



PROVINCIA DI GENOVA

TORRENTE SAN PIETRO O FOCE

**PIANO DI BACINO STRALCIO
PER LA TUTELA DAL RISCHIO IDROGEOLOGICO**
(ai sensi dell'art. 1, comma 1, del D.L. 180/1998 convertito in L. 267/1998)



ALLEGATO: Verifiche idrauliche

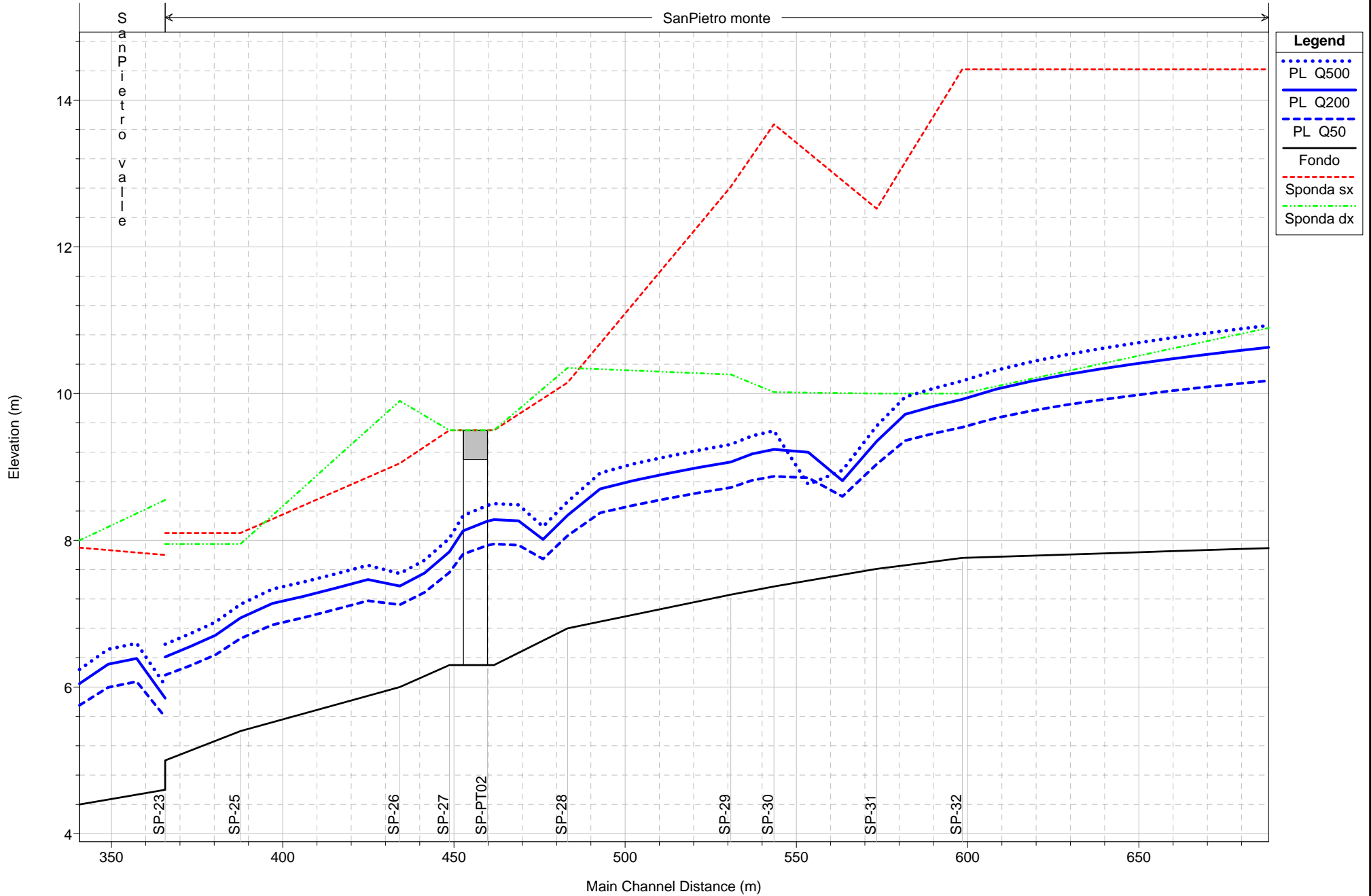
Approvato con D.C.P. n. 19 del 30/07/2013

Elaborato	Verificato	Regolarità tecnica	Data	Ed.	Rev.
Ufficio Pianificazione territoriale	Arch. Andrea Pasetti	Arch. Andrea Pasetti	30/07/2013	0	0

