km	le m	b m	R.A m <sup>2</sup>	d m	V20 x10 <sup>3</sup> m <sup>3</sup>
2- 1		3.11	0	0	0	0.0	0.0
2- 2		1.28	0	0	0	0.0	0.0
2- 3		0.52	0	0	0	0.0	0.0
2- 4		1.20	0	0	0	0.0	0.0
2- 5		2.43	0	0	0	0.0	0.0
3- 1 Remains		0.90	0	0	0	0.0	0.0
2- 6		2.61	0	0	0	0.0	0.0
2- 7		0.42	0	0	0	0.0	0.0
2- 8		0.55	0	0	0	0.0	0.0
3- 2 Remains		0.15	0	0	0	0.0	0.0
2- 9		3.47	0	0	0	0.0	0.0
2-10		1.72	0	0	0	0.0	0.0
4- 1 -1 Remains		4.03	1000	20	20000	1.0	20.0
① 4- 1 -1 Sub Total (Rio Santa Ana)		22.39	-	-	-	-	20.0
2-11		1.08	200	20	4000	1.0	4.0
2-12		2.24	1000	20	20000	1.0	20.0
2-13		6.42	2650	20	53000	1.0	53.0
4- 1- 2 Remains		5.50	4030	52	209560	1.0	209.6
Sub Total (Remains)		15.24	-	-	-	-	286.6
△ 4- 1 Total (Rio Santa Ana , Rio El Sauce)		37.63	-	-	-	-	306.6

Note/Nota : Refer to the note of table for the Rio Blanco  
Refrirse a la nota de la tabla para el Rio Blanco

TABLE D.3.4(4) NATURALLY CONTROLLED SEDIMENT DISCHARGE / DESCARGA DE SEDIMENTO CONTROLADA NATURALMENTE  
Rio Piedras , Rio El Sauce(1/1)

Stream Order & Drainage Number , C.P Orden de La Corriente y Numero de Cuenca	Stream Name Nombre de La Corriente	D.A km	le m	b m	R.A m <sup>2</sup>	d m	V20 x10 <sup>3</sup> m <sup>3</sup>
2- 1		1.85	0	0	0	0.0	0.0
2- 2		0.86	0	0	0	0.0	0.0
2- 3		0.75	0	0	0	0.0	0.0
2- 4		0.71	0	0	0	0.0	0.0
2- 5		2.14	0	0	0	0.0	0.0
2- 6		0.81	0	0	0	0.0	0.0
3- 1- 1 Remains		3.16	0	0	0	0.0	0.0
2- 7		1.39	0	0	0	0.0	0.0
2- 8		0.94	0	0	0	0.0	0.0
3- 1- 2 Remains		7.48	2000	20	40000	1.0	40.0
① 3- 1- 1, 3- 1- 2 Sub total (Rio Piedras)		20.09	-	-	-	-	40.0
2- 9		1.57	0	0	0	0.0	0.0
3- 1- 3 Remains		0.86	2180	40	87200	1.0	87.2
② 3- 1 Sub total (Rio Piedras)		22.52	-	-	-	-	127.2
2-10		0.57	0	0	0	0.0	0.0
2-11		0.82	0	0	0	0.0	0.0
3- 2 Remains		4.09	1200	20	24000	1.0	24.0
③ 3- 2 Sub Total (Qda. Santa Ana)		5.48	-	-	-	-	24.0
4- 1 Remains		2.87	2400	40	96000	1.0	96.0
Sub Total (Remains)		2.87	-	-	-	-	96.0
△ 4- 1 Total (Rio Santa Ana , Rio El Sauce)		30.87	-	-	-	-	247.2

Note/Nota : Refer to the note of table for the Rio Blanco  
Refrirse a la nota de la tabla para el Rio Blanco

TABLE D.3.5(1) DESIGN BASIC SEDIMENT VOLUME / VOLUMEN DE SEDIMENTOS BASICO DE DISEÑO

Rio Choloma (1/3)

Stream Order & Drainage Number , Stream Name C.P Orden de La Corriente Nombre de y Numero de Cuenca La Corriente		D.A	V10	V20	V30	ALP	V40	V50
5 4 3 2 (Stream Order)		km	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>
2- 1		2.03	221.1	0.0	221.1	0.00	-	221.1
2- 2		0.55	56.8	0.0	56.8	0.00	-	56.8
2- 3		0.47	48.5	0.0	48.5	0.00	-	48.5
2- 4		0.21	21.9	0.0	21.9	0.00	-	21.9
3- 1 Remains		0.49	56.6	37.5	19.1	0.09	-	19.1
3- 1 Sub Total (Qda. del Tamarindo)		3.75	404.9	37.5	367.4	-	-	367.4
2- 5		1.65	177.9	0.0	177.9	0.00	-	177.9
2- 6		0.75	79.6	0.0	79.6	0.00	-	79.6
2- 7		1.30	140.8	0.0	140.8	0.00	-	140.8
3- 2 Remains		0.57	64.4	30.0	34.4	0.06	-	34.4
3- 2 Sub Total (Qda. de Agua Blanco)		4.27	462.7	30.0	432.7	-	-	432.7
3- 1, 3- 2 Sub Total		8.02	867.6	67.5	800.1	-	-	800.1
2- 8		0.83	90.2	0.0	90.2	0.00	-	90.2
2- 9		0.34	37.2	0.0	37.2	0.00	-	37.2
2-10		0.79	81.8	0.0	81.8	0.00	-	81.8
4- 1 Remains		2.93	371.4	517.5	-146.1	0.37	-	-146.1
4- 1 Remains Sub Total		4.89	580.6	517.5	63.1	-	-	63.1
4- 1 Sub Total		12.91	1448.2	585.0	863.2	-	-	863.2
2-11		0.53	55.9	5.0	50.9	0.09	-	50.9
2-12		0.75	79.2	12.0	67.2	0.15	-	67.2
2-13		1.33	150.1	0.0	150.1	0.00	-	150.1
3- 3 Remains		1.19	163.0	124.5	38.5	0.11	-	38.5
3- 3 Sub Total ((Rio del Ocotillo)		3.85	448.2	141.5	306.7	-	-	306.7
2-14		0.91	98.3	0.0	98.3	0.00	-	98.3
2-15		0.65	71.7	0.0	71.7	0.00	-	71.7
3- 4 Remains		0.21	23.9	0.0	23.9	0.00	-	23.9
3- 4 Sub Total		1.77	193.9	0.0	193.9	-	-	193.9
3- 3, 3- 4 Sub Total		5.62	642.1	141.5	500.6	-	-	500.6
2-17		0.78	85.4	0.0	85.4	0.00	-	85.4
2-18		1.53	161.2	0.0	161.2	0.00	-	161.2
2-19		1.70	183.9	0.0	183.9	0.00	-	183.9
3- 5 Remains		1.22	147.3	30.0	117.3	0.05	-	117.3
3- 5 Sub Total (Qda. del Ocotillo)		5.23	577.8	30.0	547.8	-	-	547.8
2-16		1.03	113.2	0.0	113.2	0.00	-	113.2
4- 2 Remains		1.63	211.3	195.0	16.3	0.14	-	16.3

TABLE D.3.5(1) DESIGN BASIC SEDIMENT VOLUME / VOLUMEN DE SEDIMENTOS BASICO DE DISEÑO

Rio Choloma (2/3)

(Continued)

Stream Order & Drainage Number , Stream Name C.P Orden de La Corriente Nombre de y Numero de Cuenca La Corriente		D.A	V10	V20	V30	ALP	V40	V50
5 4 3 2 (Stream Order)		km	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>
4- 2 Remains Sub Total		2.66	324.5	195.0	129.5	-	-	129.5
4- 2 Sub Total (Rio del Ocotillo)		13.51	1544.4	366.5	1177.9	-	-	1177.9
4- 1, 4- 2 Sub Total		26.42	2992.6	951.5	2041.1	-	-	2041.1
2-21		1.23	137.1	0.0	137.1	0.00	-	137.1
2-22		0.19	20.8	0.0	20.8	0.00	-	20.8
3- 6 Remains		0.37	46.1	10.5	35.6	0.05	-	35.6
3- 6 Sub Total (Qda. Tino Gacho)		1.79	204.0	10.5	193.5	-	-	193.5
2-23		1.50	153.2	0.0	153.2	0.00	-	153.2
2-24		0.23	25.0	0.0	25.0	0.00	-	25.0
3- 7 Remains		1.36	175.8	352.5	-176.7	1.00	-	-176.7
3- 7 Sub Total		3.09	354.0	352.5	1.5	-	-	1.5
2-20		0.43	48.3	0.0	48.3	0.00	-	48.3
5- 1- 1 Remains		2.90	389.6	1381.5	-991.9	0.52	-	-991.9
5- 1- 1 Remains Sub Total		3.33	437.9	1381.5	-943.6	-	-	-943.6
5- 1- 1 Sub Total (Rio Majaine)		34.63	3988.5	2696.0	1292.5	-	-	1292.5
2-25		1.58	171.2	0.0	171.2	0.00	-	171.2
2-26		0.58	60.4	8.0	52.4	0.13	-	52.4
2-27		0.65	68.8	0.0	68.8	0.00	-	68.8
2-28		1.14	120.2	0.0	120.2	0.00	-	120.2
2-29		1.56	164.5	0.0	164.5	0.00	-	164.5
3- 8- 1 Remains		0.88	103.4	38.4	65.0	0.06	-	65.0
3- 8- 1 Sub Total		6.39	688.5	46.4	642.1	-	-	642.1
2-30		2.40	262.7	45.0	217.7	0.17	-	217.7
3- 8- 2 Remains		3.44	459.5	260.0	199.5	0.20	-	199.5
3- 8- 2 Sub Total		5.84	722.2	305.0	417.2	-	-	417.2
3- 8 Sub Total		12.23	1410.7	351.4	1059.3	-	-	1059.3
2-31		0.99	103.3	0.0	103.3	0.00	-	103.3
2-32		0.51	53.4	0.0	53.4	0.00	-	53.4
3- 9 Remains		0.50	48.8	40.0	8.8	0.19	-	8.8
3- 9 Sub Total		2.00	205.5	40.0	165.5	-	-	165.5
3- 8, 3- 9 Sub Total		14.2	1616.2	391.4	1224.8	-	-	1224.8
2-33		1.25	130.9	0.0	130.9	0.00	-	130.9
2-34		0.25	26.9	0.0	26.9	0.00	-	26.9
3-10 Remains		1.54	168.5	49.5	119.0	0.15	-	119.0
3-10 Sub Total (Qda. del Cabro)		3.04	326.3	49.5	276.8	-	-	276.8

TABLE D.3.5(1) DESIGN BASIC SEDIMENT VOLUME / VOLUMEN DE SEDIMENTOS BASICO DE DISEÑO

(Continued)

Rio Choloma (3/3)

C.P	Stream Order & Drainage Number Orden de La Corriente y Numero de Cuenca	Stream Name Nombre de La Corriente	D.A	V10	V20	V30	ALP	V40	V50
5 4 3 2	(Stream Order)		km <sup>2</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>
	2-35		0.93	86.9	0.0	86.9	0.00	-	86.9
	4-3 Remains		2.19	312.6	939.0	-626.4	0.49	-	-626.4
	4-3 Remains Sub Total		3.12	399.5	939.0	-539.5	-	-	-539.5
	4-3 Sub Total (Rio la Jutosa)		20.39	2342.0	1379.9	962.1	-	-	962.1
	4-3,5-1-1 Sub Total		55.02	6330.5	4075.9	2254.6	-	-	2254.6
	2-37		1.29	145.1	0.0	145.1	0.00	-	145.1
	2-38		1.51	163.5	0.0	163.5	0.00	-	163.5
	3-11 Remains		0.86	85.3	200.2	-114.9	0.51	-	-114.9
	3-11 Sub Total (Qda. Gueno)		3.66	393.9	200.2	193.7	-	-	193.7
	2-41		0.93	98.8	0.0	98.8	0.00	-	98.8
	2-42		0.86	78.6	0.0	78.6	0.00	-	78.6
	2-43		0.51	41.0	0.0	41.0	0.00	-	41.0
	3-12 Remains		0.98	46.7	204.8	-158.1	0.77	-	-158.1
	3-12 Sub Total		3.28	265.1	204.8	60.3	-	-	60.3
	2-36		0.83	59.8	59.2	0.6	0.99	-	0.6
	2-39		1.80	153.3	80.0	73.3	0.52	-	73.3
	2-40		0.59	50.4	8.0	42.4	0.16	-	42.4
	5-1-2 Remains		6.46	800.1	1996.7	-1196.6	0.58	142.8	-1339.4
	5-1-2 Remains Sub Total		9.68	1063.6	2143.9	-1080.3	-	142.8	-1223.1
	5-1-2 Sub Total		16.62	1722.6	2548.9	-	-	-	-
△	5-1 Total (Rio Choloma)		71.64	8053.1	6624.8	1428.3	-	142.8	1285.5

Note/Nota :

C.P, △ : Design control point / Punto de control de diseño

Remains : Remains of drainage area / Restos en area de cuenca

① : Sub-control point & number / Punto de sub-control y numero

D.A : Drainage area / Area de cuenca

V10 : Design sediment yield / Produccion de sedimentos de diseño

V20 : Naturally controlled sediment discharge along the river course / Descarga de sedimento controlada naturalmente a lo largo de los cursos del rio

V30 : Design sediment discharge / Descarga de sedimentos de diseño

V40 : Design allowable sediment discharge / Descarga de sedimentos permisible de diseño

V50 : Design excess sediment discharge / Descarga de sedimentos exceso de diseño

ALP : Proportion of V20 at calculation point to the total volume of V10 at the calculation point and V30 at the upper reaches of calculation point

/ Proportion de V20 el punto de calculo por total de V10 en el punto de calculo y V30 en los tramos arriba de el punto de calculo

(ALP<sub>n</sub> : V20<sub>n</sub> / (V10<sub>n</sub> + Σ V30<sub>n</sub>), n : Calculation point / Punto de calculo)

TABLE D.3.5(2) DESIGN BASIC SEDIMENT VOLUME / VOLUMEN DE SEDIMENTOS BASICO DE DISEÑO

Rio Blanco (1/2)

C.P	Stream Order & Drainage Number Orden de La Corriente y Numero de Cuenca	Stream Name Nombre de La Corriente	D.A	V10	V20	V30	ALP	V40	V50
5 4 3 2	(Stream Order)		km <sup>2</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>
	2-1		2.22	231.9	0.0	231.9	0.00	-	231.9
	2-2		0.77	80.5	0.0	80.5	0.00	-	80.5
	2-3		1.01	108.2	0.0	108.2	0.00	-	108.2
	2-4		0.74	75.9	0.0	75.9	0.00	-	75.9
	3-1-1 Remains		1.00	106.0	0.0	106.0	0.00	-	106.0
	3-1-1 Remains Sub Total		5.74	602.5	0.0	602.5	-	-	602.5
	2-5		1.56	162.8	0.0	162.8	0.00	-	162.8
	2-6		0.43	43.9	0.0	43.9	0.00	-	43.9
	3-1-2 Remains		3.33	353.2	47.2	306.0	0.08	-	306.0
	3-1-2 Remains Sub Total		5.32	559.9	47.2	512.7	-	-	512.7
	3-1 Sub Total (Rio del Chorreron)		11.06	1162.4	47.2	1115.2	-	-	1115.2
	2-7		1.13	120.0	0.0	120.0	0.00	-	120.0
	2-8		2.18	236.1	0.0	236.1	0.00	-	236.1
	3-2 Remains		0.46	52.6	0.0	52.6	0.00	-	52.6
	3-2 Sub Total (Qda. la Coronilla)		3.77	408.7	0.0	408.7	-	-	408.7
	3-1,3-2 Sub Total		14.83	1571.1	47.2	1523.9	-	-	1523.9
	2-9		0.66	70.2	0.0	70.2	0.00	-	70.2
	4-1-1 Remains		2.43	389.8	310.5	79.3	0.16	-	79.3
	4-1-1 Remains Sub Total		3.09	460.0	310.5	149.5	-	-	149.5
	4-1-1 Sub Total		17.92	2031.1	357.7	1673.4	-	-	1673.4
	4-1-2 Remains		2.01	136.1	1192.8	-1056.7	0.66	-	-1056.7
	4-1-2 Remains Sub Total		2.01	136.1	1,192.8	-1,056.7	-	-	-1,056.7
	4-1 Sub Total (Rio del Zapotal)		19.93	2167.2	1550.5	616.7	-	-	616.7
	2-10		2.21	241.4	0.0	241.4	0.00	-	241.4
	2-11		1.13	122.2	0.0	122.2	0.00	-	122.2
	2-12		1.90	196.5	5.0	191.5	0.03	-	191.5
	3-3-1 Remains		3.78	412.5	192.0	220.5	0.20	-	220.5
	3-3-1 Sub Total		9.02	972.6	197.0	775.6	-	-	775.6
	3-3-2 Remains		0.29	24.0	334.6	-310.6	0.42	-	-310.6
	3-3-2 Remains Sub Total		0.29	24.0	334.6	-310.6	-	-	-310.6
	3-3 Sub Total		9.31	996.6	531.6	465.0	-	-	465.0
	2-13		2.43	226.0	134.2	91.8	0.59	-	91.8
	2-14		0.62	53.0	53.0	0.0	1.00	-	0.0
	2-15		1.05	69.6	69.6	0.0	1.00	-	0.0
	3-4 Remains		0.10	0.0	91.8	-91.8	1.00	-	-91.8

