

Objekta nosaukums: **Viļānu HES ūdenskrātuves pie NUL=113.14 un Maltas upes ietekmes novērtējums uz meliorācijas sistēmām pieguļošās platībās posmā pik.300/00 - 355/00**

Objekta adrese: **Viļānu pilsēta, Rēzeknes novads**

Inženierbūvju grupa: **II grupa**

Darba nosaukums: **Apsekošanas atskaite.**

Amats	Paraksts	Datums	Vārds, uzvārds
SIA Inženieru birojs PROPECTO Valdes loceklis		28/09/2022	Edgars Logins
Hidrotehnisko būvju inženieris		28.09.2022.	Gundars Birzleja , sertifikāta numurs Nr.5-01623
Mērnieris		28.09.2022.	Dzintra Savicka, sertifikāta numurs Nr. AC0175
Izskatīta, 2022. gads			

Satura rādītājs

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Vispārīgā daļa

Paskaidrojuma raksts

par Viļānu HES ūdenskrātuves un Maltas upes (pik.300/00 - pik.355/00)

ietekmi uz pieguļošajām platībām.

27.09.2022.

Pasūtītājs: "Janovskis", Firma, SIA - Reg. Nr.42403002257

pēc Rēzeknes novada pašvaldības iestādes "Viļānu apvienības pārvalde" pieprasījuma.

Mērķis: veikt Viļānu HES ūdenskrātuves un Maltas upes ietekmes novērtējumu uz pieguļošajām platībām posmā pik.300/00 - pik.355/00.

Pētāmās teritorijas apsekošanas informācija

2022. gada 17. jūnijā, 3. augustā un 20. septembrī SIA „Inženieru birojs „PROFECTO”” inženieri veica Viļānu HES ūdenskrātuves un Maltas upes (pik.299/00 - pik.356/00) apsekošanu.

Pētāmā teritorija atrodas Maltas upes sateces baseinā, Viļānu pilsētas, Viļānu un Sokolku pagastu teritorijā.

Metodoloģija:

- Caurplūduma mērījumi un Maltas upes profilu mērījumi tika veikti ar iekārtu SonTek RS5, kā arī ar Leica GNSS topogrāfiskās uzmērīšanas instrumentu;
- Ūdens līmeņi pie $Q_{1\%}$, $Q_{5\%}$, $Q_{10\%}$ un pie Q_{vv} , kā arī applūstošā platība pie $Q_{10\%}$ (varbūtība=1 reizi 10 gados), tika modelēta HEC-RAS programmā;
- Plāns ar applūstošo platību pie $Q_{10\%}$, garenprofils un šķērsprofili tika sastādīti Autodesk Civil 3D programmā integrējot iepriekš minētos datus no SonTek RS5 un HEC-RAS, kā arī www.melioracija.lv pieejamo kartogrāfisko informāciju (LiDAR modelis ar augstumlīknēm).

Atbilstoši HEC-RAS modeļa datiem sastādīts garenprofils, kurā pēc ūdens līmeņu līknēm redzams, kad Viļānu HES ūdenskrātuves ietekme ir līdz Maltas upes 334/00 piketam. Lai gan apsekojot Maltas upi dabā jau posmā pik.326/50 - 328/00 tika novērota straumes nesto daļiņu izgulsnēšanās, kā rezultātā šajā posmā izveidojies sēklis ar vidējo upes dziļumu 70-80 cm (20.09.2022). Tas norāda, kad straume posmā 327/00 - 334/00 vēl ir pietiekami izteikta un šī daļa būtu uzskatāma vēl par upi, nevis ūdenskrātuvi.

HES ūdenskrātuves un Maltas upes ietekme uz meliorācijas sistēmām.

Pēc www.melioracija.lv pieejamās informācijas Maltas upei pieguļošās platības posmā pik.299/00 - pik.321/00 kreisajā krastā un posmā pik.299/00 - pik.324/00 labajā krastā nav meliorētas.

Meliorācijas sistēmas Maltas kreisajā krastā posmā pik.321/00 - pik.329/30 ir pieņemtas ekspluatācijā 1972. gadā. objekta nosaukums "Notras", obj. numurs 028.

Meliorācijas sistēmas Maltas kreisajā krastā posmā pik.329/30 - pik.357/50 ir pieņemtas ekspluatācijā 1973. gadā. objekta nosaukums "Maltai pieguļošo platību nosusināšana", obj. numurs 030.

Meliorācijas sistēmas Maltas labajā krastā posmā pik.324/00 līdz pik. 357/00 ir pieņemtas ekspluatācijā 1983. gadā. objekta nosaukums "Vecmurāni", obj. numurs 020.

Pēc ZMNI Latgales reģiona meliorācijas nodaļas Rēzeknes sektora vadītājas Daigas Beitānes sniegtās informācijas par grāvju un drenu izteku atzīmēm Maltas upē secinu, kad ietekme uz pieguļošo meliorācijas sistēmu nepastāv, jo tiek izpildīta MK Nr.329 "Noteikumi par Latvijas būvnormatīvu LBN 224-15 "Meliorācijas sistēmas un hidrotehniskās būves"" 21.4 punkta prasības. Ietekme pastāv galvenokārt nemeliorētās mežu un krūmāju platībās, jo netiek izpildīts augstāk minēto noteikumu 21.1 punkts.

Plānā parādītas teritorijas, kas īslaicīgi applūst pie pavasara palu 10% caurplūduma līdz brīdim kamēr ar HES palīdzību ūdenslīmenis ūdenskrātuvē un Maltā tiek pazemināts līdz NUL = 113.14m.

Kolektora izteku un ietekošo grāvju augstuma atzīmes skatīt garenprofilā 9.lpp.

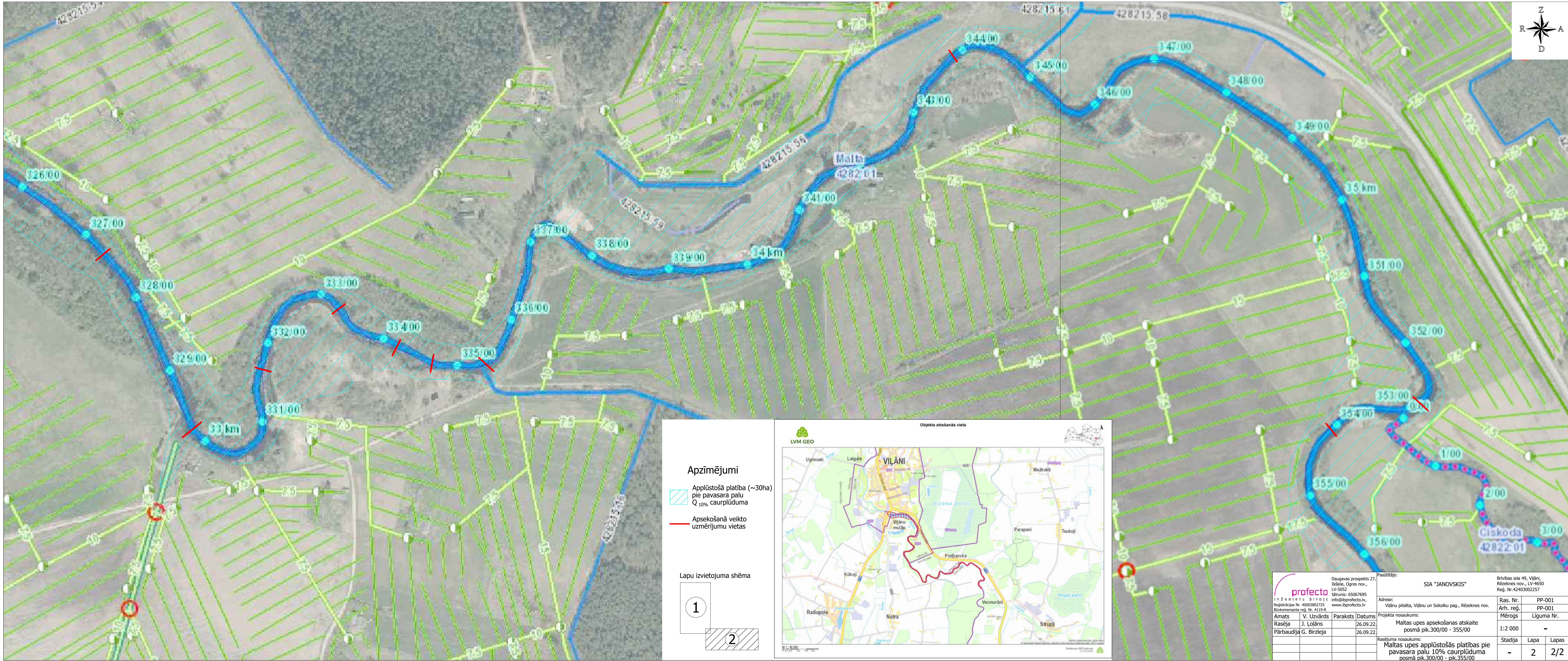
Īslaicīgi applūstošās teritorijas pie pavasara palu 10% caurplūduma skatīt plānā 7. un 8.lpp.

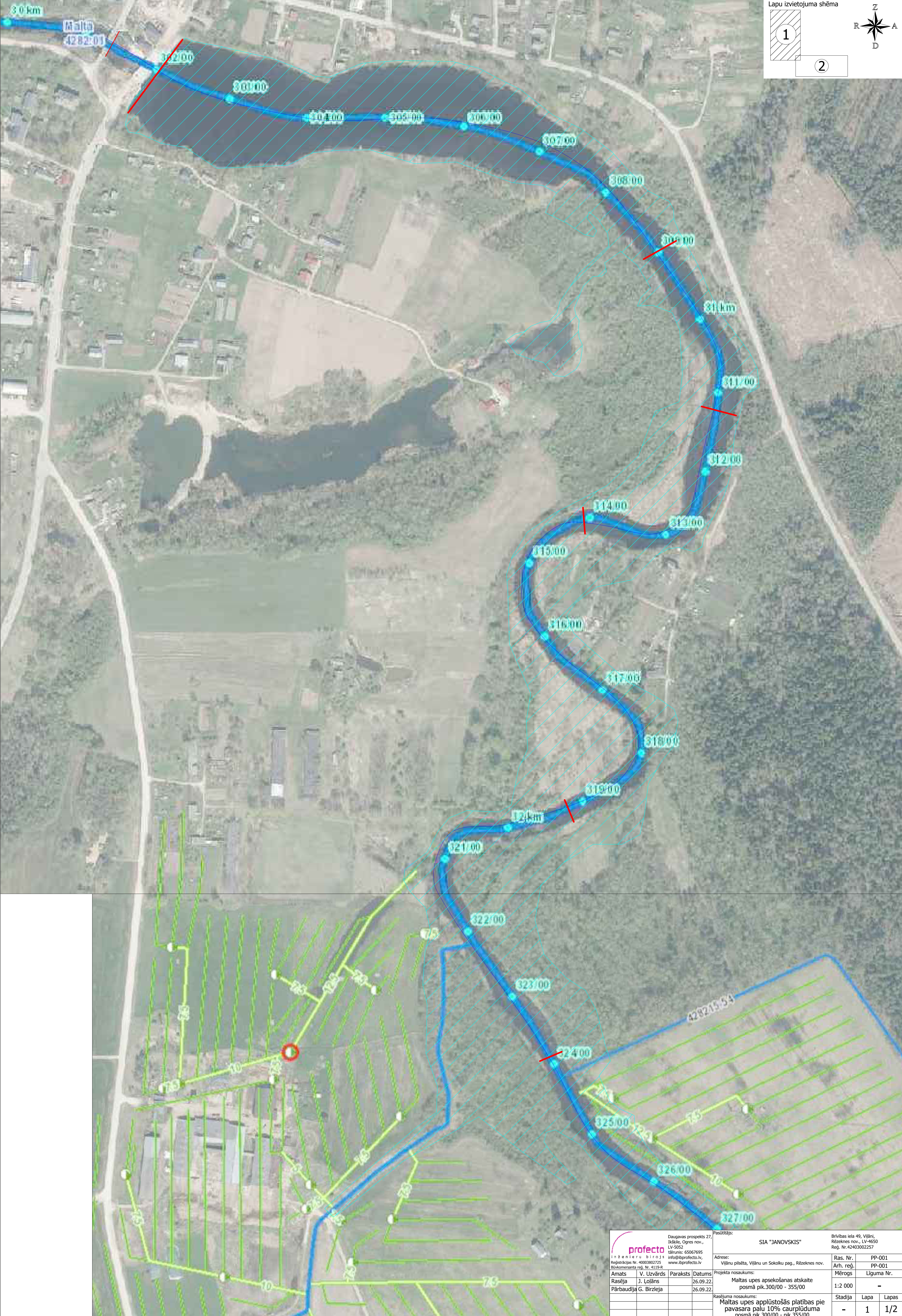
Secinājumi:

- 1) Viļānu HES ūdenskrātuves NUL=113.14m LAS lauksaimniecībā izmantojamās zemes neietekmē;
- 2) Viļānu HES ūdenskrātuve un Maltas upe īslaicīgi ietekmē galvenokārt mežu un krūmāju platības pavasara palos. Kopumā īslaicīgi appludinātā platība pie $Q_{10\%}$ - ~30 ha;
- 3) Ekspluatācijas gaitā drenu zari un kolektori ir aizauguši ar augu saknēm un pieskaloti ar grunti pa drenu caurulīšu saduru vietām, kā rezultātā samazinājusies ūdens novades spēja;
- 4) Ekspluatācijas gaitā neveicot pārtīrīšanu grāvji 428215:02, 428215:54, 428215:01, 428215:57, 428215:02, aizauguši un piesērējuši, kā rezultātā samazinājusies ūdens novades spēja uz Maltas upi;
- 5) Atbilstoši 3.un 4. punktam var secināt, kad Viļānu HES ūdenskrātuvei un Maltas upei posmā pik.300/00 - 355/00 pieguļošās platības ir pārmitras, jo meliorācijas sistēma kopumā nestrādā atbilstoši paredzētajam mērķim.

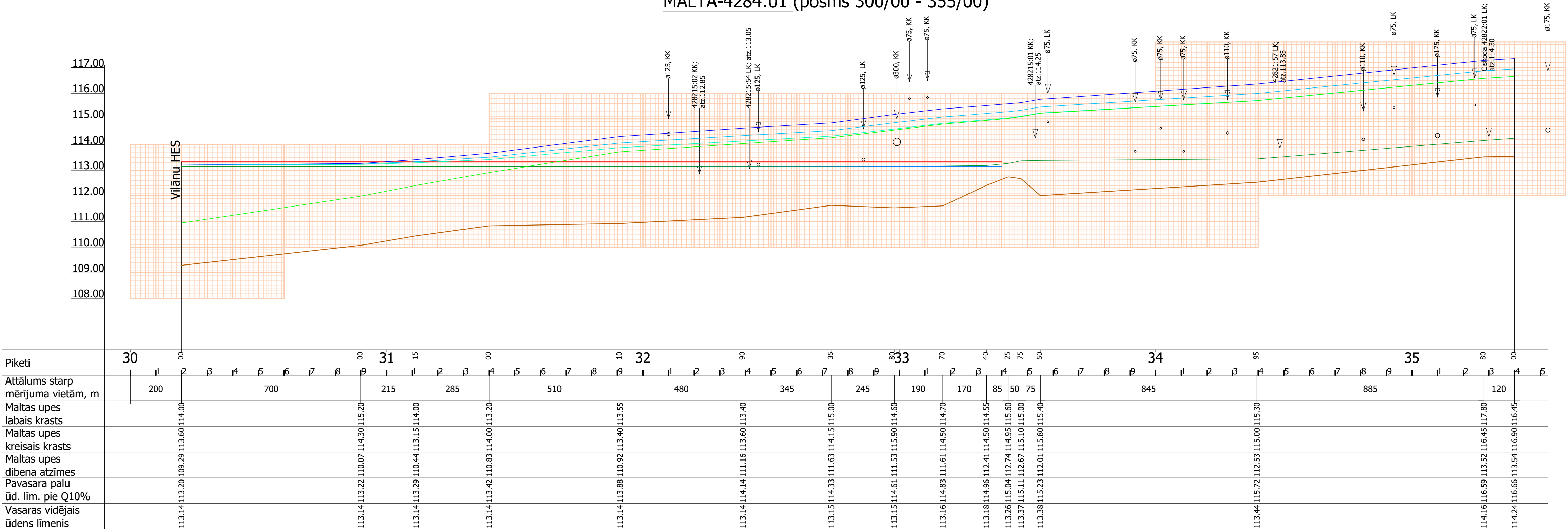
Sertificēts hidrotehnisko būvju inženieris
Gundars Birzleja
LMB Nr.5-01623

Grafiskā daļa





MALTA-4284:01 (posms 300/00 - 355/00)

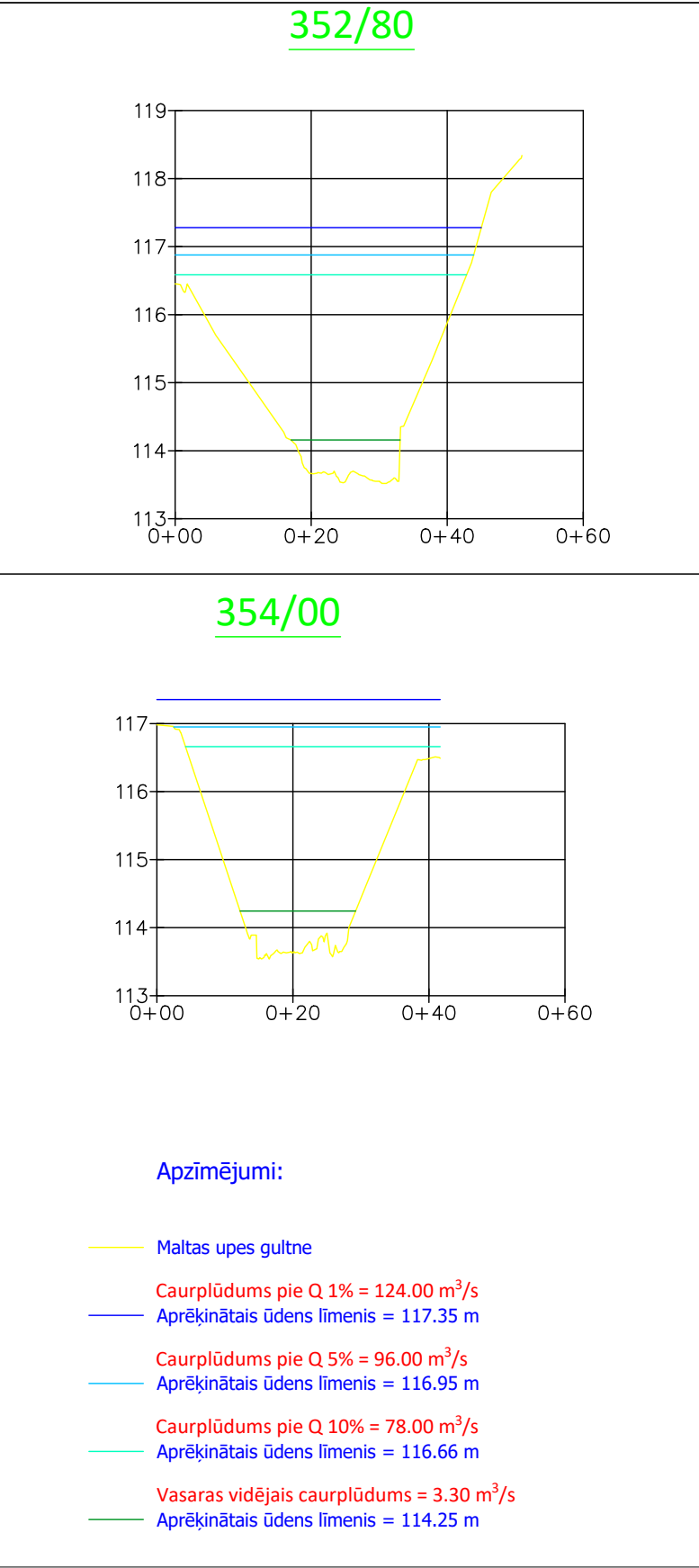
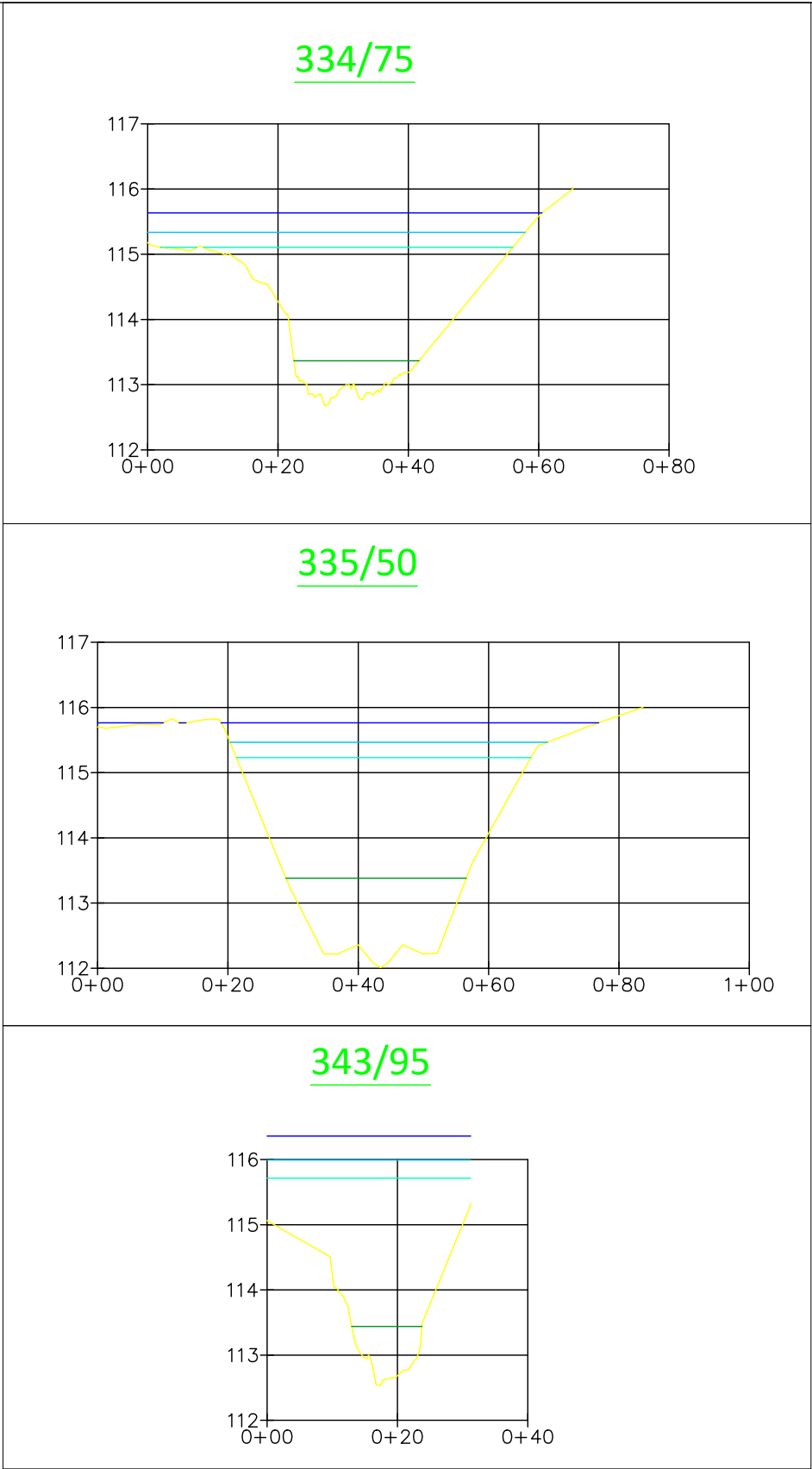
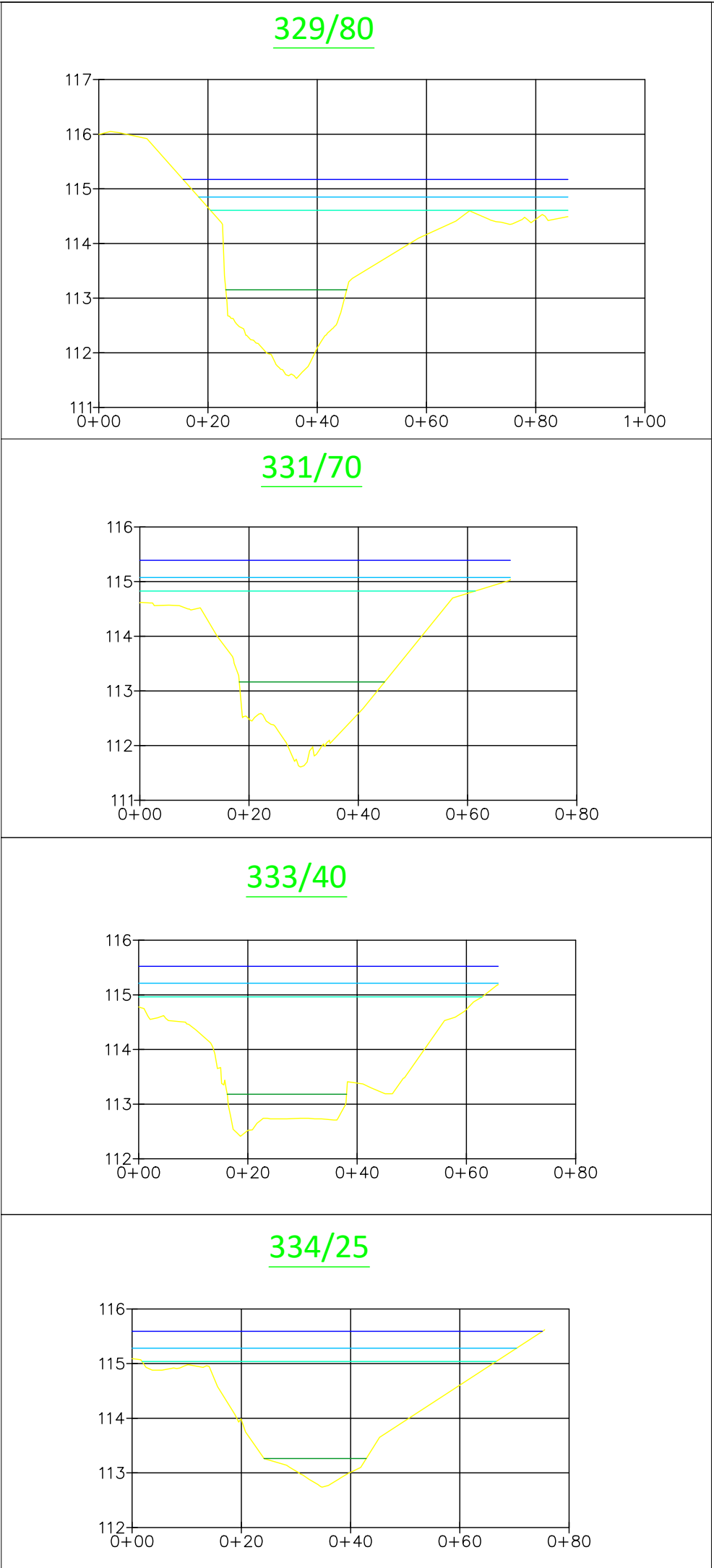
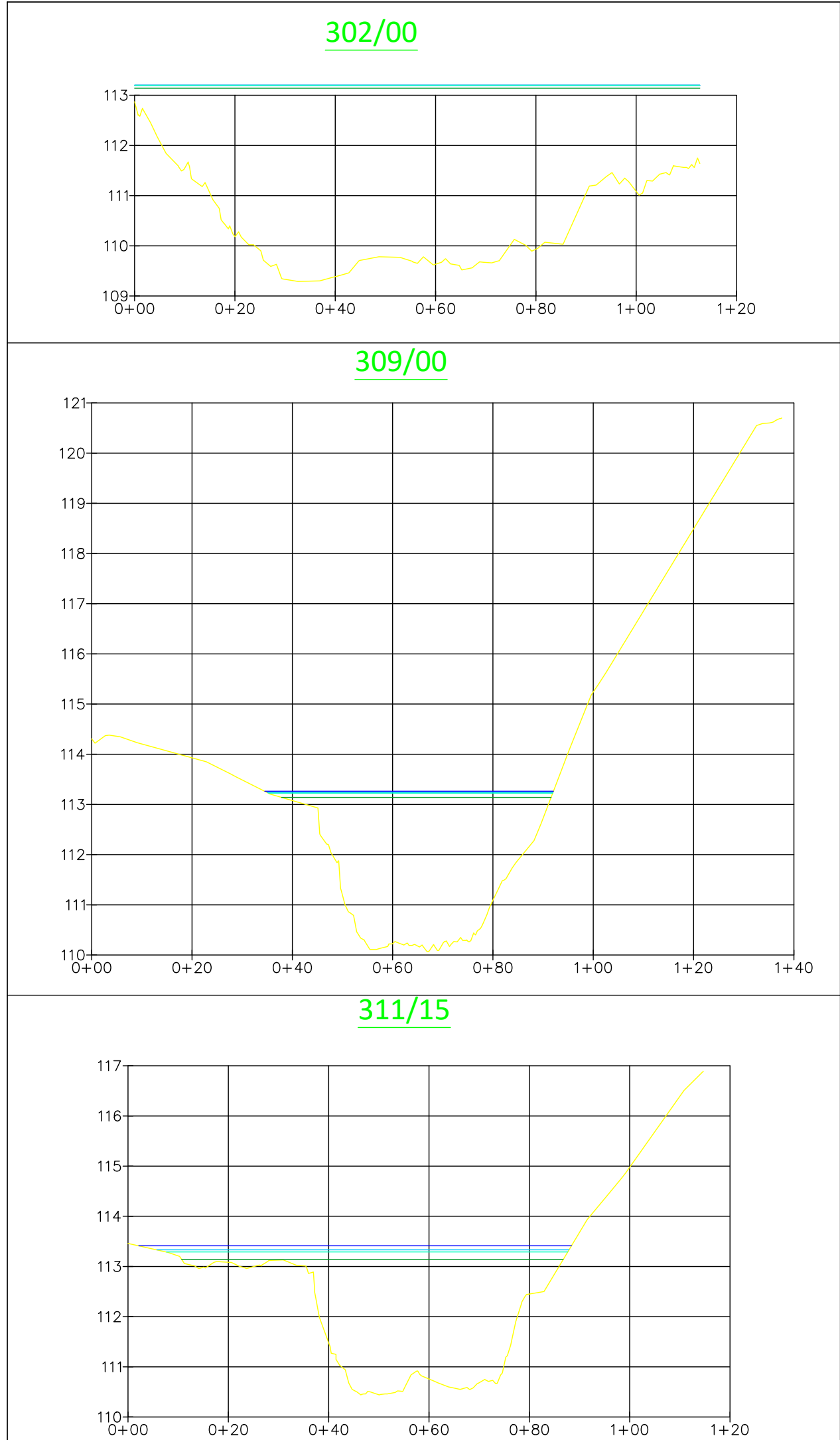


- Piezīmes:
- Maltas upes krasta atzīmes iegūtas no LiDAR Aerolāzerskenēšanas datiem.
 - Maltas upes gultnes atzīmes iegūtas ar SonTek RSQ5 mērišanas iekārtu, kā arī izmantojot Leica GNSS ģeodēzisko iekārtu.
 - Ūdens līmeņi noteikti ar HEC-RAS hidrauliskās modelēšanas programmu.

Apzīmējumi


- Maltas gultne
- AUL 113.33m
- NUL 113.14m
- VVUL
- PPUL 10%
- PPUL 5%
- PPUL 1%
- PPUL 10% bez HES

<div><div><div><div><div><div></div><div>profecto</div></div></div><div><div><div>Inženieru birojs</div><div>Reģistrācijas Nr. 40003802725</div><div>Būvkomersanta reģ. Nr. 4119-R</div></div></div></div><div><div><div>Daugavas prospekts 27,</div><div>1kšķile, Ogres nov.,</div><div>LV-5052</div><div>tālrunis: 65067695</div><div>info@ibprofecto.lv,</div><div>www.ibprofecto.lv</div></div></div></div></div>				Pasūtītājs: <div>SIA "JANOVSKIS"</div> <div>Brīvības iela 49, Vijāni,</div> <div>Rēzeknes nov., LV-4650</div> <div>Reģ. Nr.42403002257</div>		
Adrese: Vijānu pilsēta, Vijānu un Sokolku pag., Rēzeknes nov.				Ras. Nr.	GP-001	
Projekta nosaukums: Maltas upes apsekošanas atskaite posmā pik.300/00 - 355/00				Arh. reģ.	GP-001	
Rasēja J.Loļāns				Mērogs	Līguma Nr.	
Pārbaudīja G. Birzleja				V1:100 H1:10000	-	
Rasējuma nosaukums: Garenprofili Maltas upei posmā pik.300/00 - pik.355/00				Stadija	Lapa	Lapas
				-	1	1/1



Apzīmējumi:

- Maltas upes gultne
- Caurplūdums pie Q 1% = 124.00 m³/s
- Aprēķinātais ūdens līmenis = 117.35 m
- Caurplūdums pie Q 5% = 96.00 m³/s
- Aprēķinātais ūdens līmenis = 116.95 m
- Caurplūdums pie Q 10% = 78.00 m³/s
- Aprēķinātais ūdens līmenis = 116.66 m
- Vasaras vidējais caurplūdums = 3.30 m³/s
- Aprēķinātais ūdens līmenis = 114.25 m

<div><div><div>Daugavas prospekts 27, Ikšķile, Ogres nov., LV-5052</div><div>tālrunis: 65067695 info@ibprofecto.lv, www.ibprofecto.lv</div></div><div>inženieru birojs Reģistrācijas Nr. 40003802725 Būvkomersanta reģ. Nr. 4119-R</div></div> <td colspan="4">Pasūtītājs <div>SIA "JANOVSKIS"</div> <div>Brīvības iela 49, Vijāni, Rēzeknes nov., LV-4650 Reģ.Nr. 42403002257</div></td>				Pasūtītājs <div>SIA "JANOVSKIS"</div> <div>Brīvības iela 49, Vijāni, Rēzeknes nov., LV-4650 Reģ.Nr. 42403002257</div>			
Adrese		Vijānu pilsēta, Vijānu un Sokolku pagasts, Rēzeknes novads		Ras. Nr.		SP-001	
		info@ibprofecto.lv, www.ibprofecto.lv		Arh.reģ.		SP-001	
Amats	V. Uzvārds	Paraksts	Datums	Projekta nosaukums		Mērogs	Līguma Nr.
Rasēja	J. Lojāns		26.09.22.	Maltas upes apsekošanas atskaite posmā pik.300/00 - 355/00		V1:100 H1:1000	-
Pārbaudīja	G. Birzleja		26.09.22.				
				Rasējuma nosaukums		Stadija	Lapa
				Šķēršprofili Maltas upei posmā pik.300/00 - 355/00		-	1
							Lapas
							1/1

Pielikums

HEC-RAS Version 4.1.0 Jan 2010
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

```

X      X  XXXXXX      XXXX      XXXX      XX      XXXX
X      X  X          X      X      X      X      X
X      X  X          X          X      X      X
XXXXXXXX XXXX      X      XXXX XXXX      XXXXXX      XXXX
X      X  X          X          X      X      X      X
X      X  X          X      X      X      X      X
X      X  XXXXXX      XXXX      X      X      X      XXXXX

```


PROJECT DATA

Project Title :
Project File : MALTAS MODELIS AR HES.PRJ
Run Date and Time : 09/23/22 01:33:56 pecp.

Project in SI units

PLAN DATA

Plan Summary Information:

Number of: Cross Sections = 16 Multiple Openings = 0
Culverts = 0
Bridges = 0

Computational Information

Water surface calculation tolerance = 0.003
Critical depth calculation tolerance = 0.003
Maximum number of iterations = 20
Maximum difference tolerance = 0.1
Flow tolerance factor = 0.001

Computational Flow Regime: Subcritical Flow

Encroachment Data: None

FLOW DATA

Flow Data (cfs)

* River * Reach * Riv Sta * p-1% *
p-5% * p-10% * VV *

0	116.98	0	116.98	.1	116.98	.2	116.98	2.39
116.96								
2.41	116.96	2.66	116.92	3.29	116.91	3.47	116.87	3.5
116.87								
8.92	115.24	13.21	113.95	13.36	113.9	13.37	113.9	13.58
113.84								
13.67	113.83	13.85	113.89	13.85	113.89	14.61	113.89	14.7
113.55								
14.72	113.55	14.97	113.54	15.13	113.56	15.13	113.56	15.38
113.54								
15.39	113.54	15.73	113.56	15.74	113.56	15.87	113.6	15.99
113.59								
16.11	113.62	16.11	113.62	16.11	113.62	16.51	113.54	16.52
113.54								
16.74	113.59	16.75	113.59	17.16	113.62	17.17	113.62	17.6
113.67								
17.61	113.67	17.71	113.67	17.8	113.65	17.8	113.65	17.8
113.65								
18.24	113.62	18.24	113.62	18.59	113.64	18.6	113.64	19.01
113.63								
19.02	113.63	19.07	113.63	19.59	113.64	19.59	113.64	19.74
113.65								

19.83	113.63	19.83	113.63	19.98	113.63	19.98	113.63	20.14
113.65								
20.14	113.65	20.29	113.63	20.29	113.63	20.29	113.63	20.64
113.64								
20.64	113.64	20.94	113.62	20.94	113.62	21.39	113.63	21.39
113.63								
21.75	113.71	21.75	113.71	22.45	113.8	22.75	113.75	22.75
113.75								
22.89	113.66	22.89	113.66	22.89	113.66	23.11	113.67	23.52
113.69								
23.52	113.69	23.74	113.83	23.74	113.83	24.17	113.88	24.17
113.88								
24.39	113.86	24.39	113.86	24.59	113.79	24.59	113.79	24.75
113.88								
24.75	113.88	25.01	113.92	25.02	113.92	25.43	113.63	25.44
113.63								
25.74	113.59	25.75	113.59	25.82	113.57	25.97	113.61	25.97
113.61								
25.97	113.61	26.24	113.74	26.25	113.74	26.61	113.64	26.61
113.64								
26.74	113.63	26.85	113.65	26.86	113.65	26.86	113.65	27.17
113.65								
27.17	113.65	27.56	113.72	27.57	113.72	27.83	113.76	27.84
113.76								
28.01	113.81	28.01	113.81	28.24	114	29.6288	114.343	30.71
114.61								
37.8	116.34	38.32	116.47	38.33	116.47	38.41	116.47	38.91
116.46								
39.07	116.47	39.44	116.47	40.53	116.5	40.92	116.51	41.55
116.5								
41.65	116.49							

Manning's n Values, num = 3

Sta.	Value	Sta.	Value	Sta.	Value
0	.05	14.61	.04	29.6288	.05

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.
Expan.	14.61	29.6288	119.686	124.623	124.623	0.1	
	0.3						

CROSS SECTION OUTPUT Profile # p-1

* E.G. Elev (m)	*	117.46	* Element	*	Left OB *
Channel * Right OB *					
* Vel Head (m)	*	0.11	* Wt. n-Val	*	0.050 *
0.040 *					
* W.S. Elev (m)	*	117.35	* Reach Len. (m)	*	119.69 *
124.62 *					
* Crit W.S. (m)	*		* Flow Area (m2)	*	25.13 *
54.54 *					
* E.G. Slope (m/m)	*	0.000816	* Area (m2)	*	25.13 *
54.54 *					
* Q Total (m3/s)	*	124.00	* Flow (m3/s)	*	19.86 *
89.26 *					
* Top Width (m)	*	41.65	* Top Width (m)	*	14.61 *
15.02 *					

* Vel Total (m/s)	*	1.25	* Avg. Vel. (m/s)	*	0.79	*
1.64 *		0.75				
* Max Chl Dpth (m)	*	3.81	* Hydr. Depth (m)	*	1.72	*
3.63 *		1.65				
* Conv. Total (m3/s)	*	4341.3	* Conv. (m3/s)	*	695.3	*
3124.9 *		521.1				
* Length Wtd. (m)	*	123.78	* Wetted Per. (m)	*	15.45	*
15.72 *		13.14				
* Min Ch El (m)	*	113.54	* Shear (N/sq m)	*	13.02	*
27.75 *		12.06				
* Alpha	*	1.35	* Stream Power (N/m s)	*	1994.21	*
0.00 *		0.00				
* Frctn Loss (m)	*	0.09	* Cum Volume (cu m x 10^	*	0.10	*
0.43 *		0.09				
* C & E Loss (m)	*	0.01	* Cum SA (1000 m2)	*	93.64	*
152.39 *		73.25				

CROSS SECTION OUTPUT Profile # p-5

* E.G. Elev (m)	*	117.04	* Element	*	Left OB	*
Channel * Right OB *						
* Vel Head (m)	*	0.09	* Wt. n-Val	*	0.050	*
0.040 *		0.050				
* W.S. Elev (m)	*	116.95	* Reach Len. (m)	*	119.69	*
124.62 *		124.62				
* Crit W.S. (m)	*		* Flow Area (m2)	*	19.30	*
48.50 *		14.98				
* E.G. Slope (m/m)	*	0.000790	* Area (m2)	*	19.30	*
48.50 *		14.98				
* Q Total (m3/s)	*	96.00	* Flow (m3/s)	*	14.41	*
72.21 *		9.38				
* Top Width (m)	*	39.19	* Top Width (m)	*	12.15	*
15.02 *		12.02				
* Vel Total (m/s)	*	1.16	* Avg. Vel. (m/s)	*	0.75	*
1.49 *		0.63				
* Max Chl Dpth (m)	*	3.41	* Hydr. Depth (m)	*	1.59	*
3.23 *		1.25				
* Conv. Total (m3/s)	*	3416.4	* Conv. (m3/s)	*	512.8	*
2569.8 *		333.8				
* Length Wtd. (m)	*	123.86	* Wetted Per. (m)	*	12.61	*
15.72 *		12.74				
* Min Ch El (m)	*	113.54	* Shear (N/sq m)	*	11.85	*
23.89 *		9.11				
* Alpha	*	1.33	* Stream Power (N/m s)	*	1994.21	*
0.00 *		0.00				
* Frctn Loss (m)	*	0.09	* Cum Volume (cu m x 10^	*	0.08	*
0.40 *		0.07				
* C & E Loss (m)	*	0.01	* Cum SA (1000 m2)	*	81.81	*
152.39 *		67.48				

CROSS SECTION OUTPUT Profile # p-10

* E.G. Elev (m)	*	116.74	* Element	*	Left OB	*
Channel * Right OB *						

* Vel Head (m)	*	0.08	* Wt. n-Val	*	0.050	*
0.040 *		0.050 *				
* W.S. Elev (m)	*	116.66	* Reach Len. (m)	*	119.69	*
124.62 *		124.62 *				
* Crit W.S. (m)	*		* Flow Area (m2)	*	16.10	*
44.13 *		11.48 *				
* E.G. Slope (m/m)	*	0.000759	* Area (m2)	*	16.10	*
44.13 *		11.48 *				
* Q Total (m3/s)	*	78.00	* Flow (m3/s)	*	11.55	*
60.46 *		5.99 *				
* Top Width (m)	*	37.45	* Top Width (m)	*	10.41	*
15.02 *		12.02 *				
* Vel Total (m/s)	*	1.09	* Avg. Vel. (m/s)	*	0.72	*
1.37 *		0.52 *				
* Max Chl Dpth (m)	*	3.12	* Hydr. Depth (m)	*	1.55	*
2.94 *		0.95 *				
* Conv. Total (m3/s)	*	2831.8	* Conv. (m3/s)	*	419.2	*
2195.1 *		217.5 *				
* Length Wtd. (m)	*	123.92	* Wetted Per. (m)	*	10.84	*
15.72 *		12.45 *				
* Min Ch El (m)	*	113.54	* Shear (N/sq m)	*	11.05	*
20.88 *		6.86 *				
* Alpha	*	1.31	* Stream Power (N/m s)	*	1994.21	*
0.00 *		0.00 *				
* Frctn Loss (m)	*	0.09	* Cum Volume (cu m x 10^	*	0.07	*
0.38 *		0.06 *				
* C & E Loss (m)	*	0.00	* Cum SA (1000 m2)	*	76.99	*
152.39 *		62.91 *				

CROSS SECTION OUTPUT Profile # VV

* E.G. Elev (m)	*	114.25	* Element	*	Left OB	*
Channel * Right OB *						
* Vel Head (m)	*	0.01	* Wt. n-Val	*	0.050	*
0.040 *						
* W.S. Elev (m)	*	114.24	* Reach Len. (m)	*	119.69	*
124.62 *		124.62 *				
* Crit W.S. (m)	*		* Flow Area (m2)	*	0.65	*
7.87 *						
* E.G. Slope (m/m)	*	0.000630	* Area (m2)	*	0.65	*
7.87 *						
* Q Total (m3/s)	*	3.30	* Flow (m3/s)	*	0.13	*
3.17 *						
* Top Width (m)	*	17.00	* Top Width (m)	*	2.38	*
14.62 *						
* Vel Total (m/s)	*	0.39	* Avg. Vel. (m/s)	*	0.21	*
0.40 *						
* Max Chl Dpth (m)	*	0.70	* Hydr. Depth (m)	*	0.27	*
0.54 *						
* Conv. Total (m3/s)	*	131.5	* Conv. (m3/s)	*	5.4	*
126.2 *						
* Length Wtd. (m)	*	124.52	* Wetted Per. (m)	*	2.45	*
15.31 *						
* Min Ch El (m)	*	113.54	* Shear (N/sq m)	*	1.64	*
3.17 *						
* Alpha	*	1.05	* Stream Power (N/m s)	*	1994.21	*
0.00 *		0.00 *				

```

* Frctn Loss (m)          *      0.09 * Cum Volume (cu m x 10^ *      0.02 *
0.25 *      0.02 *
* C & E Loss (m)          *      0.00 * Cum SA (1000 m2)          *      29.24 *
141.54 *      14.98 *
*****
*****

```

CROSS SECTION

RIVER: Malta

REACH: Malta

River Station: 115

INPUT

Description:

Station Elevation Data, num = 108

Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.	Elev.
0	116.45	.1	116.45	.2	116.45	.77	116.44	1.19	116.35
1.33	116.33	1.47	116.33	1.77	116.45	4.57	115.95	5.96	115.7
9.33	115.22	15.97	114.27	16.01	114.26	16.27	114.2	16.29	114.2
16.34	114.19	16.97	114.16	17.02	114.16	17.51	114.11	17.53	114.11
17.74	114.09	17.78	114.08	18.2	113.97	18.22	113.97	18.53	113.91
18.54	113.9	18.69	113.82	18.98	113.75	18.99	113.75	19.17	113.74
19.19	113.74	19.7	113.67	19.72	113.67	20.31	113.66	20.87	113.67
20.96	113.68	20.96	113.68	21.47	113.67	21.48	113.67	21.81	113.69
21.82	113.69	22.07	113.68	22.07	113.68	22.49	113.65	22.51	113.65
23.22	113.67	23.37	113.7	23.38	113.7	23.72	113.62	23.74	113.62
23.89	113.61	23.91	113.61	24.19	113.55	24.22	113.54	24.68	113.53
24.73	113.53	24.98	113.54	25	113.54	25.43	113.63	25.48	113.64
25.71	113.67	25.74	113.68	26.15	113.7	26.21	113.7	26.87	113.66
26.99	113.65	27.64	113.63	27.79	113.63	27.82	113.63	28.5	113.58
28.67	113.57	28.95	113.57	29.02	113.56	29.44	113.55	29.55	113.55
29.95	113.55	30.07	113.55	30.11	113.54	30.3	113.53	30.38	113.52
30.48	113.52	30.52	113.52	30.91	113.52	31.05	113.52	31.37	113.54
31.49	113.54	32.1	113.59	32.14	113.6	32.29	113.6	32.47	113.58
32.52	113.58	32.62	113.56	32.66	113.55	32.81	113.55	32.88	113.55
33.06	114.1	33.14	114.35	33.45	114.36	33.59	114.36		
34.42	114.52	22							

37.74	115.32	43.59	116.77	43.66	116.8	43.71	116.81	46.48
117.8								
50.62	118.28	50.88	118.3	50.98	118.34			

Manning's n Values, num = 3

Sta.	Value	Sta.	Value	Sta.	Value
0	.05	16.29	.04	34.4211	.05

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.
Expan.							
	16.29	34.4211		867.994	893.858	893.858	0.1
0.3							

CROSS SECTION OUTPUT Profile # p-1

```

*****
* E.G. Elev (m) * 117.36 * Element * Left OB *
Channel * Right OB *
* Vel Head (m) * 0.08 * Wt. n-Val * 0.050 *
0.040 * 0.050 *
* W.S. Elev (m) * 117.28 * Reach Len. (m) * 867.99 *
893.86 * 893.86 *
* Crit W.S. (m) * * Flow Area (m2) * 30.54 *
64.14 * 15.38 *
* E.G. Slope (m/m) * 0.000639 * Area (m2) * 30.54 *
64.14 * 15.38 *
* Q Total (m3/s) * 124.00 * Flow (m3/s) * 22.53 *
91.72 * 9.75 *
* Top Width (m) * 45.03 * Top Width (m) * 16.29 *
18.13 * 10.61 *
* Vel Total (m/s) * 1.13 * Avg. Vel. (m/s) * 0.74 *
1.43 * 0.63 *
* Max Chl Dpth (m) * 3.76 * Hydr. Depth (m) * 1.88 *
3.54 * 1.45 *
* Conv. Total (m3/s) * 4905.2 * Conv. (m3/s) * 891.4 *
3628.2 * 385.6 *
* Length Wtd. (m) * 890.00 * Wetted Per. (m) * 17.33 *
18.85 * 10.96 *
* Min Ch El (m) * 113.52 * Shear (N/sq m) * 11.05 *
21.33 * 8.80 *
* Alpha * 1.29 * Stream Power (N/m s) * 2440.93 *
0.00 * 0.00 *
* Frctn Loss (m) * 0.82 * Cum Volume (cu m x 10^ * 0.10 *
0.43 * 0.09 *
* C & E Loss (m) * 0.01 * Cum SA (1000 m2) * 91.79 *
150.32 * 71.84 *
*****
*****

```

CROSS SECTION OUTPUT Profile # p-5

```

*****
* E.G. Elev (m) * 116.95 * Element * Left OB *
Channel * Right OB *
* Vel Head (m) * 0.07 * Wt. n-Val * 0.050 *
0.040 * 0.050 *
* W.S. Elev (m) * 116.88 * Reach Len. (m) * 867.99 *
893.86 * 893.86 *

```

* Crit W.S. (m)	*	* Flow Area (m2)	*	23.98 *
56.83 * 11.33 *				
* E.G. Slope (m/m)	*	0.000631 * Area (m2)	*	23.98 *
56.83 * 11.33 *				
* Q Total (m3/s)	*	96.00 * Flow (m3/s)	*	15.20 *
74.51 * 6.29 *				
* Top Width (m)	*	43.90 * Top Width (m)	*	16.29 *
18.13 * 9.48 *				
* Vel Total (m/s)	*	1.04 * Avg. Vel. (m/s)	*	0.63 *
1.31 * 0.56 *				
* Max Chl Dpth (m)	*	3.36 * Hydr. Depth (m)	*	1.47 *
3.13 * 1.20 *				
* Conv. Total (m3/s)	*	3820.8 * Conv. (m3/s)	*	604.9 *
2965.6 * 250.3 *				
* Length Wtd. (m)	*	890.56 * Wetted Per. (m)	*	16.93 *
18.85 * 9.76 *				
* Min Ch El (m)	*	113.52 * Shear (N/sq m)	*	8.77 *
18.67 * 7.19 *				
* Alpha	*	1.31 * Stream Power (N/m s)	*	2440.93 *
0.00 * 0.00 *				
* Frctn Loss (m)	*	0.81 * Cum Volume (cu m x 10^	*	0.08 *
0.40 * 0.07 *				
* C & E Loss (m)	*	0.01 * Cum SA (1000m2)	*	80.10 *
150.32 * 66.14 *				

CROSS SECTION OUTPUT Profile # p-10

* E.G. Elev (m)	*	116.65 * Element	*	Left OB *
Channel * Right OB *				
* Vel Head (m)	*	0.06 * Wt. n-Val	*	0.050 *
0.040 * 0.050 *				
* W.S. Elev (m)	*	116.59 * Reach Len. (m)	*	867.99 *
893.86 * 893.86 *				
* Crit W.S. (m)	*	* Flow Area (m2)	*	19.21 *
51.53 * 8.70 *				
* E.G. Slope (m/m)	*	0.000626 * Area (m2)	*	19.21 *
51.53 * 8.70 *				
* Q Total (m3/s)	*	78.00 * Flow (m3/s)	*	10.59 *
63.04 * 4.37 *				
* Top Width (m)	*	42.84 * Top Width (m)	*	16.29 *
18.13 * 8.42 *				
* Vel Total (m/s)	*	0.98 * Avg. Vel. (m/s)	*	0.55 *
1.22 * 0.50 *				
* Max Chl Dpth (m)	*	3.07 * Hydr. Depth (m)	*	1.18 *
2.84 * 1.03 *				
* Conv. Total (m3/s)	*	3116.5 * Conv. (m3/s)	*	423.0 *
2519.0 * 174.5 *				
* Length Wtd. (m)	*	891.09 * Wetted Per. (m)	*	16.64 *
18.85 * 8.67 *				
* Min Ch El (m)	*	113.52 * Shear (N/sq m)	*	7.10 *
16.79 * 6.17 *				
* Alpha	*	1.31 * Stream Power (N/m s)	*	2440.93 *
0.00 * 0.00 *				
* Frctn Loss (m)	*	0.80 * Cum Volume (cu m x 10^	*	0.06 *
0.38 * 0.06 *				
* C & E Loss (m)	*	0.01 * Cum SA (1000 m2)	*	75.39 *
150.32 * 61.63 *				

CROSS SECTION OUTPUT Profile # VV

* E.G. Elev (m) * 114.17 * Element * Left OB *
Channel * Right OB *
* Vel Head (m) * 0.01 * Wt. n-Val * *
0.040 * *
* W.S. Elev (m) * 114.16 * Reach Len. (m) * 867.99 *
893.86 * 893.86 *
* Crit W.S. (m) * * Flow Area (m2) * *
7.88 * *
* E.G. Slope (m/m) * 0.000756 * Area (m2) * *
7.88 * *
* Q Total (m3/s) * 3.30 * Flow (m3/s) * *
3.30 * *
* Top Width (m) * 16.04 * Top Width (m) * *
16.04 * *
* Vel Total (m/s) * 0.42 * Avg. Vel. (m/s) * *
0.42 * *
* Max Chl Dpth (m) * 0.64 * Hydr. Depth (m) * *
0.49 * *
* Conv. Total (m3/s) * 120.0 * Conv. (m3/s) * *
120.0 * *
* Length Wtd. (m) * 893.86 * Wetted Per. (m) * *
16.59 * *
* Min Ch El (m) * 113.52 * Shear (N/sq m) * *
3.52 * *
* Alpha * 1.00 * Stream Power (N/m s) * 2440.93 *
0.00 * 0.00 *
* Frctn Loss (m) * 0.72 * Cum Volume (cu m x 10^ * 0.02 *
0.25 * 0.02 *
* C & E Loss (m) * 0.00 * Cum SA (1000 m2) * 29.10 *
139.63 * 14.98 *

CROSS SECTION

RIVER: Malta

REACH: Malta

River Station: 114

INPUT

Description:

Station Elevation Data, num = 61

Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.	Elev.
------	-------	------	-------	------	-------	------	-------	------	-------

0 115.07 .1 115.06 .11 115.06 .15 115.06 .2
115.05
9.65 114.51 10.29 114.04 10.38 114.04 10.76 114.02 10.88
114
11.42 113.93 11.48 113.92 11.76 113.89 11.79 113.88 11.95
113.84
11.98 113.83 12.05 113.82 12.42 113.76 12.47 113.73 12.76
113.54

12.81	113.52	13.18	113.35	13.55	113.18	13.64	113.16	14.29
113.03								
14.37	113.02	15.04	112.95	15.07	112.95	15.38	112.95	15.39
112.96								
15.54	113	15.56	113	15.78	112.98	15.81	112.97	16.11
112.87								
16.15	112.85	16.72	112.55	16.76	112.55	17.34	112.53	17.36
112.53								
17.82	112.62	17.84	112.62	18.61	112.64	18.63	112.64	19.2
112.65								
19.73	112.66	19.74	112.66	20.61	112.74	20.62	112.74	20.95
112.77								
21.69	112.77	22.67	112.93	22.69	112.93	22.93	112.94	22.97
112.95								
23.49	113.12	23.73	113.34	23.7845	113.4762	23.79	113.49	31.14
115.28								
31.24	115.33							

Manning's n Values, num = 3

Sta.	Value	Sta.	Value	Sta.	Value
0	.05	9.65	.04	23.7845	.05

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.
Expan.	9.65	23.7845	855.053	858.648	858.648	0.1	
0.3							

CROSS SECTION OUTPUT Profile # p-1

* E.G. Elev (m)	* 116.53	* Element	* Left OB *
Channel * Right OB *			
* Vel Head (m)	* 0.17	* Wt. n-Val	* 0.050 *
0.040 * 0.050 *			
* W.S. Elev (m)	* 116.36	* Reach Len. (m)	* 855.05 *
858.65 * 858.65 *			
* Crit W.S. (m)	*	* Flow Area (m2)	* 15.19 *
46.11 * 14.64 *			
* E.G. Slope (m/m)	* 0.001457	* Area (m2)	* 15.19 *
46.11 * 14.64 *			
* Q Total (m3/s)	* 124.00	* Flow (m3/s)	* 14.42 *
93.80 * 15.78 *			
* Top Width (m)	* 31.24	* Top Width (m)	* 9.65 *
14.13 * 7.46 *			
* Vel Total (m/s)	* 1.63	* Avg. Vel. (m/s)	* 0.95 *
2.03 * 1.08 *			
* Max Chl Dpth (m)	* 3.83	* Hydr. Depth (m)	* 1.57 *
3.26 * 1.96 *			
* Conv. Total (m3/s)	* 3248.7	* Conv. (m3/s)	* 377.7 *
2457.5 * 413.5 *			
* Length Wtd. (m)	* 858.35	* Wetted Per. (m)	* 10.96 *
14.81 * 8.72 *			
* Min Ch El (m)	* 112.53	* Shear (N/sq m)	* 19.81 *
44.47 * 23.98 *			
* Alpha	* 1.27	* Stream Power (N/m s)	* 1495.77 *
0.00 * 0.00 *			
* Frctn Loss (m)	* 0.67	* Cum Volume (cu m x 10^	* 0.08 *
0.38 * 0.07 *			

```

* C & E Loss (m)          *      0.03 * Cum SA (1000 m2)          *      80.53 *
135.90 *      63.77 *
*****
*****

```

CROSS SECTION OUTPUT Profile # p-5

```

*****
*****
* E.G. Elev (m)          *    116.14 * Element          *    Left OB *
Channel * Right OB *
* Vel Head (m)          *      0.14 * Wt. n-Val          *      0.050 *
0.040 *      0.050 *
* W.S. Elev (m)          *    115.99 * Reach Len. (m)      *    855.05 *
858.65 *    858.65 *
* Crit W.S. (m)          *          * Flow Area (m2)      *    11.65 *
40.92 *    11.90 *
* E.G. Slope (m/m)       * 0.001402 * Area (m2)          *    11.65 *
40.92 *    11.90 *
* Q Total (m3/s)         *    96.00 * Flow (m3/s)         *    9.29 *
75.42 *    11.28 *
* Top Width (m)          *    31.24 * Top Width (m)       *    9.65 *
14.13 *    7.46 *
* Vel Total (m/s)        *    1.49 * Avg. Vel. (m/s)     *    0.80 *
1.84 *    0.95 *
* Max Chl Dpth (m)       *    3.46 * Hydr. Depth (m)     *    1.21 *
2.90 *    1.60 *
* Conv. Total (m3/s)     *   2563.7 * Conv. (m3/s)        *   248.2 *
2014.1 *   301.3 *
* Length Wtd. (m)        *   858.40 * Wetted Per. (m)     *   10.59 *
14.81 *    8.35 *
* Min Ch El (m)          *   112.53 * Shear (N/sq m)      *   15.12 *
37.99 *   19.59 *
* Alpha                  *    1.28 * Stream Power (N/m s) *  1495.77 *
0.00 *    0.00 *
* Frctn Loss (m)         *    0.59 * Cum Volume (cu m x 10^ *    0.06 *
0.35 *    0.06 *
* C & E Loss (m)         *    0.03 * Cum SA (1000 m2)    *    68.85 *
135.90 *    58.58 *
*****
*****

```

CROSS SECTION OUTPUT Profile # p-10

```

*****
*****
* E.G. Elev (m)          *    115.84 * Element          *    Left OB *
Channel * Right OB *
* Vel Head (m)          *      0.13 * Wt. n-Val          *      0.050 *
0.040 *      0.050 *
* W.S. Elev (m)          *    115.72 * Reach Len. (m)      *    855.05 *
858.65 *    858.65 *
* Crit W.S. (m)          *          * Flow Area (m2)      *    8.97 *
37.00 *    9.83 *
* E.G. Slope (m/m)       * 0.001391 * Area (m2)          *    8.97 *
37.00 *    9.83 *
* Q Total (m3/s)         *    78.00 * Flow (m3/s)         *    6.10 *
63.53 *    8.37 *
* Top Width (m)          *    31.24 * Top Width (m)       *    9.65 *
14.13 *    7.46 *
* Vel Total (m/s)        *    1.40 * Avg. Vel. (m/s)     *    0.68 *
1.72 *    0.85 *

```

* Max Chl Dpth (m)	*	3.19	* Hydr. Depth (m)	*	0.93	*
2.62 *		1.32 *				
* Conv. Total (m3/s)	*	2091.0	* Conv. (m3/s)	*	163.6	*
1703.2 *		224.3 *				
* Length Wtd. (m)	*	858.44	* Wetted Per. (m)	*	10.31	*
14.81 *		8.08 *				
* Min Ch El (m)	*	112.53	* Shear (N/sq m)	*	11.87	*
34.09 *		16.62 *				
* Alpha	*	1.29	* Stream Power (N/m s)	*	1495.77	*
0.00 *		0.00 *				
* Frctn Loss (m)	*	0.54	* Cum Volume (cu m x 10^	*	0.05	*
0.34 *		0.05 *				
* C & E Loss (m)	*	0.03	* Cum SA (1000 m2)	*	64.14	*
135.90 *		54.54 *				

CROSS SECTION OUTPUT Profile # VV

* E.G. Elev (m)	*	113.45	* Element	*	Left OB	*
Channel * Right OB *						
* Vel Head (m)	*	0.01	* Wt. n-Val	*		*
0.040 *						
* W.S. Elev (m)	*	113.44	* Reach Len. (m)	*	855.05	*
858.65 *		858.65 *				
* Crit W.S. (m)	*		* Flow Area (m2)	*		*
6.50 *						
* E.G. Slope (m/m)	*	0.000851	* Area (m2)	*		*
6.50 *						
* Q Total (m3/s)	*	3.30	* Flow (m3/s)	*		*
3.30 *						
* Top Width (m)	*	10.79	* Top Width (m)	*		*
10.79 *						
* Vel Total (m/s)	*	0.51	* Avg. Vel. (m/s)	*		*
0.51 *						
* Max Chl Dpth (m)	*	0.91	* Hydr. Depth (m)	*		*
0.60 *						
* Conv. Total (m3/s)	*	113.1	* Conv. (m3/s)	*		*
113.1 *						
* Length Wtd. (m)	*	858.65	* Wetted Per. (m)	*		*
11.18 *						
* Min Ch El (m)	*	112.53	* Shear (N/sq m)	*		*
4.85 *						
* Alpha	*	1.00	* Stream Power (N/m s)	*	1495.77	*
0.00 *		0.00 *				
* Frctn Loss (m)	*	0.07	* Cum Volume (cu m x 10^	*	0.02	*
0.24 *		0.02 *				
* C & E Loss (m)	*	0.00	* Cum SA (1000 m2)	*	29.10	*
127.64 *		14.98 *				

CROSS SECTION

RIVER: Malta

REACH: Malta

River Station: 113

INPUT

Description:

Station Elevation Data, num = 61

Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.
0	115.7	.27	115.7	.82	115.69	1.2	115.68	3.07
115.7								
3.18	115.7	3.38	115.7	3.78	115.71	5.38	115.73	6.76
115.75								
6.83	115.74	7.04	115.74	7.23	115.74	8.11	115.74	9.38
115.73								
11.07	115.81	11.39	115.83	12.12	115.79	12.44	115.77	12.72
115.75								
16.26	115.81	17.25	115.82	17.42	115.82	17.61	115.82	18.6
115.82								
18.6	115.82	18.62	115.82	19.5	115.67	29.05	113.35	29.39
113.27								
29.51	113.24	29.6	113.22	34.71	112.22	34.75	112.22	36.91
112.22								
36.98	112.22	37.07	112.23	40.01	112.36	40.06	112.35	42.26
112.08								
42.28	112.08	43.41	112.01	43.44	112.01	44.56	112.08	44.62
112.09								
46.81	112.36	46.89	112.36	49.91	112.22	49.97	112.22	52.12
112.23								
57.4174	113.5987	57.5	113.62	60.11	114.09	66.75	115.28	67.51
115.4								
67.51	115.4	67.58	115.41	72.78	115.61	75.07	115.7	83.6
116								
83.7	116.01							

Manning's n Values, num = 3

Sta.	Value	Sta.	Value	Sta.	Value
0	.05	29.39	.04	57.4174	.05

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.
Expan.	29.39	57.4174	76.294	68.1499	68.1499	0.1	
0.3							