San Pietro_Foce

SanPietro monte

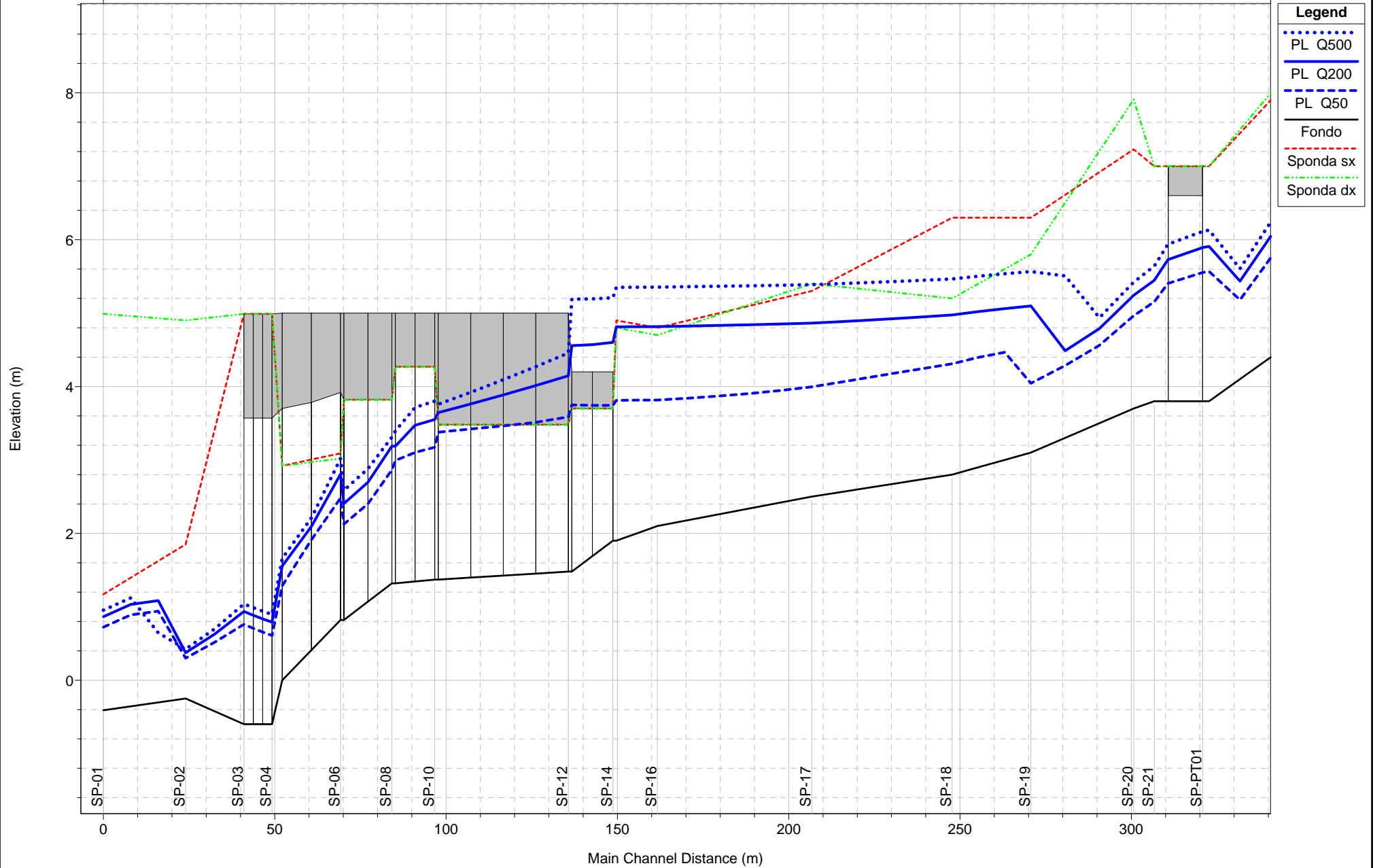
San Pietro valle



1 cm Horiz. = 15 m 1 cm Vert. = 0.7 m

San Pietro_Foce

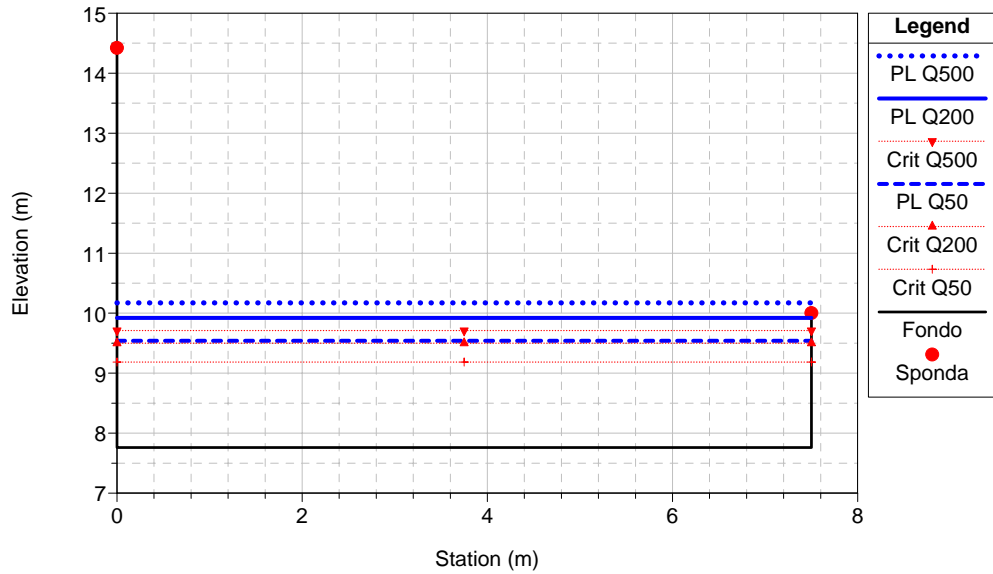
SanPietro valle



1 cm Horiz. = 15 m 1 cm Vert. = 0.7 m

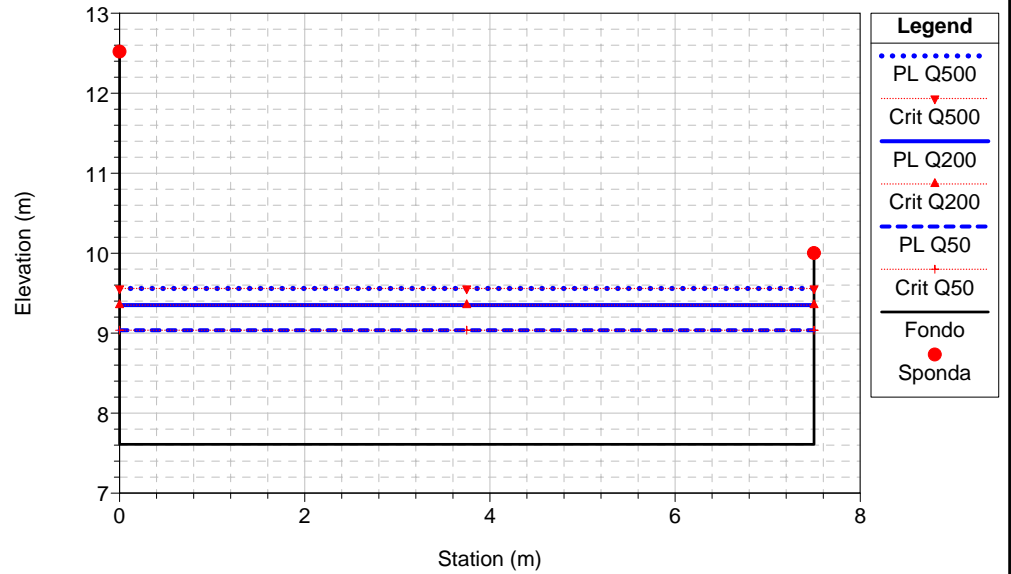
San Pietro_Foce

River = SanPietro Reach = monte SP-32



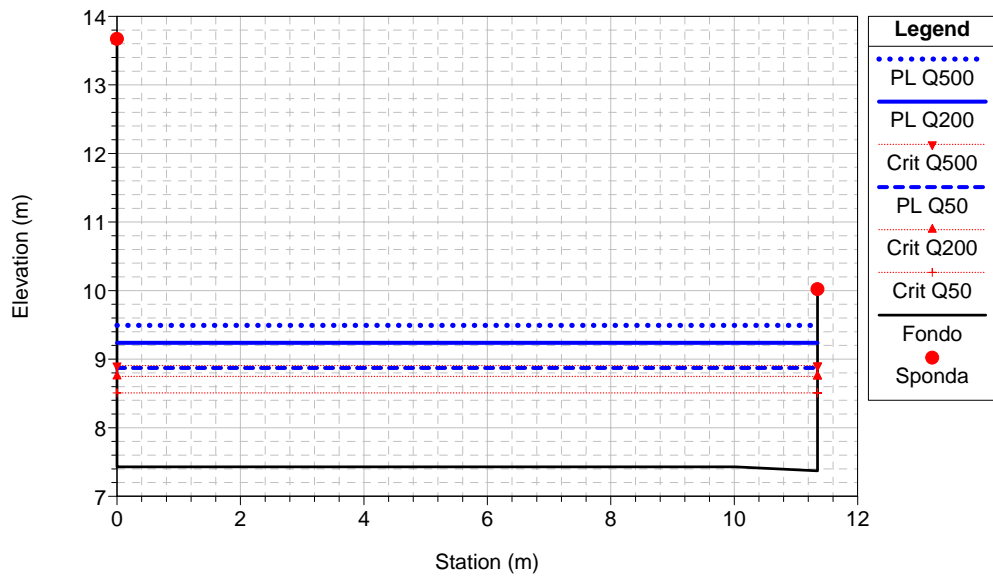
San Pietro_Foce

River = SanPietro Reach = monte SP-31



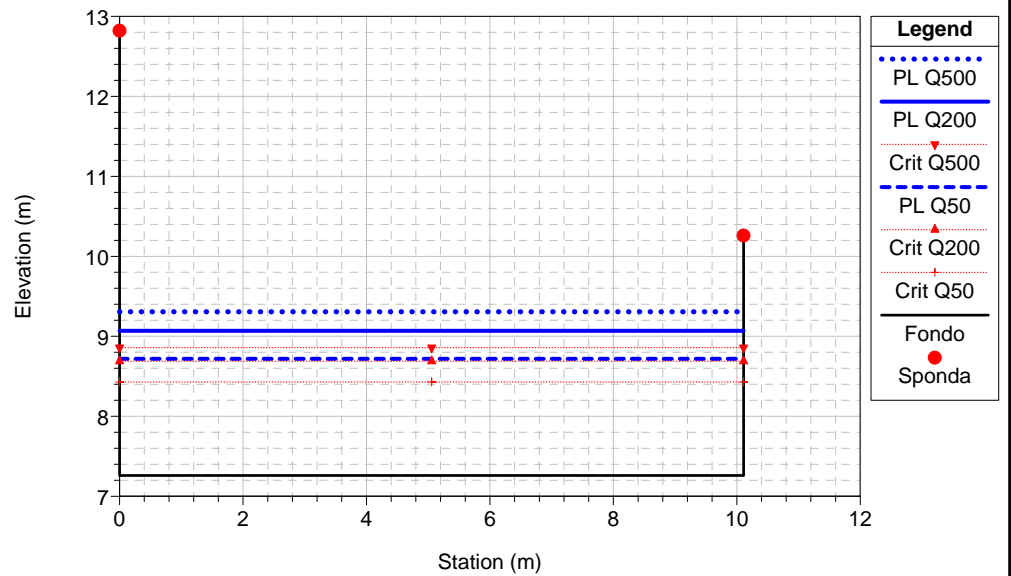
San Pietro_Foce

River = SanPietro Reach = monte SP-30



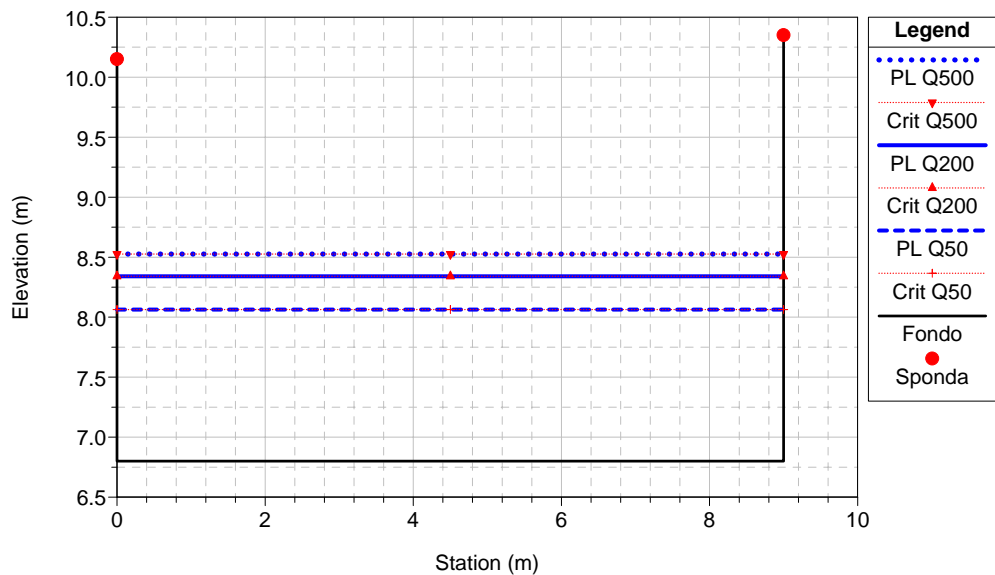
San Pietro_Foce

River = SanPietro Reach = monte SP-29



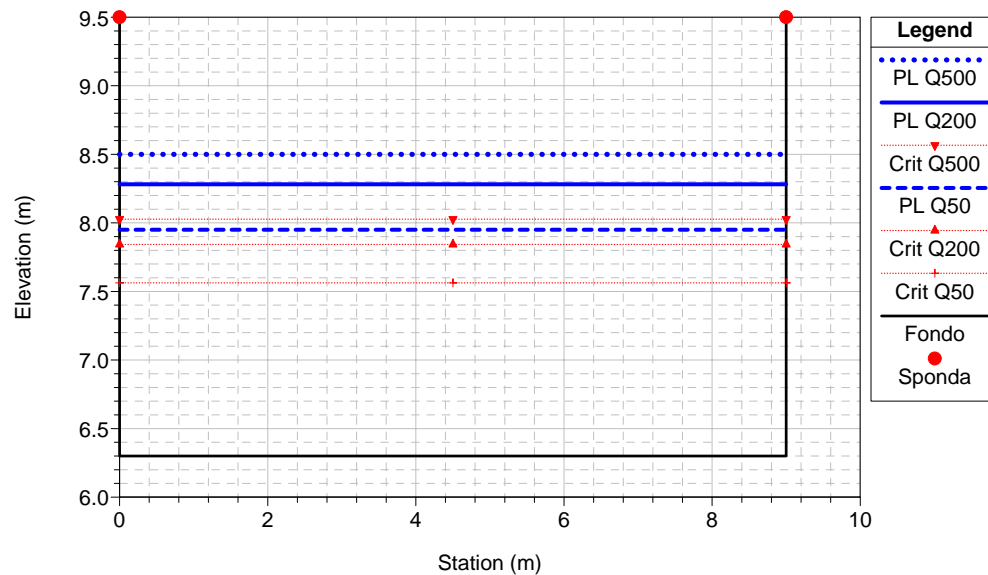
San Pietro_Foce

River = SanPietro Reach = monte SP-28



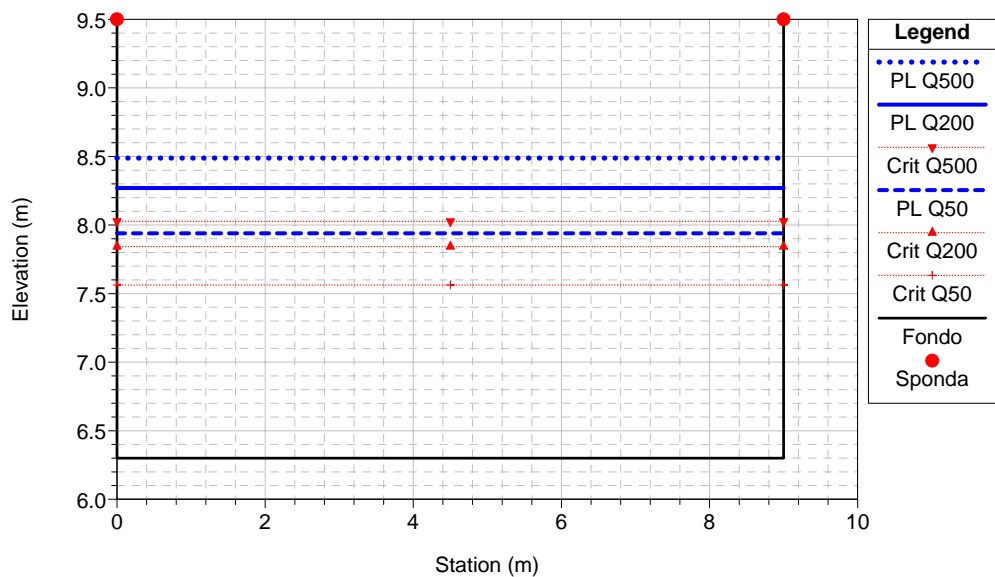
San Pietro_Foce

River = SanPietro Reach = monte SP-27



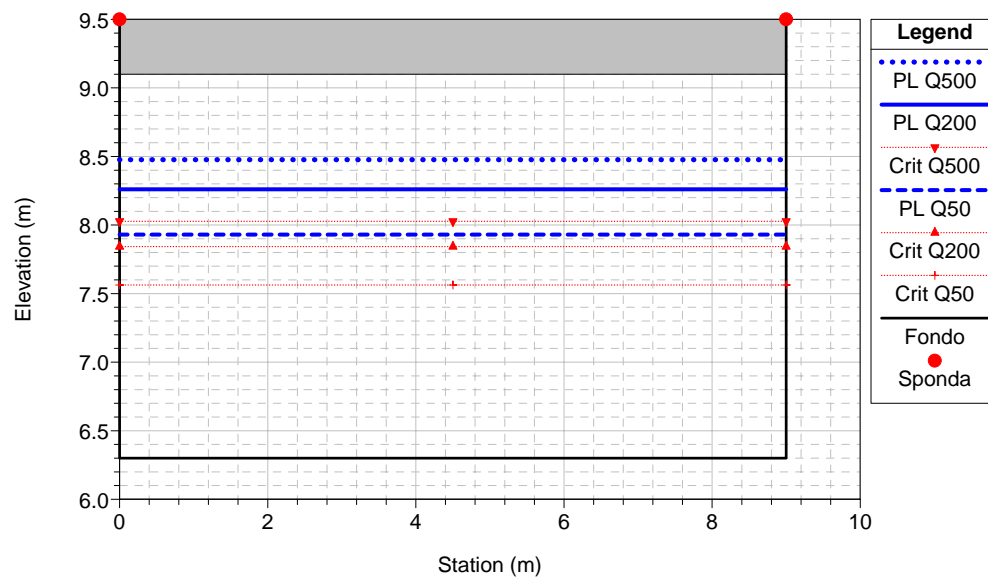
San Pietro_Foce

River = SanPietro Reach = monte SP-27



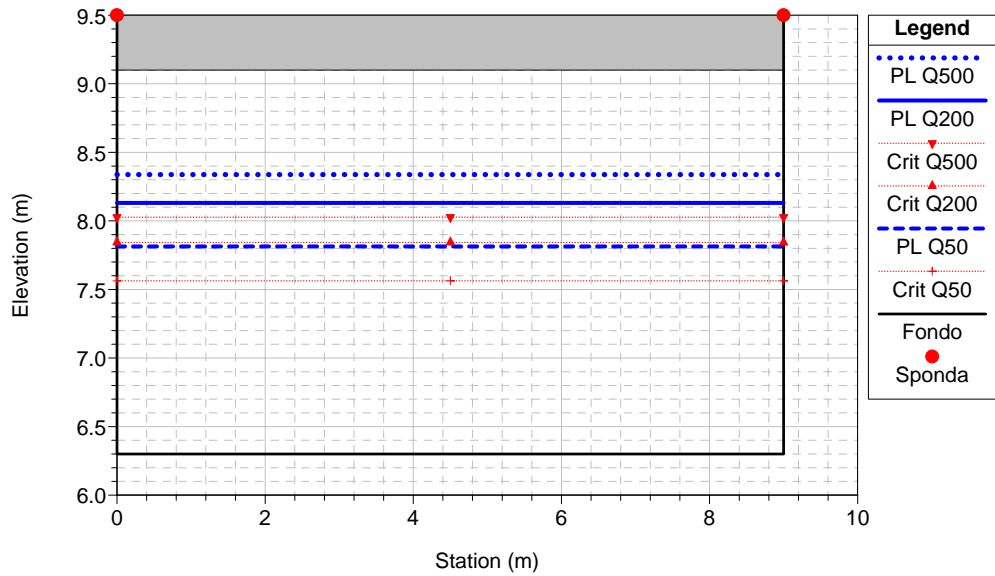
San Pietro_Foce

River = SanPietro Reach = monte SP-PT02



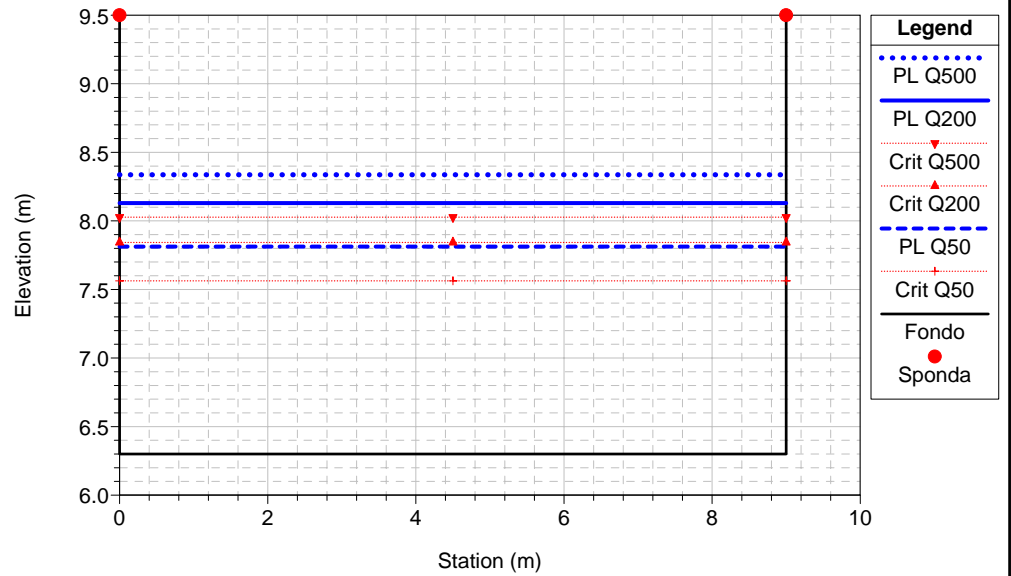
San Pietro_Foce

River = SanPietro Reach = monte SP-PT02



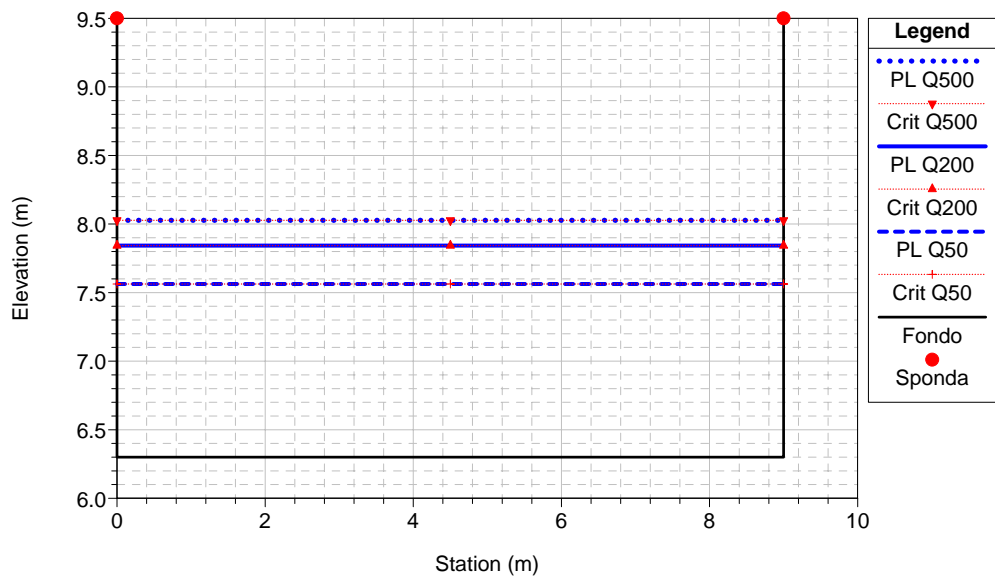
San Pietro_Foce

River = SanPietro Reach = monte SP-27



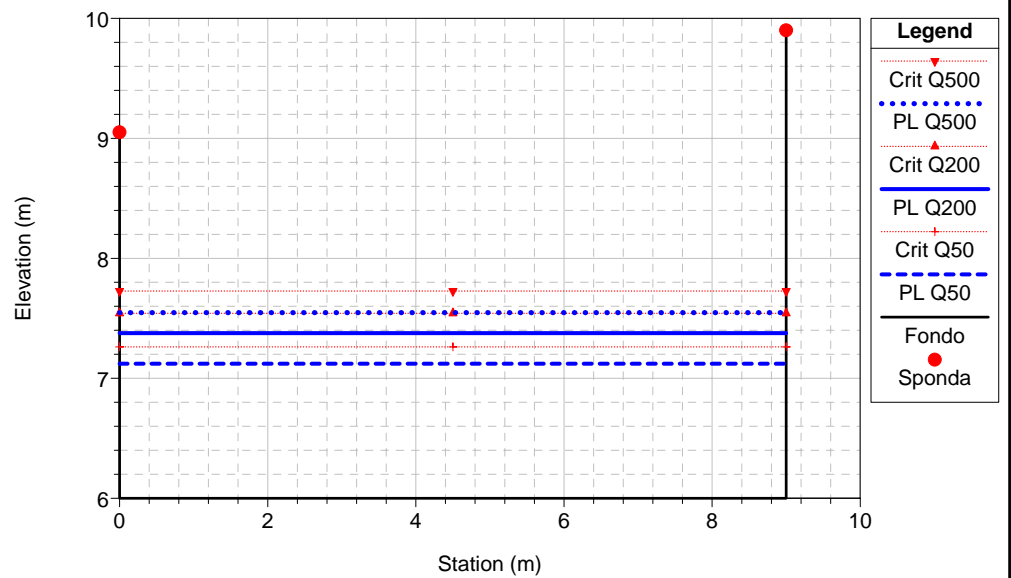
San Pietro_Foce

River = SanPietro Reach = monte SP-27



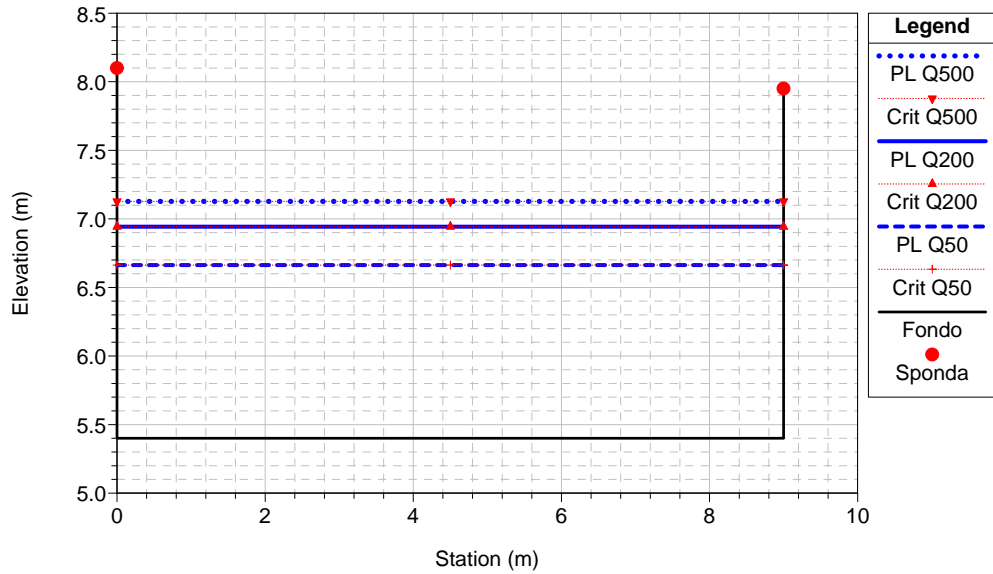
San Pietro_Foce

River = SanPietro Reach = monte SP-26



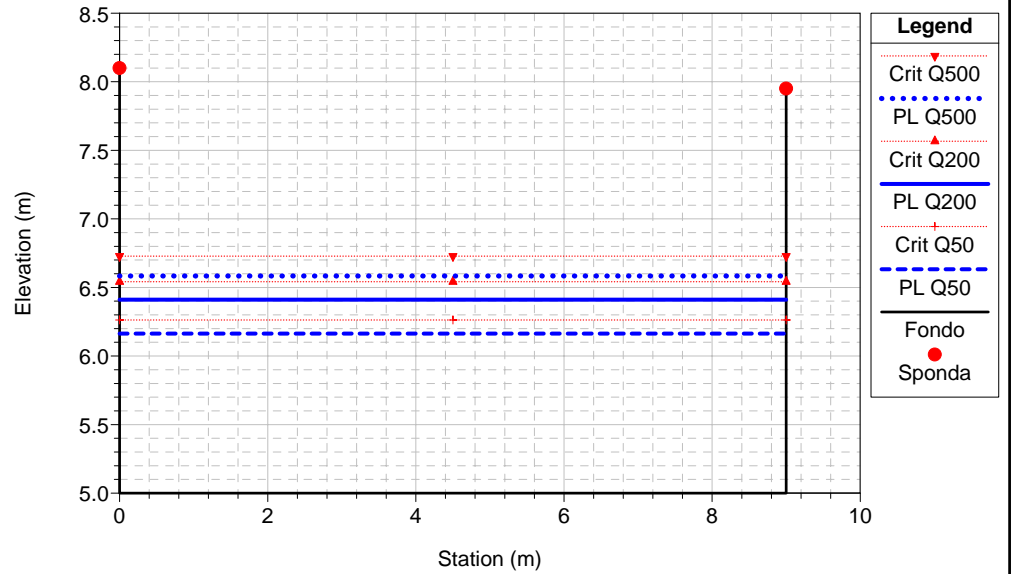
San Pietro_Foce

River = SanPietro Reach = monte SP-25



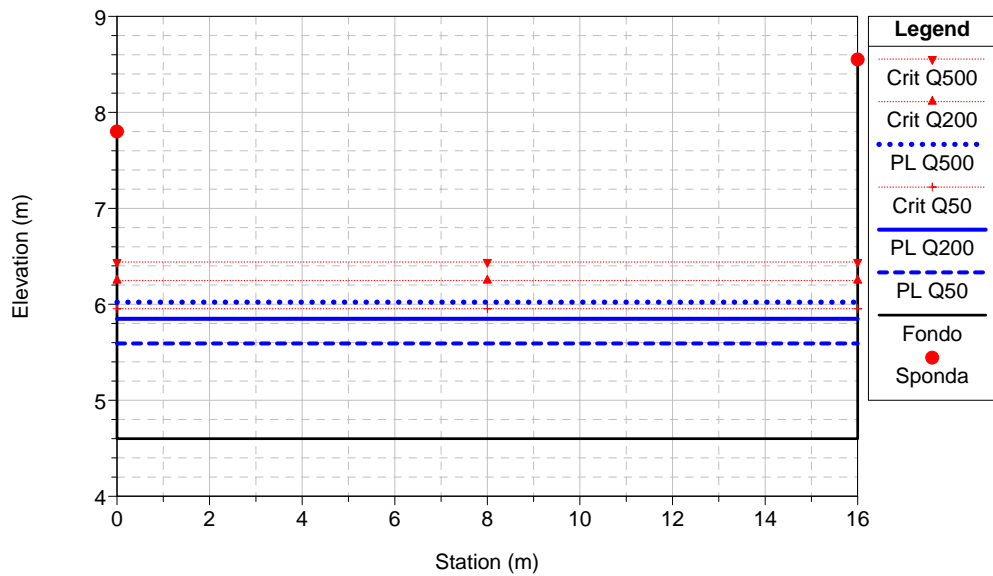
San Pietro_Foce

River = SanPietro Reach = monte SP-24



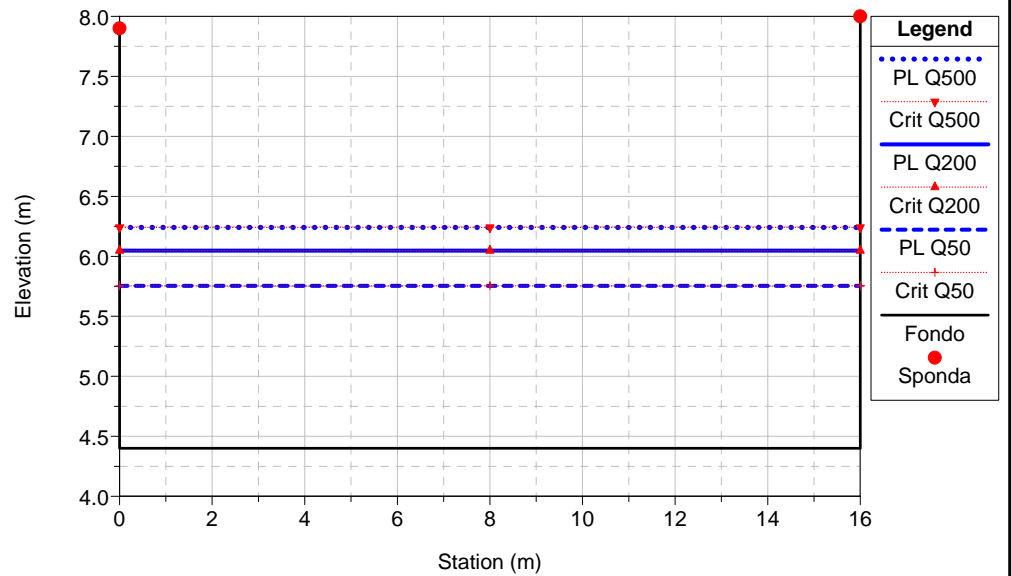
San Pietro_Foce

River = SanPietro Reach = valle SP-23

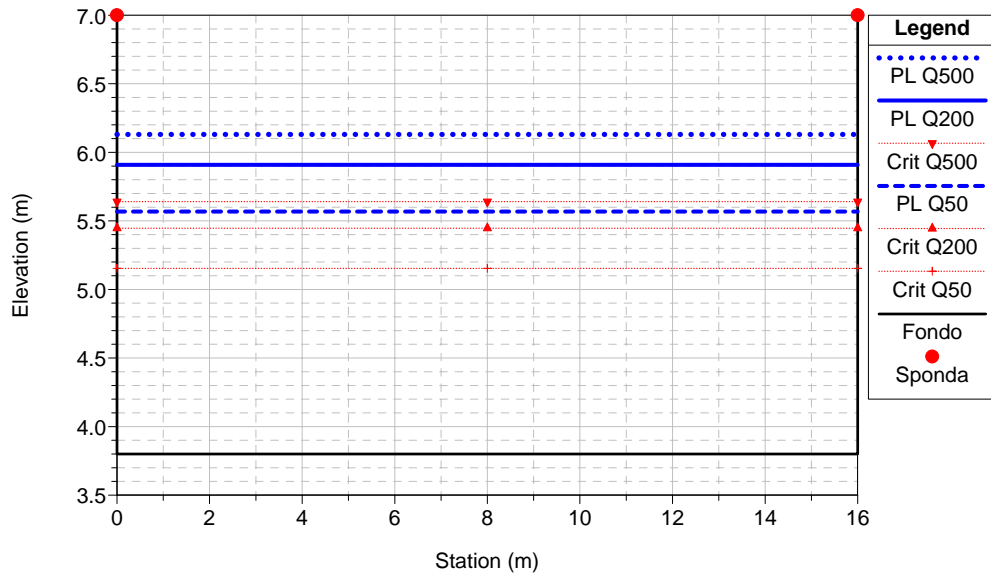


San Pietro_Foce

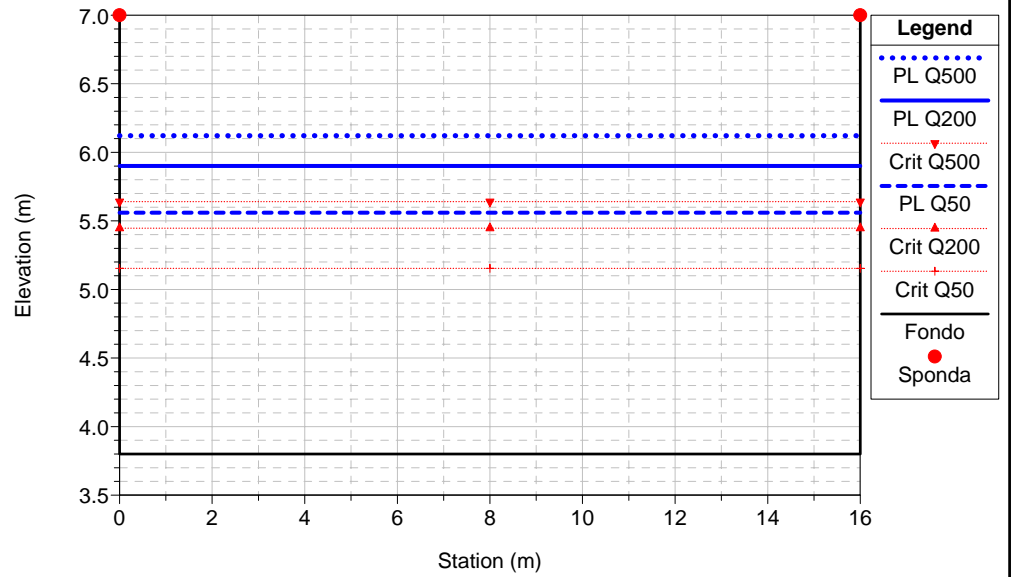
River = SanPietro Reach = valle SP-22



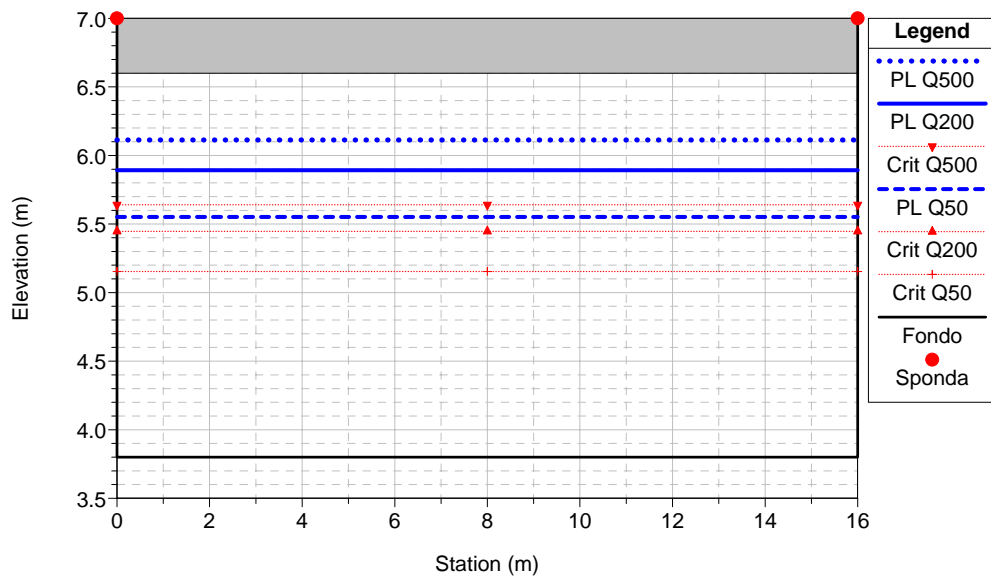
San Pietro_Foce
River = SanPietro Reach = valle SP-21



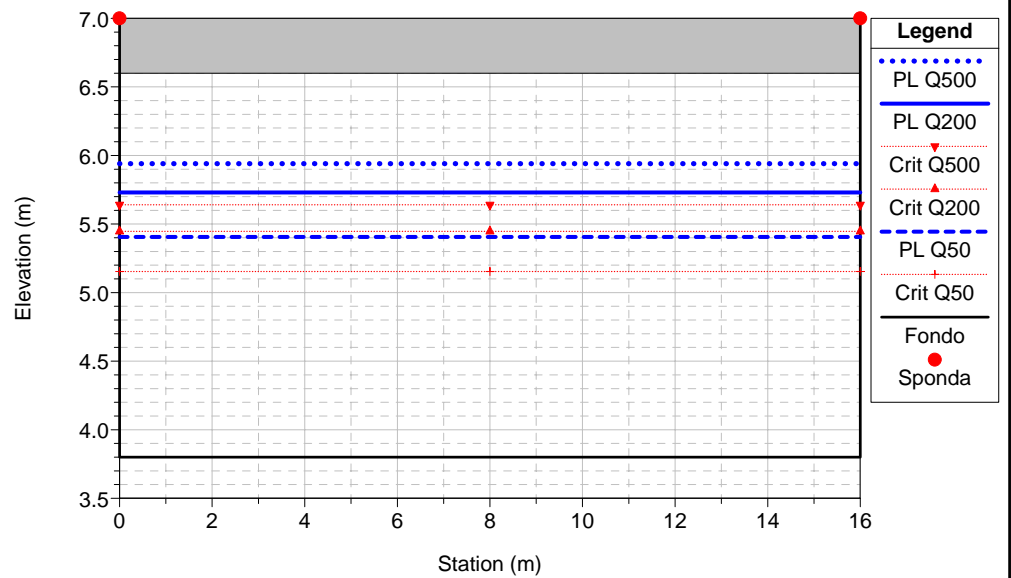
San Pietro_Foce
River = SanPietro Reach = valle SP-21