TABLE D.3.5(2) DESIGN BASIC SEDIMENT VOLUME / VOLUMEN DE SEDIMENTOS BASICO DE DISEÑO

(Continued)

Rio Blanco (2/2)

Stream Order & Drainage Number , Stream Name C.P Orden de La Corriente y Numero de Cuenca La Corriente		D.A	V10	V20	V30	ALP	V40	V50
5 4 3 2 (Stream Order)		km	x10 <sup>3</sup> m	x10 <sup>3</sup> m	x10 <sup>3</sup> m	x10 <sup>3</sup> m	x10 <sup>3</sup> m	x10 <sup>3</sup> m
	3- 4 Sub Total (Qda. de Penas)	4.20	348.6	348.6	0.0	-	-	0.0
	3- 3,3- 4 Sub Total	13.51	1345.2	880.2	465.0	-	-	465.0
	4- 2 Remains	0.37	14.0	211.9	-197.9	0.44	-	-197.9
	4- 2 Remains Sub Total	0.37	14.0	211.9	-197.9	-	-	-197.9
	4- 2 Sub Total (Rio de Armenta)	13.88	1359.2	1092.1	267.1	-	-	267.1
	4- 1,4- 2 Sub Total	33.81	3526.4	2642.6	883.8	-	-	883.8
	2-16	0.72	78.4	0.0	78.4	0.00	-	78.4
	2-17	0.76	79.6	0.0	79.6	0.00	-	79.6
	2-18	1.03	111.4	3.0	108.4	0.03	-	108.4
	2-19	1.08	107.7	0.0	107.7	0.00	-	107.7
	3- 5 Remains	1.65	212.6	360.0	-147.4	0.61	-	-147.4
	3- 5 Sub Total	5.24	589.7	363.0	226.7	-	-	226.7
	2-20	0.35	40.4	0.0	40.4	0.00	-	40.4
	2-21	0.84	90.2	0.0	90.2	0.00	-	90.2
	3- 6 Remains	1.04	100.1	223.1	-123.0	0.97	-	-123.0
	3- 6 Sub Total	2.23	230.7	223.1	7.6	-	-	7.6
	3- 5,3- 6 Sub Total	7.47	820.4	586.1	234.3	-	-	234.3
	4- 3 Remains	2.50	282.4	516.7	-234.3	1.00	-	-234.3
	4- 3 Remains Sub Total	2.50	282.4	516.7	-234.3	-	-	-234.3
	4- 3 Sub Total (Rio Chiquito)	9.97	1102.8	1102.8	-0.0	-	-	-0.0
	4- 1,4- 2,4- 3 Sub Total	43.78	4629.2	3745.4	883.8	-	-	883.8
	5- 1 Remains	0.12	28.0	111.2	-83.2	0.12	80.1	-163.3
	5- 1 Remains Sub Total	0.12	28.0	111.2	-83.2	-	80.1	-163.3
	5- 1 Total (Rio Blanco)	43.90	4657.2	3856.6	800.6	-	80.1	720.5

Note/Nota : Refer to the note of table for the Rio Choloma  
Referirse a la nota de la tabla para el Rio Choloma

TABLE D.3.5(3) DESIGN BASIC SEDIMENT VOLUME / VOLUMEN DE SEDIMENTOS BASICO DE DISEÑO

Rio Santa Ana , Rio El Sauce (1/1)

Stream Order & Drainage Number , Stream Name C.P Orden de La Corriente y Numero de Cuenca La Corriente		D.A	V10	V20	V30	ALP	V40	V50
5 4 3 2 (Stream Order)		km	x10 <sup>3</sup> m	x10 <sup>3</sup> m	x10 <sup>3</sup> m	x10 <sup>3</sup> m	x10 <sup>3</sup> m	x10 <sup>3</sup> m
	2- 1	3.11	58.7	0.0	58.7	0.00	-	58.7
	2- 2	1.28	27.7	0.0	27.7	0.00	-	27.7
	2- 3	0.52	10.5	0.0	10.5	0.00	-	10.5
	2- 4	1.20	12.5	0.0	12.5	0.00	-	12.5
	2- 5	2.43	27.8	0.0	27.8	0.00	-	27.8
	3- 1 Remains	0.90	26.7	0.0	26.7	0.00	-	26.7
	3- 1 Sub Total (Rio Santa Ana)	9.44	163.9	0.0	163.9	-	-	163.9
	2- 6	2.61	35.0	0.0	35.0	0.00	-	35.0
	2- 7	0.42	6.3	0.0	6.3	0.00	-	6.3
	2- 8	0.55	9.1	0.0	9.1	0.00	-	9.1
	3- 2 Remains	0.15	16.3	0.0	16.3	0.00	-	16.3
	3- 2 Sub Total (Qda. del Intierno)	3.73	66.7	0.0	66.7	-	-	66.7
	3- 1, 3- 2 Sub Total	13.17	230.6	0.0	230.6	-	-	230.6
	2- 9	3.47	44.2	0.0	44.2	0.00	-	44.2
	2-10	1.72	23.2	0.0	23.2	0.00	-	23.2
	4- 1 -1 Remains	4.03	112.8	20.0	92.8	0.05	-	92.8
	4- 1 -1 Remains Sub Total	9.22	180.2	20.0	160.2	-	-	160.2
	4- 1 -1 Sub Total	22.39	410.8	20.0	390.8	-	-	390.8
	2-11 Remains	1.08	20.0	4.0	16.0	0.20	-	16.0
	2-12 (Qda. del Comercio)	2.24	34.5	20.0	12.7	0.61	-	12.7
	2-13 (Qda. de Agua Prieta)	6.42	51.8	53.0	0.6	0.99	-	0.6
	4- 1 -2 Remains	5.50	195.5	209.6	-14.1	0.34	40.6	-54.7
	4- 1 -2 Remains Sub Total	15.24	301.8	286.6	15.2	-	40.6	-25.4
	4- 1 Total (Rio Santa Ana , Rio El Sauce)	37.63	712.6	306.6	406.0	-	40.6	365.4

Note/Nota : Refer to the note of table for the Rio Choloma  
Referirse a la nota de la tabla para el Rio Choloma

TABLE D.3.5(4) DESIGN BASIC SEDIMENT VOLUME / VOLUMEN DE SEDIMENTOS BASICO DE DISEÑO

Rio Piedras, Rio El Sauce (1/1)

Stream Order & Drainage Number , Stream Name C.P Orden de La Corriente Nombre de y Numero de Cuenca La Corriente		D.A	V10	V20	V30	ALP	V40	V50
5 4 3 2 (Stream Order)		m <sup>2</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>
①	2-1	1.85	19.2	0.0	19.2	0.00	-	19.2
	2-2	0.86	7.2	0.0	7.2	0.00	-	7.2
	2-3	0.75	7.8	0.0	7.8	0.00	-	7.8
	2-4	0.71	7.0	0.0	7.0	0.00	-	7.0
	2-5	2.14	21.8	0.0	21.8	0.00	-	21.8
	2-6	0.81	11.3	0.0	11.3	0.00	-	11.3
	3-1-1 Remains	3.16	71.4	0.0	71.4	0.00	-	71.4
	3-1-1 Sub Total	10.28	145.7	0.0	145.7	-	-	145.7
	2-7	1.39	26.7	0.0	26.7	0.00	-	26.7
	2-8	0.94	13.2	0.0	13.2	0.00	-	13.2
	3-1-2 Remains	7.48	218.4	40.0	178.4	0.10	-	178.4
	3-1-2 Sub Total	9.81	258.3	40.0	218.3	-	-	218.3
3-1-1,3-1-2 Sub Total	20.09	404.0	40.0	364.0	-	-	364.0	
②	2-9	1.57	27.7	0.0	27.7	0.00	-	27.7
	3-1-3 Remains	0.86	43.6	87.2	-43.6	0.20	-	-43.6
	3-1-3 Sub Total	2.43	71.3	87.2	-15.9	-	-	-15.9
3-1 Sub Total (Rio Piedras)	22.52	475.3	127.2	348.1	-	-	348.1	
③	2-10	0.57	8.5	0.0	8.5	0.00	-	8.5
	2-11	0.82	8.8	0.0	8.8	0.00	-	8.8
	3-2 Remains	4.09	37.2	24.0	13.2	0.06	-	13.2
	3-2 Sub Total (Qda. Santa Ana)	5.48	54.5	24.0	30.5	-	-	30.5
△	4-1 Remains	2.87	48.0	96.0	-48.0	0.23	33.1	-81.1
	4-1 Remains Sub Total	2.87	48.0	96.0	-48.0	-	33.1	-81.1
4-1 Total (Rio Piedras, Rio El Sauce)		30.87	577.8	247.2	330.6	-	33.1	297.5

Note/Nota : Refer to the note of table for the Rio Choloma  
Referirse a la nota de la tabla para el Rio Choloma



TABLE D.3.6(1) PROPOSED SEDIMENT BALANCE / BALANCE DE SEDIMENTOS PROPUESTO

Rio Choloma (1/3)

Stream Order & Drainage Number C.P. Orden de La Corriente y Numero de Cuenca	Stream Name Nombre de La Corriente	D.A	V10	V20	V30	V40	V50	E1	E2	E1+E2	P1	P2
5 4 3 2 (Stream Order)		km	x10 <sup>3</sup> m	x10 <sup>3</sup> m	x10 <sup>3</sup> m	x10 <sup>3</sup> m	x10 <sup>3</sup> m	x10 <sup>3</sup> m	x10 <sup>3</sup> m	x10 <sup>3</sup> m	%	%
2-1		2.03	221.1	0.0	221.1	-	221.1	0.0	0.0	0.0		-1
2-2		0.55	56.8	0.0	56.8	-	56.8	0.0	0.0	0.0		-1
2-3		0.47	48.5	0.0	48.5	-	48.5	0.0	0.0	0.0		-1
2-4		0.21	21.9	0.0	21.9	-	21.9	0.0	0.0	0.0		-1
3-1 Remains		0.49	56.6	37.5	19.1	-	19.1	0.0	0.0	0.0		-1
3-1 Sub Total (Qda. del Tamarindo)		3.75	404.9	37.5	367.4	-	367.4	0.0	0.0	0.0	0	0
2-5		1.65	177.9	0.0	177.9	-	177.9	0.0	0.0	0.0		-1
2-6		0.75	79.6	0.0	79.6	-	79.6	0.0	0.0	0.0		-1
2-7		1.30	140.8	0.0	140.8	-	140.8	0.0	0.0	0.0		-1
3-2 Remains		0.57	64.4	30.0	34.4	-	34.4	0.0	0.0	0.0		-1
3-2 Sub Total (Qda. de Agua Blanco)		4.27	462.7	30.0	432.7	-	432.7	0.0	0.0	0.0	0	0
3-1,3-2 Sub Total		8.02	867.6	67.5	800.1	-	800.1	0.0	0.0	0.0	0	0
2-8		0.83	90.2	0.0	90.2	-	90.2	0.0	0.0	0.0		-1
2-9		0.34	37.2	0.0	37.2	-	37.2	0.0	0.0	0.0		-1
2-10		0.79	81.8	0.0	81.8	-	81.8	0.0	0.0	0.0		-1
4-1 Remains		2.93	371.4	517.5	-146.1	-	-146.1	0.0	178.8	178.8		-1
4-1 Remains Sub Total		4.89	580.6	517.5	63.1	-	63.1	0.0	178.8	178.8	0	-1
4-1 Sub Total		12.91	1448.2	585.0	863.2	-	863.2	0.0	178.8	178.8	0	21
2-11		0.53	55.9	5.6	50.9	-	50.9	0.0	0.0	0.0		-1
2-12		0.75	79.2	12.0	67.2	-	67.2	0.0	0.0	0.0		-1
2-13		1.38	150.1	0.0	150.1	-	150.1	0.0	0.0	0.0		-1
3-3 Remains		1.19	163.0	124.5	38.5	-	38.5	0.0	0.0	0.0		-1
3-3 Sub Total ((Rio del Ocotillo))		3.85	448.2	141.5	306.7	-	306.7	0.0	0.0	0.0	0	0
2-14		0.91	98.3	0.0	98.3	-	98.3	0.0	0.0	0.0		-1
2-15		0.65	71.7	0.0	71.7	-	71.7	0.0	0.0	0.0		-1
3-4 Remains		0.21	23.9	0.0	23.9	-	23.9	0.0	0.0	0.0		-1
3-4 Sub Total		1.77	193.9	0.0	193.9	-	193.9	0.0	0.0	0.0	0	0
3-3,3-4 Sub Total		5.62	642.1	141.5	500.6	-	500.6	0.0	0.0	0.0	0	0
2-17		0.78	85.4	0.0	85.4	-	85.4	0.0	0.0	0.0		-1
2-18		1.53	161.2	0.0	161.2	-	161.2	0.0	0.0	0.0		-1
2-19		1.70	183.9	0.0	183.9	-	183.9	0.0	0.0	0.0		-1
3-5 Remains		1.22	147.3	30.0	117.3	-	117.3	0.0	20.4	20.4		-1
3-5 Sub Total (Qda. del Ocotillo)		5.23	577.8	30.0	547.8	-	547.8	0.0	20.4	20.4	0	4
2-16		1.03	113.2	0.0	113.2	-	113.2	0.0	0.0	0.0		-1
4-2 Remains		1.63	211.3	195.0	16.3	-	16.3	0.0	72.6	72.6		-1

TABLE D.3.6(1) PROPOSED SEDIMENT BALANCE / BALANCE DE SEDIMENTOS PROPUESTO

Rio Choloma (2/3)