CROSS SECTION OUTPUT Profile # p-1

* E.G. Elev (m)	* 115.83	* Element	* Left OB *
Channel * Right OB *			
* Vel Head (m)	* 0.07	* Wt. n-Val	* 0.050 *
0.040 * 0.050 *			
* W.S. Elev (m)	* 115.76	* Reach Len. (m)	* 76.29 *
68.15 * 68.15 *			
* Crit W.S. (m)	* 14.31	* Flow Area (m2)	* 13.30 *
92.83 * 14.31 *			
* E.G. Slope (m/m)	* 0.000483	* Area (m2)	* 13.30 *
92.83 * 14.31 *			
* Q Total (m3/s)	* 124.00	* Flow (m3/s)	* 6.39 *
112.52 * 5.09 *			
* Top Width (m)	* 69.11	* Top Width (m)	* 21.60 *
28.03 * 19.49 *			

* Vel Total (m/s)	*	1.03	* Avg. Vel. (m/s)	*	0.48	*
1.21 *		0.36				
* Max Chl Dpth (m)	*	3.75	* Hydr. Depth (m)	*	0.62	*
3.31 *		0.73				
* Conv. Total (m3/s)	*	5640.4	* Conv. (m3/s)	*	290.5	*
5118.3 *		231.6				
* Length Wtd. (m)	*	68.80	* Wetted Per. (m)	*	21.96	*
28.35 *		19.65				
* Min Ch El (m)	*	112.01	* Shear (N/sq m)	*	2.87	*
15.52 *		3.45				
* Alpha	*	1.27	* Stream Power (N/m s)	*	4007.57	*
0.00 *		0.00				
* Frctn Loss (m)	*	0.05	* Cum Volume (cu m x 10^	*	0.06	*
0.32 *		0.06				
* C & E Loss (m)	*	0.01	* Cum SA (1000 m2)	*	67.17	*
117.80 *		52.20				

CROSS SECTION OUTPUT Profile # p-5

* E.G. Elev (m)	*	115.52	* Element	*	Left OB	*
Channel * Right OB *						
* Vel Head (m)	*	0.05	* Wt. n-Val	*	0.050	*
0.040 *		0.050				
* W.S. Elev (m)	*	115.47	* Reach Len. (m)	*	76.29	*
68.15 *		68.15				
* Crit W.S. (m)	*		* Flow Area (m2)	*	9.95	*
84.48 *		9.69				
* E.G. Slope (m/m)	*	0.000408	* Area (m2)	*	9.95	*
84.48 *		9.69				
* Q Total (m3/s)	*	96.00	* Flow (m3/s)	*	4.20	*
88.36 *		3.43				
* Top Width (m)	*	48.71	* Top Width (m)	*	9.05	*
28.03 *		11.63				
* Vel Total (m/s)	*	0.92	* Avg. Vel. (m/s)	*	0.42	*
1.05 *		0.35				
* Max Chl Dpth (m)	*	3.46	* Hydr. Depth (m)	*	1.10	*
3.01 *		0.83				
* Conv. Total (m3/s)	*	4752.5	* Conv. (m3/s)	*	208.1	*
4374.4 *		170.0				
* Length Wtd. (m)	*	68.61	* Wetted Per. (m)	*	9.31	*
28.35 *		11.79				
* Min Ch El (m)	*	112.01	* Shear (N/sq m)	*	4.28	*
11.93 *		3.29				
* Alpha	*	1.20	* Stream Power (N/m s)	*	4007.57	*
0.00 *		0.00				
* Frctn Loss (m)	*	0.05	* Cum Volume (cu m x 10^	*	0.05	*
0.30 *		0.05				
* C & E Loss (m)	*	0.01	* Cum SA (1000 m2)	*	60.85	*
117.80 *		50.38				

CROSS SECTION OUTPUT Profile # p-10

* E.G. Elev (m)	*	115.27	* Element	*	Left OB	*
Channel * Right OB *						

* Vel Head (m)	*	0.04	* Wt. n-Val	*	0.050	*
0.040 *		0.050 *				
* W.S. Elev (m)	*	115.23	* Reach Len. (m)	*	76.29	*
68.15 *		68.15 *				
* Crit W.S. (m)	*		* Flow Area (m2)	*	7.94	*
77.90 *		7.36 *				
* E.G. Slope (m/m)	*	0.000362	* Area (m2)	*	7.94	*
77.90 *		7.36 *				
* Q Total (m3/s)	*	78.00	* Flow (m3/s)	*	2.93	*
72.66 *		2.41 *				
* Top Width (m)	*	45.17	* Top Width (m)	*	8.08	*
28.03 *		9.06 *				
* Vel Total (m/s)	*	0.84	* Avg. Vel. (m/s)	*	0.37	*
0.93 *		0.33 *				
* Max Chl Dpth (m)	*	3.22	* Hydr. Depth (m)	*	0.98	*
2.78 *		0.81 *				
* Conv. Total (m3/s)	*	4101.6	* Conv. (m3/s)	*	153.9	*
3820.8 *		126.8 *				
* Length Wtd. (m)	*	68.49	* Wetted Per. (m)	*	8.32	*
28.35 *		9.21 *				
* Min Ch El (m)	*	112.01	* Shear (N/sq m)	*	3.38	*
9.75 *		2.84 *				
* Alpha	*	1.17	* Stream Power (N/m s)	*	4007.57	*
0.00 *		0.00 *				
* Frctn Loss (m)	*	0.04	* Cum Volume (cu m x 10^	*	0.04	*
0.29 *		0.04 *				
* C & E Loss (m)	*	0.01	* Cum SA (1000 m2)	*	56.56	*
117.80 *		47.44 *				

CROSS SECTION OUTPUT Profile # VV

* E.G. Elev (m)	*	113.38	* Element	*	Left OB	*
Channel * Right OB *						
* Vel Head (m)	*	0.00	* Wt. n-Val	*	0.050	*
0.040 *						
* W.S. Elev (m)	*	113.38	* Reach Len. (m)	*	76.29	*
68.15 *		68.15 *				
* Crit W.S. (m)	*		* Flow Area (m2)	*	0.03	*
26.15 *						
* E.G. Slope (m/m)	*	0.000027	* Area (m2)	*	0.03	*
26.15 *						
* Q Total (m3/s)	*	3.30	* Flow (m3/s)	*	0.00	*
3.30 *						
* Top Width (m)	*	27.66	* Top Width (m)	*	0.47	*
27.19 *						
* Vel Total (m/s)	*	0.13	* Avg. Vel. (m/s)	*	0.02	*
0.13 *						
* Max Chl Dpth (m)	*	1.37	* Hydr. Depth (m)	*	0.06	*
0.96 *						
* Conv. Total (m3/s)	*	632.5	* Conv. (m3/s)	*	0.1	*
632.4 *						
* Length Wtd. (m)	*	68.18	* Wetted Per. (m)	*	0.48	*
27.48 *						
* Min Ch El (m)	*	112.01	* Shear (N/sq m)	*	0.01	*
0.25 *						
* Alpha	*	1.00	* Stream Power (N/m s)	*	4007.57	*
0.00 *		0.00 *				

```

* Frctn Loss (m)          *      0.01 * Cum Volume (cu m x 10^ *      0.02 *
0.23 *      0.02 *
* C & E Loss (m)          *      0.00 * Cum SA (1000 m2)          *      28.90 *
111.34 *      14.98 *
*****
*****

```

CROSS SECTION

RIVER: Malta

REACH: Malta

River Station: 112

INPUT

Description:

Station Elevation Data, num = 130

Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.	Elev.
0	115.18	.1	115.17	.12	115.17	.49	115.14	1.8	115.11
2.14	115.1	2.48	115.11	2.85	115.09	3.54	115.1	5.38	115.07
6.22	115.05	6.29	115.04	6.53	115.05	8.04	115.13	9.11	115.08
9.25	115.07	9.84	115.05	11.33	115.02	11.87	114.99	12.09	115
12.32	115.02	14.95	114.84	16.17	114.62	17.23	114.57	18.05	114.55
18.36	114.54	19.3	114.4	19.66	114.33	21.12	114.09	21.49	114.08
22.74	113.14	22.74	113.14	22.75	113.14	22.8	113.12	22.8	113.12
22.97	113.13	23.08	113.12	23.09	113.12	23.18	113.07	23.33	113.05
23.34	113.05	23.62	113.07	23.63	113.07	23.96	113.03	23.98	113.03
24.13	113.02	24.45	113	24.46	113	24.64	112.85	24.67	112.85
25.36	112.86	25.63	112.81	26.41	112.86	26.43	112.85	26.68	112.83
26.69	112.82	27.21	112.67	27.24	112.68	27.77	112.7	28.04	112.77
28.15	112.8	28.18	112.8	28.67	112.8	28.69	112.81	29.01	112.83
29.04	112.84	29.38	112.91	29.43	112.92	30.02	112.97	30.04	112.97
30.27	112.98	30.3	112.98	30.6	113.01	30.61	113.01	30.7	113.01
30.72	113.01	30.95	112.99	30.97	112.99	31.19	112.93	31.22	112.94
31.6	113.02	31.67	113	31.96	112.93	32.44	112.8	32.49	112.79
33	112.77	33.06	112.78	33.58	112.88	33.6	112.88	33.74	112.87
33.78	112.87	33.78	112.87	34.09	112.88	34.14	112.88	34.55	112.84
34.58	112.85	34.87	112.88	35.11	112.89	35.13	112.9	35.31	112.92

35.34	112.92	35.61	112.88	35.69	112.9	36.34	113.01	36.58
113.03								
36.61	113.03	36.75	113.01	36.86	113	36.94	113	37.49
113.03								
37.76	113.1	37.81	113.1	38.11	113.1	38.34	113.12	38.38
113.13								
38.61	113.16	38.62	113.16	38.63	113.16	38.78	113.14	38.85
113.15								
39.27	113.18	39.38	113.18	40.04	113.19	40.07	113.19	40.19
113.19								
43.4714	113.5881	45.63	113.85	60.19	115.61	65.21	116	65.31
116.02								

Manning's n Values, num = 3

Sta.	Value	Sta.	Value	Sta.	Value
0	.05	23.09	.04	43.4714	.05

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.
Expan.	23.09	43.4714	53.1469	48.11	48.11	0.1	
0.3							

CROSS SECTION OUTPUT Profile # p-1

```

*****
*****
* E.G. Elev (m) * 115.77 * Element * Left OB *
Channel * Right OB *
* Vel Head (m) * 0.14 * Wt. n-Val * 0.050 *
0.040 * 0.050 *
* W.S. Elev (m) * 115.63 * Reach Len. (m) * 53.15 *
48.11 * 48.11 *
* Crit W.S. (m) * * Flow Area (m2) * 19.73 *
53.55 * 17.31 *
* E.G. Slope (m/m) * 0.001481 * Area (m2) * 19.73 *
53.55 * 17.31 *
* Q Total (m3/s) * 124.00 * Flow (m3/s) * 13.35 *
97.25 * 13.40 *
* Top Width (m) * 60.51 * Top Width (m) * 23.09 *
20.38 * 17.04 *
* Vel Total (m/s) * 1.37 * Avg. Vel. (m/s) * 0.68 *
1.82 * 0.77 *
* Max Chl Dpth (m) * 2.96 * Hydr. Depth (m) * 0.85 *
2.63 * 1.02 *
* Conv. Total (m3/s) * 3222.4 * Conv. (m3/s) * 346.8 *
2527.3 * 348.3 *
* Length Wtd. (m) * 48.74 * Wetted Per. (m) * 23.94 *
20.65 * 17.16 *
* Min Ch El (m) * 112.67 * Shear (N/sq m) * 11.97 *
37.66 * 14.65 *
* Alpha * 1.44 * Stream Power (N/m s) * 3127.06 *
0.00 * 0.00 *
* Frctn Loss (m) * 0.07 * Cum Volume (cu m x 10^ * 0.06 *
0.31 * 0.06 *
* C & E Loss (m) * 0.01 * Cum SA (1000 m2) * 65.47 *
116.15 * 50.96 *
*****
*****

```


CROSS SECTION OUTPUT Profile # p-5

```

*****
*****
* E.G. Elev (m)          * 115.46 * Element          * Left OB *
Channel * Right OB *
* Vel Head (m)          * 0.13 * Wt. n-Val        * 0.050 *
0.040 * 0.050 *
* W.S. Elev (m)         * 115.34 * Reach Len. (m)   * 53.15 *
48.11 * 48.11 *
* Crit W.S. (m)         *          * Flow Area (m2)   * 12.85 *
47.47 * 12.63 *
* E.G. Slope (m/m)      * 0.001512 * Area (m2)        * 12.85 *
47.47 * 12.63 *
* Q Total (m3/s)        * 96.00 * Flow (m3/s)      * 6.65 *
80.41 * 8.94 *
* Top Width (m)         * 57.93 * Top Width (m)    * 23.09 *
20.38 * 14.46 *
* Vel Total (m/s)       * 1.32 * Avg. Vel. (m/s)  * 0.52 *
1.69 * 0.71 *
* Max Chl Dpth (m)     * 2.67 * Hydr. Depth (m)  * 0.56 *
2.33 * 0.87 *
* Conv. Total (m3/s)    * 2468.9 * Conv. (m3/s)     * 171.1 *
2067.9 * 229.9 *
* Length Wtd. (m)      * 48.56 * Wetted Per. (m)  * 23.64 *
20.65 * 14.56 *
* Min Ch El (m)        * 112.67 * Shear (N/sq m)   * 8.06 *
34.10 * 12.86 *
* Alpha                * 1.43 * Stream Power (N/m s) * 3127.06 *
0.00 * 0.00 *
* Frctn Loss (m)       * 0.07 * Cum Volume (cu m x 10^ * 0.05 *
0.29 * 0.05 *
* C & E Loss (m)       * 0.01 * Cum SA (1000 m2)  * 59.62 *
116.15 * 49.49 *
*****
*****

```

CROSS SECTION OUTPUT Profile # p-10

```

*****
*****
* E.G. Elev (m)          * 115.22 * Element          * Left OB *
Channel * Right OB *
* Vel Head (m)          * 0.12 * Wt. n-Val        * 0.050 *
0.040 * 0.050 *
* W.S. Elev (m)         * 115.11 * Reach Len. (m)   * 53.15 *
48.11 * 48.11 *
* Crit W.S. (m)         *          * Flow Area (m2)   * 7.57 *
42.76 * 9.51 *
* E.G. Slope (m/m)      * 0.001539 * Area (m2)        * 7.57 *
42.76 * 9.51 *
* Q Total (m3/s)        * 78.00 * Flow (m3/s)      * 3.68 *
68.14 * 6.18 *
* Top Width (m)         * 52.85 * Top Width (m)    * 19.93 *
20.38 * 12.55 *
* Vel Total (m/s)       * 1.30 * Avg. Vel. (m/s)  * 0.49 *
1.59 * 0.65 *
* Max Chl Dpth (m)     * 2.44 * Hydr. Depth (m)  * 0.38 *
2.10 * 0.76 *
* Conv. Total (m3/s)    * 1988.5 * Conv. (m3/s)     * 93.8 *
1737.2 * 157.4 *

```

* Length Wtd. (m)	*	48.42	* Wetted Per. (m)	*	20.32	*
20.65 *		12.64 *				
* Min Ch El (m)	*	112.67	* Shear (N/sq m)	*	5.62	*
31.25 *		11.36 *				
* Alpha	*	1.33	* Stream Power (N/m s)	*	3127.06	*
0.00 *		0.00 *				
* Frctn Loss (m)	*	0.08	* Cum Volume (cu m x 10^	*	0.04	*
0.28 *		0.04 *				
* C & E Loss (m)	*	0.00	* Cum SA (1000 m2)	*	55.49	*
116.15 *		46.71 *				

CROSS SECTION OUTPUT Profile # VV

* E.G. Elev (m)	*	113.38	* Element	*	Left OB	*
Channel *		Right OB *				
* Vel Head (m)	*	0.01	* Wt. n-Val	*	0.050	*
0.040 *						
* W.S. Elev (m)	*	113.37	* Reach Len. (m)	*	53.15	*
48.11 *		48.11 *				
* Crit W.S. (m)	*		* Flow Area (m2)	*	0.12	*
7.52 *						
* E.G. Slope (m/m)	*	0.001031	* Area (m2)	*	0.12	*
7.52 *						
* Q Total (m3/s)	*	3.30	* Flow (m3/s)	*	0.02	*
3.28 *						
* Top Width (m)	*	19.21	* Top Width (m)	*	0.65	*
18.56 *						
* Vel Total (m/s)	*	0.43	* Avg. Vel. (m/s)	*	0.19	*
0.44 *						
* Max Chl Dpth (m)	*	0.70	* Hydr. Depth (m)	*	0.18	*
0.41 *						
* Conv. Total (m3/s)	*	102.8	* Conv. (m3/s)	*	0.7	*
102.1 *						
* Length Wtd. (m)	*	48.13	* Wetted Per. (m)	*	0.73	*
18.81 *						
* Min Ch El (m)	*	112.67	* Shear (N/sq m)	*	1.63	*
4.04 *						
* Alpha	*	1.01	* Stream Power (N/m s)	*	3127.06	*
0.00 *		0.00 *				
* Frctn Loss (m)	*	0.09	* Cum Volume (cu m x 10^	*	0.02	*
0.23 *		0.02 *				
* C & E Loss (m)	*	0.00	* Cum SA (1000 m2)	*	28.85	*
109.78 *		14.98 *				

CROSS SECTION

RIVER: Malta

REACH: Malta

River Station: 111

INPUT

Description:

Station Elevation Data, num = 50

Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.	Elev.
Elev.							

```

*****
*****
      0  115.09      .1  115.09      .2  115.09      1.59  115.07      1.94
115.02
      2.55  114.93      3.71  114.88      4.15  114.88      5.49  114.88      7.59
114.92
      8.18  114.91      8.77  114.92      9.39  114.95     10.19  114.98     10.35
114.98
      13  114.93     13.62  114.96     14.09  114.95     15.39  114.64     15.65
114.58
      18.82  114.07     19.51  113.93     19.93  113.99     20.77  113.75     24.18
113.26
      28.29  113.14     28.88  113.1     30.55      113     30.59      113     30.64
112.99
      31.27  112.96     32.43  112.88      34  112.79     34.51  112.75     34.75
112.74
      34.82  112.74     35.93  112.77     36.12  112.78     36.24  112.79     37.92
112.89
      38.04  112.9     38.18  112.91     39.73      113     39.8      113
41.1991113.0686
      41.84  113.1     41.84  113.1     45.31  113.65     75.42  115.61     75.52
115.62

```

Manning's n Values, num = 3

```

      Sta.  Value      Sta.  Value      Sta.  Value
*****
      0      .05     24.18      .04  41.1991      .05

```

```

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.
Expan.
      24.18  41.1991           96.1398  88.8371  88.8371           0.1
0.3

```

CROSS SECTION OUTPUT Profile # p-1

```

*****
*****
* E.G. Elev (m)      *  115.69 * Element      *  Left OB *
Channel * Right OB *
* Vel Head (m)      *      0.10 * Wt. n-Val      *  0.050 *
0.040 *  0.050 *
* W.S. Elev (m)      *  115.59 * Reach Len. (m) *  96.14 *
88.84 *  88.84 *
* Crit W.S. (m)      *      * Flow Area (m2) *  24.70 *
44.33 *  38.21 *
* E.G. Slope (m/m)    *  0.001319 * Area (m2)      *  24.70 *
44.33 *  38.21 *
* Q Total (m3/s)      *  124.00 * Flow (m3/s)     *  17.87 *
76.13 *  29.99 *
* Top Width (m)       *  75.12 * Top Width (m)   *  24.18 *
17.02 *  33.92 *
* Vel Total (m/s)     *  1.16 * Avg. Vel. (m/s) *  0.72 *
1.72 *  0.78 *
* Max Chl Dpth (m)    *  2.85 * Hydr. Depth (m) *  1.02 *
2.60 *  1.13 *
* Conv. Total (m3/s)  *  3413.9 * Conv. (m3/s)    *  492.0 *
2096.1 *  825.8 *
* Length Wtd. (m)     *  90.09 * Wetted Per. (m) *  24.87 *
17.04 *  34.03 *

```

* Min Ch El (m)	* 112.74	* Shear (N/sq m)	* 12.86
33.65 * 14.53 *			
* Alpha	* 1.52	* Stream Power (N/m s)	* 3615.92
0.00 * 0.00 *			
* Frctn Loss (m)	* 0.09	* Cum Volume (cu m x 10^	* 0.06
0.31 * 0.06 *			
* C & E Loss (m)	* 0.01	* Cum SA (1000 m2)	* 64.21
115.25 * 49.73 *			

CROSS SECTION OUTPUT Profile # p-5

* E.G. Elev (m)	* 115.38	* Element	* Left OB
Channel * Right OB *			
* Vel Head (m)	* 0.10	* Wt. n-Val	* 0.050
0.040 * 0.050 *			
* W.S. Elev (m)	* 115.28	* Reach Len. (m)	* 96.14
88.84 * 88.84 *			
* Crit W.S. (m)	*	* Flow Area (m2)	* 17.26
39.09 * 28.50 *			
* E.G. Slope (m/m)	* 0.001437	* Area (m2)	* 17.26
39.09 * 28.50 *			
* Q Total (m3/s)	* 96.00	* Flow (m3/s)	* 10.35
64.43 * 21.22 *			
* Top Width (m)	* 70.39	* Top Width (m)	* 24.18
17.02 * 29.19 *			
* Vel Total (m/s)	* 1.13	* Avg. Vel. (m/s)	* 0.60
1.65 * 0.74 *			
* Max Chl Dpth (m)	* 2.54	* Hydr. Depth (m)	* 0.71
2.30 * 0.98 *			
* Conv. Total (m3/s)	* 2532.7	* Conv. (m3/s)	* 273.0
1699.8 * 559.8 *			
* Length Wtd. (m)	* 89.89	* Wetted Per. (m)	* 24.56
17.04 * 29.29 *			
* Min Ch El (m)	* 112.74	* Shear (N/sq m)	* 9.91
32.32 * 13.71 *			
* Alpha	* 1.55	* Stream Power (N/m s)	* 3615.92
0.00 * 0.00 *			
* Frctn Loss (m)	* 0.10	* Cum Volume (cu m x 10^	* 0.05
0.29 * 0.05 *			
* C & E Loss (m)	* 0.01	* Cum SA (1000 m2)	* 58.37
115.25 * 48.44 *			

CROSS SECTION OUTPUT Profile # p-10

* E.G. Elev (m)	* 115.14	* Element	* Left OB
Channel * Right OB *			
* Vel Head (m)	* 0.10	* Wt. n-Val	* 0.050
0.040 * 0.050 *			
* W.S. Elev (m)	* 115.04	* Reach Len. (m)	* 96.14
88.84 * 88.84 *			
* Crit W.S. (m)	*	* Flow Area (m2)	* 11.43
34.94 * 21.83 *			
* E.G. Slope (m/m)	* 0.001603	* Area (m2)	* 11.43
34.94 * 21.83 *			

* Q Total (m3/s)	*	78.00	* Flow (m3/s)	*	5.82	*
56.43 *		15.75	*			*
* Top Width (m)	*	64.83	* Top Width (m)	*	22.37	*
17.02 *		25.44	*			*
* Vel Total (m/s)	*	1.14	* Avg. Vel. (m/s)	*	0.51	*
1.62 *		0.72	*			*
* Max Chl Dpth (m)	*	2.30	* Hydr. Depth (m)	*	0.51	*
2.05 *		0.86	*			*
* Conv. Total (m3/s)	*	1948.5	* Conv. (m3/s)	*	145.4	*
1409.6 *		393.5	*			*
* Length Wtd. (m)	*	89.70	* Wetted Per. (m)	*	22.55	*
17.04 *		25.53	*			*
* Min Ch El (m)	*	112.74	* Shear (N/sq m)	*	7.97	*
32.22 *		13.44	*			*
* Alpha	*	1.54	* Stream Power (N/m s)	*	3615.92	*
0.00 *		0.00	*			*
* Frctn Loss (m)	*	0.11	* Cum Volume (cu m x 10^	*	0.04	*
0.28 *		0.04	*			*
* C & E Loss (m)	*	0.01	* Cum SA (1000 m2)	*	54.36	*
115.25 *		45.79	*			*

CROSS SECTION OUTPUT Profile # VV

* E.G. Elev (m)	*	113.29	* Element	*	Left OB	*
Channel *						
* Vel Head (m)	*	0.02	* Wt. n-Val	*	0.000	*
0.040 *		0.050	*			*
* W.S. Elev (m)	*	113.26	* Reach Len. (m)	*	96.14	*
88.84 *		88.84	*			*
* Crit W.S. (m)	*		* Flow Area (m2)	*	0.00	*
4.73 *		0.20	*			*
* E.G. Slope (m/m)	*	0.004134	* Area (m2)	*	0.00	*
4.73 *		0.20	*			*
* Q Total (m3/s)	*	3.30	* Flow (m3/s)	*	0.00	*
3.24 *		0.06	*			*
* Top Width (m)	*	18.72	* Top Width (m)	*	0.03	*
17.02 *		1.67	*			*
* Vel Total (m/s)	*	0.67	* Avg. Vel. (m/s)	*	0.02	*
0.68 *		0.31	*			*
* Max Chl Dpth (m)	*	0.52	* Hydr. Depth (m)	*	0.00	*
0.28 *		0.12	*			*
* Conv. Total (m3/s)	*	51.3	* Conv. (m3/s)	*	0.0	*
50.4 *		1.0	*			*
* Length Wtd. (m)	*	89.80	* Wetted Per. (m)	*	0.03	*
17.04 *		1.69	*			*
* Min Ch El (m)	*	112.74	* Shear (N/sq m)	*		*
11.26 *		4.79	*			*
* Alpha	*	1.03	* Stream Power (N/m s)	*	3615.92	*
0.00 *		0.00	*			*
* Frctn Loss (m)	*	0.09	* Cum Volume (cu m x 10^	*	0.02	*
0.23 *		0.02	*			*
* C & E Loss (m)	*	0.01	* Cum SA (1000 m2)	*	28.84	*
108.92 *		14.94	*			*

CROSS SECTION

RIVER: Malta
REACH: Malta

River Station: 110

INPUT

Description:

Station Elevation Data, num = 72

Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.
0	114.78	.1	114.78	.2	114.77	.98	114.75	1.71
114.61								
2.11	114.55	3.49	114.58	4.57	114.62	4.97	114.57	5.45
114.53								
8.6	114.5	8.77	114.47	9.18	114.46	10.46	114.36	13.17
114.12								
13.56	114.05	13.95	113.92	14.42	113.65	15.02	113.67	15.19
113.38								
15.58	113.35	15.78	113.44	16.02	113.29	16.26	113.16	16.37
113.03								
16.42	112.98	16.79	112.8	17.3	112.54	17.84	112.49	17.86
112.49								
18.64	112.41	20.01	112.52	20.81	112.53	21.66	112.65	22.32
112.7								
22.81	112.74	23.58	112.74	24.1	112.73	24.63	112.73	25.15
112.73								
26.37	112.73	26.85	112.73	27.14	112.73	29.55	112.74	29.88
112.74								
31.12	112.74	32.23	112.73	33.5	112.73	35.75	112.71	36.29
112.71								
36.54	112.75	37.14	112.86	37.87	112.99	37.89	113	37.97
113.03								
38.21	113.41	39.6287	113.3901	41.06	113.37	42.52	113.3	45.12
113.19								
46.45	113.19	48.43	113.47	48.57	113.48	48.66	113.48	56.01
114.53								
57.94	114.59	59.69	114.7	61.32	114.87	62.83	114.96	65.63
115.18								
65.73	115.18	65.83	115.19					

Manning's n Values, num = 3

Sta.	Value	Sta.	Value	Sta.	Value
0	.05	20.81	.04	39.6287	.05

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.
Expan.	20.81	39.6287	133.495	164.898	164.898		0.1
	0.3						

CROSS SECTION OUTPUT Profile # p-1

* E.G. Elev (m)	* 115.59	* Element	* Left OB *
Channel * Right OB *			
* Vel Head (m)	* 0.07	* Wt. n-Val	* 0.050 *
0.040 *	0.050 *		

* W.S. Elev (m)	* 115.52	* Reach Len. (m)	* 133.50
164.90 * 164.90 *			
* Crit W.S. (m)	*	* Flow Area (m2)	* 32.81
51.40 * 38.07 *			
* E.G. Slope (m/m)	* 0.000829	* Area (m2)	* 32.81
51.40 * 38.07 *			
* Q Total (m3/s)	* 124.00	* Flow (m3/s)	* 24.55
71.64 * 27.80 *			
* Top Width (m)	* 65.83	* Top Width (m)	* 20.81
18.82 * 26.20 *			
* Vel Total (m/s)	* 1.01	* Avg. Vel. (m/s)	* 0.75
1.39 * 0.73 *			
* Max Chl Dpth (m)	* 3.11	* Hydr. Depth (m)	* 1.58
2.73 * 1.45 *			
* Conv. Total (m3/s)	* 4307.6	* Conv. (m3/s)	* 853.0
2488.7 * 965.9 *			
* Length Wtd. (m)	* 160.93	* Wetted Per. (m)	* 22.15
19.07 * 26.66 *			
* Min Ch El (m)	* 112.53	* Shear (N/sq m)	* 12.04
21.90 * 11.61 *			
* Alpha	* 1.32	* Stream Power (N/m s)	* 3151.96
0.00 * 0.00 *			
* Frctn Loss (m)	* 0.14	* Cum Volume (cu m x 10^	* 0.06
0.31 * 0.06 *			
* C & E Loss (m)	* 0.00	* Cum SA (1000 m2)	* 62.05
113.66 * 47.06 *			

CROSS SECTION OUTPUT Profile # p-5

* E.G. Elev (m)	* 115.27	* Element	* Left OB *
Channel * Right OB *			
* Vel Head (m)	* 0.06	* Wt. n-Val	* 0.050
0.040 * 0.050 *			
* W.S. Elev (m)	* 115.21	* Reach Len. (m)	* 133.50
164.90 * 164.90 *			
* Crit W.S. (m)	*	* Flow Area (m2)	* 26.37
45.57 * 29.96 *			
* E.G. Slope (m/m)	* 0.000852	* Area (m2)	* 26.37
45.57 * 29.96 *			
* Q Total (m3/s)	* 96.00	* Flow (m3/s)	* 17.47
59.47 * 19.07 *			
* Top Width (m)	* 65.83	* Top Width (m)	* 20.81
18.82 * 26.20 *			
* Vel Total (m/s)	* 0.94	* Avg. Vel. (m/s)	* 0.66
1.30 * 0.64 *			
* Max Chl Dpth (m)	* 2.80	* Hydr. Depth (m)	* 1.27
2.42 * 1.14 *			
* Conv. Total (m3/s)	* 3288.0	* Conv. (m3/s)	* 598.2
2036.7 * 653.0 *			
* Length Wtd. (m)	* 161.48	* Wetted Per. (m)	* 21.84
19.07 * 26.35 *			
* Min Ch El (m)	* 112.53	* Shear (N/sq m)	* 10.10
19.98 * 9.51 *			
* Alpha	* 1.37	* Stream Power (N/m s)	* 3151.96
0.00 * 0.00 *			
* Frctn Loss (m)	* 0.14	* Cum Volume (cu m x 10^	* 0.05
0.29 * 0.04 *			

```

* C & E Loss (m)          *      0.00 * Cum SA (1000 m2)          *      56.21 *
113.66 *      45.98 *
*****
*****

```

CROSS SECTION OUTPUT Profile # p-10

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*****
*****
* E.G. Elev (m)          *    115.02 * Element          *    Left OB *
Channel * Right OB *
* Vel Head (m)          *      0.06 * Wt. n-Val          *      0.050 *
0.040 *      0.050 *
* W.S. Elev (m)          *    114.96 * Reach Len. (m)      *    133.50 *
164.90 *    164.90 *
* Crit W.S. (m)          *          * Flow Area (m2)      *    21.21 *
40.91 *    23.81 *
* E.G. Slope (m/m)       * 0.000898 * Area (m2)           *    21.21 *
40.91 *    23.81 *
* Q Total (m3/s)         *    78.00 * Flow (m3/s)         *    12.57 *
50.98 *    14.45 *
* Top Width (m)          *    62.88 * Top Width (m)       *    20.81 *
18.82 *    23.26 *
* Vel Total (m/s)        *      0.91 * Avg. Vel. (m/s)     *      0.59 *
1.25 *      0.61 *
* Max Chl Dpth (m)       *      2.55 * Hydr. Depth (m)     *      1.02 *
2.17 *      1.02 *
* Conv. Total (m3/s)     *   2602.4 * Conv. (m3/s)        *   419.3 *
1701.0 *   482.1 *
* Length Wtd. (m)        *   162.10 * Wetted Per. (m)     *   21.59 *
19.07 *    23.37 *
* Min Ch El (m)          *   112.53 * Shear (N/sq m)      *      8.66 *
18.90 *      8.97 *
* Alpha                  *      1.38 * Stream Power (N/m s) * 3151.96 *
0.00 *      0.00 *
* Frctn Loss (m)         *      0.14 * Cum Volume (cu m x 10^ *      0.04 *
0.28 *      0.04 *
* C & E Loss (m)         *      0.00 * Cum SA (1000 m2)     *   52.29 *
113.66 *    43.63 *
*****
*****

```

CROSS SECTION OUTPUT Profile # VV

```

*****
*****
* E.G. Elev (m)          *    113.19 * Element          *    Left OB *
Channel * Right OB *
* Vel Head (m)          *      0.01 * Wt. n-Val          *      0.050 *
0.040 *          *
* W.S. Elev (m)          *    113.18 * Reach Len. (m)      *    133.50 *
164.90 *    164.90 *
* Crit W.S. (m)          *          * Flow Area (m2)      *      2.84 *
7.69 *          *
* E.G. Slope (m/m)       * 0.000472 * Area (m2)           *      2.84 *
7.69 *          *
* Q Total (m3/s)         *      3.30 * Flow (m3/s)         *      0.87 *
2.43 *          *
* Top Width (m)          *    21.85 * Top Width (m)       *      4.59 *
17.26 *          *
* Vel Total (m/s)        *      0.31 * Avg. Vel. (m/s)     *      0.31 *
0.32 *          *

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* Max Chl Dpth (m)      *      0.77 * Hydr. Depth (m)      *      0.62 *
0.45 *                  *
* Conv. Total (m3/s)    *      151.8 * Conv. (m3/s)      *      40.1 *
111.7 *                  *
* Length Wtd. (m)       *      160.75 * Wetted Per. (m)    *      4.79 *
17.38 *                  *
* Min Ch El (m)         *      112.53 * Shear (N/sq m)     *      2.75 *
2.05 *                  *
* Alpha                 *      1.00 * Stream Power (N/m s) *      3151.96 *
0.00 *      0.00 *
* Frctn Loss (m)        *      0.02 * Cum Volume (cu m x 10^ *      0.02 *
0.23 *      0.02 *
* C & E Loss (m)        *      0.00 * Cum SA (1000 m2)    *      28.61 *
107.40 *      14.87 *
*****
*****

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CROSS SECTION

RIVER: Malta

REACH: Malta

River Station: 109

INPUT

Description:

Station Elevation Data, num = 92

Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.
Elev.								

0	114.61	.1	114.62	.15	114.62	.2	114.62	1.83
114.61								
2.34	114.61	2.66	114.56	5.28	114.57	5.3	114.57	5.34
114.57								
7.22	114.56	8.84	114.5	9.04	114.5	9.35	114.48	11.08
114.52								
14.17	114	16.96	113.63	17.15	113.58	17.26	113.51	18.1
113.28								
18.76	112.54	18.8	112.51	18.94	112.53	19.41	112.54	19.43
112.54								
19.96	112.49	19.96	112.49	20.14	112.47	20.14	112.47	20.51
112.45								
20.52	112.45	21.05	112.52	21.06	112.52	21.84	112.58	21.85
112.58								
22.05	112.58	22.15	112.59	22.15	112.59	22.56	112.56	22.56
112.56								
23.15	112.45	24	112.39	24	112.39	24.48	112.38	24.49
112.38								
24.49	112.38	24.8	112.35	24.8	112.35	25.32	112.27	25.32
112.27								
26.77	112.06	26.78	112.06	27.0759	111.9936	28.34	111.71	28.63
111.75								
28.64	111.75	29.05	111.63	29.06	111.63	29.42	111.61	29.43
111.61								
30.03	111.63	30.05	111.63	30.63	111.7	30.65	111.71	31.11
111.91								
31.13	111.91	31.63	111.97	31.64	111.98	31.91	111.82	31.92
111.81								
32.33	111.84	32.34	111.84	33.14	111.96	33.18	111.97	33.62
112.03								

33.65	112.03	33.87	111.98	33.89	111.98	34.12	112.04	34.13
112.04								
34.39	112.07	34.4	112.07	34.67	112.09	34.68	112.1	34.81
112.05								
34.82	112.04	40.88	112.68	57.26	114.7	67.64	115.02	67.66
115.02								
67.74	115.02	67.84	115.04					

Manning's n Values, num = 3

Sta.	Value	Sta.	Value	Sta.	Value
0	.05	14.17	.04	27.0759	.05

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff Contr.
Expan.	14.17	27.0759	207.008	185.852	185.852	0.1
	0.3					

CROSS SECTION OUTPUT Profile # p-1

```

*****
*****
* E.G. Elev (m) * 115.45 * Element * Left OB *
Channel * Right OB *
* Vel Head (m) * 0.06 * Wt. n-Val * 0.050 *
0.040 * 0.050 *
* W.S. Elev (m) * 115.39 * Reach Len. (m) * 207.01 *
185.85 * 185.85 *
* Crit W.S. (m) * * Flow Area (m2) * 12.73 *
33.09 * 79.30 *
* E.G. Slope (m/m) * 0.000878 * Area (m2) * 12.73 *
33.09 * 79.30 *
* Q Total (m3/s) * 124.00 * Flow (m3/s) * 6.77 *
44.82 * 72.41 *
* Top Width (m) * 67.84 * Top Width (m) * 14.17 *
12.91 * 40.76 *
* Vel Total (m/s) * 0.99 * Avg. Vel. (m/s) * 0.53 *
1.35 * 0.91 *
* Max Chl Dpth (m) * 3.78 * Hydr. Depth (m) * 0.90 *
2.56 * 1.95 *
* Conv. Total (m3/s) * 4184.0 * Conv. (m3/s) * 228.3 *
1512.5 * 2443.3 *
* Length Wtd. (m) * 189.54 * Wetted Per. (m) * 15.00 *
13.39 * 41.48 *
* Min Ch El (m) * 111.99 * Shear (N/sq m) * 7.31 *
21.29 * 16.47 *
* Alpha * 1.19 * Stream Power (N/m s) * 3248.19 *
0.00 * 0.00 *
* Frctn Loss (m) * 0.19 * Cum Volume (cu m x 10^ * 0.06 *
0.30 * 0.05 *
* C & E Loss (m) * 0.00 * Cum SA (1000 m2) * 59.71 *
111.04 * 41.54 *
*****
*****

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CROSS SECTION OUTPUT Profile # p-5

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*****
*****
* E.G. Elev (m) * 115.13 * Element * Left OB *
Channel * Right OB *

```

* Vel Head (m)	*	0.05	* Wt. n-Val	*	0.050	*
0.040 *		0.050	*			
* W.S. Elev (m)	*	115.08	* Reach Len. (m)	*	207.01	*
185.85 *		185.85	*			
* Crit W.S. (m)	*		* Flow Area (m2)	*	8.25	*
29.01 *		66.42	*			
* E.G. Slope (m/m)	*	0.000926	* Area (m2)	*	8.25	*
29.01 *		66.42	*			
* Q Total (m3/s)	*	96.00	* Flow (m3/s)	*	3.42	*
36.96 *		55.61	*			
* Top Width (m)	*	67.84	* Top Width (m)	*	14.17	*
12.91 *		40.76	*			
* Vel Total (m/s)	*	0.93	* Avg. Vel. (m/s)	*	0.41	*
1.27 *		0.84	*			
* Max Chl Dpth (m)	*	3.46	* Hydr. Depth (m)	*	0.58	*
2.25 *		1.63	*			
* Conv. Total (m3/s)	*	3154.8	* Conv. (m3/s)	*	112.4	*
1214.7 *		1827.7	*			
* Length Wtd. (m)	*	189.65	* Wetted Per. (m)	*	14.69	*
13.39 *		41.17	*			
* Min Ch El (m)	*	111.99	* Shear (N/sq m)	*	5.10	*
19.68 *		14.65	*			
* Alpha	*	1.21	* Stream Power (N/m s)	*	3248.19	*
0.00 *		0.00	*			
* Frctn Loss (m)	*	0.19	* Cum Volume (cu m x 10^	*	0.05	*
0.28 *		0.04	*			
* C & E Loss (m)	*	0.00	* Cum SA (1000 m2)	*	53.87	*
111.04 *		40.46	*			

CROSS SECTION OUTPUT Profile # p-10

* E.G. Elev (m)	*	114.87	* Element	*	Left OB	*
Channel * Right OB *						
* Vel Head (m)	*	0.05	* Wt. n-Val	*	0.050	*
0.040 *		0.050	*			
* W.S. Elev (m)	*	114.83	* Reach Len. (m)	*	207.01	*
185.85 *		185.85	*			
* Crit W.S. (m)	*		* Flow Area (m2)	*	4.76	*
25.83 *		57.00	*			
* E.G. Slope (m/m)	*	0.000878	* Area (m2)	*	4.76	*
25.83 *		57.00	*			
* Q Total (m3/s)	*	78.00	* Flow (m3/s)	*	1.34	*
29.65 *		47.01	*			
* Top Width (m)	*	61.43	* Top Width (m)	*	14.17	*
12.91 *		34.35	*			
* Vel Total (m/s)	*	0.89	* Avg. Vel. (m/s)	*	0.28	*
1.15 *		0.82	*			
* Max Chl Dpth (m)	*	3.22	* Hydr. Depth (m)	*	0.34	*
2.00 *		1.66	*			
* Conv. Total (m3/s)	*	2632.9	* Conv. (m3/s)	*	45.4	*
1000.7 *		1586.8	*			
* Length Wtd. (m)	*	189.79	* Wetted Per. (m)	*	14.44	*
13.39 *		34.71	*			
* Min Ch El (m)	*	111.99	* Shear (N/sq m)	*	2.84	*
16.61 *		14.13	*			
* Alpha	*	1.15	* Stream Power (N/m s)	*	3248.19	*
0.00 *		0.00	*			

23.62	112.68	23.77	112.67	23.96	112.67	24.07	112.65	24.23
112.63								
24.37	112.63	24.57	112.63	24.71	112.61	24.92	112.57	25.2
112.53								
25.71	112.48	26.51	112.44	26.63	112.41	26.93	112.32	27.09
112.32								
27.82	112.24	27.92	112.24	28.33	112.23	28.81	112.18	29.2
112.17								
29.46	112.14	30.81	111.99	30.86	111.99	31.53	111.97	31.57
111.97								
32.4	111.8	32.41	111.79	32.78	111.75	32.79	111.75	33.11
111.72								
33.28	111.7	33.28	111.7	33.65	111.69	33.66	111.69	34.24
111.6								
34.25	111.6	34.76	111.58	34.8	111.58	35.22	111.61	35.23
111.61								
35.27	111.61	35.79	111.58	35.84	111.57	36.21	111.53	36.38
111.55								
37.29	111.65	37.5	111.67	38.33	111.75	38.65	111.81	39.69
112.02								
39.99	112.09	40.26	112.13	40.8	112.22	41.4	112.31	41.52
112.32								
41.7	112.33	41.87	112.36	42.46	112.41	42.62	112.43	42.89
112.45								
43.16	112.48	43.48	112.51	43.65	112.55	44.07	112.67	44.3
112.73								
45.77	113.3	46.41	113.36	50.0322	113.5806	58.56	114.1	65.37
114.41								
67.63	114.58	67.93	114.6	68.31	114.58	71.51	114.44	71.71
114.43								
72.71	114.4	73.71	114.39	75.29	114.35	75.73	114.36	77.53
114.44								
77.96	114.48	78.34	114.45	79.15	114.38	81.2	114.53	81.72
114.5								
82.25	114.42	85.8	114.49	85.9	114.49			

Manning's n Values, num = 3

Sta.	Value	Sta.	Value	Sta.	Value
0	.05	34.24	.04	50.0322	.05

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.
Expan.	34.24	50.0322	244.148	245.872	245.872	0.1	
	0.3						

CROSS SECTION OUTPUT Profile # p-1

* E.G. Elev (m)	* 115.26	* Element	* Left OB *
Channel * Right OB *			
* Vel Head (m)	* 0.09	* Wt. n-Val	* 0.050 *
0.040 * 0.050 *			
* W.S. Elev (m)	* 115.17	* Reach Len. (m)	* 244.15 *
245.87 * 245.87 *			
* Crit W.S. (m)	*	* Flow Area (m2)	* 36.59 *
42.51 * 32.36 *			
* E.G. Slope (m/m)	* 0.001105	* Area (m2)	* 36.59 *
42.51 * 32.36 *			

* Q Total (m3/s)	*	124.00	* Flow (m3/s)	*	36.48	*
67.71 *		19.82				
* Top Width (m)	*	70.46	* Top Width (m)	*	18.80	*
15.79 *		35.87				
* Vel Total (m/s)	*	1.11	* Avg. Vel. (m/s)	*	1.00	*
1.59 *		0.61				
* Max Chl Dpth (m)	*	3.64	* Hydr. Depth (m)	*	1.95	*
2.69 *		0.90				
* Conv. Total (m3/s)	*	3731.1	* Conv. (m3/s)	*	1097.5	*
2037.3 *		596.3				
* Length Wtd. (m)	*	245.54	* Wetted Per. (m)	*	19.93	*
16.02 *		36.61				
* Min Ch El (m)	*	111.53	* Shear (N/sq m)	*	19.89	*
28.75 *		9.58				
* Alpha	*	1.40	* Stream Power (N/m s)	*	4112.91	*
0.00 *		0.00				
* Frctn Loss (m)	*	0.28	* Cum Volume (cu m x 10^	*	0.05	*
0.29 *		0.04				
* C & E Loss (m)	*	0.00	* Cum SA (1000 m2)	*	56.30	*
108.37 *		34.42				

CROSS SECTION OUTPUT Profile # p-5

* E.G. Elev (m)	*	114.93	* Element	*	Left OB	*
Channel *						
* Vel Head (m)	*	0.08	* Wt. n-Val	*	0.050	*
0.040 *		0.050				
* W.S. Elev (m)	*	114.85	* Reach Len. (m)	*	244.15	*
245.87 *		245.87				
* Crit W.S. (m)	*		* Flow Area (m2)	*	30.97	*
37.40 *		20.77				
* E.G. Slope (m/m)	*	0.001131	* Area (m2)	*	30.97	*
37.40 *		20.77				
* Q Total (m3/s)	*	96.00	* Flow (m3/s)	*	31.02	*
55.35 *		9.63				
* Top Width (m)	*	67.60	* Top Width (m)	*	15.94	*
15.79 *		35.87				
* Vel Total (m/s)	*	1.08	* Avg. Vel. (m/s)	*	1.00	*
1.48 *		0.46				
* Max Chl Dpth (m)	*	3.32	* Hydr. Depth (m)	*	1.94	*
2.37 *		0.58				
* Conv. Total (m3/s)	*	2854.9	* Conv. (m3/s)	*	922.6	*
1646.0 *		286.3				
* Length Wtd. (m)	*	245.53	* Wetted Per. (m)	*	17.04	*
16.02 *		36.28				
* Min Ch El (m)	*	111.53	* Shear (N/sq m)	*	20.15	*
25.90 *		6.35				
* Alpha	*	1.39	* Stream Power (N/m s)	*	4112.91	*
0.00 *		0.00				
* Frctn Loss (m)	*	0.28	* Cum Volume (cu m x 10^	*	0.04	*
0.28 *		0.03				
* C & E Loss (m)	*	0.00	* Cum SA (1000 m2)	*	50.75	*
108.37 *		33.34				

CROSS SECTION OUTPUT Profile # p-10

```

*****
*****
* E.G. Elev (m) * 114.68 * Element * Left OB *
Channel * Right OB *
* Vel Head (m) * 0.08 * Wt. n-Val * 0.050 *
0.040 * 0.050 *
* W.S. Elev (m) * 114.61 * Reach Len. (m) * 244.15 *
245.87 * 245.87 *
* Crit W.S. (m) * * Flow Area (m2) * 27.36 *
33.56 * 12.04 *
* E.G. Slope (m/m) * 0.001139 * Area (m2) * 27.36 *
33.56 * 12.04 *
* Q Total (m3/s) * 78.00 * Flow (m3/s) * 27.72 *
46.37 * 3.91 *
* Top Width (m) * 65.44 * Top Width (m) * 13.78 *
15.79 * 35.87 *
* Vel Total (m/s) * 1.07 * Avg. Vel. (m/s) * 1.01 *
1.38 * 0.32 *
* Max Chl Dpth (m) * 3.08 * Hydr. Depth (m) * 1.98 *
2.13 * 0.34 *
* Conv. Total (m3/s) * 2311.1 * Conv. (m3/s) * 821.4 *
1373.8 * 115.9 *
* Length Wtd. (m) * 245.51 * Wetted Per. (m) * 14.88 *
16.02 * 36.04 *
* Min Ch El (m) * 111.53 * Shear (N/sq m) * 20.55 *
23.41 * 3.73 *
* Alpha * 1.32 * Stream Power (N/m s) * 4112.91 *
0.00 * 0.00 *
* Frctn Loss (m) * 0.26 * Cum Volume (cu m x 10^ * 0.04 *
0.27 * 0.02 *
* C & E Loss (m) * 0.00 * Cum SA (1000 m2) * 47.06 *
108.37 * 32.36 *
*****
*****

```

CROSS SECTION OUTPUT Profile # VV

```

*****
*****
* E.G. Elev (m) * 113.16 * Element * Left OB *
Channel * Right OB *
* Vel Head (m) * 0.00 * Wt. n-Val * 0.050 *
0.040 * *
* W.S. Elev (m) * 113.15 * Reach Len. (m) * 244.15 *
245.87 * 245.87 *
* Crit W.S. (m) * * Flow Area (m2) * 10.55 *
11.91 * *
* E.G. Slope (m/m) * 0.000042 * Area (m2) * 10.55 *
11.91 * *
* Q Total (m3/s) * 3.30 * Flow (m3/s) * 1.31 *
1.99 * *
* Top Width (m) * 22.14 * Top Width (m) * 10.98 *
11.15 * *
* Vel Total (m/s) * 0.15 * Avg. Vel. (m/s) * 0.12 *
0.17 * *
* Max Chl Dpth (m) * 1.62 * Hydr. Depth (m) * 0.96 *
1.07 * *
* Conv. Total (m3/s) * 509.2 * Conv. (m3/s) * 201.5 *
307.8 * *
* Length Wtd. (m) * 245.48 * Wetted Per. (m) * 11.30 *
11.34 * *

```

```

* Min Ch El (m)          *    111.53 * Shear (N/sq m)          *    0.38 *
0.43 *                   *
* Alpha                  *    1.07 * Stream Power (N/m s)    *  4112.91 *
0.00 *    0.00 *
* Frctn Loss (m)        *    0.01 * Cum Volume (cu m x 10^ *    0.02 *
0.22 *    0.01 *
* C & E Loss (m)        *    0.00 * Cum SA (1000 m2)        *    27.17 *
103.39 *    11.76 *
*****
*****

```

CROSS SECTION

RIVER: Malta

REACH: Malta

River Station: 107

INPUT

Description:

Station Elevation Data, num = 102

Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.	Elev.
0	114.89	.1	114.89	.18	114.89	.2	114.89	.43	114.92
1.28	114.86	16.08	114.39	22.91	114.19	24.22	114.12	24.61	114.23
24.73	114.26	29.57	112.48	29.94	112.48	30.06	112.48	30.43	112.38
30.55	112.35	30.97	112.16	31.14	112.11	31.55	112.09	32.03	112.08
32.08	112	32.2	111.98	32.74	111.83	32.89	111.78	33.23	111.75
33.31	111.75	33.95	111.72	34.11	111.72	34.22	111.72	34.24	111.72
35.91	111.75	36.07	111.75	36.73	111.76	36.87	111.76	37.24	111.65
37.31	111.63	38.6	111.65	38.83	111.65	39.2	111.69	39.26	111.7
40.57	111.74	40.77	111.75	41.18	111.71	41.24	111.71	43.15	111.74
43.19	111.75	43.53	111.74	43.57	111.74	44.94	111.91	45.07	111.92
45.87	112.03	45.94	112.04	45.96	112.04	46.49	112.04	46.53	112.04
46.59	112.04	47.49	112.13	47.55	112.14	47.93	112.13	47.95	112.13
48.66	112.23	48.69	112.24	49.02	112.22	49.03	112.22	49.51	112.24
49.53	112.25	50.72	112.39	50.84	112.41	51.38	112.47	51.41	112.48
51.89	112.5	51.9	112.5	52.11	112.6	52.12	112.6	52.14	112.62
52.52	112.72	55.4752	113.4785	61.91	115.13	64.82	115.39	67.97	115.46
68.73	115.39	69.28	115.32	71.78	115.16	72.61	115.21	73.17	115.28
73.43	115.32	73.77	115.37	74.67	115.32	74.85	115.32	75.52	115.27

75.64	115.29	76.06	115.29	80.28	115.52	80.37	115.52	80.45
115.51								
80.96	115.49	81.83	115.48	82.53	115.51	83.07	115.51	83.13
115.51								
84.21	115.5	84.31	115.49					

Manning's n Values, num = 3

Sta.	Value	Sta.	Value	Sta.	Value
0	.05	32.03	.04	55.4752	.05

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff Contr.
Expan.						
	32.03	55.4752		348.502	341.478	0.1
0.3						

CROSS SECTION OUTPUT Profile # p-1

```

*****
*****
* E.G. Elev (m) * 114.97 * Element * Left OB *
Channel * Right OB *
* Vel Head (m) * 0.13 * Wt. n-Val * 0.050 *
0.040 * 0.050 *
* W.S. Elev (m) * 114.84 * Reach Len. (m) * 348.50 *
341.48 * 341.48 *
* Crit W.S. (m) * * Flow Area (m2) * 21.71 *
64.97 * 3.63 *
* E.G. Slope (m/m) * 0.001201 * Area (m2) * 21.71 *
64.97 * 3.63 *
* Q Total (m3/s) * 124.00 * Flow (m3/s) * 11.96 *
110.13 * 1.91 *
* Top Width (m) * 58.97 * Top Width (m) * 30.21 *
23.45 * 5.32 *
* Vel Total (m/s) * 1.37 * Avg. Vel. (m/s) * 0.55 *
1.70 * 0.53 *
* Max Chl Dpth (m) * 3.21 * Hydr. Depth (m) * 0.72 *
2.77 * 0.68 *
* Conv. Total (m3/s) * 3578.4 * Conv. (m3/s) * 345.2 *
3178.2 * 55.0 *
* Length Wtd. (m) * 342.15 * Wetted Per. (m) * 30.62 *
23.74 * 5.49 *
* Min Ch El (m) * 111.63 * Shear (N/sq m) * 8.35 *
32.23 * 7.78 *
* Alpha * 1.37 * Stream Power (N/m s) * 4036.79 *
0.00 * 0.00 *
* Frctn Loss (m) * 0.26 * Cum Volume (cu m x 10^ * 0.04 *
0.28 * 0.03 *
* C & E Loss (m) * 0.02 * Cum SA (1000 m2) * 50.32 *
103.55 * 29.35 *
*****
*****

```

CROSS SECTION OUTPUT Profile # p-5

```

*****
*****
* E.G. Elev (m) * 114.65 * Element * Left OB *
Channel * Right OB *
* Vel Head (m) * 0.11 * Wt. n-Val * 0.050 *
0.040 * 0.050 *

```

* W.S. Elev (m)	* 114.54	* Reach Len. (m)	* 348.50
341.48 * 341.48 *			
* Crit W.S. (m)	*	* Flow Area (m2)	* 14.10
57.98 * 2.21 *			
* E.G. Slope (m/m)	* 0.001117	* Area (m2)	* 14.10
57.98 * 2.21 *			
* Q Total (m3/s)	* 96.00	* Flow (m3/s)	* 7.18
87.87 * 0.95 *			
* Top Width (m)	* 48.43	* Top Width (m)	* 20.83
23.45 * 4.15 *			
* Vel Total (m/s)	* 1.29	* Avg. Vel. (m/s)	* 0.51
1.52 * 0.43 *			
* Max Chl Dpth (m)	* 2.91	* Hydr. Depth (m)	* 0.68
2.47 * 0.53 *			
* Conv. Total (m3/s)	* 2872.7	* Conv. (m3/s)	* 214.8
2629.4 * 28.5 *			
* Length Wtd. (m)	* 342.02	* Wetted Per. (m)	* 21.24
23.74 * 4.29 *			
* Min Ch El (m)	* 111.63	* Shear (N/sq m)	* 7.27
26.75 * 5.66 *			
* Alpha	* 1.27	* Stream Power (N/m s)	* 4036.79
0.00 * 0.00 *			
* Frctn Loss (m)	* 0.24	* Cum Volume (cu m x 10^	* 0.04
0.27 * 0.03 *			
* C & E Loss (m)	* 0.02	* Cum SA (1000 m2)	* 46.27
103.55 * 28.42 *			

CROSS SECTION OUTPUT Profile # p-10

* E.G. Elev (m)	* 114.42	* Element	* Left OB *
Channel * Right OB *			
* Vel Head (m)	* 0.09	* Wt. n-Val	* 0.050
0.040 * 0.050 *			
* W.S. Elev (m)	* 114.33	* Reach Len. (m)	* 348.50
341.48 * 341.48 *			
* Crit W.S. (m)	*	* Flow Area (m2)	* 10.34
52.91 * 1.41 *			
* E.G. Slope (m/m)	* 0.001022	* Area (m2)	* 10.34
52.91 * 1.41 *			
* Q Total (m3/s)	* 78.00	* Flow (m3/s)	* 5.34
72.16 * 0.50 *			
* Top Width (m)	* 40.60	* Top Width (m)	* 13.84
23.45 * 3.31 *			
* Vel Total (m/s)	* 1.21	* Avg. Vel. (m/s)	* 0.52
1.36 * 0.35 *			
* Max Chl Dpth (m)	* 2.70	* Hydr. Depth (m)	* 0.75
2.26 * 0.42 *			
* Conv. Total (m3/s)	* 2439.5	* Conv. (m3/s)	* 167.0
2257.0 * 15.6 *			
* Length Wtd. (m)	* 341.94	* Wetted Per. (m)	* 14.25
23.74 * 3.42 *			
* Min Ch El (m)	* 111.63	* Shear (N/sq m)	* 7.27
22.35 * 4.13 *			
* Alpha	* 1.20	* Stream Power (N/m s)	* 4036.79
0.00 * 0.00 *			
* Frctn Loss (m)	* 0.23	* Cum Volume (cu m x 10^	* 0.03
0.26 * 0.02 *			

```

* C & E Loss (m)          *      0.02 * Cum SA (1000 m2)          *      43.69 *
103.55 *      27.54 *
*****
*****

```

CROSS SECTION OUTPUT Profile # VV

```

*****
*****
* E.G. Elev (m)          *      113.15 * Element          *      Left OB *
Channel * Right OB *
* Vel Head (m)          *      0.00 * Wt. n-Val          *      0.050 *
0.040 *          *
* W.S. Elev (m)          *      113.15 * Reach Len. (m)          *      348.50 *
341.48 *      341.48 *
* Crit W.S. (m)          *          * Flow Area (m2)          *      2.78 *
25.44 *          *
* E.G. Slope (m/m)        * 0.000020 * Area (m2)          *      2.78 *
25.44 *          *
* Q Total (m3/s)          *      3.30 * Flow (m3/s)          *      0.18 *
3.12 *          *
* Top Width (m)          *      26.43 * Top Width (m)          *      4.27 *
22.16 *          *
* Vel Total (m/s)          *      0.12 * Avg. Vel. (m/s)          *      0.07 *
0.12 *          *
* Max Chl Dpth (m)        *      1.52 * Hydr. Depth (m)          *      0.65 *
1.15 *          *
* Conv. Total (m3/s)        *      732.6 * Conv. (m3/s)          *      40.5 *
692.1 *          *
* Length Wtd. (m)          *      341.69 * Wetted Per. (m)          *      4.46 *
22.41 *          *
* Min Ch El (m)          *      111.63 * Shear (N/sq m)          *      0.12 *
0.23 *          *
* Alpha          *      1.05 * Stream Power (N/m s)          *      4036.79 *
0.00 *      0.00 *
* Frctn Loss (m)          *      0.00 * Cum Volume (cu m x 10^ *      0.02 *
0.22 *      0.01 *
* C & E Loss (m)          *      0.00 * Cum SA (1000 m2)          *      25.31 *
99.29 *      11.76 *
*****
*****

```

CROSS SECTION

RIVER: Malta

REACH: Malta

River Station: 106

INPUT

Description:

Station Elevation Data, num = 121

Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.	Elev.
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```

*****
*****

```

0	113.69	.1	113.69	.2	113.69	4.46	113.58	4.96	113.61
9	113.5	10.08	113.47	12.2	113.36	12.35	113.36	13.11	113.23
13.47	113.2	13.67	113.17	13.89	113.14	15.48	113.02	16.41	112.88

16.42	112.88	16.42	112.88	17.16	112.85	17.32	112.86	18.44
112.84								
18.52	112.84	19.13	112.16	19.64	112.16	19.68	112.16	20.38
111.89								
20.43	111.87	21.27	111.74	21.32	111.73	22.23	111.69	22.27
111.69								
22.69	111.64	22.71	111.64	23.14	111.61	23.15	111.61	24.04
111.6								
24.07	111.6	24.31	111.55	24.31	111.54	24.47	111.54	24.96
111.53								
24.97	111.53	25.21	111.49	25.22	111.49	25.44	111.51	25.44
111.51								
26.12	111.47	26.13	111.47	26.75	111.37	26.76	111.36	27.21
111.33								
27.67	111.35	27.67	111.36	28.06	111.35	28.52	111.35	28.52
111.35								
29.54	111.28	29.54	111.28	30.64	111.41	30.66	111.41	32.12
111.37								
32.17	111.36	32.42	111.37	32.58	111.38	32.6	111.38	33.39
111.41								
33.43	111.41	33.92	111.46	33.95	111.46	34.4	111.43	34.42
111.43								
35.47	111.43	35.54	111.42	36.17	111.45	36.63	111.43	37.07
111.4								
37.14	111.39	37.95	111.32	38.02	111.31	38.84	111.24	38.93
111.23								
40.02	111.17	40.14	111.16	40.33	111.17	40.35	111.17	41.11
111.2								
41.2	111.2	42.11	111.22	42.23	111.22	42.44	111.64	42.58
111.93								
42.63	112.03	43.39	112.03	44.19	112.04	44.4	112.04	44.44
112.04								
44.74	112.37	44.76	112.38	44.81	112.44	45.12	112.45	45.17
112.45								
45.29	112.59	45.76	112.95	46.22	113.07	46.51	113.11	46.58
113.14								
46.76	113.17	47.82	113.24	49.21	113.24	52.1448	113.2802	59.42
113.38								
60.25	113.34	60.31	113.34	61.92	113.32	62.93	113.31	63.05
113.31								
63.26	113.31	64.86	113.57	67.75	113.72	70.79	113.76	70.89
113.76								
70.99	113.76							

Manning's n Values, num = 3

Sta.	Value	Sta.	Value	Sta.	Value
0	.05	18.44	.04	52.1448	.05

Bank	Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.
Expan.		18.44	52.1448		496.671	484.679	484.679	0.1
								0.3

CROSS SECTION OUTPUT Profile # p-1