San Pietro_Foce
River = SanPietro Reach = valle SP-PT01

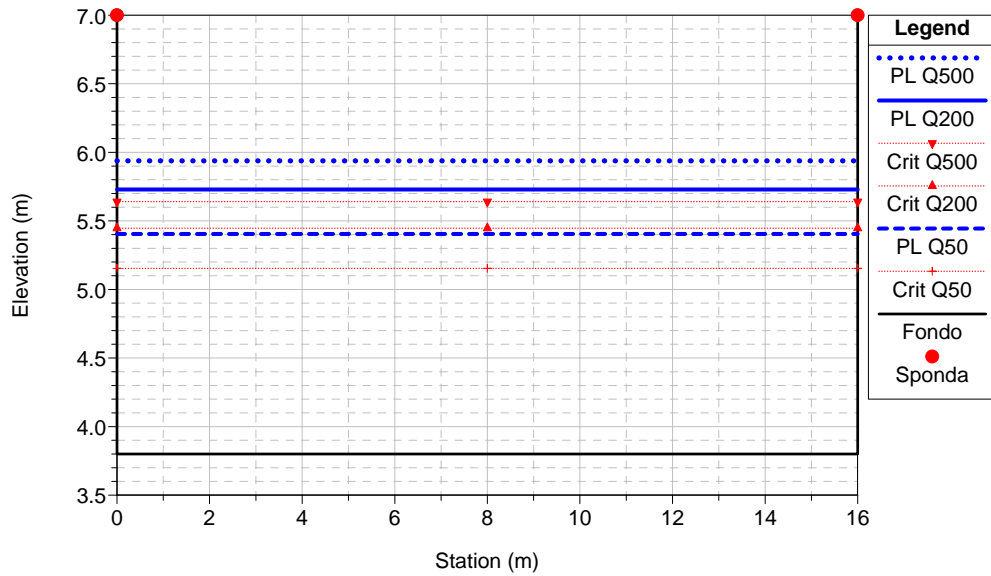


San Pietro_Foce
River = SanPietro Reach = valle SP-PT01



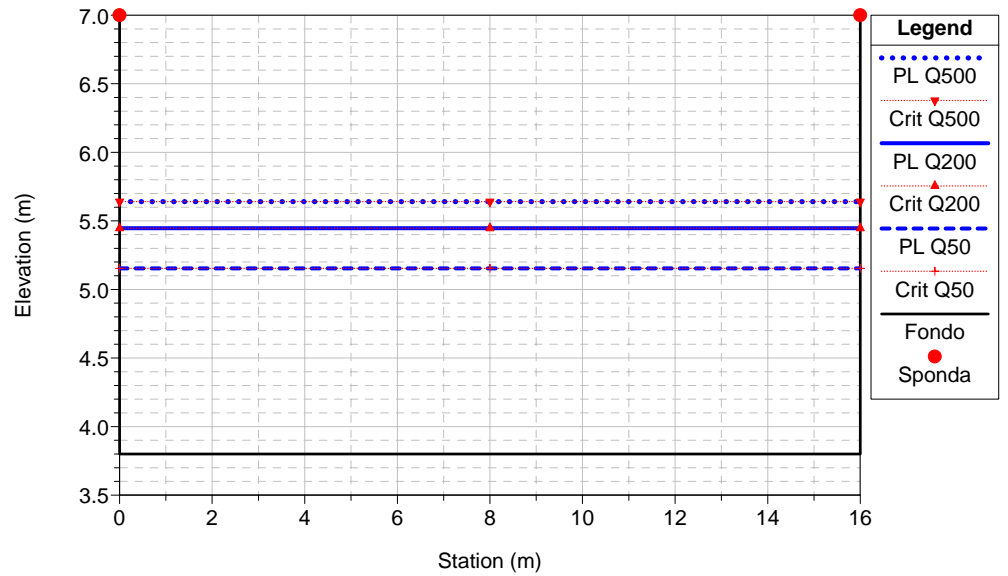
San Pietro_Foce

River = SanPietro Reach = valle SP-21



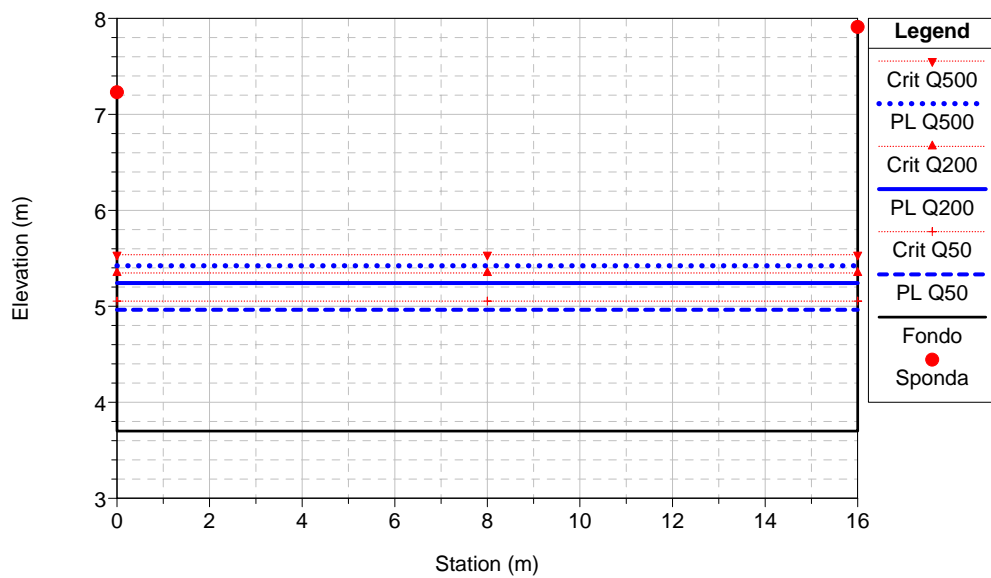
San Pietro_Foce

River = SanPietro Reach = valle SP-21



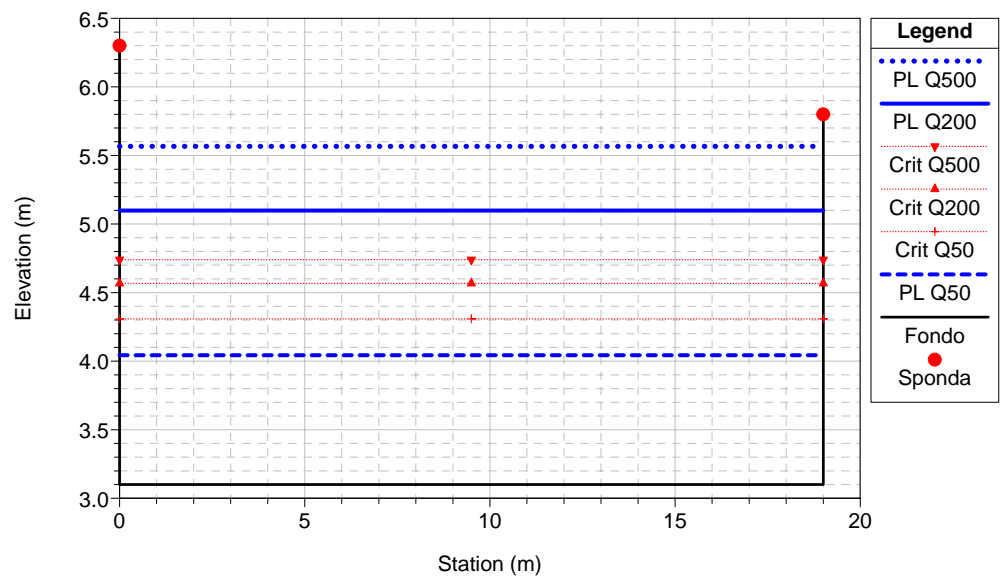
San Pietro_Foce

River = SanPietro Reach = valle SP-20

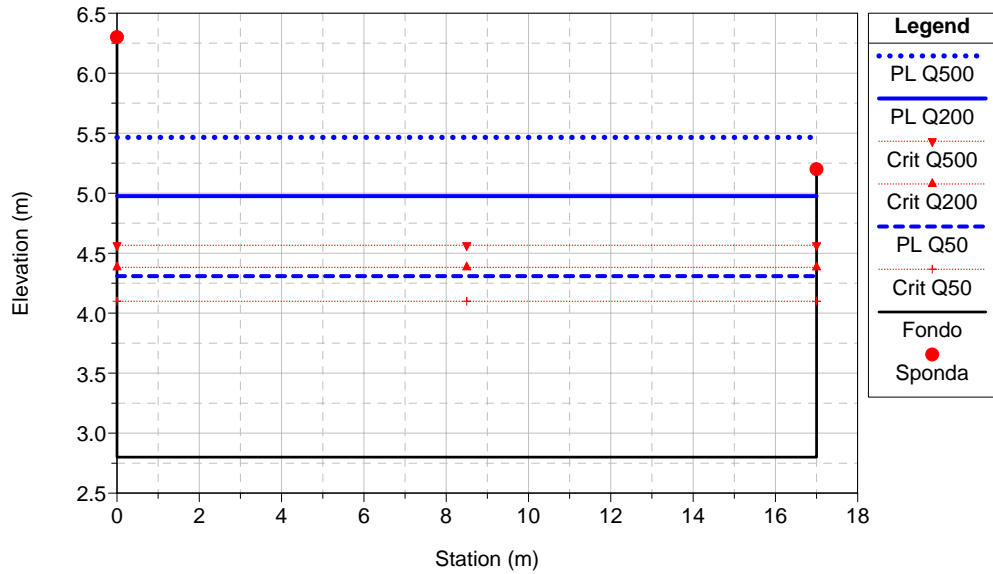


San Pietro_Foce

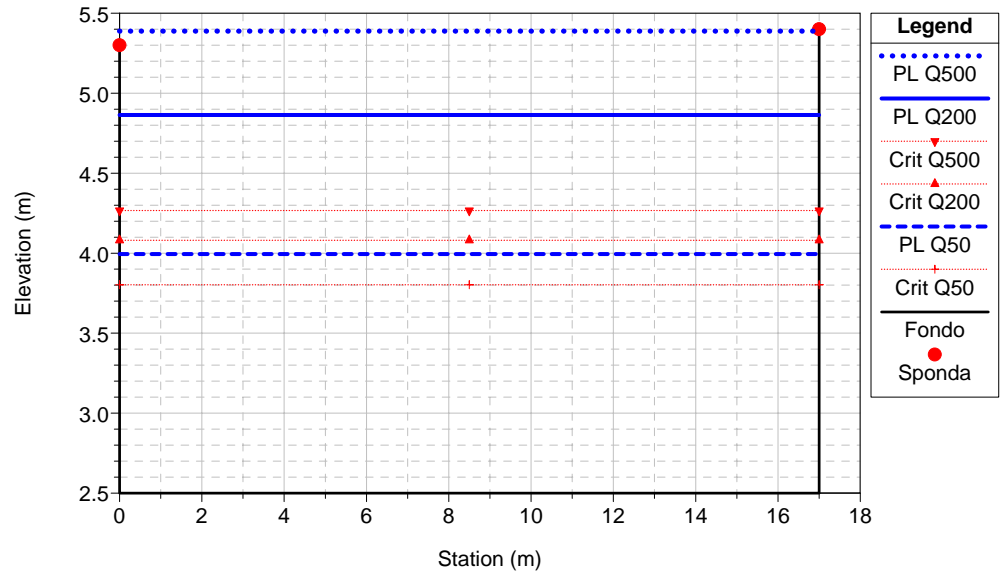
River = SanPietro Reach = valle SP-19



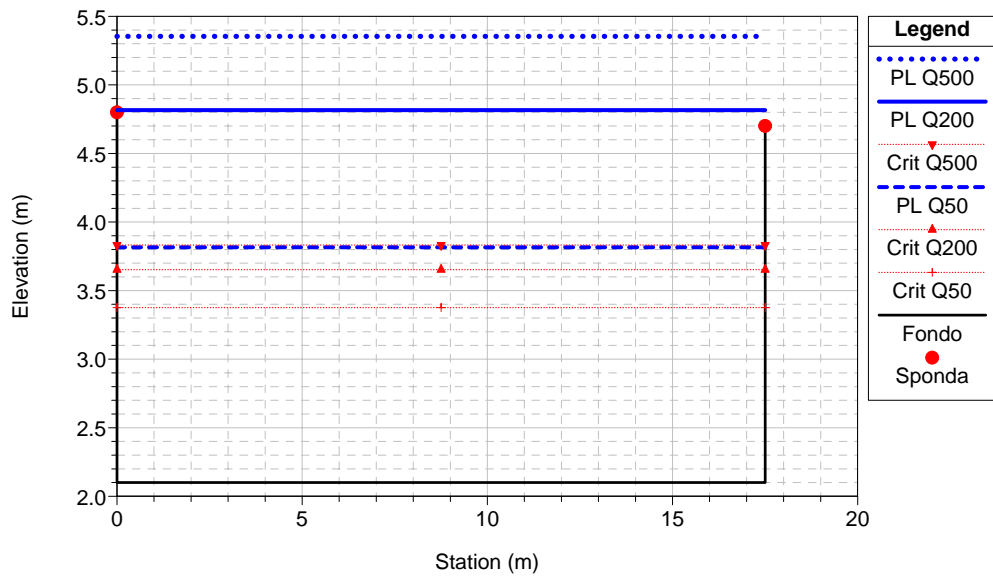
San Pietro_Foce
River = SanPietro Reach = valle SP-18



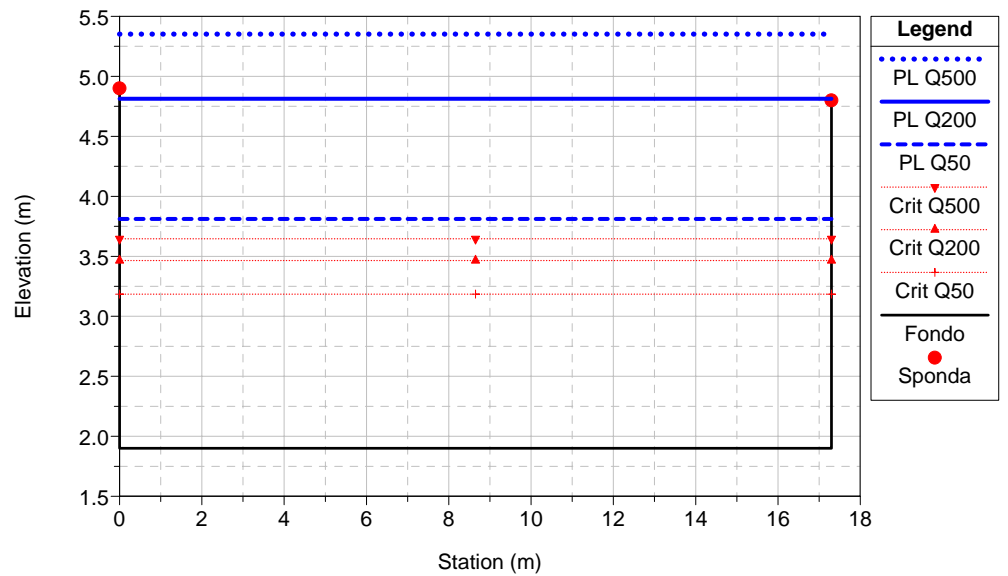
San Pietro_Foce
River = SanPietro Reach = valle SP-17