Stream Order & Drainage Number C.P. Orden de La Corriente y Numero de Cuenca	Stream Name Nombre de La Corriente	D.A	V10	V20	V30	V40	V50	E1	E2	E1+E2	P1	P2
5 4 3 2 (Stream Order)		km	x10 <sup>3</sup> m	x10 <sup>3</sup> m	x10 <sup>3</sup> m	x10 <sup>3</sup> m	x10 <sup>3</sup> m	x10 <sup>3</sup> m	x10 <sup>3</sup> m	x10 <sup>3</sup> m	%	%
4-2 Remains Sub Total		2.66	324.5	195.0	129.5	-	129.5	0.0	72.6	72.6		-1
4-2 Sub Total (Rio del Ocotillo)		13.51	1544.4	366.5	1177.9	-	1177.9	0.0	93.0	93.0	0	8
4-1,4-2 Sub Total		26.42	2992.6	951.5	2041.1	-	2041.1	0.0	271.8	271.8	0	13
2-21		1.23	137.1	0.0	137.1	-	137.1	0.0	0.0	0.0		-1
2-22		0.19	20.8	0.0	20.8	-	20.8	0.0	0.0	0.0		-1
3-6 Remains		0.37	46.1	10.5	35.6	-	35.6	0.0	0.0	0.0		-1
3-6 Sub Total (Qda. Tino Gacho)		1.79	204.0	10.5	193.5	-	193.5	0.0	0.0	0.0	0	0
2-23		1.50	153.2	0.0	153.2	-	153.2	0.0	0.0	0.0		-1
2-24		0.23	25.0	0.0	25.0	-	25.0	0.0	0.0	0.0		-1
3-7 Remains		1.36	175.8	352.5	-176.7	-	-176.7	0.0	0.0	0.0		-1
3-7 Sub Total		3.09	354.0	352.5	1.5	-	1.5	0.0	0.0	0.0	0	0
2-20		0.43	48.3	0.0	48.3	-	48.3	0.0	0.0	0.0		-1
5-1-1 Remains		2.90	389.6	1381.5	-991.9	-	-991.9	0.0	76.8	76.8		-1
5-1-1 Remains Sub Total		3.33	437.9	1381.5	-943.6	-	-943.6	0.0	76.8	76.8		-1
5-1-1 Sub Total (Rio Wajaine)		34.63	3988.5	2696.0	1292.5	-	1292.5	0.0	348.6	348.6	0	27
2-25		1.58	171.2	0.0	171.2	-	171.2	0.0	0.0	0.0		-1
2-26		0.58	60.4	8.0	52.4	-	52.4	0.0	0.0	0.0		-1
2-27		0.65	68.8	0.0	68.8	-	68.8	0.0	0.0	0.0		-1
2-28		1.14	120.2	0.0	120.2	-	120.2	0.0	0.0	0.0		-1
2-29		1.56	164.5	0.0	164.5	-	164.5	0.0	0.0	0.0		-1
3-8-1 Remains		0.88	103.4	38.4	65.0	-	65.0	0.0	0.0	0.0		-1
3-8-1 Sub Total		6.39	688.5	46.4	642.1	-	642.1	0.0	0.0	0.0	0	0
2-30		2.40	262.7	45.0	217.7	-	217.7	0.0	15.9	15.9		-1
3-8-2 Remains		3.44	459.5	260.0	199.5	-	199.5	20.9	0.0	20.9		-1
3-8-2 Sub Total		5.84	722.2	305.0	417.2	-	417.2	20.9	15.9	36.8	2	3
3-8 Sub Total		12.23	1410.7	351.4	1059.3	-	1059.3	20.9	15.9	36.8	2	3
2-31		0.99	103.3	0.0	103.3	-	103.3	0.0	0.0	0.0		-1
2-32		0.51	53.4	0.0	53.4	-	53.4	0.0	0.0	0.0		-1
3-9 Remains		0.50	48.8	40.0	8.8	-	8.8	0.0	0.0	0.0		-1
3-9 Sub Total		2.00	205.6	40.0	165.5	-	165.5	0.0	0.0	0.0	0	0
3-8,3-9 Sub Total		14.23	1616.2	391.4	1224.8	-	1224.8	20.9	15.9	36.8	2	3
2-33		1.25	130.9	0.0	130.9	-	130.9	0.0	0.0	0.0		-1
2-34		0.25	26.9	0.0	26.9	-	26.9	0.0	0.0	0.0		-1
3-10 Remains		1.54	168.5	49.5	119.0	-	119.0	0.0	0.0	0.0		-1
3-10 Sub Total (Qda. del Cabro)		3.04	326.3	49.5	276.8	-	276.8	0.0	0.0	0.0	0	0

TABLE D.3.6(1) PROPOSED SEDIMENT BALANCE / BALANCE DE SEDIMENTOS PROPUESTO

Rio Choloma (3/3)

Stream Order & Drainage Number , Stream Name C.P Orden de La Corriente Nombre de y Numero de Cuenca La Corriente		D.A	V10	V20	V30	V40	V50	E1	E2	E1+E2	P1	P2
5 4 3 2 (Stream Order)		km <sup>2</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	%	%
②	2-35	0.93	86.9	0.0	86.9	-	36.9	0.0	0.0	0.0		-1
	4- 3 Remains	2.19	312.6	939.0	-626.4	-	-626.4	0.0	244.9	244.9		-1
	4- 3 Remains Sub Total	3.12	399.5	939.0	-539.5	-	-539.5	0.0	244.9	244.9		-1
	4- 3 Sub Total (Rio la Jutosa)	20.39	2342.0	1379.9	962.1	-	962.1	20.9	260.8	281.7	2	29
	4- 3,5- 1- 1 Sub Total	55.02	6330.5	4075.9	2254.6	-	2254.6	20.9	609.4	630.3	1	28
	2-37	1.29	145.1	0.0	145.1	-	145.1	0.0	0.0	0.0		-1
	2-38	1.51	163.5	0.0	163.5	-	163.5	0.0	0.0	0.0		-1
	3-11 Remains	0.86	85.3	200.2	-114.9	-	-114.9	0.0	0.0	0.0		-1
	3-11 Sub Total (Qda. Gueno)	3.66	393.9	200.2	193.7	-	193.7	0.0	0.0	0.0	0	0
	2-41	0.93	98.8	0.0	98.8	-	98.8	0.0	0.0	0.0		-1
	2-42	0.86	78.6	0.0	78.6	-	78.6	0.0	0.0	0.0		-1
	2-43	0.51	41.0	0.0	41.0	-	41.0	0.0	0.0	0.0		-1
	3-12 Remains	0.98	46.7	204.8	-158.1	-	-158.1	0.0	0.0	0.0		-1
	3-12 Sub Total	3.28	265.1	204.8	60.3	-	60.3	0.0	0.0	0.0	0	0
	2-36	0.83	59.8	59.2	0.6	-	0.6	0.0	0.0	0.0		-1
	2-39	1.80	153.3	80.0	73.3	-	73.3	0.0	0.0	0.0		-1
	2-40	0.59	50.4	8.0	42.4	-	42.4	0.0	0.0	0.0		-1
	5- 1- 2 Remains	6.46	800.1	1996.7	-1196.6	142.8	-1339.4	0.0	655.2	655.2		-1
	5- 1- 2 Remains Sub Total	9.68	1063.6	2143.9	-1080.3	142.8	-1223.1	0.0	655.2	655.2		-1
	5- 1- 2 Sub Total	16.62	1722.6	2548.8				0.0	655.2	655.2		-1
△ 5-1 Total (Rio Choloma)	71.64	8053.1	6624.8	1428.3	142.8	1285.5	20.9	1264.6	1285.5	2	100	

Note/Nota :

- C.P, △ : Design control point / Punto de control de diseño
- ① : Sub-control point & number / Punto de sub-control y numero
- Remains : Remains of drainage area / Restos en area de cuenca
- D.A : Drainage area / Area de cuenca
- V10 : Design sediment yield / Produccion de sedimentos de diseño
- V20 : Naturally controlled sediment discharge along the river courses / Descarga de sedimento controlada naturalmente a lo largo de los cursos del rio
- V30 : Design sediment discharge / Descarga de sedimentos de diseño
- V40 : Design allowable sediment discharge / Descarga de sedimentos permisible de diseño
- V50 : Design excess sediment discharge / Descarga de sedimentos exceso de diseño
- E1 : Facilities effect(Existing) / Instalaciones efectivas(Existentes)
- E2 : Facilities effect(Plan) / Instalaciones efectivas(Propuesta)
- P1 : Sediment control ratio(Existing) / Porcentaje de control de sedimentos(Existentes)  $(=100 \times E1/V50)$
- P2 : Sediment control ratio(Plan) / Porcentaje de control de sedimentos(Propuesta)  $(=100 \times (E1+E2)/V50)$

TABLE D.3.6(2) PROPOSED SEDIMENT BALANCE / BALANCE DE SEDIMENTOS PROPUESTO

Rio Blanco (1/2)

Stream Order & Drainage Number , Stream Name C.P Orden de La Corriente Nombre de y Numero de Cuenca La Corriente		D.A	V10	V20	V30	V40	V50	E1	E2	E1+E2	P1	P2
5 4 3 2 (Stream Order)		km <sup>2</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	%	%
①	2- 1	2.22	231.9	0.0	231.9	-	231.9	0.0	0.0	0.0		
	2- 2	0.77	80.5	0.0	80.5	-	80.5	0.0	0.0	0.0		
	2- 3	1.01	108.2	0.0	108.2	-	108.2	0.0	0.0	0.0		
	2- 4	0.74	75.9	0.0	75.9	-	75.9	0.0	0.0	0.0		
	3- 1- 1 Remains	1.00	106.0	0.0	106.0	-	106.0	0.0	0.0	0.0		
	3- 1- 1 Remains Sub Total	5.74	602.5	0.0	602.5	-	602.5	0.0	0.0	0.0	0	0
	2- 5	1.56	162.8	0.0	162.8	-	162.8	0.0	0.0	0.0		
	2- 6	0.43	43.9	0.0	43.9	-	43.9	0.0	0.0	0.0		
	3- 1- 2 Remains	3.33	353.2	47.2	306.0	-	306.0	0.0	15.1	15.1		
	3- 1- 2 Remains Sub Total	5.32	559.9	47.2	512.7	-	512.7	0.0	15.1	15.1		
	3- 1 Sub Total (Rio del Chorreron)	11.06	1162.4	47.2	1115.2	-	1115.2	0.0	15.1	15.1	0	1
	2- 7	1.13	120.0	0.0	120.0	-	120.0	0.0	0.0	0.0		
	2- 8	2.18	236.1	0.0	236.1	-	236.1	0.0	0.0	0.0		
	3- 2 Remains	0.46	52.6	0.0	52.6	-	52.6	0.0	0.0	0.0		
	3- 2 Sub Total (Qda. la Coronilla)	3.77	408.7	0.0	408.7	-	408.7	0.0	0.0	0.0	0	0
	3- 1,3- 2 Sub Total	14.83	1571.1	47.2	1523.9	-	1523.9	0.0	15.1	15.1	0	1
	2- 9	0.66	70.2	0.0	70.2	-	70.2	0.0	0.0	0.0		
	4- 1 -1 Remains	2.43	389.8	310.5	79.3	-	79.3	0.0	588.9	588.9		
	4- 1 -1 Remains Sub Total	3.09	460.0	310.5	149.5	-	149.5	0.0	588.9	588.9		
	4- 1 -1 Sub Total	17.92	2031.1	357.7	1673.4	-	1673.4	0.0	604.0	604.0	0	36
4- 1- 2 Remains	2.01	136.1	1192.8	-1056.7	-	-1056.7	0.0	0.0	0.0			
4- 1- 2 Remains Sub Total	2.01	136.1	1192.8	-1056.7	-	-1056.7	0.0	0.0	0.0			
4- 1 Sub Total (Rio del Zapotal)	19.93	2167.2	1550.5	616.7	-	616.7	0.0	604.0	604.0	0	98	
②	2-10	2.21	241.4	0.0	241.4	-	241.4	0.0	0.0	0.0		
	2-11	1.13	122.2	0.0	122.2	-	122.2	0.0	0.0	0.0		
	2-12	1.90	196.5	5.0	191.5	-	191.5	0.0	0.0	0.0		
	3- 3- 1 Remains	3.78	412.5	192.0	220.5	-	220.5	0.0	116.7	116.7		
	3- 3- 1 Sub Total	9.02	972.6	197.0	775.6	-	775.6	0.0	116.7	116.7	0	15
	3- 3- 2 Remains	0.29	24.0	334.6	-310.6	-	-310.6	0.0	0.0	0.0		
	3- 3- 2 Remains Sub Total	0.29	24.0	334.6	-310.6	-	-310.6	0.0	0.0	0.0		
	3- 3 Sub Total	9.31	996.6	531.6	465.0	-	465.0	0.0	116.7	116.7	0	25
	2-13	2.43	226.0	134.2	91.8	-	91.8	0.0	0.0	0.0		
	2-14	0.62	53.0	53.0	0.0	-	0.0	0.0	0.0	0.0		
2-15	1.05	69.6	69.6	0.0	-	0.0	0.0	0.0	0.0			
3- 4 Remains	0.10	0.0	91.8	-91.8	-	-91.8	0.0	0.0	0.0			

TABLE D.3.6(2) PROPOSED SEDIMENT BALANCE / BALANCE DE SEDIMENTOS PROPUESTO

Rio Blanco (2/2)

(Continued)

Stream Order & Drainage Number , Stream Name		D.A	V10	V20	V30	V40	V50	E1	E2	E1+E2	P1	P2
C.P	Orden de La Corriente y Numero de Cuenca											
5 4 3 2 (Stream Order)		km	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	%	%
	3- 4 Sub Total (Qda. de Penas)	4.20	348.6	348.6	0.0	-	0.0	0.0	0.0	0.0	0	0
	3- 3, 3- 4 Sub Total	13.51	1345.2	880.2	465.0	-	465.0	0.0	116.7	116.7	0	25
	4- 2 Remains	0.37	14.0	211.9	-197.9	-	-197.9	0.0	0.0	0.0		
	4- 2 Remains Sub Total	0.37	14.0	211.9	-197.9	-	-197.9	0.0	0.0	0.0		
	4- 2 Sub Total (Rio de Armenta)	13.88	1359.2	1092.1	267.1	-	267.1	0.0	116.7	116.7	0	44
	4- 1, 4- 2 Sub Total	33.81	3526.4	2642.6	883.8	-	883.8	0.0	720.7	720.7	0	82
	2-16	0.72	78.4	0.0	78.4	-	78.4	0.0	0.0	0.0		
	2-17	0.76	79.6	0.0	79.6	-	79.6	0.0	0.0	0.0		
	2-18	1.03	111.4	3.0	108.4	-	108.4	0.0	0.0	0.0		
	2-19	1.08	107.7	0.0	107.7	-	107.7	0.0	0.0	0.0		
	3- 5 Remains	1.65	212.6	360.0	-147.4	-	-147.4	0.0	0.0	0.0		
	3- 5 Sub Total	5.24	589.7	363.0	226.7	-	226.7	0.0	0.0	0.0	0	0
	2-20	0.35	40.4	0.0	40.4	-	40.4	0.0	0.0	0.0		
	2-21	0.84	90.2	0.0	90.2	-	90.2	0.0	0.0	0.0		
	3- 6 Remains	1.04	100.1	223.1	-123.0	-	-123.0	0.0	0.0	0.0		
	3- 6 Sub Total	2.23	230.7	223.1	7.6	-	7.6	0.0	0.0	0.0	0	0
	3- 5, 3- 6 Sub Total	7.47	820.4	586.1	234.3	-	234.3	0.0	0.0	0.0	0	0
	4- 3 Remains	2.50	282.4	516.7	-234.3	-	-234.3	0.0	0.0	0.0		
	4- 3 Remains Sub Total	2.50	282.4	516.7	-234.3	-	-234.3	0.0	0.0	0.0	0	0
	4- 3 Sub Total (Rio Chiquito)	9.97	1102.8	1102.8	-0.0	-	-0.0	0.0	0.0	0.0		
	4- 1, 4- 2, 4- 3 Sub Total	43.78	4629.2	3745.4	883.8	-	883.8	0.0	720.7	720.7		
	5- 1 Remains	0.12	28.0	111.2	-83.2	80.1	-163.3	0.0	0.0	0.0		
	5- 1 Remains Sub Total	0.12	28.0	111.2	-83.2	80.1	-163.3	0.0	0.0	0.0		
	5- 1 Total (Rio Blanco)	43.90	4657.2	3856.6	800.6	80.1	720.5	0.0	720.7	720.7	0	100

Note/Nota : Refer to the note of table for the Rio Choloma  
Referirse a la nota de la tabla para el Rio Choloma

TABLE D.3.6(3) PROPOSED SEDIMENT BALANCE / BALANCE DE SEDIMENTOS PROPUESTO

Rio Santa Ana , Rio El Sauce (1/1)