```

*****
*****
* E.G. Elev (m)          * 114.69 * Element          * Left OB *
Channel * Right OB *

```

* Vel Head (m)	*	0.05	* Wt. n-Val	*	0.050	*
0.040 *		0.050 *				
* W.S. Elev (m)	*	114.64	* Reach Len. (m)	*	496.67	*
484.68 *		484.68 *				
* Crit W.S. (m)	*		* Flow Area (m2)	*	23.26	*
92.95 *		22.29 *				
* E.G. Slope (m/m)	*	0.000516	* Area (m2)	*	23.26	*
92.95 *		22.29 *				
* Q Total (m3/s)	*	124.00	* Flow (m3/s)	*	11.91	*
101.12 *		10.97 *				
* Top Width (m)	*	70.99	* Top Width (m)	*	18.44	*
33.70 *		18.85 *				
* Vel Total (m/s)	*	0.90	* Avg. Vel. (m/s)	*	0.51	*
1.09 *		0.49 *				
* Max Chl Dpth (m)	*	3.48	* Hydr. Depth (m)	*	1.26	*
2.76 *		1.18 *				
* Conv. Total (m3/s)	*	5460.7	* Conv. (m3/s)	*	524.6	*
4452.9 *		483.2 *				
* Length Wtd. (m)	*	485.51	* Wetted Per. (m)	*	19.43	*
35.05 *		19.75 *				
* Min Ch El (m)	*	111.16	* Shear (N/sq m)	*	6.05	*
13.41 *		5.71 *				
* Alpha	*	1.26	* Stream Power (N/m s)	*	3399.02	*
0.00 *		0.00 *				
* Frctn Loss (m)	*	0.29	* Cum Volume (cu m x 10^	*	0.04	*
0.25 *		0.03 *				
* C & E Loss (m)	*	0.00	* Cum SA (1000 m2)	*	41.84	*
93.79 *		25.23 *				

CROSS SECTION OUTPUT Profile # p-5

* E.G. Elev (m)	*	114.39	* Element	*	Left OB	*
Channel * Right OB *						
* Vel Head (m)	*	0.04	* Wt. n-Val	*	0.050	*
0.040 *		0.050 *				
* W.S. Elev (m)	*	114.35	* Reach Len. (m)	*	496.67	*
484.68 *		484.68 *				
* Crit W.S. (m)	*		* Flow Area (m2)	*	17.85	*
83.05 *		16.75 *				
* E.G. Slope (m/m)	*	0.000490	* Area (m2)	*	17.85	*
83.05 *		16.75 *				
* Q Total (m3/s)	*	96.00	* Flow (m3/s)	*	7.55	*
81.74 *		6.72 *				
* Top Width (m)	*	70.99	* Top Width (m)	*	18.44	*
33.70 *		18.85 *				
* Vel Total (m/s)	*	0.82	* Avg. Vel. (m/s)	*	0.42	*
0.98 *		0.40 *				
* Max Chl Dpth (m)	*	3.19	* Hydr. Depth (m)	*	0.97	*
2.46 *		0.89 *				
* Conv. Total (m3/s)	*	4334.6	* Conv. (m3/s)	*	340.7	*
3690.7 *		303.2 *				
* Length Wtd. (m)	*	485.32	* Wetted Per. (m)	*	19.14	*
35.05 *		19.46 *				
* Min Ch El (m)	*	111.16	* Shear (N/sq m)	*	4.49	*
11.40 *		4.14 *				
* Alpha	*	1.28	* Stream Power (N/m s)	*	3399.02	*
0.00 *		0.00 *				

* Frctn Loss (m)	*	0.26	* Cum Volume (cu m x 10^	*	0.03	*
0.24 *		0.02 *				
* C & E Loss (m)	*	0.00	* Cum SA (1000 m2)	*	39.42	*
93.79 *		24.49 *				

CROSS SECTION OUTPUT Profile # p-10

* E.G. Elev (m)	*	114.17	* Element	*	Left OB	*
Channel * Right OB *						
* Vel Head (m)	*	0.04	* Wt. n-Val	*	0.050	*
0.040 *		0.050 *				
* W.S. Elev (m)	*	114.14	* Reach Len. (m)	*	496.67	*
484.68 *		484.68 *				
* Crit W.S. (m)	*		* Flow Area (m2)	*	13.94	*
75.91 *		12.76 *				
* E.G. Slope (m/m)	*	0.000470	* Area (m2)	*	13.94	*
75.91 *		12.76 *				
* Q Total (m3/s)	*	78.00	* Flow (m3/s)	*	4.93	*
68.87 *		4.21 *				
* Top Width (m)	*	70.99	* Top Width (m)	*	18.44	*
33.70 *		18.85 *				
* Vel Total (m/s)	*	0.76	* Avg. Vel. (m/s)	*	0.35	*
0.91 *		0.33 *				
* Max Chl Dpth (m)	*	2.98	* Hydr. Depth (m)	*	0.76	*
2.25 *		0.68 *				
* Conv. Total (m3/s)	*	3598.5	* Conv. (m3/s)	*	227.4	*
3177.1 *		194.0 *				
* Length Wtd. (m)	*	485.16	* Wetted Per. (m)	*	18.93	*
35.05 *		19.25 *				
* Min Ch El (m)	*	111.16	* Shear (N/sq m)	*	3.39	*
9.98 *		3.05 *				
* Alpha	*	1.28	* Stream Power (N/m s)	*	3399.02	*
0.00 *		0.00 *				
* Frctn Loss (m)	*	0.24	* Cum Volume (cu m x 10^	*	0.03	*
0.23 *		0.02 *				
* C & E Loss (m)	*	0.00	* Cum SA (1000 m2)	*	38.06	*
93.79 *		23.76 *				

CROSS SECTION OUTPUT Profile # VV

* E.G. Elev (m)	*	113.14	* Element	*	Left OB	*
Channel * Right OB *						
* Vel Head (m)	*	0.00	* Wt. n-Val	*	0.050	*
0.040 *		*				
* W.S. Elev (m)	*	113.14	* Reach Len. (m)	*	496.67	*
484.68 *		484.68 *				
* Crit W.S. (m)	*		* Flow Area (m2)	*	0.87	*
43.04 *		*				
* E.G. Slope (m/m)	*	0.000006	* Area (m2)	*	0.87	*
43.04 *		*				
* Q Total (m3/s)	*	3.30	* Flow (m3/s)	*	0.01	*
3.29 *		*				
* Top Width (m)	*	32.75	* Top Width (m)	*	4.58	*
28.17 *		*				

```

* Vel Total (m/s)      *      0.08 * Avg. Vel. (m/s)      *      0.02 *
0.08 *                  *
* Max Chl Dpth (m)     *      1.98 * Hydr. Depth (m)     *      0.19 *
1.53 *                  *
* Conv. Total (m3/s)   *    1389.9 * Conv. (m3/s)       *      5.7 *
1384.2 *                *
* Length Wtd. (m)      *    484.71 * Wetted Per. (m)    *      4.60 *
29.51 *                  *
* Min Ch El (m)        *    111.16 * Shear (N/sq m)     *      0.01 *
0.08 *                  *
* Alpha                *      1.03 * Stream Power (N/m s) * 3399.02 *
0.00 *      0.00 *
* Frctn Loss (m)       *      0.00 * Cum Volume (cu m x 10^ *      0.02 *
0.21 *      0.01 *
* C & E Loss (m)       *      0.00 * Cum SA (1000 m2)    *      23.76 *
90.70 *      11.76 *
*****
*****

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CROSS SECTION

RIVER: Malta

REACH: Malta

River Station: 105

INPUT

Description:

Station Elevation Data, num = 111

Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.	Elev.
0	113.79	.1	113.77	.2	113.76	.61	113.7	.96	113.71
1.82	113.69	2.67	113.6	2.8	113.62	3.46	113.67	3.61	113.69
4.12	113.61	6.69	113.56	6.76	113.56	6.87	113.55	8.42	113.39
8.7	113.39	8.84	113.38	9.77	113.36	11.38	113.38	12.42	113.22
12.72	113.14	13.07	113.06	13.77	112.65	13.79	112.65	14.45	112.26
14.73	112.09	14.73	112.09	18.07	110.92	18.75	110.92	18.76	110.92
19.91	110.93	19.92	110.93	20.4	110.95	21.11	110.98	21.23	110.99
21.24	110.99	22.02	111.02	22.22	111.02	22.24	111.02	23.63	111
23.9	110.99	23.91	110.99	24.28	110.98	24.43	110.98	24.74	110.97
25.22	110.94	25.43	110.92	25.44	110.92	26.01	110.95	27.23	111.04
27.25	111.05	28.23	111.11	28.25	111.11	29.23	111.07	29.24	111.07
29.73	111.08	29.74	111.08	30.23	111.06	30.26	111.06	31.22	110.97
31.23	110.97	31.76	110.96	31.78	110.97	32.69	110.98	32.75	110.98
33.22	111.03	33.27	111.03	34.01	111	34.71	110.97	34.73	110.97

35.29	110.93	35.31	110.94	35.89	111.15	35.91	111.15	36.43
111.16								
36.45	111.16	36.93	111.22	36.97	111.24	37.89	111.57	37.93
111.59								
38.86	112.19	38.9	112.19	39.62	112.27	39.77	112.29	39.8
112.29								
40.3	112.35	40.34	112.35	41.27	112.32	41.43	112.39	42.29
112.84								
42.53	113.03	43.13	113.1	43.3	113.13	43.914	113.1892	46.31
113.42								
47.83	113.57	49.13	113.53	50.07	113.57	50.77	113.68	51.23
113.74								
52.71	113.9	53.57	114.01	55.04	114.34	56.13	114.51	57.32
114.73								
58.22	114.81	58.38	114.84	58.93	114.86	59.6	114.88	59.67
114.88								
60.51	114.88							

Manning's n Values, num = 3

Sta.	Value	Sta.	Value	Sta.	Value
0	.05	13.79	.04	43.914	.05

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff Contr.
Expan.	13.79	43.914	517.277	511.781	511.781	0.1
0.3						

CROSS SECTION OUTPUT Profile # p-1

```

*****
*****
* E.G. Elev (m) * 114.40 * Element * Left OB *
Channel * Right OB *
* Vel Head (m) * 0.08 * Wt. n-Val * 0.050 *
0.040 * 0.050 *
* W.S. Elev (m) * 114.31 * Reach Len. (m) * 517.28 *
511.78 * 511.78 *
* Crit W.S. (m) * * Flow Area (m2) * 11.62 *
87.41 * 7.39 *
* E.G. Slope (m/m) * 0.000703 * Area (m2) * 11.62 *
87.41 * 7.39 *
* Q Total (m3/s) * 124.00 * Flow (m3/s) * 5.32 *
115.69 * 2.99 *
* Top Width (m) * 54.93 * Top Width (m) * 13.79 *
30.12 * 11.01 *
* Vel Total (m/s) * 1.17 * Avg. Vel. (m/s) * 0.46 *
1.32 * 0.40 *
* Max Chl Dpth (m) * 3.39 * Hydr. Depth (m) * 0.84 *
2.90 * 0.67 *
* Conv. Total (m3/s) * 4675.3 * Conv. (m3/s) * 200.5 *
4362.0 * 112.7 *
* Length Wtd. (m) * 511.98 * Wetted Per. (m) * 14.49 *
31.00 * 11.10 *
* Min Ch El (m) * 110.92 * Shear (N/sq m) * 5.53 *
19.45 * 4.59 *
* Alpha * 1.21 * Stream Power (N/m s) * 2897.24 *
0.00 * 0.00 *
* Frctn Loss (m) * 0.60 * Cum Volume (cu m x 10^ * 0.03 *
0.21 * 0.02 *

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* C & E Loss (m)          *      0.01 * Cum SA (1000 m2)          *      33.83 *
78.33 *      17.99 *
*****
*****

```

CROSS SECTION OUTPUT Profile # p-5

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*****
*****
* E.G. Elev (m)          *      114.13 * Element          *      Left OB *
Channel * Right OB *
* Vel Head (m)          *      0.06 * Wt. n-Val          *      0.050 *
0.040 *      0.050 *
* W.S. Elev (m)          *      114.06 * Reach Len. (m)          *      517.28 *
511.78 *      511.78 *
* Crit W.S. (m)          *          * Flow Area (m2)          *      8.11 *
79.75 *      4.73 *
* E.G. Slope (m/m)        * 0.000602 * Area (m2)          *      8.11 *
79.75 *      4.73 *
* Q Total (m3/s)          *      96.00 * Flow (m3/s)          *      2.73 *
91.85 *      1.42 *
* Top Width (m)          *      53.80 * Top Width (m)          *      13.79 *
30.12 *      9.88 *
* Vel Total (m/s)          *      1.04 * Avg. Vel. (m/s)          *      0.34 *
1.15 *      0.30 *
* Max Chl Dpth (m)        *      3.14 * Hydr. Depth (m)          *      0.59 *
2.65 *      0.48 *
* Conv. Total (m3/s)      *      3913.1 * Conv. (m3/s)          *      111.5 *
3743.8 *      57.8 *
* Length Wtd. (m)          *      511.91 * Wetted Per. (m)          *      14.24 *
31.00 *      9.94 *
* Min Ch El (m)          *      110.92 * Shear (N/sq m)          *      3.36 *
15.19 *      2.81 *
* Alpha          *      1.18 * Stream Power (N/m s)          *      2897.24 *
0.00 *      0.00 *
* Frctn Loss (m)          *      0.51 * Cum Volume (cu m x 10^ *      0.02 *
0.20 *      0.02 *
* C & E Loss (m)          *      0.00 * Cum SA (1000 m2)          *      31.42 *
78.33 *      17.53 *
*****
*****

```

CROSS SECTION OUTPUT Profile # p-10

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*****
*****
* E.G. Elev (m)          *      113.93 * Element          *      Left OB *
Channel * Right OB *
* Vel Head (m)          *      0.05 * Wt. n-Val          *      0.050 *
0.040 *      0.050 *
* W.S. Elev (m)          *      113.88 * Reach Len. (m)          *      517.28 *
511.78 *      511.78 *
* Crit W.S. (m)          *          * Flow Area (m2)          *      5.62 *
74.32 *      3.05 *
* E.G. Slope (m/m)        * 0.000520 * Area (m2)          *      5.62 *
74.32 *      3.05 *
* Q Total (m3/s)          *      78.00 * Flow (m3/s)          *      1.39 *
75.91 *      0.70 *
* Top Width (m)          *      52.53 * Top Width (m)          *      13.79 *
30.12 *      8.61 *
* Vel Total (m/s)          *      0.94 * Avg. Vel. (m/s)          *      0.25 *
1.02 *      0.23 *

```

* Max Chl Dpth (m)	*	2.96	* Hydr. Depth (m)	*	0.41	*
2.47 *		0.35 *				
* Conv. Total (m3/s)	*	3420.3	* Conv. (m3/s)	*	61.1	*
3328.7 *		30.5 *				
* Length Wtd. (m)	*	511.87	* Wetted Per. (m)	*	14.06	*
31.00 *		8.65 *				
* Min Ch El (m)	*	110.92	* Shear (N/sq m)	*	2.04	*
12.23 *		1.80 *				
* Alpha	*	1.15	* Stream Power (N/m s)	*	2897.24	*
0.00 *		0.00 *				
* Frctn Loss (m)	*	0.43	* Cum Volume (cu m x 10^	*	0.02	*
0.20 *		0.02 *				
* C & E Loss (m)	*	0.00	* Cum SA (1000 m2)	*	30.06	*
78.33 *		17.10 *				

CROSS SECTION OUTPUT Profile # VV

* E.G. Elev (m)	*	113.14	* Element	*	Left OB	*
Channel * Right OB *						
* Vel Head (m)	*	0.00	* Wt. n-Val	*	0.050	*
0.040 *						
* W.S. Elev (m)	*	113.14	* Reach Len. (m)	*	517.28	*
511.78 *		511.78 *				
* Crit W.S. (m)	*		* Flow Area (m2)	*	0.23	*
52.10 *						
* E.G. Slope (m/m)	*	0.000003	* Area (m2)	*	0.23	*
52.10 *						
* Q Total (m3/s)	*	3.30	* Flow (m3/s)	*	0.00	*
3.30 *						
* Top Width (m)	*	30.72	* Top Width (m)	*	1.08	*
29.64 *						
* Vel Total (m/s)	*	0.06	* Avg. Vel. (m/s)	*	0.01	*
0.06 *						
* Max Chl Dpth (m)	*	2.22	* Hydr. Depth (m)	*	0.21	*
1.76 *						
* Conv. Total (m3/s)	*	1862.6	* Conv. (m3/s)	*	1.5	*
1861.1 *						
* Length Wtd. (m)	*	511.79	* Wetted Per. (m)	*	1.20	*
30.51 *						
* Min Ch El (m)	*	110.92	* Shear (N/sq m)	*	0.01	*
0.05 *						
* Alpha	*	1.01	* Stream Power (N/m s)	*	2897.24	*
0.00 *		0.00 *				
* Frctn Loss (m)	*	0.00	* Cum Volume (cu m x 10^	*	0.02	*
0.18 *		0.01 *				
* C & E Loss (m)	*	0.00	* Cum SA (1000 m2)	*	22.36	*
76.69 *		11.76 *				

CROSS SECTION

RIVER: Malta

REACH: Malta

River Station: 104

INPUT

Description:

Station Elevation Data, num = 80

Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.
0	113.75	.1	113.75	.2	113.74	9.04	113.33	17.28
112.97								
17.56	112.95	17.83	112.92	17.94	112.92	18.12	112.93	19.57
113.06								
20.02	113.08	24.71	111.94	24.82	111.91	24.85	111.9	25.7
111.46								
25.71	111.46	26.08	111.35	26.09	111.35	26.54	111.38	28.06
110.98								
28.11	110.98	29.5	110.95	29.52	110.96	31.21	111.67	31.24
111.65								
31.95	111.05	33.08	111.1	33.36	110.97	33.5	110.92	33.54
110.91								
34.17	110.86	34.57	110.83	35.18	110.86	35.24	110.87	36.75
110.92								
36.78	110.93	37.59	111	38.43	110.93	38.46	110.94	39.29
110.98								
40.71	110.96	40.73	110.96	41.22	110.97	41.31	110.98	43.22
111.12								
43.26	111.13	44.22	111.35	44.24	111.36	45.73	111.94	46.41
112.08								
49.65	112.78	49.82	112.81	50.54	112.97	51.81	113.01	52.84
113.04								
53.87	112.98	55.09	113.11	55.26	113.14	55.5	113.19	55.63
113.2								
56.38	113.14	57.33	113.13	58.53	113.19	58.92	113.18	58.94
113.18								
59.29	113.18	60.8672	113.1158	61.01	113.11	61.55	113.12	63.17
113.12								
64.1	113.07	64.54	113.11	66.46	113.34	67.18	113.39	67.57
113.39								
71.01	113.31	71.14	113.32	71.39	113.34	71.72	113.39	71.82
113.43								

Manning's n Values, num = 3

Sta.	Value	Sta.	Value	Sta.	Value
0	.05	19.57	.04	60.8672	.05

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.
Expan.	19.57	60.8672	274.954	276.04	276.04	0.1	0.3

CROSS SECTION OUTPUT Profile # p-1

* E.G. Elev (m)	* 113.80	* Element	* Left OB *
Channel * Right OB *			
* Vel Head (m)	* 0.14	* Wt. n-Val	* 0.050 *
0.040 * 0.050 *			
* W.S. Elev (m)	* 113.66	* Reach Len. (m)	* 274.95 *
276.04 * 276.04 *			
* Crit W.S. (m)	* 70.34	* Flow Area (m2)	* 6.96 *
4.50 *			

* E.G. Slope (m/m)	* 0.002289	* Area (m2)	* 6.96
70.34 *	4.50 *		
* Q Total (m3/s)	* 124.00	* Flow (m3/s)	* 3.57
118.08 *	2.34 *		
* Top Width (m)	* 69.91	* Top Width (m)	* 17.66
41.30 *	10.95 *		
* Vel Total (m/s)	* 1.52	* Avg. Vel. (m/s)	* 0.51
1.68 *	0.52 *		
* Max Chl Dpth (m)	* 2.83	* Hydr. Depth (m)	* 0.39
1.70 *	0.41 *		
* Conv. Total (m3/s)	* 2591.8	* Conv. (m3/s)	* 74.7
2468.2 *	49.0 *		
* Length Wtd. (m)	* 276.00	* Wetted Per. (m)	* 17.68
42.32 *	11.22 *		
* Min Ch El (m)	* 110.83	* Shear (N/sq m)	* 8.83
37.32 *	9.01 *		
* Alpha	* 1.17	* Stream Power (N/m s)	* 3438.76
0.00 *	0.00 *		
* Frctn Loss (m)	* 0.30	* Cum Volume (cu m x 10^	* 0.02
0.17 *	0.02 *		
* C & E Loss (m)	* 0.02	* Cum SA (1000 m2)	* 25.70
60.05 *	12.37 *		

CROSS SECTION OUTPUT Profile # p-5

* E.G. Elev (m)	* 113.61	* Element	* Left OB
Channel *	Right OB *		
* Vel Head (m)	* 0.10	* Wt. n-Val	* 0.050
0.040 *	0.050 *		
* W.S. Elev (m)	* 113.51	* Reach Len. (m)	* 274.95
276.04 *	276.04 *		
* Crit W.S. (m)	*	* Flow Area (m2)	* 4.50
64.01 *	2.82 *		
* E.G. Slope (m/m)	* 0.001951	* Area (m2)	* 4.50
64.01 *	2.82 *		
* Q Total (m3/s)	* 96.00	* Flow (m3/s)	* 1.84
93.16 *	1.00 *		
* Top Width (m)	* 66.60	* Top Width (m)	* 14.35
41.30 *	10.95 *		
* Vel Total (m/s)	* 1.35	* Avg. Vel. (m/s)	* 0.41
1.46 *	0.36 *		
* Max Chl Dpth (m)	* 2.68	* Hydr. Depth (m)	* 0.31
1.55 *	0.26 *		
* Conv. Total (m3/s)	* 2173.4	* Conv. (m3/s)	* 41.5
2109.1 *	22.7 *		
* Length Wtd. (m)	* 276.01	* Wetted Per. (m)	* 14.37
42.32 *	11.06 *		
* Min Ch El (m)	* 110.83	* Shear (N/sq m)	* 6.00
28.95 *	4.88 *		
* Alpha	* 1.14	* Stream Power (N/m s)	* 3438.76
0.00 *	0.00 *		
* Frctn Loss (m)	* 0.22	* Cum Volume (cu m x 10^	* 0.02
0.16 *	0.02 *		
* C & E Loss (m)	* 0.02	* Cum SA (1000 m2)	* 24.14
60.05 *	12.20 *		

CROSS SECTION OUTPUT Profile # p-10

```

*****
*****
* E.G. Elev (m)          * 113.50 * Element          * Left OB *
Channel * Right OB *
* Vel Head (m)          * 0.08 * Wt. n-Val        * 0.050 *
0.040 * 0.050 *
* W.S. Elev (m)         * 113.42 * Reach Len. (m)   * 274.95 *
276.04 * 276.04 *
* Crit W.S. (m)         *          * Flow Area (m2)   * 3.28 *
60.23 * 1.82 *
* E.G. Slope (m/m)      * 0.001610 * Area (m2)        * 3.28 *
60.23 * 1.82 *
* Q Total (m3/s)        * 78.00 * Flow (m3/s)      * 1.08 *
76.47 * 0.44 *
* Top Width (m)         * 64.59 * Top Width (m)    * 12.38 *
41.30 * 10.92 *
* Vel Total (m/s)       * 1.19 * Avg. Vel. (m/s)  * 0.33 *
1.27 * 0.24 *
* Max Chl Dpth (m)     * 2.59 * Hydr. Depth (m)  * 0.26 *
1.46 * 0.17 *
* Conv. Total (m3/s)    * 1943.7 * Conv. (m3/s)     * 27.0 *
1905.7 * 11.0 *
* Length Wtd. (m)      * 276.01 * Wetted Per. (m)  * 12.40 *
42.32 * 10.95 *
* Min Ch El (m)        * 110.83 * Shear (N/sq m)   * 4.18 *
22.48 * 2.62 *
* Alpha                * 1.11 * Stream Power (N/m s) * 3438.76 *
0.00 * 0.00 *
* Frctn Loss (m)       * 0.16 * Cum Volume (cu m x 10^ * 0.02 *
0.16 * 0.02 *
* C & E Loss (m)       * 0.02 * Cum SA (1000 m2)  * 23.29 *
60.05 * 12.11 *
*****
*****

```

CROSS SECTION OUTPUT Profile # VV

```

*****
*****
* E.G. Elev (m)          * 113.14 * Element          * Left OB *
Channel * Right OB *
* Vel Head (m)          * 0.00 * Wt. n-Val        * 0.050 *
0.040 * 0.050 *
* W.S. Elev (m)         * 113.14 * Reach Len. (m)   * 274.95 *
276.04 * 276.04 *
* Crit W.S. (m)         *          * Flow Area (m2)   * 0.71 *
48.97 * 0.12 *
* E.G. Slope (m/m)      * 0.000005 * Area (m2)        * 0.71 *
48.97 * 0.12 *
* Q Total (m3/s)        * 3.30 * Flow (m3/s)      * 0.01 *
3.29 * 0.00 *
* Top Width (m)         * 47.58 * Top Width (m)    * 6.19 *
37.46 * 3.93 *
* Vel Total (m/s)       * 0.07 * Avg. Vel. (m/s)  * 0.01 *
0.07 * 0.00 *
* Max Chl Dpth (m)     * 2.31 * Hydr. Depth (m)  * 0.12 *
1.31 * 0.03 *
* Conv. Total (m3/s)    * 1441.8 * Conv. (m3/s)     * 3.4 *
1438.2 * 0.2 *

```

```

* Length Wtd. (m)      * 276.03 * Wetted Per. (m)      * 6.20 *
38.47 * 3.93 *
* Min Ch El (m)       * 110.83 * Shear (N/sq m)      * 0.01 *
0.07 * 0.00 *
* Alpha               * 1.03 * Stream Power (N/m s) * 3438.76 *
0.00 * 0.00 *
* Frctn Loss (m)      * 0.00 * Cum Volume (cu m x 10^ * 0.02 *
0.16 * 0.01 *
* C & E Loss (m)      * 0.00 * Cum SA (1000 m2)      * 20.48 *
59.52 * 10.75 *
*****
*****

```

CROSS SECTION

RIVER: Malta

REACH: Malta

River Station: 103

INPUT

Description:

Station Elevation Data, num = 123

Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.	Elev.
0	113.46	8.02	113.28	10.29	113.2	11.23	113.06	13.31	113.01
13.91	112.97	14.15	112.96	14.87	112.98	15.12	112.99	15.4	112.97
16.31	113.03	17.07	113.08	17.68	113.1	18.85	113.09	20.61	113.08
22.28	113	23.07	112.98	23.65	112.96	24.44	112.98	24.7	112.99
26.21	113.03	26.57	113.01	26.68	113.03	27.85	113.1	28.06	113.12
30.94	113.13	33.16	113.04	33.67	113.02	35.44	113.01	35.59	112.98
35.98	112.86	36.96	112.89	37.17	112.59	37.17	112.51	37.37	112.4
37.82	112.16	38.13	111.99	38.6	111.86	40.3	111.4	40.34	111.37
40.5	111.27	41.47	111.25	41.47	111.15	42.2	111.03	42.45	111.01
43.33	110.94	43.48	110.88	44.01	110.68	44.16	110.65	44.67	110.55
45.41	110.51	45.63	110.5	46.41	110.44	46.51	110.45	46.96	110.46
47.35	110.46	47.45	110.47	47.8	110.51	48.32	110.5	50.08	110.44
50.34	110.45	51.24	110.46	51.68	110.46	53.28	110.49	53.7	110.52
53.95	110.52	54.77	110.51	55.16	110.59	56.42	110.84	56.72	110.86
57.47	110.91	57.68	110.92	57.8	110.91	58.17	110.85	58.52	110.82
61.15	110.71	61.8	110.68	63.89	110.6	64.45	110.59	66.2	110.55
66.53	110.56	67.59	110.59	67.67	110.58	68.07	110.55	68.19	110.55

68.8	110.58	69.56	110.66	69.95	110.68	71.13	110.75	71.24
110.74								
71.85	110.71	72.7	110.73	73.25	110.67	73.34	110.67	73.6
110.67								
73.75	110.71	74.2	110.82	74.31	110.84	74.63	110.88	74.8
110.96								
75.3	111.19	75.38	111.2	75.61	111.22	75.77	111.27	76.27
111.43								
76.53	111.55	77.3	111.9	77.62	112	78.37	112.24	78.55
112.3								
78.85	112.35	79.14	112.4	79.43	112.44	82.92	112.5	91.33
113.9								
91.59	113.94	96	114.47	98.23	114.74	99.19	114.86	110.84
116.51								
114.48	116.87	114.58	116.88	114.68	116.89			

Manning's n Values, num = 3

Sta.	Value	Sta.	Value	Sta.	Value
0	.05	41.47	.04	82.92	.05

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff Contr.
Expan.						
	41.47	82.92		207.437	223.227	238.674
0.3						0.1

CROSS SECTION OUTPUT Profile # p-1

* E.G. Elev (m)	* 113.48	* Element	* Left OB *
Channel * Right OB *			
* Vel Head (m)	* 0.06	* Wt. n-Val	* 0.050 *
0.040 * 0.050 *			
* W.S. Elev (m)	* 113.41	* Reach Len. (m)	* 207.44 *
223.23 * 238.67 *			
* Crit W.S. (m)	*	* Flow Area (m2)	* 18.18 *
103.01 * 2.50 *			
* E.G. Slope (m/m)	* 0.000633	* Area (m2)	* 18.18 *
103.01 * 2.50 *			
* Q Total (m3/s)	* 124.00	* Flow (m3/s)	* 5.42 *
117.84 * 0.74 *			
* Top Width (m)	* 86.27	* Top Width (m)	* 39.34 *
41.45 * 5.48 *			
* Vel Total (m/s)	* 1.00	* Avg. Vel. (m/s)	* 0.30 *
1.14 * 0.30 *			
* Max Chl Dpth (m)	* 2.97	* Hydr. Depth (m)	* 0.46 *
2.49 * 0.46 *			
* Conv. Total (m3/s)	* 4928.9	* Conv. (m3/s)	* 215.4 *
4684.2 * 29.4 *			
* Length Wtd. (m)	* 222.95	* Wetted Per. (m)	* 39.88 *
42.00 * 5.56 *			
* Min Ch El (m)	* 110.44	* Shear (N/sq m)	* 2.83 *
15.23 * 2.79 *			
* Alpha	* 1.24	* Stream Power (N/m s)	* 5490.91 *
0.00 * 0.00 *			
* Frctn Loss (m)	* 0.14	* Cum Volume (cu m x 10^	* 0.02 *
0.14 * 0.02 *			
* C & E Loss (m)	* 0.00	* Cum SA (1000 m2)	* 17.87 *
48.63 * 10.10 *			

CROSS SECTION OUTPUT Profile # p-5

* E.G. Elev (m)	* 113.37	* Element	* Left OB *
Channel * Right OB *			
* Vel Head (m)	* 0.04	* Wt. n-Val	* 0.050 *
0.040 * 0.050 *			
* W.S. Elev (m)	* 113.33	* Reach Len. (m)	* 207.44 *
223.23 * 238.67 *			
* Crit W.S. (m)	*	* Flow Area (m2)	* 15.15 *
99.66 * 2.08 *			
* E.G. Slope (m/m)	* 0.000431	* Area (m2)	* 15.15 *
99.66 * 2.08 *			
* Q Total (m3/s)	* 96.00	* Flow (m3/s)	* 3.51 *
92.01 * 0.48 *			
* Top Width (m)	* 82.19	* Top Width (m)	* 35.74 *
41.45 * 4.99 *			
* Vel Total (m/s)	* 0.82	* Avg. Vel. (m/s)	* 0.23 *
0.92 * 0.23 *			
* Max Chl Dpth (m)	* 2.89	* Hydr. Depth (m)	* 0.42 *
2.40 * 0.42 *			
* Conv. Total (m3/s)	* 4625.7	* Conv. (m3/s)	* 169.3 *
4433.5 * 22.9 *			
* Length Wtd. (m)	* 223.00	* Wetted Per. (m)	* 36.28 *
42.00 * 5.06 *			
* Min Ch El (m)	* 110.44	* Shear (N/sq m)	* 1.76 *
10.02 * 1.73 *			
* Alpha	* 1.21	* Stream Power (N/m s)	* 5490.91 *
0.00 * 0.00 *			
* Frctn Loss (m)	* 0.09	* Cum Volume (cu m x 10^	* 0.02 *
0.14 * 0.01 *			
* C & E Loss (m)	* 0.00	* Cum SA (1000 m2)	* 17.25 *
48.63 * 10.00 *			

CROSS SECTION OUTPUT Profile # p-10

* E.G. Elev (m)	* 113.32	* Element	* Left OB *
Channel * Right OB *			
* Vel Head (m)	* 0.03	* Wt. n-Val	* 0.050 *
0.040 * 0.050 *			
* W.S. Elev (m)	* 113.29	* Reach Len. (m)	* 207.44 *
223.23 * 238.67 *			
* Crit W.S. (m)	*	* Flow Area (m2)	* 13.66 *
97.89 * 1.87 *			
* E.G. Slope (m/m)	* 0.000304	* Area (m2)	* 13.66 *
97.89 * 1.87 *			
* Q Total (m3/s)	* 78.00	* Flow (m3/s)	* 2.58 *
75.07 * 0.35 *			
* Top Width (m)	* 80.02	* Top Width (m)	* 33.83 *
41.45 * 4.74 *			
* Vel Total (m/s)	* 0.69	* Avg. Vel. (m/s)	* 0.19 *
0.77 * 0.19 *			
* Max Chl Dpth (m)	* 2.85	* Hydr. Depth (m)	* 0.40 *
2.36 * 0.39 *			

* Conv. Total (m3/s)	*	4470.6	* Conv. (m3/s)	*	147.8	*
4302.9 *		19.9 *				
* Length Wtd. (m)	*	223.02	* Wetted Per. (m)	*	34.37	*
42.00 *		4.80 *				
* Min Ch El (m)	*	110.44	* Shear (N/sq m)	*	1.19	*
6.96 *		1.16 *				
* Alpha	*	1.20	* Stream Power (N/m s)	*	5490.91	*
0.00 *		0.00 *				
* Frctn Loss (m)	*	0.06	* Cum Volume (cu m x 10^	*	0.02	*
0.14 *		0.01 *				
* C & E Loss (m)	*	0.00	* Cum SA (1000 m2)	*	16.94	*
48.63 *		9.94 *				

CROSS SECTION OUTPUT Profile # VV

* E.G. Elev (m)	*	113.14	* Element	*	Left OB	*
Channel * Right OB *						
* Vel Head (m)	*	0.00	* Wt. n-Val	*	0.050	*
0.040 *		0.050 *				
* W.S. Elev (m)	*	113.14	* Reach Len. (m)	*	207.44	*
223.23 *		238.67 *				
* Crit W.S. (m)	*		* Flow Area (m2)	*	8.93	*
91.73 *		1.23 *				
* E.G. Slope (m/m)	*	0.000001	* Area (m2)	*	8.93	*
91.73 *		1.23 *				
* Q Total (m3/s)	*	3.30	* Flow (m3/s)	*	0.06	*
3.23 *		0.01 *				
* Top Width (m)	*	76.07	* Top Width (m)	*	30.78	*
41.45 *		3.85 *				
* Vel Total (m/s)	*	0.03	* Avg. Vel. (m/s)	*	0.01	*
0.04 *		0.01 *				
* Max Chl Dpth (m)	*	2.70	* Hydr. Depth (m)	*	0.29	*
2.21 *		0.32 *				
* Conv. Total (m3/s)	*	3949.9	* Conv. (m3/s)	*	77.4	*
3861.1 *		11.4 *				
* Length Wtd. (m)	*	223.12	* Wetted Per. (m)	*	31.31	*
42.00 *		3.90 *				
* Min Ch El (m)	*	110.44	* Shear (N/sq m)	*	0.00	*
0.01 *		0.00 *				
* Alpha	*	1.15	* Stream Power (N/m s)	*	5490.91	*
0.00 *		0.00 *				
* Frctn Loss (m)	*	0.00	* Cum Volume (cu m x 10^	*	0.02	*
0.14 *		0.01 *				
* C & E Loss (m)	*	0.00	* Cum SA (1000 m2)	*	15.40	*
48.63 *		9.68 *				

CROSS SECTION

RIVER: Malta

REACH: Malta

River Station: 102

INPUT

Description:

Station Elevation Data, num = 131

Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.
0	114.31	.45	114.25	.67	114.22	2.71	114.37	3.48
114.38								
5.66	114.35	9.06	114.23	22.86	113.85	27.65	113.61	28.8
113.55								
35.36	113.22	35.43	113.21	45.11	112.93	45.48	112.41	45.65
112.38								
46.85	112.21	46.9	112.21	47.21	112.2	47.28	112.18	47.73
112.03								
47.88	112.01	48.89	111.84	49.24	111.88	49.3	111.8	49.62
111.33								
49.76	111.28	50.54	110.99	50.65	110.97	51.19	110.86	51.37
110.85								
52.2	110.79	52.32	110.73	52.84	110.46	52.98	110.44	53.59
110.34								
53.72	110.33	54.31	110.3	54.54	110.26	55.47	110.11	55.69
110.11								
56.54	110.11	56.73	110.11	57.43	110.13	57.79	110.14	59.02
110.17								
59.07	110.18	59.23	110.22	59.4	110.22	59.93	110.22	60.47
110.27								
60.91	110.25	62.24	110.2	62.42	110.21	62.9	110.24	63
110.23								
63.28	110.19	63.92	110.19	64.04	110.2	64.34	110.21	64.63
110.2								
65.34	110.16	65.87	110.2	66.16	110.16	66.84	110.07	66.95
110.07								
67.21	110.07	67.5	110.11	68.15	110.21	68.39	110.17	68.6
110.14								
68.92	110.09	69.01	110.09	69.2	110.09	69.44	110.13	69.95
110.22								
70.07	110.24	70.33	110.27	70.46	110.27	70.73	110.28	70.94
110.24								
71.34	110.17	71.64	110.21	72.21	110.27	72.85	110.26	73.1
110.29								
73.55	110.35	73.97	110.29	74.16	110.29	74.49	110.29	74.59
110.29								
74.77	110.3	74.93	110.28	75.21	110.26	75.37	110.27	75.62
110.29								
75.83	110.35	76.16	110.44	76.3	110.42	76.53	110.4	76.66
110.43								
76.88	110.48	77.13	110.5	77.52	110.53	77.89	110.6	78.79
110.8								
79.28	110.94	80.07	111.11	81.2	111.34	81.48	111.4	81.86
111.48								
82.18	111.49	82.6	111.52	83.13	111.61	83.81	111.73	84.56
111.84								
88.18	112.28	89.56	112.61	95.25	114.1	99.6	115.18	101.2
115.42								
102.61	115.64	132.54	120.55	133.73	120.59	135.05	120.6	135.08
120.6								
135.86	120.62	136.21	120.64	136.3	120.65	137.18	120.69	137.37
120.69								
137.59	120.7							

Manning's n Values, num = 3

Sta.	Value	Sta.	Value	Sta.	Value
------	-------	------	-------	------	-------

```
*****
      0      .05   45.11      .04   88.18      .05
```

```
Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.
Expan.          45.11   88.18          739.749 703.806 732.07          0.1
0.3
```

CROSS SECTION OUTPUT Profile # p-1

```
*****
*****
* E.G. Elev (m)          * 113.33 * Element          * Left OB *
Channel * Right OB *
* Vel Head (m)          * 0.07 * Wt. n-Val          * 0.050 *
0.040 * 0.050 *
* W.S. Elev (m)          * 113.26 * Reach Len. (m)      * 739.75 *
703.81 * 732.07 *
* Crit W.S. (m)          *          * Flow Area (m2)      * 1.89 *
106.22 * 1.94 *
* E.G. Slope (m/m)        * 0.000666 * Area (m2)          * 1.89 *
106.22 * 1.94 *
* Q Total (m3/s)          * 124.00 * Flow (m3/s)         * 0.31 *
123.07 * 0.62 *
* Top Width (m)           * 57.54 * Top Width (m)       * 10.60 *
43.07 * 3.87 *
* Vel Total (m/s)         * 1.13 * Avg. Vel. (m/s)     * 0.16 *
1.16 * 0.32 *
* Max Chl Dpth (m)        * 3.19 * Hydr. Depth (m)     * 0.18 *
2.47 * 0.50 *
* Conv. Total (m3/s)      * 4804.8 * Conv. (m3/s)        * 11.9 *
4768.9 * 24.0 *
* Length Wtd. (m)         * 706.42 * Wetted Per. (m)     * 10.60 *
44.15 * 4.00 *
* Min Ch El (m)           * 110.07 * Shear (N/sq m)      * 1.16 *
15.72 * 3.17 *
* Alpha                   * 1.05 * Stream Power (N/m s) * 6587.85 *
0.00 * 0.00 *
* Frctn Loss (m)          * 0.10 * Cum Volume (cu m x 10^ * 0.02 *
0.12 * 0.01 *
* C & E Loss (m)          * 0.02 * Cum SA (1000 m2)     * 12.69 *
39.19 * 8.99 *
*****
*****
```

CROSS SECTION OUTPUT Profile # p-5

```
*****
*****
* E.G. Elev (m)          * 113.28 * Element          * Left OB *
Channel * Right OB *
* Vel Head (m)          * 0.04 * Wt. n-Val          * 0.050 *
0.040 * 0.050 *
* W.S. Elev (m)          * 113.24 * Reach Len. (m)      * 739.75 *
703.81 * 732.07 *
* Crit W.S. (m)          *          * Flow Area (m2)      * 1.63 *
105.14 * 1.85 *
* E.G. Slope (m/m)        * 0.000414 * Area (m2)          * 1.63 *
105.14 * 1.85 *
* Q Total (m3/s)          * 96.00 * Flow (m3/s)         * 0.20 *
95.35 * 0.46 *
```

* Top Width (m)	* 56.94	* Top Width (m)	* 10.10
43.07 *	3.78 *		
* Vel Total (m/s)	* 0.88	* Avg. Vel. (m/s)	* 0.12
0.91 *	0.25 *		
* Max Chl Dpth (m)	* 3.17	* Hydr. Depth (m)	* 0.16
2.44 *	0.49 *		
* Conv. Total (m3/s)	* 4719.8	* Conv. (m3/s)	* 9.6
4687.7 *	22.4 *		
* Length Wtd. (m)	* 706.41	* Wetted Per. (m)	* 10.10
44.15 *	3.90 *		
* Min Ch El (m)	* 110.07	* Shear (N/sq m)	* 0.65
9.66 *	1.92 *		
* Alpha	* 1.05	* Stream Power (N/m s)	* 6587.85
0.00 *	0.00 *		
* Frctn Loss (m)	* 0.06	* Cum Volume (cu m x 10^	* 0.02
0.12 *	0.01 *		
* C & E Loss (m)	* 0.01	* Cum SA (1000 m2)	* 12.50
39.19 *	8.95 *		

CROSS SECTION OUTPUT Profile # p-10

* E.G. Elev (m)	* 113.25	* Element	* Left OB
Channel * Right OB *			
* Vel Head (m)	* 0.03	* Wt. n-Val	* 0.050
0.040 *	0.050 *		
* W.S. Elev (m)	* 113.22	* Reach Len. (m)	* 739.75
703.81 *	732.07 *		
* Crit W.S. (m)	*	* Flow Area (m2)	* 1.50
104.58 *	1.80 *		
* E.G. Slope (m/m)	* 0.000278	* Area (m2)	* 1.50
104.58 *	1.80 *		
* Q Total (m3/s)	* 78.00	* Flow (m3/s)	* 0.14
77.50 *	0.36 *		
* Top Width (m)	* 56.64	* Top Width (m)	* 9.84
43.07 *	3.73 *		
* Vel Total (m/s)	* 0.72	* Avg. Vel. (m/s)	* 0.10
0.74 *	0.20 *		
* Max Chl Dpth (m)	* 3.15	* Hydr. Depth (m)	* 0.15
2.43 *	0.48 *		
* Conv. Total (m3/s)	* 4677.1	* Conv. (m3/s)	* 8.5
4646.9 *	21.7 *		
* Length Wtd. (m)	* 706.40	* Wetted Per. (m)	* 9.85
44.15 *	3.85 *		
* Min Ch El (m)	* 110.07	* Shear (N/sq m)	* 0.42
6.46 *	1.28 *		
* Alpha	* 1.04	* Stream Power (N/m s)	* 6587.85
0.00 *	0.00 *		
* Frctn Loss (m)	* 0.04	* Cum Volume (cu m x 10^	* 0.02
0.12 *	0.01 *		
* C & E Loss (m)	* 0.01	* Cum SA (1000 m2)	* 12.41
39.19 *	8.93 *		

CROSS SECTION OUTPUT Profile # VV


```

* E.G. Elev (m)          * 113.14 * Element          * Left OB *
Channel * Right OB *
* Vel Head (m)          * 0.00 * Wt. n-Val          * 0.050 *
0.040 * 0.050 *
* W.S. Elev (m)          * 113.14 * Reach Len. (m)      * 739.75 *
703.81 * 732.07 *
* Crit W.S. (m)          *          * Flow Area (m2)        * 0.76 *
100.94 * 1.50 *
* E.G. Slope (m/m)        * 0.000001 * Area (m2)            * 0.76 *
100.94 * 1.50 *
* Q Total (m3/s)          * 3.30 * Flow (m3/s)          * 0.00 *
3.28 * 0.01 *
* Top Width (m)           * 53.73 * Top Width (m)          * 7.26 *
43.07 * 3.40 *
* Vel Total (m/s)          * 0.03 * Avg. Vel. (m/s)        * 0.00 *
0.03 * 0.01 *
* Max Chl Dpth (m)        * 3.07 * Hydr. Depth (m)        * 0.11 *
2.34 * 0.44 *
* Conv. Total (m3/s)      * 4400.3 * Conv. (m3/s)          * 3.4 *
4380.0 * 16.9 *
* Length Wtd. (m)         * 706.32 * Wetted Per. (m)        * 7.26 *
44.15 * 3.51 *
* Min Ch El (m)           * 110.07 * Shear (N/sq m)         * 0.00 *
0.01 * 0.00 *
* Alpha                   * 1.03 * Stream Power (N/m s)   * 6587.85 *
0.00 * 0.00 *
* Frctn Loss (m)          * 0.00 * Cum Volume (cu m x 10^ * 0.02 *
0.12 * 0.01 *
* C & E Loss (m)          * 0.00 * Cum SA (1000 m2)        * 11.45 *
39.19 * 8.82 *
*****
*****

```

CROSS SECTION

RIVER: Malta

REACH: Malta

River Station: 101

INPUT

Description:

Station Elevation Data, num = 138

Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.	Elev.
------	-------	------	-------	------	-------	------	-------	------	-------

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*****
*****

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0	112.87	.72	112.6	.74	112.61	1.05	112.58	1.56	112.74
1.61	112.73	3.19	112.45	4.57	112.16	4.63	112.15	6.23	111.85
6.28	111.84	8.72	111.59	8.74	111.58	9.34	111.49	9.36	111.49
9.82	111.52	9.85	111.52	10.7	111.67	10.71	111.66	10.72	111.65
10.94	111.58	11.33	111.34	11.41	111.33	13.48	111.18	14.05	111.26
15.56	110.93	15.61	110.92	16.85	110.75	16.87	110.75	17.25	110.52
17.79	110.45	17.83	110.45	18.68	110.34	18.69	110.35	18.72	110.34

18.97	110.4	19.54	110.25	19.56	110.24	20.02	110.18	20.75
110.28								
20.77	110.27	21.23	110.18	21.29	110.17	22.77	110.02	23.7
110.02								
25.16	109.9	25.18	109.89	25.65	109.72	25.71	109.71	27.12
109.59								
27.18	109.59	28.28	109.63	28.32	109.62	29.31	109.35	29.46
109.34								
32.55	109.29	32.75	109.29	36.9	109.3	40.11	109.39	40.24
109.39								
42.7	109.46	42.8	109.47	44.72	109.7	44.93	109.71	48.68
109.78								
48.9	109.78	52.73	109.77	52.88	109.77	55.39	109.69	55.44
109.68								
56.39	109.65	57.57	109.78	57.69	109.77	59.52	109.62	59.62
109.62								
61.15	109.67	61.2	109.67	61.96	109.74	62.01	109.74	62.89
109.65								
63	109.64	64.73	109.61	65.21	109.52	65.33	109.52	67.3
109.56								
67.76	109.6	68.78	109.68	68.83	109.68	69.6	109.67	69.7
109.67								
71.13	109.66	71.23	109.66	72.58	109.7	72.68	109.7	75.72
110.13								
75.87	110.12	77.97	110.01	79.21	109.89	79.3	109.9	80.41
109.95								
80.49	109.96	81.79	110.07	85.43	110.03	90.66	111.19	92.01
111.21								
94.06	111.38	95.19	111.46	96.64	111.23	97.73	111.35	97.79
111.34								
98.48	111.28	98.64	111.26	100.57	111.01	101.29	111.05	101.35
111.07								
102.12	111.3	102.2	111.3	103.24	111.29	104.7	111.43	104.8
111.43								
105.99	111.46	106.04	111.45	106.64	111.41	106.7	111.42	107.43
111.6								
107.6	111.59	109.5	111.56	109.54	111.56	109.57	111.56	110.04
111.56								
110.42	111.54	111.09	111.62	111.13	111.61	111.57	111.56	111.62
111.57								
112.22	111.75	112.26	111.74	112.69	111.64			

Manning's n Values, num = 3

Sta.	Value	Sta.	Value	Sta.	Value
0	.05	23.7	.04	92.01	.05

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.
Expan.	23.7	92.01	0	0	0	0.1	
	0.3						

CROSS SECTION OUTPUT Profile # p-1

```

*****
*****
* E.G. Elev (m)          * 113.21 * Element          * Left OB *
Channel * Right OB *
* Vel Head (m)          * 0.01 * Wt. n-Val          * 0.050 *
0.040 * 0.050 *

```

* W.S. Elev (m)	*	113.20	* Reach Len. (m)	*	*
* Crit W.S. (m)	*	110.42	* Flow Area (m2)	*	44.76 *
233.88 * 37.66 *					
* E.G. Slope (m/m)	*	0.000063	* Area (m2)	*	44.76 *
233.88 * 37.66 *					
* Q Total (m3/s)	*	124.00	* Flow (m3/s)	*	10.60 *
104.96 * 8.44 *					
* Top Width (m)	*	112.69	* Top Width (m)	*	23.70 *
68.31 * 20.68 *					
* Vel Total (m/s)	*	0.39	* Avg. Vel. (m/s)	*	0.24 *
0.45 * 0.22 *					
* Max Chl Dpth (m)	*	3.91	* Hydr. Depth (m)	*	1.89 *
3.42 * 1.82 *					
* Conv. Total (m3/s)	*	15645.8	* Conv. (m3/s)	*	1337.3 *
13244.0 * 1064.5 *					
* Length Wtd. (m)	*		* Wetted Per. (m)	*	24.52 *
68.62 * 22.42 *					
* Min Ch El (m)	*	109.29	* Shear (N/sq m)	*	1.12 *
2.10 * 1.03 *					
* Alpha	*	1.16	* Stream Power (N/m s)	*	5395.63 *
0.00 * 0.00 *					
* Frctn Loss (m)	*		* Cum Volume (cu m x 10^	*	*
* C & E Loss (m)	*		* Cum SA (1000 m2)	*	*

CROSS SECTION OUTPUT Profile # p-5

* E.G. Elev (m)	*	113.21	* Element	*	Left OB *
Channel * Right OB *					
* Vel Head (m)	*	0.01	* Wt. n-Val	*	0.050 *
0.040 * 0.050 *					
* W.S. Elev (m)	*	113.20	* Reach Len. (m)	*	*
* Crit W.S. (m)	*	110.30	* Flow Area (m2)	*	44.76 *
233.88 * 37.66 *					
* E.G. Slope (m/m)	*	0.000038	* Area (m2)	*	44.76 *
233.88 * 37.66 *					
* Q Total (m3/s)	*	96.00	* Flow (m3/s)	*	8.21 *
81.26 * 6.53 *					
* Top Width (m)	*	112.69	* Top Width (m)	*	23.70 *
68.31 * 20.68 *					
* Vel Total (m/s)	*	0.30	* Avg. Vel. (m/s)	*	0.18 *
0.35 * 0.17 *					
* Max Chl Dpth (m)	*	3.91	* Hydr. Depth (m)	*	1.89 *
3.42 * 1.82 *					
* Conv. Total (m3/s)	*	15645.8	* Conv. (m3/s)	*	1337.3 *
13244.0 * 1064.5 *					
* Length Wtd. (m)	*		* Wetted Per. (m)	*	24.52 *
68.62 * 22.42 *					
* Min Ch El (m)	*	109.29	* Shear (N/sq m)	*	0.67 *
1.26 * 0.62 *					
* Alpha	*	1.16	* Stream Power (N/m s)	*	5395.63 *
0.00 * 0.00 *					
* Frctn Loss (m)	*		* Cum Volume (cu m x 10^	*	*
* *					

```

* C & E Loss (m)          *          * Cum SA (1000 m2)          *          *
*                          *
*****
*****

```

CROSS SECTION OUTPUT Profile # p-10

```

*****
*****
* E.G. Elev (m)          * 113.20 * Element          * Left OB *
Channel * Right OB *
* Vel Head (m)          * 0.00 * Wt. n-Val          * 0.050 *
0.040 * 0.050 *
* W.S. Elev (m)          * 113.20 * Reach Len. (m)          *          *
*                          *
* Crit W.S. (m)          * 110.22 * Flow Area (m2)          * 44.76 *
233.88 * 37.66 *
* E.G. Slope (m/m)          * 0.000025 * Area (m2)          * 44.76 *
233.88 * 37.66 *
* Q Total (m3/s)          * 78.00 * Flow (m3/s)          * 6.67 *
66.03 * 5.31 *
* Top Width (m)          * 112.69 * Top Width (m)          * 23.70 *
68.31 * 20.68 *
* Vel Total (m/s)          * 0.25 * Avg. Vel. (m/s)          * 0.15 *
0.28 * 0.14 *
* Max Chl Dpth (m)          * 3.91 * Hydr. Depth (m)          * 1.89 *
3.42 * 1.82 *
* Conv. Total (m3/s)          * 15645.8 * Conv. (m3/s)          * 1337.3 *
13244.0 * 1064.5 *
* Length Wtd. (m)          *          * Wetted Per. (m)          * 24.52 *
68.62 * 22.42 *
* Min Ch El (m)          * 109.29 * Shear (N/sq m)          * 0.45 *
0.83 * 0.41 *
* Alpha          * 1.16 * Stream Power (N/m s)          * 5395.63 *
0.00 * 0.00 *
* Frctn Loss (m)          *          * Cum Volume (cu m x 10^          *          *
*                          *
* C & E Loss (m)          *          * Cum SA (1000 m2)          *          *
*                          *
*****
*****

```

CROSS SECTION OUTPUT Profile # VV

```

*****
*****
* E.G. Elev (m)          * 113.14 * Element          * Left OB *
Channel * Right OB *
* Vel Head (m)          * 0.00 * Wt. n-Val          * 0.050 *
0.040 * 0.050 *
* W.S. Elev (m)          * 113.14 * Reach Len. (m)          *          *
*                          *
* Crit W.S. (m)          * 109.52 * Flow Area (m2)          * 43.33 *
229.78 * 36.42 *
* E.G. Slope (m/m)          * 0.000000 * Area (m2)          * 43.33 *
229.78 * 36.42 *
* Q Total (m3/s)          * 3.30 * Flow (m3/s)          * 0.28 *
2.80 * 0.22 *
* Top Width (m)          * 112.69 * Top Width (m)          * 23.70 *
68.31 * 20.68 *
* Vel Total (m/s)          * 0.01 * Avg. Vel. (m/s)          * 0.01 *
0.01 * 0.01 *

```


* Max Chl Dpth (m)	*	3.85	* Hydr. Depth (m)	*	1.83	*
3.36 *		1.76	*			
* Conv. Total (m3/s)	*	15136.9	* Conv. (m3/s)	*	1269.2	*
12859.2 *		1008.5	*			
* Length Wtd. (m)	*		* Wetted Per. (m)	*	24.46	*
68.62 *		22.36	*			
* Min Ch El (m)	*	109.29	* Shear (N/sq m)	*	0.00	*
0.00 *		0.00	*			
* Alpha	*	1.16	* Stream Power (N/m s)	*	5395.63	*
0.00 *		0.00	*			
* Frctn Loss (m)	*		* Cum Volume (cu m x 10^	*		*
*		*				
* C & E Loss (m)	*		* Cum SA (1000 m2)	*		*
*		*				

SUMMARY OF MANNING'S N VALUES

River: Malta

* Reach	* River Sta.	* n1	* n2	* n3	*
*****	*****	*****	*****	*****	*****
*Malta	* 116	* 0.05*	0.04*	0.05*	
*Malta	* 115	* 0.05*	0.04*	0.05*	
*Malta	* 114	* 0.05*	0.04*	0.05*	
*Malta	* 113	* 0.05*	0.04*	0.05*	
*Malta	* 112	* 0.05*	0.04*	0.05*	
*Malta	* 111	* 0.05*	0.04*	0.05*	
*Malta	* 110	* 0.05*	0.04*	0.05*	
*Malta	* 109	* 0.05*	0.04*	0.05*	
*Malta	* 108	* 0.05*	0.04*	0.05*	
*Malta	* 107	* 0.05*	0.04*	0.05*	
*Malta	* 106	* 0.05*	0.04*	0.05*	
*Malta	* 105	* 0.05*	0.04*	0.05*	
*Malta	* 104	* 0.05*	0.04*	0.05*	
*Malta	* 103	* 0.05*	0.04*	0.05*	
*Malta	* 102	* 0.05*	0.04*	0.05*	
*Malta	* 101	* 0.05*	0.04*	0.05*	

SUMMARY OF REACH LENGTHS

River: Malta

* Reach	* River Sta.	* Left	* Channel	* Right	*
*****	*****	*****	*****	*****	*****
*Malta	* 116	* 119.686*	124.623*	124.623*	
*Malta	* 115	* 867.994*	893.858*	893.858*	
*Malta	* 114	* 855.053*	858.648*	858.648*	
*Malta	* 113	* 76.294*	68.1499*	68.1499*	
*Malta	* 112	* 53.1469*	48.11*	48.11*	
*Malta	* 111	* 96.1398*	88.8371*	88.8371*	

*Malta	*	110	*	133.495*	164.898*	164.898*
*Malta	*	109	*	207.008*	185.852*	185.852*
*Malta	*	108	*	244.148*	245.872*	245.872*
*Malta	*	107	*	348.502*	341.478*	341.478*
*Malta	*	106	*	496.671*	484.679*	484.679*
*Malta	*	105	*	517.277*	511.781*	511.781*
*Malta	*	104	*	274.954*	276.04*	276.04*
*Malta	*	103	*	207.437*	223.227*	238.674*
*Malta	*	102	*	739.749*	703.806*	732.07*
*Malta	*	101	*	*	*	*

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS

River: Malta

*	Reach	*	River Sta.	*	Contr.* Expan.*

*Malta	*	116	*	0.1*	0.3*
*Malta	*	115	*	0.1*	0.3*
*Malta	*	114	*	0.1*	0.3*
*Malta	*	113	*	0.1*	0.3*
*Malta	*	112	*	0.1*	0.3*
*Malta	*	111	*	0.1*	0.3*
*Malta	*	110	*	0.1*	0.3*
*Malta	*	109	*	0.1*	0.3*
*Malta	*	108	*	0.1*	0.3*
*Malta	*	107	*	0.1*	0.3*
*Malta	*	106	*	0.1*	0.3*
*Malta	*	105	*	0.1*	0.3*
*Malta	*	104	*	0.1*	0.3*
*Malta	*	103	*	0.1*	0.3*
*Malta	*	102	*	0.1*	0.3*
*Malta	*	101	*	0.1*	0.3*

Profile Output - Standard Table 1

*	Reach	*	River Sta.	*	Profile	*	Q Total	*	Min Ch El	*	W.S.	
Elev	*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/s)	*	(m2)	*	(m)
*		*		*				*		*		*

* Malta		*116		*p-1	*	124.00	*	113.54	*	117.35	*
* 117.46	*	0.000816	*	1.64	*	99.49	*	41.65	*	0.27	*
* Malta		*116		*p-5	*	96.00	*	113.54	*	116.95	*
* 117.04	*	0.000790	*	1.49	*	82.79	*	39.19	*	0.26	*
* Malta		*116		*p-10	*	78.00	*	113.54	*	116.66	
*	*	116.74	*	0.000759	*	1.37	*	71.70	*	37.45	*

0.26 *

* Malta		*116		*VV			3.30 *	113.54 *	
114.24 *		* 114.25 *		0.000630 *		0.40 *		8.51 *	17.00
	0.18 *								
		*		*		*		*	
	*	*		*		*		*	
* Malta		*115		*p-1 *	124.00 *	113.52 *		117.28 *	
* 117.36 *	0.000639 *		1.43 *	110.06 *	45.03 *			0.24 *	
* Malta		*115		*p-5 *	96.00 *	113.52 *		116.88 *	
* 116.95 *	0.000631 *		1.31 *	92.14 *	43.90 *			0.24 *	
* Malta		*115		*p-10 *	78.00 *	113.52 *		116.59	
	* 116.65 *	0.000626 *		1.22 *	79.44 *			42.84 *	
0.23 *									
* Malta		*115		*VV		3.30 *	113.52 *		
114.16 *		* 114.17 *		0.000756 *		0.42 *		7.88 *	16.04
	0.19 *								
		*		*		*		*	
	*	*		*		*		*	
* Malta		*114		*p-1 *	124.00 *	112.53 *		116.36 *	
* 116.53 *	0.001457 *		2.03 *	75.93 *	31.24 *			0.36 *	
* Malta		*114		*p-5 *	96.00 *	112.53 *		115.99 *	
* 116.14 *	0.001402 *		1.84 *	64.46 *	31.24 *			0.35 *	
* Malta		*114		*p-10 *	78.00 *	112.53 *		115.72	
	* 115.84 *	0.001391 *		1.72 *	55.81 *			31.24 *	
0.34 *									
* Malta		*114		*VV		3.30 *	112.53 *		
113.44 *		* 113.45 *		0.000851 *		0.51 *		6.50 *	10.79
	0.21 *								
		*		*		*		*	
	*	*		*		*		*	
* Malta		*113		*p-1 *	124.00 *	112.01 *		115.76 *	
* 115.83 *	0.000483 *		1.21 *	120.44 *	69.11 *			0.21 *	
* Malta		*113		*p-5 *	96.00 *	112.01 *		115.47 *	
* 115.52 *	0.000408 *		1.05 *	104.12 *	48.71 *			0.19 *	
* Malta		*113		*p-10 *	78.00 *	112.01 *		115.23	
	* 115.27 *	0.000362 *		0.93 *	93.19 *			45.17 *	
0.18 *									
* Malta		*113		*VV		3.30 *	112.01 *		
113.38 *		* 113.38 *		0.000027 *		0.13 *		26.17 *	27.66
	0.04 *								
		*		*		*		*	
	*	*		*		*		*	
* Malta		*112		*p-1 *	124.00 *	112.67 *		115.63 *	
* 115.77 *	0.001481 *		1.82 *	90.58 *	60.51 *			0.36 *	
* Malta		*112		*p-5 *	96.00 *	112.67 *		115.34 *	
* 115.46 *	0.001512 *		1.69 *	72.95 *	57.93 *			0.35 *	
* Malta		*112		*p-10 *	78.00 *	112.67 *		115.11	
	* 115.22 *	0.001539 *		1.59 *	59.85 *			52.85 *	
0.35 *									
* Malta		*112		*VV		3.30 *	112.67 *		
113.37 *		* 113.38 *		0.001031 *		0.44 *		7.64 *	19.21
	0.22 *								
		*		*		*		*	
	*	*		*		*		*	
* Malta		*111		*p-1 *	124.00 *	112.74 *		115.59 *	
* 115.69 *	0.001319 *		1.72 *	107.24 *	75.12 *			0.34 *	

* Malta		*111		*p-5 *	96.00 *	112.74 *	115.28 *
* 115.38 *	0.001437 *		1.65 *	84.85 *	70.39 *		0.35 *
* Malta		*111		*p-10 *	78.00 *	112.74 *	115.04
* 115.14 *	0.001603 *		1.62 *	68.20 *	64.83 *		
0.36 *							
* Malta		*111		*VV	3.30 *	112.74 *	
113.26 *		* 113.29 *	0.004134 *	0.68 *	4.93 *	18.72	
* 0.41 *							
* *		* *	* *	* *	* *	* *	
* *		* *	* *	* *	* *	* *	
* *							
* Malta		*110		*p-1 *	124.00 *	112.53 *	115.52 *
* 115.59 *	0.000829 *		1.39 *	122.29 *	65.83 *		0.27 *
* Malta		*110		*p-5 *	96.00 *	112.53 *	115.21 *
* 115.27 *	0.000852 *		1.30 *	101.91 *	65.83 *		0.27 *
* Malta		*110		*p-10 *	78.00 *	112.53 *	114.96
* 115.02 *	0.000898 *		1.25 *	85.92 *	62.88 *		
0.27 *							
* Malta		*110		*VV	3.30 *	112.53 *	
113.18 *		* 113.19 *	0.000472 *	0.32 *	10.53 *	21.85	
* 0.15 *							
* *		* *	* *	* *	* *	* *	
* *		* *	* *	* *	* *	* *	
* *							
* Malta		*109		*p-1 *	124.00 *	111.99 *	115.39 *
* 115.45 *	0.000878 *		1.35 *	125.12 *	67.84 *		0.27 *
* Malta		*109		*p-5 *	96.00 *	111.99 *	115.08 *
* 115.13 *	0.000926 *		1.27 *	103.68 *	67.84 *		0.27 *
* Malta		*109		*p-10 *	78.00 *	111.99 *	114.83
* 114.87 *	0.000878 *		1.15 *	87.58 *	61.43 *		
0.26 *							
* Malta		*109		*VV	3.30 *	111.99 *	
113.16 *		* 113.16 *	0.000060 *	0.15 *	22.54 *	26.60	
* 0.06 *							
* *		* *	* *	* *	* *	* *	
* *		* *	* *	* *	* *	* *	
* *							
* Malta		*108		*p-1 *	124.00 *	111.53 *	115.17 *
* 115.26 *	0.001105 *		1.59 *	111.46 *	70.46 *		0.31 *
* Malta		*108		*p-5 *	96.00 *	111.53 *	114.85 *
* 114.93 *	0.001131 *		1.48 *	89.14 *	67.60 *		0.31 *
* Malta		*108		*p-10 *	78.00 *	111.53 *	114.61
* 114.68 *	0.001139 *		1.38 *	72.95 *	65.44 *		
0.30 *							
* Malta		*108		*VV	3.30 *	111.53 *	
113.15 *		* 113.16 *	0.000042 *	0.17 *	22.46 *	22.14	
* 0.05 *							
* *		* *	* *	* *	* *	* *	
* *		* *	* *	* *	* *	* *	
* *							
* Malta		*107		*p-1 *	124.00 *	111.63 *	114.84 *
* 114.97 *	0.001201 *		1.70 *	90.30 *	58.97 *		0.33 *
* Malta		*107		*p-5 *	96.00 *	111.63 *	114.54 *
* 114.65 *	0.001117 *		1.52 *	74.30 *	48.43 *		0.31 *
* Malta		*107		*p-10 *	78.00 *	111.63 *	114.33
* 114.42 *	0.001022 *		1.36 *	64.65 *	40.60 *		
0.29 *							
* Malta		*107		*VV	3.30 *	111.63 *	
113.15 *		* 113.15 *	0.000020 *	0.12 *	28.21 *	26.43	
* 0.04 *							