San Pietro_Foce
River = SanPietro Reach = valle SP-16

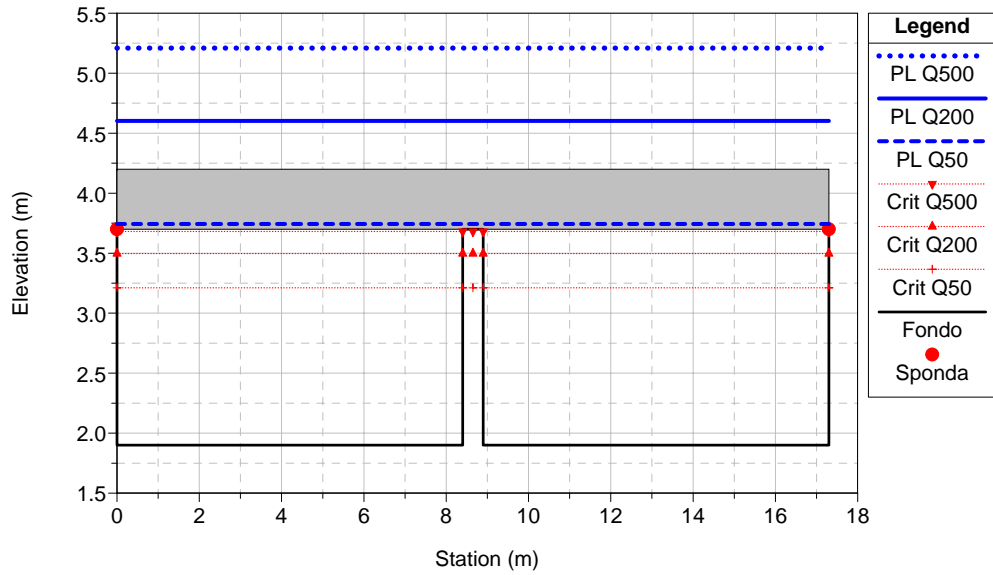


San Pietro_Foce
River = SanPietro Reach = valle SP-15



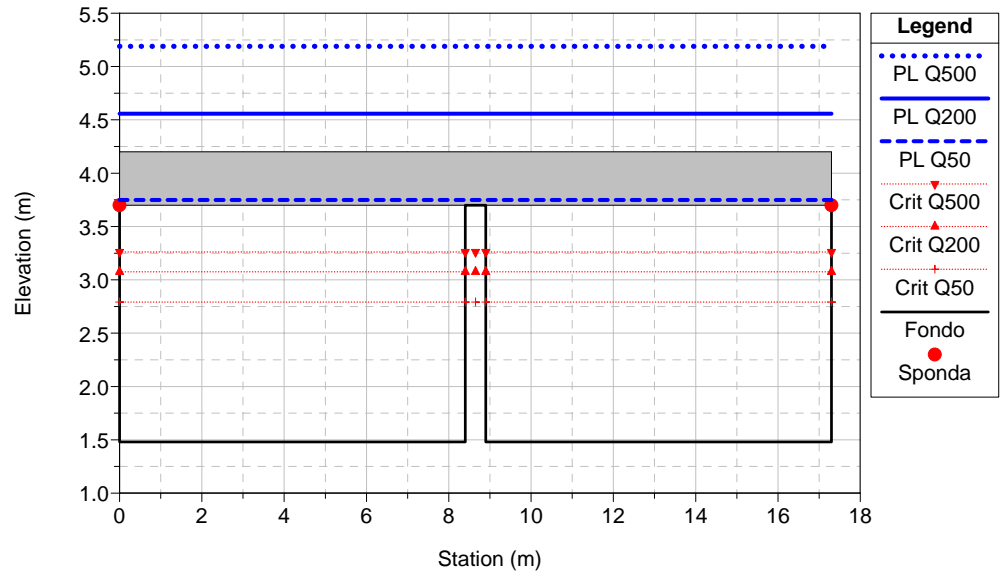
San Pietro_Foce

River = SanPietro Reach = valle SP-14



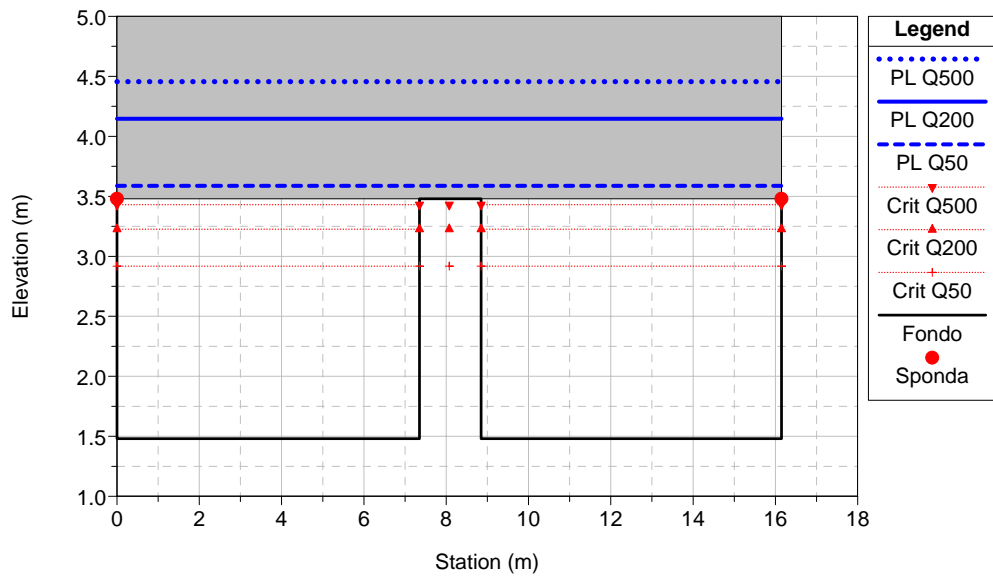
San Pietro_Foce

River = SanPietro Reach = valle SP-13



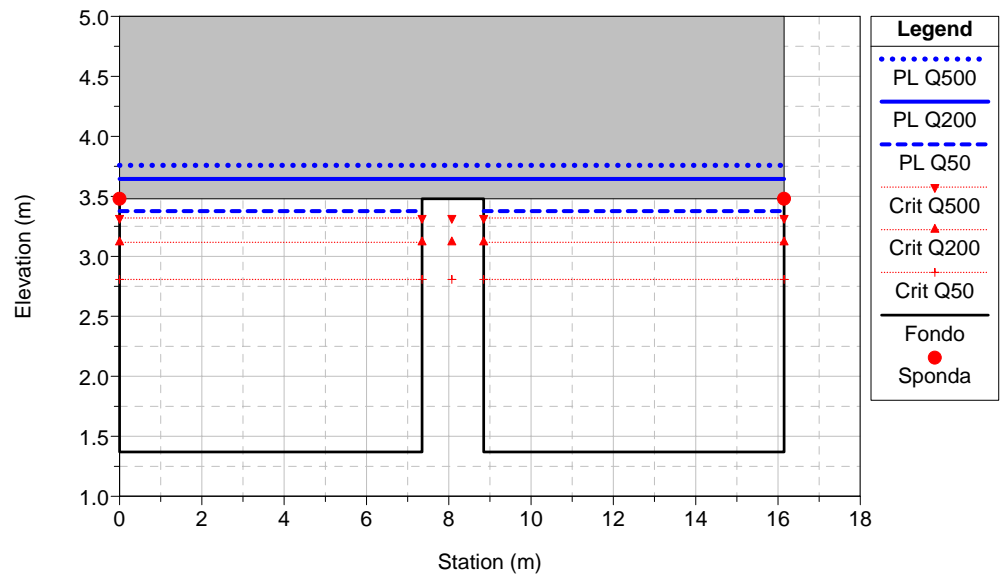
San Pietro_Foce

River = SanPietro Reach = valle SP-12



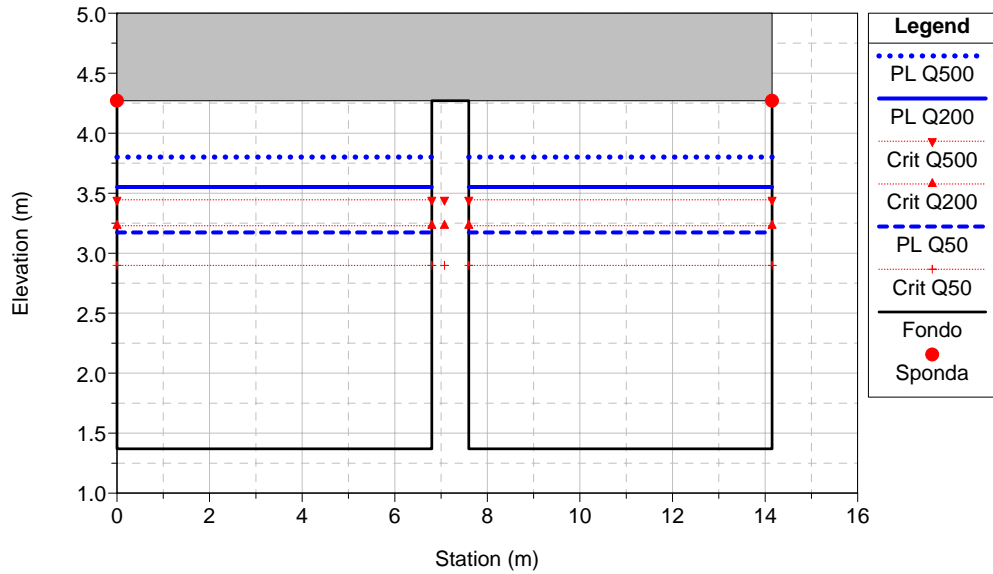
San Pietro_Foce

River = SanPietro Reach = valle SP-11



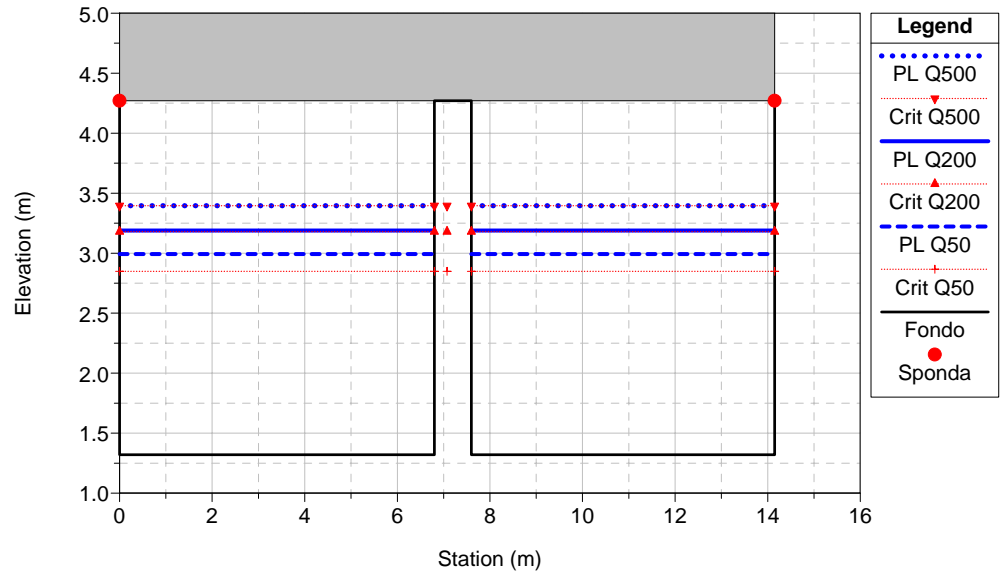
San Pietro_Foce

River = SanPietro Reach = valle SP-10



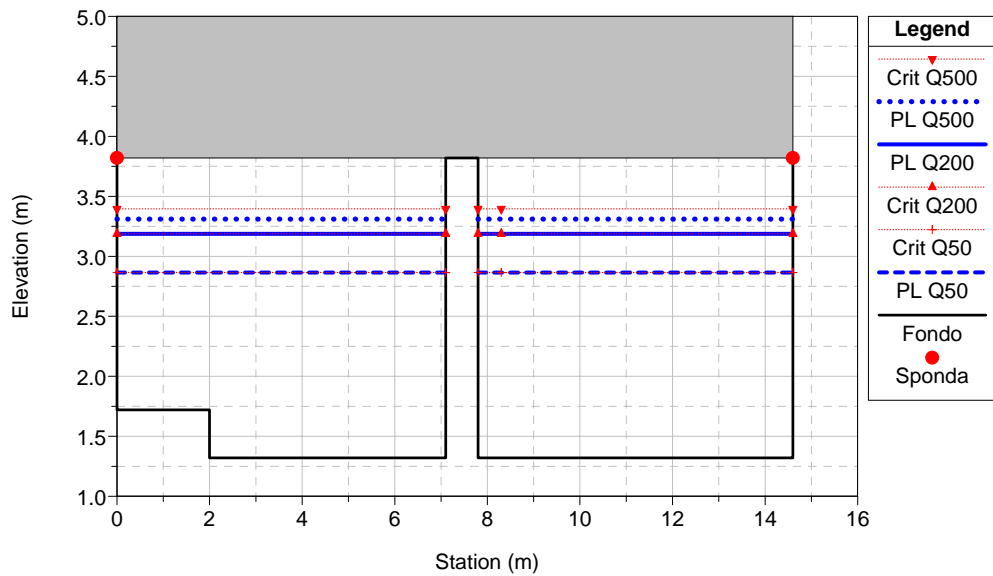
San Pietro_Foce

River = SanPietro Reach = valle SP-09



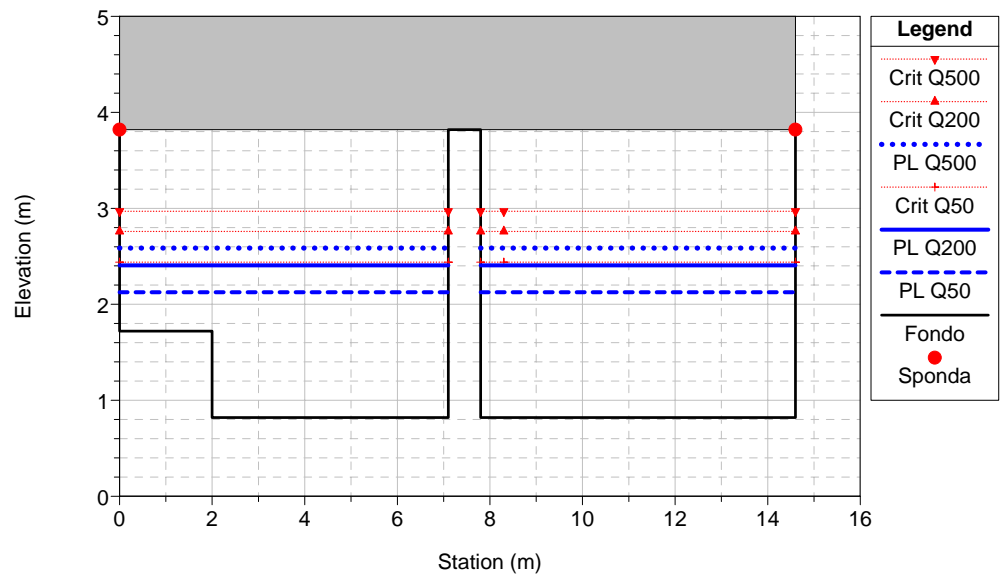
San Pietro_Foce

River = SanPietro Reach = valle SP-08



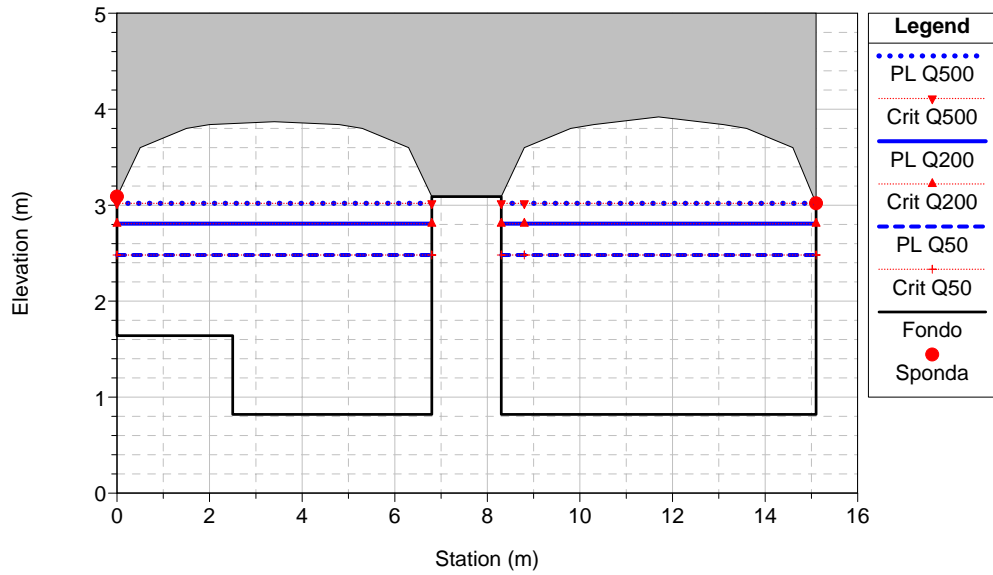
San Pietro_Foce

River = SanPietro Reach = valle SP-07



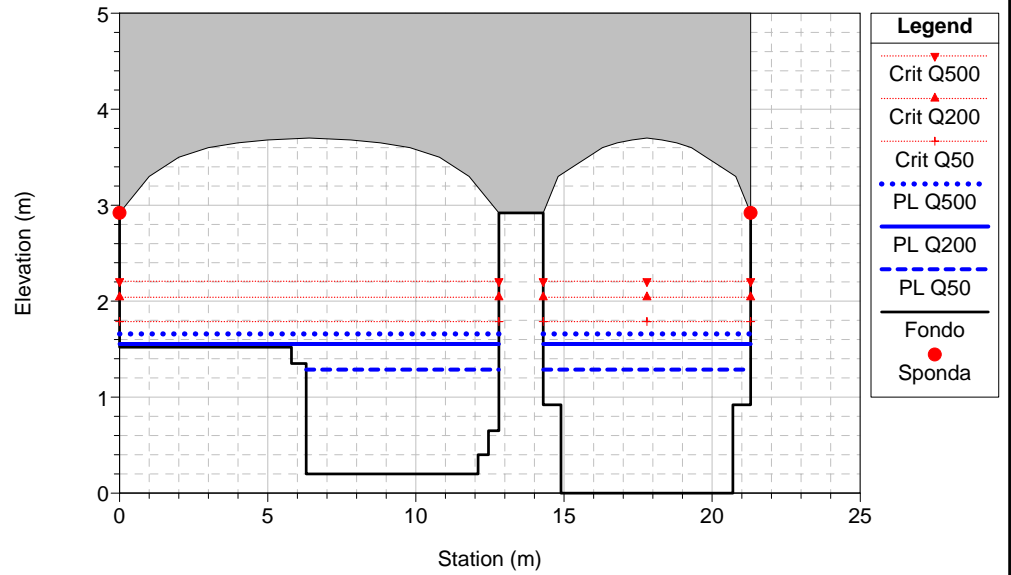
San Pietro_Foce

River = SanPietro Reach = valle SP-06



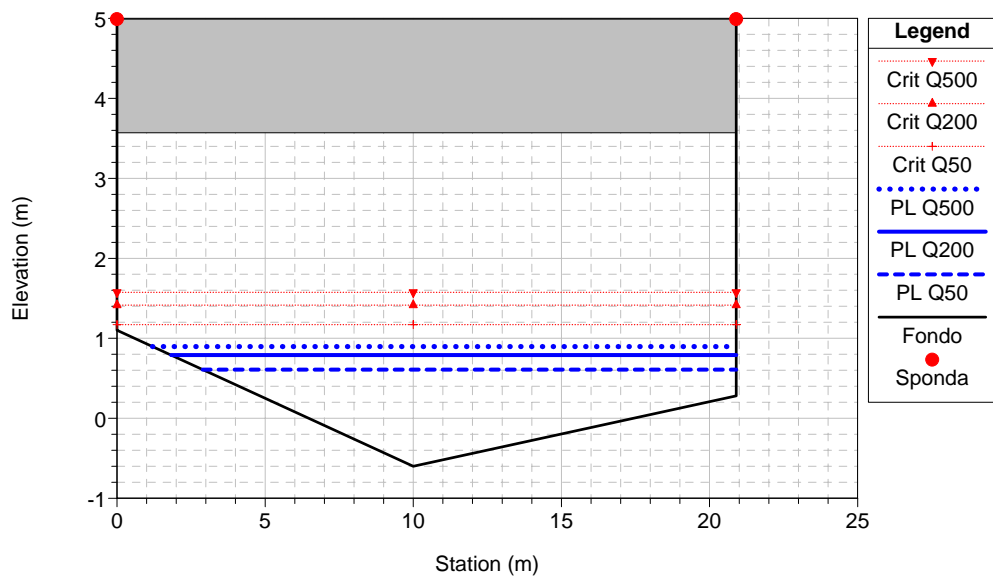
San Pietro_Foce

River = SanPietro Reach = valle SP-05



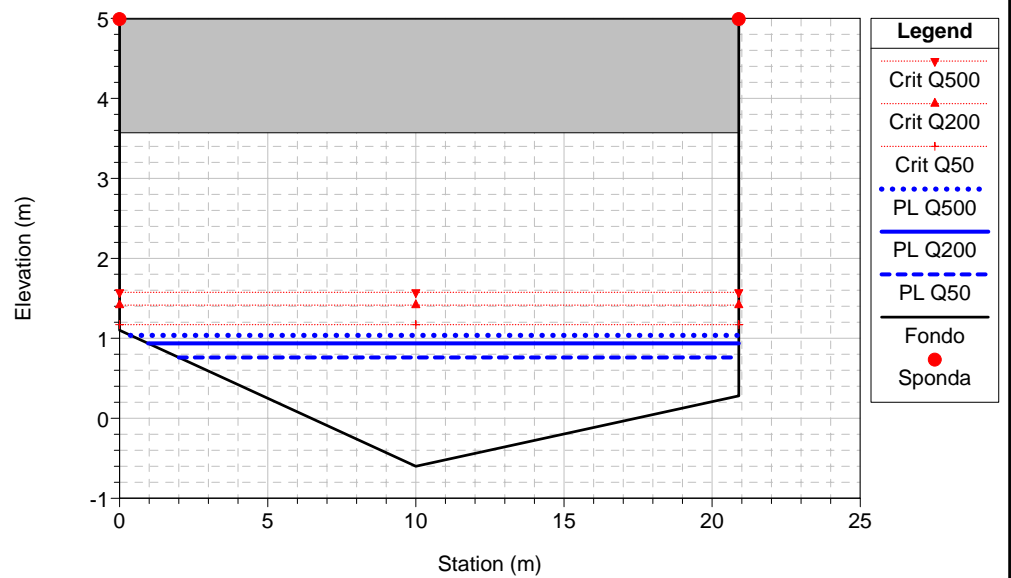
San Pietro_Foce

River = SanPietro Reach = valle SP-04



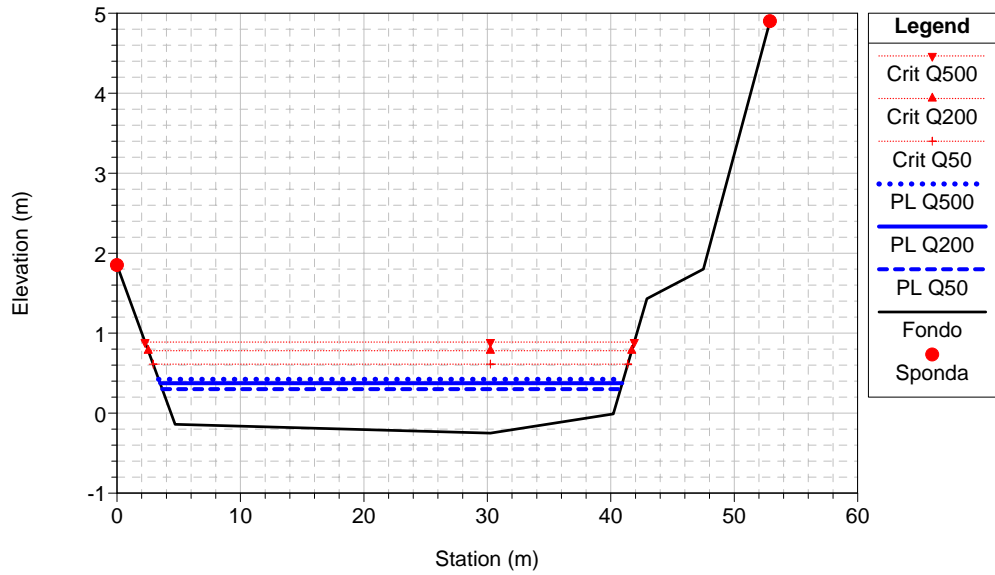
San Pietro_Foce

River = SanPietro Reach = valle SP-03



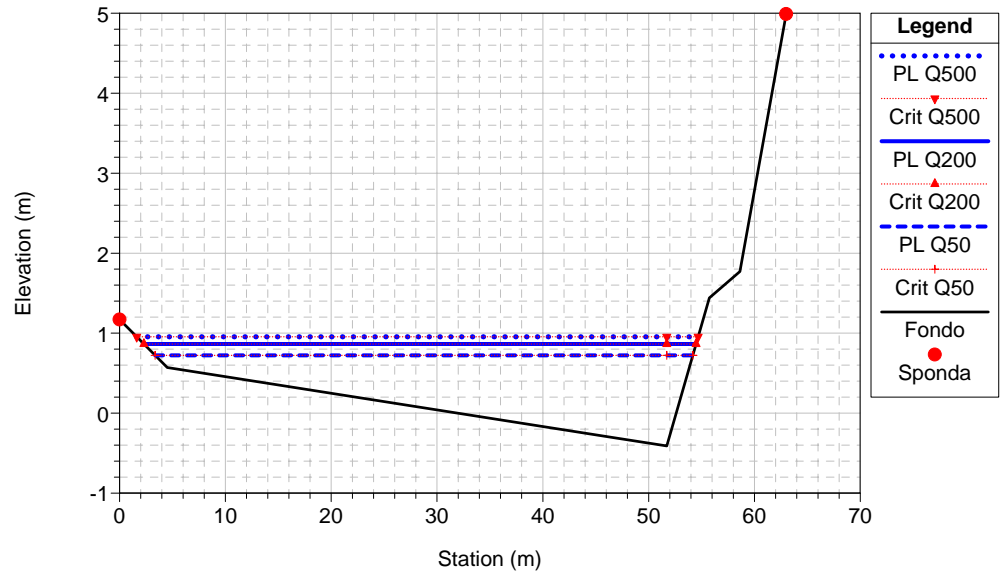
San Pietro_Foce

River = SanPietro Reach = valle SP-02



San Pietro_Foce

River = SanPietro Reach = valle SP-01



HEC-RAS Plan: 00_PdB

Reach	River Sta	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	LOB Elev (m)	L. Freeboard (m)	ROB Elev (m)	R. Freeboard (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
monte	100	40.00	7.91	10.22	14.42	4.20	11.00	0.78	9.34	10.49	0.003597	2.31	17.34	7.50	0.48
monte	100	54.00	7.91	10.68	14.42	3.74	11.00	0.32	9.65	11.03	0.003945	2.60	20.79	7.50	0.50
monte	100	64.00	7.91	10.98	14.42	3.44	11.00	0.02	9.86	11.38	0.004168	2.78	23.06	7.50	0.51
monte	18 SP-32	40.00	7.76	9.54	14.42	4.88	10.00	0.46	9.19	10.00	0.007598	3.00	13.36	7.50	0.72
monte	18 SP-32	54.00	7.76	9.92	14.42	4.50	10.00	0.08	9.50	10.49	0.007927	3.33	16.22	7.50	0.72
monte	18 SP-32	64.00	7.76	10.17	14.42	4.25	10.00	-0.17	9.71	10.81	0.008167	3.54	18.09	7.50	0.73
monte	17 SP-31	40.00	7.61	9.04	12.52	3.48	10.00	0.96	9.04	9.75	0.014551	3.74	10.70	7.50	1.00
monte	17 SP-31	54.00	7.61	9.35	12.52	3.17	10.00	0.65	9.35	10.22	0.014803	4.14	13.05	7.50	1.00
monte	17 SP-31	64.00	7.61	9.56	12.52	2.96	10.00	0.44	9.56	10.54	0.014973	4.38	14.62	7.50	1.00
monte	16 SP-30	40.00	7.37	8.87	13.67	4.80	10.02	1.15	8.51	9.17	0.005391	2.44	16.40	11.35	0.65
monte	16 SP-30	54.00	7.37	9.24	13.67	4.43	10.02	0.78	8.75	9.59	0.004936	2.62	20.57	11.35	0.62
monte	16 SP-30	64.00	7.37	9.49	13.67	4.18	10.02	0.53	8.91	9.87	0.004687	2.73	23.45	11.35	0.61
monte	15 SP-29	40.00	7.26	8.72	12.82	4.10	10.26	1.54	8.43	9.09	0.006797	2.71	14.74	10.11	0.72
monte	15 SP-29	54.00	7.26	9.07	12.82	3.75	10.26	1.19	8.69	9.51	0.006489	2.95	18.28	10.11	0.70
monte	15 SP-29	64.00	7.26	9.31	12.82	3.51	10.26	0.95	8.86	9.79	0.006304	3.09	20.70	10.11	0.69
monte	14 SP-28	40.00	6.80	8.06	10.15	2.09	10.35	2.29	8.06	8.69	0.013754	3.52	11.36	9.00	1.00
monte	14 SP-28	54.00	6.80	8.34	10.15	1.81	10.35	2.01	8.34	9.11	0.013741	3.89	13.87	9.00	1.00
monte	14 SP-28	64.00	6.80	8.53	10.15	1.62	10.35	1.82	8.53	9.39	0.013769	4.12	15.53	9.00	1.00
monte	13.3 SP-27	40.00	6.30	7.95	9.50	1.55	9.50	1.55	7.56	8.32	0.006143	2.69	14.85	9.00	0.67
monte	13.3 SP-27	54.00	6.30	8.28	9.50	1.22	9.50	1.22	7.84	8.75	0.006523	3.03	17.84	9.00	0.69
monte	13.3 SP-27	64.00	6.30	8.50	9.50	1.00	9.50	1.00	8.03	9.03	0.006763	3.23	19.80	9.00	0.70
monte	13.2 SP-27	40.00	6.30	7.94	9.50	1.56	9.50	1.56	7.56	8.31	0.006260	2.71	14.76	9.00	0.68
monte	13.2 SP-27	54.00	6.30	8.27	9.50	1.23	9.50	1.23	7.84	8.74	0.006634	3.05	17.73	9.00	0.69
monte	13.2 SP-27	64.00	6.30	8.49	9.50	1.01	9.50	1.01	8.03	9.03	0.006870	3.25	19.69	9.00	0.70
monte	13.15 SP-PT02	Bridge													
monte	13.1 SP-27	40.00	6.30	7.81	9.50	1.69	9.50	1.69	7.56	8.25	0.007971	2.94	13.61	9.00	0.76
monte	13.1 SP-27	54.00	6.30	8.13	9.50	1.37	9.50	1.37	7.84	8.68	0.008247	3.28	16.47	9.00	0.77
monte	13.1 SP-27	64.00	6.30	8.34	9.50	1.16	9.50	1.16	8.03	8.96	0.008464	3.49	18.33	9.00	0.78
monte	13 SP-27	40.00	6.30	7.56	9.50	1.94	9.50	1.94	7.56	8.19	0.013750	3.52	11.36	9.00	1.00
monte	13 SP-27	54.00	6.30	7.84	9.50	1.66	9.50	1.66	7.84	8.61	0.013676	3.89	13.89	9.00	1.00
monte	13 SP-27	64.00	6.30	8.03	9.50	1.47	9.50	1.47	8.03	8.89	0.013722	4.12	15.55	9.00	1.00
monte	12 SP-26	40.00	6.00	7.12	9.05	1.93	9.90	2.78	7.26	7.92	0.019713	3.96	10.10	9.00	1.19
monte	12 SP-26	54.00	6.00	7.38	9.05	1.67	9.90	2.52	7.54	8.34	0.019280	4.36	12.39	9.00	1.19
monte	12 SP-26	64.00	6.00	7.55	9.05	1.50	9.90	2.35	7.73	8.62	0.019061	4.60	13.93	9.00	1.18
monte	11 SP-25	40.00	5.40	6.66	8.10	1.44	7.95	1.29	6.66	7.29	0.013744	3.52	11.37	9.00	1.00
monte	11 SP-25	54.00	5.40	6.94	8.10	1.16	7.95	1.01	6.94	7.71	0.013686	3.89	13.89	9.00	1.00
monte	11 SP-25	64.00	5.40	7.13	8.10	0.97	7.95	0.82	7.13	7.99	0.013740	4.12	15.54	9.00	1.00

HEC-RAS Plan: 00_PdB (Continued)

Reach	River Sta		Q Total	Min Ch El	W.S. Elev	LOB Elev	L. Freeboard	ROB Elev	R. Freeboard	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
monte	10	SP-24	40.00	5.00	6.16	8.10	1.94	7.95	1.79	6.26	6.91	0.017627	3.82	10.47	9.00	1.13
monte	10	SP-24	54.00	5.00	6.41	8.10	1.69	7.95	1.54	6.54	7.33	0.017890	4.25	12.70	9.00	1.14
monte	10	SP-24	64.00	5.00	6.58	8.10	1.52	7.95	1.37	6.73	7.61	0.017787	4.49	14.25	9.00	1.14
valle	9	SP-23	79.00	4.60	5.59	7.80	2.21	8.55	2.96	5.95	6.86	0.031934	4.98	15.86	16.00	1.60
valle	9	SP-23	106.00	4.60	5.85	7.80	1.95	8.55	2.70	6.25	7.28	0.027601	5.30	19.99	16.00	1.51
valle	9	SP-23	125.00	4.60	6.02	7.80	1.78	8.55	2.53	6.44	7.56	0.025588	5.50	22.75	16.00	1.47
valle	8	SP-22	79.00	4.40	5.75	7.90	2.15	8.00	2.25	5.75	6.43	0.011930	3.65	21.65	16.00	1.00
valle	8	SP-22	106.00	4.40	6.05	7.90	1.85	8.00	1.95	6.05	6.87	0.011628	4.02	26.35	16.00	1.00
valle	8	SP-22	125.00	4.40	6.24	7.90	1.66	8.00	1.76	6.24	7.16	0.011468	4.25	29.45	16.00	1.00
valle	7.3	SP-21	79.00	3.80	5.57	7.00	1.43	7.00	1.43	5.15	5.97	0.005188	2.79	28.28	16.00	0.67
valle	7.3	SP-21	106.00	3.80	5.91	7.00	1.09	7.00	1.09	5.45	6.41	0.005430	3.14	33.74	16.00	0.69
valle	7.3	SP-21	125.00	3.80	6.13	7.00	0.87	7.00	0.87	5.64	6.70	0.005567	3.35	37.29	16.00	0.70
valle	7.2	SP-21	79.00	3.80	5.56	7.00	1.44	7.00	1.44	5.15	5.96	0.005260	2.81	28.16	16.00	0.68
valle	7.2	SP-21	106.00	3.80	5.90	7.00	1.10	7.00	1.10	5.45	6.41	0.005496	3.15	33.61	16.00	0.69
valle	7.2	SP-21	125.00	3.80	6.12	7.00	0.88	7.00	0.88	5.64	6.70	0.005639	3.37	37.14	16.00	0.71
valle	7.15	SP-PT01	Bridge													
valle	7.1	SP-21	79.00	3.80	5.40	7.00	1.60	7.00	1.60	5.15	5.89	0.007004	3.08	25.67	16.00	0.78
valle	7.1	SP-21	106.00	3.80	5.73	7.00	1.27	7.00	1.27	5.45	6.33	0.007138	3.43	30.86	16.00	0.79
valle	7.1	SP-21	125.00	3.80	5.94	7.00	1.06	7.00	1.06	5.64	6.62	0.007235	3.65	34.22	16.00	0.80
valle	7	SP-21	79.00	3.80	5.15	7.00	1.85	7.00	1.85	5.15	5.83	0.011903	3.65	21.67	16.00	1.00
valle	7	SP-21	106.00	3.80	5.45	7.00	1.55	7.00	1.55	5.45	6.27	0.011639	4.02	26.34	16.00	1.00
valle	7	SP-21	125.00	3.80	5.64	7.00	1.36	7.00	1.36	5.64	6.56	0.011471	4.25	29.44	16.00	1.00
valle	6	SP-20	79.00	3.70	4.96	7.23	2.27	7.91	2.95	5.05	5.74	0.014789	3.91	20.22	16.00	1.11
valle	6	SP-20	106.00	3.70	5.24	7.23	1.99	7.91	2.67	5.35	6.18	0.014247	4.29	24.69	16.00	1.10
valle	6	SP-20	125.00	3.70	5.42	7.23	1.81	7.91	2.49	5.54	6.47	0.014088	4.54	27.55	16.00	1.10
valle	5	SP-19	79.00	3.10	4.04	6.30	2.26	5.80	1.76	4.31	5.03	0.025919	4.41	17.93	19.00	1.45
valle	5	SP-19	106.00	3.10	5.10	6.30	1.20	5.80	0.70	4.57	5.50	0.004350	2.79	37.97	19.00	0.63
valle	5	SP-19	125.00	3.10	5.57	6.30	0.73	5.80	0.23	4.74	5.93	0.003163	2.67	46.86	19.00	0.54
valle	4	SP-18	79.00	2.80	4.31	6.30	1.99	5.20	0.89	4.10	4.79	0.007417	3.08	25.66	17.00	0.80
valle	4	SP-18	106.00	2.80	4.98	6.30	1.32	5.20	0.22	4.38	5.39	0.004300	2.87	36.98	17.00	0.62
valle	4	SP-18	125.00	2.80	5.47	6.30	0.83	5.20	-0.27	4.57	5.85	0.003226	2.76	45.31	17.00	0.54
valle	3	SP-17	79.00	2.50	3.99	5.30	1.31	5.40	1.41	3.80	4.49	0.007644	3.11	25.41	17.00	0.81
valle	3	SP-17	106.00	2.50	4.86	5.30	0.44	5.40	0.54	4.08	5.22	0.003336	2.64	40.19	17.00	0.55
valle	3	SP-17	125.00	2.50	5.39	5.30	-0.09	5.40	0.01	4.27	5.72	0.002535	2.55	49.10	17.00	0.48
valle	2	SP-16	79.00	2.10	3.82	4.80	0.98	4.70	0.88	3.38	4.17	0.004656	2.63	30.03	17.50	0.64
valle	2	SP-16	106.00	2.10	4.82	4.80	-0.02	4.70	-0.12	3.65	5.07	0.002049	2.23	47.53	17.50	0.43
valle	2	SP-16	125.00	2.10	5.35	4.80	-0.55	4.70	-0.65	3.83	5.60	0.001658	2.19	56.95	17.50	0.39

HEC-RAS Plan: 00_PdB (Continued)