Stream Order & Drainage Number , Stream Name		D.A	V10	V20	V30	V40	V50	E1	E2	E1+E2	P1	P2
C.P	Orden de La Corriente y Numero de Cuenca											
5 4 3 2 (Stream Order)		km	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	x10 <sup>3</sup> m <sup>3</sup>	%	%
	2- 1	3.11	58.7	0.0	58.7	-	58.7	0.0	0.0	0.0		
	2- 2	1.28	27.7	0.0	27.7	-	27.7	0.0	0.0	0.0		
	2- 3	0.52	10.5	0.0	10.5	-	10.5	0.0	0.0	0.0		
	2- 4	1.20	12.5	0.0	12.5	-	12.5	0.0	0.0	0.0		
	2- 5	2.43	27.8	0.0	27.8	-	27.8	0.0	0.0	0.0		
	3- 1 Remains	0.90	26.7	0.0	26.7	-	26.7	0.0	0.0	0.0		
	3- 1 Sub Total (Rio Santa Ana)	9.44	163.9	0.0	163.9	-	163.9	0.0	0.0	0.0	0	0
	2- 6	2.61	35.0	0.0	35.0	-	35.0	0.0	0.0	0.0		
	2- 7	0.42	6.3	0.0	6.3	-	6.3	0.0	0.0	0.0		
	2- 8	0.55	9.1	0.0	9.1	-	9.1	0.0	0.0	0.0		
	3- 2 Remains	0.15	16.3	0.0	16.3	-	16.3	0.0	0.0	0.0		
	3- 2 Sub Total (Qda. del Intierno)	3.73	66.7	0.0	66.7	-	66.7	0.0	0.0	0.0	0	0
	3- 1, 3- 2 Sub Total	13.17	230.6	0.0	230.6	-	230.6	0.0	0.0	0.0	0	0
	2- 9	3.47	44.2	0.0	44.2	-	44.2	0.0	0.0	0.0		
	2-10	1.72	23.2	0.0	23.2	-	23.2	0.0	0.0	0.0		
	4- 1 -1 Remains	4.03	112.8	20.0	92.8	-	92.8	2.3	202.0	204.3		
	4- 1 -1 Remains Sub Total	9.22	180.2	20.0	160.2	-	160.2	2.3	202.0	204.3		
	4- 1 -1 Sub Total	22.39	410.8	20.0	390.8	-	390.8	2.3	202.0	204.3	1	52
	2-11 Remains	1.08	20.0	4.0	16.0	-	16.0	0.0	0.0	0.0		
	2-12 (Qda. del Comercio)	2.24	34.5	20.0	12.7	-	12.7	0.0	0.0	0.0		
	2-13 (Qda. de Agua Prieta)	6.42	51.8	53.0	0.6	-	0.6	0.0	0.0	0.0		
	4- 1 -2 Remains	5.50	195.5	209.6	-14.1	40.6	-54.7	0.0	160.9	160.9		
	4- 1 -2 Remains Sub Total	15.24	301.8	286.6	15.2	40.6	-25.4	0.0	160.9	160.9		
	4- 1 Total (Rio Santa Ana , Rio El Sauce)	37.63	712.6	306.6	406.0	40.6	365.4	2.3	362.9	365.2	1	100

Note/Nota : Refer to the note of table for the Rio Choloma  
Referirse a la nota de la tabla para el Rio Choloma

TABLE D.3.6(4) PROPOSED SEDIMENT BALANCE / BALANCE DE SEDIMENTOS PROPUESTO

Rio Piedras , Rio El Sauce (1/1)

Stream Order & Drainage Number , Stream Name C.P Orden de La Corriente Nombre de y Numero de Cuenca La Corriente		D.A	V10	V20	V30	V40	V50	E1	E2	E1+E2	P1	P2
5 4 3 2 (Stream Order)		kd	x10 <sup>3</sup> m	x10 <sup>3</sup> m	x10 <sup>3</sup> m	x10 <sup>3</sup> m	x10 <sup>3</sup> m	x10 <sup>3</sup> m	x10 <sup>3</sup> m	x10 <sup>3</sup> m	%	%
①	2- 1	1.85	19.2	0.0	19.2	-	19.2	0.0	0.0	0.0		
	2- 2	0.86	7.2	0.0	7.2	-	7.2	0.0	0.0	0.0		
	2- 3	0.75	7.8	0.0	7.8	-	7.8	0.0	0.0	0.0		
	2- 4	0.71	7.0	0.0	7.0	-	7.0	0.0	0.0	0.0		
	2- 5	2.14	21.8	0.0	21.8	-	21.8	0.0	0.0	0.0		
	2- 6	0.81	11.3	0.0	11.3	-	11.3	0.0	0.0	0.0		
	3- 1- 1 Remains	3.16	71.4	0.0	71.4	-	71.4	0.0	0.0	0.0		
	3- 1- 1 Sub Total	10.28	145.7	0.0	145.7	-	145.7	0.0	0.0	0.0	0	0
	2- 7	1.39	26.7	0.0	26.7	-	26.7	0.0	0.0	0.0		
	2- 8	0.94	13.2	0.0	13.2	-	13.2	0.0	0.0	0.0		
3- 1- 2 Remains	7.48	218.4	40.0	178.4	-	178.4	1.1	202.6	203.7			
3- 1- 2 Sub Total	9.81	258.3	40.0	218.3	-	218.3	1.1	202.6	203.7			
3- 1- 1,3- 1- 2 Sub Total	20.09	404.0	40.0	364.0	-	364.0	1.1	202.6	203.7	0	56	
②	2- 9	1.57	27.7	0.0	27.7	-	27.7	0.0	6.3	6.3		
	3- 1- 3 Remains	0.86	43.6	87.2	-43.6	-	-43.6	0.0	42.0	42.0		
	3- 1- 3 Sub Total	2.43	71.3	87.2	-15.9	-	-15.9	0.0	48.3	48.3		
	3- 1 Sub Total (Rio Piedras)	22.52	475.3	127.2	348.1	-	348.1	1.1	250.9	252.0	0	72
③	2-10	0.57	8.5	0.0	8.5	-	8.5	0.0	0.0	0.0		
	2-11	0.82	8.8	0.0	8.8	-	8.8	0.0	0.0	0.0		
	3- 2 Remains	4.09	37.2	24.0	13.2	-	13.2	0.0	14.6	14.6		
	3- 2 Sub Total (Qda. Santa Ana)	5.48	54.5	24.0	30.5	-	30.5	0.0	14.6	14.6	0	48
	4- 1 Remains	2.87	48.0	96.0	-48.0	33.1	-81.1	0.0	32.3	32.3		
4- 1 Sub Total	2.87	48.0	96.0	-48.0	33.1	-81.1	0.0	32.3	32.3			
△	4- 1 Total (Rio Piedras , Rio El Sauce)	30.87	577.8	247.2	330.6	33.1	297.5	1.1	297.8	298.9	0	100

Note/Nota : Refer to the note of table for the Rio Choloma  
Referirse a la nota de la tabla para el Rio Choloma

TABLE D.3.7(1) PRIORITY OF PROPOSED FACILITY / PROIRIDAD DE ESTRUCTURAS PROPUESTAS

Rank	D.N	T.F	H m	L m	Vc1 m <sup>2</sup>	Vc2 m <sup>2</sup>	Vr m <sup>2</sup>	Ve m <sup>2</sup>	Ve' m <sup>2</sup>	V50 m <sup>2</sup>	P1 %	Rio Blanco			
												Pe %	Pe' %		
A	R4-1-1	CO.W					150000	126000	126000						
	R3-3-1	DC	500												
	R4-1-2	DC	430												
	R4-1-2	DC	420												
	R4-1-2	DC	650												
	R4-1-2	DC	1050												
	R4-1-2	DC	500												
	R4-1-2	DC	400												
	2-14	DC	110												
	Total (Rio del Zapotal)								126000	126000	1673400	0	8	8	
Total (Rio de Armenta)								0	0	775600	0	0	0		
Total (Rio Chiquito)								0	0	234300	0	0	0		
Total (Control Point)								126000	126000	720500	0	0	17		
B	R4-1-1	D-1	14.0	122	221180	22120	57720	70600	291780						
	R4-1-10	D-2	11.0	193	209220	20920	40330	222180	264020						
	R3-3-1	D-6	11.0	55	64800	6480	20880	23180	87980						
	R3-3-1	D-7	14.0	95	129600	12960	30240	37150	166750						
	Total (Rio del Zapotal)								418780	681800	1673400	0	25	41	
	Total (Rio de Armenta)								60330	254730	775600	0	8	33	
Total (Rio Chiquito)								0	0	234300	0	0	0		
Total (Control Point)								479110	936530	720500	0	66	130		
C	R4-1-10	D-3	14.0	117	139390	13940	31230	151680	179560						
	R4-1-1	D-4	14.0	82	61110	6110	14650	18420	79530						
	R3-1-2	D-5	14.0	68	38120	3810	12280	15110	53230						
	R3-3-1	D-8	14.0	83	110880	11090	24860	30980	141860						
	R3-3-1	D-9	14.0	61	76230	7620	22180	25360	101590						
	R4-3	G	3.0	120											
	R5-1	G	3.0	150											

TABLE D.3.7(1) PRIORITY OF PROPOSED FACILITY / PROIRIDAD DE ESTRUCTURAS PROPUESTAS

(Continued)

Rank	D.N	T.F	H m	L m	Vc1 m <sup>2</sup>	Vc2 m <sup>2</sup>	Vr m <sup>2</sup>	Ve m <sup>2</sup>	Ve' m <sup>2</sup>	V50 m <sup>2</sup>	P1 %	Rio Blanco		
												Pe %	Pe' %	
C	R5-1	CH.W		1650										
	Total (Rio del Zapotal)								603990	994120	1673400	0	36	59
	Total (Rio de Armenta)								116670	498180	775600	0	15	64
	Total (Control Point)								720660	1492300	720500	0	100	207

TABLE D.3.7(2) PRIORITY OF PROPOSED FACILITY / PROIRIDAD DE ESTRUCTURAS PROPUESTAS

Rank	D.N	T.F	H m	L m	Vc1 m <sup>2</sup>	Vc2 m <sup>2</sup>	Vr m <sup>2</sup>	Ve m <sup>2</sup>	Ve' m <sup>2</sup>	V50 m <sup>2</sup>	P1 %	Rio Santa Ana		
												Pe %	Pe' %	
A	R4-1-1	D-1	14.0	103	127050	12710	28640	39920	166970					
	Total (Sub-Control Point)								39920	166970	390800	1	11	43
	Total (Control Point)								39920	166970	365400	1	12	46
B	R4-1-1	D-2	14.0	78	87120	8710	24550	32030	119150					
	Total (Sub-Control Point)								71950	286120	390800	1	19	74
	Total (Control Point)								71950	286120	365400	1	21	79
C	R4-1-1	D-3	14.0	98	90720	9070	24860	32690	123410					
	R4-1-1	D-4	14.0	51	39680	3970	14630	17870	57550					
	R4-1-1	D-5	14.0	66	53240	5320	15000	19570	72810					
	R4-1-1	D-6	14.0	57	75600	7560	26640	32870	108470					
	R4-1-1	D-7	14.0	51	63530	6350	21780	27040	90570					
	R4-1-2	CH.W					243750	160880	160880					
	Total (Sub-Control Point)								201990	738930	390800	1	53	190
	Total (Control Point)								362870	899810	365400	1	100	247

Note/Nota : †=Upstream area of CO.W

Refer to the note of table for the Rio Piedras

Referirse a la nota de la tabla para el Rio Piedras

TABLE D.3.7(3) PRIORITY OF PROPOSED FACILITY / PROIRIDAD DE ESTRUCTURAS PROPUESTAS

Rio Piedras														
Rank	D.N	T.F	H m	L m	Vc1 m <sup>3</sup>	Vc2 m <sup>3</sup>	Vr m <sup>3</sup>	Ve m <sup>3</sup>	Ve' m <sup>3</sup>	V50 m <sup>3</sup>	P1 %	Pe %	Pe' %	
A	R3-1-2	D-1	14.0	71	125640	12560	31900	41270	166910					
	Total (Sub-Control Point)							41270	166910	364000	0	11	46	
	Total (Control Point)							41270	166910	297500	0	14	56	
B	R3-1-2	D-2	14.0	93	106480	10650	28860	36620	143100					
	R3-1-2	D-3	14.0	107	116160	11620	39420	47100	163260					
	R3-2	D-6	14.0	86	37030	3700	11590	14590	51620					
	2-9	D-7	10.0	57	11200	1120	5150	6270	17470					
	Total (Sub-Control Point)								124990	473270	364000	0	34	130
	Total (Control Point)								145850	542360	297500	0	49	182
C	R3-1-2	D-4	14.0	99	108900	10890	33660	41180	150080					
	R3-1-2	D-5	14.0	69	90750	9080	30360	36400	127150					
	R3-1-3	CH,W					52500	42000	42000					
	R4-1	CH,W					42000	32340	32340					
	Total (Sub-Control Point)								202570	750500	364000	0	56	206
	Total (Control Point)								297770	893930	297500	0	100	300

Note/Nota :

Rank : Priority of execution of facility construction / Prioridad de estructuras propuestas

D.N : Stream order and number / Orden de la corriente y numero de cuenca

T.F : Facility type / Tipo de estructuras

D : Ckech dam(Sabo dam) / Presa de retencion

OD : Open type dam / Tipo de presa de retencion abierto

CH,W : Channel warks / Trabajos en los cauces

G : Groundsill / Proteccion por fondo del rio

CO,W : Consolidation works / Trabajos de consolidacion

DC : Debris control levee / Control de sedimentos

H : Dam height / Altura de presa

L : Dam length / Longitud de presa

Vc1 : Sediment trap capacity / Capacidad de la trampa de sedimentos(=NB2XH<sup>3</sup>)

Vc2 : Sediment discharge control volume / Volumen de descarga de sedimento controlada(0.1XVc1)

Vr : Reduction of sediment production / Reduccion de la produccion de sedimentos(=Lcx(hXd2+B1Xd1))

Ve : Effective reserve capacity / Capacidad de reservas efectiva(=Vr(1-ALP)+Vd)

Ve' : Provisionally effective reserve capacity / Capacidad provisional de reservas efectiva(=Vc1+Vc2+Vr)

V50 : Design excess sediments / Exceso de sedimentos de disenno

P1 : Existing improvement ratio / Proporción de mejoramiento existentes

Pe : Improvement ratio / Proporción de mejoramiento

Pe' : Provisional improvement ratio / Proporción de mejoramiento provisional

TABLE D.3.8(1) CONSTRUCTION VOLUME - Rio Choloma -

CONSTRUCTION VOLUME (Master plan)

(RIO CHOLOMA)

Construction	Concrete volume(m3)	Embankment volume(m3)	Gabion volume(m3)	Riverbed protection works(m2)
No. 1 Check dam	9080	--	--	23x15 345
No. 2 Check dam	7830	--	--	23x15 345
No. 3 Check dam	7790	--	--	23x15 345
No. 4 Check dam	4890	--	--	18x15 270
No. 5 Check dam	16470	--	--	30x10 300
No. 6 Check dam	10160	--	--	30x15 450
No. 7 Check dam	8850	--	--	20x15 300
No. 8 Check dam	6650	--	--	20x15 300
No. 9 Check dam	20120	--	--	40x15 600
No. 10 Check dam	11050	--	--	25x15 375
Training levee	$950 \times 3 \times (6+4 \times 3) / 2$	25650	$1 \times 950 \times ((6^2 + 3^2) \cdot 0.5 + 2)$	--
Rio Choloma No. 1 Consolidation dam	9980	--	--	200x10 2000
Rio Choloma No. 2--No. 6 Consolidation dam	--	--	4x390x4x5 31200	200x10x5 6000
Rio Choloma No. 7 Consolidation dam	21500	--	--	200x20 4000
Rio Majaine No. 1 Consolidation dam	--	--	3x180x4 2160	60x10 600
Rio Majaine No. 2 Consolidation dam	10600	--	--	75x10 750
Rio La Jutosa No. 1--No. 8 Consolidation dam	8x9350 74800	--	--	8x50x10 4000
Total	219770	25650	41630	20980

Note : The details of the concrete and excavation volume of check dam No1 and No9 and consolidation dam No1 and No7 were shown in Tables D.5.2 and D.5.3.