*		*		*		*		*
*	*		*		*		*	*
*								
* Malta		*106		*p-1 *	124.00 *	111.16 *	114.64 *	
* 114.69 *	0.000516 *		1.09 *	138.50 *	70.99 *		0.21 *	
* Malta		*106		*p-5 *	96.00 *	111.16 *	114.35 *	
* 114.39 *	0.000490 *		0.98 *	117.64 *	70.99 *		0.20 *	
* Malta		*106		*p-10 *	78.00 *	111.16 *	114.14	
* *	114.17 *	0.000470 *		0.91 *	102.60 *	70.99 *		
0.19 *								
* Malta		*106		*VV	3.30 *	111.16 *		
113.14 *		* 113.14 *	0.000006 *		0.08 *	43.91 *	32.75	
*	0.02 *							
*		*		*		*	*	
*	*	*		*	*	*	*	
*								
* Malta		*105		*p-1 *	124.00 *	110.92 *	114.31 *	
* 114.40 *	0.000703 *		1.32 *	106.41 *	54.93 *		0.25 *	
* Malta		*105		*p-5 *	96.00 *	110.92 *	114.06 *	
* 114.13 *	0.000602 *		1.15 *	92.59 *	53.80 *		0.23 *	
* Malta		*105		*p-10 *	78.00 *	110.92 *	113.88	
* *	113.93 *	0.000520 *		1.02 *	83.00 *	52.53 *		
0.21 *								
* Malta		*105		*VV	3.30 *	110.92 *		
113.14 *		* 113.14 *	0.000003 *		0.06 *	52.33 *	30.72	
*	0.02 *							
*		*		*		*	*	
*	*	*		*	*	*	*	
*								
* Malta		*104		*p-1 *	124.00 *	110.83 *	113.66 *	
* 113.80 *	0.002289 *		1.68 *	81.80 *	69.91 *		0.41 *	
* Malta		*104		*p-5 *	96.00 *	110.83 *	113.51 *	
* 113.61 *	0.001951 *		1.46 *	71.34 *	66.60 *		0.37 *	
* Malta		*104		*p-10 *	78.00 *	110.83 *	113.42	
* *	113.50 *	0.001610 *		1.27 *	65.33 *	64.59 *		
0.34 *								
* Malta		*104		*VV	3.30 *	110.83 *		
113.14 *		* 113.14 *	0.000005 *		0.07 *	49.80 *	47.58	
*	0.02 *							
*		*		*		*	*	
*	*	*		*	*	*	*	
*								
* Malta		*103		*p-1 *	124.00 *	110.44 *	113.41 *	
* 113.48 *	0.000633 *		1.14 *	123.68 *	86.27 *		0.23 *	
* Malta		*103		*p-5 *	96.00 *	110.44 *	113.33 *	
* 113.37 *	0.000431 *		0.92 *	116.89 *	82.19 *		0.19 *	
* Malta		*103		*p-10 *	78.00 *	110.44 *	113.29	
* *	113.32 *	0.000304 *		0.77 *	113.42 *	80.02 *		
0.16 *								
* Malta		*103		*VV	3.30 *	110.44 *		
113.14 *		* 113.14 *	0.000001 *		0.04 *	101.89 *	76.07	
*	0.01 *							
*		*		*		*	*	
*	*	*		*	*	*	*	
*								
* Malta		*102		*p-1 *	124.00 *	110.07 *	113.26 *	
* 113.33 *	0.000666 *		1.16 *	110.05 *	57.54 *		0.24 *	
* Malta		*102		*p-5 *	96.00 *	110.07 *	113.24 *	
* 113.28 *	0.000414 *		0.91 *	108.61 *	56.94 *		0.19 *	

```

* Malta          *102          *p-10 *          78.00 * 110.07 * 113.22
*          * 113.25 * 0.000278 *          0.74 * 107.88 * 56.64 *
0.15 *
* Malta          *102          *VV          *          3.30 * 110.07 *
113.14 *          * 113.14 * 0.000001 *          0.03 * 103.20 * 53.73
*          0.01 *
*          *          *          *          *          *
*          *          *          *          *          *
*
* Malta          *101          *p-1 *          124.00 * 109.29 * 113.20 *
110.42 * 113.21 * 0.000063 *          0.45 * 316.29 * 112.69 *
0.08 *
* Malta          *101          *p-5 *          96.00 * 109.29 * 113.20 *
110.30 * 113.21 * 0.000038 *          0.35 * 316.29 * 112.69 *
0.06 *
* Malta          *101          *p-10 *          78.00 * 109.29 * 113.20
* 110.22 * 113.20 * 0.000025 *          0.28 * 316.29 * 112.69 *
0.05 *
* Malta          *101          *VV          *          3.30 * 109.29 *
113.14 * 109.52 * 113.14 * 0.000000 *          0.01 * 309.53 * 112.69
*          0.00 *
*****
*****
*****

```

Profile Output - Standard Table 2

```

*****
*****
*****
*          Reach          * River Sta. * Profile * E.G. Elev * W.S. Elev *
Vel Head * Frctn Loss * C & E Loss * Q Left * Q Channel * Q Right *
Top Width *
*          *          *          *          *          *          *
(m) *          (m) *          (m) * (m3/s) * (m3/s) * (m) * (m) *
(m) *
*****
*****
*****
* Malta          * 116          * p-1 *          117.46 * 117.35 *
0.11 *          0.09 *          0.01 *          19.86 *          89.26 *          14.88 *
41.65 *
* Malta          * 116          * p-5 *          117.04 * 116.95 *
0.09 *          0.09 *          0.01 *          14.41 *          72.21 *          9.38 *
39.19 *
* Malta          * 116          * p-10 *          116.74 * 116.66 *
0.08 *          0.09 *          0.00 *          11.55 *          60.46 *          5.99 *
37.45 *
* Malta          * 116          * VV          *          114.25 * 114.24 *
0.01 *          0.09 *          0.00 *          0.13 *          3.17 *          *
17.00 *
*          *          *          *          *          *          *
*          *          *          *          *          *          *
*
* Malta          * 115          * p-1 *          117.36 * 117.28 *
0.08 *          0.82 *          0.01 *          22.53 *          91.72 *          9.75 *
45.03 *
* Malta          * 115          * p-5 *          116.95 * 116.88 *
0.07 *          0.81 *          0.01 *          15.20 *          74.51 *          6.29 *
43.90 *

```

* Malta	* 115	* p-10 *	116.65 *	116.59 *
0.06 *	0.80 *	10.59 *	63.04 *	4.37 *
42.84 *				
* Malta	* 115	* VV	114.17 *	114.16 *
0.01 *	0.72 *	0.00 *	3.30 *	*
16.04 *				
*	*	*	*	*
*	*	*	*	*
*				
* Malta	* 114	* p-1 *	116.53 *	116.36 *
0.17 *	0.67 *	14.42 *	93.80 *	15.78 *
31.24 *				
* Malta	* 114	* p-5 *	116.14 *	115.99 *
0.14 *	0.59 *	9.29 *	75.42 *	11.28 *
31.24 *				
* Malta	* 114	* p-10 *	115.84 *	115.72 *
0.13 *	0.54 *	6.10 *	63.53 *	8.37 *
31.24 *				
* Malta	* 114	* VV	113.45 *	113.44 *
0.01 *	0.07 *	0.00 *	3.30 *	*
10.79 *				
*	*	*	*	*
*	*	*	*	*
*				
* Malta	* 113	* p-1 *	115.83 *	115.76 *
0.07 *	0.05 *	6.39 *	112.52 *	5.09 *
69.11 *				
* Malta	* 113	* p-5 *	115.52 *	115.47 *
0.05 *	0.05 *	4.20 *	88.36 *	3.43 *
48.71 *				
* Malta	* 113	* p-10 *	115.27 *	115.23 *
0.04 *	0.04 *	2.93 *	72.66 *	2.41 *
45.17 *				
* Malta	* 113	* VV	113.38 *	113.38 *
0.00 *	0.01 *	0.00 *	3.30 *	*
27.66 *				
*	*	*	*	*
*	*	*	*	*
*				
* Malta	* 112	* p-1 *	115.77 *	115.63 *
0.14 *	0.07 *	13.35 *	97.25 *	13.40 *
60.51 *				
* Malta	* 112	* p-5 *	115.46 *	115.34 *
0.13 *	0.07 *	6.65 *	80.41 *	8.94 *
57.93 *				
* Malta	* 112	* p-10 *	115.22 *	115.11 *
0.12 *	0.08 *	3.68 *	68.14 *	6.18 *
52.85 *				
* Malta	* 112	* VV	113.38 *	113.37 *
0.01 *	0.09 *	0.00 *	3.28 *	*
19.21 *				
*	*	*	*	*
*	*	*	*	*
*				
* Malta	* 111	* p-1 *	115.69 *	115.59 *
0.10 *	0.09 *	17.87 *	76.13 *	29.99 *
75.12 *				
* Malta	* 111	* p-5 *	115.38 *	115.28 *
0.10 *	0.10 *	10.35 *	64.43 *	21.22 *
70.39 *				

* Malta		* 111		* p-10 *		115.14 *	115.04 *
0.10 *	0.11 *		0.01 *	5.82 *		56.43 *	15.75 *
64.83 *							
* Malta		* 111		* VV *		113.29 *	113.26 *
0.02 *	0.09 *		0.01 *	0.00 *		3.24 *	0.06 *
18.72 *							
*		*		*		*	*
*	*		*	*		*	*
*							
* Malta		* 110		* p-1 *		115.59 *	115.52 *
0.07 *	0.14 *		0.00 *	24.55 *		71.64 *	27.80 *
65.83 *							
* Malta		* 110		* p-5 *		115.27 *	115.21 *
0.06 *	0.14 *		0.00 *	17.47 *		59.47 *	19.07 *
65.83 *							
* Malta		* 110		* p-10 *		115.02 *	114.96 *
0.06 *	0.14 *		0.00 *	12.57 *		50.98 *	14.45 *
62.88 *							
* Malta		* 110		* VV *		113.19 *	113.18 *
0.01 *	0.02 *		0.00 *	0.87 *		2.43 *	*
21.85 *							
*		*		*		*	*
*	*		*	*		*	*
*							
* Malta		* 109		* p-1 *		115.45 *	115.39 *
0.06 *	0.19 *		0.00 *	6.77 *		44.82 *	72.41 *
67.84 *							
* Malta		* 109		* p-5 *		115.13 *	115.08 *
0.05 *	0.19 *		0.00 *	3.42 *		36.96 *	55.61 *
67.84 *							
* Malta		* 109		* p-10 *		114.87 *	114.83 *
0.05 *	0.19 *		0.00 *	1.34 *		29.65 *	47.01 *
61.43 *							
* Malta		* 109		* VV *		113.16 *	113.16 *
0.00 *	0.01 *		0.00 *	*		0.99 *	2.31 *
26.60 *							
*		*		*		*	*
*	*		*	*		*	*
*							
* Malta		* 108		* p-1 *		115.26 *	115.17 *
0.09 *	0.28 *		0.00 *	36.48 *		67.71 *	19.82 *
70.46 *							
* Malta		* 108		* p-5 *		114.93 *	114.85 *
0.08 *	0.28 *		0.00 *	31.02 *		55.35 *	9.63 *
67.60 *							
* Malta		* 108		* p-10 *		114.68 *	114.61 *
0.08 *	0.26 *		0.00 *	27.72 *		46.37 *	3.91 *
65.44 *							
* Malta		* 108		* VV *		113.16 *	113.15 *
0.00 *	0.01 *		0.00 *	1.31 *		1.99 *	*
22.14 *							
*		*		*		*	*
*	*		*	*		*	*
*							
* Malta		* 107		* p-1 *		114.97 *	114.84 *
0.13 *	0.26 *		0.02 *	11.96 *		110.13 *	1.91 *
58.97 *							
* Malta		* 107		* p-5 *		114.65 *	114.54 *
0.11 *	0.24 *		0.02 *	7.18 *		87.87 *	0.95 *
48.43 *							

* Malta	* 107	* p-10 *	114.42 *	114.33 *
0.09 *	0.23 *	0.02 *	5.34 *	72.16 *
40.60 *				0.50 *
* Malta	* 107	* VV	113.15 *	113.15 *
0.00 *	0.00 *	0.00 *	0.18 *	3.12 *
26.43 *				
*	*	*	*	*
*	*	*	*	*
*				
* Malta	* 106	* p-1 *	114.69 *	114.64 *
0.05 *	0.29 *	0.00 *	11.91 *	101.12 *
70.99 *				10.97 *
* Malta	* 106	* p-5 *	114.39 *	114.35 *
0.04 *	0.26 *	0.00 *	7.55 *	81.74 *
70.99 *				6.72 *
* Malta	* 106	* p-10 *	114.17 *	114.14 *
0.04 *	0.24 *	0.00 *	4.93 *	68.87 *
70.99 *				4.21 *
* Malta	* 106	* VV	113.14 *	113.14 *
0.00 *	0.00 *	0.00 *	0.01 *	3.29 *
32.75 *				
*	*	*	*	*
*	*	*	*	*
*				
* Malta	* 105	* p-1 *	114.40 *	114.31 *
0.08 *	0.60 *	0.01 *	5.32 *	115.69 *
54.93 *				2.99 *
* Malta	* 105	* p-5 *	114.13 *	114.06 *
0.06 *	0.51 *	0.00 *	2.73 *	91.85 *
53.80 *				1.42 *
* Malta	* 105	* p-10 *	113.93 *	113.88 *
0.05 *	0.43 *	0.00 *	1.39 *	75.91 *
52.53 *				0.70 *
* Malta	* 105	* VV	113.14 *	113.14 *
0.00 *	0.00 *	0.00 *	0.00 *	3.30 *
30.72 *				
*	*	*	*	*
*	*	*	*	*
*				
* Malta	* 104	* p-1 *	113.80 *	113.66 *
0.14 *	0.30 *	0.02 *	3.57 *	118.08 *
69.91 *				2.34 *
* Malta	* 104	* p-5 *	113.61 *	113.51 *
0.10 *	0.22 *	0.02 *	1.84 *	93.16 *
66.60 *				1.00 *
* Malta	* 104	* p-10 *	113.50 *	113.42 *
0.08 *	0.16 *	0.02 *	1.08 *	76.47 *
64.59 *				0.44 *
* Malta	* 104	* VV	113.14 *	113.14 *
0.00 *	0.00 *	0.00 *	0.01 *	3.29 *
47.58 *				0.00 *
*	*	*	*	*
*	*	*	*	*
*				
* Malta	* 103	* p-1 *	113.48 *	113.41 *
0.06 *	0.14 *	0.00 *	5.42 *	117.84 *
86.27 *				0.74 *
* Malta	* 103	* p-5 *	113.37 *	113.33 *
0.04 *	0.09 *	0.00 *	3.51 *	92.01 *
82.19 *				0.48 *

* Malta		* 103		* p-10 *	113.32 *	113.29 *
0.03 *	0.06 *		0.00 *	2.58 *	75.07 *	0.35 *
80.02 *						
* Malta		* 103		* VV *	113.14 *	113.14 *
0.00 *	0.00 *		0.00 *	0.06 *	3.23 *	0.01 *
76.07 *						
*		*		*		*
*	*		*	*	*	*
*						
* Malta		* 102		* p-1 *	113.33 *	113.26 *
0.07 *	0.10 *		0.02 *	0.31 *	123.07 *	0.62 *
57.54 *						
* Malta		* 102		* p-5 *	113.28 *	113.24 *
0.04 *	0.06 *		0.01 *	0.20 *	95.35 *	0.46 *
56.94 *						
* Malta		* 102		* p-10 *	113.25 *	113.22 *
0.03 *	0.04 *		0.01 *	0.14 *	77.50 *	0.36 *
56.64 *						
* Malta		* 102		* VV *	113.14 *	113.14 *
0.00 *	0.00 *		0.00 *	0.00 *	3.28 *	0.01 *
53.73 *						
*		*		*		*
*	*		*	*	*	*
*						
* Malta		* 101		* p-1 *	113.21 *	113.20 *
0.01 *	*		*	10.60 *	104.96 *	8.44 *
112.69 *						
* Malta		* 101		* p-5 *	113.21 *	113.20 *
0.01 *	*		*	8.21 *	81.26 *	6.53 *
112.69 *						
* Malta		* 101		* p-10 *	113.20 *	113.20 *
0.00 *	*		*	6.67 *	66.03 *	5.31 *
112.69 *						
* Malta		* 101		* VV *	113.14 *	113.14 *
0.00 *	*		*	0.28 *	2.80 *	0.22 *
112.69 *						

Report Completed - 09/23/22 01:34:06 pecp.

HEC-RAS Version 4.1.0 Jan 2010
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

```

X      X  XXXXXX      XXXX      XXXX      XX      XXXX
X      X  X          X      X      X      X      X
X      X  X          X          X      X      X
XXXXXXXX XXXX      X      XXXX XXXX      XXXXXX      XXXX
X      X  X          X          X      X      X      X
X      X  X          X      X      X      X      X
X      X  XXXXXX      XXXX      X      X      X      XXXXX

```


PROJECT DATA

Project Title :
Project File : MALTAS MODELIS BEZ HES.PRJ
Run Date and Time : 09/23/22 01:53:16 pecp.

Project in SI units

PLAN DATA

Plan Summary Information:

Number of: Cross Sections = 16 Multiple Openings = 0
Culverts = 0
Bridges = 0

Computational Information

Water surface calculation tolerance = 0.003
Critical depth calculation tolerance = 0.003
Maximum number of iterations = 20
Maximum difference tolerance = 0.1
Flow tolerance factor = 0.001

Computational Flow Regime: Subcritical Flow

Encroachment Data: None

FLOW DATA

Flow Data (cfs)

* River * Reach * Riv Sta * p-1% *
p-5% * p-10% * VV *

0	116.98	0	116.98	.1	116.98	.2	116.98	2.39
116.96								
2.41	116.96	2.66	116.92	3.29	116.91	3.47	116.87	3.5
116.87								
8.92	115.24	13.21	113.95	13.36	113.9	13.37	113.9	13.58
113.84								
13.67	113.83	13.85	113.89	13.85	113.89	14.61	113.89	14.7
113.55								
14.72	113.55	14.97	113.54	15.13	113.56	15.13	113.56	15.38
113.54								
15.39	113.54	15.73	113.56	15.74	113.56	15.87	113.6	15.99
113.59								
16.11	113.62	16.11	113.62	16.11	113.62	16.51	113.54	16.52
113.54								
16.74	113.59	16.75	113.59	17.16	113.62	17.17	113.62	17.6
113.67								
17.61	113.67	17.71	113.67	17.8	113.65	17.8	113.65	17.8
113.65								
18.24	113.62	18.24	113.62	18.59	113.64	18.6	113.64	19.01
113.63								
19.02	113.63	19.07	113.63	19.59	113.64	19.59	113.64	19.74
113.65								

19.83	113.63	19.83	113.63	19.98	113.63	19.98	113.63	20.14
113.65								
20.14	113.65	20.29	113.63	20.29	113.63	20.29	113.63	20.64
113.64								
20.64	113.64	20.94	113.62	20.94	113.62	21.39	113.63	21.39
113.63								
21.75	113.71	21.75	113.71	22.45	113.8	22.75	113.75	22.75
113.75								
22.89	113.66	22.89	113.66	22.89	113.66	23.11	113.67	23.52
113.69								
23.52	113.69	23.74	113.83	23.74	113.83	24.17	113.88	24.17
113.88								
24.39	113.86	24.39	113.86	24.59	113.79	24.59	113.79	24.75
113.88								
24.75	113.88	25.01	113.92	25.02	113.92	25.43	113.63	25.44
113.63								
25.74	113.59	25.75	113.59	25.82	113.57	25.97	113.61	25.97
113.61								
25.97	113.61	26.24	113.74	26.25	113.74	26.61	113.64	26.61
113.64								
26.74	113.63	26.85	113.65	26.86	113.65	26.86	113.65	27.17
113.65								
27.17	113.65	27.56	113.72	27.57	113.72	27.83	113.76	27.84
113.76								
28.01	113.81	28.01	113.81	28.24	114	29.6288	114.343	30.71
114.61								
37.8	116.34	38.32	116.47	38.33	116.47	38.41	116.47	38.91
116.46								
39.07	116.47	39.44	116.47	40.53	116.5	40.92	116.51	41.55
116.5								
41.65	116.49							

Manning's n Values, num = 3

Sta.	Value	Sta.	Value	Sta.	Value
0	.05	14.61	.04	29.6288	.05

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.
Expan.	14.61	29.6288	119.686	124.623	124.623	0.1	
	0.3						

CROSS SECTION OUTPUT Profile # p-1

* E.G. Elev (m)	*	117.46	* Element	*	Left OB *
Channel * Right OB *					
* Vel Head (m)	*	0.11	* Wt. n-Val	*	0.050 *
0.040 *					
* W.S. Elev (m)	*	117.35	* Reach Len. (m)	*	119.69 *
124.62 *					
* Crit W.S. (m)	*		* Flow Area (m2)	*	25.13 *
54.54 *					
* E.G. Slope (m/m)	*	0.000816	* Area (m2)	*	25.13 *
54.54 *					
* Q Total (m3/s)	*	124.00	* Flow (m3/s)	*	19.86 *
89.26 *					
* Top Width (m)	*	41.65	* Top Width (m)	*	14.61 *
15.02 *					

* Vel Total (m/s)	*	1.25	* Avg. Vel. (m/s)	*	0.79	*
1.64 *		0.75				
* Max Chl Dpth (m)	*	3.81	* Hydr. Depth (m)	*	1.72	*
3.63 *		1.65				
* Conv. Total (m3/s)	*	4340.7	* Conv. (m3/s)	*	695.1	*
3124.5 *		521.0				
* Length Wtd. (m)	*	123.78	* Wetted Per. (m)	*	15.45	*
15.72 *		13.14				
* Min Ch El (m)	*	113.54	* Shear (N/sq m)	*	13.02	*
27.76 *		12.07				
* Alpha	*	1.35	* Stream Power (N/m s)	*	1994.21	*
0.00 *		0.00				
* Frctn Loss (m)	*	0.09	* Cum Volume (cu m x 10^	*	0.08	*
0.36 *		0.07				
* C & E Loss (m)	*	0.01	* Cum SA (1000 m2)	*	74.20	*
152.22 *		66.53				

CROSS SECTION OUTPUT Profile # p-5

* E.G. Elev (m)	*	117.04	* Element	*	Left OB	*
Channel * Right OB *						
* Vel Head (m)	*	0.09	* Wt. n-Val	*	0.050	*
0.040 *		0.050				
* W.S. Elev (m)	*	116.95	* Reach Len. (m)	*	119.69	*
124.62 *		124.62				
* Crit W.S. (m)	*		* Flow Area (m2)	*	19.30	*
48.50 *		14.98				
* E.G. Slope (m/m)	*	0.000790	* Area (m2)	*	19.30	*
48.50 *		14.98				
* Q Total (m3/s)	*	96.00	* Flow (m3/s)	*	14.41	*
72.21 *		9.38				
* Top Width (m)	*	39.19	* Top Width (m)	*	12.15	*
15.02 *		12.02				
* Vel Total (m/s)	*	1.16	* Avg. Vel. (m/s)	*	0.75	*
1.49 *		0.63				
* Max Chl Dpth (m)	*	3.41	* Hydr. Depth (m)	*	1.59	*
3.23 *		1.25				
* Conv. Total (m3/s)	*	3415.7	* Conv. (m3/s)	*	512.7	*
2569.3 *		333.7				
* Length Wtd. (m)	*	123.86	* Wetted Per. (m)	*	12.61	*
15.72 *		12.74				
* Min Ch El (m)	*	113.54	* Shear (N/sq m)	*	11.86	*
23.89 *		9.11				
* Alpha	*	1.33	* Stream Power (N/m s)	*	1994.21	*
0.00 *		0.00				
* Frctn Loss (m)	*	0.09	* Cum Volume (cu m x 10^	*	0.06	*
0.32 *		0.05				
* C & E Loss (m)	*	0.01	* Cum SA (1000 m2)	*	61.00	*
150.28 *		54.80				

CROSS SECTION OUTPUT Profile # p-10

* E.G. Elev (m)	*	116.74	* Element	*	Left OB	*
Channel * Right OB *						

* Vel Head (m)	*	0.08	* Wt. n-Val	*	0.050	*
0.040 *		0.050 *				
* W.S. Elev (m)	*	116.66	* Reach Len. (m)	*	119.69	*
124.62 *		124.62 *				
* Crit W.S. (m)	*		* Flow Area (m2)	*	16.09	*
44.11 *		11.47 *				
* E.G. Slope (m/m)	*	0.000760	* Area (m2)	*	16.09	*
44.11 *		11.47 *				
* Q Total (m3/s)	*	78.00	* Flow (m3/s)	*	11.54	*
60.47 *		5.98 *				
* Top Width (m)	*	37.45	* Top Width (m)	*	10.41	*
15.02 *		12.02 *				
* Vel Total (m/s)	*	1.09	* Avg. Vel. (m/s)	*	0.72	*
1.37 *		0.52 *				
* Max Chl Dpth (m)	*	3.12	* Hydr. Depth (m)	*	1.55	*
2.94 *		0.95 *				
* Conv. Total (m3/s)	*	2829.8	* Conv. (m3/s)	*	418.8	*
2193.8 *		217.1 *				
* Length Wtd. (m)	*	123.92	* Wetted Per. (m)	*	10.83	*
15.72 *		12.45 *				
* Min Ch El (m)	*	113.54	* Shear (N/sq m)	*	11.07	*
20.90 *		6.86 *				
* Alpha	*	1.31	* Stream Power (N/m s)	*	1994.21	*
0.00 *		0.00 *				
* Frctn Loss (m)	*	0.09	* Cum Volume (cu m x 10^	*	0.04	*
0.28 *		0.04 *				
* C & E Loss (m)	*	0.00	* Cum SA (1000 m2)	*	53.36	*
143.49 *		46.66 *				

CROSS SECTION OUTPUT Profile # VV

* E.G. Elev (m)	*	114.25	* Element	*	Left OB	*
Channel * Right OB *						
* Vel Head (m)	*	0.01	* Wt. n-Val	*	0.050	*
0.040 *						
* W.S. Elev (m)	*	114.24	* Reach Len. (m)	*	119.69	*
124.62 *		124.62 *				
* Crit W.S. (m)	*		* Flow Area (m2)	*	0.65	*
7.85 *						
* E.G. Slope (m/m)	*	0.000633	* Area (m2)	*	0.65	*
7.85 *						
* Q Total (m3/s)	*	3.30	* Flow (m3/s)	*	0.13	*
3.17 *						
* Top Width (m)	*	16.99	* Top Width (m)	*	2.38	*
14.62 *						
* Vel Total (m/s)	*	0.39	* Avg. Vel. (m/s)	*	0.21	*
0.40 *						
* Max Chl Dpth (m)	*	0.70	* Hydr. Depth (m)	*	0.27	*
0.54 *						
* Conv. Total (m3/s)	*	131.1	* Conv. (m3/s)	*	5.3	*
125.8 *						
* Length Wtd. (m)	*	124.52	* Wetted Per. (m)	*	2.45	*
15.31 *						
* Min Ch El (m)	*	113.54	* Shear (N/sq m)	*	1.64	*
3.19 *						
* Alpha	*	1.05	* Stream Power (N/m s)	*	1994.21	*
0.00 *		0.00 *				

```

* Frctn Loss (m)          *      0.09 * Cum Volume (cu m x 10^ *      0.00 *
0.05 *      0.00 *
* C & E Loss (m)          *      0.00 * Cum SA (1000 m2)          *      3.10 *
106.38 *      2.44 *
*****
*****

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CROSS SECTION

RIVER: Malta

REACH: Malta

River Station: 115

INPUT

Description:

Station Elevation Data, num = 108

Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.	Elev.
0	116.45	.1	116.45	.2	116.45	.77	116.44	1.19	116.35
1.33	116.33	1.47	116.33	1.77	116.45	4.57	115.95	5.96	115.7
9.33	115.22	15.97	114.27	16.01	114.26	16.27	114.2	16.29	114.2
16.34	114.19	16.97	114.16	17.02	114.16	17.51	114.11	17.53	114.11
17.74	114.09	17.78	114.08	18.2	113.97	18.22	113.97	18.53	113.91
18.54	113.9	18.69	113.82	18.98	113.75	18.99	113.75	19.17	113.74
19.19	113.74	19.7	113.67	19.72	113.67	20.31	113.66	20.87	113.67
20.96	113.68	20.96	113.68	21.47	113.67	21.48	113.67	21.81	113.69
21.82	113.69	22.07	113.68	22.07	113.68	22.49	113.65	22.51	113.65
23.22	113.67	23.37	113.7	23.38	113.7	23.72	113.62	23.74	113.62
23.89	113.61	23.91	113.61	24.19	113.55	24.22	113.54	24.68	113.53
24.73	113.53	24.98	113.54	25	113.54	25.43	113.63	25.48	113.64
25.71	113.67	25.74	113.68	26.15	113.7	26.21	113.7	26.87	113.66
26.99	113.65	27.64	113.63	27.79	113.63	27.82	113.63	28.5	113.58
28.67	113.57	28.95	113.57	29.02	113.56	29.44	113.55	29.55	113.55
29.95	113.55	30.07	113.55	30.11	113.54	30.3	113.53	30.38	113.52
30.48	113.52	30.52	113.52	30.91	113.52	31.05	113.52	31.37	113.54
31.49	113.54	32.1	113.59	32.14	113.6	32.29	113.6	32.47	113.58
32.52	113.58	32.62	113.56	32.66	113.55	32.81	113.55	32.88	113.55
33.06	114.1	33.14	114.35	33.45	114.36	33.59	114.36		
34.42	114.52	22							

37.74	115.32	43.59	116.77	43.66	116.8	43.71	116.81	46.48
117.8								
50.62	118.28	50.88	118.3	50.98	118.34			

Manning's n Values, num = 3

Sta.	Value	Sta.	Value	Sta.	Value
0	.05	16.29	.04	34.4211	.05

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff Contr.
Expan.						
	16.29	34.4211		867.994	893.858	0.1
0.3						

CROSS SECTION OUTPUT Profile # p-1

```

*****
*****
* E.G. Elev (m) * 117.36 * Element * Left OB *
Channel * Right OB *
* Vel Head (m) * 0.08 * Wt. n-Val * 0.050 *
0.040 * 0.050 *
* W.S. Elev (m) * 117.28 * Reach Len. (m) * 867.99 *
893.86 * 893.86 *
* Crit W.S. (m) * * Flow Area (m2) * 30.54 *
64.14 * 15.38 *
* E.G. Slope (m/m) * 0.000639 * Area (m2) * 30.54 *
64.14 * 15.38 *
* Q Total (m3/s) * 124.00 * Flow (m3/s) * 22.53 *
91.72 * 9.75 *
* Top Width (m) * 45.03 * Top Width (m) * 16.29 *
18.13 * 10.61 *
* Vel Total (m/s) * 1.13 * Avg. Vel. (m/s) * 0.74 *
1.43 * 0.63 *
* Max Chl Dpth (m) * 3.76 * Hydr. Depth (m) * 1.87 *
3.54 * 1.45 *
* Conv. Total (m3/s) * 4904.4 * Conv. (m3/s) * 891.2 *
3627.7 * 385.5 *
* Length Wtd. (m) * 890.01 * Wetted Per. (m) * 17.33 *
18.85 * 10.96 *
* Min Ch El (m) * 113.52 * Shear (N/sq m) * 11.05 *
21.33 * 8.80 *
* Alpha * 1.29 * Stream Power (N/m s) * 2440.93 *
0.00 * 0.00 *
* Frctn Loss (m) * 0.82 * Cum Volume (cu m x 10^ * 0.08 *
0.35 * 0.07 *
* C & E Loss (m) * 0.01 * Cum SA (1000 m2) * 72.35 *
150.15 * 65.12 *
*****
*****

```

CROSS SECTION OUTPUT Profile # p-5

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*****
*****
* E.G. Elev (m) * 116.95 * Element * Left OB *
Channel * Right OB *
* Vel Head (m) * 0.07 * Wt. n-Val * 0.050 *
0.040 * 0.050 *
* W.S. Elev (m) * 116.88 * Reach Len. (m) * 867.99 *
893.86 * 893.86 *

```

* Crit W.S. (m)	*	* Flow Area (m2)	*	23.97 *
56.83 * 11.33 *				
* E.G. Slope (m/m)	*	0.000632 * Area (m2)	*	23.97 *
56.83 * 11.33 *				
* Q Total (m3/s)	*	96.00 * Flow (m3/s)	*	15.20 *
74.52 * 6.29 *				
* Top Width (m)	*	43.90 * Top Width (m)	*	16.29 *
18.13 * 9.48 *				
* Vel Total (m/s)	*	1.04 * Avg. Vel. (m/s)	*	0.63 *
1.31 * 0.56 *				
* Max Chl Dpth (m)	*	3.36 * Hydr. Depth (m)	*	1.47 *
3.13 * 1.20 *				
* Conv. Total (m3/s)	*	3819.8 * Conv. (m3/s)	*	604.6 *
2965.0 * 250.2 *				
* Length Wtd. (m)	*	890.56 * Wetted Per. (m)	*	16.93 *
18.85 * 9.76 *				
* Min Ch El (m)	*	113.52 * Shear (N/sq m)	*	8.77 *
18.67 * 7.19 *				
* Alpha	*	1.31 * Stream Power (N/m s)	*	2440.93 *
0.00 * 0.00 *				
* Frctn Loss (m)	*	0.81 * Cum Volume (cu m x 10^	*	0.06 *
0.31 * 0.05 *				
* C & E Loss (m)	*	0.01 * Cum SA (1000m2)	*	59.30 *
148.22 * 53.46 *				

CROSS SECTION OUTPUT Profile # p-10

* E.G. Elev (m)	*	116.65 * Element	*	Left OB *
Channel * Right OB *				
* Vel Head (m)	*	0.06 * Wt. n-Val	*	0.050 *
0.040 * 0.050 *				
* W.S. Elev (m)	*	116.58 * Reach Len. (m)	*	867.99 *
893.86 * 893.86 *				
* Crit W.S. (m)	*	* Flow Area (m2)	*	19.19 *
51.51 * 8.69 *				
* E.G. Slope (m/m)	*	0.000627 * Area (m2)	*	19.19 *
51.51 * 8.69 *				
* Q Total (m3/s)	*	78.00 * Flow (m3/s)	*	10.58 *
63.05 * 4.37 *				
* Top Width (m)	*	42.84 * Top Width (m)	*	16.29 *
18.13 * 8.42 *				
* Vel Total (m/s)	*	0.98 * Avg. Vel. (m/s)	*	0.55 *
1.22 * 0.50 *				
* Max Chl Dpth (m)	*	3.06 * Hydr. Depth (m)	*	1.18 *
2.84 * 1.03 *				
* Conv. Total (m3/s)	*	3113.9 * Conv. (m3/s)	*	422.4 *
2517.3 * 174.3 *				
* Length Wtd. (m)	*	891.10 * Wetted Per. (m)	*	16.63 *
18.85 * 8.66 *				
* Min Ch El (m)	*	113.52 * Shear (N/sq m)	*	7.10 *
16.81 * 6.18 *				
* Alpha	*	1.31 * Stream Power (N/m s)	*	2440.93 *
0.00 * 0.00 *				
* Frctn Loss (m)	*	0.80 * Cum Volume (cu m x 10^	*	0.04 *
0.28 * 0.04 *				
* C & E Loss (m)	*	0.01 * Cum SA (1000 m2)	*	51.76 *
141.43 * 45.39 *				

CROSS SECTION OUTPUT Profile # VV

* E.G. Elev (m)	*	114.17	* Element	*	Left OB	*
Channel * Right OB *						
* Vel Head (m)	*	0.01	* Wt. n-Val	*		*
0.040 *	*					
* W.S. Elev (m)	*	114.16	* Reach Len. (m)	*	867.99	*
893.86 * 893.86 *						
* Crit W.S. (m)	*		* Flow Area (m2)	*		*
7.86 *	*					
* E.G. Slope (m/m)	*	0.000764	* Area (m2)	*		*
7.86 *	*					
* Q Total (m3/s)	*	3.30	* Flow (m3/s)	*		*
3.30 *	*					
* Top Width (m)	*	16.02	* Top Width (m)	*		*
16.02 *	*					
* Vel Total (m/s)	*	0.42	* Avg. Vel. (m/s)	*		*
0.42 *	*					
* Max Chl Dpth (m)	*	0.64	* Hydr. Depth (m)	*		*
0.49 *	*					
* Conv. Total (m3/s)	*	119.4	* Conv. (m3/s)	*		*
119.4 *	*					
* Length Wtd. (m)	*	893.86	* Wetted Per. (m)	*		*
16.58 *	*					
* Min Ch El (m)	*	113.52	* Shear (N/sq m)	*		*
3.55 *	*					
* Alpha	*	1.00	* Stream Power (N/m s)	*	2440.93	*
0.00 * 0.00 *						
* Frctn Loss (m)	*	0.70	* Cum Volume (cu m x 10^	*	0.00	*
0.05 * 0.00 *						
* C & E Loss (m)	*	0.00	* Cum SA (1000 m2)	*	2.95	*
104.47 * 2.44 *						

CROSS SECTION

RIVER: Malta

REACH: Malta

River Station: 114

INPUT

Description:

Station Elevation Data, num = 61

Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.	Elev.
------	-------	------	-------	------	-------	------	-------	------	-------

0	115.07	.1	115.06	.11	115.06	.15	115.06	.2	115.05
9.65	114.51	10.29	114.04	10.38	114.04	10.76	114.02	10.88	114
11.42	113.93	11.48	113.92	11.76	113.89	11.79	113.88	11.95	113.84
11.98	113.83	12.05	113.82	12.42	113.76	12.47	113.73	12.76	113.54

12.81	113.52	13.18	113.35	13.55	113.18	13.64	113.16	14.29
113.03								
14.37	113.02	15.04	112.95	15.07	112.95	15.38	112.95	15.39
112.96								
15.54	113	15.56	113	15.78	112.98	15.81	112.97	16.11
112.87								
16.15	112.85	16.72	112.55	16.76	112.55	17.34	112.53	17.36
112.53								
17.82	112.62	17.84	112.62	18.61	112.64	18.63	112.64	19.2
112.65								
19.73	112.66	19.74	112.66	20.61	112.74	20.62	112.74	20.95
112.77								
21.69	112.77	22.67	112.93	22.69	112.93	22.93	112.94	22.97
112.95								
23.49	113.12	23.73	113.34	23.7845	113.4762	23.79	113.49	31.14
115.28								
31.24	115.33							

Manning's n Values, num = 3

Sta.	Value	Sta.	Value	Sta.	Value
0	.05	9.65	.04	23.7845	.05

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.
Expan.	9.65	23.7845	855.053	858.648	858.648	0.1	
0.3							

CROSS SECTION OUTPUT Profile # p-1

* E.G. Elev (m)	* 116.53	* Element	* Left OB *
Channel * Right OB *			
* Vel Head (m)	* 0.17	* Wt. n-Val	* 0.050 *
0.040 * 0.050 *			
* W.S. Elev (m)	* 116.36	* Reach Len. (m)	* 855.05 *
858.65 * 858.65 *			
* Crit W.S. (m)	*	* Flow Area (m2)	* 15.18 *
46.09 * 14.63 *			
* E.G. Slope (m/m)	* 0.001459	* Area (m2)	* 15.18 *
46.09 * 14.63 *			
* Q Total (m3/s)	* 124.00	* Flow (m3/s)	* 14.41 *
93.81 * 15.78 *			
* Top Width (m)	* 31.24	* Top Width (m)	* 9.65 *
14.13 * 7.46 *			
* Vel Total (m/s)	* 1.63	* Avg. Vel. (m/s)	* 0.95 *
2.04 * 1.08 *			
* Max Chl Dpth (m)	* 3.83	* Hydr. Depth (m)	* 1.57 *
3.26 * 1.96 *			
* Conv. Total (m3/s)	* 3246.8	* Conv. (m3/s)	* 377.4 *
2456.3 * 413.2 *			
* Length Wtd. (m)	* 858.35	* Wetted Per. (m)	* 10.96 *
14.81 * 8.72 *			
* Min Ch El (m)	* 112.53	* Shear (N/sq m)	* 19.82 *
44.51 * 24.00 *			
* Alpha	* 1.27	* Stream Power (N/m s)	* 1495.77 *
0.00 * 0.00 *			
* Frctn Loss (m)	* 0.67	* Cum Volume (cu m x 10^	* 0.06 *
0.31 * 0.06 *			

```

* C & E Loss (m)          *      0.03 * Cum SA (1000 m2)          *      61.09 *
135.73 *      57.05 *
*****
*****

```

CROSS SECTION OUTPUT Profile # p-5

```

*****
*****
* E.G. Elev (m)          *    116.14 * Element          *    Left OB *
Channel * Right OB *
* Vel Head (m)          *      0.14 * Wt. n-Val          *      0.050 *
0.040 *      0.050 *
* W.S. Elev (m)          *    115.99 * Reach Len. (m)      *    855.05 *
858.65 *    858.65 *
* Crit W.S. (m)          *          * Flow Area (m2)      *    11.63 *
40.90 *    11.89 *
* E.G. Slope (m/m)       * 0.001405 * Area (m2)           *    11.63 *
40.90 *    11.89 *
* Q Total (m3/s)         *    96.00 * Flow (m3/s)         *      9.29 *
75.44 *    11.28 *
* Top Width (m)          *    31.24 * Top Width (m)       *      9.65 *
14.13 *      7.46 *
* Vel Total (m/s)        *      1.49 * Avg. Vel. (m/s)     *      0.80 *
1.84 *      0.95 *
* Max Chl Dpth (m)       *      3.46 * Hydr. Depth (m)     *      1.21 *
2.89 *      1.59 *
* Conv. Total (m3/s)     *   2560.9 * Conv. (m3/s)        *    247.7 *
2012.3 *    300.9 *
* Length Wtd. (m)        *    858.40 * Wetted Per. (m)     *    10.59 *
14.81 *      8.35 *
* Min Ch El (m)          *    112.53 * Shear (N/sq m)      *    15.14 *
38.05 *    19.62 *
* Alpha                  *      1.28 * Stream Power (N/m s) *   1495.77 *
0.00 *      0.00 *
* Frctn Loss (m)         *      0.59 * Cum Volume (cu m x 10^ *      0.04 *
0.27 *      0.04 *
* C & E Loss (m)         *      0.03 * Cum SA (1000 m2)    *    48.04 *
133.80 *    45.89 *
*****
*****

```

CROSS SECTION OUTPUT Profile # p-10

```

*****
*****
* E.G. Elev (m)          *    115.84 * Element          *    Left OB *
Channel * Right OB *
* Vel Head (m)          *      0.13 * Wt. n-Val          *      0.050 *
0.040 *      0.050 *
* W.S. Elev (m)          *    115.71 * Reach Len. (m)      *    855.05 *
858.65 *    858.65 *
* Crit W.S. (m)          *          * Flow Area (m2)      *      8.92 *
36.92 *      9.79 *
* E.G. Slope (m/m)       * 0.001404 * Area (m2)           *      8.92 *
36.92 *      9.79 *
* Q Total (m3/s)         *    78.00 * Flow (m3/s)         *      6.07 *
63.58 *      8.35 *
* Top Width (m)          *    31.24 * Top Width (m)       *      9.65 *
14.13 *      7.46 *
* Vel Total (m/s)        *      1.40 * Avg. Vel. (m/s)     *      0.68 *
1.72 *      0.85 *

```

* Max Chl Dpth (m)	*	3.18	* Hydr. Depth (m)	*	0.92	*
2.61 *		1.31 *				
* Conv. Total (m3/s)	*	2082.0	* Conv. (m3/s)	*	162.0	*
1697.2 *		222.8 *				
* Length Wtd. (m)	*	858.44	* Wetted Per. (m)	*	10.31	*
14.81 *		8.07 *				
* Min Ch El (m)	*	112.53	* Shear (N/sq m)	*	11.91	*
34.31 *		16.70 *				
* Alpha	*	1.29	* Stream Power (N/m s)	*	1495.77	*
0.00 *		0.00 *				
* Frctn Loss (m)	*	0.55	* Cum Volume (cu m x 10^	*	0.03	*
0.24 *		0.03 *				
* C & E Loss (m)	*	0.03	* Cum SA (1000 m2)	*	40.50	*
127.01 *		38.30 *				

CROSS SECTION OUTPUT Profile # VV

* E.G. Elev (m)	*	113.46	* Element	*	Left OB	*
Channel * Right OB *						
* Vel Head (m)	*	0.01	* Wt. n-Val	*		*
0.040 *						
* W.S. Elev (m)	*	113.45	* Reach Len. (m)	*	855.05	*
858.65 *		858.65 *				
* Crit W.S. (m)	*		* Flow Area (m2)	*		*
6.62 *						
* E.G. Slope (m/m)	*	0.000802	* Area (m2)	*		*
6.62 *						
* Q Total (m3/s)	*	3.30	* Flow (m3/s)	*		*
3.30 *						
* Top Width (m)	*	10.82	* Top Width (m)	*		*
10.82 *						
* Vel Total (m/s)	*	0.50	* Avg. Vel. (m/s)	*		*
0.50 *						
* Max Chl Dpth (m)	*	0.92	* Hydr. Depth (m)	*		*
0.61 *						
* Conv. Total (m3/s)	*	116.5	* Conv. (m3/s)	*		*
116.5 *						
* Length Wtd. (m)	*	858.65	* Wetted Per. (m)	*		*
11.22 *						
* Min Ch El (m)	*	112.53	* Shear (N/sq m)	*		*
4.64 *						
* Alpha	*	1.00	* Stream Power (N/m s)	*	1495.77	*
0.00 *		0.00 *				
* Frctn Loss (m)	*	0.06	* Cum Volume (cu m x 10^	*	0.00	*
0.04 *		0.00 *				
* C & E Loss (m)	*	0.00	* Cum SA (1000 m2)	*	2.95	*
92.48 *		2.44 *				

CROSS SECTION

RIVER: Malta
REACH: Malta

River Station: 113

INPUT

Description:

Station Elevation Data, num = 61

Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.
0	115.7	.27	115.7	.82	115.69	1.2	115.68	3.07
115.7								
3.18	115.7	3.38	115.7	3.78	115.71	5.38	115.73	6.76
115.75								
6.83	115.74	7.04	115.74	7.23	115.74	8.11	115.74	9.38
115.73								
11.07	115.81	11.39	115.83	12.12	115.79	12.44	115.77	12.72
115.75								
16.26	115.81	17.25	115.82	17.42	115.82	17.61	115.82	18.6
115.82								
18.6	115.82	18.62	115.82	19.5	115.67	29.05	113.35	29.39
113.27								
29.51	113.24	29.6	113.22	34.71	112.22	34.75	112.22	36.91
112.22								
36.98	112.22	37.07	112.23	40.01	112.36	40.06	112.35	42.26
112.08								
42.28	112.08	43.41	112.01	43.44	112.01	44.56	112.08	44.62
112.09								
46.81	112.36	46.89	112.36	49.91	112.22	49.97	112.22	52.12
112.23								
57.4174	113.5987	57.5	113.62	60.11	114.09	66.75	115.28	67.51
115.4								
67.51	115.4	67.58	115.41	72.78	115.61	75.07	115.7	83.6
116								
83.7	116.01							

Manning's n Values, num = 3

Sta.	Value	Sta.	Value	Sta.	Value
0	.05	29.39	.04	57.4174	.05

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.
Expan.	29.39	57.4174	76.294	68.1499	68.1499	0.1	
0.3							

CROSS SECTION OUTPUT Profile # p-1

* E.G. Elev (m)	* 115.83	* Element	* Left OB *
Channel * Right OB *			
* Vel Head (m)	* 0.07	* Wt. n-Val	* 0.050 *
0.040 * 0.050 *			
* W.S. Elev (m)	* 115.76	* Reach Len. (m)	* 76.29 *
68.15 * 68.15 *			
* Crit W.S. (m)	* 14.26	* Flow Area (m2)	* 13.25 *
92.76 * 14.26 *			
* E.G. Slope (m/m)	* 0.000485	* Area (m2)	* 13.25 *
92.76 * 14.26 *			
* Q Total (m3/s)	* 124.00	* Flow (m3/s)	* 6.38 *
112.54 * 5.08 *			
* Top Width (m)	* 68.80	* Top Width (m)	* 21.35 *
28.03 * 19.42 *			

* Vel Total (m/s)	*	1.03	* Avg. Vel. (m/s)	*	0.48	*
1.21 *		0.36 *				
* Max Chl Dpth (m)	*	3.75	* Hydr. Depth (m)	*	0.62	*
3.31 *		0.73 *				
* Conv. Total (m3/s)	*	5632.5	* Conv. (m3/s)	*	289.7	*
5112.0 *		230.9 *				
* Length Wtd. (m)	*	68.80	* Wetted Per. (m)	*	21.71	*
28.35 *		19.58 *				
* Min Ch El (m)	*	112.01	* Shear (N/sq m)	*	2.90	*
15.55 *		3.46 *				
* Alpha	*	1.27	* Stream Power (N/m s)	*	4007.57	*
0.00 *		0.00 *				
* Frctn Loss (m)	*	0.05	* Cum Volume (cu m x 10^	*	0.05	*
0.25 *		0.04 *				
* C & E Loss (m)	*	0.01	* Cum SA (1000 m2)	*	47.84	*
117.63 *		45.51 *				

CROSS SECTION OUTPUT Profile # p-5

* E.G. Elev (m)	*	115.51	* Element	*	Left OB	*
Channel * Right OB *						
* Vel Head (m)	*	0.05	* Wt. n-Val	*	0.050	*
0.040 *		0.050 *				
* W.S. Elev (m)	*	115.46	* Reach Len. (m)	*	76.29	*
68.15 *		68.15 *				
* Crit W.S. (m)	*		* Flow Area (m2)	*	9.92	*
84.38 *		9.65 *				
* E.G. Slope (m/m)	*	0.000410	* Area (m2)	*	9.92	*
84.38 *		9.65 *				
* Q Total (m3/s)	*	96.00	* Flow (m3/s)	*	4.19	*
88.37 *		3.44 *				
* Top Width (m)	*	48.60	* Top Width (m)	*	9.04	*
28.03 *		11.54 *				
* Vel Total (m/s)	*	0.92	* Avg. Vel. (m/s)	*	0.42	*
1.05 *		0.36 *				
* Max Chl Dpth (m)	*	3.45	* Hydr. Depth (m)	*	1.10	*
3.01 *		0.84 *				
* Conv. Total (m3/s)	*	4742.8	* Conv. (m3/s)	*	207.2	*
4365.9 *		169.7 *				
* Length Wtd. (m)	*	68.61	* Wetted Per. (m)	*	9.30	*
28.35 *		11.70 *				
* Min Ch El (m)	*	112.01	* Shear (N/sq m)	*	4.29	*
11.96 *		3.31 *				
* Alpha	*	1.20	* Stream Power (N/m s)	*	4007.57	*
0.00 *		0.00 *				
* Frctn Loss (m)	*	0.05	* Cum Volume (cu m x 10^	*	0.03	*
0.21 *		0.03 *				
* C & E Loss (m)	*	0.01	* Cum SA (1000 m2)	*	40.05	*
115.70 *		37.73 *				

CROSS SECTION OUTPUT Profile # p-10

* E.G. Elev (m)	*	115.26	* Element	*	Left OB	*
Channel * Right OB *						

* Vel Head (m)	*	0.04	* Wt. n-Val	*	0.050	*
0.040 *		0.050 *				
* W.S. Elev (m)	*	115.22	* Reach Len. (m)	*	76.29	*
68.15 *		68.15 *				
* Crit W.S. (m)	*		* Flow Area (m2)	*	7.83	*
77.52 *		7.24 *				
* E.G. Slope (m/m)	*	0.000368	* Area (m2)	*	7.83	*
77.52 *		7.24 *				
* Q Total (m3/s)	*	78.00	* Flow (m3/s)	*	2.90	*
72.72 *		2.38 *				
* Top Width (m)	*	45.05	* Top Width (m)	*	8.03	*
28.03 *		8.99 *				
* Vel Total (m/s)	*	0.84	* Avg. Vel. (m/s)	*	0.37	*
0.94 *		0.33 *				
* Max Chl Dpth (m)	*	3.21	* Hydr. Depth (m)	*	0.98	*
2.77 *		0.81 *				
* Conv. Total (m3/s)	*	4065.8	* Conv. (m3/s)	*	151.2	*
3790.5 *		124.1 *				
* Length Wtd. (m)	*	68.49	* Wetted Per. (m)	*	8.26	*
28.35 *		9.13 *				
* Min Ch El (m)	*	112.01	* Shear (N/sq m)	*	3.42	*
9.87 *		2.86 *				
* Alpha	*	1.17	* Stream Power (N/m s)	*	4007.57	*
0.00 *		0.00 *				
* Frctn Loss (m)	*	0.05	* Cum Volume (cu m x 10^	*	0.02	*
0.19 *		0.02 *				
* C & E Loss (m)	*	0.01	* Cum SA (1000 m2)	*	32.94	*
108.91 *		31.24 *				

CROSS SECTION OUTPUT Profile # VV

* E.G. Elev (m)	*	113.40	* Element	*	Left OB	*
Channel * Right OB *						
* Vel Head (m)	*	0.00	* Wt. n-Val	*	0.050	*
0.040 *						
* W.S. Elev (m)	*	113.40	* Reach Len. (m)	*	76.29	*
68.15 *		68.15 *				
* Crit W.S. (m)	*		* Flow Area (m2)	*	0.03	*
26.54 *						
* E.G. Slope (m/m)	*	0.000026	* Area (m2)	*	0.03	*
26.54 *						
* Q Total (m3/s)	*	3.30	* Flow (m3/s)	*	0.00	*
3.30 *						
* Top Width (m)	*	27.77	* Top Width (m)	*	0.53	*
27.24 *						
* Vel Total (m/s)	*	0.12	* Avg. Vel. (m/s)	*	0.02	*
0.12 *						
* Max Chl Dpth (m)	*	1.39	* Hydr. Depth (m)	*	0.06	*
0.97 *						
* Conv. Total (m3/s)	*	647.6	* Conv. (m3/s)	*	0.1	*
647.5 *						
* Length Wtd. (m)	*	68.18	* Wetted Per. (m)	*	0.55	*
27.54 *						
* Min Ch El (m)	*	112.01	* Shear (N/sq m)	*	0.02	*
0.25 *						
* Alpha	*	1.00	* Stream Power (N/m s)	*	4007.57	*
0.00 *		0.00 *				

```

* Frctn Loss (m)          *      0.01 * Cum Volume (cu m x 10^ *      0.00 *
0.03 *      0.00 *
* C & E Loss (m)          *      0.00 * Cum SA (1000 m2)          *      2.73 *
76.14 *      2.44 *
*****
*****

```

CROSS SECTION

RIVER: Malta

REACH: Malta

River Station: 112

INPUT

Description:

Station Elevation Data, num = 130

Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.	Elev.
0	115.18	.1	115.17	.12	115.17	.49	115.14	1.8	115.11
2.14	115.1	2.48	115.11	2.85	115.09	3.54	115.1	5.38	115.07
6.22	115.05	6.29	115.04	6.53	115.05	8.04	115.13	9.11	115.08
9.25	115.07	9.84	115.05	11.33	115.02	11.87	114.99	12.09	115
12.32	115.02	14.95	114.84	16.17	114.62	17.23	114.57	18.05	114.55
18.36	114.54	19.3	114.4	19.66	114.33	21.12	114.09	21.49	114.08
22.74	113.14	22.74	113.14	22.75	113.14	22.8	113.12	22.8	113.12
22.97	113.13	23.08	113.12	23.09	113.12	23.18	113.07	23.33	113.05
23.34	113.05	23.62	113.07	23.63	113.07	23.96	113.03	23.98	113.03
24.13	113.02	24.45	113	24.46	113	24.64	112.85	24.67	112.85
25.36	112.86	25.63	112.81	26.41	112.86	26.43	112.85	26.68	112.83
26.69	112.82	27.21	112.67	27.24	112.68	27.77	112.7	28.04	112.77
28.15	112.8	28.18	112.8	28.67	112.8	28.69	112.81	29.01	112.83
29.04	112.84	29.38	112.91	29.43	112.92	30.02	112.97	30.04	112.97
30.27	112.98	30.3	112.98	30.6	113.01	30.61	113.01	30.7	113.01
30.72	113.01	30.95	112.99	30.97	112.99	31.19	112.93	31.22	112.94
31.6	113.02	31.67	113	31.96	112.93	32.44	112.8	32.49	112.79
33	112.77	33.06	112.78	33.58	112.88	33.6	112.88	33.74	112.87
33.78	112.87	33.78	112.87	34.09	112.88	34.14	112.88	34.55	112.84
34.58	112.85	34.87	112.88	35.11	112.89	35.13	112.9	35.31	112.92

35.34	112.92	35.61	112.88	35.69	112.9	36.34	113.01	36.58
113.03								
36.61	113.03	36.75	113.01	36.86	113	36.94	113	37.49
113.03								
37.76	113.1	37.81	113.1	38.11	113.1	38.34	113.12	38.38
113.13								
38.61	113.16	38.62	113.16	38.63	113.16	38.78	113.14	38.85
113.15								
39.27	113.18	39.38	113.18	40.04	113.19	40.07	113.19	40.19
113.19								
43.4714	113.5881	45.63	113.85	60.19	115.61	65.21	116	65.31
116.02								

Manning's n Values, num = 3

Sta.	Value	Sta.	Value	Sta.	Value
0	.05	23.09	.04	43.4714	.05

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff Contr.
Expan.	23.09	43.4714	53.1469	48.11	48.11	0.1
0.3						

CROSS SECTION OUTPUT Profile # p-1

```

*****
*****
* E.G. Elev (m) * 115.77 * Element * Left OB *
Channel * Right OB *
* Vel Head (m) * 0.14 * Wt. n-Val * 0.050 *
0.040 * 0.050 *
* W.S. Elev (m) * 115.63 * Reach Len. (m) * 53.15 *
48.11 * 48.11 *
* Crit W.S. (m) * * Flow Area (m2) * 19.65 *
53.48 * 17.26 *
* E.G. Slope (m/m) * 0.001488 * Area (m2) * 19.65 *
53.48 * 17.26 *
* Q Total (m3/s) * 124.00 * Flow (m3/s) * 13.30 *
97.31 * 13.39 *
* Top Width (m) * 60.47 * Top Width (m) * 23.09 *
20.38 * 17.00 *
* Vel Total (m/s) * 1.37 * Avg. Vel. (m/s) * 0.68 *
1.82 * 0.78 *
* Max Chl Dpth (m) * 2.96 * Hydr. Depth (m) * 0.85 *
2.62 * 1.02 *
* Conv. Total (m3/s) * 3214.2 * Conv. (m3/s) * 344.8 *
2522.4 * 347.1 *
* Length Wtd. (m) * 48.74 * Wetted Per. (m) * 23.94 *
20.65 * 17.12 *
* Min Ch El (m) * 112.67 * Shear (N/sq m) * 11.99 *
37.81 * 14.71 *
* Alpha * 1.44 * Stream Power (N/m s) * 3127.06 *
0.00 * 0.00 *
* Frctn Loss (m) * 0.07 * Cum Volume (cu m x 10^ * 0.04 *
0.24 * 0.04 *
* C & E Loss (m) * 0.01 * Cum SA (1000 m2) * 46.14 *
115.98 * 44.27 *
*****
*****

```

CROSS SECTION OUTPUT Profile # p-5

```

*****
*****
* E.G. Elev (m)          * 115.46 * Element          * Left OB *
Channel * Right OB *
* Vel Head (m)          * 0.13 * Wt. n-Val          * 0.050 *
0.040 * 0.050 *
* W.S. Elev (m)          * 115.33 * Reach Len. (m)      * 53.15 *
48.11 * 48.11 *
* Crit W.S. (m)          *          * Flow Area (m2)      * 12.74 *
47.38 * 12.57 *
* E.G. Slope (m/m)       * 0.001525 * Area (m2)           * 12.74 *
47.38 * 12.57 *
* Q Total (m3/s)         * 96.00 * Flow (m3/s)         * 6.59 *
80.49 * 8.91 *
* Top Width (m)          * 57.89 * Top Width (m)       * 23.09 *
20.38 * 14.42 *
* Vel Total (m/s)        * 1.32 * Avg. Vel. (m/s)     * 0.52 *
1.70 * 0.71 *
* Max Chl Dpth (m)       * 2.66 * Hydr. Depth (m)     * 0.55 *
2.32 * 0.87 *
* Conv. Total (m3/s)     * 2458.1 * Conv. (m3/s)        * 168.8 *
2061.1 * 228.2 *
* Length Wtd. (m)        * 48.55 * Wetted Per. (m)     * 23.64 *
20.65 * 14.52 *
* Min Ch El (m)          * 112.67 * Shear (N/sq m)      * 8.06 *
34.33 * 12.94 *
* Alpha                  * 1.42 * Stream Power (N/m s) * 3127.06 *
0.00 * 0.00 *
* Frctn Loss (m)         * 0.07 * Cum Volume (cu m x 10^ * 0.03 *
0.21 * 0.03 *
* C & E Loss (m)         * 0.01 * Cum SA (1000 m2)    * 38.83 *
114.05 * 36.85 *
*****
*****

```

CROSS SECTION OUTPUT Profile # p-10

```

*****
*****
* E.G. Elev (m)          * 115.21 * Element          * Left OB *
Channel * Right OB *
* Vel Head (m)          * 0.12 * Wt. n-Val          * 0.050 *
0.040 * 0.050 *
* W.S. Elev (m)          * 115.09 * Reach Len. (m)      * 53.15 *
48.11 * 48.11 *
* Crit W.S. (m)          *          * Flow Area (m2)      * 7.26 *
42.42 * 9.30 *
* E.G. Slope (m/m)       * 0.001588 * Area (m2)           * 7.26 *
42.42 * 9.30 *
* Q Total (m3/s)         * 78.00 * Flow (m3/s)         * 3.59 *
68.32 * 6.09 *
* Top Width (m)          * 50.00 * Top Width (m)       * 17.21 *
20.38 * 12.41 *
* Vel Total (m/s)        * 1.32 * Avg. Vel. (m/s)     * 0.49 *
1.61 * 0.65 *
* Max Chl Dpth (m)       * 2.42 * Hydr. Depth (m)     * 0.42 *
2.08 * 0.75 *
* Conv. Total (m3/s)     * 1957.3 * Conv. (m3/s)        * 90.1 *
1714.3 * 152.9 *

```

* Length Wtd. (m)	*	48.41	* Wetted Per. (m)	*	17.60	*
20.65 *		12.50 *				
* Min Ch El (m)	*	112.67	* Shear (N/sq m)	*	6.43	*
32.00 *		11.60 *				
* Alpha	*	1.32	* Stream Power (N/m s)	*	3127.06	*
0.00 *		0.00 *				
* Frctn Loss (m)	*	0.08	* Cum Volume (cu m x 10^	*	0.02	*
0.18 *		0.02 *				
* C & E Loss (m)	*	0.00	* Cum SA (1000 m2)	*	31.98	*
107.26 *		30.51 *				

CROSS SECTION OUTPUT Profile # VV

* E.G. Elev (m)	*	113.39	* Element	*	Left OB	*
Channel *		Right OB *				
* Vel Head (m)	*	0.01	* Wt. n-Val	*	0.050	*
0.040 *						
* W.S. Elev (m)	*	113.38	* Reach Len. (m)	*	53.15	*
48.11 *		48.11 *				
* Crit W.S. (m)	*		* Flow Area (m2)	*	0.13	*
7.81 *						
* E.G. Slope (m/m)	*	0.000916	* Area (m2)	*	0.13	*
7.81 *						
* Q Total (m3/s)	*	3.30	* Flow (m3/s)	*	0.02	*
3.28 *						
* Top Width (m)	*	19.36	* Top Width (m)	*	0.67	*
18.68 *						
* Vel Total (m/s)	*	0.42	* Avg. Vel. (m/s)	*	0.19	*
0.42 *						
* Max Chl Dpth (m)	*	0.71	* Hydr. Depth (m)	*	0.19	*
0.42 *						
* Conv. Total (m3/s)	*	109.0	* Conv. (m3/s)	*	0.8	*
108.3 *						
* Length Wtd. (m)	*	48.13	* Wetted Per. (m)	*	0.76	*
18.94 *						
* Min Ch El (m)	*	112.67	* Shear (N/sq m)	*	1.53	*
3.71 *						
* Alpha	*	1.01	* Stream Power (N/m s)	*	3127.06	*
0.00 *		0.00 *				
* Frctn Loss (m)	*	0.07	* Cum Volume (cu m x 10^	*	0.00	*
0.03 *		0.00 *				
* C & E Loss (m)	*	0.00	* Cum SA (1000 m2)	*	2.68	*
74.57 *		2.44 *				

CROSS SECTION

RIVER: Malta

REACH: Malta

River Station: 111

INPUT

Description:

Station Elevation Data, num = 50

Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.	Elev.
Elev.							

```

*****
*****
      0  115.09      .1  115.09      .2  115.09      1.59  115.07      1.94
115.02
      2.55  114.93      3.71  114.88      4.15  114.88      5.49  114.88      7.59
114.92
      8.18  114.91      8.77  114.92      9.39  114.95     10.19  114.98     10.35
114.98
      13  114.93     13.62  114.96     14.09  114.95     15.39  114.64     15.65
114.58
      18.82  114.07     19.51  113.93     19.93  113.99     20.77  113.75     24.18
113.26
      28.29  113.14     28.88  113.1     30.55      113     30.59      113     30.64
112.99
      31.27  112.96     32.43  112.88      34  112.79     34.51  112.75     34.75
112.74
      34.82  112.74     35.93  112.77     36.12  112.78     36.24  112.79     37.92
112.89
      38.04  112.9     38.18  112.91     39.73      113     39.8      113
41.1991113.0686
      41.84  113.1     41.84  113.1     45.31  113.65     75.42  115.61     75.52
115.62