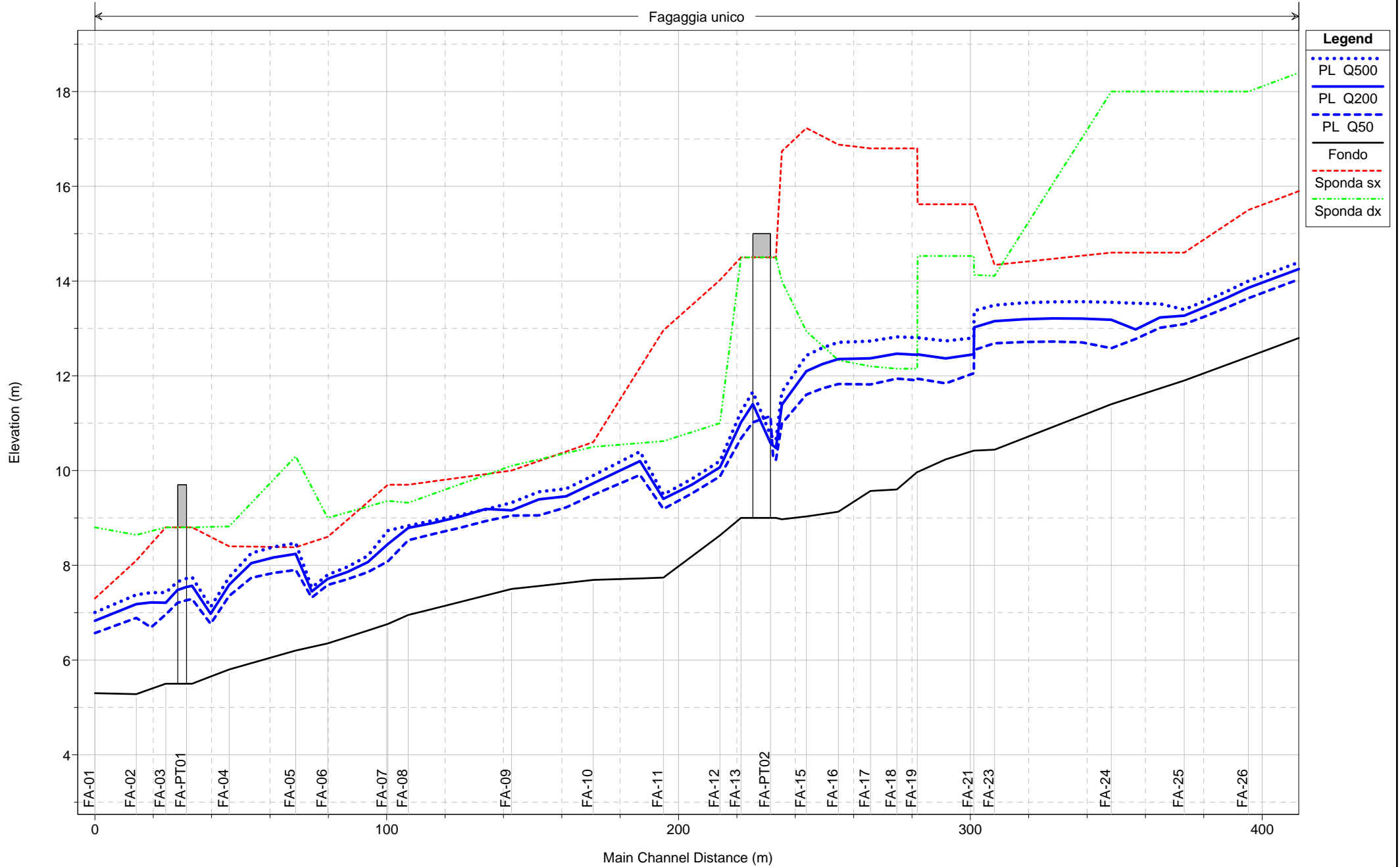
Reach	River Sta		Q Total	Min Ch El	W.S. Elev	LOB Elev	L. Freeboard	ROB Elev	R. Freeboard	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
valle	1	SP-15	79.00	1.90	3.81	4.90	1.09	4.80	0.99	3.18	4.10	0.003417	2.39	33.07	17.30	0.55
valle	1	SP-15	106.00	1.90	4.81	4.90	0.09	4.80	-0.01	3.46	5.04	0.001705	2.10	50.40	17.30	0.39
valle	1	SP-15	125.00	1.90	5.35	4.90	-0.45	4.80	-0.55	3.65	5.57	0.001431	2.09	59.71	17.30	0.36
valle	0.9	SP-14	79.00	1.90	3.74	3.70	-0.04	3.70	-0.04	3.21	4.09	0.011447	2.61	30.24		0.61
valle	0.9	SP-14	106.00	1.90	4.60	3.70	-0.90	3.70	-0.90	3.50	5.02	0.016407	2.85	37.19	17.30	0.55
valle	0.9	SP-14	125.00	1.90	5.21	3.70	-1.51	3.70	-1.51	3.68	5.56	0.009954	2.62	47.70	17.30	0.46
valle	0.85	SP-13	79.00	1.48	3.75	3.70	-0.05	3.70	-0.05	2.79	3.98	0.004317	2.12	37.29		0.45
valle	0.85	SP-13	106.00	1.48	4.56	3.70	-0.86	3.70	-0.86	3.08	4.86	0.007288	2.44	43.47	17.30	0.44
valle	0.85	SP-13	125.00	1.48	5.19	3.70	-1.49	3.70	-1.49	3.26	5.46	0.004798	2.30	54.40	17.30	0.38
valle	0.8	SP-12	79.00	1.48	3.59	3.48	-0.11	3.48	-0.11	2.92	3.96	0.008720	2.70	29.30		0.59
valle	0.8	SP-12	106.00	1.48	4.15	3.48	-0.67	3.48	-0.67	3.23	4.81	0.015700	3.62	29.30		0.71
valle	0.8	SP-12	125.00	1.48	4.46	3.48	-0.98	3.48	-0.98	3.43	5.38	0.021833	4.27	29.30		0.79
valle	0.75	SP-11	79.00	1.37	3.38	3.48	0.10	3.48	0.10	2.81	3.74	0.004003	2.69	29.40	14.65	0.61
valle	0.75	SP-11	106.00	1.37	3.64	3.48	-0.16	3.48	-0.16	3.12	4.24	0.013324	3.43	30.91		0.73
valle	0.75	SP-11	125.00	1.37	3.76	3.48	-0.28	3.48	-0.28	3.32	4.59	0.018529	4.04	30.91		0.84
valle	0.7	SP-10	79.00	1.37	3.17	4.27	1.10	4.27	1.10	2.90	3.72	0.006842	3.28	24.07	13.35	0.78
valle	0.7	SP-10	106.00	1.37	3.55	4.27	0.72	4.27	0.72	3.23	4.23	0.007182	3.64	29.12	13.35	0.79
valle	0.7	SP-10	125.00	1.37	3.80	4.27	0.47	4.27	0.47	3.45	4.56	0.007383	3.85	32.45	13.35	0.79
valle	0.65	SP-09	79.00	1.32	2.99	4.27	1.28	4.27	1.28	2.85	3.63	0.008496	3.54	22.33	13.35	0.87
valle	0.65	SP-09	106.00	1.32	3.19	4.27	1.08	4.27	1.08	3.18	4.11	0.011129	4.25	24.94	13.35	0.99
valle	0.65	SP-09	125.00	1.32	3.40	4.27	0.87	4.27	0.87	3.40	4.43	0.011490	4.51	27.70	13.35	1.00
valle	0.6	SP-08	79.00	1.32	2.86	3.82	0.96	3.82	0.96	2.86	3.61	0.011016	3.82	20.67	13.90	1.00
valle	0.6	SP-08	106.00	1.32	3.19	3.82	0.63	3.82	0.63	3.19	4.09	0.011196	4.21	25.16	13.90	1.00
valle	0.6	SP-08	125.00	1.32	3.31	3.82	0.51	3.82	0.51	3.40	4.41	0.012892	4.65	26.87	13.90	1.07
valle	0.55	SP-07	79.00	0.82	2.13	3.82	1.69	3.82	1.69	2.44	3.32	0.022564	4.83	16.35	13.90	1.42
valle	0.55	SP-07	106.00	0.82	2.41	3.82	1.41	3.82	1.41	2.76	3.80	0.021525	5.24	20.23	13.90	1.39
valle	0.55	SP-07	125.00	0.82	2.59	3.82	1.23	3.82	1.23	2.97	4.12	0.021213	5.49	22.75	13.90	1.37
valle	0.5	SP-06	79.00	0.82	2.48	3.09	0.61	3.02	0.54	2.48	3.23	0.011381	3.85	20.54	13.60	1.00
valle	0.5	SP-06	106.00	0.82	2.81	3.09	0.28	3.02	0.21	2.81	3.72	0.011601	4.24	24.97	13.60	1.00
valle	0.5	SP-06	125.00	0.82	3.02	3.09	0.07	3.02	0.00	3.02	4.04	0.011797	4.49	27.86	13.60	1.00
valle	0.45	SP-05	79.00	0.00	1.29	2.92	1.63	2.92	1.63	1.79	2.75	0.029970	5.36	14.73	13.50	1.64
valle	0.45	SP-05	106.00	0.00	1.55	2.92	1.37	2.92	1.37	2.04	3.20	0.038631	5.68	18.66	19.80	1.87
valle	0.45	SP-05	125.00	0.00	1.66	2.92	1.26	2.92	1.26	2.21	3.51	0.038583	6.03	20.74	19.80	1.88
valle	0.40	SP-04	79.00	-0.60	0.61	3.57	2.96	3.57	2.96	1.17	2.59	0.050269	6.23	12.68	18.01	2.37
valle	0.40	SP-04	106.00	-0.60	0.79	3.57	2.78	3.57	2.78	1.42	3.02	0.045191	6.61	16.04	19.08	2.30
valle	0.40	SP-04	125.00	-0.60	0.90	3.57	2.67	3.57	2.67	1.57	3.33	0.044171	6.91	18.09	19.70	2.30
valle	0.39	SP-03	79.00	-0.60	0.76	3.57	2.81	3.57	2.81	1.17	2.09	0.027850	5.10	15.48	18.90	1.80
valle	0.39	SP-03	106.00	-0.60	0.94	3.57	2.63	3.57	2.63	1.42	2.54	0.027981	5.61	18.89	19.94	1.84

HEC-RAS Plan: 00_PdB (Continued)

Reach	River Sta	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	LOB Elev (m)	L. Freeboard (m)	ROB Elev (m)	R. Freeboard (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
valle	0.39 SP-03	125.00	-0.60	1.04	3.57	2.53	3.57	2.53	1.57	2.85	0.028864	5.97	20.94	20.53	1.89
valle	0.36 SP-02	79.00	-0.25	0.30	1.85	1.55	4.90	4.60	0.61	1.37	0.045907	4.58	17.26	37.13	2.14
valle	0.36 SP-02	106.00	-0.25	0.37	1.85	1.48	4.90	4.53	0.78	1.81	0.051256	5.30	19.99	37.44	2.32
valle	0.36 SP-02	125.00	-0.25	0.42	1.85	1.43	4.90	4.48	0.89	2.09	0.053451	5.72	21.85	37.65	2.40
valle	0.34 SP-01	79.00	-0.41	0.72	1.17	0.45	4.99	4.27	0.72	1.04	0.009049	2.48	31.86	50.83	1.00
valle	0.34 SP-01	106.00	-0.41	0.86	1.17	0.31	4.99	4.13	0.86	1.24	0.008520	2.71	39.12	52.19	1.00
valle	0.34 SP-01	125.00	-0.41	0.95	1.17	0.22	4.99	4.04	0.95	1.37	0.008283	2.85	43.85	53.06	1.00