TABLE D.3.8(2) CONSTRUCTION VOLUME - Rio Blanco -

CONSTRUCTION VOLUME (Master plan)		(RIO BLANCO)			
Construction	Concrete volume(m3)	Embankment volume(m3)	Gabion volume(m3)	Riverbed protection works(m2)	
No. 1 Check dam	14480	--	--	30x15	450
No. 2 Check dam	15680	--	--	40x15	600
No. 3 Check dam	12970	--	--	40x15	600
No. 4 Check dam	9370	--	--	25x20	500
No. 5 Check dam	7670	--	--	25x20	500
No. 6 Check dam	4310	--	--	20x15	300
No. 7 Check dam	9630	--	--	28x15	420
No. 8 Check dam	7770	--	--	23x15	345
No. 9 Check dam	6310	--	--	22x20	440
No. 1 Training levee	$430 \times 3 \times (6+4 \times 3) / 2$	$1 \times 430 \times ((6^2+3^2)^{0.5+2})$			
	--	11610	3740		--
No. 2 Training levee	$420 \times 3 \times (6+4 \times 3) / 2$	$1 \times 420 \times ((6^2+3^2)^{0.5+2})$			
	--	11340	3660		--
No. 3 Training levee	$650 \times 3 \times (6+4 \times 3) / 2$	$1 \times 650 \times ((6^2+3^2)^{0.5+2})$			
	--	17550	5660		--
No. 4 Training levee	$1050 \times 3 \times (6+4 \times 3) / 2$	$1 \times 1050 \times ((6^2+3^2)^{0.5+2})$			
	--	28350	9140		--
No. 5 Training levee	$500 \times 3 \times (6+4 \times 3) / 2$	$1 \times 500 \times ((6^2+3^2)^{0.5+2})$			
	--	13500	4350		--
No. 6 Training levee	$400 \times 3 \times (6+4 \times 3) / 2$	$1 \times 400 \times ((6^2+3^2)^{0.5+2})$			
	--	10800	3480		--
No. 7 Training levee	$110 \times 3 \times (6+4 \times 3) / 2$	$1 \times 110 \times ((6^2+3^2)^{0.5+2})$			
	--	2970	960		--
No. 8 Training levee	$500 \times 3 \times (6+4 \times 3) / 2$	$1 \times 500 \times ((6^2+3^2)^{0.5+2})$			
	--	13500	4350		--
Rio Chiquito Consolidation dam	--	--	$3 \times 120 \times 4$	30x10	3000
			1440		
Rio Blanco Consolidation dam	6430	--	--	100x10	1000
Rio del Zapotal Consolidation works	$5 \times 4440$	--	--	$5 \times 50 \times 5$	2500
	22200				
Rio del Zapotal channel work	--	--	$3 \times 150 \times 4 \times 3$		--
			5400		
Total	116820	109620	42180		10655

TABLE D.3.8(3) CONSTRUCTION VOLUME - Rio Santa Ana -

CONSTRUCTION VOLUME (Master plan)		(RIO SANTA ANA)			
Construction	Concrete volume(m3)	Embankment volume(m3)	Gabion volume(m3)	Riverbed protection works(m2)	
No. 1 Check dam	11050	--	--	30x20	600
No. 2 Check dam	9640	--	--	30x20	600
No. 3 Check dam	11770	--	--	35x20	700
No. 4 Check dam	7030	--	--	25x20	500
No. 5 Check dam	7380	--	--	25x20	500
No. 6 Check dam	7070	--	--	20x20	400
No. 7 Check dam	7080	--	--	25x20	500
Rio Santa Ana channel work					
Consolidation dam(6)	--	--	$3 \times 80 \times 4 \times 6$	$6 \times 80 \times 10$	4800
			5760		
Riverbed girdle(2)	--	--	$2 \times 80 \times 4 \times 2$		--
			1280		
Total	61020	--	7040		8600

TABLE D.3.8(4) CONSTRUCTION VOLUME - Rio Piedras -

CONSTRUCTION VOLUME (Master plan)		(RIO PIEDRAS)			
Construction	Concrete volume(m3)	Embankment volume(m3)	Gabion volume(m3)	Riverbed protection works(m2)	
No. 1 Check dam	9840	--	--	35x15	525
No. 2 Check dam	9190	--	--	30x15	450
No. 3 Check dam	11610	--	--	30x15	450
No. 4 Check dam	10870	--	--	28x15	420
No. 5 Check dam	7670	--	--	23x20	460
No. 6 Check dam	7860	--	--	20x 5	100
No. 7 Check dam	2590	--	--	15x 5	75
Rio Piedras channel work					
Consolidation dam(3)	--	--	$3 \times 70 \times 4 \times 6$	$6 \times 10 \times 70$	4200
			5040		
Riverbed girdle(2)	--	--	$2 \times 70 \times 4 \times 2$		--
			1120		
Total	59630	--	6160		6680



TABLE D.5.1 CONSTRUCTION VOLUME - Rio Choloma -  
 CONSTRUCTION VOLUME (F/S) (RIO CHOLOMA)

Construction	Concrete volume(m3)		Excavation volume(m3)	Embankment volume(m3)	Gabion (m3)	River bed protection works(m2)	Remarks
	Main-dam	Sub-dam					
No.1 Check dam	11830	800	1740	14370	---	40x28	1120
Majaine dam	5950	930	950	7830	---	23x15	345
No.2 Check dam	5900	950	940	7790	---	23x15	345
No.3 Check dam	3530	740	620	4890	---	18x15	270
No.4 Check dam	13520	1920	1030	16470	---	30x10	300
No.5 Check dam	8020	1250	890	10160	---	30x15	450
No.6 Check dam	7000	1200	650	8850	---	20x15	300
No.7 Check dam	5580	620	450	6650	---	20x15	300
No.8 Check dam	13290	680	1510	15480	---	30x28	840
Jutosa dam	8200	1370	1480	11050	---	25x15	375
No.10 Check dam	---	---	---	---	---	---	---
Training levee	---	---	---	---	51680*1	2300*2	---
Rio Choloma	---	---	---	---	---	---	*1 1325x3x(8+6x3)/2 *2 1x200x((9^2+3^2)-0.5+2)
No.1 Consolidation dam	6420	1000	3240	10660	---	4x150+12x150	Sheet pile:1540m <sup>2</sup>
Rio Choloma No.2--No.6 Consolidation dam	---	---	---	---	---	---	2400 150x(3+2)+150x(2+2)+38x(3+2)
Rio Choloma	---	---	---	---	---	---	*1 5x100x12 *2 5x320x5x4
No.7 Consolidation dam	4590	860	2280	7730	20240*1	3790*2	150x12 1800
Rio Majaine No.1--No.2 Consolidation dam	2x2960	2x1580	2x1380	2x5920	---	---	2x60x15 1800
Rio La Jutosa No.1--No.8 Consolidation dam	8x8170	8x1330	8x1850	8x11350	---	---	8x100x12 9600
Total	224570	71920	38090	26245	---	---	---

--:No calculation  
 ---:No existing

TABLE D.5.2(1) CONCRETE VOLUME OF CHECK DAM No.1  
(Majaine Dam)

Majaine dam		14364.5						
Section(H)	h1	h2	h1	h2	b1	b2	L	V
<b>Main dam</b>								
<b>Main body</b>								
0.00-2.00	2.00	50.00	52.00	13.90	12.20		11828.4	
2.00-4.00	2.00	62.00	64.00	12.20	10.50		10486.9	
4.00-6.00	2.00	83.00	85.00	10.50	8.80		1429.5	1330.5
6.00-8.00	2.00	110.00	112.00	8.80	7.10		1620.6	1429.5
8.00-11.00	3.00	144.00	147.00	7.10	4.55		1764.3	1620.6
11.00-12.00	1.00	180.00	181.00	4.55	3.70		2540.7	1764.3
12.00-14.00	2.00	184.50	186.50	3.70	2.00		744.5	2540.7
<b>Wing</b>								
<b>Wing (R)</b>								
0.00-2.40	2.40	19.80	19.80	2.00	2.00		1056.8	
2.40-3.20	0.80	19.80	19.40	2.00	2.00		1341.5	
3.20-3.45	0.25	19.40	4.40	2.00	2.00		132.4	132.4
<b>Wing (L)</b>								
0.00-2.00	2.00	132.00	132.00	2.00	2.00		95.0	
2.00-3.20	1.20	133.00	133.00	2.00	2.00		31.4	95.0
3.20-4.70	1.50	133.00	43.75	2.00	2.00		265.1	31.4
4.70-6.00	1.30	43.75	18.40	2.00	2.00		80.8	265.1
6.00-6.70	0.70	18.40	4.40	2.00	2.00		16.0	80.8
<b>Sub dam</b>								
<b>Main body</b>								
0.00-4.00	4.00	47.00	51.00	4.40	2.00		800.9	
<b>Wing</b>								
<b>Wing (R)</b>								
0.00-2.20	2.20	7.20	7.20	2.00	2.00		624.0	
2.20-3.20	1.00	7.20	6.70	2.00	2.00		176.9	624.0
<b>Wing (L)</b>								
0.00-2.20	2.20	20.60	20.60	2.00	2.00		45.6	
2.20-3.20	1.00	20.60	20.10	2.00	2.00		31.7	45.6
<b>Apron</b>								
0.84-1.40	0.00	0.00	0.00	1.40	38.07	36.67	0.56	14.6
1.40-23.20	1.40	38.07	36.67	1.40	44.60	43.20	21.80	1240.2
23.20-23.48	1.40	44.60	43.20	0.00	0.00	0.00	0.28	8.6
<b>Side wall</b>								
<b>Right</b>								
0.00-1.40	3.20	0.50	1.46	6.70	0.50	2.51	1.40	9.3
1.40-23.20	6.70	0.50	2.51	6.70	0.50	2.51	21.80	219.8
23.20-24.54	6.70	0.50	2.51	0.00	0.00	0.00	1.34	6.8
<b>Left</b>								
0.00-1.40	3.20	0.50	1.46	6.70	0.50	2.51	1.40	9.3
1.40-23.20	6.70	0.50	2.51	6.70	0.50	2.51	21.80	219.8
23.20-24.54	6.70	0.50	2.51	0.00	0.00	0.00	1.34	6.8

TABLE D.5.2(2) CONCRETE VOLUME OF CHECK DAM No.9  
(Jutosa Dam)

Jutosa dam		15480.2						
Section(H)	h1	h2	h1	h2	b1	b2	L	V
<b>Main dam</b>								
<b>Main body</b>								
0.00-4.00	4.00	56.00	59.18	13.70	10.50		13289.5	
4.00-8.00	4.00	88.18	91.35	10.50	7.30		11356.1	
8.00-10.00	2.00	160.35	161.94	7.30	5.70		2784.0	2784.0
10.00-14.00	4.00	198.94	202.12	5.70	2.50		3182.3	2784.0
<b>Wing</b>								
<b>Wing (R)</b>								
0.00-3.00	3.00	23.12	22.50	2.50	2.50		200.3	
3.00-3.30	0.30	22.50	22.35	2.50	2.50		171.1	200.3
3.30-3.70	0.40	22.35	2.35	2.50	2.50		16.8	171.1
<b>Wing (L)</b>								
0.00-3.30	3.30	153.00	153.00	2.50	2.50		1733.1	
3.30-4.00	0.70	153.00	118.35	2.50	2.50		1262.3	1733.1
4.00-5.00	1.00	118.35	68.35	2.50	2.50		237.4	1262.3
<b>Sub dam</b>								
<b>Main body</b>								
0.00-4.00	4.00	41.00	45.00	4.40	2.00		547.2	
<b>Wing</b>								
<b>Wing (R)</b>								
0.00-2.50	2.50	8.00	8.00	2.00	2.00		52.5	
2.50-3.30	0.80	8.00	7.60	2.00	2.00		40.0	52.5
<b>Wing (L)</b>								
0.00-2.50	2.50	12.50	12.50	2.00	2.00		82.2	
2.50-3.30	0.80	12.50	12.10	2.00	2.00		19.7	82.2
<b>Apron</b>								
0.80-1.40	0.00	0.00	0.00	1.50	28.18	26.68	0.60	1075.2
1.40-23.20	1.50	28.18	26.68	1.50	34.80	33.30	21.80	12.3
23.20-23.50	1.50	34.80	33.30	0.00	0.00	0.00	0.30	1005.2
<b>Side wall</b>								
<b>Right</b>								
0.00-1.40	3.30	0.50	1.49	6.80	0.50	2.54	1.40	9.5
1.40-23.20	6.80	0.50	2.54	6.80	0.50	2.54	21.80	225.3
23.20-24.54	6.80	0.50	2.54	0.00	0.00	0.00	1.36	7.0
<b>Left</b>								
0.00-1.40	3.30	0.50	1.49	6.80	0.50	2.54	1.40	9.5
1.40-23.20	6.80	0.50	2.54	6.80	0.50	2.54	21.80	225.3
23.20-24.54	6.80	0.50	2.54	0.00	0.00	0.00	1.36	7.0

TABLE D.5.2(3) CONCRETE VOLUME OF CONSOLIDATION DAM No.1

Section(H)	h1	h2	h3	b1	b2	L	V
Main dam							5423.0
Main body							4939.3
Wing							482.6
Wing(R)							493.8
Wing(L)							88.8
Vert. wall							3145.7
Main body							1657.1
Wing							165.2
Wing(R)							136.8
Wing(L)							28.4
Apron							1657.1
L. water							1657.1
H. water							1491.6
L. (R)							745.8
L. (L)							44.7
Side wall(L)							701.1
Side wall(R)							745.8
L. water							701.1
L. (R)							95.4
L. (L)							45.4
H. (R)							22.7
H. (L)							0.5
H. water							22.2
L. (R)							22.7
L. (L)							0.5
H. (R)							22.2
H. (L)							50.0
H. water							25.0
L. (R)							2.2
L. (L)							22.8
H. (R)							25.0
H. (L)							2.2
H. water							22.8

TABLE D.5.2(4) CONCRETE VOLUME OF CONSOLIDATION DAM No.7

Section(H)	h1	h2	h3	b1	b2	L	V
Main dam							7724.6
Main body							4588.7
Wing							1862.6
Wing(R)							933.5
Wing(L)							757.6
Apron							171.5
L. water							2726.1
L. (R)							1445.3
L. (L)							696.0
H. (R)							416.9
H. (L)							300.0
H. water							31.5
L. (R)							0.9
L. (L)							1280.8
H. (R)							934.4
H. (L)							103.7
H. water							174.1
L. (R)							48.0
L. (L)							16.5
H. (R)							4.0
H. (L)							860.2
H. water							726.8
L. (R)							133.4
L. (L)							66.7
H. (R)							42.0
H. (L)							24.7
H. water							66.7
L. (R)							42.0
L. (L)							24.7
H. (R)							2163.3
H. (L)							30.2
H. water							2133.1
L. (R)							112.4
L. (L)							56.2
H. (R)							2.0
H. (L)							54.2
H. water							56.2
L. (R)							2.0
L. (L)							54.2
H. (R)							0.60
H. (L)							0.60
H. water							0.60
L. (R)							0.60
L. (L)							0.60
H. (R)							0.60
H. (L)							0.60
H. water							0.60

TABLE D.5.3(1) EXCAVATION VOLUME OF CHECK DAM No.1  
(Majaine Dam)

Majaine dam		22281.8					
Main dam		15842.1					
b= 2.00							
n= 0.20							
m= 0.65							
e=139.60							
Block	El Ground	El Bottom	Depth	Wide Bottom	Wide Ground	Area	Volume
R	43	146.00	146.00	0.00	4.0	4.0	0.0
R	38	144.00	139.60	4.40	4.0	9.3	29.3
R	25	137.60	125.60	12.00	15.9	30.3	277.2
	0	129.90	125.60	4.30	15.9	21.1	79.6
L	25	129.90	125.60	4.30	15.9	21.1	79.6
L	50	134.20	129.60	4.60	12.5	18.0	70.2
L	75	136.50	131.60	4.90	10.8	16.7	67.4
L	100	138.40	133.60	4.80	9.1	14.9	57.6
L	125	141.30	136.60	4.70	6.6	12.2	44.2
L	150	142.90	139.60	3.30	4.0	8.0	19.8
L	160	150.00	150.00	0.00	4.0	4.0	0.0
Total							15842.1
Sub dam		2379.7					
b= 2.00							
n= 0.20							
m= 0.40							
e=129.10							
Block	El Ground	El Bottom	Depth	Wide Bottom	Wide Ground	Area	Volume
R	31	134.00	134.00	0.00	4.0	4.0	0.0
R	28	132.90	131.30	1.60	4.0	5.9	7.9
R	23	130.30	125.10	5.20	6.4	12.6	49.4
	0	128.30	125.10	3.20	6.4	10.2	26.6
L	20	130.20	125.10	5.10	6.4	12.5	48.2
L	45	135.00	135.00	0.00	4.0	4.0	0.0
Total							2379.7
Main dam-Sub dam		4060.0					
(28-2.0-2.8)*(200+150)/2							