```

Manning's n Values, num = 3

```

      Sta.  Value      Sta.  Value      Sta.  Value
*****
      0      .05     24.18      .04  41.1991      .05

```

```

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.
Expan.
      24.18  41.1991           96.1398  88.8371  88.8371           0.1
0.3

```

CROSS SECTION OUTPUT Profile # p-1

```

*****
*****
* E.G. Elev (m)      *  115.69 * Element      *  Left OB *
Channel * Right OB *
* Vel Head (m)      *      0.10 * Wt. n-Val      *  0.050 *
0.040 *  0.050 *
* W.S. Elev (m)      *  115.59 * Reach Len. (m) *  96.14 *
88.84 *  88.84 *
* Crit W.S. (m)      *      * Flow Area (m2) *  24.62 *
44.27 *  38.09 *
* E.G. Slope (m/m)    *  0.001328 * Area (m2)      *  24.62 *
44.27 *  38.09 *
* Q Total (m3/s)      *  124.00 * Flow (m3/s)     *  17.83 *
76.21 *  29.97 *
* Top Width (m)       *  75.06 * Top Width (m)   *  24.18 *
17.02 *  33.87 *
* Vel Total (m/s)     *  1.16 * Avg. Vel. (m/s) *  0.72 *
1.72 *  0.79 *
* Max Chl Dpth (m)    *  2.85 * Hydr. Depth (m) *  1.02 *
2.60 *  1.12 *
* Conv. Total (m3/s)  *  3403.1 * Conv. (m3/s)    *  489.3 *
2091.4 *  822.4 *
* Length Wtd. (m)     *  90.08 * Wetted Per. (m) *  24.86 *
17.04 *  33.97 *

```

* Min Ch El (m)	* 112.74	* Shear (N/sq m)	* 12.89
33.82 * 14.60 *			
* Alpha	* 1.52	* Stream Power (N/m s)	* 3615.92
0.00 * 0.00 *			
* Frctn Loss (m)	* 0.09	* Cum Volume (cu m x 10^	* 0.04
0.24 * 0.04 *			
* C & E Loss (m)	* 0.01	* Cum SA (1000 m2)	* 44.89
115.08 * 43.05 *			

CROSS SECTION OUTPUT Profile # p-5

* E.G. Elev (m)	* 115.38	* Element	* Left OB *
Channel * Right OB *			
* Vel Head (m)	* 0.10	* Wt. n-Val	* 0.050
0.040 * 0.050 *			
* W.S. Elev (m)	* 115.28	* Reach Len. (m)	* 96.14
88.84 * 88.84 *			
* Crit W.S. (m)	*	* Flow Area (m2)	* 17.13
39.00 * 28.34 *			
* E.G. Slope (m/m)	* 0.001453	* Area (m2)	* 17.13
39.00 * 28.34 *			
* Q Total (m3/s)	* 96.00	* Flow (m3/s)	* 10.28
64.54 * 21.18 *			
* Top Width (m)	* 70.31	* Top Width (m)	* 24.18
17.02 * 29.11 *			
* Vel Total (m/s)	* 1.14	* Avg. Vel. (m/s)	* 0.60
1.65 * 0.75 *			
* Max Chl Dpth (m)	* 2.54	* Hydr. Depth (m)	* 0.71
2.29 * 0.97 *			
* Conv. Total (m3/s)	* 2518.6	* Conv. (m3/s)	* 269.6
1693.2 * 555.8 *			
* Length Wtd. (m)	* 89.89	* Wetted Per. (m)	* 24.55
17.04 * 29.21 *			
* Min Ch El (m)	* 112.74	* Shear (N/sq m)	* 9.94
32.60 * 13.83 *			
* Alpha	* 1.55	* Stream Power (N/m s)	* 3615.92
0.00 * 0.00 *			
* Frctn Loss (m)	* 0.10	* Cum Volume (cu m x 10^	* 0.03
0.21 * 0.03 *			
* C & E Loss (m)	* 0.01	* Cum SA (1000 m2)	* 37.57
113.15 * 35.80 *			

CROSS SECTION OUTPUT Profile # p-10

* E.G. Elev (m)	* 115.12	* Element	* Left OB *
Channel * Right OB *			
* Vel Head (m)	* 0.11	* Wt. n-Val	* 0.050
0.040 * 0.050 *			
* W.S. Elev (m)	* 115.02	* Reach Len. (m)	* 96.14
88.84 * 88.84 *			
* Crit W.S. (m)	*	* Flow Area (m2)	* 10.97
34.59 * 21.31 *			
* E.G. Slope (m/m)	* 0.001679	* Area (m2)	* 10.97
34.59 * 21.31 *			

* Q Total (m3/s)	*	78.00	* Flow (m3/s)	*	5.59	*
56.79 *		15.62	*			*
* Top Width (m)	*	64.37	* Top Width (m)	*	22.23	*
17.02 *		25.13	*			*
* Vel Total (m/s)	*	1.17	* Avg. Vel. (m/s)	*	0.51	*
1.64 *		0.73	*			*
* Max Chl Dpth (m)	*	2.28	* Hydr. Depth (m)	*	0.49	*
2.03 *		0.85	*			*
* Conv. Total (m3/s)	*	1903.6	* Conv. (m3/s)	*	136.4	*
1386.1 *		381.1	*			*
* Length Wtd. (m)	*	89.68	* Wetted Per. (m)	*	22.41	*
17.04 *		25.21	*			*
* Min Ch El (m)	*	112.74	* Shear (N/sq m)	*	8.06	*
33.41 *		13.92	*			*
* Alpha	*	1.54	* Stream Power (N/m s)	*	3615.92	*
0.00 *		0.00	*			*
* Frctn Loss (m)	*	0.11	* Cum Volume (cu m x 10^	*	0.02	*
0.18 *		0.02	*			*
* C & E Loss (m)	*	0.01	* Cum SA (1000 m2)	*	30.93	*
106.36 *		29.61	*			*

CROSS SECTION OUTPUT Profile # VV

* E.G. Elev (m)	*	113.32	* Element	*	Left OB	*
Channel *						
* Vel Head (m)	*	0.02	* Wt. n-Val	*	0.050	*
0.040 *		0.050	*			*
* W.S. Elev (m)	*	113.30	* Reach Len. (m)	*	96.14	*
88.84 *		88.84	*			*
* Crit W.S. (m)	*		* Flow Area (m2)	*	0.01	*
5.39 *		0.27	*			*
* E.G. Slope (m/m)	*	0.002665	* Area (m2)	*	0.01	*
5.39 *		0.27	*			*
* Q Total (m3/s)	*	3.30	* Flow (m3/s)	*	0.00	*
3.23 *		0.07	*			*
* Top Width (m)	*	19.23	* Top Width (m)	*	0.29	*
17.02 *		1.92	*			*
* Vel Total (m/s)	*	0.58	* Avg. Vel. (m/s)	*	0.08	*
0.60 *		0.28	*			*
* Max Chl Dpth (m)	*	0.56	* Hydr. Depth (m)	*	0.02	*
0.32 *		0.14	*			*
* Conv. Total (m3/s)	*	63.9	* Conv. (m3/s)	*	0.0	*
62.5 *		1.4	*			*
* Length Wtd. (m)	*	90.43	* Wetted Per. (m)	*	0.30	*
17.04 *		1.93	*			*
* Min Ch El (m)	*	112.74	* Shear (N/sq m)	*	0.54	*
8.26 *		3.63	*			*
* Alpha	*	1.04	* Stream Power (N/m s)	*	3615.92	*
0.00 *		0.00	*			*
* Frctn Loss (m)	*	0.40	* Cum Volume (cu m x 10^	*	0.00	*
0.03 *		0.00	*			*
* C & E Loss (m)	*	0.00	* Cum SA (1000 m2)	*	2.66	*
73.71 *		2.39	*			*

CROSS SECTION

RIVER: Malta
REACH: Malta

River Station: 110

INPUT

Description:

Station Elevation Data, num = 72

Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.
0	114.78	.1	114.78	.2	114.77	.98	114.75	1.71
114.61								
2.11	114.55	3.49	114.58	4.57	114.62	4.97	114.57	5.45
114.53								
8.6	114.5	8.77	114.47	9.18	114.46	10.46	114.36	13.17
114.12								
13.56	114.05	13.95	113.92	14.42	113.65	15.02	113.67	15.19
113.38								
15.58	113.35	15.78	113.44	16.02	113.29	16.26	113.16	16.37
113.03								
16.42	112.98	16.79	112.8	17.3	112.54	17.84	112.49	17.86
112.49								
18.64	112.41	20.01	112.52	20.81	112.53	21.66	112.65	22.32
112.7								
22.81	112.74	23.58	112.74	24.1	112.73	24.63	112.73	25.15
112.73								
26.37	112.73	26.85	112.73	27.14	112.73	29.55	112.74	29.88
112.74								
31.12	112.74	32.23	112.73	33.5	112.73	35.75	112.71	36.29
112.71								
36.54	112.75	37.14	112.86	37.87	112.99	37.89	113	37.97
113.03								
38.21	113.41	39.6287	113.3901	41.06	113.37	42.52	113.3	45.12
113.19								
46.45	113.19	48.43	113.47	48.57	113.48	48.66	113.48	56.01
114.53								
57.94	114.59	59.69	114.7	61.32	114.87	62.83	114.96	65.63
115.18								
65.73	115.18	65.83	115.19					

Manning's n Values, num = 3

Sta.	Value	Sta.	Value	Sta.	Value
0	.05	20.81	.04	39.6287	.05

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.
Expan.	20.81	39.6287	133.495	164.898	164.898		0.1
	0.3						

CROSS SECTION OUTPUT Profile # p-1

* E.G. Elev (m)	* 115.59	* Element	* Left OB *
Channel * Right OB *			
* Vel Head (m)	* 0.07	* Wt. n-Val	* 0.050 *
0.040 *	0.050 *		

* W.S. Elev (m)	* 115.52	* Reach Len. (m)	* 133.50
164.90 * 164.90 *			
* Crit W.S. (m)	*	* Flow Area (m2)	* 32.73
51.32 * 37.97 *			
* E.G. Slope (m/m)	* 0.000834	* Area (m2)	* 32.73
51.32 * 37.97 *			
* Q Total (m3/s)	* 124.00	* Flow (m3/s)	* 24.53
71.70 * 27.77 *			
* Top Width (m)	* 65.83	* Top Width (m)	* 20.81
18.82 * 26.20 *			
* Vel Total (m/s)	* 1.02	* Avg. Vel. (m/s)	* 0.75
1.40 * 0.73 *			
* Max Chl Dpth (m)	* 3.11	* Hydr. Depth (m)	* 1.57
2.73 * 1.45 *			
* Conv. Total (m3/s)	* 4294.0	* Conv. (m3/s)	* 849.6
2482.8 * 961.6 *			
* Length Wtd. (m)	* 160.94	* Wetted Per. (m)	* 22.15
19.07 * 26.65 *			
* Min Ch El (m)	* 112.53	* Shear (N/sq m)	* 12.09
22.01 * 11.65 *			
* Alpha	* 1.32	* Stream Power (N/m s)	* 3151.96
0.00 * 0.00 *			
* Frctn Loss (m)	* 0.14	* Cum Volume (cu m x 10^	* 0.04
0.23 * 0.04 *			
* C & E Loss (m)	* 0.00	* Cum SA (1000 m2)	* 42.73
113.49 * 40.38 *			

CROSS SECTION OUTPUT Profile # p-5

* E.G. Elev (m)	* 115.27	* Element	* Left OB *
Channel * Right OB *			
* Vel Head (m)	* 0.06	* Wt. n-Val	* 0.050
0.040 * 0.050 *			
* W.S. Elev (m)	* 115.21	* Reach Len. (m)	* 133.50
164.90 * 164.90 *			
* Crit W.S. (m)	*	* Flow Area (m2)	* 26.24
45.46 * 29.80 *			
* E.G. Slope (m/m)	* 0.000863	* Area (m2)	* 26.24
45.46 * 29.80 *			
* Q Total (m3/s)	* 96.00	* Flow (m3/s)	* 17.43
59.56 * 19.01 *			
* Top Width (m)	* 65.83	* Top Width (m)	* 20.81
18.82 * 26.20 *			
* Vel Total (m/s)	* 0.95	* Avg. Vel. (m/s)	* 0.66
1.31 * 0.64 *			
* Max Chl Dpth (m)	* 2.80	* Hydr. Depth (m)	* 1.26
2.42 * 1.14 *			
* Conv. Total (m3/s)	* 3268.6	* Conv. (m3/s)	* 593.5
2028.0 * 647.2 *			
* Length Wtd. (m)	* 161.50	* Wetted Per. (m)	* 21.84
19.07 * 26.34 *			
* Min Ch El (m)	* 112.53	* Shear (N/sq m)	* 10.17
20.16 * 9.57 *			
* Alpha	* 1.37	* Stream Power (N/m s)	* 3151.96
0.00 * 0.00 *			
* Frctn Loss (m)	* 0.15	* Cum Volume (cu m x 10^	* 0.03
0.20 * 0.03 *			

```

* C & E Loss (m)          *      0.00 * Cum SA (1000 m2)          *      35.41 *
111.56 *      33.35 *
*****
*****

```

CROSS SECTION OUTPUT Profile # p-10

```

*****
*****
* E.G. Elev (m)          *      115.00 * Element          *      Left OB *
Channel * Right OB *
* Vel Head (m)          *      0.06 * Wt. n-Val          *      0.050 *
0.040 *      0.050 *
* W.S. Elev (m)          *      114.94 * Reach Len. (m)      *      133.50 *
164.90 *      164.90 *
* Crit W.S. (m)          *          * Flow Area (m2)      *      20.71 *
40.45 *      23.24 *
* E.G. Slope (m/m)       * 0.000942 * Area (m2)          *      20.71 *
40.45 *      23.24 *
* Q Total (m3/s)         *      78.00 * Flow (m3/s)         *      12.37 *
51.25 *      14.38 *
* Top Width (m)          *      62.49 * Top Width (m)        *      20.81 *
18.82 *      22.86 *
* Vel Total (m/s)        *      0.92 * Avg. Vel. (m/s)     *      0.60 *
1.27 *      0.62 *
* Max Chl Dpth (m)       *      2.53 * Hydr. Depth (m)     *      1.00 *
2.15 *      1.02 *
* Conv. Total (m3/s)     *      2540.9 * Conv. (m3/s)        *      403.0 *
1669.4 *      468.5 *
* Length Wtd. (m)        *      162.17 * Wetted Per. (m)     *      21.57 *
19.07 *      22.98 *
* Min Ch El (m)          *      112.53 * Shear (N/sq m)      *      8.87 *
19.60 *      9.35 *
* Alpha                  *      1.38 * Stream Power (N/m s) *      3151.96 *
0.00 *      0.00 *
* Frctn Loss (m)         *      0.15 * Cum Volume (cu m x 10^ *      0.02 *
0.18 *      0.02 *
* C & E Loss (m)         *      0.00 * Cum SA (1000 m2)    *      28.86 *
104.77 *      27.47 *
*****
*****

```

CROSS SECTION OUTPUT Profile # VV

```

*****
*****
* E.G. Elev (m)          *      112.92 * Element          *      Left OB *
Channel * Right OB *
* Vel Head (m)          *      0.03 * Wt. n-Val          *      0.050 *
0.040 *          *
* W.S. Elev (m)          *      112.89 * Reach Len. (m)      *      133.50 *
164.90 *      164.90 *
* Crit W.S. (m)          *          * Flow Area (m2)      *      1.54 *
2.70 *          *
* E.G. Slope (m/m)       * 0.008499 * Area (m2)          *      1.54 *
2.70 *          *
* Q Total (m3/s)         *      3.30 * Flow (m3/s)         *      1.44 *
1.86 *          *
* Top Width (m)          *      20.69 * Top Width (m)        *      4.20 *
16.49 *          *
* Vel Total (m/s)        *      0.78 * Avg. Vel. (m/s)     *      0.93 *
0.69 *          *

```


33.65	112.03	33.87	111.98	33.89	111.98	34.12	112.04	34.13
112.04								
34.39	112.07	34.4	112.07	34.67	112.09	34.68	112.1	34.81
112.05								
34.82	112.04	40.88	112.68	57.26	114.7	67.64	115.02	67.66
115.02								
67.74	115.02	67.84	115.04					

Manning's n Values, num = 3

Sta.	Value	Sta.	Value	Sta.	Value
0	.05	14.17	.04	27.0759	.05

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff Contr.
Expan.	14.17	27.0759	207.008	185.852	185.852	0.1
	0.3					

CROSS SECTION OUTPUT Profile # p-1

```

*****
*****
* E.G. Elev (m) * 115.45 * Element * Left OB *
Channel * Right OB *
* Vel Head (m) * 0.06 * Wt. n-Val * 0.050 *
0.040 * 0.050 *
* W.S. Elev (m) * 115.39 * Reach Len. (m) * 207.01 *
185.85 * 185.85 *
* Crit W.S. (m) * * Flow Area (m2) * 12.66 *
33.02 * 79.10 *
* E.G. Slope (m/m) * 0.000885 * Area (m2) * 12.66 *
33.02 * 79.10 *
* Q Total (m3/s) * 124.00 * Flow (m3/s) * 6.73 *
44.86 * 72.40 *
* Top Width (m) * 67.84 * Top Width (m) * 14.17 *
12.91 * 40.76 *
* Vel Total (m/s) * 0.99 * Avg. Vel. (m/s) * 0.53 *
1.36 * 0.92 *
* Max Chl Dpth (m) * 3.78 * Hydr. Depth (m) * 0.89 *
2.56 * 1.94 *
* Conv. Total (m3/s) * 4167.1 * Conv. (m3/s) * 226.2 *
1507.6 * 2433.2 *
* Length Wtd. (m) * 189.54 * Wetted Per. (m) * 15.00 *
13.39 * 41.48 *
* Min Ch El (m) * 111.99 * Shear (N/sq m) * 7.33 *
21.43 * 16.56 *
* Alpha * 1.19 * Stream Power (N/m s) * 3248.19 *
0.00 * 0.00 *
* Frctn Loss (m) * 0.19 * Cum Volume (cu m x 10^ * 0.04 *
0.23 * 0.03 *
* C & E Loss (m) * 0.00 * Cum SA (1000 m2) * 40.39 *
110.87 * 34.86 *
*****
*****

```

CROSS SECTION OUTPUT Profile # p-5

```

*****
*****
* E.G. Elev (m) * 115.12 * Element * Left OB *
Channel * Right OB *

```

* Vel Head (m)	*	0.05	* Wt. n-Val	*	0.050	*
0.040 *		0.050 *				
* W.S. Elev (m)	*	115.07	* Reach Len. (m)	*	207.01	*
185.85 *		185.85 *				
* Crit W.S. (m)	*		* Flow Area (m2)	*	8.14	*
28.90 *		66.08 *				
* E.G. Slope (m/m)	*	0.000941	* Area (m2)	*	8.14	*
28.90 *		66.08 *				
* Q Total (m3/s)	*	96.00	* Flow (m3/s)	*	3.37	*
37.03 *		55.60 *				
* Top Width (m)	*	67.84	* Top Width (m)	*	14.17	*
12.91 *		40.76 *				
* Vel Total (m/s)	*	0.93	* Avg. Vel. (m/s)	*	0.41	*
1.28 *		0.84 *				
* Max Chl Dpth (m)	*	3.46	* Hydr. Depth (m)	*	0.57	*
2.24 *		1.62 *				
* Conv. Total (m3/s)	*	3129.6	* Conv. (m3/s)	*	109.8	*
1207.3 *		1812.4 *				
* Length Wtd. (m)	*	189.66	* Wetted Per. (m)	*	14.68	*
13.39 *		41.16 *				
* Min Ch El (m)	*	111.99	* Shear (N/sq m)	*	5.12	*
19.93 *		14.82 *				
* Alpha	*	1.21	* Stream Power (N/m s)	*	3248.19	*
0.00 *		0.00 *				
* Frctn Loss (m)	*	0.20	* Cum Volume (cu m x 10^	*	0.03	*
0.20 *		0.02 *				
* C & E Loss (m)	*	0.00	* Cum SA (1000 m2)	*	33.08	*
108.94 *		27.82 *				

CROSS SECTION OUTPUT Profile # p-10

* E.G. Elev (m)	*	114.85	* Element	*	Left OB	*
Channel *						
* Right OB *						
* Vel Head (m)	*	0.05	* Wt. n-Val	*	0.050	*
0.040 *		0.050 *				
* W.S. Elev (m)	*	114.80	* Reach Len. (m)	*	207.01	*
185.85 *		185.85 *				
* Crit W.S. (m)	*		* Flow Area (m2)	*	4.33	*
25.43 *		55.97 *				
* E.G. Slope (m/m)	*	0.000911	* Area (m2)	*	4.33	*
25.43 *		55.97 *				
* Q Total (m3/s)	*	78.00	* Flow (m3/s)	*	1.17	*
29.45 *		47.37 *				
* Top Width (m)	*	60.44	* Top Width (m)	*	14.17	*
12.91 *		33.37 *				
* Vel Total (m/s)	*	0.91	* Avg. Vel. (m/s)	*	0.27	*
1.16 *		0.85 *				
* Max Chl Dpth (m)	*	3.19	* Hydr. Depth (m)	*	0.31	*
1.97 *		1.68 *				
* Conv. Total (m3/s)	*	2583.6	* Conv. (m3/s)	*	38.8	*
975.6 *		1569.2 *				
* Length Wtd. (m)	*	189.80	* Wetted Per. (m)	*	14.41	*
13.39 *		33.73 *				
* Min Ch El (m)	*	111.99	* Shear (N/sq m)	*	2.68	*
16.99 *		14.83 *				
* Alpha	*	1.14	* Stream Power (N/m s)	*	3248.19	*
0.00 *		0.00 *				

0	116	.1	116	.2	116	2.12	116.05	3.69
116.03								
8.82	115.92	22.46	114.38	22.65	114.35	23.01	113.41	23.48
112.92								

23.62	112.68	23.77	112.67	23.96	112.67	24.07	112.65	24.23
112.63								
24.37	112.63	24.57	112.63	24.71	112.61	24.92	112.57	25.2
112.53								
25.71	112.48	26.51	112.44	26.63	112.41	26.93	112.32	27.09
112.32								
27.82	112.24	27.92	112.24	28.33	112.23	28.81	112.18	29.2
112.17								
29.46	112.14	30.81	111.99	30.86	111.99	31.53	111.97	31.57
111.97								
32.4	111.8	32.41	111.79	32.78	111.75	32.79	111.75	33.11
111.72								
33.28	111.7	33.28	111.7	33.65	111.69	33.66	111.69	34.24
111.6								
34.25	111.6	34.76	111.58	34.8	111.58	35.22	111.61	35.23
111.61								
35.27	111.61	35.79	111.58	35.84	111.57	36.21	111.53	36.38
111.55								
37.29	111.65	37.5	111.67	38.33	111.75	38.65	111.81	39.69
112.02								
39.99	112.09	40.26	112.13	40.8	112.22	41.4	112.31	41.52
112.32								
41.7	112.33	41.87	112.36	42.46	112.41	42.62	112.43	42.89
112.45								
43.16	112.48	43.48	112.51	43.65	112.55	44.07	112.67	44.3
112.73								
45.77	113.3	46.41	113.36	50.0322	113.5806	58.56	114.1	65.37
114.41								
67.63	114.58	67.93	114.6	68.31	114.58	71.51	114.44	71.71
114.43								
72.71	114.4	73.71	114.39	75.29	114.35	75.73	114.36	77.53
114.44								
77.96	114.48	78.34	114.45	79.15	114.38	81.2	114.53	81.72
114.5								
82.25	114.42	85.8	114.49	85.9	114.49			

Manning's n Values, num = 3

Sta.	Value	Sta.	Value	Sta.	Value
0	.05	34.24	.04	50.0322	.05

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.
Expan.	34.24	50.0322	244.148	245.872	245.872	0.1	
	0.3						

CROSS SECTION OUTPUT Profile # p-1

```

*****
*****
* E.G. Elev (m)          * 115.25 * Element          * Left OB *
Channel * Right OB *
* Vel Head (m)          * 0.09 * Wt. n-Val          * 0.050 *
0.040 * 0.050 *
* W.S. Elev (m)          * 115.17 * Reach Len. (m)      * 244.15 *
245.87 * 245.87 *
* Crit W.S. (m)          *          * Flow Area (m2)      * 36.45 *
42.39 * 32.10 *
* E.G. Slope (m/m)       * 0.001117 * Area (m2)           * 36.45 *
42.39 * 32.10 *

```


* Q Total (m3/s)	*	124.00	* Flow (m3/s)	*	36.54	*
67.79 *		19.67				
* Top Width (m)	*	70.40	* Top Width (m)	*	18.74	*
15.79 *		35.87				
* Vel Total (m/s)	*	1.12	* Avg. Vel. (m/s)	*	1.00	*
1.60 *		0.61				
* Max Chl Dpth (m)	*	3.64	* Hydr. Depth (m)	*	1.95	*
2.68 *		0.90				
* Conv. Total (m3/s)	*	3709.6	* Conv. (m3/s)	*	1093.1	*
2028.1 *		588.4				
* Length Wtd. (m)	*	245.54	* Wetted Per. (m)	*	19.86	*
16.02 *		36.60				
* Min Ch El (m)	*	111.53	* Shear (N/sq m)	*	20.11	*
29.01 *		9.61				
* Alpha	*	1.40	* Stream Power (N/m s)	*	4112.91	*
0.00 *		0.00				
* Frctn Loss (m)	*	0.29	* Cum Volume (cu m x 10^	*	0.03	*
0.22 *		0.02				
* C & E Loss (m)	*	0.00	* Cum SA (1000 m2)	*	36.98	*
108.21 *		27.74				

CROSS SECTION OUTPUT Profile # p-5

* E.G. Elev (m)	*	114.92	* Element	*	Left OB	*
Channel *						
* Vel Head (m)	*	0.08	* Wt. n-Val	*	0.050	*
0.040 *		0.050				
* W.S. Elev (m)	*	114.84	* Reach Len. (m)	*	244.15	*
245.87 *		245.87				
* Crit W.S. (m)	*		* Flow Area (m2)	*	30.77	*
37.19 *		20.30				
* E.G. Slope (m/m)	*	0.001156	* Area (m2)	*	30.77	*
37.19 *		20.30				
* Q Total (m3/s)	*	96.00	* Flow (m3/s)	*	31.17	*
55.46 *		9.38				
* Top Width (m)	*	67.48	* Top Width (m)	*	15.82	*
15.79 *		35.87				
* Vel Total (m/s)	*	1.09	* Avg. Vel. (m/s)	*	1.01	*
1.49 *		0.46				
* Max Chl Dpth (m)	*	3.31	* Hydr. Depth (m)	*	1.94	*
2.36 *		0.57				
* Conv. Total (m3/s)	*	2823.1	* Conv. (m3/s)	*	916.5	*
1630.9 *		275.7				
* Length Wtd. (m)	*	245.53	* Wetted Per. (m)	*	16.93	*
16.02 *		36.27				
* Min Ch El (m)	*	111.53	* Shear (N/sq m)	*	20.61	*
26.34 *		6.35				
* Alpha	*	1.38	* Stream Power (N/m s)	*	4112.91	*
0.00 *		0.00				
* Frctn Loss (m)	*	0.28	* Cum Volume (cu m x 10^	*	0.02	*
0.19 *		0.01				
* C & E Loss (m)	*	0.00	* Cum SA (1000 m2)	*	29.97	*
106.27 *		20.70				

CROSS SECTION OUTPUT Profile # p-10

```

*****
*****
* E.G. Elev (m) * 114.65 * Element * Left OB *
Channel * Right OB *
* Vel Head (m) * 0.08 * Wt. n-Val * 0.050 *
0.040 * 0.050 *
* W.S. Elev (m) * 114.57 * Reach Len. (m) * 244.15 *
245.87 * 245.87 *
* Crit W.S. (m) * * Flow Area (m2) * 26.82 *
32.93 * 10.64 *
* E.G. Slope (m/m) * 0.001197 * Area (m2) * 26.82 *
32.93 * 10.64 *
* Q Total (m3/s) * 78.00 * Flow (m3/s) * 27.94 *
46.07 * 4.00 *
* Top Width (m) * 63.92 * Top Width (m) * 13.43 *
15.79 * 34.70 *
* Vel Total (m/s) * 1.11 * Avg. Vel. (m/s) * 1.04 *
1.40 * 0.38 *
* Max Chl Dpth (m) * 3.04 * Hydr. Depth (m) * 2.00 *
2.09 * 0.31 *
* Conv. Total (m3/s) * 2254.4 * Conv. (m3/s) * 807.4 *
1331.4 * 115.5 *
* Length Wtd. (m) * 245.50 * Wetted Per. (m) * 14.52 *
16.02 * 34.83 *
* Min Ch El (m) * 111.53 * Shear (N/sq m) * 21.68 *
24.14 * 3.59 *
* Alpha * 1.26 * Stream Power (N/m s) * 4112.91 *
0.00 * 0.00 *
* Frctn Loss (m) * 0.28 * Cum Volume (cu m x 10^ * 0.02 *
0.17 * 0.01 *
* C & E Loss (m) * 0.00 * Cum SA (1000 m2) * 23.67 *
99.48 * 16.51 *
*****
*****

```

CROSS SECTION OUTPUT Profile # VV

```

*****
*****
* E.G. Elev (m) * 112.47 * Element * Left OB *
Channel * Right OB *
* Vel Head (m) * 0.01 * Wt. n-Val * 0.050 *
0.040 * *
* W.S. Elev (m) * 112.46 * Reach Len. (m) * 244.15 *
245.87 * 245.87 *
* Crit W.S. (m) * * Flow Area (m2) * 3.38 *
4.83 * *
* E.G. Slope (m/m) * 0.000776 * Area (m2) * 3.38 *
4.83 * *
* Q Total (m3/s) * 3.30 * Flow (m3/s) * 1.04 *
2.26 * *
* Top Width (m) * 16.84 * Top Width (m) * 8.11 *
8.73 * *
* Vel Total (m/s) * 0.40 * Avg. Vel. (m/s) * 0.31 *
0.47 * *
* Max Chl Dpth (m) * 0.93 * Hydr. Depth (m) * 0.42 *
0.55 * *
* Conv. Total (m3/s) * 118.5 * Conv. (m3/s) * 37.5 *
81.0 * *
* Length Wtd. (m) * 245.60 * Wetted Per. (m) * 8.18 *
8.81 * *

```

```

* Min Ch El (m)          *    111.53 * Shear (N/sq m)          *    3.14 *
4.18 *                   *
* Alpha                  *    1.11 * Stream Power (N/m s)    *  4112.91 *
0.00 *         0.00 *
* Frctn Loss (m)        *    0.27 * Cum Volume (cu m x 10^ *    0.00 *
0.02 *                   *
* C & E Loss (m)        *    0.00 * Cum SA (1000 m2)        *    1.32 *
68.58 *                   *
*****
*****

```

CROSS SECTION

RIVER: Malta

REACH: Malta

River Station: 107

INPUT

Description:

Station Elevation Data, num = 102

Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.	Elev.
0	114.89	.1	114.89	.18	114.89	.2	114.89	.43	114.92
1.28	114.86	16.08	114.39	22.91	114.19	24.22	114.12	24.61	114.23
24.73	114.26	29.57	112.48	29.94	112.48	30.06	112.48	30.43	112.38
30.55	112.35	30.97	112.16	31.14	112.11	31.55	112.09	32.03	112.08
32.08	112	32.2	111.98	32.74	111.83	32.89	111.78	33.23	111.75
33.31	111.75	33.95	111.72	34.11	111.72	34.22	111.72	34.24	111.72
35.91	111.75	36.07	111.75	36.73	111.76	36.87	111.76	37.24	111.65
37.31	111.63	38.6	111.65	38.83	111.65	39.2	111.69	39.26	111.7
40.57	111.74	40.77	111.75	41.18	111.71	41.24	111.71	43.15	111.74
43.19	111.75	43.53	111.74	43.57	111.74	44.94	111.91	45.07	111.92
45.87	112.03	45.94	112.04	45.96	112.04	46.49	112.04	46.53	112.04
46.59	112.04	47.49	112.13	47.55	112.14	47.93	112.13	47.95	112.13
48.66	112.23	48.69	112.24	49.02	112.22	49.03	112.22	49.51	112.24
49.53	112.25	50.72	112.39	50.84	112.41	51.38	112.47	51.41	112.48
51.89	112.5	51.9	112.5	52.11	112.6	52.12	112.6	52.14	112.62
52.52	112.72	55.4752	113.4785	61.91	115.13	64.82	115.39	67.97	115.46
68.73	115.39	69.28	115.32	71.78	115.16	72.61	115.21	73.17	115.28
73.43	115.32	73.77	115.37	74.67	115.32	74.85	115.32	75.52	115.27

75.64	115.29	76.06	115.29	80.28	115.52	80.37	115.52	80.45
115.51								
80.96	115.49	81.83	115.48	82.53	115.51	83.07	115.51	83.13
115.51								
84.21	115.5	84.31	115.49					

Manning's n Values, num = 3

Sta.	Value	Sta.	Value	Sta.	Value
0	.05	32.03	.04	55.4752	.05

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff Contr.
Expan.						
	32.03	55.4752		348.502	341.478	0.1
0.3						

CROSS SECTION OUTPUT Profile # p-1

```

*****
*****
* E.G. Elev (m) * 114.96 * Element * Left OB *
Channel * Right OB *
* Vel Head (m) * 0.13 * Wt. n-Val * 0.050 *
0.040 * 0.050 *
* W.S. Elev (m) * 114.83 * Reach Len. (m) * 348.50 *
341.48 * 341.48 *
* Crit W.S. (m) * * Flow Area (m2) * 21.33 *
64.67 * 3.56 *
* E.G. Slope (m/m) * 0.001223 * Area (m2) * 21.33 *
64.67 * 3.56 *
* Q Total (m3/s) * 124.00 * Flow (m3/s) * 11.83 *
110.30 * 1.88 *
* Top Width (m) * 58.53 * Top Width (m) * 29.82 *
23.45 * 5.27 *
* Vel Total (m/s) * 1.38 * Avg. Vel. (m/s) * 0.55 *
1.71 * 0.53 *
* Max Chl Dpth (m) * 3.20 * Hydr. Depth (m) * 0.72 *
2.76 * 0.68 *
* Conv. Total (m3/s) * 3546.2 * Conv. (m3/s) * 338.2 *
3154.3 * 53.7 *
* Length Wtd. (m) * 342.15 * Wetted Per. (m) * 30.23 *
23.74 * 5.44 *
* Min Ch El (m) * 111.63 * Shear (N/sq m) * 8.46 *
32.67 * 7.85 *
* Alpha * 1.37 * Stream Power (N/m s) * 4036.79 *
0.00 * 0.00 *
* Frctn Loss (m) * 0.26 * Cum Volume (cu m x 10^ * 0.03 *
0.21 * 0.01 *
* C & E Loss (m) * 0.02 * Cum SA (1000 m2) * 31.06 *
103.38 * 22.68 *
*****
*****

```

CROSS SECTION OUTPUT Profile # p-5

```

*****
*****
* E.G. Elev (m) * 114.63 * Element * Left OB *
Channel * Right OB *
* Vel Head (m) * 0.11 * Wt. n-Val * 0.050 *
0.040 * 0.050 *

```

* W.S. Elev (m)	* 114.52	* Reach Len. (m)	* 348.50
341.48 * 341.48 *			
* Crit W.S. (m)	*	* Flow Area (m2)	* 13.66
57.47 * 2.13 *			
* E.G. Slope (m/m)	* 0.001154	* Area (m2)	* 13.66
57.47 * 2.13 *			
* Q Total (m3/s)	* 96.00	* Flow (m3/s)	* 7.07
88.01 * 0.92 *			
* Top Width (m)	* 47.66	* Top Width (m)	* 20.14
23.45 * 4.07 *			
* Vel Total (m/s)	* 1.31	* Avg. Vel. (m/s)	* 0.52
1.53 * 0.43 *			
* Max Chl Dpth (m)	* 2.89	* Hydr. Depth (m)	* 0.68
2.45 * 0.52 *			
* Conv. Total (m3/s)	* 2825.9	* Conv. (m3/s)	* 208.1
2590.9 * 27.0 *			
* Length Wtd. (m)	* 342.00	* Wetted Per. (m)	* 20.55
23.74 * 4.20 *			
* Min Ch El (m)	* 111.63	* Shear (N/sq m)	* 7.52
27.40 * 5.72 *			
* Alpha	* 1.26	* Stream Power (N/m s)	* 4036.79
0.00 * 0.00 *			
* Frctn Loss (m)	* 0.25	* Cum Volume (cu m x 10^	* 0.02
0.18 * 0.01 *			
* C & E Loss (m)	* 0.02	* Cum SA (1000 m2)	* 25.58
101.45 * 15.79 *			

CROSS SECTION OUTPUT Profile # p-10

* E.G. Elev (m)	* 114.36	* Element	* Left OB *
Channel * Right OB *			
* Vel Head (m)	* 0.09	* Wt. n-Val	* 0.050
0.040 * 0.050 *			
* W.S. Elev (m)	* 114.27	* Reach Len. (m)	* 348.50
341.48 * 341.48 *			
* Crit W.S. (m)	*	* Flow Area (m2)	* 9.54
51.45 * 1.21 *			
* E.G. Slope (m/m)	* 0.001121	* Area (m2)	* 9.54
51.45 * 1.21 *			
* Q Total (m3/s)	* 78.00	* Flow (m3/s)	* 5.45
72.13 * 0.43 *			
* Top Width (m)	* 38.23	* Top Width (m)	* 11.72
23.45 * 3.07 *			
* Vel Total (m/s)	* 1.25	* Avg. Vel. (m/s)	* 0.57
1.40 * 0.35 *			
* Max Chl Dpth (m)	* 2.64	* Hydr. Depth (m)	* 0.81
2.19 * 0.39 *			
* Conv. Total (m3/s)	* 2329.7	* Conv. (m3/s)	* 162.7
2154.3 * 12.7 *			
* Length Wtd. (m)	* 341.92	* Wetted Per. (m)	* 12.12
23.74 * 3.17 *			
* Min Ch El (m)	* 111.63	* Shear (N/sq m)	* 8.65
23.83 * 4.19 *			
* Alpha	* 1.17	* Stream Power (N/m s)	* 4036.79
0.00 * 0.00 *			
* Frctn Loss (m)	* 0.26	* Cum Volume (cu m x 10^	* 0.01
0.16 * 0.01 *			

```

CROSS SECTION OUTPUT      Profile # VV
*****
*****
* E.G. Elev (m)           * 112.20 * Element                      * Left OB *
Channel * Right OB *
* Vel Head (m)           * 0.01 * Wt. n-Val                      * 0.050 *
0.040 *                   *
* W.S. Elev (m)           * 112.18 * Reach Len. (m)                * 348.50 *
341.48 * 341.48 *
* Crit W.S. (m)           *          * Flow Area (m2)                * 0.09 *
6.14 *                   *
* E.G. Slope (m/m)        * 0.001700 * Area (m2)                    * 0.09 *
6.14 *                   *
* Q Total (m3/s)          * 3.30 * Flow (m3/s)                  * 0.01 *
3.29 *                   *
* Top Width (m)           * 17.41 * Top Width (m)                * 1.11 *
16.30 *                   *
* Vel Total (m/s)         * 0.53 * Avg. Vel. (m/s)              * 0.15 *
0.53 *                   *
* Max Chl Dpth (m)        * 0.55 * Hydr. Depth (m)              * 0.08 *
0.38 *                   *
* Conv. Total (m3/s)      * 80.0 * Conv. (m3/s)                 * 0.3 *
79.7 *                   *
* Length Wtd. (m)         * 341.49 * Wetted Per. (m)              * 1.12 *
16.43 *                   *
* Min Ch El (m)           * 111.63 * Shear (N/sq m)               * 1.34 *
6.23 *                   *
* Alpha                   * 1.02 * Stream Power (N/m s)        * 4036.79 *
0.00 * 0.00 *
* Frctn Loss (m)         * 0.37 * Cum Volume (cu m x 10^      * 0.00 *
0.02 *                   *
* C & E Loss (m)         * 0.00 * Cum SA (1000 m2)            * 0.19 *
65.51 *                   *
*****
*****

```

```

*****
*****
      0  113.69      .1  113.69      .2  113.69      4.46  113.58      4.96
113.61
      9   113.5    10.08  113.47     12.2  113.36     12.35  113.36     13.11
113.23
    13.47   113.2    13.67  113.17    13.89  113.14     15.48  113.02     16.41
112.88

```

16.42	112.88	16.42	112.88	17.16	112.85	17.32	112.86	18.44
112.84								
18.52	112.84	19.13	112.16	19.64	112.16	19.68	112.16	20.38
111.89								
20.43	111.87	21.27	111.74	21.32	111.73	22.23	111.69	22.27
111.69								
22.69	111.64	22.71	111.64	23.14	111.61	23.15	111.61	24.04
111.6								
24.07	111.6	24.31	111.55	24.31	111.54	24.47	111.54	24.96
111.53								
24.97	111.53	25.21	111.49	25.22	111.49	25.44	111.51	25.44
111.51								
26.12	111.47	26.13	111.47	26.75	111.37	26.76	111.36	27.21
111.33								
27.67	111.35	27.67	111.36	28.06	111.35	28.52	111.35	28.52
111.35								
29.54	111.28	29.54	111.28	30.64	111.41	30.66	111.41	32.12
111.37								
32.17	111.36	32.42	111.37	32.58	111.38	32.6	111.38	33.39
111.41								
33.43	111.41	33.92	111.46	33.95	111.46	34.4	111.43	34.42
111.43								
35.47	111.43	35.54	111.42	36.17	111.45	36.63	111.43	37.07
111.4								
37.14	111.39	37.95	111.32	38.02	111.31	38.84	111.24	38.93
111.23								
40.02	111.17	40.14	111.16	40.33	111.17	40.35	111.17	41.11
111.2								
41.2	111.2	42.11	111.22	42.23	111.22	42.44	111.64	42.58
111.93								
42.63	112.03	43.39	112.03	44.19	112.04	44.4	112.04	44.44
112.04								
44.74	112.37	44.76	112.38	44.81	112.44	45.12	112.45	45.17
112.45								
45.29	112.59	45.76	112.95	46.22	113.07	46.51	113.11	46.58
113.14								
46.76	113.17	47.82	113.24	49.21	113.24	52.1448	113.2802	59.42
113.38								
60.25	113.34	60.31	113.34	61.92	113.32	62.93	113.31	63.05
113.31								
63.26	113.31	64.86	113.57	67.75	113.72	70.79	113.76	70.89
113.76								
70.99	113.76							

Manning's n Values, num = 3

Sta.	Value	Sta.	Value	Sta.	Value
0	.05	18.44	.04	52.1448	.05

Bank	Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.
Expan.	18.44	52.1448	496.671	484.679	484.679	0.1		
	0.3							

CROSS SECTION OUTPUT Profile # p-1

```

*****
*****
* E.G. Elev (m)          * 114.68 * Element          * Left OB *
Channel * Right OB *

```

* Vel Head (m)	*	0.05	* Wt. n-Val	*	0.050	*
0.040 *		0.050 *				
* W.S. Elev (m)	*	114.62	* Reach Len. (m)	*	496.67	*
484.68 *		484.68 *				
* Crit W.S. (m)	*		* Flow Area (m2)	*	22.93	*
92.34 *		21.95 *				
* E.G. Slope (m/m)	*	0.000530	* Area (m2)	*	22.93	*
92.34 *		21.95 *				
* Q Total (m3/s)	*	124.00	* Flow (m3/s)	*	11.79	*
101.36 *		10.84 *				
* Top Width (m)	*	70.99	* Top Width (m)	*	18.44	*
33.70 *		18.85 *				
* Vel Total (m/s)	*	0.90	* Avg. Vel. (m/s)	*	0.51	*
1.10 *		0.49 *				
* Max Chl Dpth (m)	*	3.46	* Hydr. Depth (m)	*	1.24	*
2.74 *		1.16 *				
* Conv. Total (m3/s)	*	5388.4	* Conv. (m3/s)	*	512.5	*
4404.6 *		471.3 *				
* Length Wtd. (m)	*	485.50	* Wetted Per. (m)	*	19.41	*
35.05 *		19.74 *				
* Min Ch El (m)	*	111.16	* Shear (N/sq m)	*	6.14	*
13.68 *		5.78 *				
* Alpha	*	1.26	* Stream Power (N/m s)	*	3399.02	*
0.00 *		0.00 *				
* Frctn Loss (m)	*	0.30	* Cum Volume (cu m x 10^	*	0.02	*
0.18 *		0.01 *				
* C & E Loss (m)	*	0.00	* Cum SA (1000 m2)	*	22.65	*
93.63 *		18.56 *				

CROSS SECTION OUTPUT Profile # p-5

* E.G. Elev (m)	*	114.36	* Element	*	Left OB	*
Channel * Right OB *						
* Vel Head (m)	*	0.05	* Wt. n-Val	*	0.050	*
0.040 *		0.050 *				
* W.S. Elev (m)	*	114.31	* Reach Len. (m)	*	496.67	*
484.68 *		484.68 *				
* Crit W.S. (m)	*		* Flow Area (m2)	*	17.24	*
81.94 *		16.13 *				
* E.G. Slope (m/m)	*	0.000518	* Area (m2)	*	17.24	*
81.94 *		16.13 *				
* Q Total (m3/s)	*	96.00	* Flow (m3/s)	*	7.33	*
82.18 *		6.49 *				
* Top Width (m)	*	70.99	* Top Width (m)	*	18.44	*
33.70 *		18.85 *				
* Vel Total (m/s)	*	0.83	* Avg. Vel. (m/s)	*	0.43	*
1.00 *		0.40 *				
* Max Chl Dpth (m)	*	3.15	* Hydr. Depth (m)	*	0.93	*
2.43 *		0.86 *				
* Conv. Total (m3/s)	*	4216.1	* Conv. (m3/s)	*	322.0	*
3609.0 *		285.1 *				
* Length Wtd. (m)	*	485.29	* Wetted Per. (m)	*	19.10	*
35.05 *		19.43 *				
* Min Ch El (m)	*	111.16	* Shear (N/sq m)	*	4.59	*
11.89 *		4.22 *				
* Alpha	*	1.28	* Stream Power (N/m s)	*	3399.02	*
0.00 *		0.00 *				

* Frctn Loss (m)	*	0.28	* Cum Volume (cu m x 10^	*	0.01	*
0.16 *		0.01 *				
* C & E Loss (m)	*	0.00	* Cum SA (1000 m2)	*	18.86	*
91.69 *		11.88 *				

CROSS SECTION OUTPUT Profile # p-10

* E.G. Elev (m)	*	114.08	* Element	*	Left OB	*
Channel * Right OB *						
* Vel Head (m)	*	0.04	* Wt. n-Val	*	0.050	*
0.040 *		0.050 *				
* W.S. Elev (m)	*	114.04	* Reach Len. (m)	*	496.67	*
484.68 *		484.68 *				
* Crit W.S. (m)	*		* Flow Area (m2)	*	12.12	*
72.58 *		10.90 *				
* E.G. Slope (m/m)	*	0.000566	* Area (m2)	*	12.12	*
72.58 *		10.90 *				
* Q Total (m3/s)	*	78.00	* Flow (m3/s)	*	4.30	*
70.14 *		3.56 *				
* Top Width (m)	*	70.99	* Top Width (m)	*	18.44	*
33.70 *		18.85 *				
* Vel Total (m/s)	*	0.82	* Avg. Vel. (m/s)	*	0.35	*
0.97 *		0.33 *				
* Max Chl Dpth (m)	*	2.88	* Hydr. Depth (m)	*	0.66	*
2.15 *		0.58 *				
* Conv. Total (m3/s)	*	3278.4	* Conv. (m3/s)	*	180.6	*
2948.1 *		149.6 *				
* Length Wtd. (m)	*	485.06	* Wetted Per. (m)	*	18.83	*
35.05 *		19.15 *				
* Min Ch El (m)	*	111.16	* Shear (N/sq m)	*	3.57	*
11.50 *		3.16 *				
* Alpha	*	1.28	* Stream Power (N/m s)	*	3399.02	*
0.00 *		0.00 *				
* Frctn Loss (m)	*	0.30	* Cum Volume (cu m x 10^	*	0.01	*
0.14 *		0.00 *				
* C & E Loss (m)	*	0.00	* Cum SA (1000 m2)	*	15.35	*
84.90 *		8.13 *				

CROSS SECTION OUTPUT Profile # VV

* E.G. Elev (m)	*	111.82	* Element	*	Left OB	*
Channel * Right OB *						
* Vel Head (m)	*	0.01	* Wt. n-Val	*		*
0.040 *						
* W.S. Elev (m)	*	111.82	* Reach Len. (m)	*	496.67	*
484.68 *		484.68 *				
* Crit W.S. (m)	*		* Flow Area (m2)	*		*
8.84 *						
* E.G. Slope (m/m)	*	0.000761	* Area (m2)	*		*
8.84 *						
* Q Total (m3/s)	*	3.30	* Flow (m3/s)	*		*
3.30 *						
* Top Width (m)	*	21.75	* Top Width (m)	*		*
21.75 *						

35.29	110.93	35.31	110.94	35.89	111.15	35.91	111.15	36.43
111.16								
36.45	111.16	36.93	111.22	36.97	111.24	37.89	111.57	37.93
111.59								
38.86	112.19	38.9	112.19	39.62	112.27	39.77	112.29	39.8
112.29								
40.3	112.35	40.34	112.35	41.27	112.32	41.43	112.39	42.29
112.84								
42.53	113.03	43.13	113.1	43.3	113.13	43.914	113.1892	46.31
113.42								
47.83	113.57	49.13	113.53	50.07	113.57	50.77	113.68	51.23
113.74								
52.71	113.9	53.57	114.01	55.04	114.34	56.13	114.51	57.32
114.73								
58.22	114.81	58.38	114.84	58.93	114.86	59.6	114.88	59.67
114.88								
60.51	114.88							

Manning's n Values, num = 3

Sta.	Value	Sta.	Value	Sta.	Value
0	.05	13.79	.04	43.914	.05

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff Contr.
Expan.	13.79	43.914	517.277	511.781	511.781	0.1
0.3						

CROSS SECTION OUTPUT Profile # p-1

* E.G. Elev (m)	* 114.37	* Element	* Left OB *
Channel * Right OB *			
* Vel Head (m)	* 0.09	* Wt. n-Val	* 0.050 *
0.040 * 0.050 *			
* W.S. Elev (m)	* 114.29	* Reach Len. (m)	* 517.28 *
511.78 * 511.78 *			
* Crit W.S. (m)	*	* Flow Area (m2)	* 11.21 *
86.53 * 7.07 *			
* E.G. Slope (m/m)	* 0.000732	* Area (m2)	* 11.21 *
86.53 * 7.07 *			
* Q Total (m3/s)	* 124.00	* Flow (m3/s)	* 5.12 *
116.02 * 2.86 *			
* Top Width (m)	* 54.80	* Top Width (m)	* 13.79 *
30.12 * 10.88 *			
* Vel Total (m/s)	* 1.18	* Avg. Vel. (m/s)	* 0.46 *
1.34 * 0.40 *			
* Max Chl Dpth (m)	* 3.37	* Hydr. Depth (m)	* 0.81 *
2.87 * 0.65 *			
* Conv. Total (m3/s)	* 4583.7	* Conv. (m3/s)	* 189.3 *
4288.9 * 105.5 *			
* Length Wtd. (m)	* 511.94	* Wetted Per. (m)	* 14.46 *
31.00 * 10.96 *			
* Min Ch El (m)	* 110.92	* Shear (N/sq m)	* 5.56 *
20.03 * 4.63 *			
* Alpha	* 1.21	* Stream Power (N/m s)	* 2897.24 *
0.00 * 0.00 *			
* Frctn Loss (m)	* 0.72	* Cum Volume (cu m x 10^	* 0.01 *
0.14 * 0.00 *			

```

* C & E Loss (m)          *      0.01 * Cum SA (1000 m2)          *      14.64 *
78.16 *      11.36 *
*****
*****

```

CROSS SECTION OUTPUT Profile # p-5

```

*****
*****
* E.G. Elev (m)          *      114.08 * Element          *      Left OB *
Channel * Right OB *
* Vel Head (m)          *      0.07 * Wt. n-Val          *      0.050 *
0.040 *      0.050 *
* W.S. Elev (m)          *      114.01 * Reach Len. (m)          *      517.28 *
511.78 *      511.78 *
* Crit W.S. (m)          *          * Flow Area (m2)          *      7.38 *
78.15 *      4.22 *
* E.G. Slope (m/m)        * 0.000651 * Area (m2)          *      7.38 *
78.15 *      4.22 *
* Q Total (m3/s)          *      96.00 * Flow (m3/s)          *      2.43 *
92.33 *      1.24 *
* Top Width (m)          *      53.55 * Top Width (m)          *      13.79 *
30.12 *      9.64 *
* Vel Total (m/s)          *      1.07 * Avg. Vel. (m/s)          *      0.33 *
1.18 *      0.29 *
* Max Chl Dpth (m)        *      3.09 * Hydr. Depth (m)          *      0.54 *
2.59 *      0.44 *
* Conv. Total (m3/s)      *      3763.4 * Conv. (m3/s)          *      95.4 *
3619.5 *      48.4 *
* Length Wtd. (m)          *      511.86 * Wetted Per. (m)          *      14.18 *
31.00 *      9.68 *
* Min Ch El (m)          *      110.92 * Shear (N/sq m)          *      3.32 *
16.09 *      2.78 *
* Alpha          *      1.18 * Stream Power (N/m s)          *      2897.24 *
0.00 *      0.00 *
* Frctn Loss (m)          *      0.69 * Cum Volume (cu m x 10^ *      0.01 *
0.12 *      0.00 *
* C & E Loss (m)          *      0.01 * Cum SA (1000 m2)          *      10.85 *
76.22 *      4.98 *
*****
*****

```

CROSS SECTION OUTPUT Profile # p-10

```

*****
*****
* E.G. Elev (m)          *      113.78 * Element          *      Left OB *
Channel * Right OB *
* Vel Head (m)          *      0.06 * Wt. n-Val          *      0.050 *
0.040 *      0.050 *
* W.S. Elev (m)          *      113.72 * Reach Len. (m)          *      517.28 *
511.78 *      511.78 *
* Crit W.S. (m)          *          * Flow Area (m2)          *      3.40 *
69.43 *      1.78 *
* E.G. Slope (m/m)        * 0.000670 * Area (m2)          *      3.40 *
69.43 *      1.78 *
* Q Total (m3/s)          *      78.00 * Flow (m3/s)          *      0.70 *
76.93 *      0.36 *
* Top Width (m)          *      50.57 * Top Width (m)          *      13.30 *
30.12 *      7.15 *
* Vel Total (m/s)          *      1.05 * Avg. Vel. (m/s)          *      0.21 *
1.11 *      0.20 *

```

* Max Chl Dpth (m)	*	2.80	* Hydr. Depth (m)	*	0.26	*
2.30	*	0.25	*			*
* Conv. Total (m3/s)	*	3012.7	* Conv. (m3/s)	*	27.2	*
2971.5	*	14.0	*			*
* Length Wtd. (m)	*	511.81	* Wetted Per. (m)	*	13.47	*
31.00	*	7.18	*			*
* Min Ch El (m)	*	110.92	* Shear (N/sq m)	*	1.66	*
14.72	*	1.63	*			*
* Alpha	*	1.11	* Stream Power (N/m s)	*	2897.24	*
0.00	*	0.00	*			*
* Frctn Loss (m)	*	0.68	* Cum Volume (cu m x 10^	*	0.00	*
0.10	*	0.00	*			*
* C & E Loss (m)	*	0.01	* Cum SA (1000 m2)	*	7.46	*
69.43	*	1.83	*			*

CROSS SECTION OUTPUT Profile # VV

* E.G. Elev (m)	*	111.65	* Element	*	Left OB	*
Channel	*	Right OB	*			*
* Vel Head (m)	*	0.00	* Wt. n-Val	*		*
0.040	*		*			*
* W.S. Elev (m)	*	111.64	* Reach Len. (m)	*	517.28	*
511.78	*	511.78	*			*
* Crit W.S. (m)	*		* Flow Area (m2)	*		*
12.99	*		*			*
* E.G. Slope (m/m)	*	0.000212	* Area (m2)	*		*
12.99	*		*			*
* Q Total (m3/s)	*	3.30	* Flow (m3/s)	*		*
3.30	*		*			*
* Top Width (m)	*	22.01	* Top Width (m)	*		*
22.01	*		*			*
* Vel Total (m/s)	*	0.25	* Avg. Vel. (m/s)	*		*
0.25	*		*			*
* Max Chl Dpth (m)	*	0.72	* Hydr. Depth (m)	*		*
0.59	*		*			*
* Conv. Total (m3/s)	*	226.7	* Conv. (m3/s)	*		*
226.7	*		*			*
* Length Wtd. (m)	*	511.78	* Wetted Per. (m)	*		*
22.28	*		*			*
* Min Ch El (m)	*	110.92	* Shear (N/sq m)	*		*
1.21	*		*			*
* Alpha	*	1.00	* Stream Power (N/m s)	*	2897.24	*
0.00	*	0.00	*			*
* Frctn Loss (m)	*	0.25	* Cum Volume (cu m x 10^	*		*
0.02	*		*			*
* C & E Loss (m)	*	0.00	* Cum SA (1000 m2)	*		*
48.41	*		*			*

CROSS SECTION

RIVER: Malta
REACH: Malta

River Station: 104

INPUT

Description:

Station Elevation Data, num = 80

Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.
0	113.75	.1	113.75	.2	113.74	9.04	113.33	17.28
112.97								
17.56	112.95	17.83	112.92	17.94	112.92	18.12	112.93	19.57
113.06								
20.02	113.08	24.71	111.94	24.82	111.91	24.85	111.9	25.7
111.46								
25.71	111.46	26.08	111.35	26.09	111.35	26.54	111.38	28.06
110.98								
28.11	110.98	29.5	110.95	29.52	110.96	31.21	111.67	31.24
111.65								
31.95	111.05	33.08	111.1	33.36	110.97	33.5	110.92	33.54
110.91								
34.17	110.86	34.57	110.83	35.18	110.86	35.24	110.87	36.75
110.92								
36.78	110.93	37.59	111	38.43	110.93	38.46	110.94	39.29
110.98								
40.71	110.96	40.73	110.96	41.22	110.97	41.31	110.98	43.22
111.12								
43.26	111.13	44.22	111.35	44.24	111.36	45.73	111.94	46.41
112.08								
49.65	112.78	49.82	112.81	50.54	112.97	51.81	113.01	52.84
113.04								
53.87	112.98	55.09	113.11	55.26	113.14	55.5	113.19	55.63
113.2								
56.38	113.14	57.33	113.13	58.53	113.19	58.92	113.18	58.94
113.18								
59.29	113.18	60.8672	113.1158	61.01	113.11	61.55	113.12	63.17
113.12								
64.1	113.07	64.54	113.11	66.46	113.34	67.18	113.39	67.57
113.39								
71.01	113.31	71.14	113.32	71.39	113.34	71.72	113.39	71.82
113.43								

Manning's n Values, num = 3

Sta.	Value	Sta.	Value	Sta.	Value
0	.05	19.57	.04	60.8672	.05

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.
Expan.	19.57	60.8672	274.954	276.04	276.04	0.1	0.3

CROSS SECTION OUTPUT Profile # p-1

* E.G. Elev (m)	* 113.64	* Element	* Left OB *
Channel * Right OB *			
* Vel Head (m)	* 0.19	* Wt. n-Val	* 0.050 *
0.040 * 0.050 *			
* W.S. Elev (m)	* 113.44	* Reach Len. (m)	* 274.95 *
276.04 * 276.04 *			
* Crit W.S. (m)	* 61.43	* Flow Area (m2)	* 3.65 *
2.13 *			

* E.G. Slope (m/m)	* 0.003788	* Area (m2)	* 3.65 *
61.43 *	2.13 *		
* Q Total (m3/s)	* 124.00	* Flow (m3/s)	* 1.92 *
121.20 *	0.88 *		
* Top Width (m)	* 65.25	* Top Width (m)	* 13.00 *
41.30 *	10.95 *		
* Vel Total (m/s)	* 1.84	* Avg. Vel. (m/s)	* 0.53 *
1.97 *	0.41 *		
* Max Chl Dpth (m)	* 2.61	* Hydr. Depth (m)	* 0.28 *
1.49 *	0.19 *		
* Conv. Total (m3/s)	* 2014.7	* Conv. (m3/s)	* 31.2 *
1969.2 *	14.3 *		
* Length Wtd. (m)	* 276.02	* Wetted Per. (m)	* 13.02 *
42.32 *	11.00 *		
* Min Ch El (m)	* 110.83	* Shear (N/sq m)	* 10.41 *
53.93 *	7.21 *		
* Alpha	* 1.12	* Stream Power (N/m s)	* 3438.76 *
0.00 *	0.00 *		
* Frctn Loss (m)	* 0.60	* Cum Volume (cu m x 10^	* 0.00 *
0.10 *	0.00 *		
* C & E Loss (m)	* 0.03	* Cum SA (1000 m2)	* 7.71 *
59.88 *	5.77 *		

CROSS SECTION OUTPUT Profile # p-5

* E.G. Elev (m)	* 113.37	* Element	* Left OB *
Channel * Right OB *			
* Vel Head (m)	* 0.18	* Wt. n-Val	* 0.050 *
0.040 *	0.050 *		
* W.S. Elev (m)	* 113.19	* Reach Len. (m)	* 274.95 *
276.04 *	276.04 *		
* Crit W.S. (m)	*	* Flow Area (m2)	* 1.08 *
51.08 *	0.34 *		
* E.G. Slope (m/m)	* 0.004332	* Area (m2)	* 1.08 *
51.08 *	0.34 *		
* Q Total (m3/s)	* 96.00	* Flow (m3/s)	* 0.39 *
95.53 *	0.08 *		
* Top Width (m)	* 52.95	* Top Width (m)	* 7.42 *
41.15 *	4.38 *		
* Vel Total (m/s)	* 1.83	* Avg. Vel. (m/s)	* 0.36 *
1.87 *	0.24 *		
* Max Chl Dpth (m)	* 2.36	* Hydr. Depth (m)	* 0.15 *
1.24 *	0.08 *		
* Conv. Total (m3/s)	* 1458.6	* Conv. (m3/s)	* 6.0 *
1451.4 *	1.2 *		
* Length Wtd. (m)	* 276.02	* Wetted Per. (m)	* 7.43 *
42.17 *	4.38 *		
* Min Ch El (m)	* 110.83	* Shear (N/sq m)	* 6.16 *
51.46 *	3.31 *		
* Alpha	* 1.04	* Stream Power (N/m s)	* 3438.76 *
0.00 *	0.00 *		
* Frctn Loss (m)	* 0.63	* Cum Volume (cu m x 10^	* 0.00 *
0.08 *	0.00 *		
* C & E Loss (m)	* 0.03	* Cum SA (1000 m2)	* 5.37 *
57.99 *	1.39 *		

CROSS SECTION OUTPUT Profile # p-10

```

*****
*****
* E.G. Elev (m)          * 113.09 * Element                * Left OB *
Channel * Right OB *
* Vel Head (m)          * 0.18 * Wt. n-Val                *          *
0.040 *                  *
* W.S. Elev (m)          * 112.91 * Reach Len. (m)          * 274.95 *
276.04 * 276.04 *
* Crit W.S. (m)          *          * Flow Area (m2)          *          *
41.29 *                  *
* E.G. Slope (m/m)       * 0.003810 * Area (m2)                *          *
41.29 *                  *
* Q Total (m3/s)         * 78.00 * Flow (m3/s)              *          *
78.00 *                  *
* Top Width (m)          * 29.52 * Top Width (m)            *          *
29.52 *                  *
* Vel Total (m/s)        * 1.89 * Avg. Vel. (m/s)          *          *
1.89 *                  *
* Max Chl Dpth (m)       * 2.08 * Hydr. Depth (m)          *          *
1.40 *                  *
* Conv. Total (m3/s)     * 1263.7 * Conv. (m3/s)             *          *
1263.7 *                  *
* Length Wtd. (m)        * 276.03 * Wetted Per. (m)          *          *
30.49 *                  *
* Min Ch El (m)          * 110.83 * Shear (N/sq m)           *          *
50.60 *                  *
* Alpha                  * 1.00 * Stream Power (N/m s)    * 3438.76 *
0.00 * 0.00 *
* Frctn Loss (m)         * 0.57 * Cum Volume (cu m x 10^ * 0.00 *
0.07 *                  *
* C & E Loss (m)         * 0.03 * Cum SA (1000 m2)         * 4.02 *
54.17 *                  *
*****
*****

```

CROSS SECTION OUTPUT Profile # VV

```

*****
*****
* E.G. Elev (m)          * 111.40 * Element                * Left OB *
Channel * Right OB *
* Vel Head (m)          * 0.02 * Wt. n-Val                *          *
0.040 *                  *
* W.S. Elev (m)          * 111.38 * Reach Len. (m)          * 274.95 *
276.04 * 276.04 *
* Crit W.S. (m)          *          * Flow Area (m2)          *          *
6.06 *                  *
* E.G. Slope (m/m)       * 0.001976 * Area (m2)                *          *
6.06 *                  *
* Q Total (m3/s)         * 3.30 * Flow (m3/s)              *          *
3.30 *                  *
* Top Width (m)          * 17.31 * Top Width (m)            *          *
17.31 *                  *
* Vel Total (m/s)        * 0.54 * Avg. Vel. (m/s)          *          *
0.54 *                  *
* Max Chl Dpth (m)       * 0.55 * Hydr. Depth (m)          *          *
0.35 *                  *
* Conv. Total (m3/s)     * 74.2 * Conv. (m3/s)             *          *
74.2 *                  *