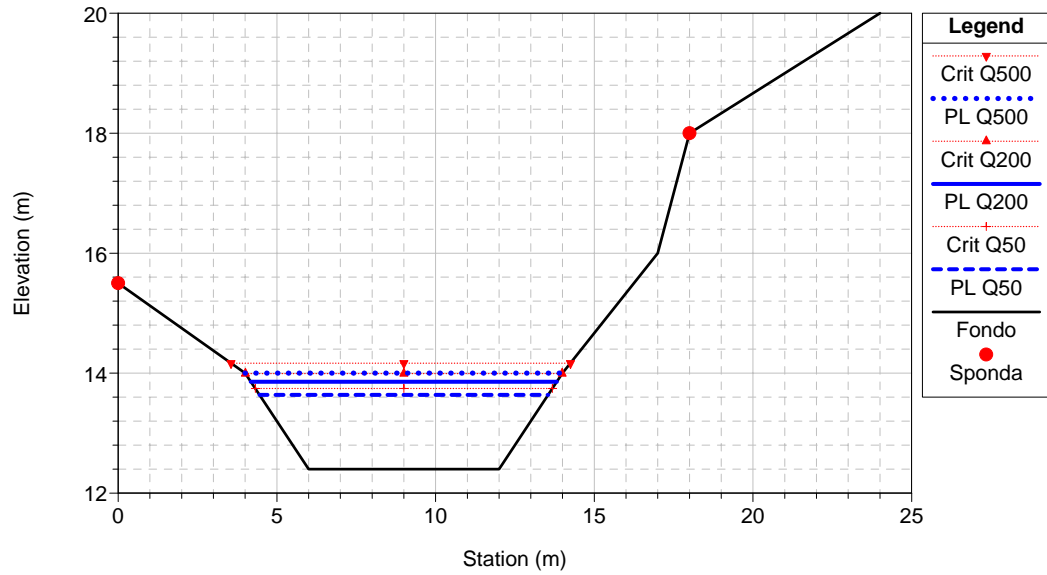
San Pietro_Foce

Fagaggia unico



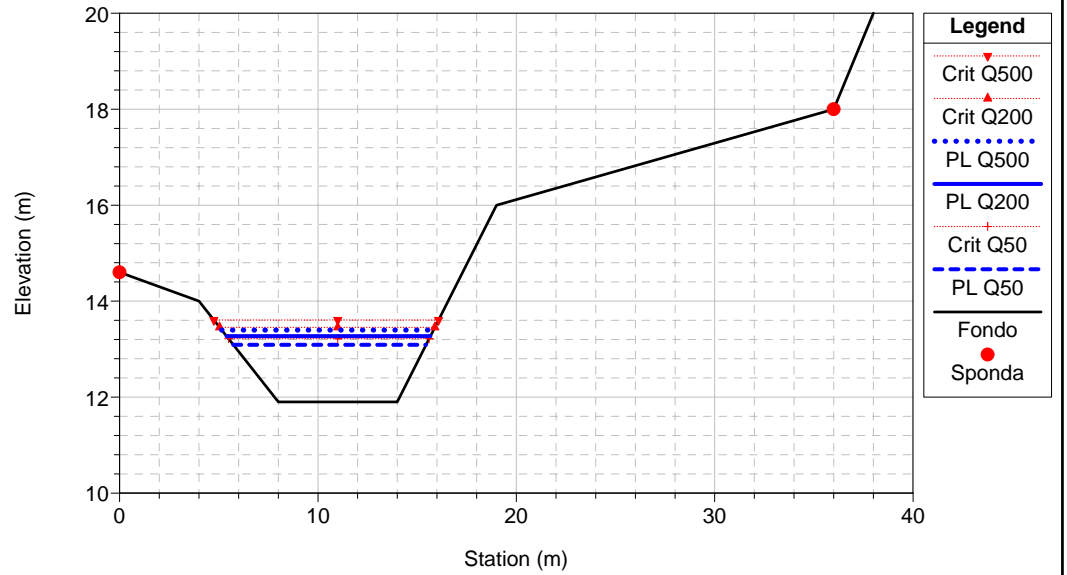
San Pietro_Foce

River = Fagaggia Reach = unico FA-26



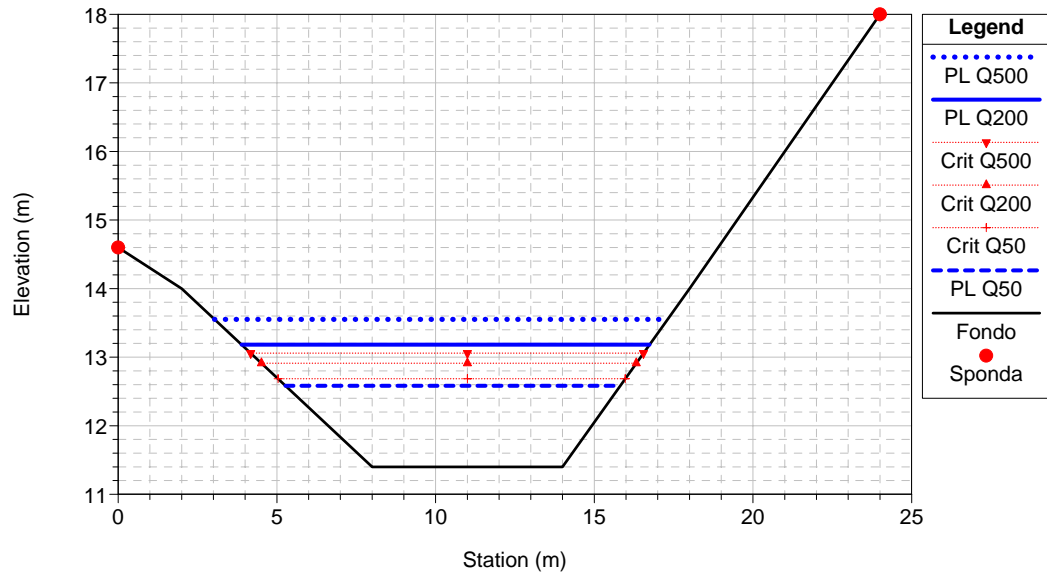
San Pietro_Foce

River = Fagaggia Reach = unico FA-25



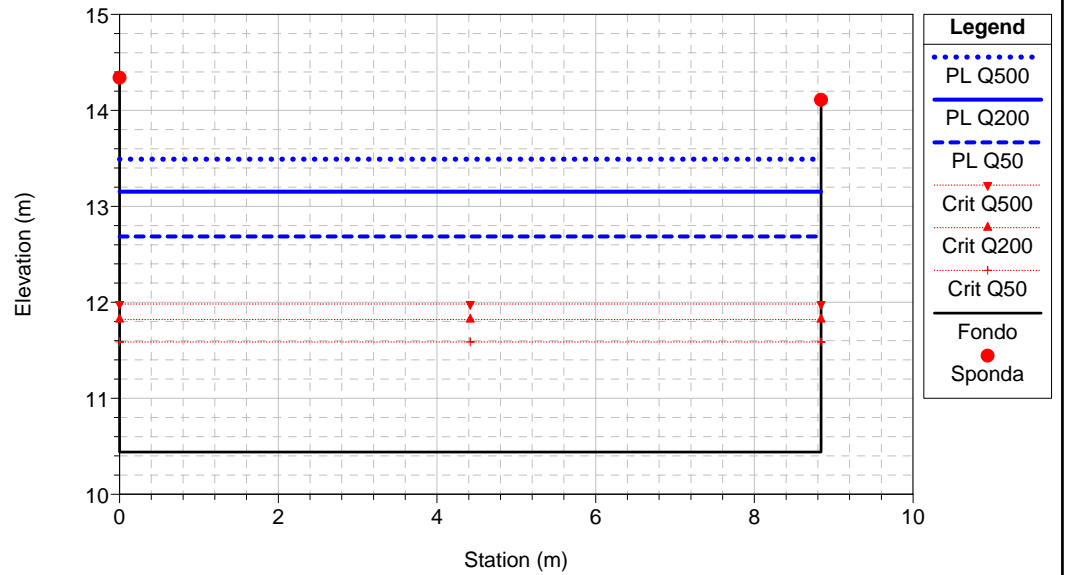
San Pietro_Foce

River = Fagaggia Reach = unico FA-24



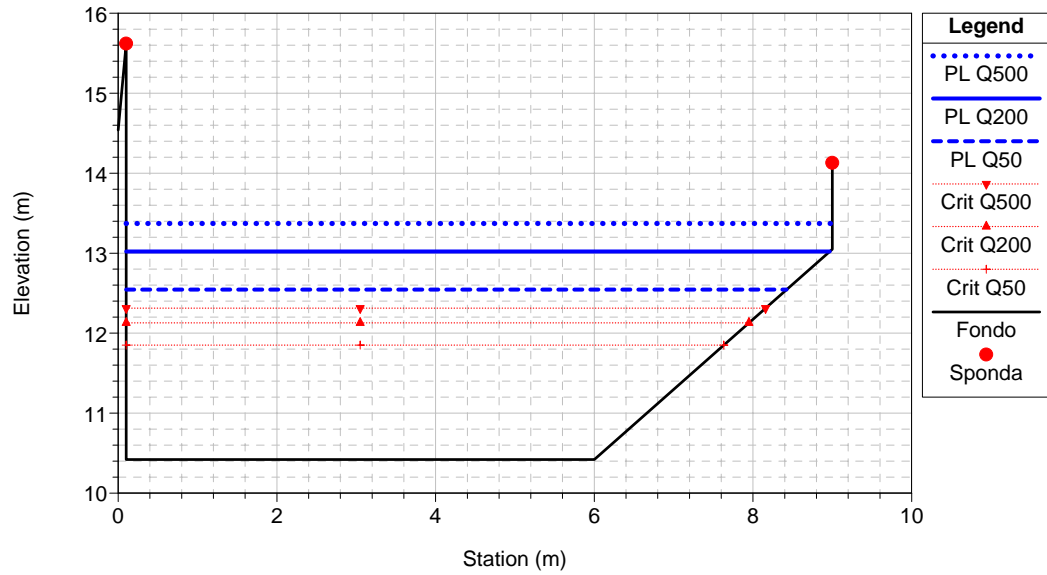
San Pietro_Foce

River = Fagaggia Reach = unico FA-23



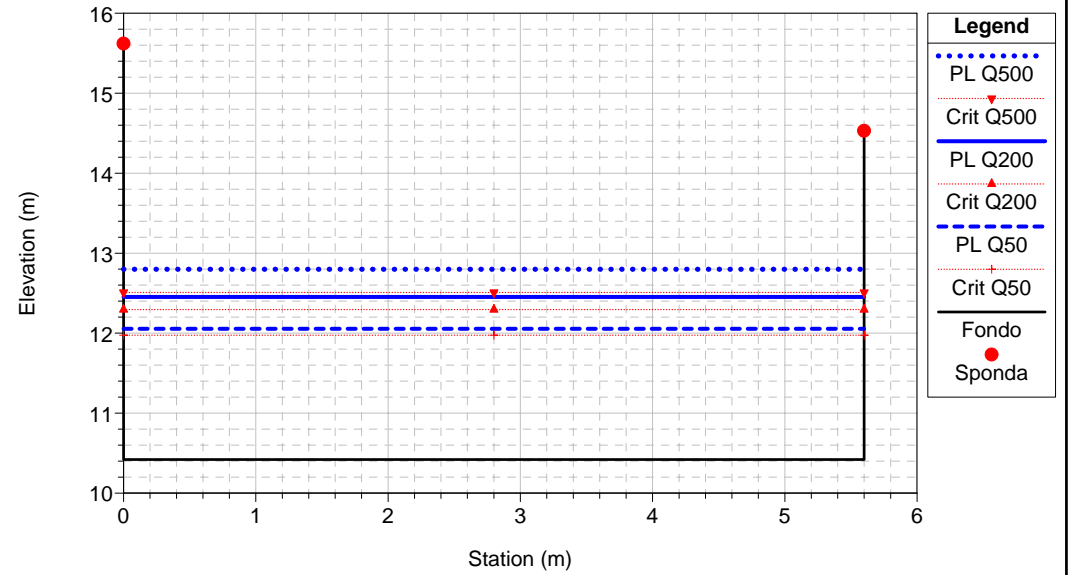
San Pietro_Foce

River = Fagaggia Reach = unico FA-22



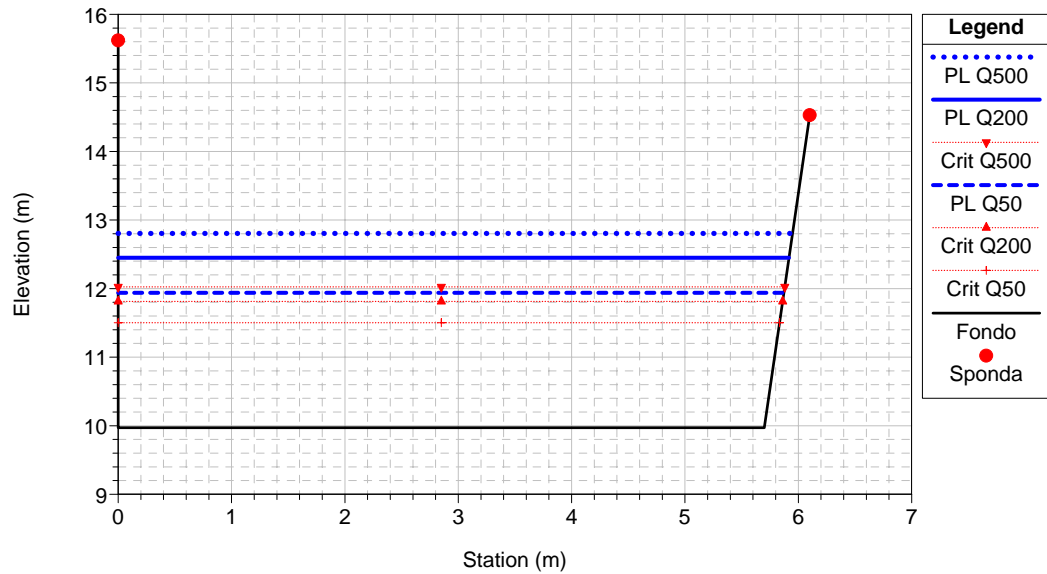
San Pietro_Foce

River = Fagaggia Reach = unico FA-21



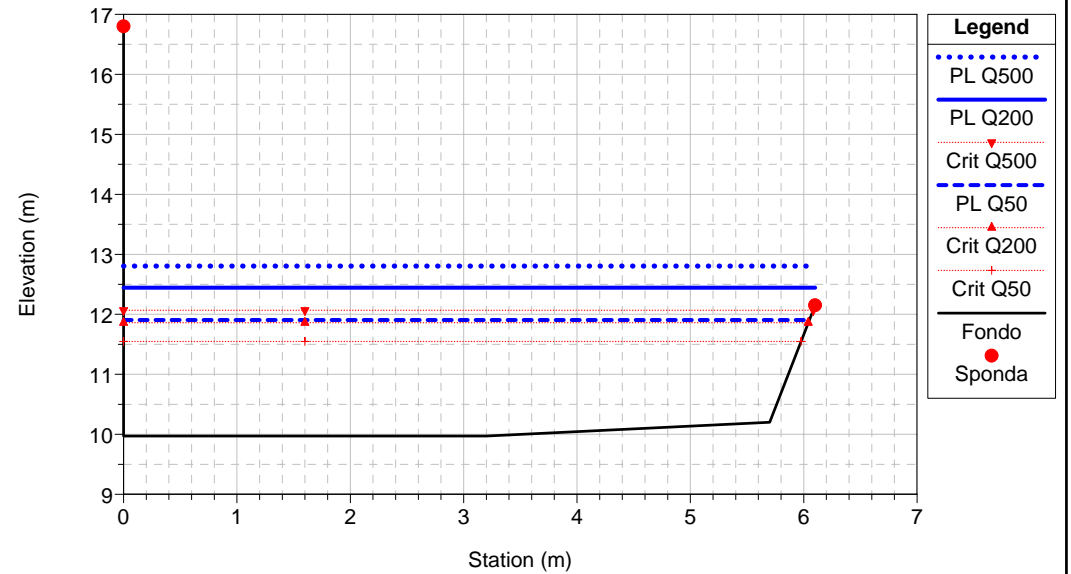
San Pietro_Foce

River = Fagaggia Reach = unico FA-20



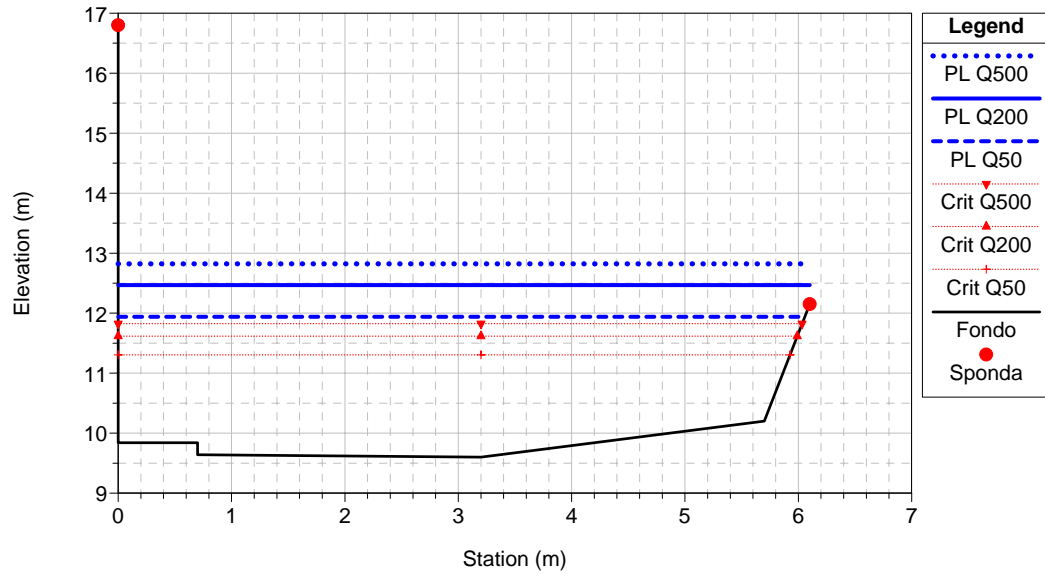
San Pietro_Foce

River = Fagaggia Reach = unico FA-19



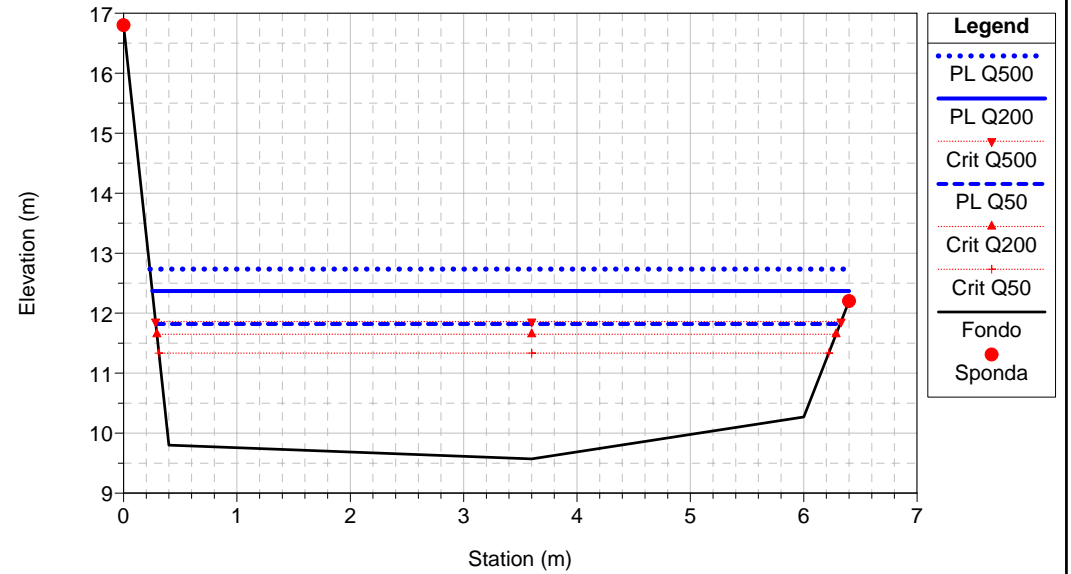
San Pietro_Foce

River = Fagaggia Reach = unico FA-18



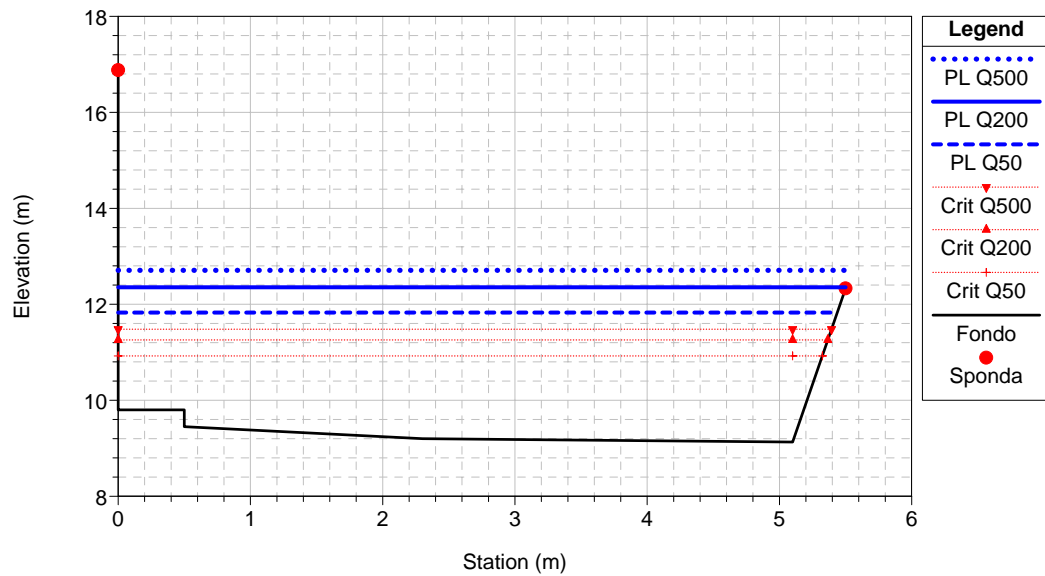
San Pietro_Foce

River = Fagaggia Reach = unico FA-17



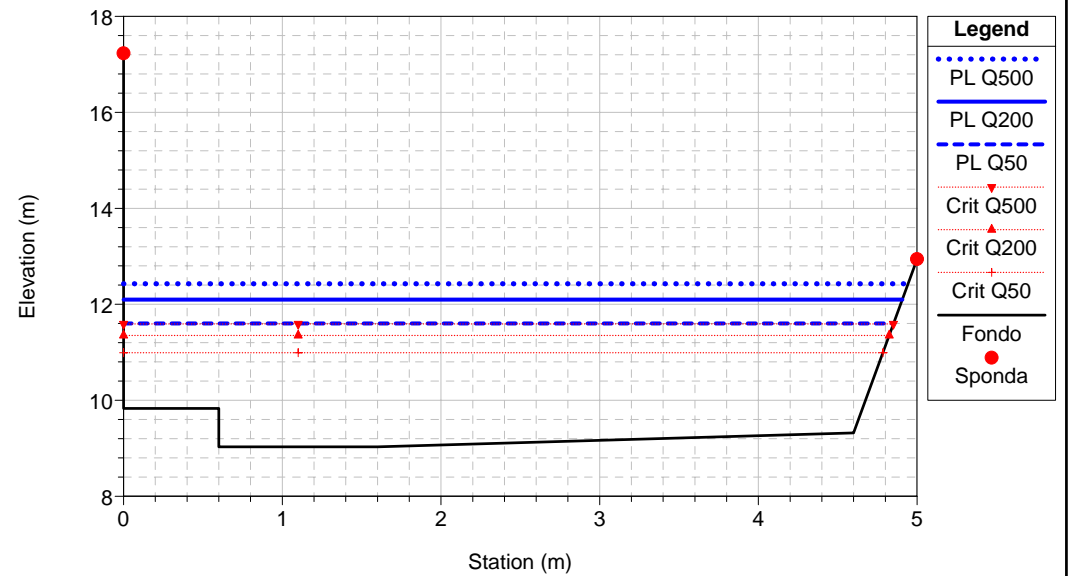
San Pietro_Foce

River = Fagaggia Reach = unico FA-16

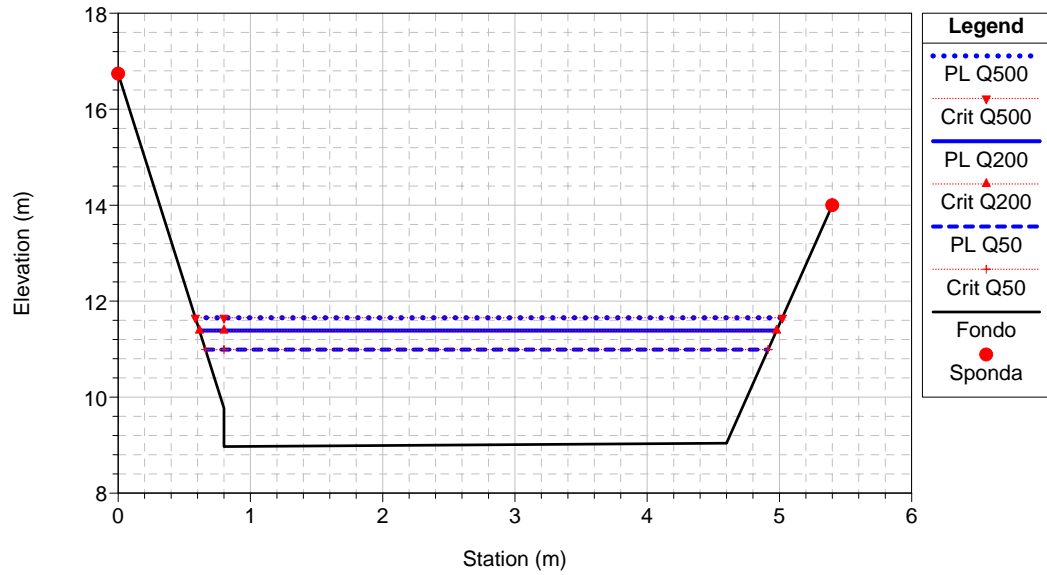


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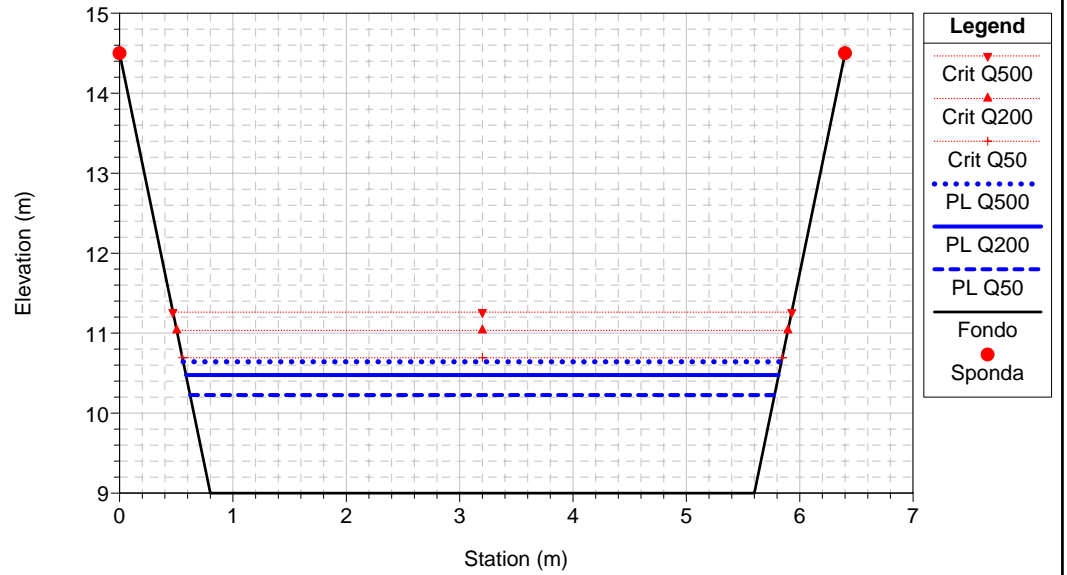
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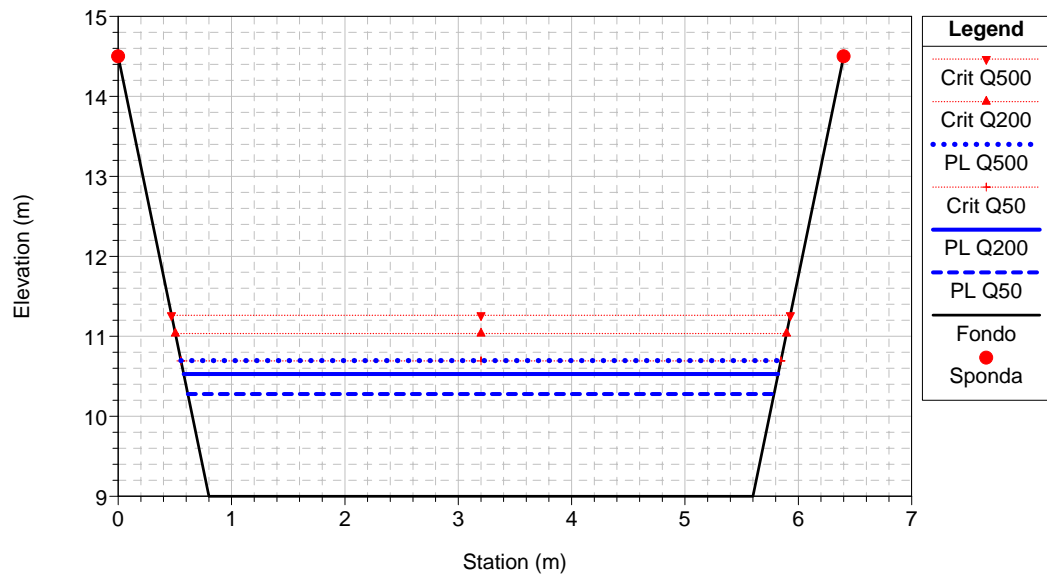
San Pietro_Foce
River = Fagaggia Reach = unico FA-14



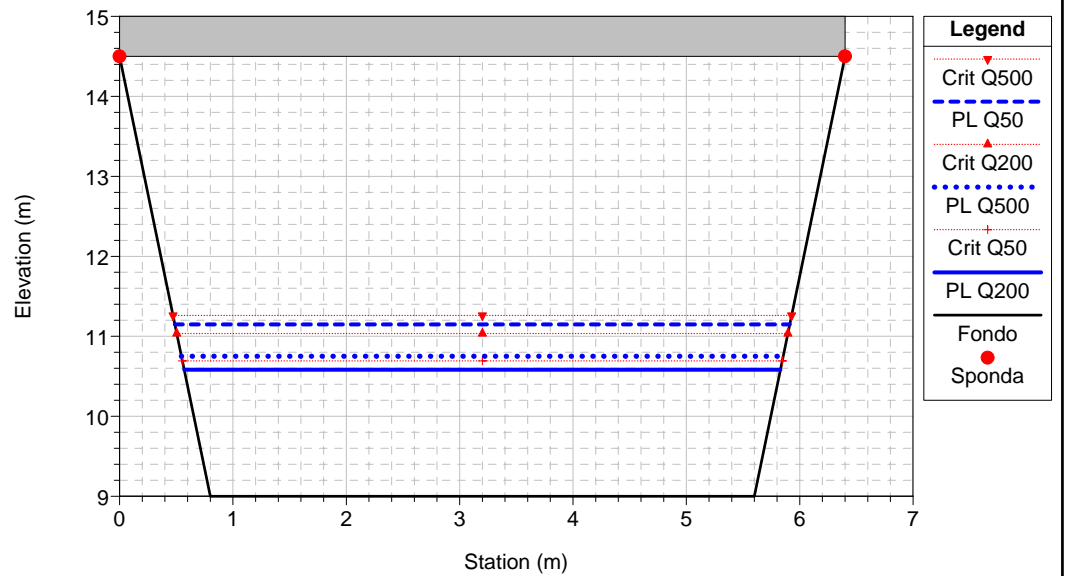
San Pietro_Foce
River = Fagaggia Reach = unico FA-13



San Pietro_Foce
River = Fagaggia Reach = unico FA-13

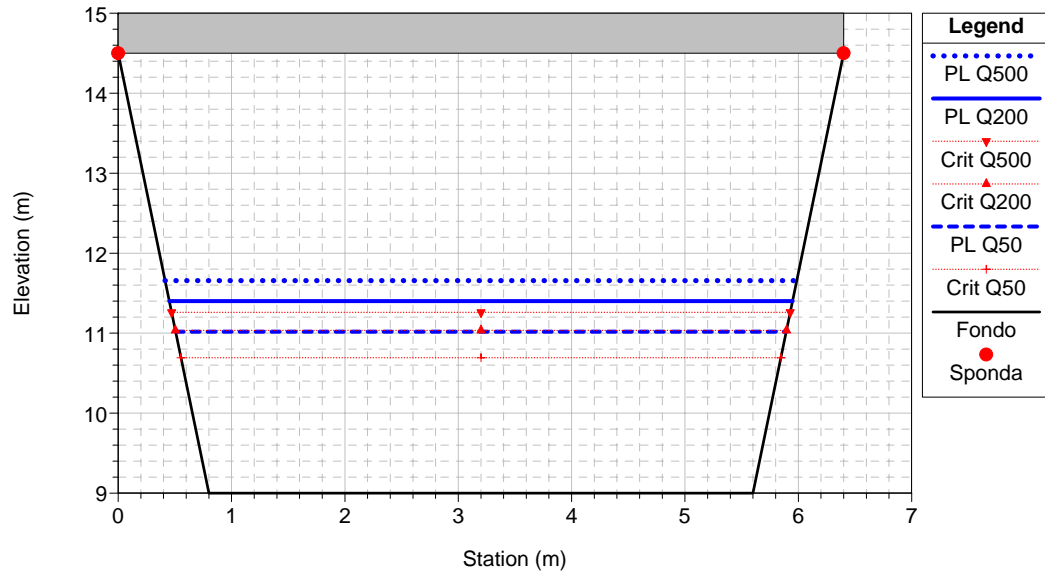


San Pietro_Foce
River = Fagaggia Reach = unico FA-PT02



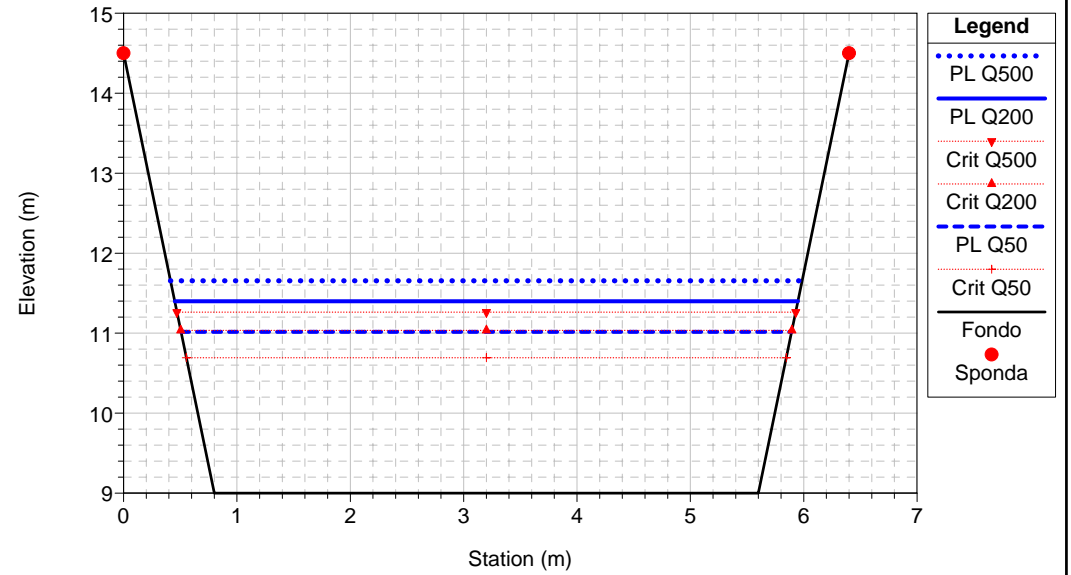
San Pietro_Foce

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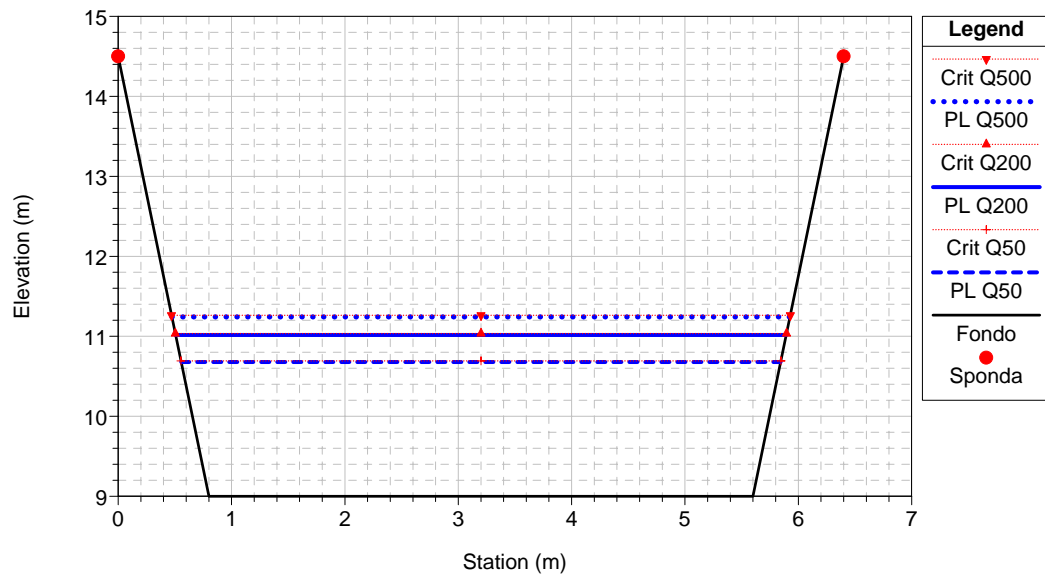
San Pietro_Foce