TABLE D.5.3(2) EXCAVATION VOLUME OF CHECK DAM No.9  
(Jutosa Dam)

Jutosa dam		18805.9					
Main dam		14366.2					
b= 2.50							
n= 0.20							
m= 0.60							
e=220.90							
Block	El Ground	El Bottom	Depth	Wide Bottom	Wide Ground	Area	Volume
R	45	240.00	240.00	0.00	4.5	4.5	0.0
R	39	232.50	223.90	8.60	4.5	14.8	83.0
R	34	214.80	206.90	7.90	15.7	25.2	161.6
R	25	213.20	206.90	6.30	15.7	23.3	122.9
	0	211.20	206.90	4.30	15.7	20.9	78.7
L	25	216.10	210.90	5.20	12.5	18.7	81.1
L	50	217.90	210.90	7.00	12.5	20.9	116.9
L	75	218.20	214.90	3.30	9.3	13.3	37.3
L	100	218.50	214.90	3.60	9.3	13.6	41.2
L	125	219.90	216.90	3.00	7.7	11.3	28.5
L	150	220.90	216.90	4.00	7.7	12.5	40.4
L	170	227.40	224.90	2.50	4.5	7.5	15.0
L	175	229.00	229.00	0.00	4.5	4.5	0.0
Total							14366.2
Sub dam		1842.3					
b= 2.00							
n= 0.20							
m= 0.40							
e=210.40							
Block	El Ground	El Bottom	Depth	Wide Bottom	Wide Ground	Area	Volume
R	28	216.00	216.00	0.00	4.0	4.0	0.0
R	23	214.80	210.40	4.40	4.0	9.3	29.3
R	19	211.20	206.40	4.80	6.4	12.2	44.6
R	10	210.90	206.40	4.50	6.4	11.8	41.0
	0	210.00	206.40	3.60	6.4	10.7	30.8
L	10	209.10	206.40	2.70	6.4	9.6	21.6
L	22	211.50	206.40	5.10	6.4	12.5	48.2
L	27	213.60	210.40	3.20	4.0	7.8	18.9
L	30	216.00	216.00	0.00	4.0	4.0	0.0
Total							1842.3
Main dam-Sub dam		2598.4					
(28-2.0-2.8)*(123+96)/2							

TABLE D.5.3(3) EXCAVATION VOLUME OF CONSOLIDATION DAM No.1

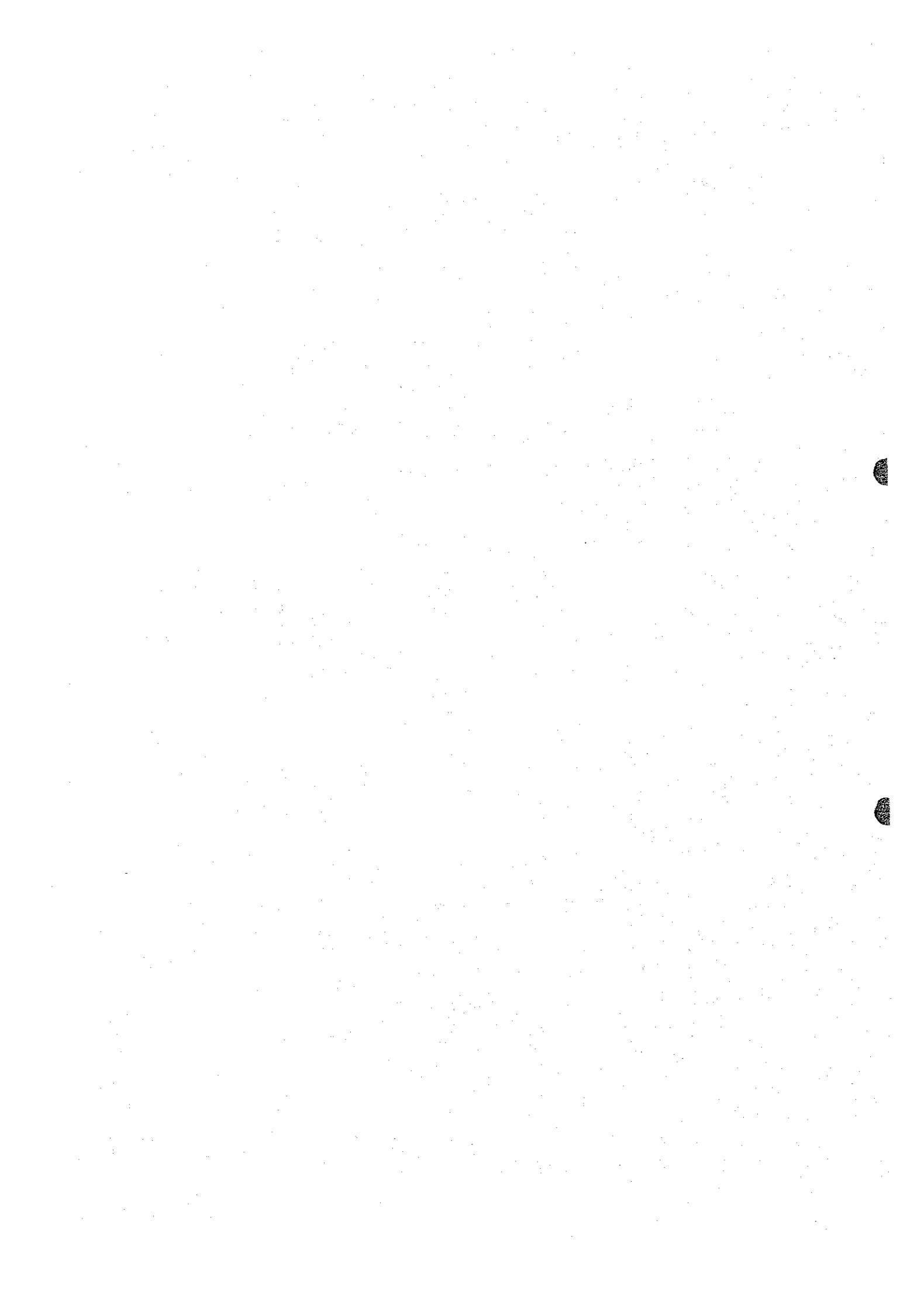
Main dam		29630.9		15301.5			
b=	3.50						
n=	1.00						
m=	0.10						
e=	34.80						
Block	El Ground	El Bottom	Depth	Wide Bottom	Wide Ground	Area	Volume
R 181	37.80	37.80	0.00	5.5	5.5	0.0	0.0
R 180	37.70	37.50	0.20	5.5	5.7	1.1	0.6
R 150	37.20	32.50	4.70	8.0	13.6	50.8	778.5
R 125	37.40	32.50	4.90	8.0	13.9	53.7	1306.3
R 100	36.20	32.50	3.70	8.0	12.4	37.7	1142.5
R 75	37.10	30.90	6.20	8.0	15.4	72.5	1377.5
R 50	35.80	30.90	4.90	8.0	13.9	53.7	1577.5
R 25	34.00	30.90	3.10	8.0	11.7	30.5	1052.5
L 25	34.50	30.90	3.60	8.0	12.3	36.5	837.5
L 50	35.20	30.90	4.30	8.0	13.2	49.6	1026.3
L 75	35.90	30.90	5.00	8.0	14.0	55.0	1257.5
L 100	36.80	32.50	4.30	8.0	13.2	45.6	1257.5
L 125	36.30	32.50	3.80	8.0	12.6	39.1	1058.8
L 150	35.20	32.50	2.70	8.0	11.2	25.9	812.5
L 175	36.50	34.50	2.00	5.8	8.2	14.0	498.8
L 200	37.00	34.50	2.50	5.8	8.8	18.3	403.8
L 215	37.80	37.50	0.30	5.5	5.9	1.7	150.0
L 216	37.80	37.80	0.00	5.5	5.5	0.0	0.9
Total							15301.5
Vertical wall							8365.4
b=	1.50						
n=	0.00						
m=	0.00						
e=	32.70						

TABLE D.5.3(4) EXCAVATION VOLUME OF CONSOLIDATION DAM No.7

Main dam		20543.6		10275.4			
b=	2.00						
n=	0.20						
m=	0.25						
e=	54.74						
Block	El Ground	El Bottom	Depth	Wide Bottom	Wide Ground	Area	Volume
R 225	57.00	57.00	0.00	4.0	4.0	0.0	0.0
R 200	57.40	54.74	2.66	4.0	7.2	14.9	186.3
R 175	57.80	54.74	3.06	4.0	7.7	17.9	410.0
R 150	57.40	54.74	2.66	4.0	7.2	14.9	410.0
R 125	57.40	54.74	2.66	4.0	7.2	14.9	372.5
R 100	56.80	53.74	3.06	4.5	8.2	19.4	428.8
R 75	57.00	51.74	5.26	5.4	11.7	45.0	805.0
R 50	55.00	51.74	3.26	5.4	9.3	24.0	862.5
R 25	55.00	51.74	3.26	5.4	9.3	24.0	600.9
L 25	53.50	51.74	1.76	5.4	7.5	11.4	442.5
L 50	55.50	51.74	3.76	5.4	9.9	28.8	502.5
L 75	56.00	51.74	4.26	5.4	10.5	33.9	783.8
L 100	56.00	53.74	2.26	4.5	7.2	13.2	588.8
L 125	56.20	53.74	2.46	4.5	7.5	14.8	350.0
L 150	56.30	53.74	2.56	4.5	7.6	15.5	378.8
L 175	56.40	53.74	2.66	4.5	7.7	16.2	336.3
L 200	56.50	53.74	2.76	4.5	7.8	17.0	415.0
L 225	56.60	53.74	2.86	4.5	7.9	17.7	433.8
L 250	55.50	51.74	3.76	5.4	9.9	28.8	581.3
L 275	57.00	53.74	3.26	4.5	8.4	21.0	622.5
L 285	58.00	58.00	0.00	4.0	4.0	0.0	105.0
Total							10275.4
Vertical wall							5936.9
b=	1.50						
n=	0.20						
m=	0.00						
e=	53.14						



**DATOS DEL  
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SEDIMENTOLOGIA**





1. RESULTS OF SEDIMENT CALCULATION IN THE MASTER PLAN STAGE

RESULTS OF SEDIMENT CALCULATION(M/P)										
RIVER :		RIO CHOLOMA (WITHOUT PROJECT)								
FLOODS :		50 YEAR FLOODS								
Acc. Dist. (km)	Low Water Channel		High Water Channel		River Bed Material (Spec. Gravity=2.76)			Ashida-Michiue's Method		
	Ave. Bed (El. m)	Bed Width (m)	Ave. Bed (El. m)	Bed Width (m)	Mean Dia. dm(cm)	90 % Dia. d90(cm)	Armour Coal da(cm)	Sediment Vol Vb(m3)	Difference DVb(m3)	Bed Change DZ(m)
11.25	8.50	30.00	10.00	124.00	0.137	0.328	-	5035	-3604	-0.17
12.23	10.00	13.00	10.50	140.00	0.137	0.328	-	1491	13424	1.13
13.08	12.80	15.00	14.60	140.00	0.137	0.328	-	14855	-12711	-0.59
14.28	15.70	21.00	17.00	140.00	0.440	1.400	-	2144	3648	0.16
15.28	18.60	24.00	20.00	130.00	0.900	2.620	-	5792	2256	0.10
16.28	22.00	22.00	23.00	120.00	1.220	3.800	-	8048	-4106	-0.31
17.08	25.00	11.00	27.00	136.60	1.480	4.550	-	3942	-2857	-0.05
18.28	27.70	82.00	30.50	180.00	1.830	5.500	-	1085	5349	0.10
19.08	30.60	50.00	35.00	112.00	2.047	6.033	-	6434	0	0.00
Notes :		1) Sediment volume is the bulk volume including void with the rate of 40 %.								
		2) River bed change is calculated under the assumption that the difference of the sediment volume is concentrated within the low water channel.								

RESULTS OF SEDIMENT CALCULATION (M/P)										
RIVER :		RIO CHOLOMA (WITH PROJECT)								
FLOODS :		50 YEAR FLOODS								
Acc. Dist. (km)	Low Water Channel		High Water Channel		River Bed Material (Spec. Gravity=2.76)			Ashida-Michiue's Method		
	Ave. Bed (El. m)	Bed Width (m)	Ave. Bed (El. m)	Bed Width (m)	Mean Dia. dm(cm)	90 % Dia. d90(cm)	Armour Coal da(cm)	Sediment Vol Vb(m3)	Difference DVb(m3)	Bed Change DZ(m)
11.25	8.30	60.00	10.30	160.00	0.137	0.328	-	9302	329	0.01
12.23	10.38	60.00	12.38	160.00	0.137	0.328	-	9631	-175	0.00
13.08	12.74	60.00	14.74	160.00	0.137	0.328	-	9455	-2111	-0.03
14.28	16.08	60.00	18.08	160.00	0.440	1.400	-	7345	-1902	-0.03
15.28	18.86	60.00	20.86	160.00	0.900	2.620	-	5443	-787	-0.01
16.28	21.63	60.00	23.63	160.00	1.220	3.800	-	4656	752	0.02
17.08	24.05	60.00	26.05	160.00	1.480	4.550	-	5408	-1563	-0.02
18.28	27.69	60.00	29.69	160.00	1.830	5.500	-	3845	54	0.00
19.08	30.11	60.00	32.11	160.00	2.047	6.033	-	3899	0	0.00
Notes :		1) Sediment volume is the bulk volume including void with the rate of 40 %.								
		2) River bed change is calculated under the assumption that the difference of the sediment volume is concentrated within the low water channel.								

RESULTS OF SEDIMENT CALCULATION (WP)										
RIVER :	RIO BLANCO (WITHOUT PROJECT)									
FLOODS :	50 YEAR FLOODS									
	Low Water Channel		High Water Channel		River Bed Material (Spec. Gravity=2.68)			Ashida-Michiue's Method		
Acc. Dist. (km)	Ave. Bed (El. m)	Bed Width (m)	Ave. Bed (El. m)	Bed Width (m)	Mean Dia. dm(cm)	90 % Dia. d90(cm)	Armour Coat da(cm)	Sediment Vol Vb(m3)	Difference DVb(m3)	Bed Change DZ(m)
20.50	54.00	148.00	-	-	0.070	0.138	-	10961	-2482	-0.02
21.40	57.00	135.00	-	-	0.070	0.138	-	8479	-4816	-0.04
22.40	60.00	139.00	-	-	0.070	0.138	-	3663	4419	0.03
23.45	63.00	164.00	-	-	0.070	0.138	-	8082	5320	0.10
23.90	67.50	84.50	-	-	0.070	0.138	-	13402	0	0.00
Notes :	1) Sediment volume is the bulk volume including void with the rate of 40 %.									
	2) River bed change is calculated under the assumption that the difference of the sediment volume is concentrated within the low water channel.									

RESULTS OF SEDIMENT CALCULATION (WP)										
RIVER :	RIO BLANCO (WITH DIVERSION)									
FLOODS :	50 YEAR FLOODS									
	Low Water Channel		High Water Channel		River Bed Material (Spec. Gravity=2.68)			Ashida-Michiue's Method		
Acc. Dist. (km)	Ave. Bed (El. m)	Bed Width (m)	Ave. Bed (El. m)	Bed Width (m)	Mean Dia. dm(cm)	90 % Dia. d90(cm)	Armour Coat da(cm)	Sediment Vol Vb(m3)	Difference DVb(m3)	Bed Change DZ(m)
19.30	49.40	40.00	50.90	126.00	0.070	0.138	-	1281	9192	0.23
20.30	52.57	40.00	54.07	126.00	0.070	0.138	-	10473	-4409	-0.11
21.30	55.75	40.00	57.25	126.00	0.070	0.138	-	6064	1957	0.08
21.90	57.65	40.00	59.15	126.00	0.070	0.138	-	8021	-2304	-0.05
22.40	60.00	139.00	-	-	0.070	0.138	-	5717	1295	0.01
23.45	63.00	164.00	-	-	0.070	0.138	-	7012	7563	0.10
23.90	64.20	164.00	-	-	0.070	0.138	-	14575	0	0.00
Notes :	1) Sediment volume is the bulk volume including void with the rate of 40 %.									
	2) River bed change is calculated under the assumption that the difference of the sediment volume is concentrated within the low water channel.									