```



```

* Length Wtd. (m)      *      276.04 * Wetted Per. (m)      *      *
17.67 *      *
* Min Ch El (m)      *      110.83 * Shear (N/sq m)      *      *
6.65 *      *
* Alpha      *      1.00 * Stream Power (N/m s)      *      3438.76 *
0.00 *      0.00 *
* Frctn Loss (m)      *      0.52 * Cum Volume (cu m x 10^ *      *
0.01 *      *
* C & E Loss (m)      *      0.00 * Cum SA (1000 m2)      *      *
38.35 *      *
*****
*****

```

CROSS SECTION

RIVER: Malta

REACH: Malta

River Station: 103

INPUT

Description:

Station Elevation Data, num = 123

Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.	Elev.
0	113.46	8.02	113.28	10.29	113.2	11.23	113.06	13.31	113.01
13.91	112.97	14.15	112.96	14.87	112.98	15.12	112.99	15.4	112.97
16.31	113.03	17.07	113.08	17.68	113.1	18.85	113.09	20.61	113.08
22.28	113	23.07	112.98	23.65	112.96	24.44	112.98	24.7	112.99
26.21	113.03	26.57	113.01	26.68	113.03	27.85	113.1	28.06	113.12
30.94	113.13	33.16	113.04	33.67	113.02	35.44	113.01	35.59	112.98
35.98	112.86	36.96	112.89	37.17	112.59	37.17	112.51	37.37	112.4
37.82	112.16	38.13	111.99	38.6	111.86	40.3	111.4	40.34	111.37
40.5	111.27	41.47	111.25	41.47	111.15	42.2	111.03	42.45	111.01
43.33	110.94	43.48	110.88	44.01	110.68	44.16	110.65	44.67	110.55
45.41	110.51	45.63	110.5	46.41	110.44	46.51	110.45	46.96	110.46
47.35	110.46	47.45	110.47	47.8	110.51	48.32	110.5	50.08	110.44
50.34	110.45	51.24	110.46	51.68	110.46	53.28	110.49	53.7	110.52
53.95	110.52	54.77	110.51	55.16	110.59	56.42	110.84	56.72	110.86
57.47	110.91	57.68	110.92	57.8	110.91	58.17	110.85	58.52	110.82
61.15	110.71	61.8	110.68	63.89	110.6	64.45	110.59	66.2	110.55
66.53	110.56	67.59	110.59	67.67	110.58	68.07	110.55	68.19	110.55

68.8	110.58	69.56	110.66	69.95	110.68	71.13	110.75	71.24
110.74								
71.85	110.71	72.7	110.73	73.25	110.67	73.34	110.67	73.6
110.67								
73.75	110.71	74.2	110.82	74.31	110.84	74.63	110.88	74.8
110.96								
75.3	111.19	75.38	111.2	75.61	111.22	75.77	111.27	76.27
111.43								
76.53	111.55	77.3	111.9	77.62	112	78.37	112.24	78.55
112.3								
78.85	112.35	79.14	112.4	79.43	112.44	82.92	112.5	91.33
113.9								
91.59	113.94	96	114.47	98.23	114.74	99.19	114.86	110.84
116.51								
114.48	116.87	114.58	116.88	114.68	116.89			

Manning's n Values, num = 3

Sta.	Value	Sta.	Value	Sta.	Value
0	.05	41.47	.04	82.92	.05

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff Contr.
Expan.						
	41.47	82.92		207.437	223.227	238.674
						0.1
						0.3

CROSS SECTION OUTPUT Profile # p-1

* E.G. Elev (m)	* 113.01	* Element	* Left OB *
Channel * Right OB *			
* Vel Head (m)	* 0.11	* Wt. n-Val	* 0.050 *
0.040 * 0.050 *			
* W.S. Elev (m)	* 112.90	* Reach Len. (m)	* 207.44 *
223.23 * 238.67 *			
* Crit W.S. (m)	*	* Flow Area (m2)	* 5.21 *
81.82 * 0.48 *			
* E.G. Slope (m/m)	* 0.001422	* Area (m2)	* 5.21 *
81.82 * 0.48 *			
* Q Total (m3/s)	* 124.00	* Flow (m3/s)	* 3.53 *
120.34 * 0.12 *			
* Top Width (m)	* 49.48	* Top Width (m)	* 5.62 *
41.45 * 2.41 *			
* Vel Total (m/s)	* 1.42	* Avg. Vel. (m/s)	* 0.68 *
1.47 * 0.26 *			
* Max Chl Dpth (m)	* 2.46	* Hydr. Depth (m)	* 0.93 *
1.97 * 0.20 *			
* Conv. Total (m3/s)	* 3288.5	* Conv. (m3/s)	* 93.7 *
3191.5 * 3.3 *			
* Length Wtd. (m)	* 223.01	* Wetted Per. (m)	* 6.12 *
42.00 * 2.44 *			
* Min Ch El (m)	* 110.44	* Shear (N/sq m)	* 11.88 *
27.17 * 2.76 *			
* Alpha	* 1.05	* Stream Power (N/m s)	* 5490.91 *
0.00 * 0.00 *			
* Frctn Loss (m)	* 0.42	* Cum Volume (cu m x 10^	* 0.00 *
0.08 * 0.00 *			
* C & E Loss (m)	* 0.01	* Cum SA (1000 m2)	* 5.15 *
48.46 * 3.93 *			

CROSS SECTION OUTPUT Profile # p-5

* E.G. Elev (m)	*	112.72	* Element	*	Left OB	*
Channel * Right OB *						
* Vel Head (m)	*	0.09	* Wt. n-Val	*	0.050	*
0.040 *		0.050	*			
* W.S. Elev (m)	*	112.63	* Reach Len. (m)	*	207.44	*
223.23 *		238.67	*			
* Crit W.S. (m)	*		* Flow Area (m2)	*	3.98	*
70.54 *		0.05	*			
* E.G. Slope (m/m)	*	0.001402	* Area (m2)	*	3.98	*
70.54 *		0.05	*			
* Q Total (m3/s)	*	96.00	* Flow (m3/s)	*	2.68	*
93.32 *		0.01	*			
* Top Width (m)	*	46.55	* Top Width (m)	*	4.33	*
41.45 *		0.78	*			
* Vel Total (m/s)	*	1.29	* Avg. Vel. (m/s)	*	0.67	*
1.32 *		0.12	*			
* Max Chl Dpth (m)	*	2.19	* Hydr. Depth (m)	*	0.92	*
1.70 *		0.06	*			
* Conv. Total (m3/s)	*	2564.1	* Conv. (m3/s)	*	71.5	*
2492.5 *		0.2	*			
* Length Wtd. (m)	*	223.01	* Wetted Per. (m)	*	4.68	*
42.00 *		0.79	*			
* Min Ch El (m)	*	110.44	* Shear (N/sq m)	*	11.70	*
23.09 *		0.88	*			
* Alpha	*	1.03	* Stream Power (N/m s)	*	5490.91	*
0.00 *		0.00	*			
* Frctn Loss (m)	*	0.41	* Cum Volume (cu m x 10^	*	0.00	*
0.07 *		0.00	*			
* C & E Loss (m)	*	0.00	* Cum SA (1000 m2)	*	3.75	*
46.58 *		0.68	*			

CROSS SECTION OUTPUT Profile # p-10

* E.G. Elev (m)	*	112.48	* Element	*	Left OB	*
Channel * Right OB *						
* Vel Head (m)	*	0.08	* Wt. n-Val	*	0.050	*
0.040 *			*			
* W.S. Elev (m)	*	112.41	* Reach Len. (m)	*	207.44	*
223.23 *		238.67	*			
* Crit W.S. (m)	*		* Flow Area (m2)	*	3.04	*
61.60 *			*			
* E.G. Slope (m/m)	*	0.001300	* Area (m2)	*	3.04	*
61.60 *			*			
* Q Total (m3/s)	*	78.00	* Flow (m3/s)	*	1.73	*
76.27 *			*			
* Top Width (m)	*	41.84	* Top Width (m)	*	4.11	*
37.73 *			*			
* Vel Total (m/s)	*	1.21	* Avg. Vel. (m/s)	*	0.57	*
1.24 *			*			
* Max Chl Dpth (m)	*	1.97	* Hydr. Depth (m)	*	0.74	*
1.63 *			*			

* Conv. Total (m3/s)	*	2163.5	* Conv. (m3/s)	*	47.9	*
2115.5 *	*					
* Length Wtd. (m)	*	223.05	* Wetted Per. (m)	*	4.34	*
38.27 *	*					
* Min Ch El (m)	*	110.44	* Shear (N/sq m)	*	8.93	*
20.52 *	*					
* Alpha	*	1.03	* Stream Power (N/m s)	*	5490.91	*
0.00 * 0.00 *						
* Frctn Loss (m)	*	0.38	* Cum Volume (cu m x 10^	*	0.00	*
0.06 *	*					
* C & E Loss (m)	*	0.00	* Cum SA (1000 m2)	*	3.46	*
44.89 *	*					

CROSS SECTION OUTPUT Profile # VV

* E.G. Elev (m)	*	110.88	* Element	*	Left OB	*
Channel * Right OB *						
* Vel Head (m)	*	0.01	* Wt. n-Val	*		*
0.040 *	*					
* W.S. Elev (m)	*	110.87	* Reach Len. (m)	*	207.44	*
223.23 * 238.67 *						
* Crit W.S. (m)	*		* Flow Area (m2)	*		*
7.70 *	*					
* E.G. Slope (m/m)	*	0.001798	* Area (m2)	*		*
7.70 *	*					
* Q Total (m3/s)	*	3.30	* Flow (m3/s)	*		*
3.30 *	*					
* Top Width (m)	*	29.82	* Top Width (m)	*		*
29.82 *	*					
* Vel Total (m/s)	*	0.43	* Avg. Vel. (m/s)	*		*
0.43 *	*					
* Max Chl Dpth (m)	*	0.43	* Hydr. Depth (m)	*		*
0.26 *	*					
* Conv. Total (m3/s)	*	77.8	* Conv. (m3/s)	*		*
77.8 *	*					
* Length Wtd. (m)	*	223.23	* Wetted Per. (m)	*		*
29.95 *	*					
* Min Ch El (m)	*	110.44	* Shear (N/sq m)	*		*
4.53 *	*					
* Alpha	*	1.00	* Stream Power (N/m s)	*	5490.91	*
0.00 * 0.00 *						
* Frctn Loss (m)	*	0.30	* Cum Volume (cu m x 10^	*		*
0.01 *	*					
* C & E Loss (m)	*	0.00	* Cum SA (1000 m2)	*		*
31.84 *	*					

CROSS SECTION

RIVER: Malta

REACH: Malta

River Station: 102

INPUT

Description:

Station Elevation Data, num = 131

Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.
0	114.31	.45	114.25	.67	114.22	2.71	114.37	3.48
114.38								
5.66	114.35	9.06	114.23	22.86	113.85	27.65	113.61	28.8
113.55								
35.36	113.22	35.43	113.21	45.11	112.93	45.48	112.41	45.65
112.38								
46.85	112.21	46.9	112.21	47.21	112.2	47.28	112.18	47.73
112.03								
47.88	112.01	48.89	111.84	49.24	111.88	49.3	111.8	49.62
111.33								
49.76	111.28	50.54	110.99	50.65	110.97	51.19	110.86	51.37
110.85								
52.2	110.79	52.32	110.73	52.84	110.46	52.98	110.44	53.59
110.34								
53.72	110.33	54.31	110.3	54.54	110.26	55.47	110.11	55.69
110.11								
56.54	110.11	56.73	110.11	57.43	110.13	57.79	110.14	59.02
110.17								
59.07	110.18	59.23	110.22	59.4	110.22	59.93	110.22	60.47
110.27								
60.91	110.25	62.24	110.2	62.42	110.21	62.9	110.24	63
110.23								
63.28	110.19	63.92	110.19	64.04	110.2	64.34	110.21	64.63
110.2								
65.34	110.16	65.87	110.2	66.16	110.16	66.84	110.07	66.95
110.07								
67.21	110.07	67.5	110.11	68.15	110.21	68.39	110.17	68.6
110.14								
68.92	110.09	69.01	110.09	69.2	110.09	69.44	110.13	69.95
110.22								
70.07	110.24	70.33	110.27	70.46	110.27	70.73	110.28	70.94
110.24								
71.34	110.17	71.64	110.21	72.21	110.27	72.85	110.26	73.1
110.29								
73.55	110.35	73.97	110.29	74.16	110.29	74.49	110.29	74.59
110.29								
74.77	110.3	74.93	110.28	75.21	110.26	75.37	110.27	75.62
110.29								
75.83	110.35	76.16	110.44	76.3	110.42	76.53	110.4	76.66
110.43								
76.88	110.48	77.13	110.5	77.52	110.53	77.89	110.6	78.79
110.8								
79.28	110.94	80.07	111.11	81.2	111.34	81.48	111.4	81.86
111.48								
82.18	111.49	82.6	111.52	83.13	111.61	83.81	111.73	84.56
111.84								
88.18	112.28	89.56	112.61	95.25	114.1	99.6	115.18	101.2
115.42								
102.61	115.64	132.54	120.55	133.73	120.59	135.05	120.6	135.08
120.6								
135.86	120.62	136.21	120.64	136.3	120.65	137.18	120.69	137.37
120.69								
137.59	120.7							

Manning's n Values, num = 3

Sta.	Value	Sta.	Value	Sta.	Value
------	-------	------	-------	------	-------

```
*****
      0      .05   45.11      .04   88.18      .05
```

```
Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.
Expan.          45.11   88.18          739.749 703.806 732.07          0.1
0.3
```

CROSS SECTION OUTPUT Profile # p-1

```
*****
*****
* E.G. Elev (m)      * 112.58 * Element      * Left OB *
Channel * Right OB *
* Vel Head (m)      * 0.16 * Wt. n-Val    *          *
0.040 * 0.050 *
* W.S. Elev (m)      * 112.42 * Reach Len. (m) * 739.75 *
703.81 * 732.07 *
* Crit W.S. (m)      *          * Flow Area (m2) *          *
70.07 * 0.04 *
* E.G. Slope (m/m)   * 0.002654 * Area (m2)      *          *
70.07 * 0.04 *
* Q Total (m3/s)     * 124.00 * Flow (m3/s)    *          *
123.99 * 0.01 *
* Top Width (m)      * 43.30 * Top Width (m)  *          *
42.71 * 0.59 *
* Vel Total (m/s)     * 1.77 * Avg. Vel. (m/s) *          *
1.77 * 0.17 *
* Max Chl Dpth (m)   * 2.35 * Hydr. Depth (m) *          *
1.64 * 0.07 *
* Conv. Total (m3/s) * 2406.9 * Conv. (m3/s)   *          *
2406.8 * 0.1 *
* Length Wtd. (m)    * 704.48 * Wetted Per. (m) *          *
43.53 * 0.61 *
* Min Ch El (m)      * 110.07 * Shear (N/sq m) *          *
41.91 * 1.79 *
* Alpha              * 1.00 * Stream Power (N/m s) * 6587.85 *
0.00 * 0.00 *
* Frctn Loss (m)     * 1.15 * Cum Volume (cu m x 10^ * 0.00 *
0.06 * 0.00 *
* C & E Loss (m)     * 0.03 * Cum SA (1000 m2)   * 4.57 *
39.07 * 3.57 *
*****
*****
```

CROSS SECTION OUTPUT Profile # p-5

```
*****
*****
* E.G. Elev (m)      * 112.30 * Element      * Left OB *
Channel * Right OB *
* Vel Head (m)      * 0.13 * Wt. n-Val    *          *
0.040 *          *
* W.S. Elev (m)      * 112.17 * Reach Len. (m) * 739.75 *
703.81 * 732.07 *
* Crit W.S. (m)      *          * Flow Area (m2) *          *
59.67 *          *
* E.G. Slope (m/m)   * 0.002492 * Area (m2)      *          *
59.67 *          *
* Q Total (m3/s)     * 96.00 * Flow (m3/s)    *          *
96.00 *          *
```

* Top Width (m)	*	39.98	* Top Width (m)	*	*
39.98 *	*				
* Vel Total (m/s)	*	1.61	* Avg. Vel. (m/s)	*	*
1.61 *	*				
* Max Chl Dpth (m)	*	2.10	* Hydr. Depth (m)	*	*
1.49 *	*				
* Conv. Total (m3/s)	*	1923.1	* Conv. (m3/s)	*	*
1923.1 *	*				
* Length Wtd. (m)	*	704.41	* Wetted Per. (m)	*	*
40.77 *	*				
* Min Ch El (m)	*	110.07	* Shear (N/sq m)	*	*
35.77 *	*				
* Alpha	*	1.00	* Stream Power (N/m s)	*	6587.85 *
0.00 * 0.00 *					
* Frctn Loss (m)	*	1.12	* Cum Volume (cu m x 10^	*	0.00 *
0.05 * 0.00 *					
* C & E Loss (m)	*	0.02	* Cum SA (1000 m2)	*	3.30 *
37.50 * 0.59 *					

CROSS SECTION OUTPUT Profile # p-10

* E.G. Elev (m)	*	112.10	* Element	*	Left OB *
Channel * Right OB *					
* Vel Head (m)	*	0.11	* Wt. n-Val	*	*
0.040 *	*				
* W.S. Elev (m)	*	111.99	* Reach Len. (m)	*	739.75 *
703.81 * 732.07 *					
* Crit W.S. (m)	*		* Flow Area (m2)	*	*
52.55 *	*				
* E.G. Slope (m/m)	*	0.002330	* Area (m2)	*	*
52.55 *	*				
* Q Total (m3/s)	*	78.00	* Flow (m3/s)	*	*
78.00 *	*				
* Top Width (m)	*	37.78	* Top Width (m)	*	*
37.78 *	*				
* Vel Total (m/s)	*	1.48	* Avg. Vel. (m/s)	*	*
1.48 *	*				
* Max Chl Dpth (m)	*	1.92	* Hydr. Depth (m)	*	*
1.39 *	*				
* Conv. Total (m3/s)	*	1616.0	* Conv. (m3/s)	*	*
1616.0 *	*				
* Length Wtd. (m)	*	704.33	* Wetted Per. (m)	*	*
38.53 *	*				
* Min Ch El (m)	*	110.07	* Shear (N/sq m)	*	*
31.17 *	*				
* Alpha	*	1.00	* Stream Power (N/m s)	*	6587.85 *
0.00 * 0.00 *					
* Frctn Loss (m)	*	1.09	* Cum Volume (cu m x 10^	*	0.00 *
0.05 *	*				
* C & E Loss (m)	*	0.02	* Cum SA (1000 m2)	*	3.03 *
36.46 *	*				

CROSS SECTION OUTPUT Profile # VV

```

* E.G. Elev (m)          * 110.57 * Element          * Left OB *
Channel * Right OB *
* Vel Head (m)          * 0.01 * Wt. n-Val          *          *
0.040 *                  *
* W.S. Elev (m)          * 110.57 * Reach Len. (m)      * 739.75 *
703.81 * 732.07 *
* Crit W.S. (m)          *          * Flow Area (m2)      *          *
8.41 *                  *
* E.G. Slope (m/m)        * 0.001067 * Area (m2)          *          *
8.41 *                  *
* Q Total (m3/s)          * 3.30 * Flow (m3/s)        *          *
3.30 *                  *
* Top Width (m)           * 25.07 * Top Width (m)       *          *
25.07 *                  *
* Vel Total (m/s)         * 0.39 * Avg. Vel. (m/s)     *          *
0.39 *                  *
* Max Chl Dpth (m)        * 0.50 * Hydr. Depth (m)     *          *
0.34 *                  *
* Conv. Total (m3/s)      * 101.0 * Conv. (m3/s)        *          *
101.0 *                  *
* Length Wtd. (m)         * 703.81 * Wetted Per. (m)     *          *
25.25 *                  *
* Min Ch El (m)           * 110.07 * Shear (N/sq m)      *          *
3.49 *                  *
* Alpha                   * 1.00 * Stream Power (N/m s) * 6587.85 *
0.00 * 0.00 *
* Frctn Loss (m)         * 0.77 * Cum Volume (cu m x 10^ *          *
0.01 *                  *
* C & E Loss (m)          * 0.00 * Cum SA (1000 m2)    *          *
25.72 *                  *
*****
*****

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CROSS SECTION

RIVER: Malta

REACH: Malta

River Station: 101

INPUT

Description:

Station Elevation Data, num = 138

Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.	Elev.	Sta.	Elev.
0	112.87	.72	112.6	.74	112.61	1.05	112.58	1.56	112.74
1.61	112.73	3.19	112.45	4.57	112.16	4.63	112.15	6.23	111.85
6.28	111.84	8.72	111.59	8.74	111.58	9.34	111.49	9.36	111.49
9.82	111.52	9.85	111.52	10.7	111.67	10.71	111.66	10.72	111.65
10.94	111.58	11.33	111.34	11.41	111.33	13.48	111.18	14.05	111.26
15.56	110.93	15.61	110.92	16.85	110.75	16.87	110.75	17.25	110.52
17.79	110.45	17.83	110.45	18.68	110.34	18.69	110.35	18.72	110.34

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0	112.87	.72	112.6	.74	112.61	1.05	112.58	1.56	112.74
1.61	112.73	3.19	112.45	4.57	112.16	4.63	112.15	6.23	111.85
6.28	111.84	8.72	111.59	8.74	111.58	9.34	111.49	9.36	111.49
9.82	111.52	9.85	111.52	10.7	111.67	10.71	111.66	10.72	111.65
10.94	111.58	11.33	111.34	11.41	111.33	13.48	111.18	14.05	111.26
15.56	110.93	15.61	110.92	16.85	110.75	16.87	110.75	17.25	110.52
17.79	110.45	17.83	110.45	18.68	110.34	18.69	110.35	18.72	110.34

18.97	110.4	19.54	110.25	19.56	110.24	20.02	110.18	20.75
110.28								
20.77	110.27	21.23	110.18	21.29	110.17	22.77	110.02	23.7
110.02								
25.16	109.9	25.18	109.89	25.65	109.72	25.71	109.71	27.12
109.59								
27.18	109.59	28.28	109.63	28.32	109.62	29.31	109.35	29.46
109.34								
32.55	109.29	32.75	109.29	36.9	109.3	40.11	109.39	40.24
109.39								
42.7	109.46	42.8	109.47	44.72	109.7	44.93	109.71	48.68
109.78								
48.9	109.78	52.73	109.77	52.88	109.77	55.39	109.69	55.44
109.68								
56.39	109.65	57.57	109.78	57.69	109.77	59.52	109.62	59.62
109.62								
61.15	109.67	61.2	109.67	61.96	109.74	62.01	109.74	62.89
109.65								
63	109.64	64.73	109.61	65.21	109.52	65.33	109.52	67.3
109.56								
67.76	109.6	68.78	109.68	68.83	109.68	69.6	109.67	69.7
109.67								
71.13	109.66	71.23	109.66	72.58	109.7	72.68	109.7	75.72
110.13								
75.87	110.12	77.97	110.01	79.21	109.89	79.3	109.9	80.41
109.95								
80.49	109.96	81.79	110.07	85.43	110.03	90.66	111.19	92.01
111.21								
94.06	111.38	95.19	111.46	96.64	111.23	97.73	111.35	97.79
111.34								
98.48	111.28	98.64	111.26	100.57	111.01	101.29	111.05	101.35
111.07								
102.12	111.3	102.2	111.3	103.24	111.29	104.7	111.43	104.8
111.43								
105.99	111.46	106.04	111.45	106.64	111.41	106.7	111.42	107.43
111.6								
107.6	111.59	109.5	111.56	109.54	111.56	109.57	111.56	110.04
111.56								
110.42	111.54	111.09	111.62	111.13	111.61	111.57	111.56	111.62
111.57								
112.22	111.75	112.26	111.74	112.69	111.64			

Manning's n Values, num = 3

Sta.	Value	Sta.	Value	Sta.	Value
0	.05	23.7	.04	92.01	.05

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.
Expan.	23.7	92.01	0	0	0	0.1	
	0.3						

CROSS SECTION OUTPUT Profile # p-1

```

*****
*****
* E.G. Elev (m)          * 111.40 * Element          * Left OB *
Channel * Right OB *
* Vel Head (m)          * 0.06 * Wt. n-Val          * 0.050 *
0.040 * 0.050 *

```

* W.S. Elev (m)	*	111.34	* Reach Len. (m)	*	*
* Crit W.S. (m)	*	110.42	* Flow Area (m2)	*	8.71 *
106.74 * 1.03 *					
* E.G. Slope (m/m)	*	0.001108	* Area (m2)	*	8.71 *
106.74 * 1.03 *					
* Q Total (m3/s)	*	124.00	* Flow (m3/s)	*	4.55 *
119.28 * 0.17 *					
* Top Width (m)	*	89.83	* Top Width (m)	*	12.36 *
68.31 * 9.16 *					
* Vel Total (m/s)	*	1.06	* Avg. Vel. (m/s)	*	0.52 *
1.12 * 0.17 *					
* Max Chl Dpth (m)	*	2.05	* Hydr. Depth (m)	*	0.70 *
1.56 * 0.11 *					
* Conv. Total (m3/s)	*	3724.8	* Conv. (m3/s)	*	136.5 *
3583.2 * 5.1 *					
* Length Wtd. (m)	*		* Wetted Per. (m)	*	12.56 *
68.62 * 9.24 *					
* Min Ch El (m)	*	109.29	* Shear (N/sq m)	*	7.54 *
16.91 * 1.21 *					
* Alpha	*	1.07	* Stream Power (N/m s)	*	5395.63 *
0.00 * 0.00 *					
* Frctn Loss (m)	*		* Cum Volume (cu m x 10^	*	*
* C & E Loss (m)	*		* Cum SA (1000 m2)	*	*

CROSS SECTION OUTPUT Profile # p-5

* E.G. Elev (m)	*	111.16	* Element	*	Left OB *
Channel * Right OB *					
* Vel Head (m)	*	0.05	* Wt. n-Val	*	0.050 *
0.040 * 0.050 *					
* W.S. Elev (m)	*	111.10	* Reach Len. (m)	*	*
* Crit W.S. (m)	*	110.30	* Flow Area (m2)	*	6.26 *
90.82 * 0.09 *					
* E.G. Slope (m/m)	*	0.001109	* Area (m2)	*	6.26 *
90.82 * 0.09 *					
* Q Total (m3/s)	*	96.00	* Flow (m3/s)	*	3.24 *
92.75 * 0.01 *					
* Top Width (m)	*	77.11	* Top Width (m)	*	8.93 *
66.57 * 1.61 *					
* Vel Total (m/s)	*	0.99	* Avg. Vel. (m/s)	*	0.52 *
1.02 * 0.10 *					
* Max Chl Dpth (m)	*	1.81	* Hydr. Depth (m)	*	0.70 *
1.36 * 0.06 *					
* Conv. Total (m3/s)	*	2882.5	* Conv. (m3/s)	*	97.4 *
2784.8 * 0.3 *					
* Length Wtd. (m)	*		* Wetted Per. (m)	*	9.10 *
66.87 * 1.63 *					
* Min Ch El (m)	*	109.29	* Shear (N/sq m)	*	7.47 *
14.77 * 0.61 *					
* Alpha	*	1.04	* Stream Power (N/m s)	*	5395.63 *
0.00 * 0.00 *					
* Frctn Loss (m)	*		* Cum Volume (cu m x 10^	*	*

```

* C & E Loss (m)          *          * Cum SA (1000 m2)          *          *
*                          *
*****
*****

```

CROSS SECTION OUTPUT Profile # p-10

```

*****
*****
* E.G. Elev (m)          * 110.99 * Element          * Left OB *
Channel * Right OB *
* Vel Head (m)          * 0.04 * Wt. n-Val          * 0.050 *
0.040 *
* W.S. Elev (m)          * 110.94 * Reach Len. (m)      *
*
* Crit W.S. (m)          * 110.22 * Flow Area (m2)      * 4.87 *
80.07 *
* E.G. Slope (m/m)       * 0.001109 * Area (m2)          * 4.87 *
80.07 *
* Q Total (m3/s)         * 78.00 * Flow (m3/s)         * 2.26 *
75.74 *
* Top Width (m)          * 74.03 * Top Width (m)       * 8.19 *
65.84 *
* Vel Total (m/s)        * 0.92 * Avg. Vel. (m/s)     * 0.46 *
0.95 *
* Max Chl Dpth (m)       * 1.65 * Hydr. Depth (m)     * 0.59 *
1.22 *
* Conv. Total (m3/s)     * 2342.4 * Conv. (m3/s)        * 67.9 *
2274.5 *
* Length Wtd. (m)        *          * Wetted Per. (m)     * 8.34 *
66.12 *
* Min Ch El (m)          * 109.29 * Shear (N/sq m)      * 6.34 *
13.17 *
* Alpha                  * 1.04 * Stream Power (N/m s) * 5395.63 *
0.00 * 0.00 *
* Frctn Loss (m)         *          * Cum Volume (cu m x 10^ *
*
* C & E Loss (m)         *          * Cum SA (1000 m2)    *
*
*****
*****

```

CROSS SECTION OUTPUT Profile # VV

```

*****
*****
* E.G. Elev (m)          * 109.81 * Element          * Left OB *
Channel * Right OB *
* Vel Head (m)          * 0.00 * Wt. n-Val          *
0.040 *
* W.S. Elev (m)          * 109.80 * Reach Len. (m)      *
*
* Crit W.S. (m)          * 109.52 * Flow Area (m2)      *
10.76 *
* E.G. Slope (m/m)       * 0.001109 * Area (m2)          *
10.76 *
* Q Total (m3/s)         * 3.30 * Flow (m3/s)         *
3.30 *
* Top Width (m)          * 48.00 * Top Width (m)       *
48.00 *
* Vel Total (m/s)        * 0.31 * Avg. Vel. (m/s)     *
0.31 *

```

* Max Chl Dpth (m)	*	0.51	* Hydr. Depth (m)	*	*
0.22	*				
* Conv. Total (m3/s)	*	99.1	* Conv. (m3/s)	*	*
99.1	*				
* Length Wtd. (m)	*		* Wetted Per. (m)	*	*
48.13	*				
* Min Ch El (m)	*	109.29	* Shear (N/sq m)	*	*
2.43	*				
* Alpha	*	1.00	* Stream Power (N/m s)	*	5395.63
0.00	*	0.00			
* Frctn Loss (m)	*		* Cum Volume (cu m x 10^	*	*
*	*				
* C & E Loss (m)	*		* Cum SA (1000 m2)	*	*
*	*				

SUMMARY OF MANNING'S N VALUES

River: Malta

* Reach	* River Sta.	* n1	* n2	* n3	*	

*Malta	* 116	* 0.05*	0.04*	0.05*		
*Malta	* 115	* 0.05*	0.04*	0.05*		
*Malta	* 114	* 0.05*	0.04*	0.05*		
*Malta	* 113	* 0.05*	0.04*	0.05*		
*Malta	* 112	* 0.05*	0.04*	0.05*		
*Malta	* 111	* 0.05*	0.04*	0.05*		
*Malta	* 110	* 0.05*	0.04*	0.05*		
*Malta	* 109	* 0.05*	0.04*	0.05*		
*Malta	* 108	* 0.05*	0.04*	0.05*		
*Malta	* 107	* 0.05*	0.04*	0.05*		
*Malta	* 106	* 0.05*	0.04*	0.05*		
*Malta	* 105	* 0.05*	0.04*	0.05*		
*Malta	* 104	* 0.05*	0.04*	0.05*		
*Malta	* 103	* 0.05*	0.04*	0.05*		
*Malta	* 102	* 0.05*	0.04*	0.05*		
*Malta	* 101	* 0.05*	0.04*	0.05*		

SUMMARY OF REACH LENGTHS

River: Malta

* Reach	* River Sta.	* Left	* Channel	* Right	*

*Malta	* 116	* 119.686*	124.623*	124.623*	
*Malta	* 115	* 867.994*	893.858*	893.858*	
*Malta	* 114	* 855.053*	858.648*	858.648*	
*Malta	* 113	* 76.294*	68.1499*	68.1499*	
*Malta	* 112	* 53.1469*	48.11*	48.11*	
*Malta	* 111	* 96.1398*	88.8371*	88.8371*	

*Malta	*	110	*	133.495*	164.898*	164.898*
*Malta	*	109	*	207.008*	185.852*	185.852*
*Malta	*	108	*	244.148*	245.872*	245.872*
*Malta	*	107	*	348.502*	341.478*	341.478*
*Malta	*	106	*	496.671*	484.679*	484.679*
*Malta	*	105	*	517.277*	511.781*	511.781*
*Malta	*	104	*	274.954*	276.04*	276.04*
*Malta	*	103	*	207.437*	223.227*	238.674*
*Malta	*	102	*	739.749*	703.806*	732.07*
*Malta	*	101	*	*	*	*

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS

River: Malta

*	Reach	*	River Sta.	*	Contr.* Expan.*

*Malta	*	116	*	0.1*	0.3*
*Malta	*	115	*	0.1*	0.3*
*Malta	*	114	*	0.1*	0.3*
*Malta	*	113	*	0.1*	0.3*
*Malta	*	112	*	0.1*	0.3*
*Malta	*	111	*	0.1*	0.3*
*Malta	*	110	*	0.1*	0.3*
*Malta	*	109	*	0.1*	0.3*
*Malta	*	108	*	0.1*	0.3*
*Malta	*	107	*	0.1*	0.3*
*Malta	*	106	*	0.1*	0.3*
*Malta	*	105	*	0.1*	0.3*
*Malta	*	104	*	0.1*	0.3*
*Malta	*	103	*	0.1*	0.3*
*Malta	*	102	*	0.1*	0.3*
*Malta	*	101	*	0.1*	0.3*

Profile Output - Standard Table 1

*	Reach	*	River Sta.	*	Profile	*	Q Total	*	Min Ch El	*	W.S.
Elev	*Crit W.S.	*E.G. Elev	*E.G. Slope	*	Vel Chnl	*Flow Area	*Top Width				
*Froude #	*Chl	*		*							
*		*		*							
(m)	*	(m)	*	(m)	*	(m3/s)	*	(m)	*		
*		*		*				*			
(m)	*	(m)	*	(m/m)	*	(m/s)	*	(m2)	*	(m)	*
*		*		*				*			

* Malta		*116		*p-1	*	124.00	*	113.54	*	117.35	*
* 117.46	*	0.000816	*	1.64	*	99.48	*	41.65	*	0.27	*
* Malta		*116		*p-5	*	96.00	*	113.54	*	116.95	*
* 117.04	*	0.000790	*	1.49	*	82.77	*	39.19	*	0.26	*
* Malta		*116		*p-10	*	78.00	*	113.54	*	116.66	
*	*	116.74	*	0.000760	*	1.37	*	71.66	*	37.45	*

0.26 *

* Malta		*116		*VV		3.30 *	113.54 *	
114.24 *		* 114.25 *		0.000633 *		0.40 *	8.50 *	16.99
	0.18 *							
*		*		*		*	*	
*	*	*		*		*	*	
*								
* Malta		*115		*p-1 *	124.00 *	113.52 *	117.28 *	
* 117.36 *	0.000639 *		1.43 *	110.05 *	45.03 *		0.24 *	
* Malta		*115		*p-5 *	96.00 *	113.52 *	116.88 *	
* 116.95 *	0.000632 *		1.31 *	92.12 *	43.90 *		0.24 *	
* Malta		*115		*p-10 *	78.00 *	113.52 *	116.58	
* *	116.65 *	0.000627 *		1.22 *	79.40 *	42.84 *		
0.23 *								
* Malta		*115		*VV		3.30 *	113.52 *	
114.16 *		* 114.17 *		0.000764 *		0.42 *	7.86 *	16.02
	0.19 *							
*		*		*		*	*	
*	*	*		*		*	*	
*								
* Malta		*114		*p-1 *	124.00 *	112.53 *	116.36 *	
* 116.53 *	0.001459 *		2.04 *	75.90 *	31.24 *		0.36 *	
* Malta		*114		*p-5 *	96.00 *	112.53 *	115.99 *	
* 116.14 *	0.001405 *		1.84 *	64.42 *	31.24 *		0.35 *	
* Malta		*114		*p-10 *	78.00 *	112.53 *	115.71	
* *	115.84 *	0.001404 *		1.72 *	55.64 *	31.24 *		
0.34 *								
* Malta		*114		*VV		3.30 *	112.53 *	
113.45 *		* 113.46 *		0.000802 *		0.50 *	6.62 *	10.82
	0.20 *							
*		*		*		*	*	
*	*	*		*		*	*	
*								
* Malta		*113		*p-1 *	124.00 *	112.01 *	115.76 *	
* 115.83 *	0.000485 *		1.21 *	120.27 *	68.80 *		0.21 *	
* Malta		*113		*p-5 *	96.00 *	112.01 *	115.46 *	
* 115.51 *	0.000410 *		1.05 *	103.95 *	48.60 *		0.19 *	
* Malta		*113		*p-10 *	78.00 *	112.01 *	115.22	
* *	115.26 *	0.000368 *		0.94 *	92.60 *	45.05 *		
0.18 *								
* Malta		*113		*VV		3.30 *	112.01 *	
113.40 *		* 113.40 *		0.000026 *		0.12 *	26.58 *	27.77
	0.04 *							
*		*		*		*	*	
*	*	*		*		*	*	
*								
* Malta		*112		*p-1 *	124.00 *	112.67 *	115.63 *	
* 115.77 *	0.001488 *		1.82 *	90.40 *	60.47 *		0.36 *	
* Malta		*112		*p-5 *	96.00 *	112.67 *	115.33 *	
* 115.46 *	0.001525 *		1.70 *	72.69 *	57.89 *		0.36 *	
* Malta		*112		*p-10 *	78.00 *	112.67 *	115.09	
* *	115.21 *	0.001588 *		1.61 *	58.99 *	50.00 *		
0.36 *								
* Malta		*112		*VV		3.30 *	112.67 *	
113.38 *		* 113.39 *		0.000916 *		0.42 *	7.94 *	19.36
	0.21 *							
*		*		*		*	*	
*	*	*		*		*	*	
*								
* Malta		*111		*p-1 *	124.00 *	112.74 *	115.59 *	
* 115.69 *	0.001328 *		1.72 *	106.98 *	75.06 *		0.34 *	

* Malta		*111		*p-5 *	96.00 *	112.74 *	115.28 *
* 115.38 *	0.001453 *		1.65 *	84.48 *	70.31 *		0.35 *
* Malta		*111		*p-10 *	78.00 *	112.74 *	115.02
* 115.12 *	0.001679 *		1.64 *	66.87 *	64.37 *		
0.37 *							
* Malta		*111		*VV	3.30 *	112.74 *	
113.30 *		* 113.32 *	0.002665 *	0.60 *	5.66 *	19.23	
* 0.34 *							
* *		* *	* *	* *	* *	* *	
* *		* *	* *	* *	* *	* *	
* *							
* Malta		*110		*p-1 *	124.00 *	112.53 *	115.52 *
* 115.59 *	0.000834 *		1.40 *	122.03 *	65.83 *		0.27 *
* Malta		*110		*p-5 *	96.00 *	112.53 *	115.21 *
* 115.27 *	0.000863 *		1.31 *	101.50 *	65.83 *		0.27 *
* Malta		*110		*p-10 *	78.00 *	112.53 *	114.94
* 115.00 *	0.000942 *		1.27 *	84.40 *	62.49 *		
0.28 *							
* Malta		*110		*VV	3.30 *	112.53 *	
112.89 *		* 112.92 *	0.008499 *	0.69 *	4.24 *	20.69	
* 0.54 *							
* *		* *	* *	* *	* *	* *	
* *		* *	* *	* *	* *	* *	
* *							
* Malta		*109		*p-1 *	124.00 *	111.99 *	115.39 *
* 115.45 *	0.000885 *		1.36 *	124.79 *	67.84 *		0.27 *
* Malta		*109		*p-5 *	96.00 *	111.99 *	115.07 *
* 115.12 *	0.000941 *		1.28 *	103.12 *	67.84 *		0.27 *
* Malta		*109		*p-10 *	78.00 *	111.99 *	114.80
* 114.85 *	0.000911 *		1.16 *	85.73 *	60.44 *		
0.26 *							
* Malta		*109		*VV	3.30 *	111.99 *	
112.61 *		* 112.62 *	0.000803 *	0.24 *	9.20 *	21.52	
* 0.17 *							
* *		* *	* *	* *	* *	* *	
* *		* *	* *	* *	* *	* *	
* *							
* Malta		*108		*p-1 *	124.00 *	111.53 *	115.17 *
* 115.25 *	0.001117 *		1.60 *	110.95 *	70.40 *		0.31 *
* Malta		*108		*p-5 *	96.00 *	111.53 *	114.84 *
* 114.92 *	0.001156 *		1.49 *	88.26 *	67.48 *		0.31 *
* Malta		*108		*p-10 *	78.00 *	111.53 *	114.57
* 114.65 *	0.001197 *		1.40 *	70.38 *	63.92 *		
0.31 *							
* Malta		*108		*VV	3.30 *	111.53 *	
112.46 *		* 112.47 *	0.000776 *	0.47 *	8.21 *	16.84	
* 0.20 *							
* *		* *	* *	* *	* *	* *	
* *		* *	* *	* *	* *	* *	
* *							
* Malta		*107		*p-1 *	124.00 *	111.63 *	114.83 *
* 114.96 *	0.001223 *		1.71 *	89.57 *	58.53 *		0.33 *
* Malta		*107		*p-5 *	96.00 *	111.63 *	114.52 *
* 114.63 *	0.001154 *		1.53 *	73.25 *	47.66 *		0.31 *
* Malta		*107		*p-10 *	78.00 *	111.63 *	114.27
* 114.36 *	0.001121 *		1.40 *	62.20 *	38.23 *		
0.30 *							
* Malta		*107		*VV	3.30 *	111.63 *	
112.18 *		* 112.20 *	0.001700 *	0.53 *	6.23 *	17.41	
* 0.28 *							

*		*		*		*		*
*	*		*		*		*	*
*								
* Malta		*106		*p-1 *	124.00 *	111.16 *	114.62 *	
* 114.68 *	0.000530 *		1.10 *	137.22 *	70.99 *		0.21 *	
* Malta		*106		*p-5 *	96.00 *	111.16 *	114.31 *	
* 114.36 *	0.000518 *		1.00 *	115.31 *	70.99 *		0.21 *	
* Malta		*106		*p-10 *	78.00 *	111.16 *	114.04	
* *	114.08 *	0.000566 *		0.97 *	95.59 *	70.99 *		
0.21 *								
* Malta		*106		*VV	3.30 *	111.16 *		
111.82 *		* 111.82 *	0.000761 *	0.37 *	8.84 *	21.75		
*	0.19 *							
*		*		*		*		*
*	*	*		*		*		*
*								
* Malta		*105		*p-1 *	124.00 *	110.92 *	114.29 *	
* 114.37 *	0.000732 *		1.34 *	104.81 *	54.80 *		0.25 *	
* Malta		*105		*p-5 *	96.00 *	110.92 *	114.01 *	
* 114.08 *	0.000651 *		1.18 *	89.74 *	53.55 *		0.23 *	
* Malta		*105		*p-10 *	78.00 *	110.92 *	113.72	
* *	113.78 *	0.000670 *		1.11 *	74.60 *	50.57 *		
0.23 *								
* Malta		*105		*VV	3.30 *	110.92 *		
111.64 *		* 111.65 *	0.000212 *	0.25 *	12.99 *	22.01		
*	0.11 *							
*		*		*		*		*
*	*	*		*		*		*
*								
* Malta		*104		*p-1 *	124.00 *	110.83 *	113.44 *	
* 113.64 *	0.003788 *		1.97 *	67.21 *	65.25 *		0.52 *	
* Malta		*104		*p-5 *	96.00 *	110.83 *	113.19 *	
* 113.37 *	0.004332 *		1.87 *	52.50 *	52.95 *		0.54 *	
* Malta		*104		*p-10 *	78.00 *	110.83 *	112.91	
* *	113.09 *	0.003810 *		1.89 *	41.29 *	29.52 *		
0.51 *								
* Malta		*104		*VV	3.30 *	110.83 *		
111.38 *		* 111.40 *	0.001976 *	0.54 *	6.06 *	17.31		
*	0.29 *							
*		*		*		*		*
*	*	*		*		*		*
*								
* Malta		*103		*p-1 *	124.00 *	110.44 *	112.90 *	
* 113.01 *	0.001422 *		1.47 *	87.52 *	49.48 *		0.33 *	
* Malta		*103		*p-5 *	96.00 *	110.44 *	112.63 *	
* 112.72 *	0.001402 *		1.32 *	74.57 *	46.55 *		0.32 *	
* Malta		*103		*p-10 *	78.00 *	110.44 *	112.41	
* *	112.48 *	0.001300 *		1.24 *	64.64 *	41.84 *		
0.31 *								
* Malta		*103		*VV	3.30 *	110.44 *		
110.87 *		* 110.88 *	0.001798 *	0.43 *	7.70 *	29.82		
*	0.27 *							
*		*		*		*		*
*	*	*		*		*		*
*								
* Malta		*102		*p-1 *	124.00 *	110.07 *	112.42 *	
* 112.58 *	0.002654 *		1.77 *	70.12 *	43.30 *		0.44 *	
* Malta		*102		*p-5 *	96.00 *	110.07 *	112.17 *	
* 112.30 *	0.002492 *		1.61 *	59.67 *	39.98 *		0.42 *	


```

* Malta          *102          *p-10 *          78.00 * 110.07 * 111.99
*          * 112.10 * 0.002330 *          1.48 * 52.55 * 37.78 *
0.40 *
* Malta          *102          *VV          *          3.30 * 110.07 *
110.57 *          * 110.57 * 0.001067 *          0.39 * 8.41 * 25.07
*          0.22 *
*          *          *          *          *          *
*          *          *          *          *          *
*
* Malta          *101          *p-1 *          124.00 * 109.29 * 111.34 *
110.42 * 111.40 * 0.001108 *          1.12 * 116.49 * 89.83 *
0.29 *
* Malta          *101          *p-5 *          96.00 * 109.29 * 111.10 *
110.30 * 111.16 * 0.001109 *          1.02 * 97.16 * 77.11 *
0.28 *
* Malta          *101          *p-10 *          78.00 * 109.29 * 110.94
* 110.22 * 110.99 * 0.001109 *          0.95 * 84.93 * 74.03 *
0.27 *
* Malta          *101          *VV          *          3.30 * 109.29 *
109.80 * 109.52 * 109.81 * 0.001109 *          0.31 * 10.76 * 48.00
*          0.21 *
*****
*****
*****

```

Profile Output - Standard Table 2