River = Fagaggia Reach = unico FA-13



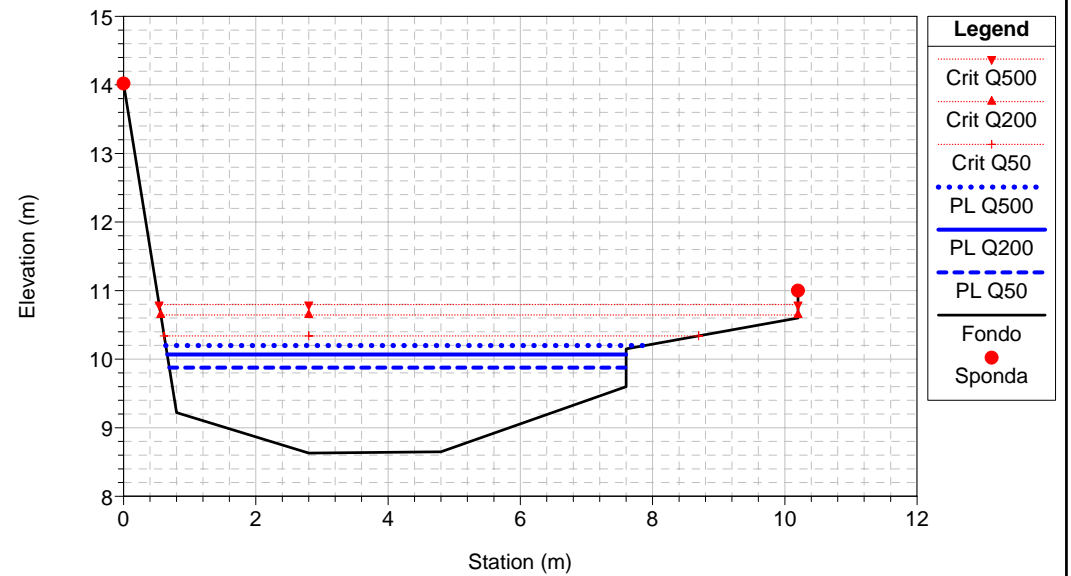
San Pietro_Foce

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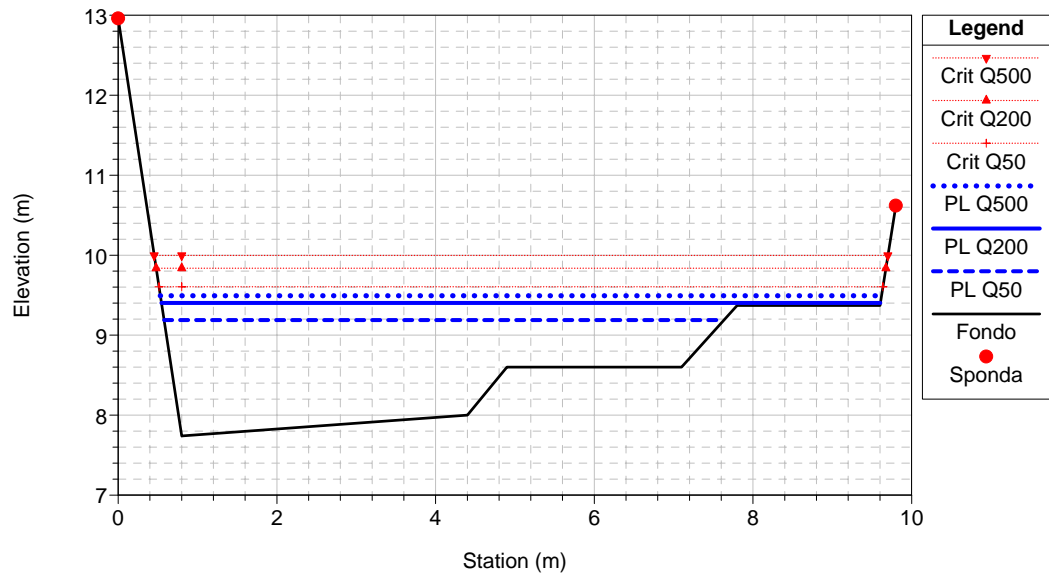


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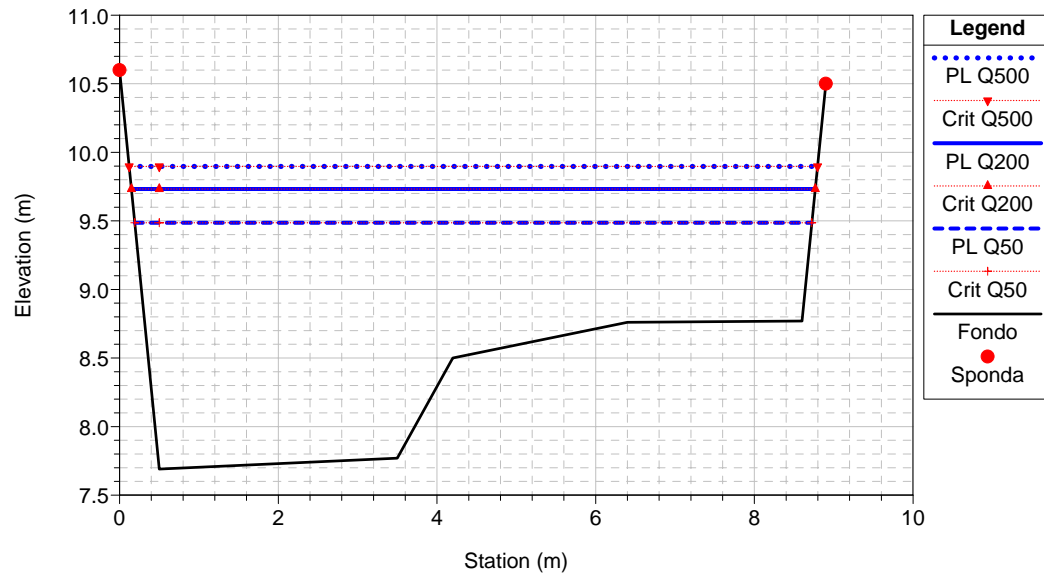
River = Fagaggia Reach = unico FA-12



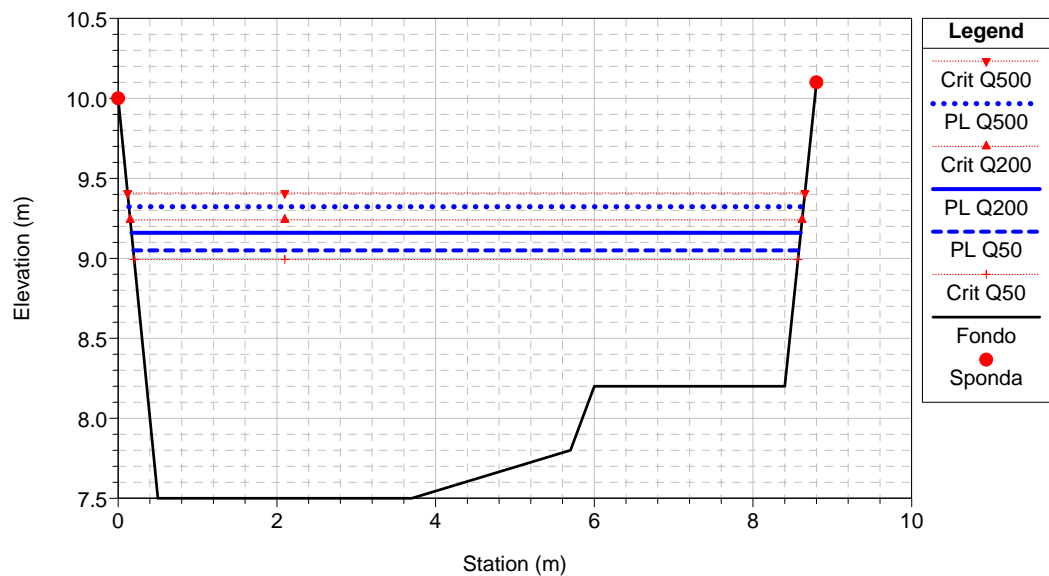
San Pietro_Foce
River = Fagaggia Reach = unico FA-11



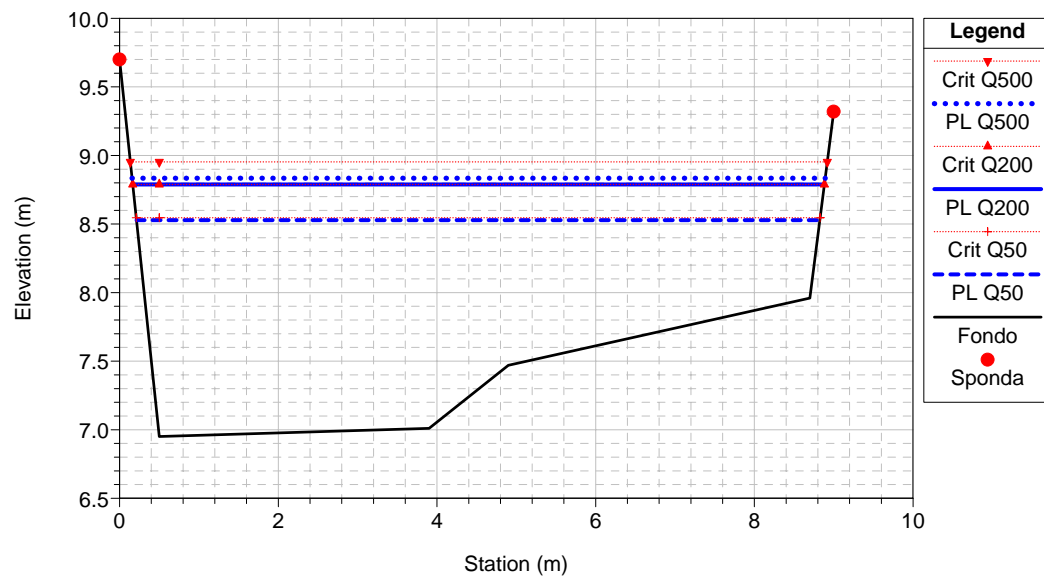
San Pietro_Foce
River = Fagaggia Reach = unico FA-10



San Pietro_Foce
River = Fagaggia Reach = unico FA-09

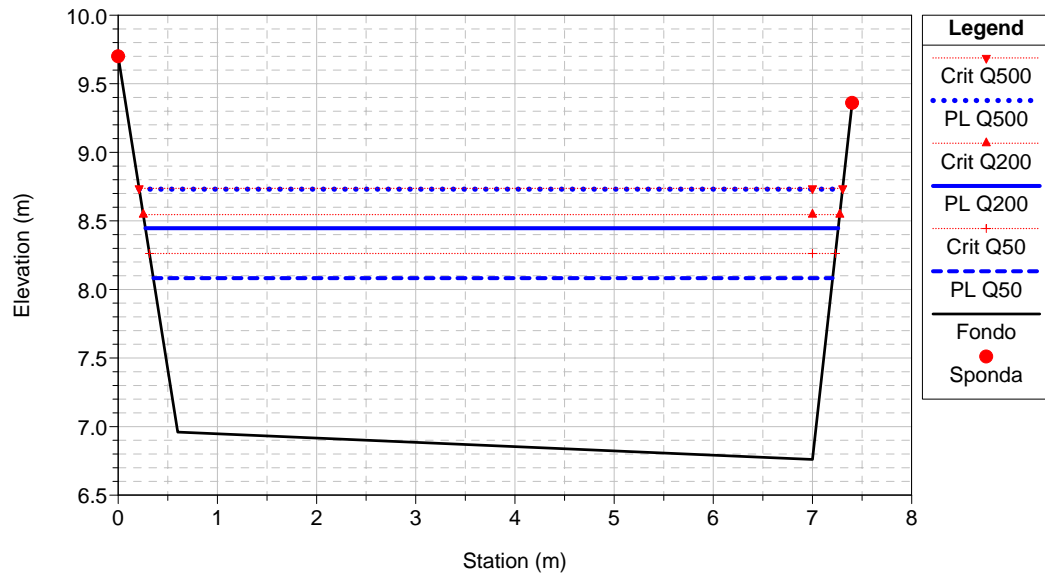


San Pietro_Foce
River = Fagaggia Reach = unico FA-08



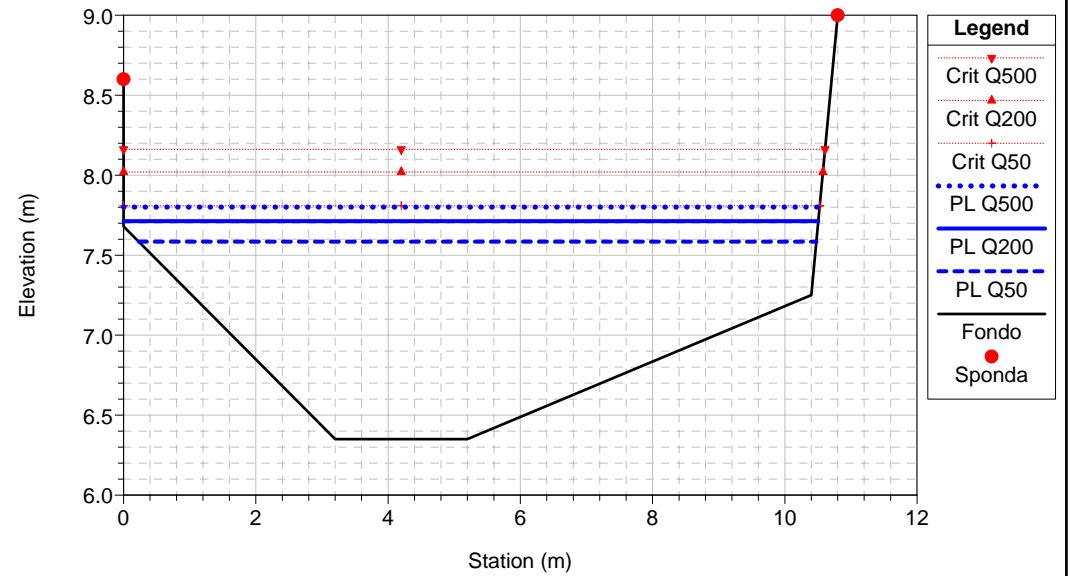
San Pietro_Foce

River = Fagaggia Reach = unico FA-07



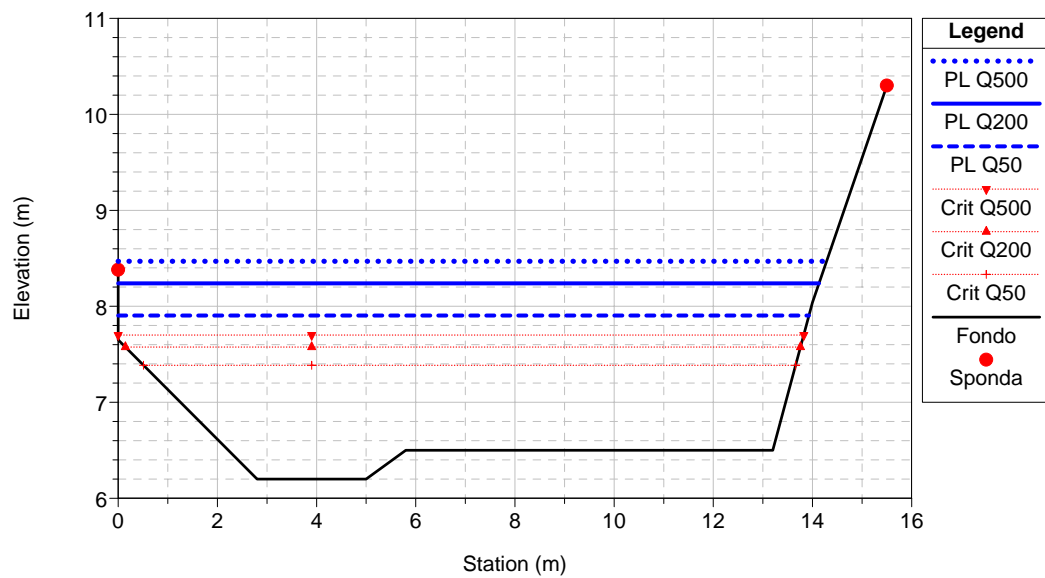
San Pietro_Foce

River = Fagaggia Reach = unico FA-06



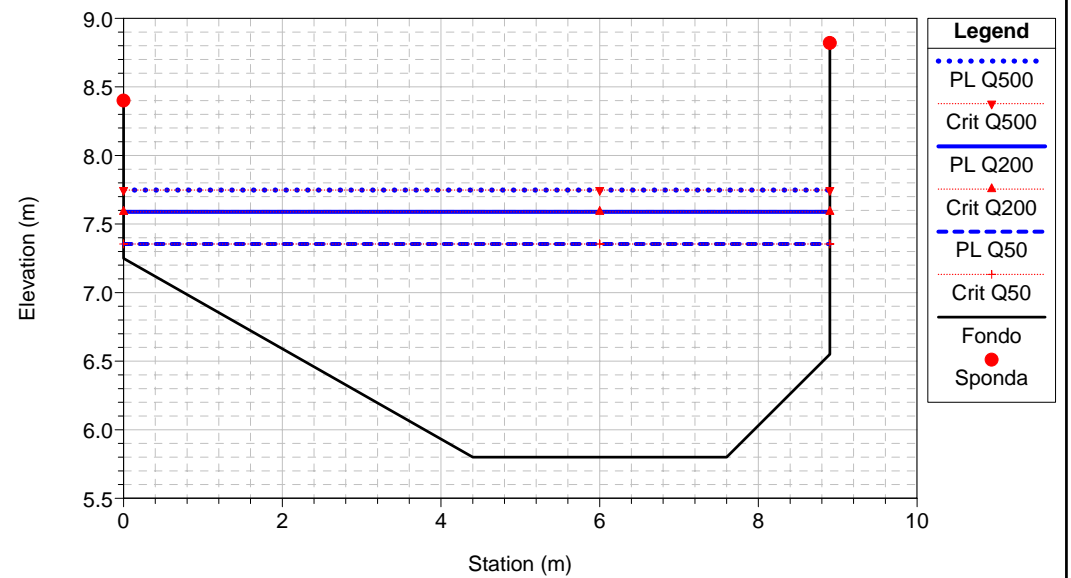
San Pietro_Foce

River = Fagaggia Reach = unico FA-05

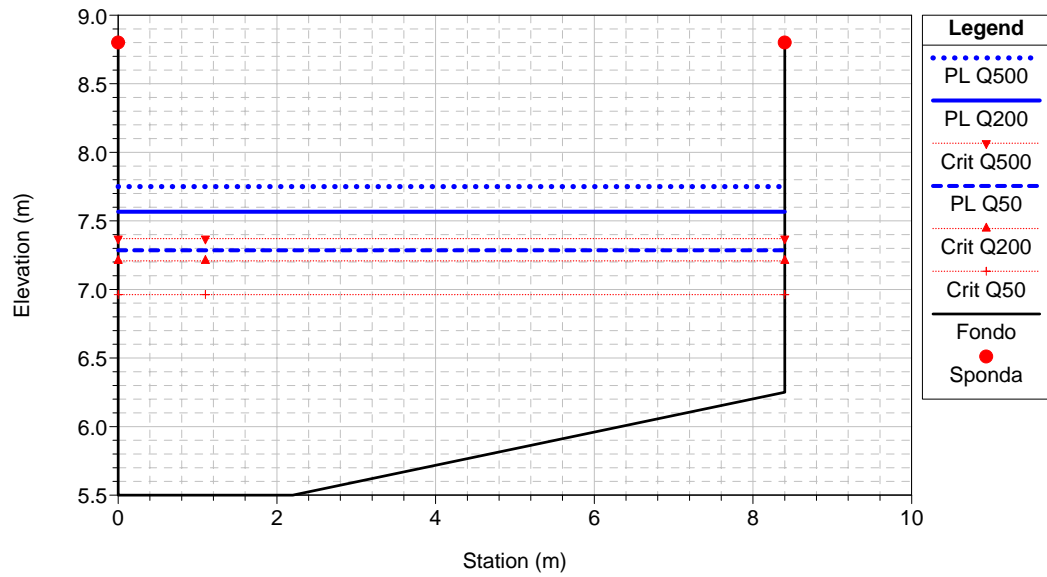


San Pietro_Foce

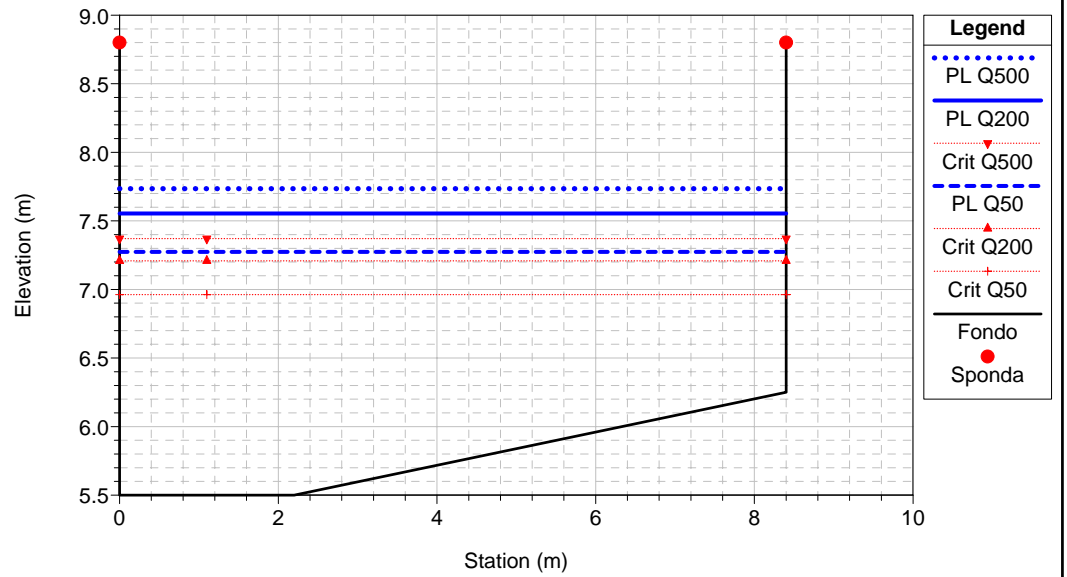
River = Fagaggia Reach = unico FA-04



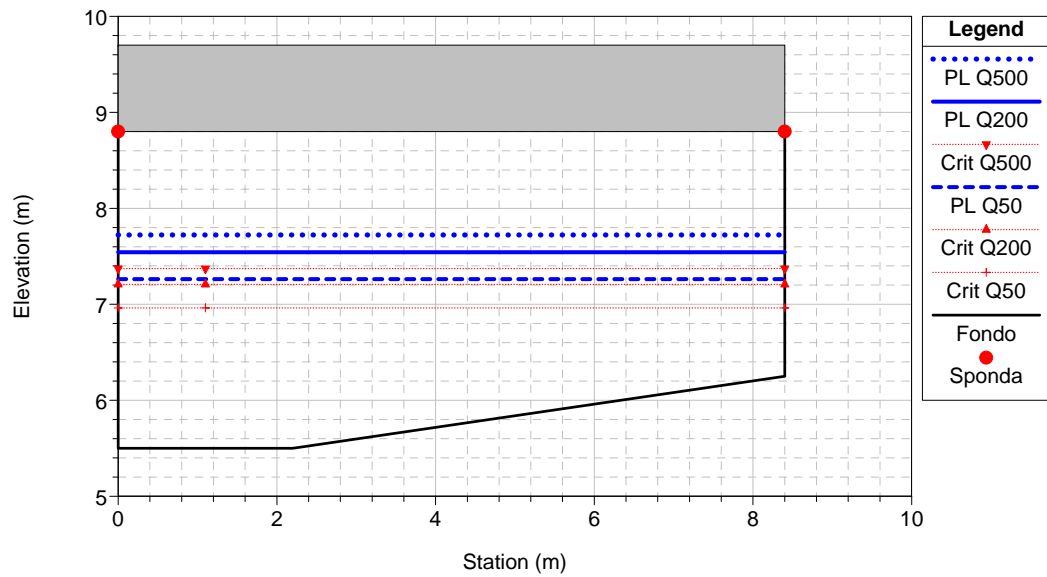
San Pietro_Foce
River = Fagaggia Reach = unico FA-03



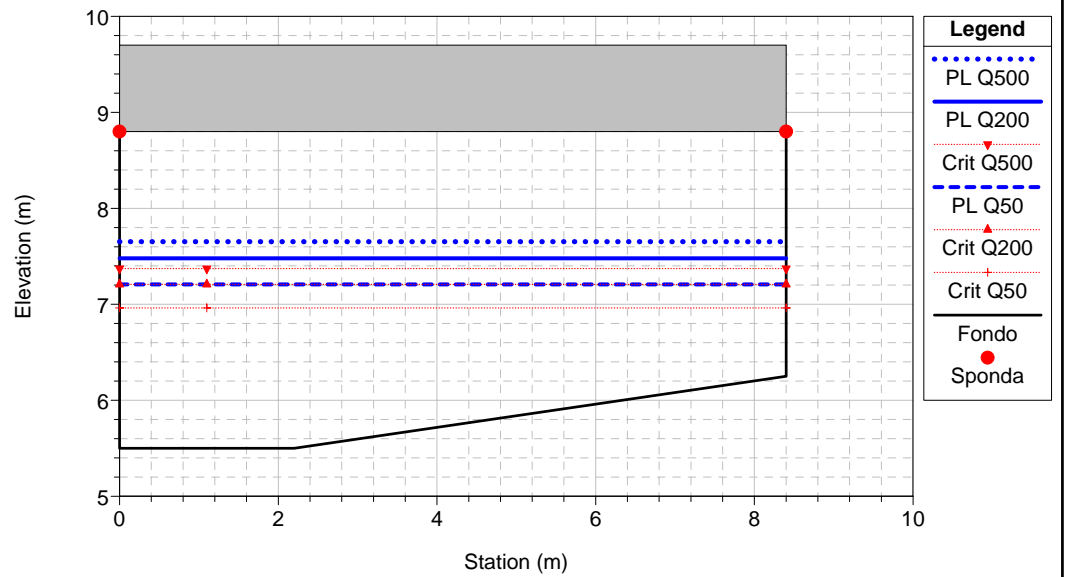
San Pietro_Foce
River = Fagaggia Reach = unico FA-03