RESULTS OF SEDIMENT CALCULATION (MP)										
RIVER : RIO EL SAUCE (WITHOUT PROJECT)										
FLOODS : 50 YEAR FLOODS										
Acc. Dist. (km)	Low Water Channel		High Water Channel		River Bed Material (Spec. Gravity=2.70)			Ashida-Michiue's Method		
	Ave. Bed (El. m)	Bed Width (m)	Ave. Bed (El. m)	Bed Width (m)	Mean Dia. dm(cm)	90 % Dia. d90(cm)	Armour Coat da(cm)	Sediment Vol Vb(m <sup>3</sup> )	Difference DVb(m <sup>3</sup> )	Bed Change DZ(m)
0.00	18.30	12.80	23.50	128.00	0.048	0.103	-	1832	-870	-0.06
1.60	20.80	6.00	22.50	128.00	0.048	0.103	-	962	-750	-0.10
2.80	21.30	7.00	22.20	140.50	0.048	0.103	-	204	4538	0.75
3.90	24.00	4.00	25.00	150.00	0.048	0.103	-	4742	-2895	-0.48
4.90	26.30	8.00	27.50	277.00	0.048	0.103	-	1847	1796	0.20
5.90	28.50	10.00	30.00	262.00	0.048	0.103	-	3643	-3435	-0.18
6.90	30.50	28.00	32.00	760.00	0.048	0.103	-	208	372	0.02
7.90	34.20	18.00	36.00	773.00	0.048	0.103	-	580	-102	-0.01
8.50	38.50	15.00	37.00	231.00	0.048	0.103	-	478	351	0.01
9.00	37.50	214.00	-	-	0.048	0.103	-	829	16161	0.13
9.75	40.70	114.00	-	-	0.048	0.103	-	16990	-16318	-0.13
10.75	44.00	137.00	-	-	0.048	0.103	-	672	10168	0.10
11.55	46.20	123.00	-	-	0.048	0.103	-	10840	-4202	-0.03
12.60	50.80	125.00	-	-	0.048	0.103	-	6638	-908	-0.01
13.55	53.00	127.00	-	-	0.048	0.103	-	5730	-3176	-0.02
14.60	55.00	123.00	-	-	0.048	0.103	-	2554	0	0.00
Notes : 1) Sediment volume is the bulk volume including void with the rate of 40 %.										
2) River bed change is calculated under the assumption that the difference of the sediment volume is concentrated within the low water channel.										

RESULTS OF SEDIMENT CALCULATION (MP)										
RIVER : RIO EL SAUCE (WITH PROJECT AND WITHOUT DIVERSION OF THE RIO BLANCO)										
FLOODS : 50 YEAR FLOODS										
Acc. Dist. (km)	Low Water Channel		High Water Channel		River Bed Material (Spec. Gravity=2.70)			Ashida-Michiue's Method		
	Ave. Bed (El. m)	Bed Width (m)	Ave. Bed (El. m)	Bed Width (m)	Mean Dia. dm(cm)	90 % Dia. d90(cm)	Armour Coat da(cm)	Sediment Vol Vb(m <sup>3</sup> )	Difference DVb(m <sup>3</sup> )	Bed Change DZ(m)
0.00	18.00	40.00	20.00	148.00	0.048	0.103	-	4007	-3366	-0.05
1.60	19.20	40.00	21.20	148.00	0.048	0.103	-	641	878	0.02
2.80	20.40	40.00	22.40	148.00	0.048	0.103	-	1519	6689	0.15
3.90	22.84	40.00	24.84	148.00	0.048	0.103	-	8208	-3265	-0.08
4.90	25.07	40.00	27.07	148.00	0.048	0.103	-	4943	1655	0.04
5.90	27.29	40.00	29.29	148.00	0.048	0.103	-	6598	4442	0.11
6.90	30.15	40.00	32.15	148.00	0.048	0.103	-	11040	-3277	-0.08
7.90	33.00	40.00	35.00	148.00	0.048	0.103	-	7763	7101	0.30
8.50	35.00	40.00	37.00	148.00	0.048	0.103	-	14864	-9838	-0.49
9.00	36.67	40.00	38.67	148.00	0.048	0.103	-	5026	3850	0.13
9.75	39.17	40.00	41.17	148.00	0.048	0.103	-	8876	2132	0.03
10.75	44.00	110.00	-	-	0.048	0.103	-	11008	-6396	-0.07
11.55	46.20	108.00	-	-	0.048	0.103	-	4612	6990	0.06
12.60	50.80	133.00	-	-	0.048	0.103	-	11602	-8139	-0.07
13.55	53.00	110.00	-	-	0.048	0.103	-	3463	-177	0.00
14.60	55.00	100.00	-	-	0.048	0.103	-	3286	0	0.00
Notes : 1) Sediment volume is the bulk volume including void with the rate of 40 %.										
2) River bed change is calculated under the assumption that the difference of the sediment volume is concentrated within the low water channel.										

RESULTS OF SEDIMENT CALCULATION (MP)										
RIVER : RIO EL SAUCE (WITH PROJECT AND WITH DIVERSION OF THE RIO BLANCO)										
FLOODS : 50 YEAR FLOODS										
Acc. Dist. (km)	Low Water Channel		High Water Channel		River Bed Material (Spec. Gravity=2.70)			Ashida-Michiue's Method		
	Ave. Bed (El. m)	Bed Width (m)	Ave. Bed (El. m)	Bed Width (m)	Mean Dia. dm(cm)	90 % Dia. d90(cm)	Armour Coat da(cm)	Sediment Vol Vb(m <sup>3</sup> )	Difference DVb(m <sup>3</sup> )	Bed Change DZ(m)
0.00	18.00	60.00	20.00	188.00	0.048	0.103	-	6253	-3957	-0.04
1.60	19.20	60.00	21.20	188.00	0.048	0.103	-	2296	2196	0.03
2.80	20.40	60.00	22.40	188.00	0.048	0.103	-	4492	9611	0.15
3.90	22.64	60.00	24.84	188.00	0.048	0.103	-	14103	-3661	-0.06
4.90	25.07	60.00	27.07	188.00	0.048	0.103	-	10442	1483	0.02
5.90	27.29	60.00	29.29	188.00	0.048	0.103	-	11925	8310	0.13
6.90	30.15	60.00	32.15	188.00	0.048	0.103	-	19935	-5179	-0.09
7.90	33.00	60.00	35.00	188.00	0.048	0.103	-	14756	10629	0.30
8.50	35.00	60.00	37.00	188.00	0.048	0.103	-	25385	-12064	-0.40
9.00	36.67	60.00	38.67	188.00	0.048	0.103	-	13321	8207	0.18
9.75	39.17	60.00	41.17	188.00	0.048	0.103	-	21528	-92	0.00
10.75	44.00	110.00	-	-	0.048	0.103	-	21436	-14121	-0.16
11.55	46.20	108.00	-	-	0.048	0.103	-	7315	12969	0.10
12.60	50.80	133.00	-	-	0.048	0.103	-	20284	-18505	-0.16
13.55	53.00	110.00	-	-	0.048	0.103	-	1779	2114	0.02
14.60	55.00	100.00	-	-	0.048	0.103	-	3693	0	0.00
Notes :	1) Sediment volume is the bulk volume including void with the rate of 40 %.									
	2) River bed change is calculated under the assumption that the difference of the sediment volume is concentrated within the low water channel.									

RESULTS OF SEDIMENT CALCULATION (MP)											
RIVER : RIO SANTA ANA/BERMEJO (WITHOUT PROJECT)											
FLOODS : 50 YEAR FLOODS											
Acc. Dist. (km)	Low Water Channel		High Water Channel		River Bed Material (Spec. Gravity=2.70)			Ashida-Michiue's Method			
	Ave. Bed (El. m)	Bed Width (m)	Ave. Bed (El. m)	Bed Width (m)	Mean Dia. dm(cm)	90 % Dia. d90(cm)	Armour Coat da(cm)	Sediment Vol Vb(m3)	Difference DVb(m3)	Bed Change DZ(m)	
14.60	55.00	100.00	-	-	0.048	0.103	-	79	49	0.00	
14.85	55.60	100.00	-	-	0.480	1.000	1.220	128	8520	0.138367844	
15.60	59.00	64.20	-	-	0.600	1.350	1.700	8648	-6068	-0.12879126	
16.50	63.50	40.50	-	-	1.000	2.100	2.800	2580	0	0.00	
Notes : 1) Sediment volume is the bulk volume including void with the rate of 40 %.											
2) River bed change is calculated under the assumption that the difference of the sediment volume is concentrated within the low water channel.											

RESULTS OF SEDIMENT CALCULATION (MP)											
RIVER : RIO SANTA ANA/BERMEJO (WITH PROJECT AND WITHOUT DIVERSION OF THE RIO BLANCO)											
FLOODS : 50 YEAR FLOODS											
Acc. Dist. (km)	Low Water Channel		High Water Channel		River Bed Material (Spec. Gravity=2.70)			Ashida-Michiue's Method			
	Ave. Bed (El. m)	Bed Width (m)	Ave. Bed (El. m)	Bed Width (m)	Mean Dia. dm(cm)	90 % Dia. d90(cm)	Armour Coat da(cm)	Sediment Vol Vb(m3)	Difference DVb(m3)	Bed Change DZ(m)	
14.60	55.00	100.00	-	-	0.048	0.103	-	101	66	0.00	
14.85	55.60	100.00	-	-	0.480	1.000	1.220	187	8481	0.14	
15.60	59.00	64.20	-	-	0.600	1.350	1.700	8648	-6144	-0.13	
16.50	63.50	40.50	-	-	1.000	2.100	2.800	2504	0	0.00	
Notes : 1) Sediment volume is the bulk volume including void with the rate of 40 %.											
2) River bed change is calculated under the assumption that the difference of the sediment volume is concentrated within the low water channel.											

RESULTS OF SEDIMENT CALCULATION (MP)											
RIVER : RIO SANTA ANA/BERMEJO (WITH PROJECT OF THE RIO EL SAUCE AND WITH DIVERSION OF THE RIO BLANCO)											
FLOODS : 50 YEAR FLOODS											
Acc. Dist. (km)	Low Water Channel		High Water Channel		River Bed Material (Spec. Gravity=2.70)			Ashida-Michiue's Method			
	Ave. Bed (El. m)	Bed Width (m)	Ave. Bed (El. m)	Bed Width (m)	Mean Dia. dm(cm)	90 % Dia. d90(cm)	Armour Coat da(cm)	Sediment Vol Vb(m3)	Difference DVb(m3)	Bed Change DZ(m)	
14.60	55.00	100.00	-	-	0.048	0.103	-	120	92	0.00	
14.85	55.60	100.00	-	-	0.480	1.000	1.220	212	8690	0.14	
15.60	59.00	64.20	-	-	0.600	1.350	1.700	8902	-6463	-0.14	
16.50	63.50	40.50	-	-	1.000	2.100	2.800	2439	0	0.00	
Notes : 1) Sediment volume is the bulk volume including void with the rate of 40 %.											
2) River bed change is calculated under the assumption that the difference of the sediment volume is concentrated within the low water channel.											

RESULTS OF SEDIMENT CALCULATION (MP)										
RIVER :	RIO PIEDRAS (WITHOUT PROJECT)									
FLOODS :	50 YEAR FLOODS									
Acc. Dist. (km)	Low Water Channel		High Water Channel		River Bed Material (Spec. Gravity=2.70)			Ashida-Michiue's Method		
	Ave. Bed (El. m)	Bed Width (m)	Ave. Bed (El. m)	Bed Width (m)	Mean Dia. dm(cm)	90 % Dia. d90(cm)	Armour Coat da(cm)	Sediment Vol Vb(m3)	Difference DVb(m3)	Bed Change DZ(m)
14.60	55.00	77.40	-	-	0.048	0.103	-	58	824	0.04
14.85	56.40	77.40	-	-	0.480	1.000	1.220	882	14790	0.28
15.60	62.00	64.50	-	-	0.600	1.350	1.700	15672	8826	0.13
16.85	71.60	45.50	-	-	1.120	2.450	3.300	6810	0	0.00
Notes :	1) Sediment volume is the bulk volume including void with the rate of 40 %.									
	2) River bed change is calculated under the assumption that the difference of the sediment volume is concentrated within the low water channel.									

RESULTS OF SEDIMENT CALCULATION (MP)										
RIVER :	RIO PIEDRAS (WITH PROJECT AND WITHOUT DIVERSION OF THE RIO BLANCO)									
FLOODS :	50 YEAR FLOODS									
Acc. Dist. (km)	Low Water Channel		High Water Channel		River Bed Material (Spec. Gravity=2.70)			Ashida-Michiue's Method		
	Ave. Bed (El. m)	Bed Width (m)	Ave. Bed (El. m)	Bed Width (m)	Mean Dia. dm(cm)	90 % Dia. d90(cm)	Armour Coat da(cm)	Sediment Vol Vb(m3)	Difference DVb(m3)	Bed Change DZ(m)
14.60	55.00	77.40	-	-	0.048	0.103	-	69	1169	0.06
14.85	56.40	77.40	-	-	0.480	1.000	1.220	1238	14434	0.27
15.60	62.00	64.50	-	-	0.600	1.350	1.700	15672	8826	0.13
16.85	71.60	45.50	-	-	1.120	2.450	3.300	6951	0	0.00
Notes :	1) Sediment volume is the bulk volume including void with the rate of 40 %.									
	2) River bed change is calculated under the assumption that the difference of the sediment volume is concentrated within the low water channel.									

RESULTS OF SEDIMENT CALCULATION (MP)										
RIVER :	RIO PIEDRAS (WITH PROJECT OF THE RIO EL SAUCE AND WITH DIVERSION OF THE RIO BLANCO)									
FLOODS :	50 YEAR FLOODS									
Acc. Dist. (km)	Low Water Channel		High Water Channel		River Bed Material (Spec. Gravity=2.70)			Ashida-Michiue's Method		
	Ave. Bed (El. m)	Bed Width (m)	Ave. Bed (El. m)	Bed Width (m)	Mean Dia. dm(cm)	90 % Dia. d90(cm)	Armour Coat da(cm)	Sediment Vol Vb(m3)	Difference DVb(m3)	Bed Change DZ(m)
14.60	55.00	77.40	-	-	0.048	0.103	-	82	1380	0.07
14.85	56.40	77.40	-	-	0.480	1.000	1.220	1462	13744	0.26
15.60	62.00	64.50	-	-	0.600	1.350	1.700	15206	8826	0.13
16.85	71.60	45.50	-	-	1.120	2.450	3.300	4723	0	0.00
Notes :	1) Sediment volume is the bulk volume including void with the rate of 40 %.									
	2) River bed change is calculated under the assumption that the difference of the sediment volume is concentrated within the low water channel.									