```

*****
*****
*****
*          Reach          * River Sta. * Profile * E.G. Elev * W.S. Elev *
Vel Head * Frctn Loss * C & E Loss * Q Left * Q Channel * Q Right *
Top Width *
*          *          *          *          *          *          *
(m) *          (m) *          (m) * (m3/s) * (m3/s) * (m) * (m) *
(m) *
*****
*****
*****
* Malta          * 116          * p-1 *          117.46 * 117.35 *
0.11 *          0.09 *          0.01 *          19.86 *          89.26 *          14.88 *
41.65 *
* Malta          * 116          * p-5 *          117.04 * 116.95 *
0.09 *          0.09 *          0.01 *          14.41 *          72.21 *          9.38 *
39.19 *
* Malta          * 116          * p-10 *          116.74 * 116.66 *
0.08 *          0.09 *          0.00 *          11.54 *          60.47 *          5.98 *
37.45 *
* Malta          * 116          * VV          *          114.25 * 114.24 *
0.01 *          0.09 *          0.00 *          0.13 *          3.17 *          *
16.99 *
*          *          *          *          *          *          *
*          *          *          *          *          *          *
*
* Malta          * 115          * p-1 *          117.36 * 117.28 *
0.08 *          0.82 *          0.01 *          22.53 *          91.72 *          9.75 *
45.03 *
* Malta          * 115          * p-5 *          116.95 * 116.88 *
0.07 *          0.81 *          0.01 *          15.20 *          74.52 *          6.29 *
43.90 *

```

* Malta	* 115	* p-10 *	116.65 *	116.58 *
0.06 *	0.80 *	0.01 * 10.58 *	63.05 *	4.37 *
42.84 *				
* Malta	* 115	* VV *	114.17 *	114.16 *
0.01 *	0.70 *	0.00 * *	3.30 *	*
16.02 *				
*	*	*	*	*
*	*	*	*	*
*				
* Malta	* 114	* p-1 *	116.53 *	116.36 *
0.17 *	0.67 *	0.03 * 14.41 *	93.81 *	15.78 *
31.24 *				
* Malta	* 114	* p-5 *	116.14 *	115.99 *
0.14 *	0.59 *	0.03 * 9.29 *	75.44 *	11.28 *
31.24 *				
* Malta	* 114	* p-10 *	115.84 *	115.71 *
0.13 *	0.55 *	0.03 * 6.07 *	63.58 *	8.35 *
31.24 *				
* Malta	* 114	* VV *	113.46 *	113.45 *
0.01 *	0.06 *	0.00 * *	3.30 *	*
10.82 *				
*	*	*	*	*
*	*	*	*	*
*				
* Malta	* 113	* p-1 *	115.83 *	115.76 *
0.07 *	0.05 *	0.01 * 6.38 *	112.54 *	5.08 *
68.80 *				
* Malta	* 113	* p-5 *	115.51 *	115.46 *
0.05 *	0.05 *	0.01 * 4.19 *	88.37 *	3.44 *
48.60 *				
* Malta	* 113	* p-10 *	115.26 *	115.22 *
0.04 *	0.05 *	0.01 * 2.90 *	72.72 *	2.38 *
45.05 *				
* Malta	* 113	* VV *	113.40 *	113.40 *
0.00 *	0.01 *	0.00 * 0.00 *	3.30 *	*
27.77 *				
*	*	*	*	*
*	*	*	*	*
*				
* Malta	* 112	* p-1 *	115.77 *	115.63 *
0.14 *	0.07 *	0.01 * 13.30 *	97.31 *	13.39 *
60.47 *				
* Malta	* 112	* p-5 *	115.46 *	115.33 *
0.13 *	0.07 *	0.01 * 6.59 *	80.49 *	8.91 *
57.89 *				
* Malta	* 112	* p-10 *	115.21 *	115.09 *
0.12 *	0.08 *	0.00 * 3.59 *	68.32 *	6.09 *
50.00 *				
* Malta	* 112	* VV *	113.39 *	113.38 *
0.01 *	0.07 *	0.00 * 0.02 *	3.28 *	*
19.36 *				
*	*	*	*	*
*	*	*	*	*
*				
* Malta	* 111	* p-1 *	115.69 *	115.59 *
0.10 *	0.09 *	0.01 * 17.83 *	76.21 *	29.97 *
75.06 *				
* Malta	* 111	* p-5 *	115.38 *	115.28 *
0.10 *	0.10 *	0.01 * 10.28 *	64.54 *	21.18 *
70.31 *				

* Malta	* 111	* p-10 *	115.12 *	115.02 *
0.11 *	0.11 *	0.01 *	5.59 *	56.79 *
64.37 *				15.62 *
* Malta	* 111	* VV *	113.32 *	113.30 *
0.02 *	0.40 *	0.00 *	0.00 *	3.23 *
19.23 *				0.07 *
*	*	*	*	*
*	*	*	*	*
*				
* Malta	* 110	* p-1 *	115.59 *	115.52 *
0.07 *	0.14 *	0.00 *	24.53 *	71.70 *
65.83 *				27.77 *
* Malta	* 110	* p-5 *	115.27 *	115.21 *
0.06 *	0.15 *	0.00 *	17.43 *	59.56 *
65.83 *				19.01 *
* Malta	* 110	* p-10 *	115.00 *	114.94 *
0.06 *	0.15 *	0.00 *	12.37 *	51.25 *
62.49 *				14.38 *
* Malta	* 110	* VV *	112.92 *	112.89 *
0.03 *	0.30 *	0.01 *	1.44 *	1.86 *
20.69 *				*
*	*	*	*	*
*	*	*	*	*
*				
* Malta	* 109	* p-1 *	115.45 *	115.39 *
0.06 *	0.19 *	0.00 *	6.73 *	44.86 *
67.84 *				72.40 *
* Malta	* 109	* p-5 *	115.12 *	115.07 *
0.05 *	0.20 *	0.00 *	3.37 *	37.03 *
67.84 *				55.60 *
* Malta	* 109	* p-10 *	114.85 *	114.80 *
0.05 *	0.20 *	0.00 *	1.17 *	29.45 *
60.44 *				47.37 *
* Malta	* 109	* VV *	112.62 *	112.61 *
0.01 *	0.15 *	0.00 *	*	0.42 *
21.52 *				2.88 *
*	*	*	*	*
*	*	*	*	*
*				
* Malta	* 108	* p-1 *	115.25 *	115.17 *
0.09 *	0.29 *	0.00 *	36.54 *	67.79 *
70.40 *				19.67 *
* Malta	* 108	* p-5 *	114.92 *	114.84 *
0.08 *	0.28 *	0.00 *	31.17 *	55.46 *
67.48 *				9.38 *
* Malta	* 108	* p-10 *	114.65 *	114.57 *
0.08 *	0.28 *	0.00 *	27.94 *	46.07 *
63.92 *				4.00 *
* Malta	* 108	* VV *	112.47 *	112.46 *
0.01 *	0.27 *	0.00 *	1.04 *	2.26 *
16.84 *				*
*	*	*	*	*
*	*	*	*	*
*				
* Malta	* 107	* p-1 *	114.96 *	114.83 *
0.13 *	0.26 *	0.02 *	11.83 *	110.30 *
58.53 *				1.88 *
* Malta	* 107	* p-5 *	114.63 *	114.52 *
0.11 *	0.25 *	0.02 *	7.07 *	88.01 *
47.66 *				0.92 *

* Malta	* 107	* p-10 *	114.36 *	114.27 *
0.09 *	0.26 *	0.02 *	72.13 *	0.43 *
38.23 *		5.45 *		
* Malta	* 107	* VV *	112.20 *	112.18 *
0.01 *	0.37 *	0.00 *	3.29 *	*
17.41 *				
*	*	*	*	*
*	*	*	*	*
*				
* Malta	* 106	* p-1 *	114.68 *	114.62 *
0.05 *	0.30 *	0.00 *	101.36 *	10.84 *
70.99 *		11.79 *		
* Malta	* 106	* p-5 *	114.36 *	114.31 *
0.05 *	0.28 *	0.00 *	82.18 *	6.49 *
70.99 *		7.33 *		
* Malta	* 106	* p-10 *	114.08 *	114.04 *
0.04 *	0.30 *	0.00 *	70.14 *	3.56 *
70.99 *		4.30 *		
* Malta	* 106	* VV *	111.82 *	111.82 *
0.01 *	0.18 *	0.00 *	3.30 *	*
21.75 *				
*	*	*	*	*
*	*	*	*	*
*				
* Malta	* 105	* p-1 *	114.37 *	114.29 *
0.09 *	0.72 *	0.01 *	116.02 *	2.86 *
54.80 *		5.12 *		
* Malta	* 105	* p-5 *	114.08 *	114.01 *
0.07 *	0.69 *	0.01 *	92.33 *	1.24 *
53.55 *		2.43 *		
* Malta	* 105	* p-10 *	113.78 *	113.72 *
0.06 *	0.68 *	0.01 *	76.93 *	0.36 *
50.57 *		0.70 *		
* Malta	* 105	* VV *	111.65 *	111.64 *
0.00 *	0.25 *	0.00 *	3.30 *	*
22.01 *				
*	*	*	*	*
*	*	*	*	*
*				
* Malta	* 104	* p-1 *	113.64 *	113.44 *
0.19 *	0.60 *	0.03 *	121.20 *	0.88 *
65.25 *		1.92 *		
* Malta	* 104	* p-5 *	113.37 *	113.19 *
0.18 *	0.63 *	0.03 *	95.53 *	0.08 *
52.95 *		0.39 *		
* Malta	* 104	* p-10 *	113.09 *	112.91 *
0.18 *	0.57 *	0.03 *	78.00 *	*
29.52 *				
* Malta	* 104	* VV *	111.40 *	111.38 *
0.02 *	0.52 *	0.00 *	3.30 *	*
17.31 *				
*	*	*	*	*
*	*	*	*	*
*				
* Malta	* 103	* p-1 *	113.01 *	112.90 *
0.11 *	0.42 *	0.01 *	120.34 *	0.12 *
49.48 *		3.53 *		
* Malta	* 103	* p-5 *	112.72 *	112.63 *
0.09 *	0.41 *	0.00 *	93.32 *	0.01 *
46.55 *		2.68 *		

* Malta		* 103		* p-10 *		112.48 *	112.41 *
0.08 *	0.38 *		0.00 *	1.73 *		76.27 *	*
41.84 *							
* Malta		* 103		* VV	*	110.88 *	110.87 *
0.01 *	0.30 *		0.00 *		*	3.30 *	*
29.82 *							
*		*		*	*		*
*	*		*	*		*	*
*							
* Malta		* 102		* p-1 *		112.58 *	112.42 *
0.16 *	1.15 *		0.03 *		*	123.99 *	0.01 *
43.30 *							
* Malta		* 102		* p-5 *		112.30 *	112.17 *
0.13 *	1.12 *		0.02 *		*	96.00 *	*
39.98 *							
* Malta		* 102		* p-10 *		112.10 *	111.99 *
0.11 *	1.09 *		0.02 *		*	78.00 *	*
37.78 *							
* Malta		* 102		* VV	*	110.57 *	110.57 *
0.01 *	0.77 *		0.00 *		*	3.30 *	*
25.07 *							
*		*		*	*		*
*	*		*	*		*	*
*							
* Malta		* 101		* p-1 *		111.40 *	111.34 *
0.06 *	*		*	4.55 *		119.28 *	0.17 *
89.83 *							
* Malta		* 101		* p-5 *		111.16 *	111.10 *
0.05 *	*		*	3.24 *		92.75 *	0.01 *
77.11 *							
* Malta		* 101		* p-10 *		110.99 *	110.94 *
0.04 *	*		*	2.26 *		75.74 *	*
74.03 *							
* Malta		* 101		* VV	*	109.81 *	109.80 *
0.00 *	*		*		*	3.30 *	*
48.00 *							

Report Completed - 09/23/22 01:53:23 pecp.

Discharge Measurement Summary

Date Measured: 2022-08-03

Site Information		Measurement Information
Site Name	Malta2.03.08	Operator
Station Number		Vessel
Location		Measurement Number

System Information		System Setup		Units	
Instrument Type	RS2	Transducer Depth (m)	0.06	Distance	m
Instrument Sub-Type	RS5	Screening Distance (m)	0	Velocity	m/s
Serial Number	RS522	Salinity (PSS-78)	0	Area	m²
	13002	Magnetic Declination (deg)	2	Discharge	m³/s
Firmware Version	1.25			Temperature	°C

Discharge Calculation Settings				Discharge Results	
Track Reference	Bottom-Track	Left Method	Slope	Width (m)	111.342
Depth Reference	Vertical Beam	Right Method	Slope	Area (m²)	287.759
Coordinate System	ENU	Top Fit Type	Power Fit		98
Moving Bed Correction	None	Bottom Fit Type	Power Fit	Mean Speed (m/s)	0.0209
				Total Q (m³/s)	6.0044
				Max Depth (m)	3.916
				Max Speed (m/s)	0.5256

Measurement Results																	
Tr #		Start Time (UTC +3)	Durati on	Track Dista nce (m)	DMG (m)	Width (m)	Area (m²)	Boat Spee d (m/ s)	Mean Spee d (m/ s)	Left Q (m³/s)	Right Q (m³/s)	Top Q (m³/s)	Botto m Q (m³/s)	Middl e Q (m³/s)	Total Q (m³/s)	Total Q Corre cted (m³/s)	% Mea sure d
01	L	12:47:21	00:18:31	111.454	105.975	111.475	290.75722	0.0995	0.0201	0	-0.0068	0.2501	1.0039	4.5979	5.845		78.66
02	R	13:07:08	00:10:25	112.842	105.709	111.209	284.76274	0.1788	0.0216	0	0.0005	0.274	1.0458	4.8435	6.1637		78.58
Mean				112.148	105.842	111.342	287.75998	0.1392	0.0209	0	-0.0031	0.262	1.0248	4.7207	6.0044	0	78.62
Std Dev				0.694	0.133	0.133	2.99724	0.0397	0.0008	0	0.0036	0.012	0.021	0.1228	0.1594	0	0.04
COV				0.006	0.001	0.001	0.01042	0.285	0.0369	-0.4335	-1.1594	0.0457	0.0204	0.026	0.0265	0	0.05

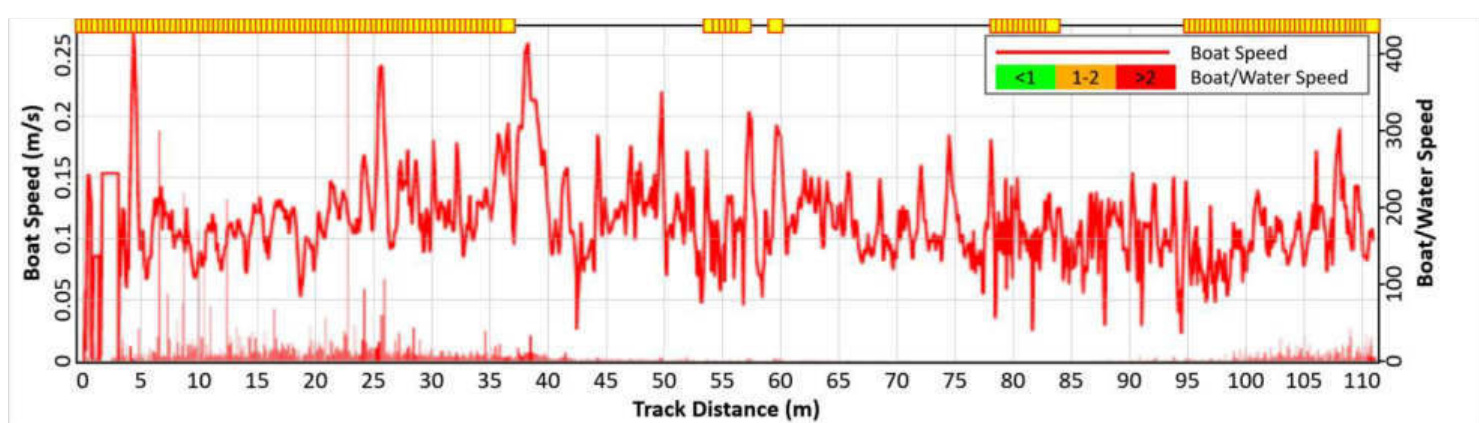
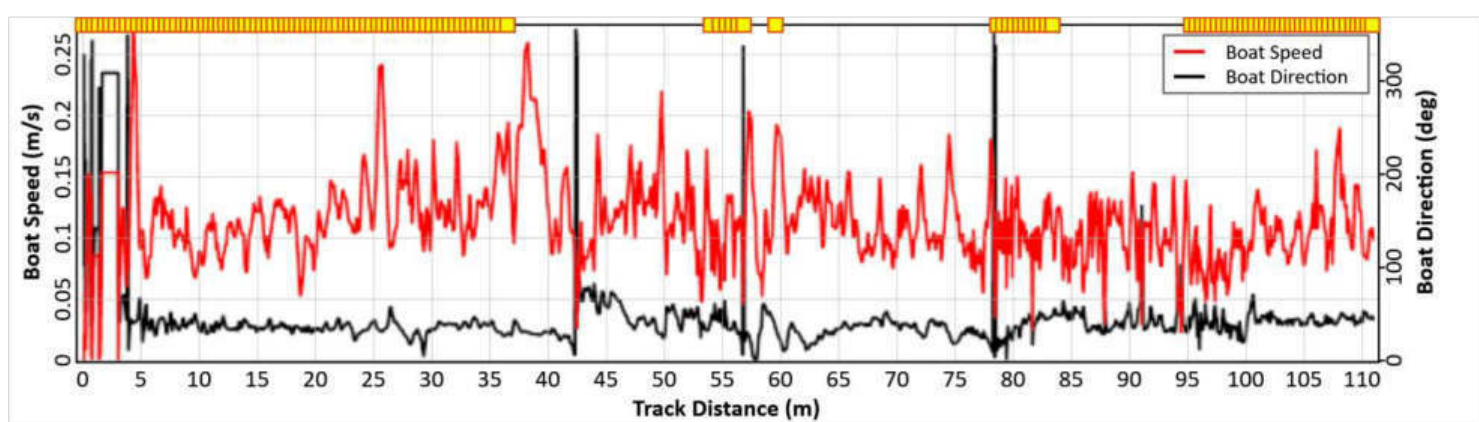
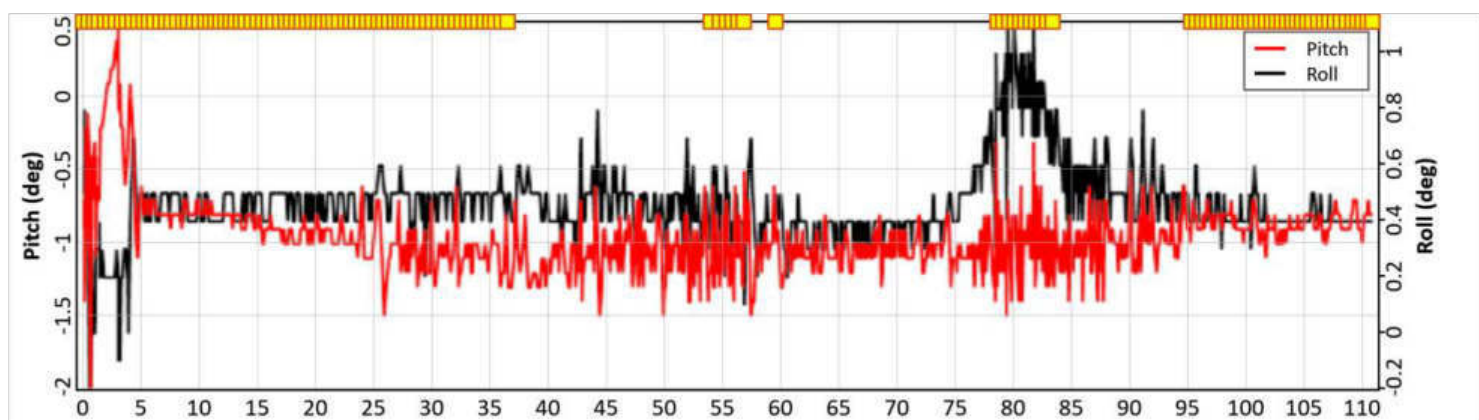
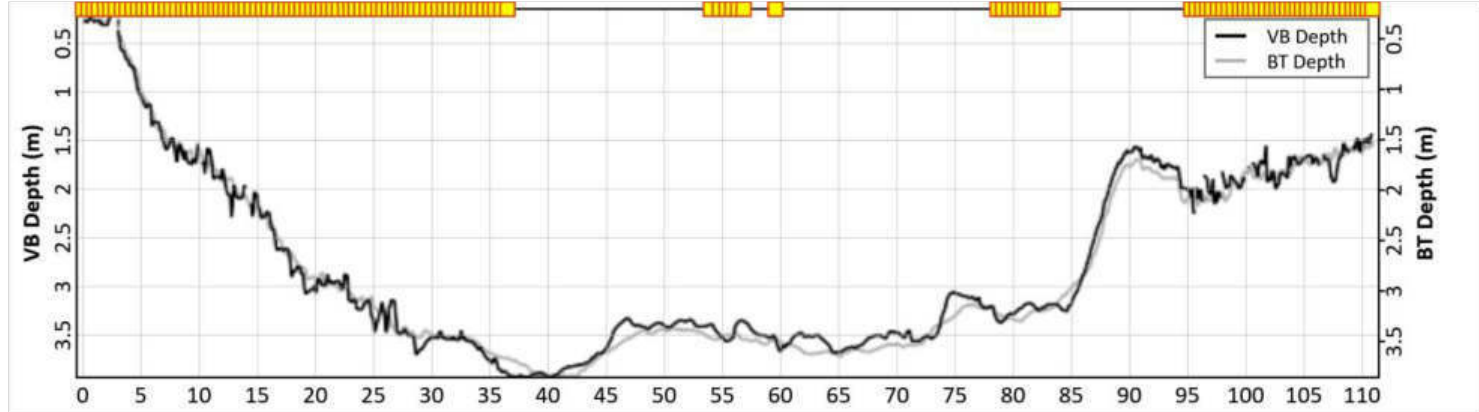
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Tr02 = 02-Transect_20220803130627;																	

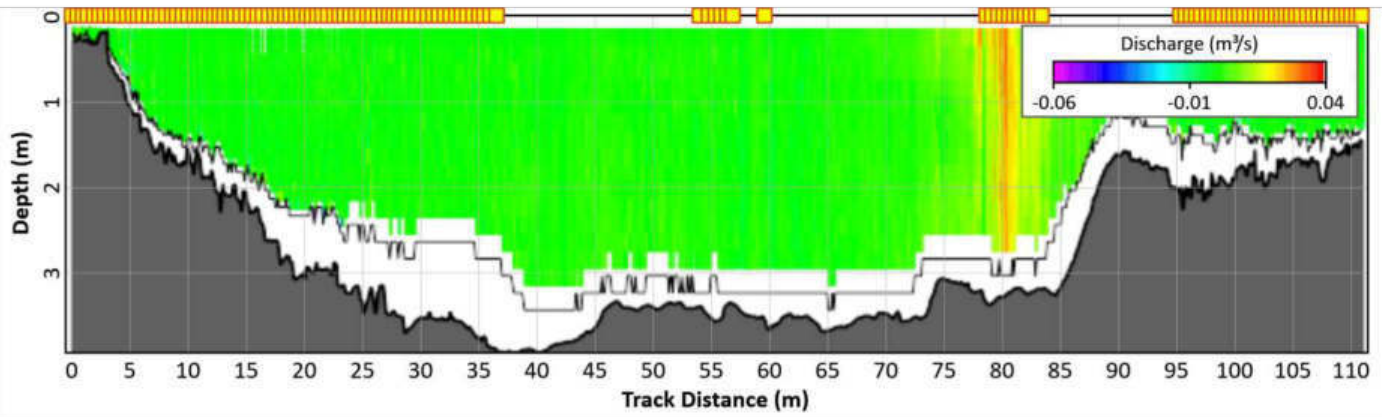
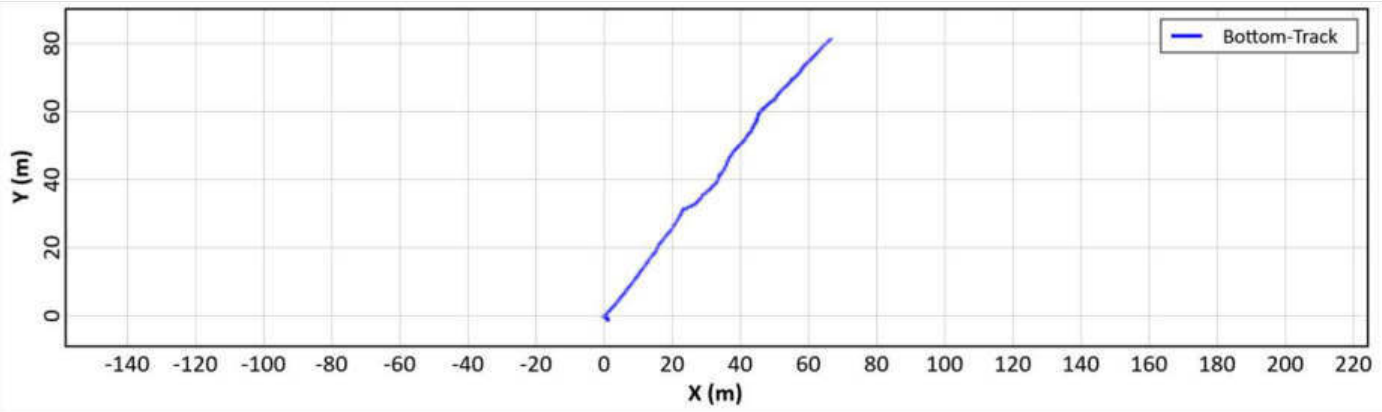
Comments																	
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02-Transect_20220803130627 - ;																	

Parameters and settings marked with a * are not constant for all files.

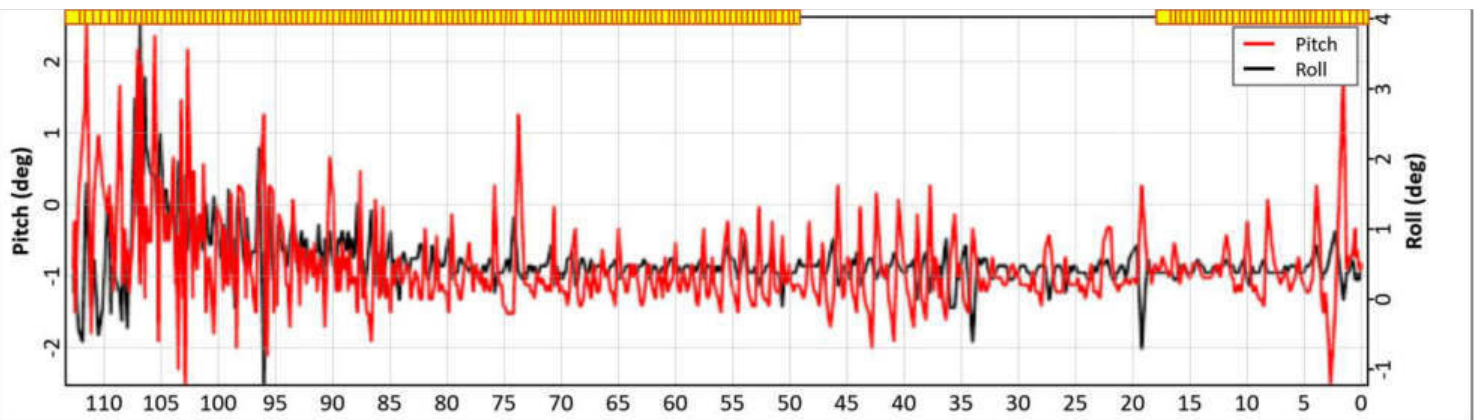
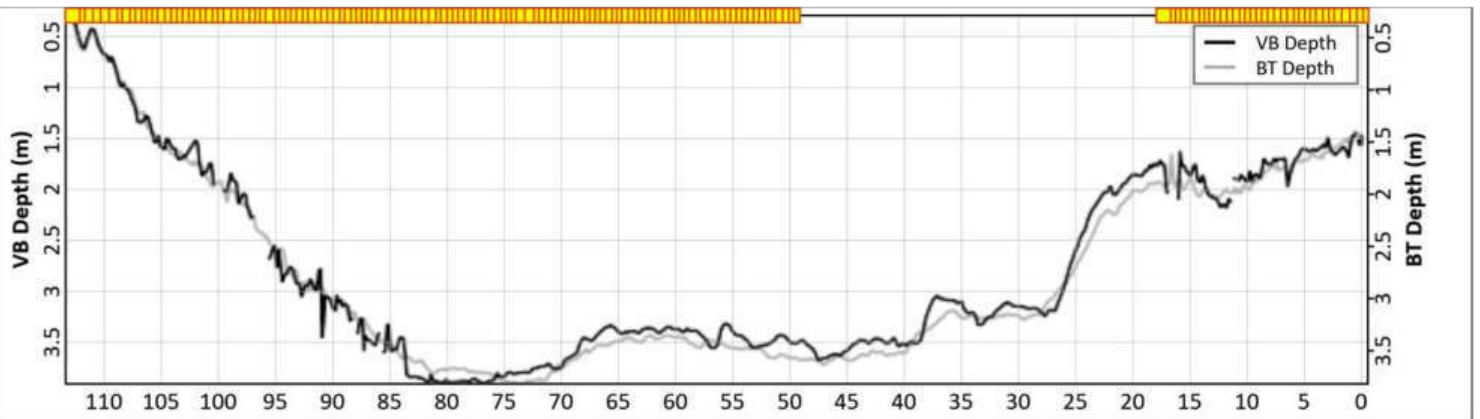
Report generated using SonTek RSQ v2.1

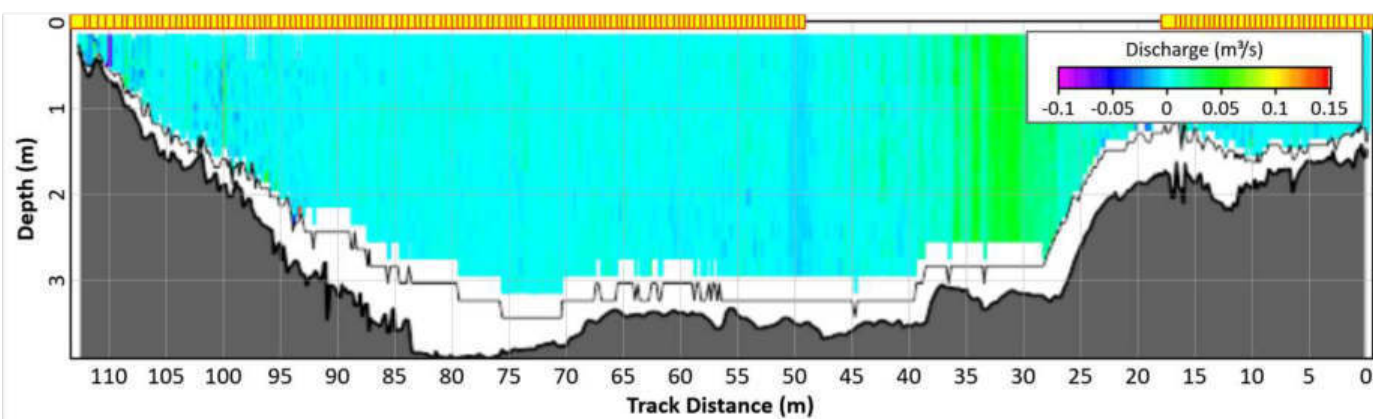
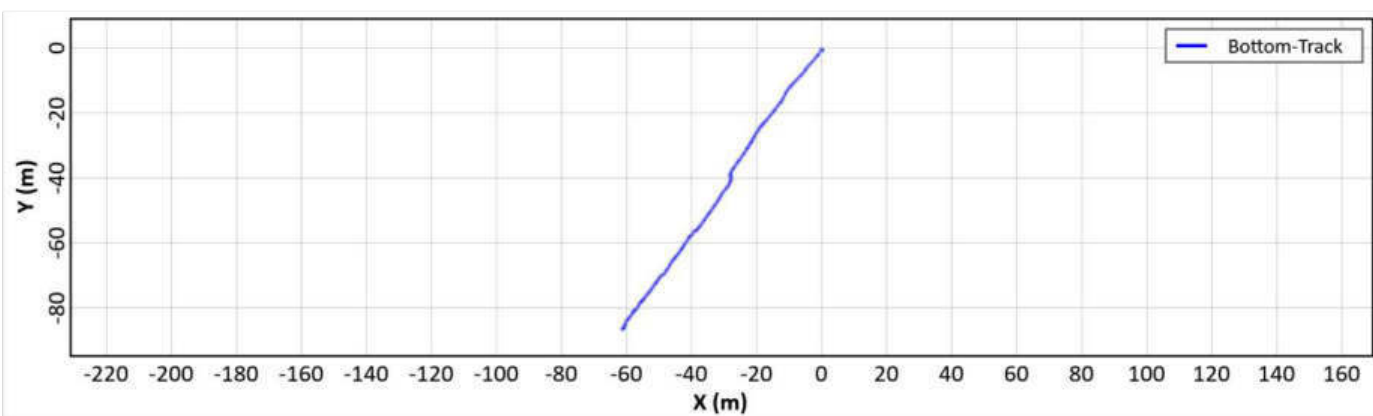
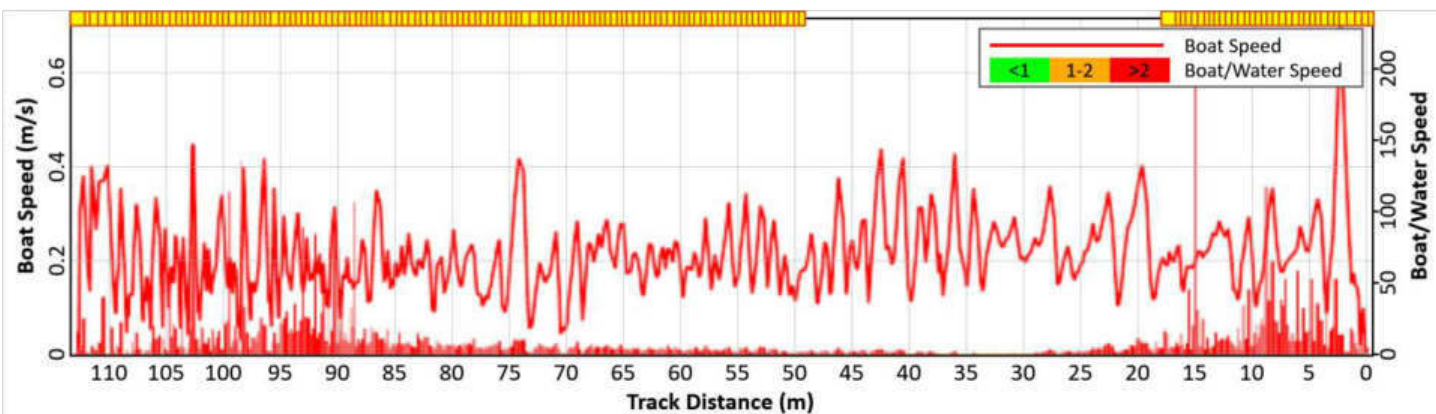
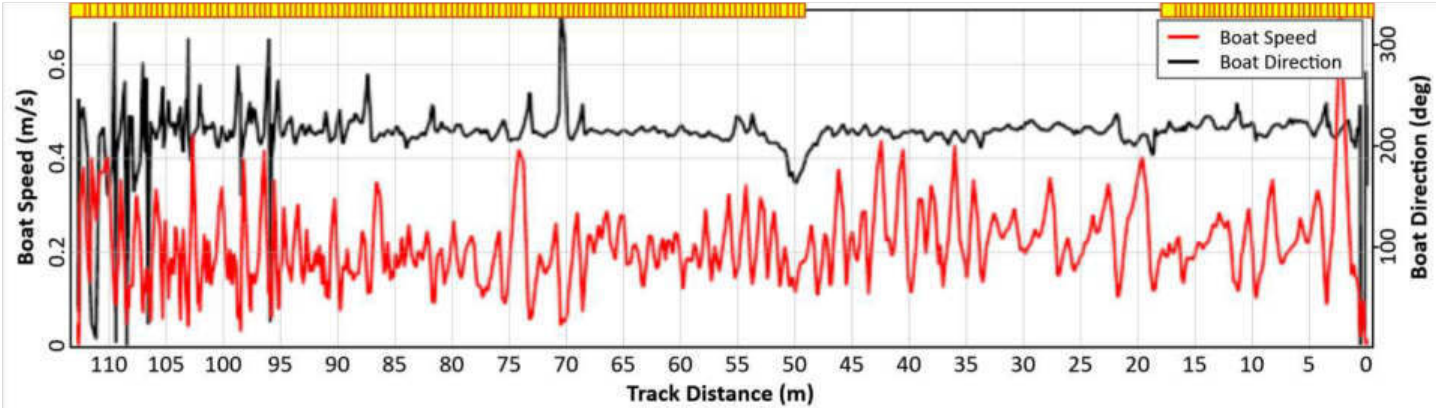
01-Transect_20220803124545 -





02-Transect_20220803130627 -





Discharge Measurement Summary

Date Measured: 2022-08-03

Site Information		Measurement Information
Site Name	603.08.2022	Operator
Station Number		Vessel
Location		Measurement Number

System Information		System Setup		Units	
Instrument Type	RS2	Transducer Depth (m)	0.06	Distance	m
Instrument Sub-Type	RS5	Screening Distance (m)	0	Velocity	m/s
Serial Number	RS522	Salinity (PSS-78)	0	Area	m²
	13002	Magnetic Declination (deg)	2	Discharge	m³/s
Firmware Version	1.25			Temperature	°C