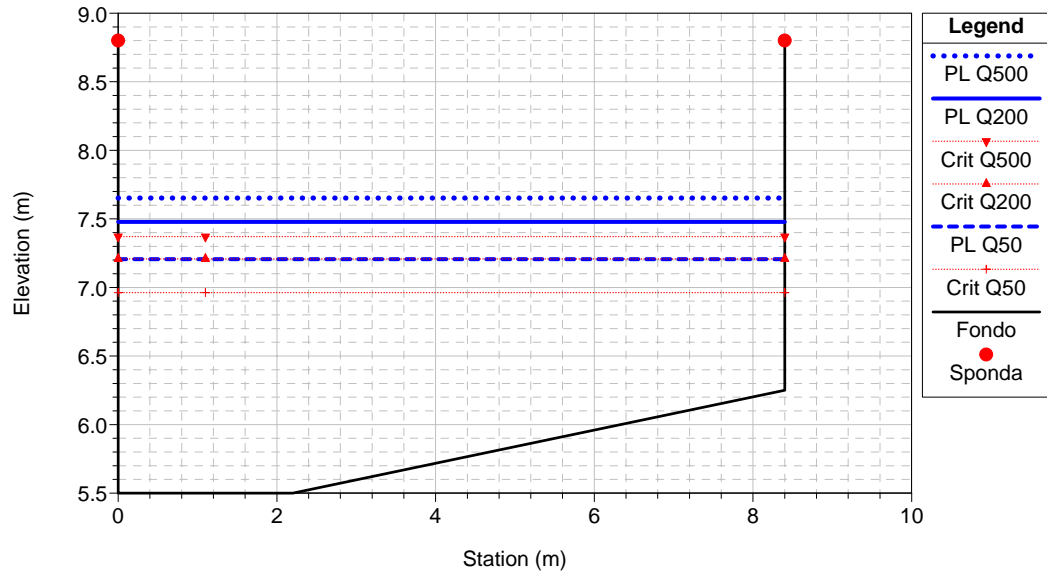
San Pietro_Foce
River = Fagaggia Reach = unico FA-PT01



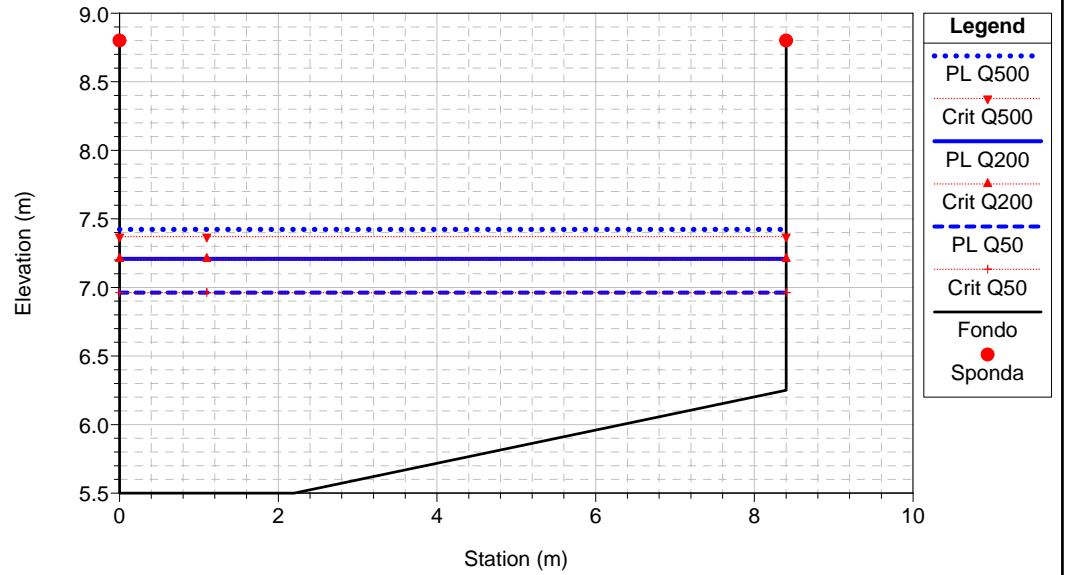
San Pietro_Foce
River = Fagaggia Reach = unico FA-PT01



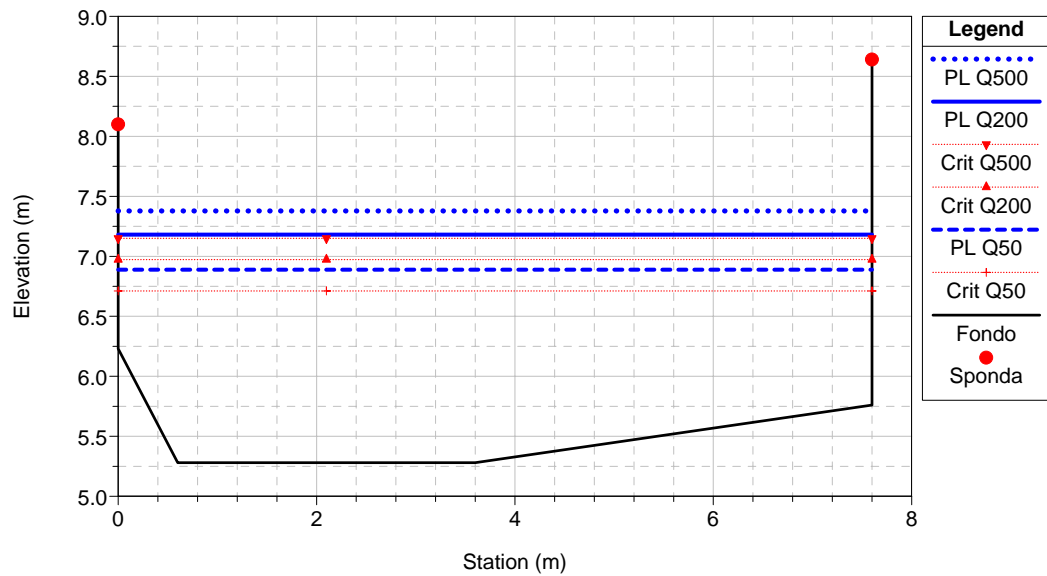
San Pietro_Foce
River = Fagaggia Reach = unico FA-03



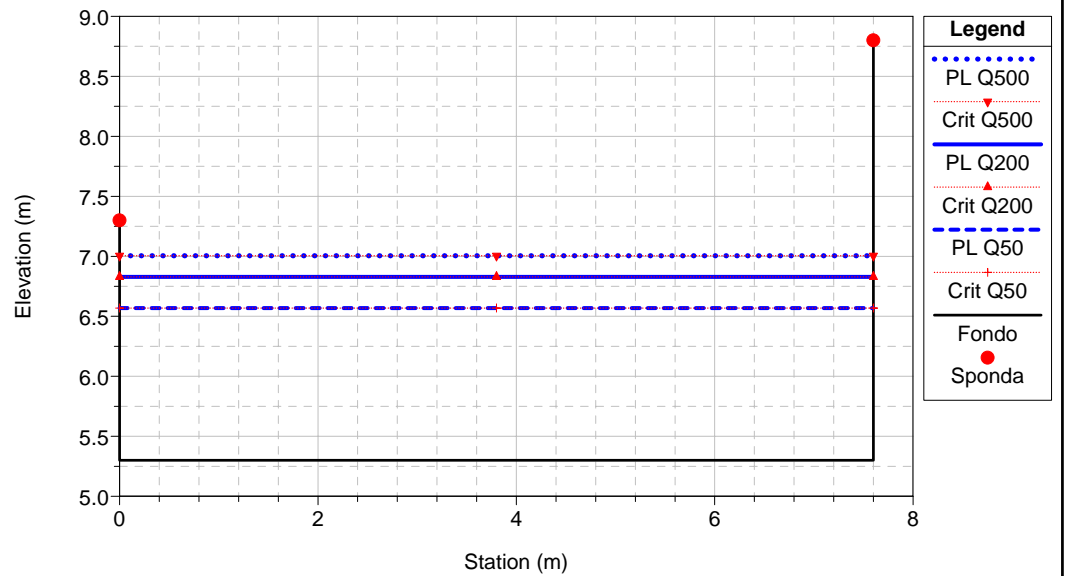
San Pietro_Foce
River = Fagaggia Reach = unico FA-03



San Pietro_Foce
River = Fagaggia Reach = unico FA-02



San Pietro_Foce
River = Fagaggia Reach = unico FA-01



HEC-RAS Plan: 00_PdB River: Fagaggia Reach: unico

Reach	River Sta	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	LOB Elev (m)	L. Freeboard (m)	ROB Elev (m)	R. Freeboard (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
unico	100	34.00	14.70	15.94	17.80	1.86	20.30	4.36	16.04	16.61	0.023018	3.64	9.35	9.10	1.14
unico	100	45.00	14.70	16.15	17.80	1.65	20.30	4.15	16.29	16.95	0.023023	3.96	11.36	9.63	1.16
unico	100	53.00	14.70	16.30	17.80	1.50	20.30	4.00	16.47	17.18	0.022994	4.16	12.75	9.99	1.17
unico	37 FA-26	34.00	12.40	13.64	15.50	1.86	18.00	4.36	13.74	14.31	0.023036	3.64	9.35	9.10	1.14
unico	37 FA-26	45.00	12.40	13.86	15.50	1.64	18.00	4.14	13.99	14.65	0.022781	3.95	11.41	9.64	1.16
unico	37 FA-26	53.00	12.40	14.00	15.50	1.50	18.00	4.00	14.17	14.87	0.022749	4.14	12.80	10.00	1.17
unico	36 FA-25	34.00	11.90	13.09	14.60	1.51	18.00	4.91	13.22	13.76	0.024373	3.63	9.37	9.72	1.18
unico	36 FA-25	45.00	11.90	13.27	14.60	1.33	18.00	4.73	13.45	14.10	0.025953	4.04	11.15	10.28	1.24
unico	36 FA-25	53.00	11.90	13.40	14.60	1.20	18.00	4.60	13.61	14.32	0.026058	4.24	12.49	10.68	1.25
unico	35 FA-24	34.00	11.40	12.58	14.60	2.02	18.00	5.42	12.68	13.20	0.023005	3.48	9.78	10.55	1.15
unico	35 FA-24	45.00	11.40	13.18	14.60	1.42	18.00	4.82	12.91	13.55	0.008788	2.68	16.80	12.85	0.75
unico	35 FA-24	53.00	11.40	13.55	14.60	1.05	18.00	4.45	13.06	13.85	0.005933	2.43	21.79	14.27	0.63
unico	34 FA-23	34.00	10.44	12.69	14.34	1.65	14.11	1.42	11.59	12.84	0.002759	1.71	19.85	8.84	0.36
unico	34 FA-23	45.00	10.44	13.15	14.34	1.19	14.11	0.96	11.82	13.33	0.002817	1.88	23.98	8.84	0.36
unico	34 FA-23	53.00	10.44	13.49	14.34	0.85	14.11	0.62	11.98	13.69	0.002813	1.97	26.97	8.84	0.36
unico	33.1 FA-22	34.00	10.42	12.54	15.62	3.08	14.13	1.59	11.85	12.80	0.003722	2.25	15.11	8.32	0.53
unico	33.1 FA-22	45.00	10.42	13.02	15.62	2.60	14.13	1.11	12.13	13.30	0.003352	2.34	19.21	8.87	0.51
unico	33.1 FA-22	53.00	10.42	13.37	15.62	2.25	14.13	0.76	12.31	13.66	0.003039	2.38	22.31	8.90	0.48
unico	33 FA-21	34.00	10.42	12.05	15.62	3.57	14.53	2.48	11.97	12.76	0.014421	3.72	9.15	5.60	0.93
unico	33 FA-21	45.00	10.42	12.45	15.62	3.17	14.53	2.08	12.29	13.25	0.013677	3.95	11.39	5.60	0.88
unico	33 FA-21	53.00	10.42	12.80	15.62	2.82	14.53	1.73	12.51	13.61	0.012313	3.98	13.33	5.60	0.82
unico	32.2 FA-20	34.00	9.97	11.94	15.62	3.68	14.53	2.59	11.50	12.39	0.007782	2.99	11.39	5.87	0.68
unico	32.2 FA-20	45.00	9.97	12.45	15.62	3.17	14.53	2.08	11.81	12.95	0.007116	3.12	14.41	5.92	0.64
unico	32.2 FA-20	53.00	9.97	12.80	15.62	2.82	14.53	1.73	12.03	13.33	0.006835	3.21	16.51	5.95	0.62
unico	32.1 FA-19	34.00	9.97	11.90	16.80	4.90	12.15	0.25	11.55	12.39	0.008320	3.08	11.04	6.05	0.73
unico	32.1 FA-19	45.00	9.97	12.44	16.80	4.36	12.15	-0.29	11.86	12.95	0.007086	3.14	14.32	6.10	0.65
unico	32.1 FA-19	53.00	9.97	12.80	16.80	4.00	12.15	-0.65	12.07	13.33	0.006669	3.21	16.52	6.10	0.62
unico	32 FA-18	34.00	9.60	11.94	16.80	4.86	12.15	0.21	11.31	12.31	0.005587	2.68	12.68	6.06	0.59
unico	32 FA-18	45.00	9.60	12.47	16.80	4.33	12.15	-0.32	11.62	12.88	0.005286	2.83	15.89	6.10	0.56
unico	32 FA-18	53.00	9.60	12.82	16.80	3.98	12.15	-0.67	11.83	13.26	0.005205	2.93	18.06	6.10	0.54
unico	31 FA-17	34.00	9.57	11.82	16.80	4.98	12.20	0.38	11.33	12.25	0.006690	2.89	11.75	6.04	0.66
unico	31 FA-17	45.00	9.57	12.37	16.80	4.43	12.20	-0.17	11.65	12.82	0.005887	2.98	15.11	6.15	0.61
unico	31 FA-17	53.00	9.57	12.73	16.80	4.07	12.20	-0.53	11.86	13.21	0.005628	3.05	17.36	6.17	0.58
unico	30 FA-16	34.00	9.13	11.83	16.88	5.05	12.33	0.50	10.93	12.15	0.004851	2.53	13.42	5.44	0.51

HEC-RAS Plan: 00_PdB River: Fagaggia Reach: unico (Continued)

Reach	River Sta		Q Total	Min Ch El	W.S. Elev	LOB Elev	L. Freeboard	ROB Elev	R. Freeboard	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
unico	30	FA-16	45.00	9.13	12.35	16.88	4.53	12.33	-0.02	11.26	12.74	0.005064	2.76	16.31	5.50	0.51
unico	30	FA-16	53.00	9.13	12.71	16.88	4.17	12.33	-0.38	11.48	13.14	0.005239	2.90	18.25	5.50	0.51
unico	29	FA-15	34.00	9.03	11.60	17.23	5.63	12.94	1.34	10.99	12.07	0.008031	3.03	11.20	4.85	0.64
unico	29	FA-15	45.00	9.03	12.10	17.23	5.13	12.94	0.84	11.35	12.65	0.008366	3.30	13.63	4.91	0.63
unico	29	FA-15	53.00	9.03	12.43	17.23	4.80	12.94	0.51	11.59	13.04	0.008642	3.47	15.26	4.94	0.63
unico	28	FA-14	34.00	8.97	10.99	16.74	5.75	14.00	3.01	10.99	11.93	0.019529	4.28	7.94	4.25	1.00
unico	28	FA-14	45.00	8.97	11.39	16.74	5.35	14.00	2.61	11.39	12.50	0.020306	4.66	9.65	4.36	1.00
unico	28	FA-14	53.00	8.97	11.65	16.74	5.09	14.00	2.35	11.65	12.88	0.020855	4.90	10.82	4.44	1.00
unico	27.3	FA-13	34.00	9.00	10.23	14.50	4.27	14.50	4.27	10.69	11.81	0.042654	5.57	6.11	5.16	1.63
unico	27.3	FA-13	45.00	9.00	10.48	14.50	4.02	14.50	4.02	11.03	12.36	0.043083	6.08	7.40	5.23	1.63
unico	27.3	FA-13	53.00	9.00	10.64	14.50	3.86	14.50	3.86	11.26	12.73	0.043479	6.40	8.28	5.28	1.63
unico	27.2	FA-13	34.00	9.00	10.28	14.50	4.22	14.50	4.22	10.69	11.73	0.037686	5.33	6.37	5.17	1.53
unico	27.2	FA-13	45.00	9.00	10.53	14.50	3.97	14.50	3.97	11.03	12.28	0.038875	5.87	7.67	5.24	1.55
unico	27.2	FA-13	53.00	9.00	10.70	14.50	3.80	14.50	3.80	11.26	12.65	0.039634	6.19	8.56	5.29	1.55
unico	27.15	FA-PT02	Bridge													
unico	27.1	FA-13	34.00	9.00	11.02	14.50	3.48	14.50	3.48	10.69	11.57	0.009824	3.31	10.27	5.39	0.77
unico	27.1	FA-13	45.00	9.00	11.40	14.50	3.10	14.50	3.10	11.03	12.08	0.010403	3.64	12.35	5.50	0.78
unico	27.1	FA-13	53.00	9.00	11.65	14.50	2.85	14.50	2.85	11.26	12.41	0.010770	3.85	13.77	5.57	0.78
unico	27	FA-13	34.00	9.00	10.68	14.50	3.82	14.50	3.82	10.69	11.50	0.016802	4.02	8.47	5.29	1.01
unico	27	FA-13	45.00	9.00	11.02	14.50	3.48	14.50	3.48	11.03	11.99	0.017226	4.38	10.27	5.39	1.01
unico	27	FA-13	53.00	9.00	11.24	14.50	3.26	14.50	3.26	11.26	12.33	0.017544	4.61	11.49	5.45	1.01
unico	26	FA-12	34.00	8.63	9.88	14.02	4.14	11.00	1.12	10.34	11.26	0.038934	5.22	6.51	6.91	1.72
unico	26	FA-12	45.00	8.63	10.07	14.02	3.95	11.00	0.93	10.64	11.75	0.039096	5.74	7.84	6.94	1.72
unico	26	FA-12	53.00	8.63	10.20	14.02	3.82	11.00	0.80	10.80	12.06	0.040509	6.05	8.76	7.25	1.76
unico	25	FA-11	34.00	7.74	9.19	12.96	3.77	10.62	1.43	9.61	10.46	0.038689	5.00	6.80	7.06	1.63
unico	25	FA-11	45.00	7.74	9.40	12.96	3.56	10.62	1.22	9.84	10.87	0.045653	5.36	8.40	9.06	1.78
unico	25	FA-11	53.00	7.74	9.49	12.96	3.47	10.62	1.13	10.00	11.18	0.047392	5.75	9.22	9.09	1.82
unico	24	FA-10	34.00	7.69	9.49	10.60	1.11	10.50	1.01	9.49	10.07	0.014213	3.40	10.01	8.53	1.00
unico	24	FA-10	45.00	7.69	9.73	10.60	0.87	10.50	0.77	9.73	10.43	0.013975	3.71	12.12	8.62	1.00
unico	24	FA-10	53.00	7.69	9.90	10.60	0.70	10.50	0.60	9.90	10.68	0.013915	3.92	13.54	8.67	1.00
unico	23	FA-09	34.00	7.50	9.05	10.00	0.95	10.10	1.05	8.99	9.59	0.011787	3.26	10.43	8.39	0.93
unico	23	FA-09	45.00	7.50	9.16	10.00	0.84	10.10	0.94	9.24	9.96	0.016006	3.96	11.35	8.43	1.09
unico	23	FA-09	53.00	7.50	9.32	10.00	0.68	10.10	0.78	9.41	10.21	0.015767	4.16	12.73	8.50	1.09

HEC-RAS Plan: 00_PdB River: Fagaggia Reach: unico (Continued)

Reach	River Sta		Q Total	Min Ch El	W.S. Elev	LOB Elev	L. Freeboard	ROB Elev	R. Freeboard	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
unico	22	FA-08	34.00	6.95	8.53	9.70	1.17	9.32	0.79	8.55	9.13	0.013884	3.43	9.91	8.61	1.02
unico	22	FA-08	45.00	6.95	8.79	9.70	0.91	9.32	0.53	8.79	9.49	0.013118	3.70	12.16	8.72	1.00
unico	22	FA-08	53.00	6.95	8.83	9.70	0.87	9.32	0.49	8.95	9.74	0.016553	4.22	12.55	8.74	1.12
unico	21	FA-07	34.00	6.76	8.08	9.70	1.62	9.36	1.28	8.26	8.98	0.021776	4.20	8.09	6.85	1.23
unico	21	FA-07	45.00	6.76	8.45	9.70	1.25	9.36	0.91	8.55	9.36	0.017201	4.24	10.61	6.98	1.10
unico	21	FA-07	53.00	6.76	8.73	9.70	0.97	9.36	0.63	8.74	9.63	0.014488	4.20	12.62	7.09	1.01
unico	20	FA-06	34.00	6.35	7.58	8.60	1.02	9.00	1.42	7.81	8.42	0.025089	4.05	8.40	10.25	1.43
unico	20	FA-06	45.00	6.35	7.71	8.60	0.89	9.00	1.29	8.02	8.80	0.028264	4.62	9.73	10.51	1.53
unico	20	FA-06	53.00	6.35	7.80	8.60	0.80	9.00	1.20	8.16	9.06	0.029612	4.98	10.65	10.53	1.58
unico	19	FA-05	34.00	6.20	7.90	8.38	0.48	10.30	2.40	7.39	8.07	0.002826	1.83	18.63	13.93	0.50
unico	19	FA-05	45.00	6.20	8.24	8.38	0.14	10.30	2.06	7.58	8.43	0.002483	1.93	23.34	14.13	0.48
unico	19	FA-05	53.00	6.20	8.47	8.38	-0.09	10.30	1.83	7.70	8.67	0.002320	1.99	26.60	14.28	0.47
unico	18	FA-04	34.00	5.80	7.35	8.40	1.05	8.82	1.47	7.35	7.93	0.012347	3.35	10.16	8.90	1.00
unico	18	FA-04	45.00	5.80	7.59	8.40	0.81	8.82	1.23	7.59	8.28	0.012299	3.67	12.25	8.90	1.00
unico	18	FA-04	53.00	5.80	7.75	8.40	0.65	8.82	1.07	7.75	8.52	0.012344	3.88	13.65	8.90	1.00
unico	17.3	FA-03	34.00	5.50	7.29	8.80	1.51	8.80	1.51	6.96	7.65	0.006694	2.68	12.68	8.40	0.70
unico	17.3	FA-03	45.00	5.50	7.57	8.80	1.23	8.80	1.23	7.21	8.02	0.007084	2.99	15.04	8.40	0.71
unico	17.3	FA-03	53.00	5.50	7.75	8.80	1.05	8.80	1.05	7.37	8.27	0.007398	3.20	16.57	8.40	0.73
unico	17.2	FA-03	34.00	5.50	7.27	8.80	1.53	8.80	1.53	6.96	7.65	0.006854	2.70	12.58	8.40	0.71
unico	17.2	FA-03	45.00	5.50	7.55	8.80	1.25	8.80	1.25	7.21	8.02	0.007237	3.01	14.93	8.40	0.72
unico	17.2	FA-03	53.00	5.50	7.73	8.80	1.07	8.80	1.07	7.37	8.26	0.007564	3.22	16.45	8.40	0.74
unico	17.15	FA-PT01	Bridge													
unico	17.1	FA-03	34.00	5.50	7.21	8.80	1.59	8.80	1.59	6.96	7.61	0.007869	2.83	12.01	8.40	0.76
unico	17.1	FA-03	45.00	5.50	7.48	8.80	1.32	8.80	1.32	7.21	7.98	0.008219	3.15	14.29	8.40	0.77
unico	17.1	FA-03	53.00	5.50	7.65	8.80	1.15	8.80	1.15	7.37	8.23	0.008585	3.37	15.75	8.40	0.78
unico	17	FA-03	34.00	5.50	6.96	8.80	1.84	8.80	1.84	6.96	7.56	0.013816	3.41	9.96	8.40	1.00
unico	17	FA-03	45.00	5.50	7.21	8.80	1.59	8.80	1.59	7.21	7.92	0.013730	3.74	12.02	8.40	1.00
unico	17	FA-03	53.00	5.50	7.42	8.80	1.38	8.80	1.38	7.37	8.17	0.012558	3.83	13.83	8.40	0.95
unico	16	FA-02	34.00	5.28	6.89	8.10	1.21	8.64	1.75	6.71	7.38	0.009153	3.10	10.98	7.60	0.82
unico	16	FA-02	45.00	5.28	7.18	8.10	0.92	8.64	1.46	6.97	7.77	0.009366	3.41	13.20	7.60	0.83
unico	16	FA-02	53.00	5.28	7.38	8.10	0.72	8.64	1.26	7.15	8.04	0.009518	3.60	14.70	7.60	0.83
unico	15	FA-01	34.00	5.30	6.57	7.30	0.73	8.80	2.23	6.57	7.20	0.014463	3.53	9.65	7.60	1.00
unico	15	FA-01	45.00	5.30	6.83	7.30	0.47	8.80	1.97	6.83	7.59	0.014558	3.87	11.62	7.60	1.00
unico	15	FA-01	53.00	5.30	7.00	7.30	0.30	8.80	1.80	7.00	7.86	0.014662	4.09	12.96	7.60	1.00