## 2. RESULTS OF SEDIMENT CALCULATION IN THE FEASIBILITY STUDY STAGE

RESULTS OF SEDIMENT CALCULATION (F/S)												
RIVER :		RIO CHOLOMA (WITHOUT PROJECT)										
FLOODS :		50 YEAR FLOODS										
GROSS SECTION	Acc. Dist. (km)	Low Water Channel		High Water Channel		River Bed Material (Spec. Gravity=2.76)			Ashida-Michlue's Method			
		Ave. Bed (EL.m)	Bed Width (m)	Ave. Bed (EL.m)	Bed Width (m)	Mean Dia. dm(cm)	90 % Dia. d90(cm)	Armour Coat da(cm)	Sediment Vol Vb(m <sup>3</sup> )	Difference DVb(m <sup>3</sup> )	Difference DV(m <sup>3</sup> /km)	Bed Change DZ(m)
CH-001	11.250	8.00	42.00	9.50	250.00	0.137	0.328	-	3894	-2886	-14430	-0.40
CH-002	11.450	8.50	39.00	8.35	250.00	0.137	0.328	-	1008	1479	7395	0.23
CH-003	11.650	9.00	34.00	9.25	250.00	0.137	0.328	-	2487	213	1065	0.04
CH-004	11.850	9.50	14.00	9.85	250.00	0.137	0.328	-	2700	-248	-1240	-0.09
CH-005	12.050	10.00	14.00	9.75	250.00	0.137	0.328	-	2452	-508	-2540	-0.19
CH-006	12.250	10.50	12.50	10.20	250.00	0.137	0.328	-	1944	2969	14845	0.91
CH-007	12.450	11.20	20.00	11.20	250.00	0.137	0.328	-	4913	2130	10650	0.52
CH-008	12.650	12.00	21.00	11.75	250.00	0.137	0.328	-	7043	-1950	-9750	-0.38
CH-009	12.850	12.80	30.00	12.70	250.00	0.137	0.328	-	5093	-847	-3235	-0.11
CH-010	13.050	13.20	31.00	13.50	250.00	0.137	0.328	-	4446	6442	32210	0.99
CH-011	13.250	13.60	34.00	14.50	250.00	0.188	0.502	-	10888	-9548	-41513	-1.08
CH-012	13.480	14.00	43.00	14.75	250.00	0.243	0.703	-	1340	940	4700	0.13
CH-013	13.680	15.00	32.00	15.30	250.00	0.292	0.877	-	2280	1520	7600	0.25
CH-014	13.880	15.30	29.00	15.73	250.00	0.341	1.051	-	3800	3151	16584	0.58
CH-015	14.070	16.00	28.00	16.55	220.00	0.388	1.217	-	6951	-3896	-11459	-0.40
CH-017	14.410	17.00	30.00	18.08	230.00	0.502	1.564	-	3055	-1031	-4910	-0.16
CH-018	14.620	17.50	33.00	18.70	250.00	0.601	1.828	-	2024	1370	6850	0.16
CH-019	14.820	17.80	55.00	19.73	225.00	0.696	2.079	-	3394	5	12	0.00
CH-021	15.250	20.00	53.00	21.10	240.00	0.900	2.620	-	3399	-3047	-8464	-0.16
CH-023	15.610	20.30	53.00	22.08	230.00	1.050	3.172	-	352	1437	6248	0.12
CH-024	15.840	22.00	53.00	23.33	230.00	1.145	3.524	-	1789	-1497	-2772	-0.06
CH-026	16.380	23.00	40.00	24.15	232.00	1.316	4.073	-	292	1016	4618	0.09
CH-027	16.600	24.00	68.00	25.15	230.00	1.372	4.239	-	1308	2677	6529	0.12
CH-029	17.010	24.00	38.00	26.15	200.00	1.480	4.550	-	3985	-1017	-5085	-0.12
CH-030	17.210	25.40	48.00	27.15	210.00	1.538	4.708	-	2968	-1209	-5257	-0.08
CH-031	17.440	26.00	78.00	28.50	180.00	1.605	4.890	-	1759	979	979	0.01
CH-034	18.440	29.00	56.00	30.60	180.00	1.887	5.641	-	2738	-811	-3060	-0.07
CH-036	18.705	29.50	37.00	32.85	135.00	1.953	5.803	-	1927	-44	-436	-0.01
CH-037	18.806	29.60	27.00	32.85	195.00	1.979	5.865	-	1883	1397	15697	0.48
CH-038	18.895	30.00	39.00	32.95	185.00	2.001	5.920	-	3280	-3177	-26622	-0.63
CH-039	19.006	30.60	52.00	33.40	180.00	2.029	5.988	-	103	2017	27257	0.49
CH-040	19.080	31.00	60.00	37.05	90.00	2.047	6.033	6.033	2120	-1811	-9055	-0.24
CH-041	19.280	31.50	15.00	34.00	300.00	2.077	6.067	6.108	309	943	4715	0.35
CH-042	19.480	32.50	12.00	35.50	305.00	2.107	6.100	6.193	1252	-1252	-6260	-0.50
CH-043	19.680	33.50	13.00	35.50	252.00	2.137	6.134	6.258	0	0	0	0.00

Notes :

- 1) Sediment volume is the bulk volume including void with the rate of 40 %.
- 2) River bed change is calculated under the assumption that the difference of the sediment volume is concentrated within the low water channel.

RESULTS OF SEDIMENT CALCULATION (F/S)													
RIVER :		RIO CHOLOMA (WITH PROJECT)											
FLOODS :		50 YEAR FLOODS											
CROSS SECTION	Low Water Channel			High Water Channel		River Bed Material (Spec. Gravity=2.76)			Ashida-Michue's Method				
	Acc. Dist. (km)	Ave. Bed (EL m)	Bed Width (m)	Ave. Bed (EL m)	Bed Width (m)	Mean Dia. $\phi_{m}(cm)$	90 % Dia. $\phi_{90}(cm)$	Armour Coat $\phi_a(cm)$	Sediment Vol Vb(m <sup>3</sup> )	Difference DVb(m <sup>3</sup> )	Difference DV(m <sup>3</sup> /km)	Bed Change DZ(m)	
CH-001	11.250	7.00	50.00	9.00	148.00	0.137	0.328	-	3163	1493	7485	0.15	
CH-002	11.450	7.53	50.00	9.53	148.00	0.137	0.328	-	4656	2037	14185	0.28	
CH-003	11.650	8.06	50.00	10.06	148.00	0.137	0.328	-	7493	939	2695	0.05	
CH-004	11.850	8.59	50.00	10.59	148.00	0.137	0.328	-	8032	115	575	0.01	
CH-005	12.050	9.12	50.00	11.12	148.00	0.137	0.328	-	8147	22	110	0.00	
CH-006	12.250	9.65	50.00	11.65	148.00	0.137	0.328	-	8169	-37	-195	0.00	
CH-007	12.440	10.15	50.00	12.15	148.00	0.137	0.328	-	8132	38	190	0.00	
CH-008	12.640	10.68	50.00	12.68	148.00	0.137	0.328	-	8170	3	15	0.00	
CH-009	12.840	11.21	50.00	13.21	148.00	0.137	0.328	-	8179	-2	-10	0.00	
CH-010	13.040	11.74	50.00	13.74	148.00	0.137	0.328	-	8171	-269	-1445	-0.03	
CH-011	13.240	12.27	50.00	14.27	148.00	0.189	0.511	-	7882	-317	-1585	-0.03	
CH-012	13.440	12.80	50.00	14.80	148.00	0.241	0.694	-	7565	368	895	0.02	
CH-014	13.810	14.08	40.00	16.08	138.00	0.336	1.034	-	7933	1439	894	0.22	
CH-015	13.970	14.64	40.00	16.64	138.00	0.378	1.180	-	9372	-719	-2996	-0.07	
CH-016	14.210	15.47	40.00	17.47	138.00	0.440	1.400	-	8653	68	1133	0.03	
CH-017	14.270	15.69	40.00	17.69	138.00	0.473	1.489	-	8727	-669	-3187	-0.08	
CH-018	14.490	16.40	40.00	18.40	138.00	0.591	1.799	-	8053	-150	-789	-0.02	
CH-019	14.670	17.08	40.00	19.08	138.00	0.696	2.080	-	7903	-1832	-5019	-0.13	
CH-021	15.035	18.33	40.00	20.83	130.00	0.900	2.920	-	6071	973	4324	0.11	
CH-022	15.260	19.11	40.00	21.61	130.00	1.002	2.997	-	7044	-240	-1846	-0.05	
CH-023	15.390	19.56	40.00	22.06	130.00	1.061	3.214	-	6804	-253	-1150	-0.03	
CH-024	15.610	20.32	40.00	22.82	130.00	1.161	3.592	-	6551	-53	-408	-0.01	
CH-025	15.740	20.77	40.00	23.27	130.00	1.220	3.800	-	6498	-184	-736	-0.02	
CH-026	15.990	21.64	40.00	24.14	130.00	1.300	4.031	-	6314	-273	-1365	-0.03	
CH-027	16.190	22.33	40.00	24.83	130.00	1.364	4.217	-	6041	-144	-720	-0.02	
CH-028	16.390	23.02	40.00	25.52	130.00	1.428	4.400	-	5897	59	369	0.01	
CH-029	16.550	23.58	40.00	26.08	130.00	1.480	4.580	-	5956	-381	-1905	-0.05	
CH-030	16.750	24.27	40.00	26.77	130.00	1.571	4.797	-	5575	-123	-588	-0.01	
CH-031	16.960	25.00	40.00	27.50	130.00	1.666	5.056	-	5452	-42	-210	-0.01	
CH-032	17.160	25.81	40.00	28.31	130.00	1.757	5.303	-	5410	1118	6987	0.17	
CH-033	17.320	26.46	40.00	28.96	130.00	1.830	5.500	-	6528	-435	-1891	-0.05	
CH-034	17.550	27.39	40.00	29.89	130.00	1.888	5.642	-	6093	-38	-230	-0.01	
CH-035	17.715	28.05	40.00	30.55	130.00	1.929	5.743	-	6055	183	1830	0.06	
CH-036	17.815	28.46	40.00	30.96	130.00	1.954	5.805	-	6238	-284	-3156	-0.08	
CH-037	17.905	28.82	40.00	31.32	130.00	1.977	5.860	-	5954	-52	-578	-0.01	
CH-038	17.995	29.18	40.00	31.68	130.00	1.999	5.916	-	5902	205	1864	0.05	
CH-039	18.105	29.63	40.00	32.13	130.00	2.027	5.964	-	6107	-1511	-18888	-0.47	
CH-040	18.185	29.95	40.00	32.45	180.00	2.047	6.033	6.033	4596	157	748	0.02	
CH-041	18.395	30.80	40.00	33.30	236.00	2.077	6.067	6.108	4753	-353	-1681	-0.04	
CH-042	18.605	31.65	40.00	34.15	292.00	2.107	6.100	6.183	4400	494	2352	0.06	
CH-043	18.815	32.50	40.00	35.00	300.00	2.137	6.134	6.258	4894	0	0	0.00	

Notes : 1) Sediment volume is the bulk volume including void with the rate of 40 %.  
2) River bed change is calculated under the assumption that the difference of the sediment volume is concentrated within the low water channel.



RESULTS OF SEDIMENT CALCULATION (F/S)													
RIVER :		RIO CHOLOMA (WITH URGENT PROJECT)											
FLOODS :		50 YEAR FLOODS											
CROSS SECTION	Low Water Channel			High Water Channel		River Bed Material (Spec. Gravity=2.76)			Ashida-Michlue's Method				
	Acc. Dist. (km)	Ave. Bed (EL. m)	Bed Width (m)	Ave. Bed (EL. m)	Bed Width (m)	Mean Dia. (mm)	90 % Dia. (mm)	Armour Coat (mm)	Sediment Vol. Vb(m <sup>3</sup> )	Difference DVb(m <sup>3</sup> )	Difference DV(m <sup>3</sup> /km)	Bed Change DZ(m)	
CH-001	11.250	8.00	42.00	9.50	250.00	0.137	0.328	-	3894	-2888	-14430	-0.40	
CH-002	11.450	8.50	30.00	8.35	250.00	0.137	0.328	-	1908	1479	7395	0.23	
CH-003	11.650	9.00	34.00	9.25	250.00	0.137	0.328	-	2487	213	1065	0.04	
CH-004	11.850	9.50	14.00	9.65	250.00	0.137	0.328	-	2700	-248	-1240	-0.09	
CH-005	12.050	10.00	14.00	9.75	250.00	0.137	0.328	-	2452	-508	-2540	-0.19	
CH-006	12.250	10.50	12.50	10.20	250.00	0.137	0.328	-	1944	2969	14845	0.91	
CH-007	12.450	11.20	20.00	11.20	250.00	0.137	0.328	-	4913	2130	10650	0.52	
CH-009	12.850	12.00	21.00	11.75	250.00	0.137	0.328	-	7043	-1850	-9750	-0.38	
CH-009	12.850	12.80	30.00	12.70	250.00	0.137	0.328	-	5093	-847	-3235	-0.11	
CH-010	13.050	13.20	31.00	13.50	250.00	0.137	0.328	-	4448	6442	32210	0.99	
CH-011	13.250	13.60	34.00	14.50	250.00	0.188	0.502	-	10888	-9548	-41513	-1.08	
CH-012	13.480	14.00	43.00	14.75	250.00	0.243	0.703	-	1340	940	4700	0.13	
CH-013	13.680	15.00	52.00	15.30	250.00	0.292	0.877	-	2280	1520	7800	0.25	
CH-014	13.880	15.30	29.00	15.73	250.00	0.341	1.051	-	3800	3151	16564	0.58	
CH-015	14.070	16.00	28.00	16.55	220.00	0.388	1.217	-	6951	-3896	-11459	-0.40	
CH-017	14.410	17.00	30.00	18.08	230.00	0.502	1.564	-	3055	-1031	-4910	-0.16	
CH-018	14.620	17.50	33.00	18.70	250.00	0.601	1.828	-	2024	1370	6850	0.16	
CH-019	14.820	17.80	55.00	19.73	225.00	0.698	2.079	-	3394	5	12	0.00	
CH-021	15.250	20.00	53.00	21.10	240.00	0.900	2.620	-	3399	-1712	-4756	-0.10	
CH-023	15.610	20.00	40.00	22.08	130.00	1.061	3.214	-	1687	2594	11791	0.29	
CH-024	15.830	20.32	40.00	22.82	130.00	1.161	3.584	-	4281	857	6592	0.18	
CH-025	15.980	20.77	40.00	23.27	130.00	1.220	3.800	-	5138	1212	4848	0.12	
CH-026	16.210	21.64	40.00	24.14	130.00	1.300	4.031	-	6350	-1199	-5995	-0.15	
CH-027	16.410	22.33	40.00	24.83	130.00	1.364	4.217	-	5151	748	3730	0.09	
CH-028	16.810	23.02	40.00	25.52	130.00	1.429	4.402	-	5897	59	369	0.01	
CH-029	16.770	23.58	40.00	26.08	130.00	1.480	4.550	-	5956	-381	-1905	-0.05	
CH-030	16.970	24.27	40.00	26.77	130.00	1.571	4.797	-	5575	-123	-586	-0.01	
CH-031	17.180	25.00	40.00	27.50	130.00	1.666	5.056	-	5452	-42	-210	-0.01	
CH-032	17.380	25.81	40.00	28.31	130.00	1.757	5.303	-	5410	1118	6987	0.17	
CH-033	17.540	26.46	40.00	28.98	130.00	1.830	5.500	-	6528	-435	-1891	-0.05	
CH-034	17.770	27.39	40.00	29.89	130.00	1.888	5.642	-	6093	-38	-230	-0.01	
CH-035	17.935	28.05	40.00	30.55	130.00	1.929	5.743	-	6055	183	1830	0.05	
CH-036	18.035	28.46	40.00	30.96	130.00	1.954	5.805	-	6238	-284	-3156	-0.08	
CH-037	18.125	28.82	40.00	31.32	130.00	1.977	5.860	-	5954	-52	-578	-0.01	
CH-038	18.215	29.18	40.00	31.68	130.00	1.999	5.916	-	5902	205	1864	0.05	
CH-039	18.325	29.63	40.00	32.13	130.00	2.027	5.984	-	6107	-548	-6850	-0.17	
CH-040	18.405	29.95	40.00	32.45	90.00	2.047	6.033	6.033	5559	-1827	-8700	-0.22	
CH-041	18.615	30.80	40.00	33.30	131.20	2.077	6.067	6.108	3732	455	2167	0.05	
CH-042	18.825	31.85	40.00	34.15	292.00	2.107	6.100	6.183	4187	1118	5314	0.13	
CH-043	19.035	32.50	40.00	35.00	300.00	2.137	6.134	6.258	5303	0	0	0	

Notes :

- 1) Sediment volume is the bulk volume including void with the rate of 40 %.
- 2) River bed change is calculated under the assumption that the difference of the sediment volume is concentrated within the low water channel.
- 3) River improvement will be done for the reaches upstream from the CH-023