Discharge Calculation Settings				Discharge Results	
Track Reference	Bottom-Track	Left Method	Slope	Width (m)	44.294
Depth Reference	Vertical Beam	Right Method	Slope	Area (m²)	77.3250
Coordinate System	ENU	Top Fit Type	Power Fit		2
Moving Bed Correction	None	Bottom Fit Type	Power Fit	Mean Speed (m/s)	0.0655
				Total Q (m³/s)	5.0636
				Max Depth (m)	2.76
				Max Speed (m/s)	3.5583

Measurement Results																	
Tr #		Start Time (UTC +3)	Durati on	Track Dista nce (m)	DMG (m)	Width (m)	Area (m²)	Boat Spee d (m/ s)	Mean Spee d (m/ s)	Left Q (m³/s)	Right Q (m³/s)	Top Q (m³/s)	Botto m Q (m³/s)	Middl e Q (m³/s)	Total Q (m³/s)	Total Q Corre cted (m³/s)	% Mea sure d
01	L	15:51:55	00:06:17	39.112	38.086	43.586	75.19767	0.1013	0.0651	0.0015	0	0.2546	0.6375	3.9998	4.8934		81.74
02	R	15:58:25	00:05:32	44.235	39.502	45.002	79.45237	0.1313	0.0659	-0.0056	0	0.3102	0.7627	4.1664	5.2338		79.61
Mean				41.673	38.794	44.294	77.32502	0.1163	0.0655	-0.002	0	0.2824	0.7001	4.0831	5.0636	0	80.67
Std Dev				2.562	0.708	0.708	2.12735	0.015	0.0004	0.0035	0	0.0278	0.0626	0.0833	0.1702	0	1.07
COV				0.061	0.018	0.016	0.02751	0.1287	0.0061	-1.7322	-0.7348	0.0985	0.0894	0.0204	0.0336	0	1.32

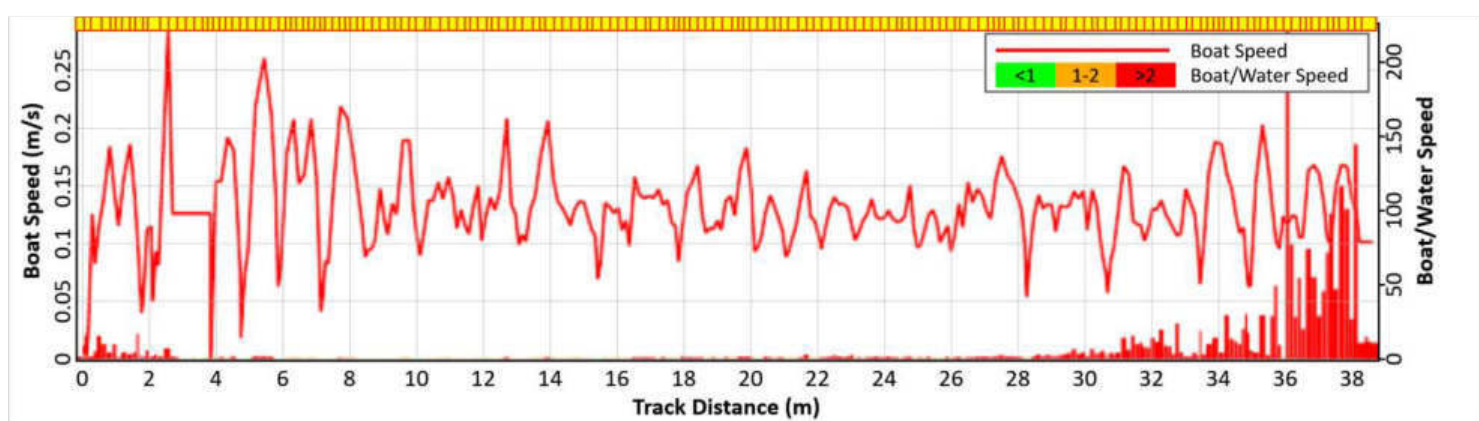
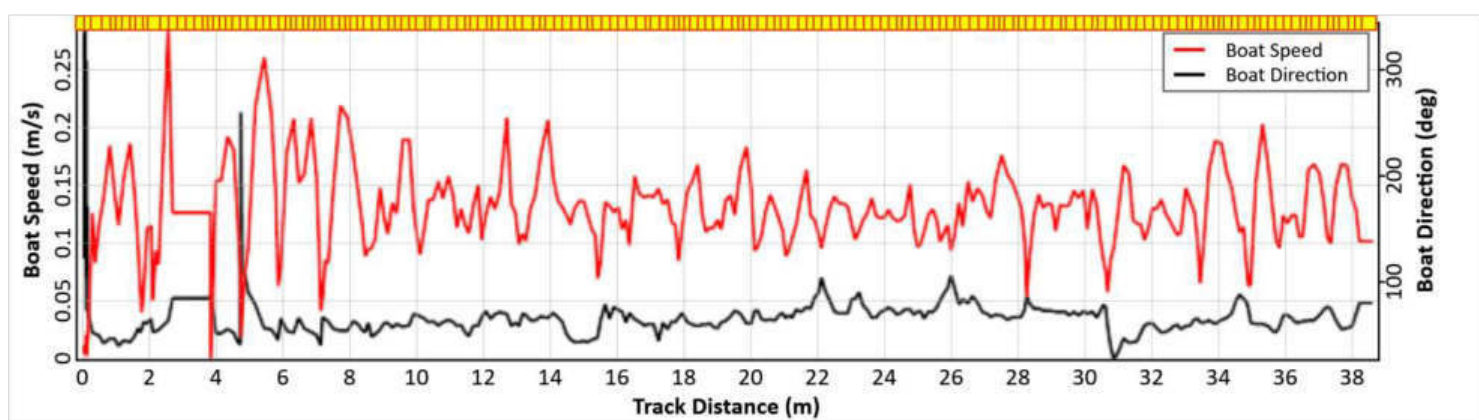
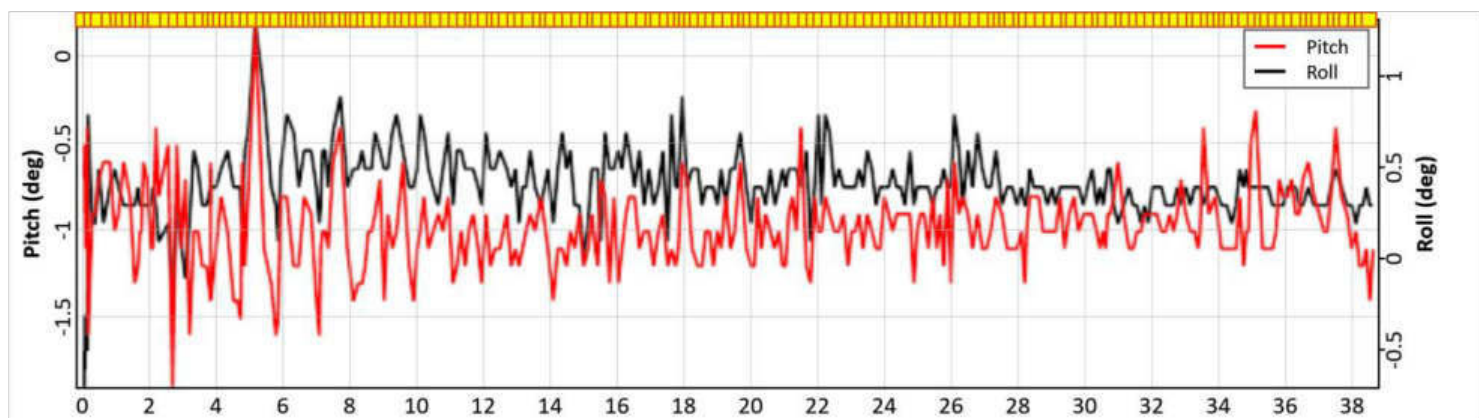
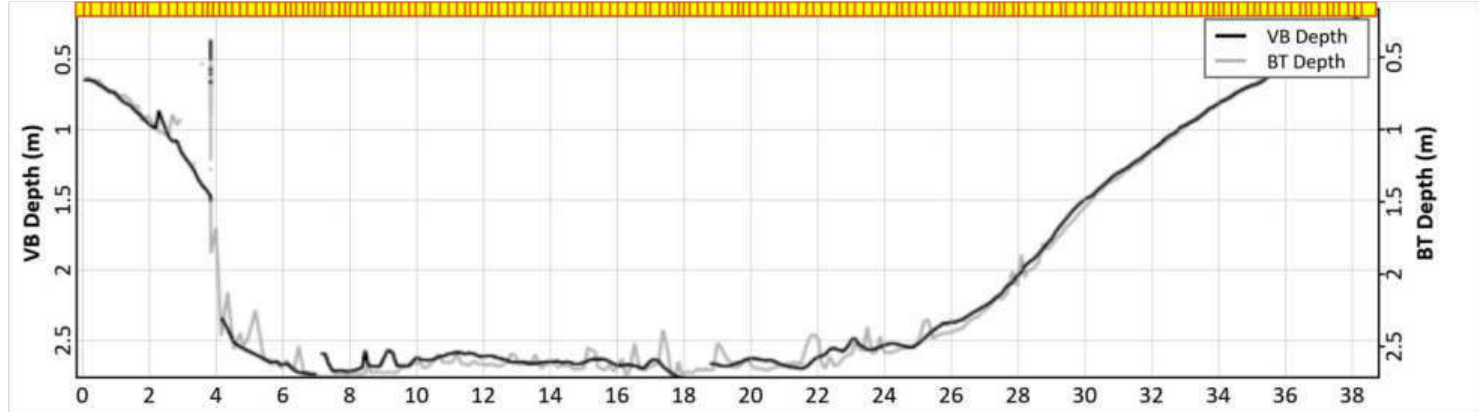
Exposure Time: 00:11:49																	
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Tr02 = 02-Transect_20220803155816;																	

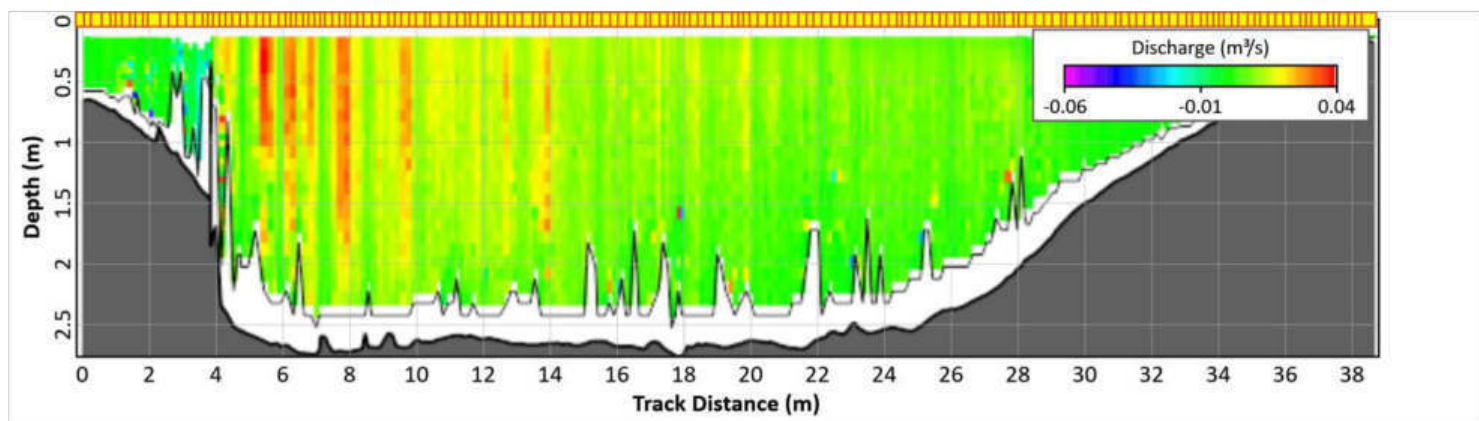
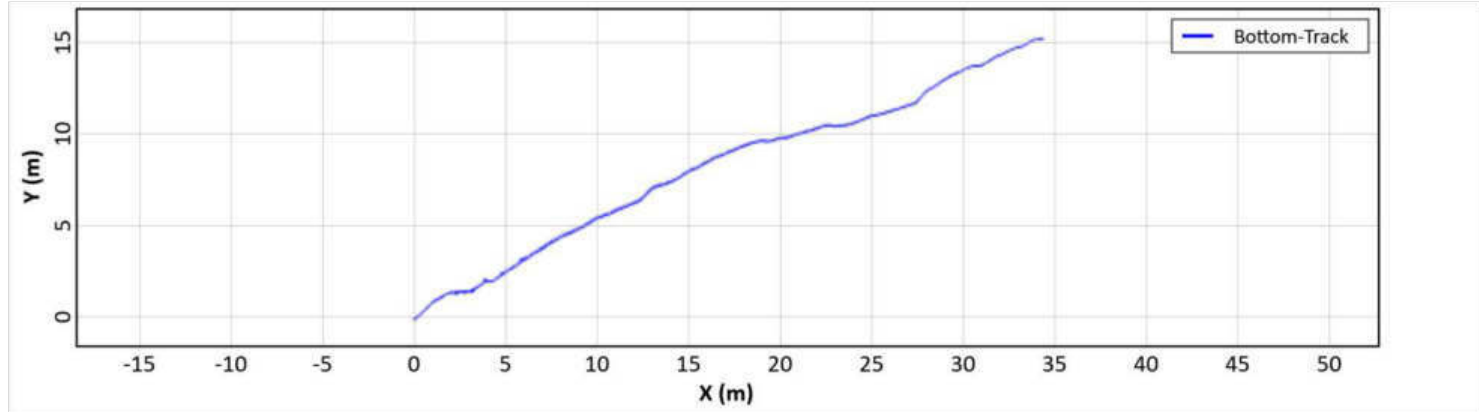
Comments																	
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02-Transect_20220803155816 - ;																	

Parameters and settings marked with a * are not constant for all files.

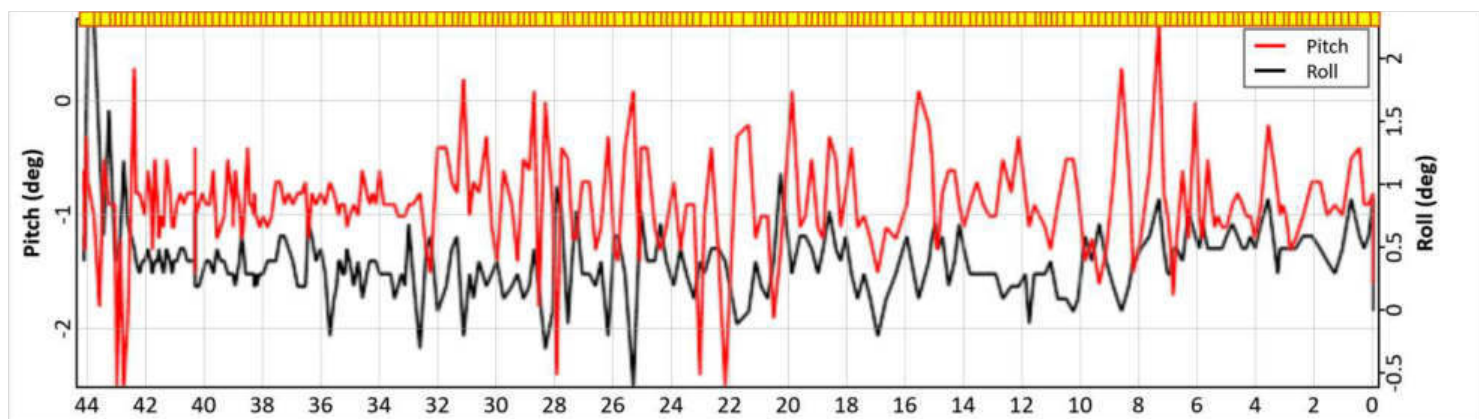
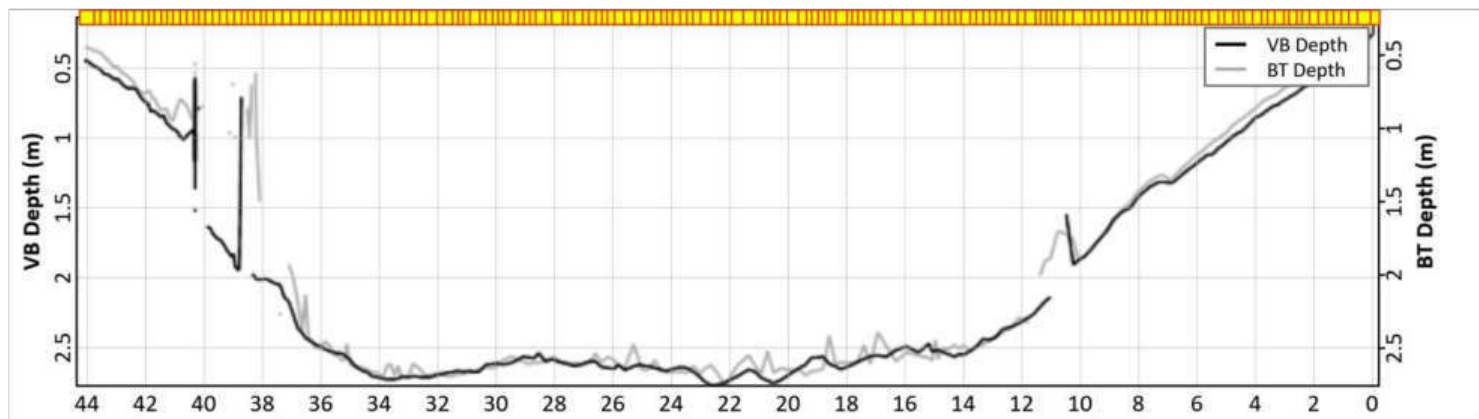
Report generated using SonTek RSQ v2.1

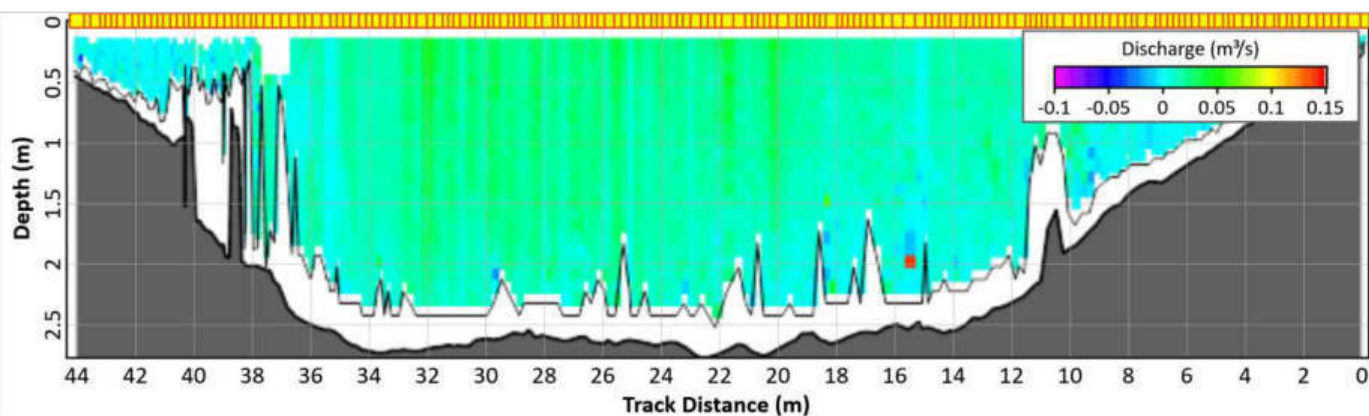
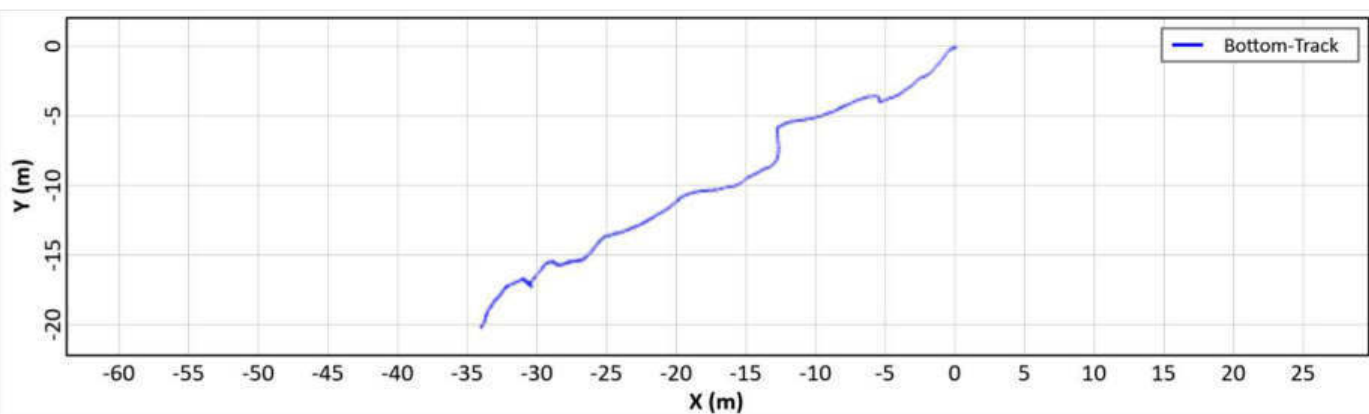
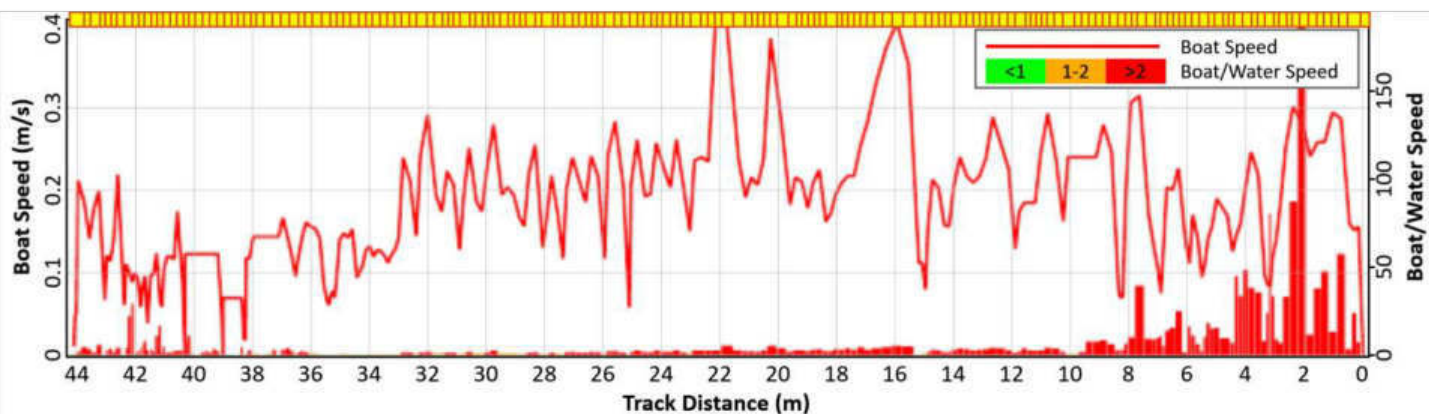
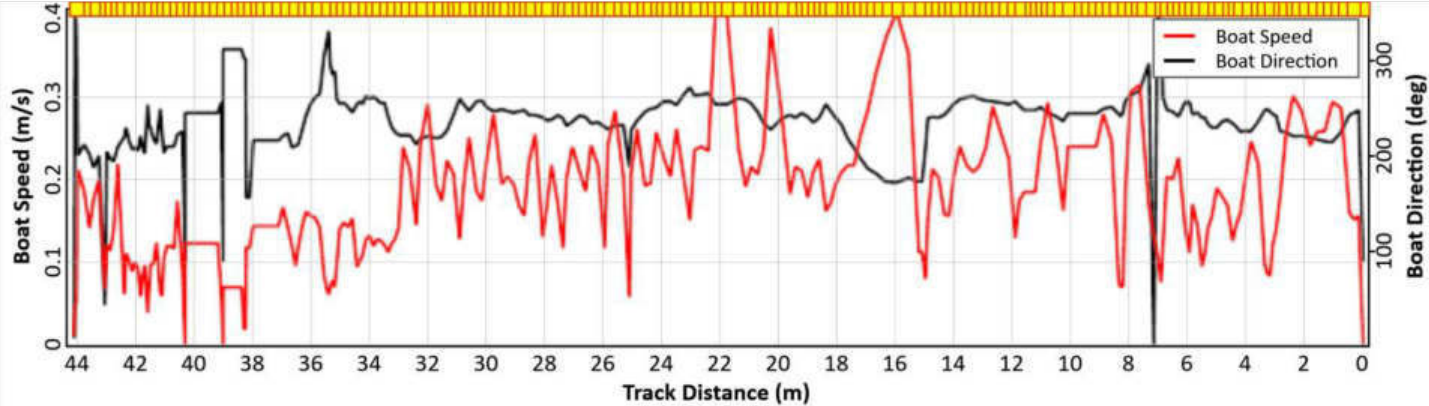
01-Transect_20220803155030 -





02-Transect_20220803155816 -





Discharge Measurement Summary

Date Measured: 2022-09-20

Site Information		Measurement Information
Site Name	Malta20.09.2022	Operator
Station Number		Vessel
Location		Measurement Number

System Information		System Setup		Units	
Instrument Type	RS2	Transducer Depth (m)	0.06	Distance	m
Instrument Sub-Type	RS5	Screening Distance (m)	0	Velocity	m/s
Serial Number	RS522	Salinity (PSS-78)	0	Area	m²
	13002	Magnetic Declination (deg)	1	Discharge	m³/s
Firmware Version	1.25			Temperature	°C

Discharge Calculation Settings				Discharge Results	
Track Reference	Bottom-Track	Left Method	Slope	Width (m)	48.456
Depth Reference	Vertical Beam	Right Method	Slope	Area (m²)	81.1645
Coordinate System	ENU	Top Fit Type	Power Fit		9
Moving Bed Correction	None	Bottom Fit Type	Power Fit	Mean Speed (m/s)	0.0081
				Total Q (m³/s)	0.6468
				Max Depth (m)	2.478
				Max Speed (m/s)	0.6885

Measurement Results																	
Tr #		Start Time (UTC +3)	Durati on	Track Dista nce (m)	DMG (m)	Width (m)	Area (m²)	Boat Spee d (m/ s)	Mean Spee d (m/ s)	Left Q (m³/s)	Right Q (m³/s)	Top Q (m³/s)	Botto m Q (m³/s)	Middl e Q (m³/s)	Total Q (m³/s)	Total Q Corre cted (m³/s)	% Mea sure d
01	L	11:06:20	00:03:51	42.638	41.292	47.292	85.70237	0.1777	0.005	0.0107	-0.0049	0.0308	0.0929	0.3024	0.4318		70.02
02	R	11:10:23	00:02:49	44.586	43.621	49.621	76.62681	0.2577	0.0112	0.128	-0.0003	0.0604	0.1913	0.4823	0.8617		55.97
Mean				43.612	42.456	48.456	81.16459	0.2177	0.0081	0.0693	-0.0026	0.0456	0.1421	0.3923	0.6468	0	62.99
Std Dev				0.974	1.164	1.164	4.53778	0.04	0.0031	0.0587	0.0023	0.0148	0.0492	0.09	0.2149	0	7.02
COV				0.022	0.027	0.024	0.05591	0.1839	0.3811	0.8462	-0.8939	0.3248	0.3461	0.2293	0.3323	0	11.15

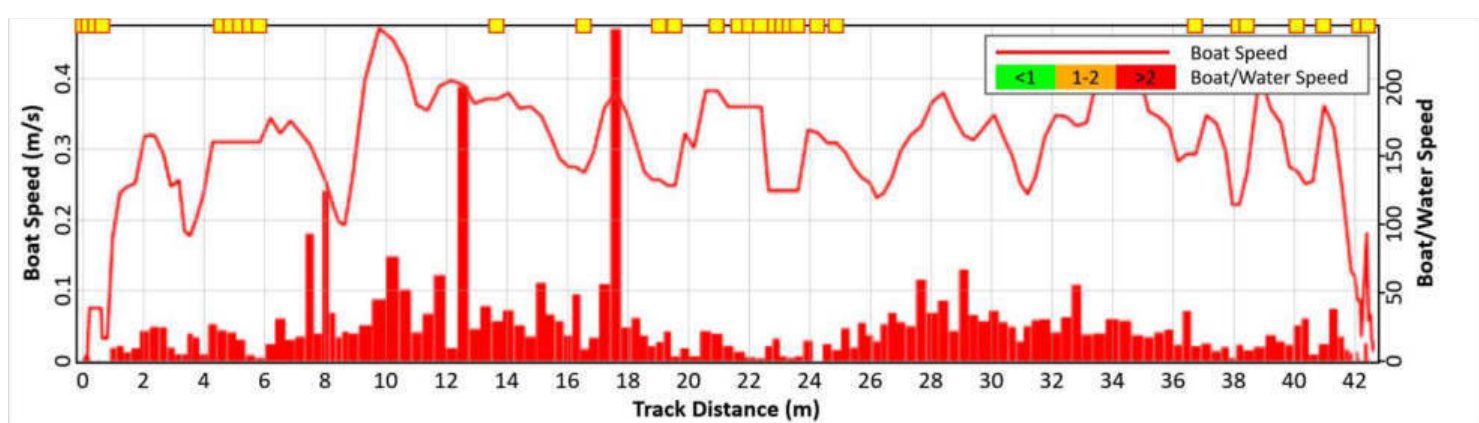
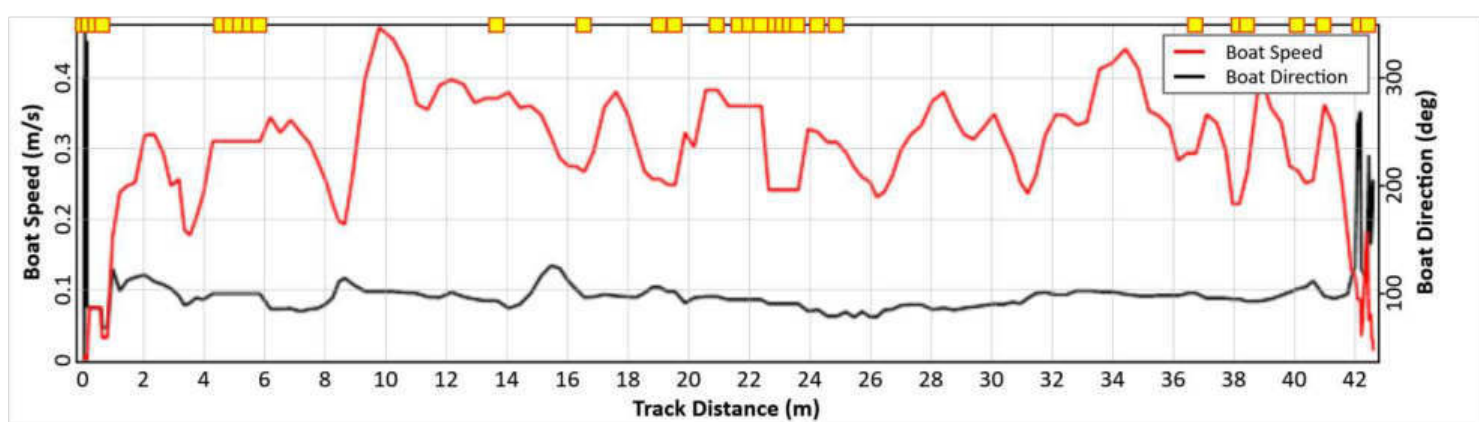
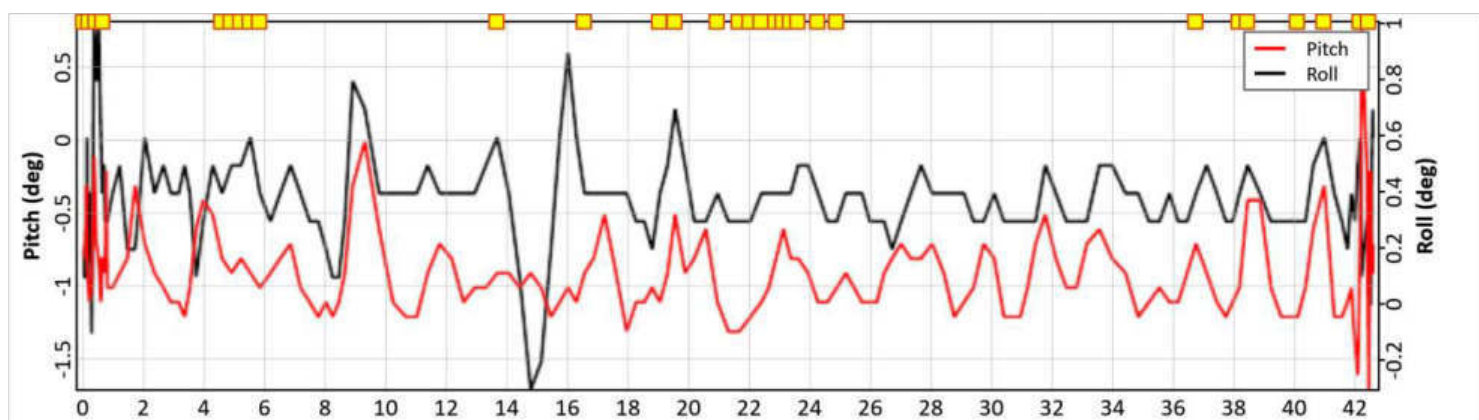
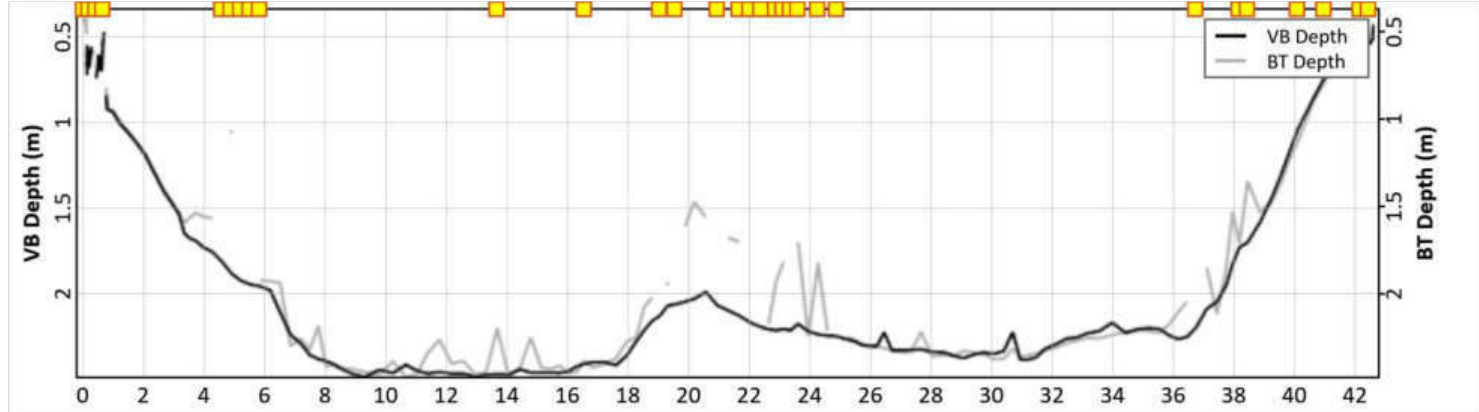
Exposure Time: 00:06:40
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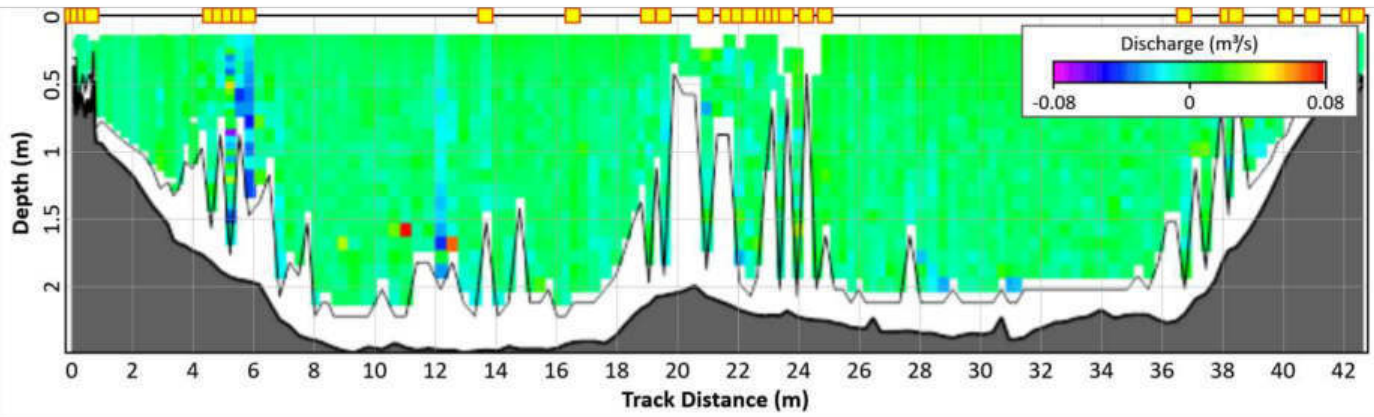
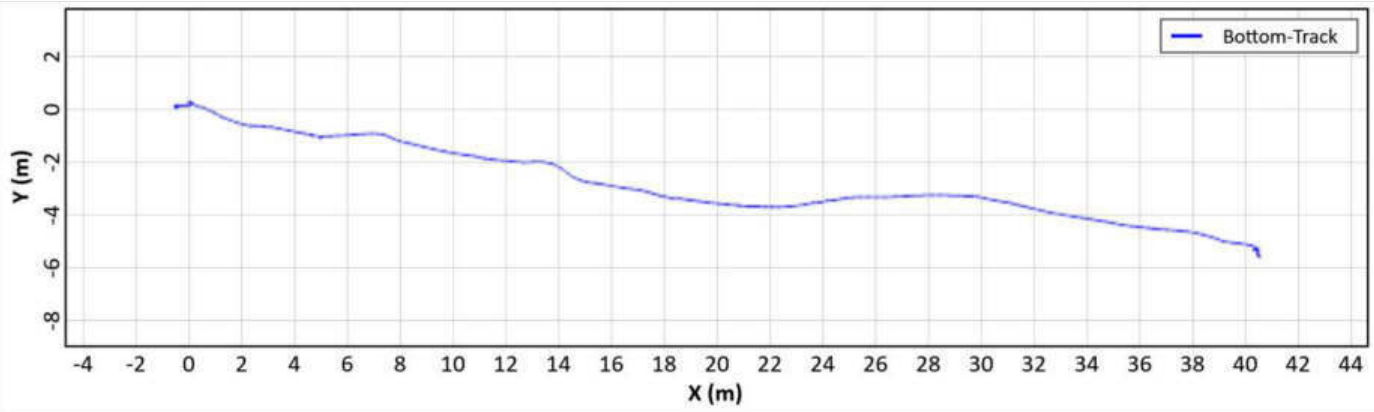
Comments
01-Transect_20220920110605 - ;
02-Transect_20220920111015 - ;

Parameters and settings marked with a * are not constant for all files.

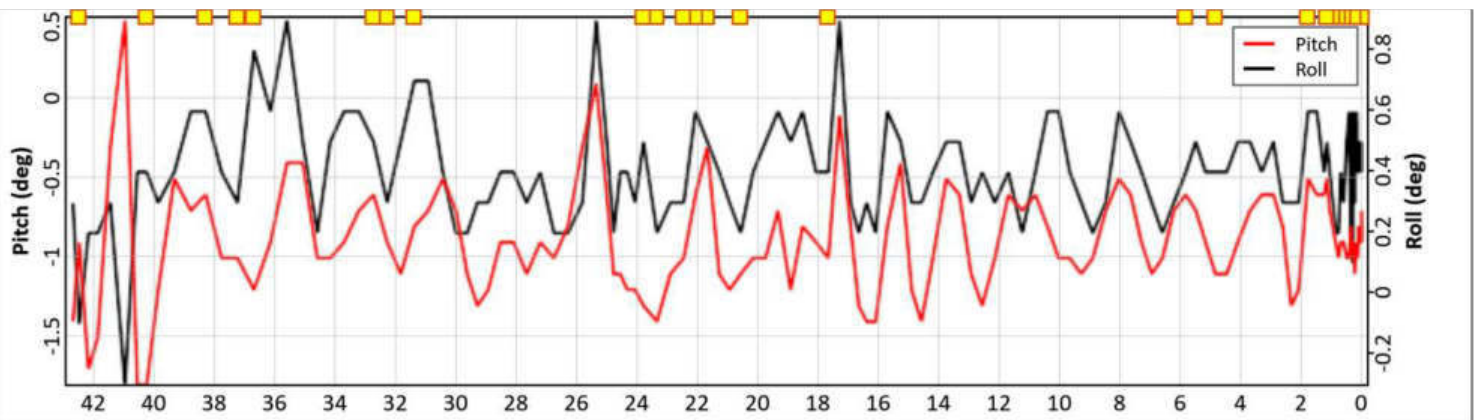
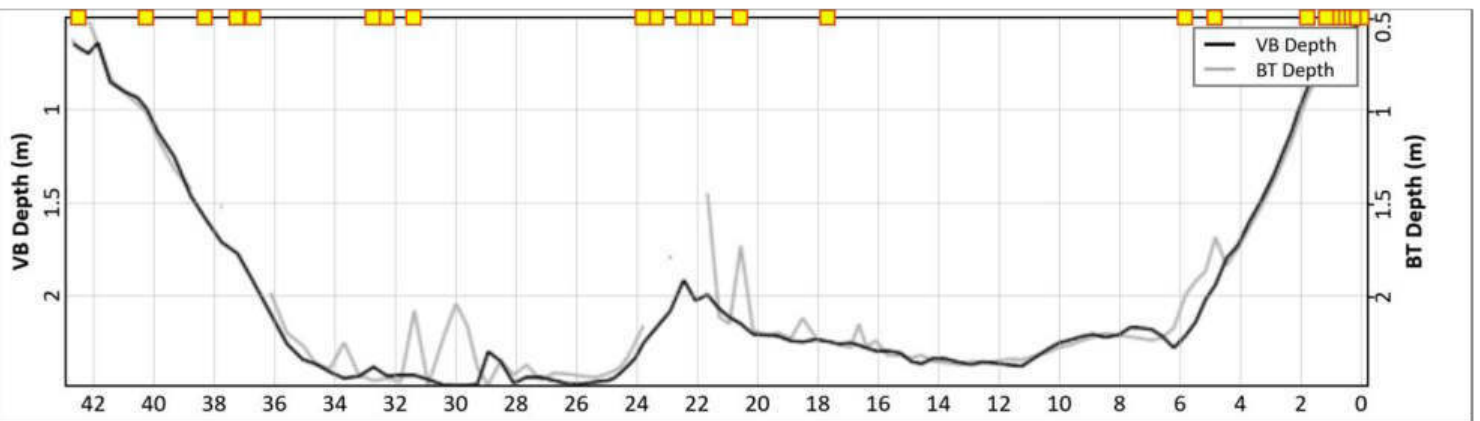
Report generated using SonTek RSQ v2.1

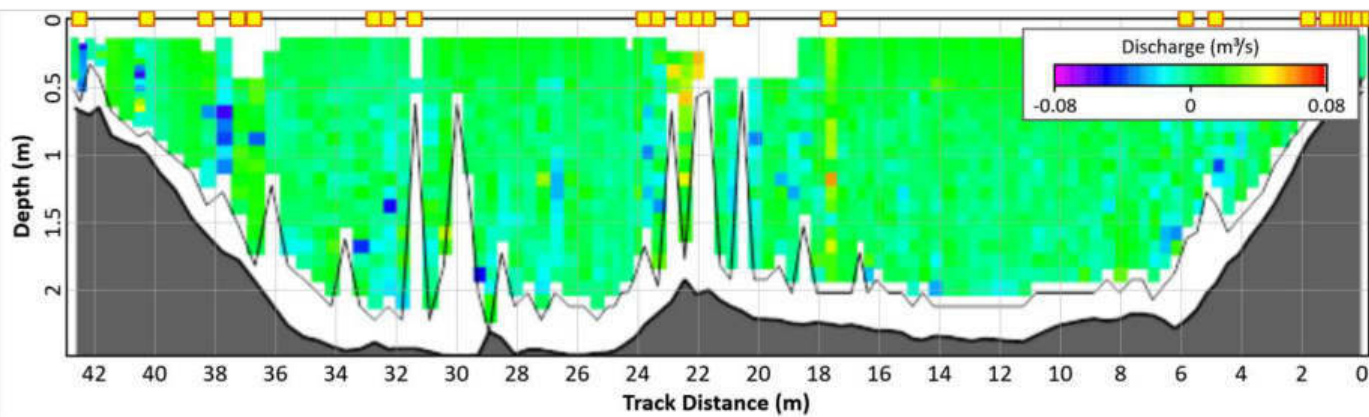
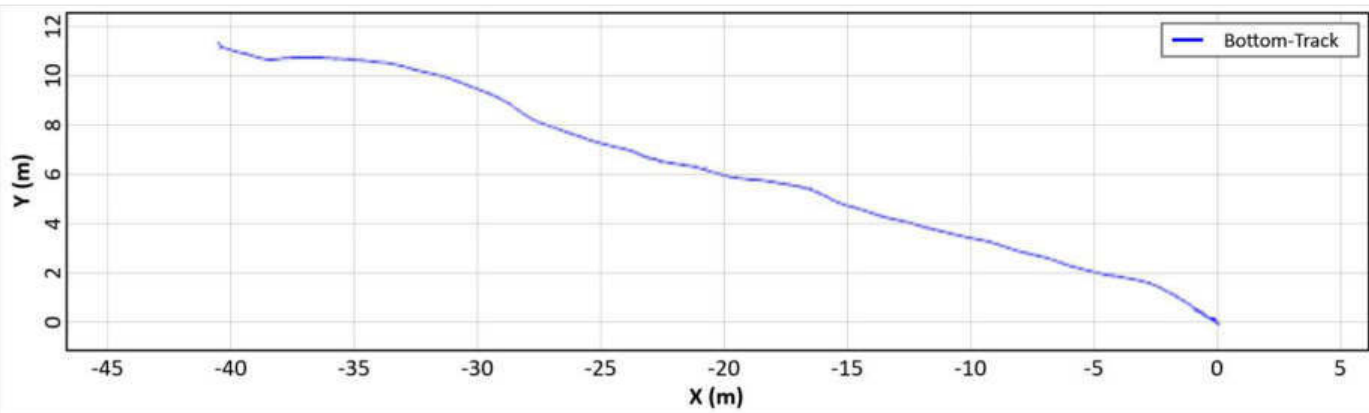
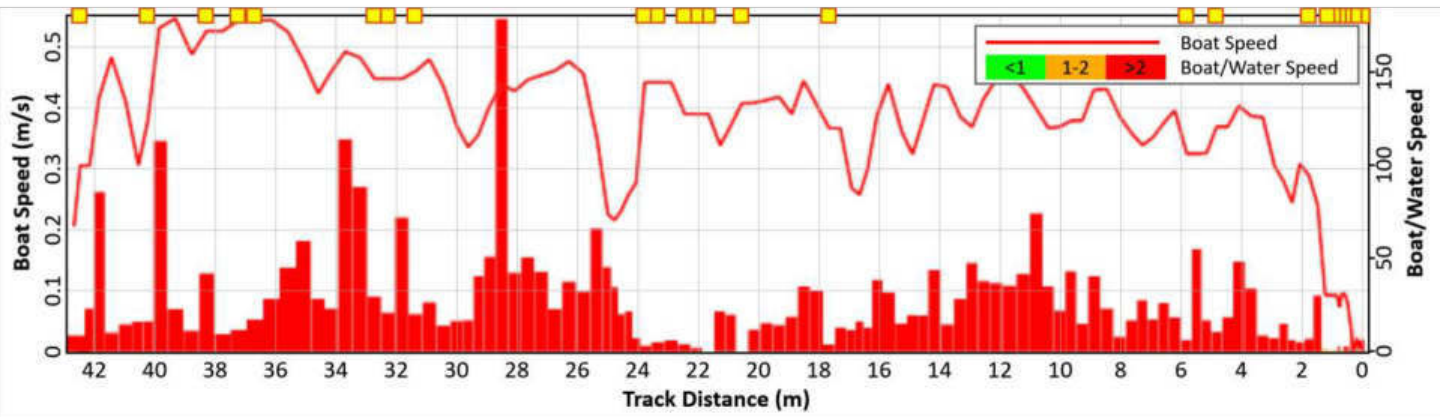
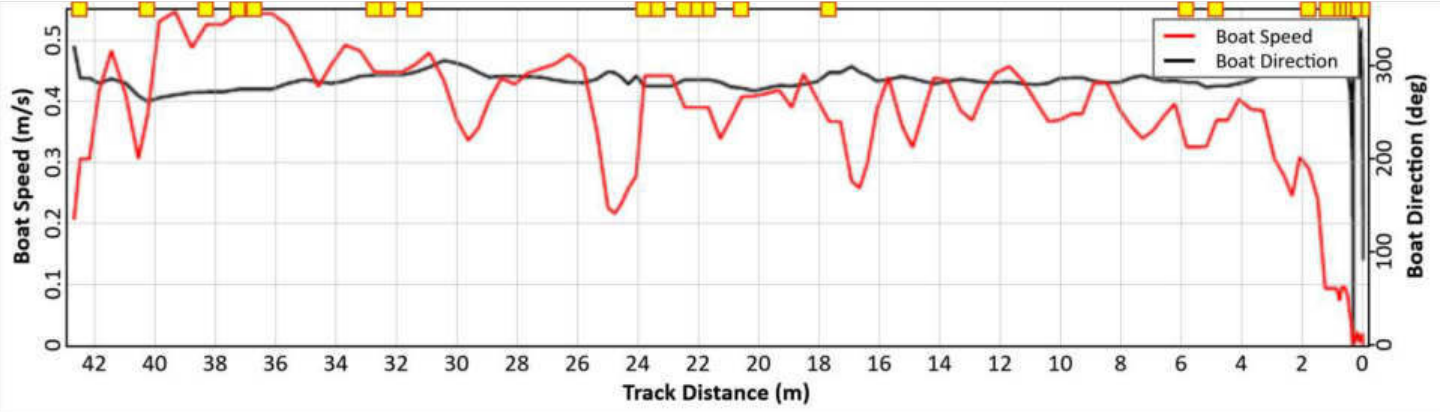
01-Transect_20220920110605 -





02-Transect_20220920111015 -





Discharge Measurement Summary

Date Measured: 2022-09-20

Site Information		Measurement Information
Site Name	Malta2_20.09.2022	Operator
Station Number		Vessel
Location		Measurement Number

System Information		System Setup		Units	
Instrument Type	RS2	Transducer Depth (m)	0.06	Distance	m
Instrument Sub-Type	RS5	Screening Distance (m)	0	Velocity	m/s
Serial Number	RS522	Salinity (PSS-78)	0	Area	m²
	13002	Magnetic Declination (deg)	1	Discharge	m³/s
Firmware Version	1.25			Temperature	°C

Discharge Calculation Settings				Discharge Results	
Track Reference	Bottom-Track	Left Method	Slope	Width (m)	26.751
Depth Reference	Vertical Beam	Right Method	Slope	Area (m²)	29.3179
Coordinate System	ENU	Top Fit Type	Power Fit		7
Moving Bed Correction	None	Bottom Fit Type	Power Fit	Mean Speed (m/s)	0.0158
				Total Q (m³/s)	0.4414
				Max Depth (m)	2.08
				Max Speed (m/s)	2.3964

Measurement Results																	
Tr #		Start Time (UTC +3)	Durati on	Track Dista nce (m)	DMG (m)	Width (m)	Area (m²)	Boat Spee d (m/ s)	Mean Spee d (m/ s)	Left Q (m³/s)	Right Q (m³/s)	Top Q (m³/s)	Botto m Q (m³/s)	Middl e Q (m³/s)	Total Q (m³/s)	Total Q Corre cted (m³/s)	% Mea sure d
01	L	11:26:29	00:02:56	26.63	24.929	29.929	36.69266	0.1455	0.0129	0.0002	0.0035	0.0548	0.1375	0.2782	0.4743		58.66
02	R	11:33:01	00:02:10	21.806	18.572	23.572	21.94328	0.0643	0.0186	-0.002	0	0.0405	0.0876	0.2825	0.4085		69.15
Mean				24.218	21.751	26.751	29.31797	0.1049	0.0158	-0.0009	0.0018	0.0476	0.1126	0.2803	0.4414	0	63.91
Std Dev				2.412	3.178	3.178	7.37469	0.0406	0.0028	0.0011	0.0018	0.0071	0.025	0.0021	0.0329	0	5.24
COV				0.1	0.146	0.119	0.25154	0.3869	0.1804	-1.1921	1	0.1501	0.222	0.0076	0.0745	0	8.2

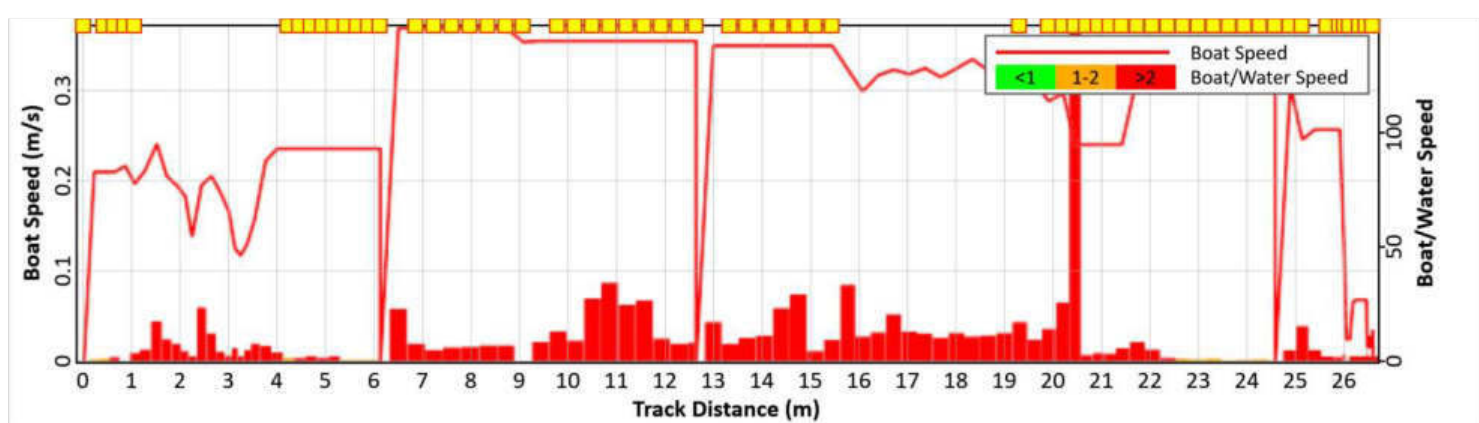
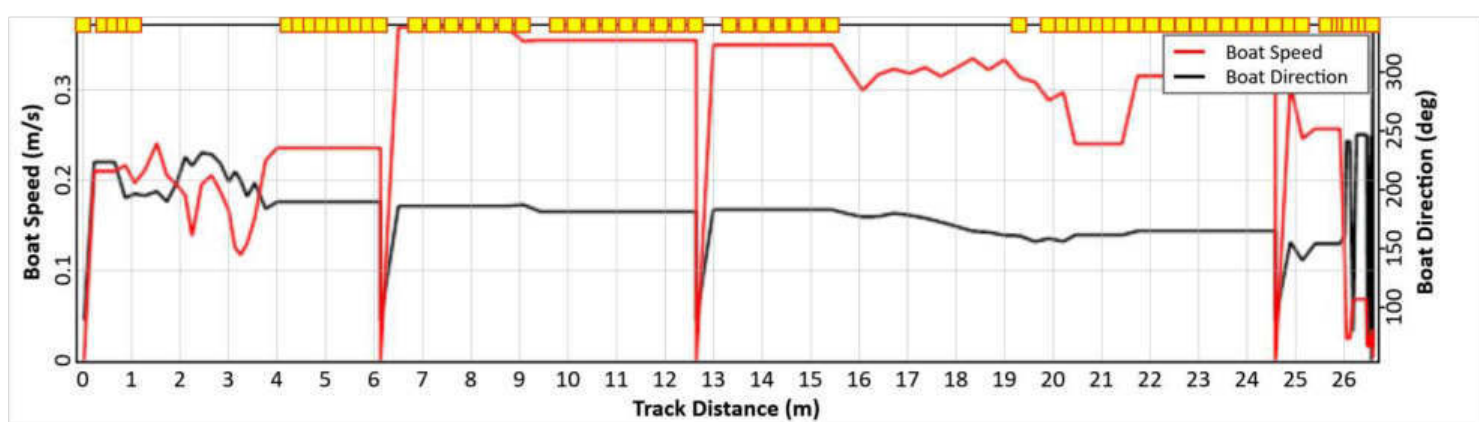
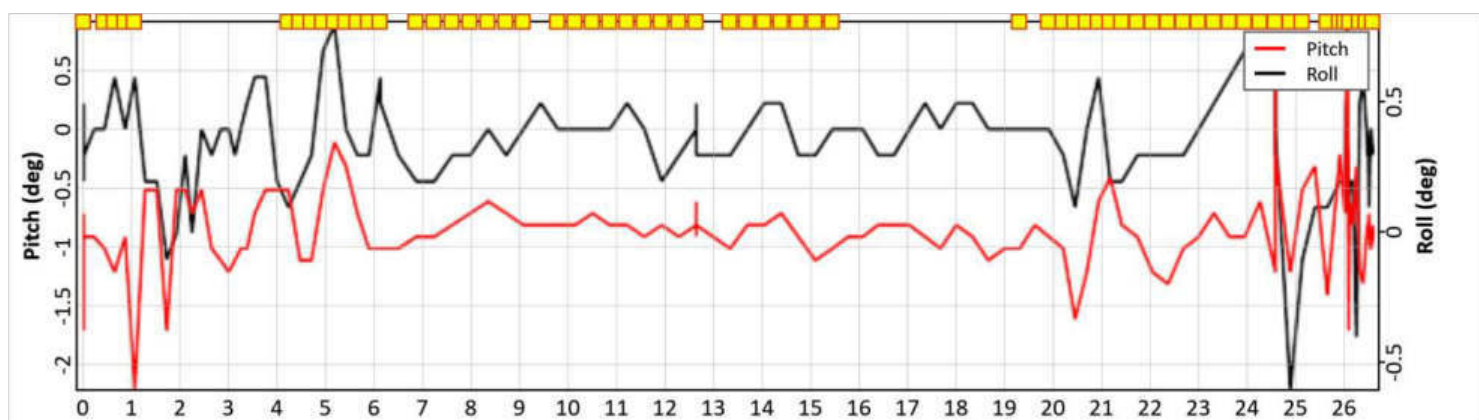
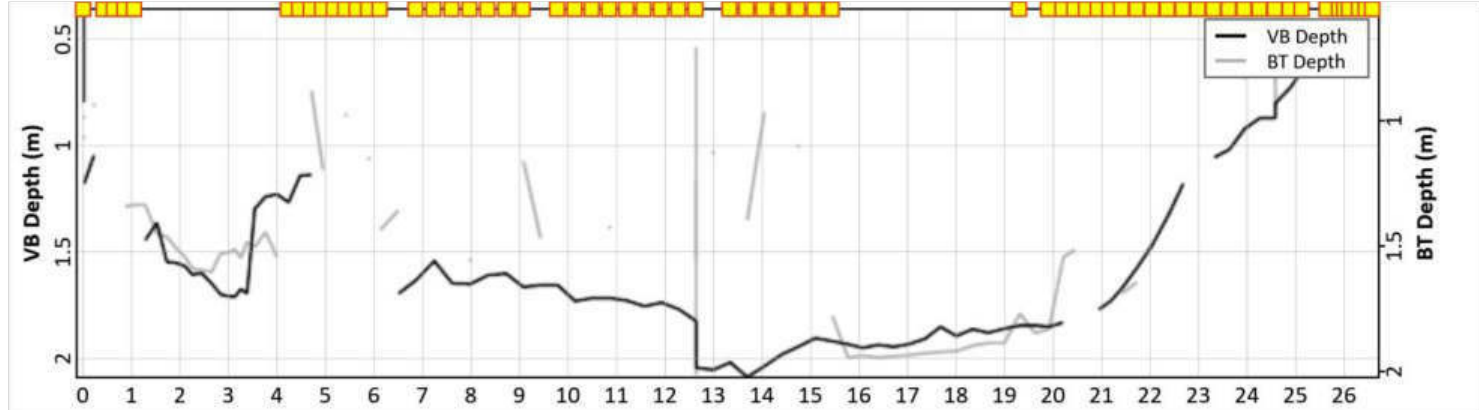
Exposure Time: 00:05:06
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Tr02 = 02-Transect_20220920112929;

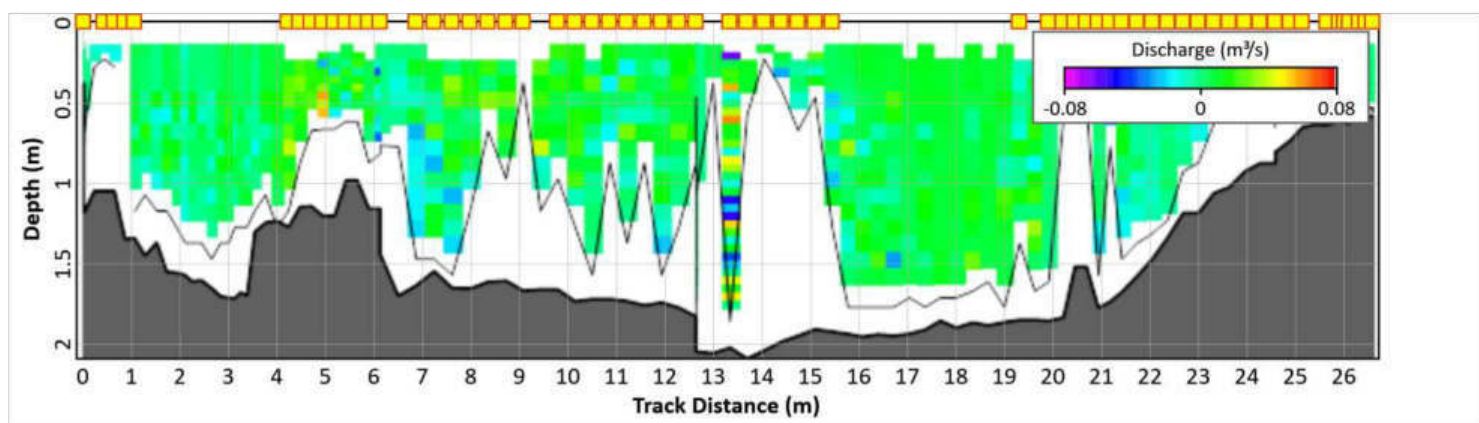
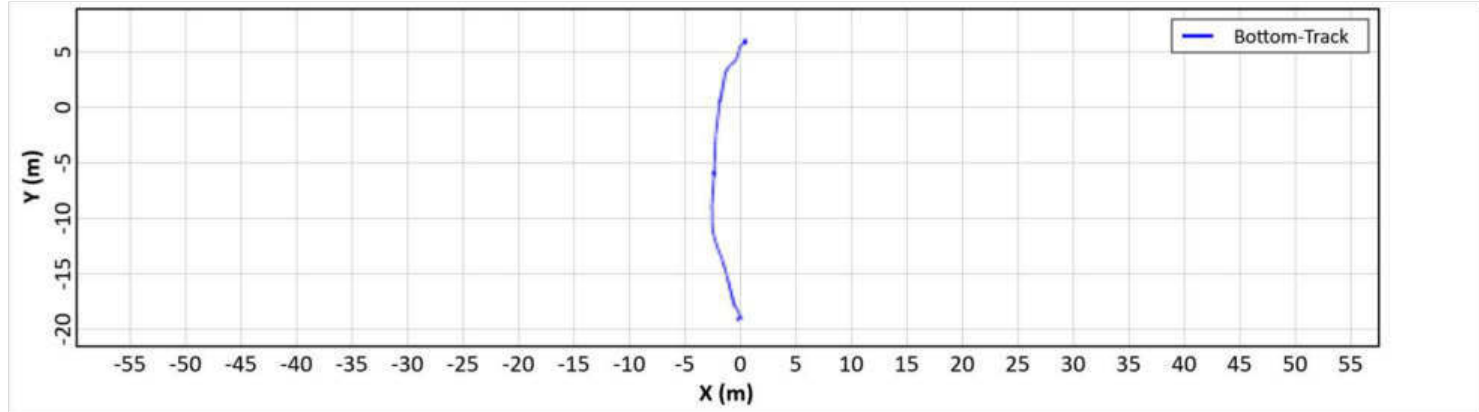
Comments
01-Transect_20220920112502 - ;
02-Transect_20220920112929 - ;

Parameters and settings marked with a * are not constant for all files.

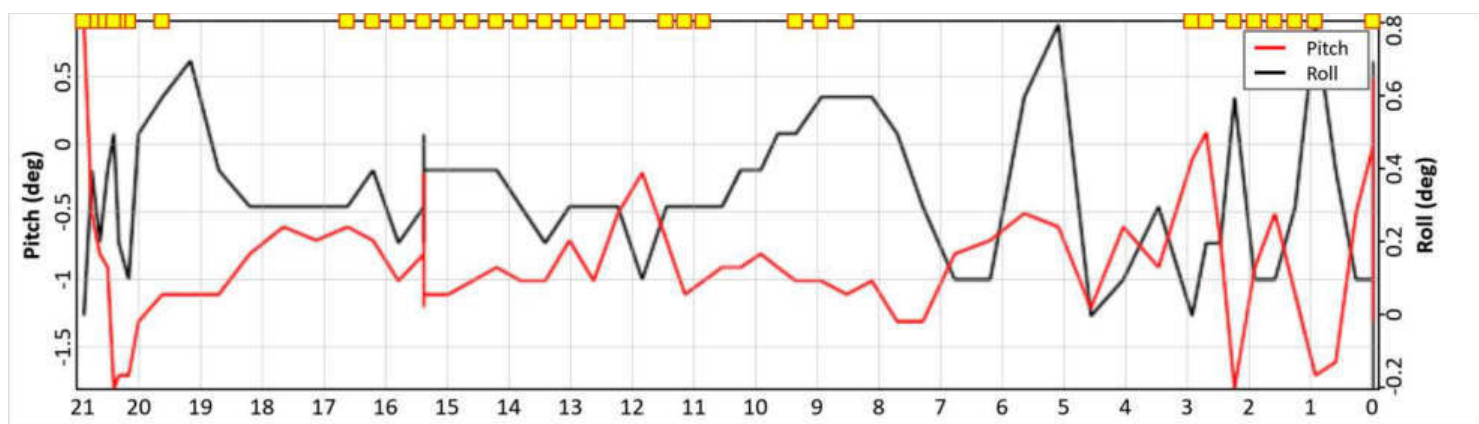
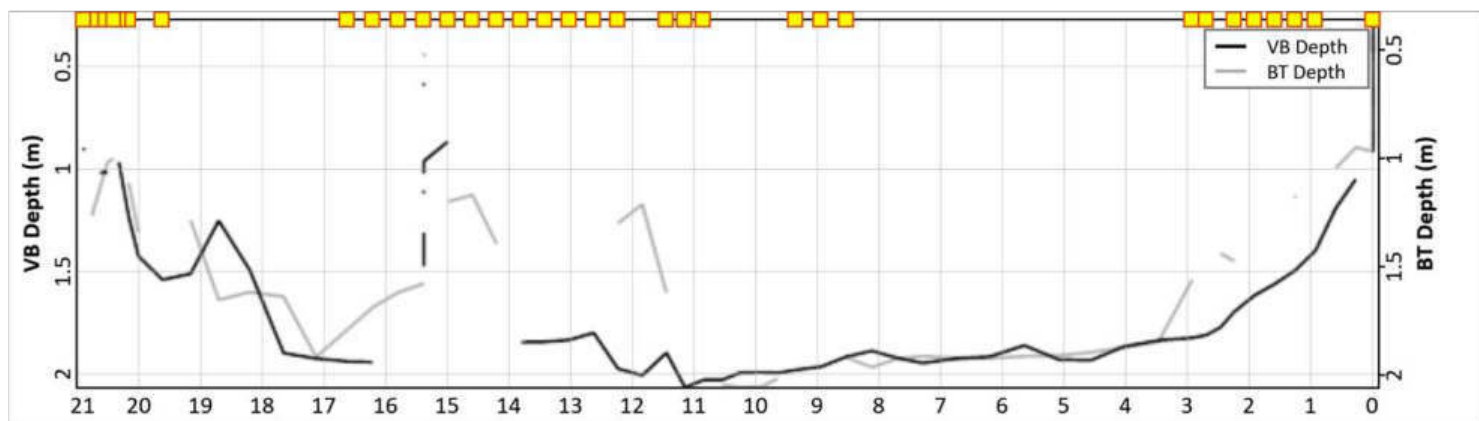
Report generated using SonTek RSQ v2.1

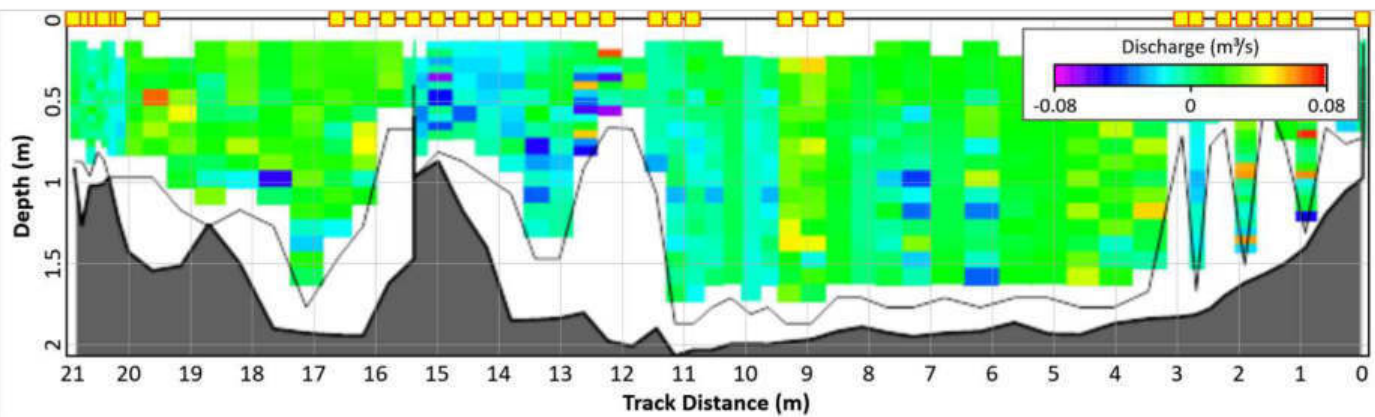
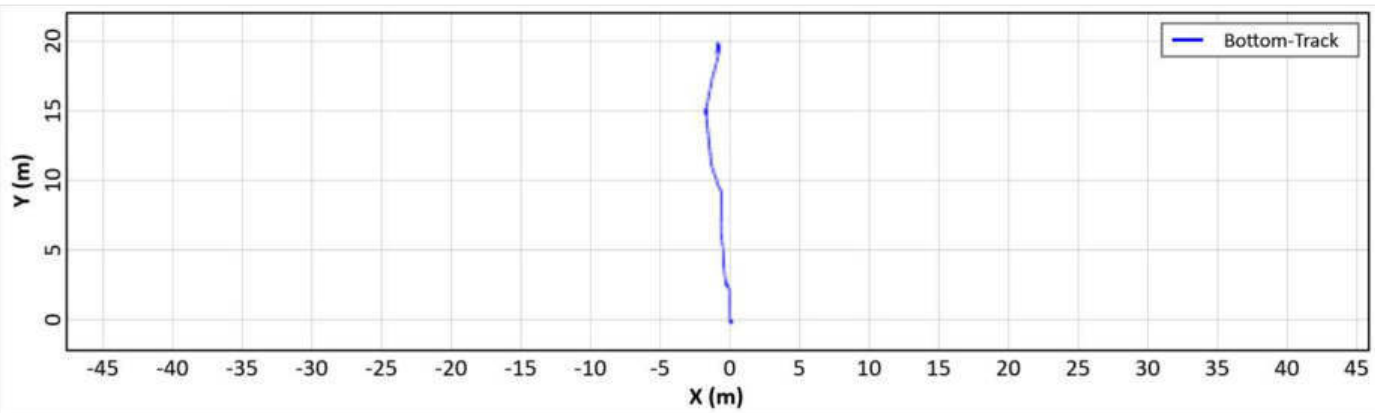
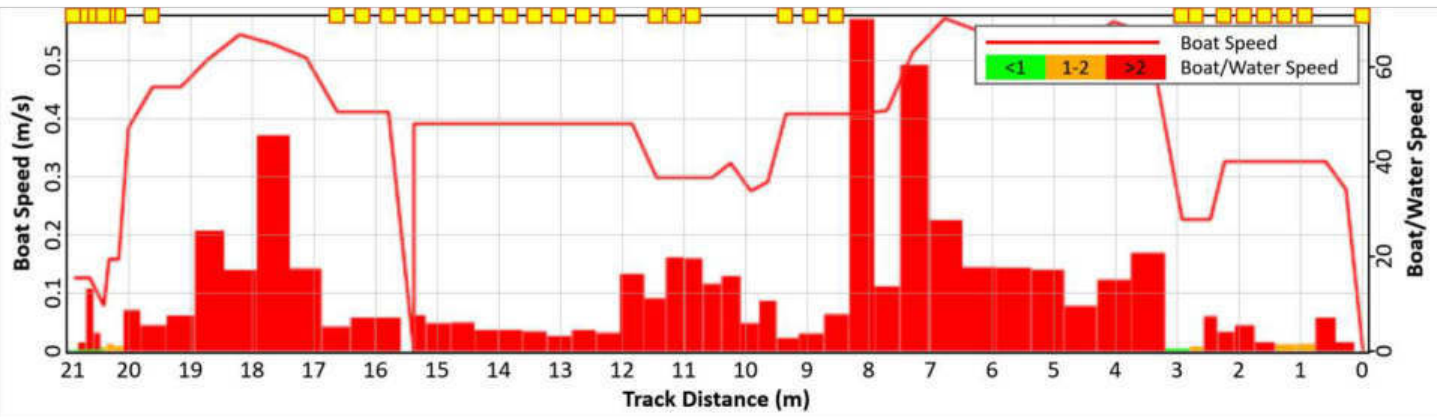
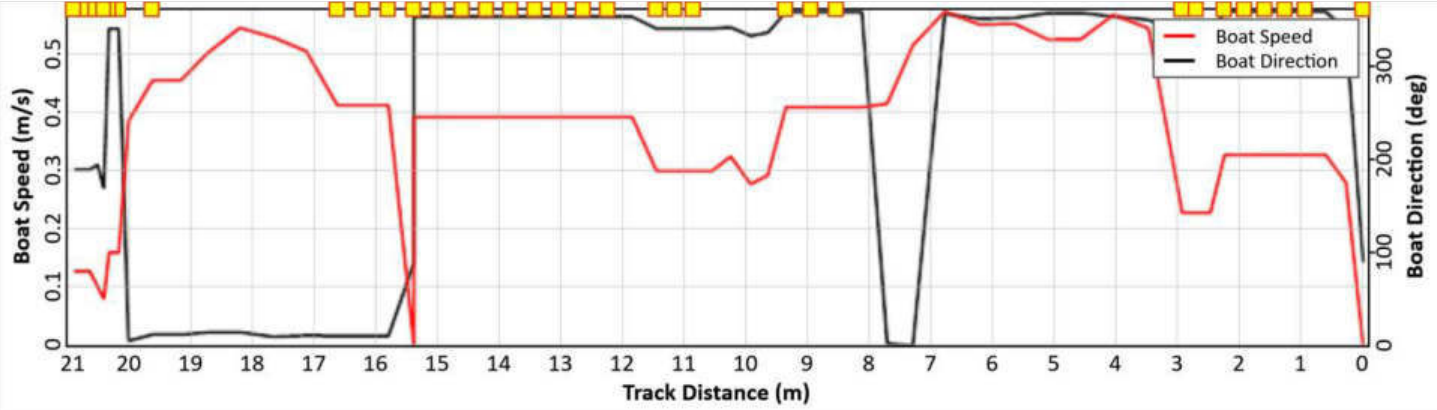
01-Transect_20220920112502 -





02-Transect_20220920112929 -





Discharge Measurement Summary

Date Measured: 2022-09-20

Site Information		Measurement Information	
Site Name	Malta3_20.09.2022	Operator	
Station Number		Vessel	
Location		Measurement Number	

System Information		System Setup		Units	
Instrument Type	RS2	Transducer Depth (m)	0.06	Distance	m
Instrument Sub-Type	RS5	Screening Distance (m)	0	Velocity	m/s
Serial Number	RS522	Salinity (PSS-78)	0	Area	m ²
	13002	Magnetic Declination (deg)	1	Discharge	m ³ /s
Firmware Version	1.25			Temperature	°C

Discharge Calculation Settings				Discharge Results	
Track Reference	Bottom-Track	Left Method	Slope	Width (m)	29.863
Depth Reference	Vertical Beam	Right Method	Slope	Area (m ²)	41.7753
Coordinate System	ENU	Top Fit Type	Power Fit		7
Moving Bed Correction	None	Bottom Fit Type	Power Fit	Mean Speed (m/s)	0.0188
				Total Q (m ³ /s)	0.772
				Max Depth (m)	2.01
				Max Speed (m/s)	0.7535

Measurement Results																	
Tr #		Start Time (UTC +3)	Durati on	Track Dista nce (m)	DMG (m)	Width (m)	Area (m ²)	Boat Spee d (m/ s)	Mean Spee d (m/ s)	Left Q (m ³ /s)	Right Q (m ³ /s)	Top Q (m ³ /s)	Botto m Q (m ³ /s)	Middl e Q (m ³ /s)	Total Q (m ³ /s)	Total Q Corre cted (m ³ /s)	% Mea sure d
01	L	11:54:27	00:02:43	28.267	26.603	29.603	45.30007	0.1663	0.0385	0.0001	-0.0005	0.1733	0.8136	0.7588	1.7452		43.48
02	R	11:57:22	00:01:43	27.667	26.559	29.559	39.82663	0.2538	0.0076	0.0009	-0.0031	0.0138	-0.0201	0.3116	0.3031		102.81
03	L	11:59:28	00:01:49	27.824	26.41	29.41	37.98889	0.2208	0.0406	0	0.0029	0.1731	0.3776	0.9885	1.5421		64.1
04	R	12:01:28	00:01:31	29.094	27.881	30.881	43.9859	0.3063	-0.0114	-0.0022	0.0022	-0.0359	-0.2688	-0.1977	-0.5023		39.35
Mean				28.213	26.863	29.863	41.77537	0.2368	0.0188	-0.0003	0.0004	0.0811	0.2256	0.4653	0.772	0	62.43
Std Dev				0.554	0.592	0.592	2.97678	0.0509	0.0218	0.0011	0.0024	0.0938	0.4104	0.4536	0.9198	0	25.13
COV				0.02	0.022	0.02	0.07126	0.2147	1.1584	-3.9797	6.3715	1.157	1.8192	0.9748	1.1914	0	40.24

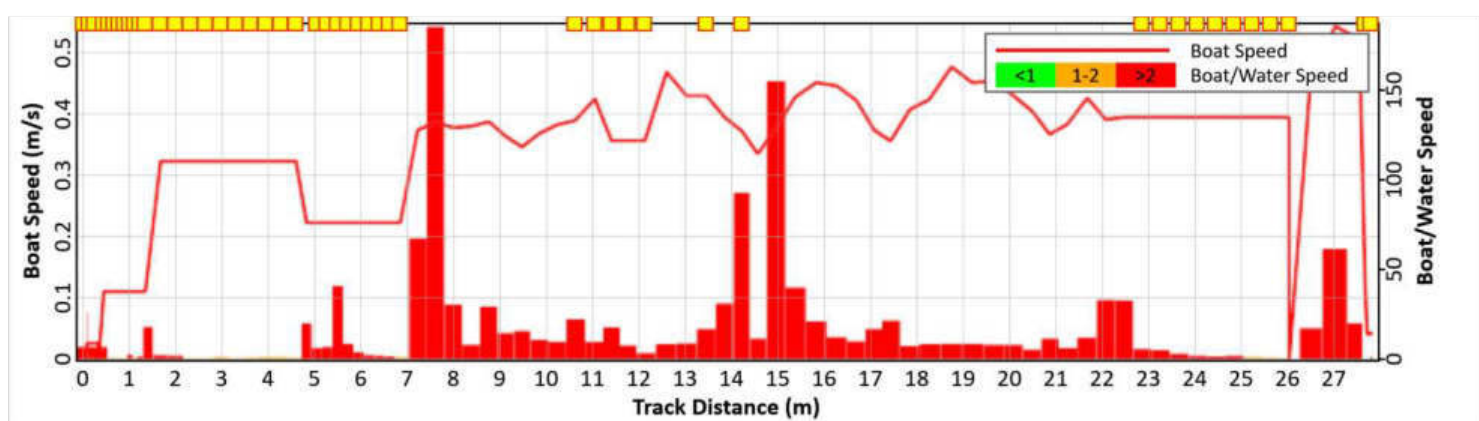
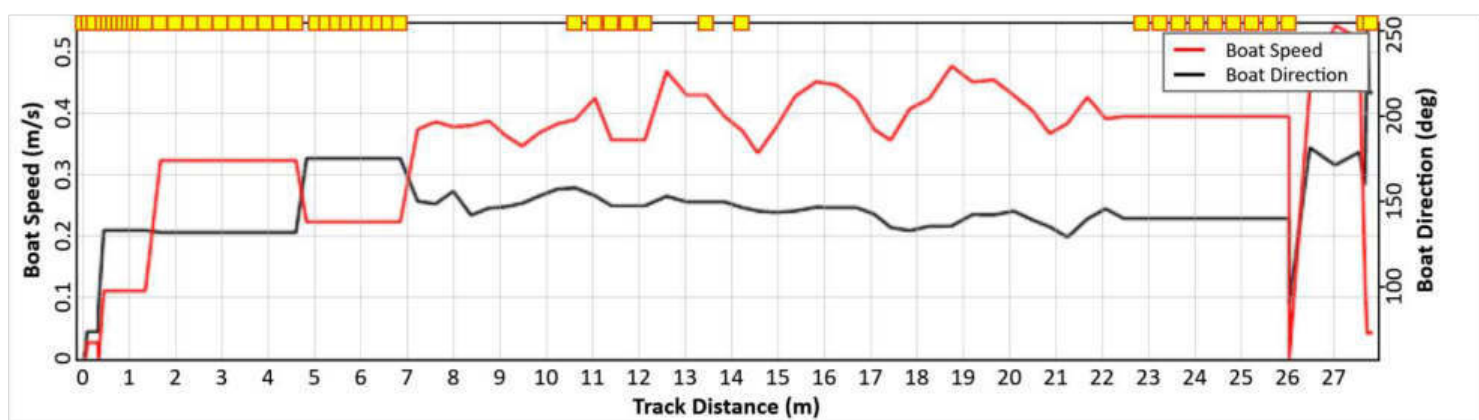
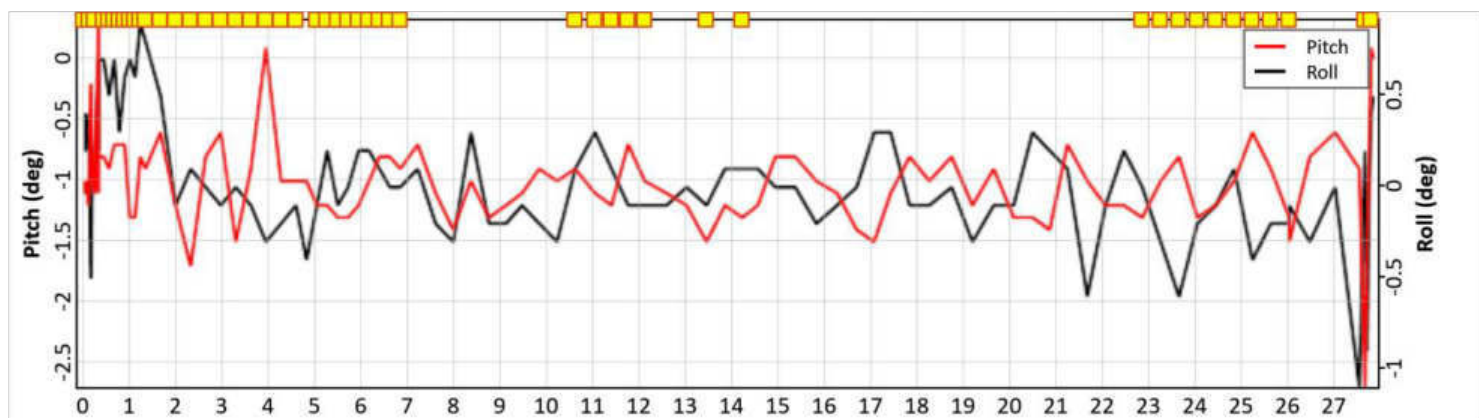
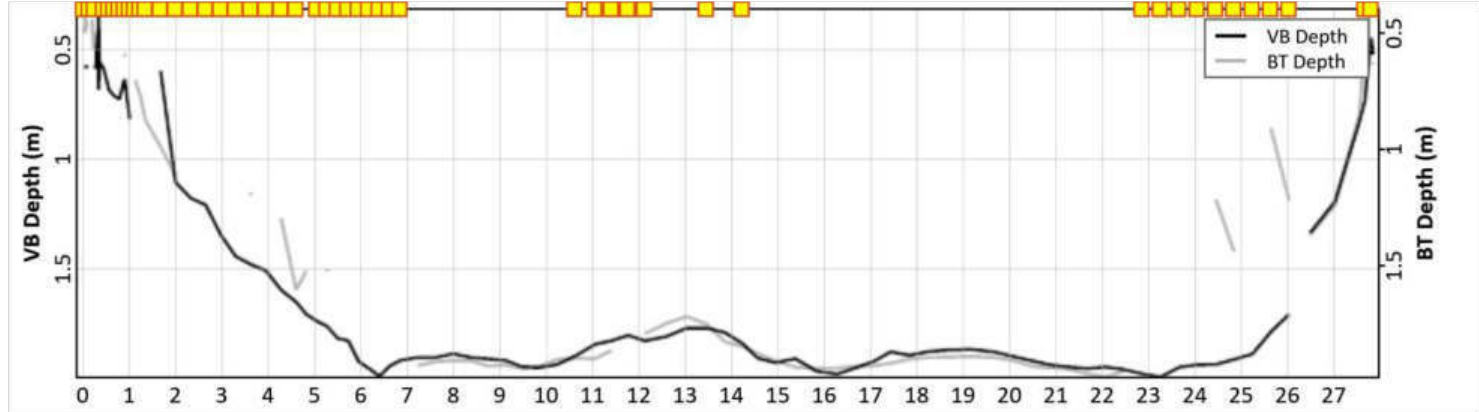
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Tr02 = 02-Transect_20220920115714;																	
Tr03 = 03-Transect_20220920115908;																	
Tr04 = 04-Transect_20220920120119;																	

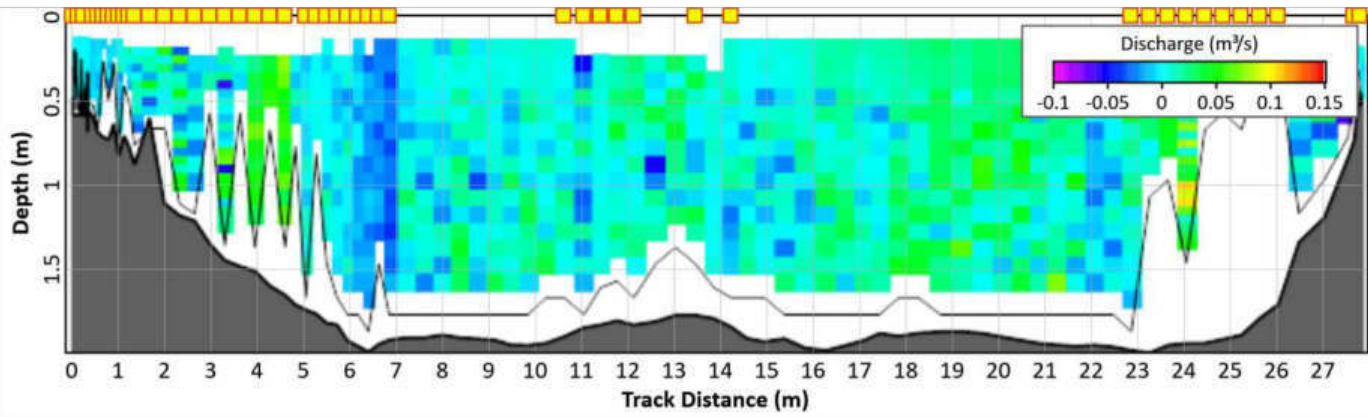
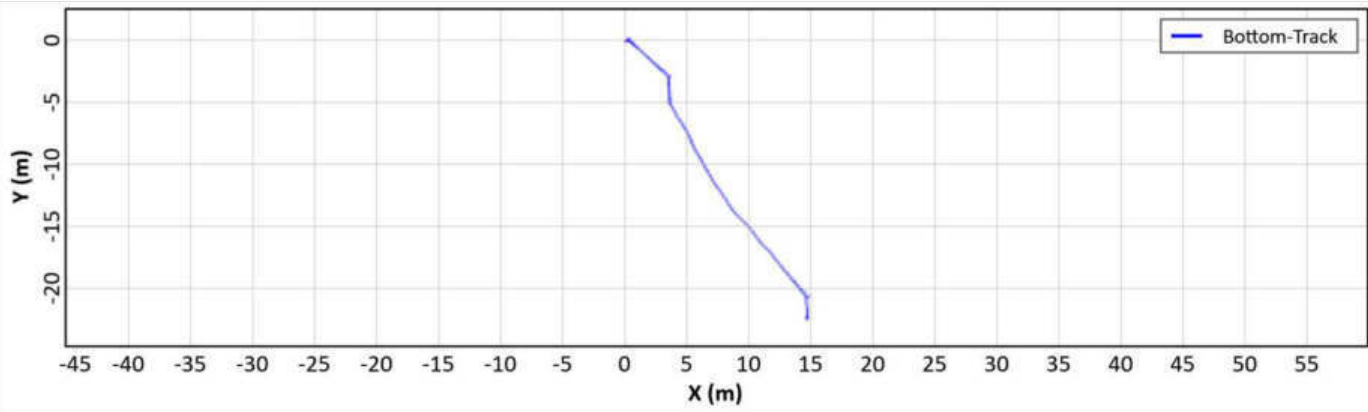
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02-Transect_20220920115714 - ;																	
03-Transect_20220920115908 - ;																	
04-Transect_20220920120119 - ;																	

Parameters and settings marked with a * are not constant for all files.

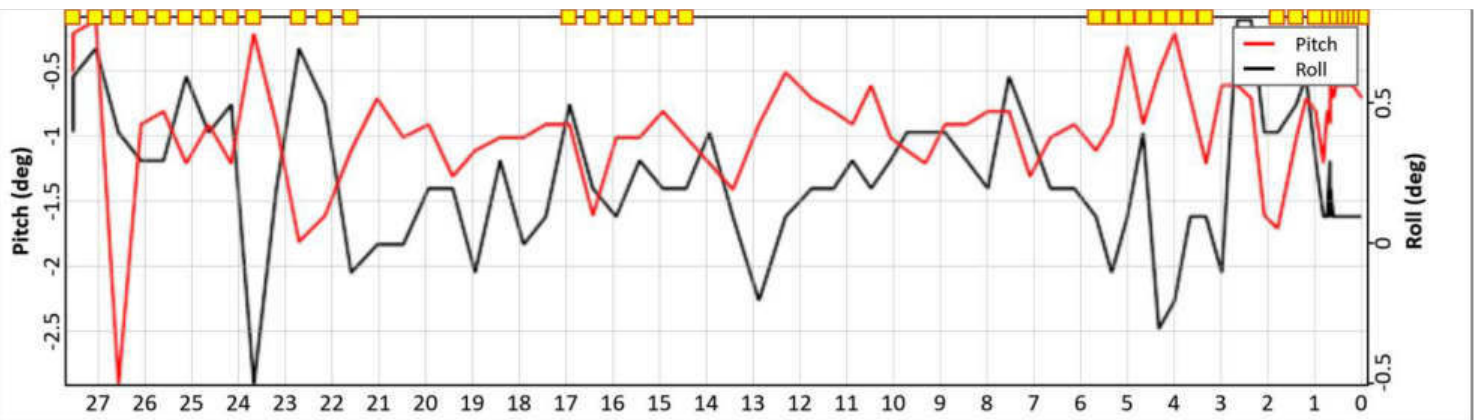
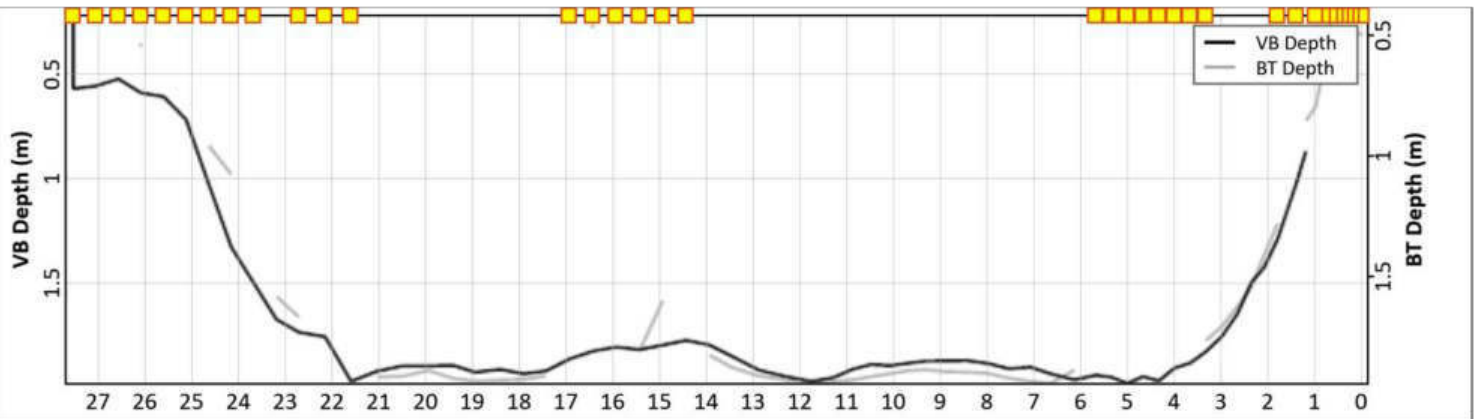
Report generated using SonTek RSQ v2.1

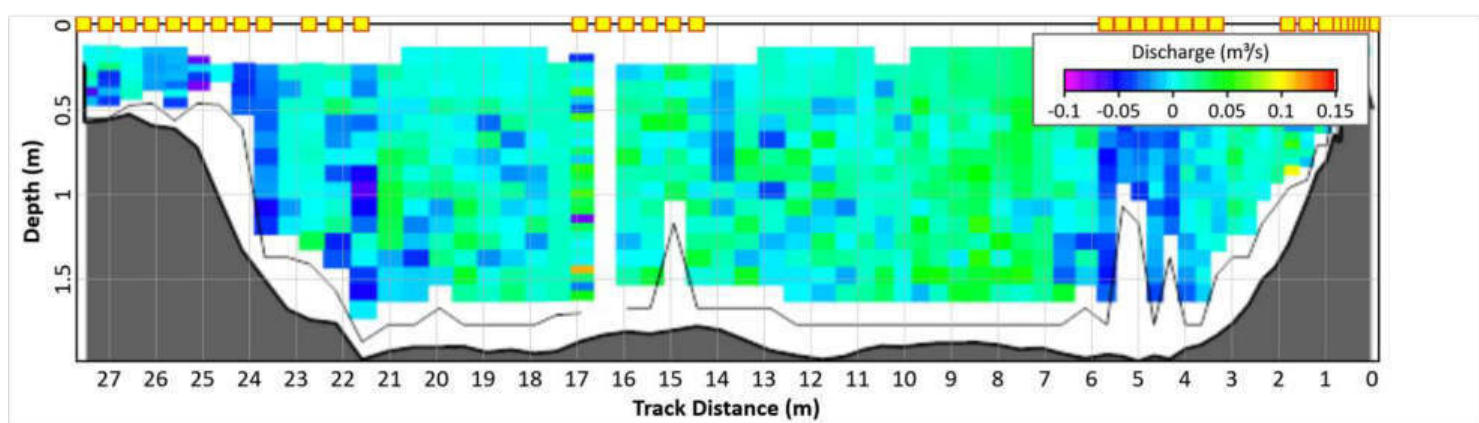
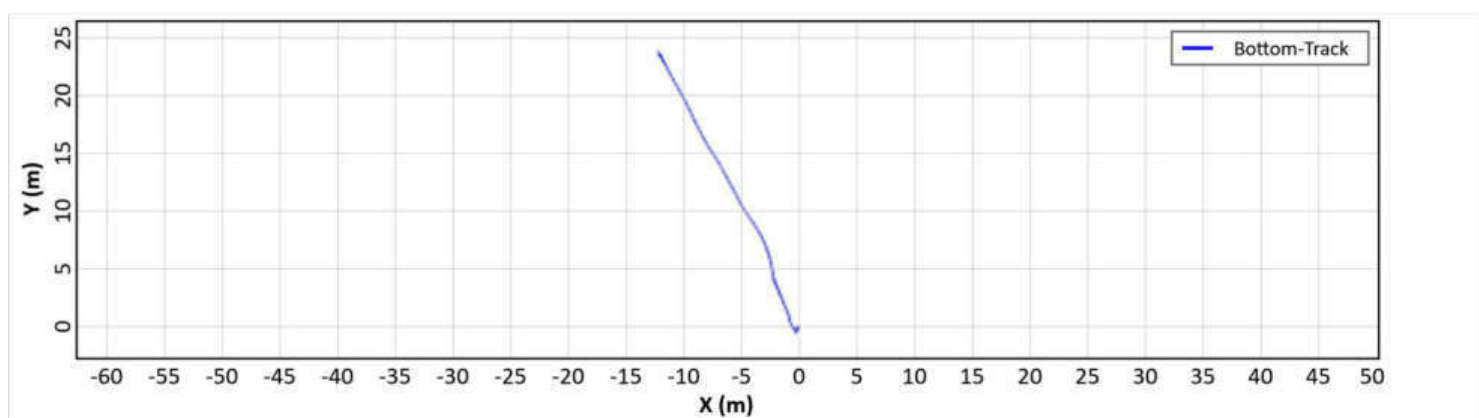
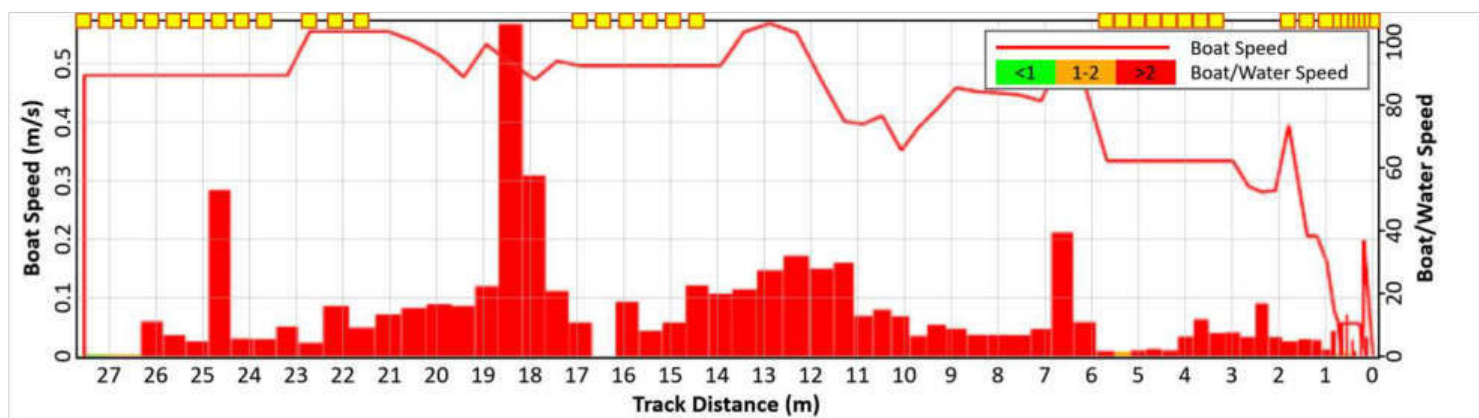
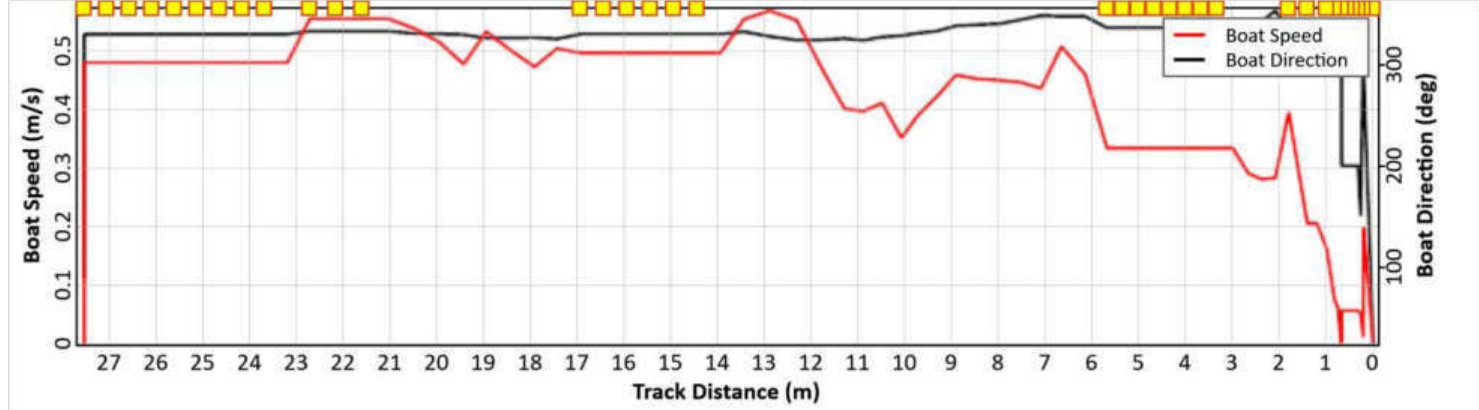
01-Transect_20220920115232 -



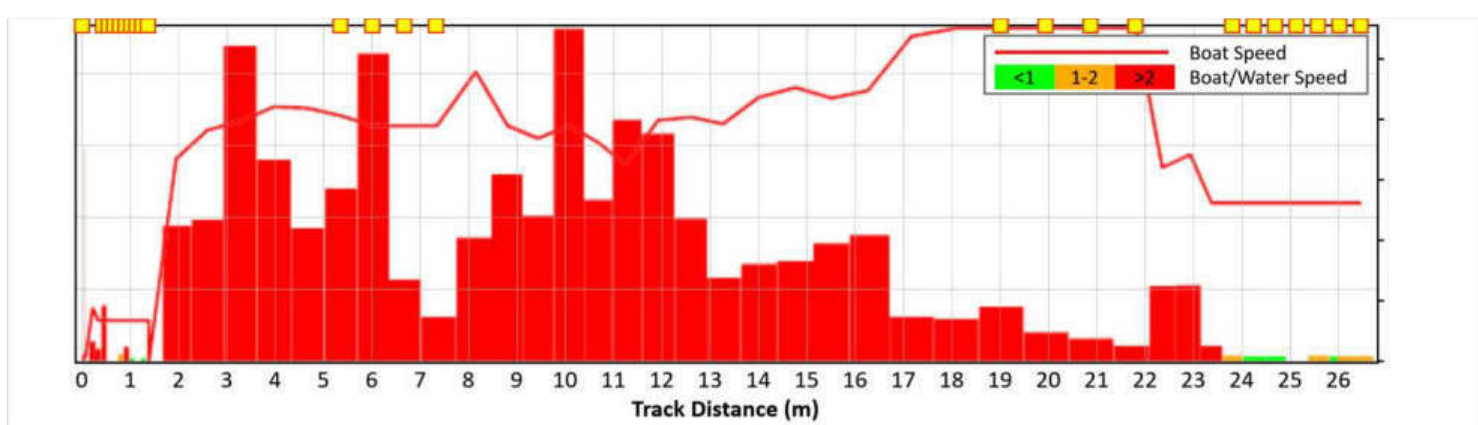
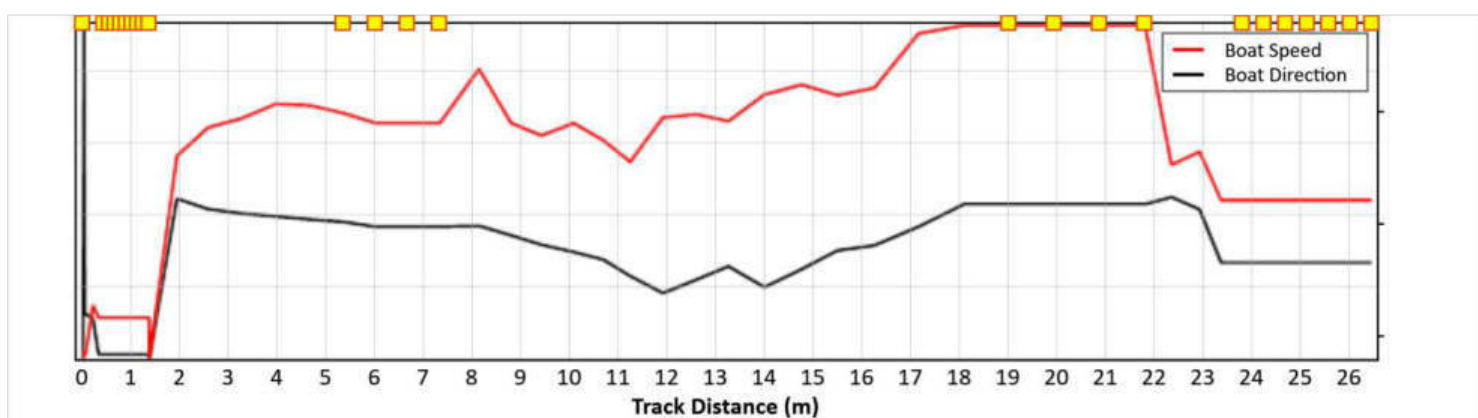
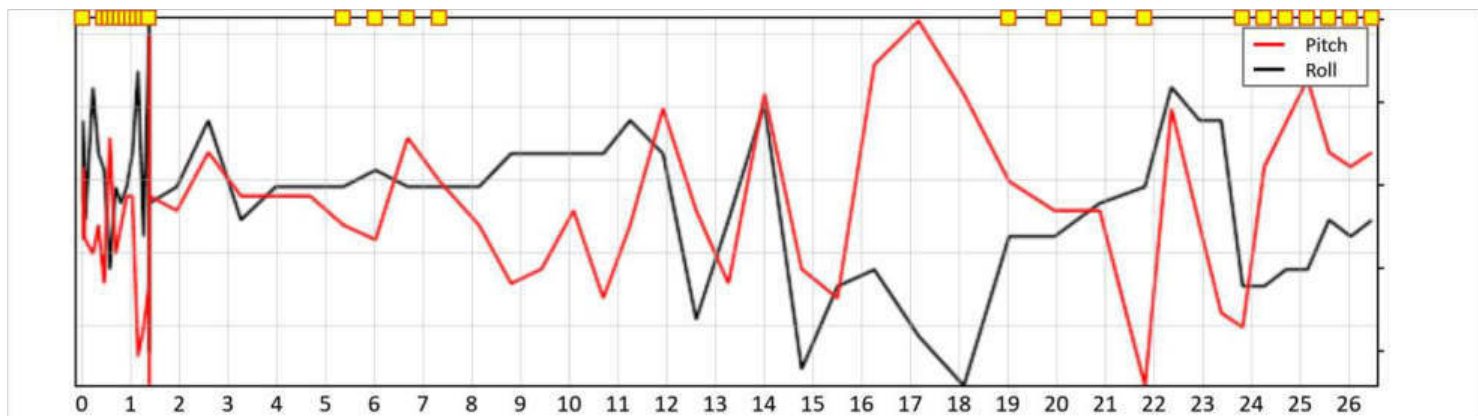
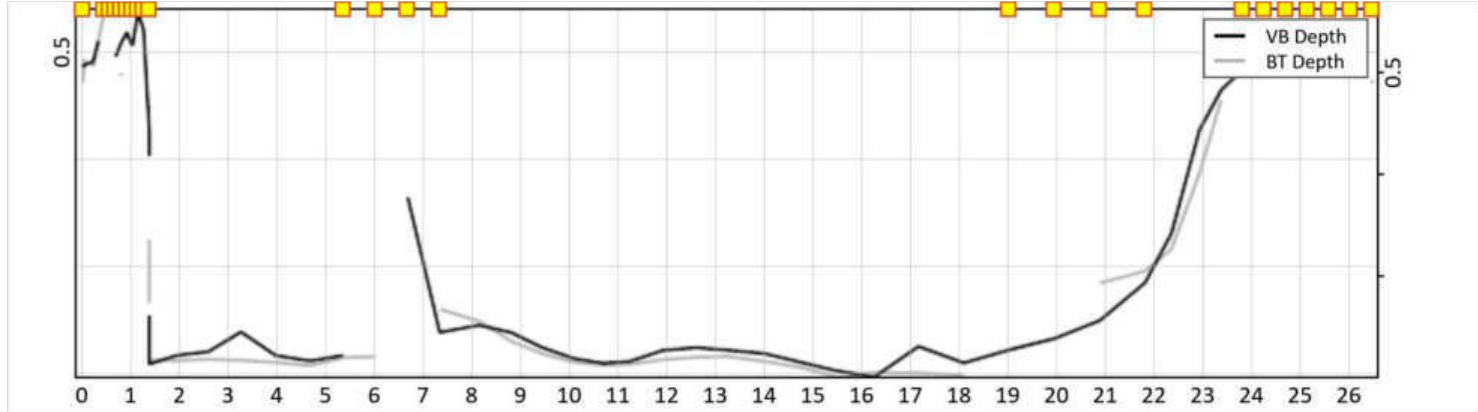


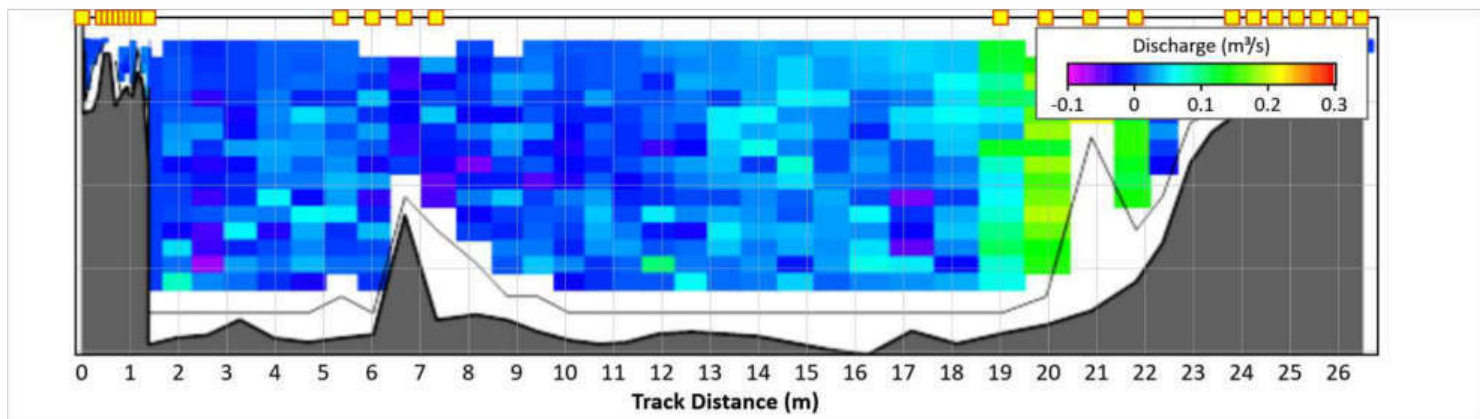
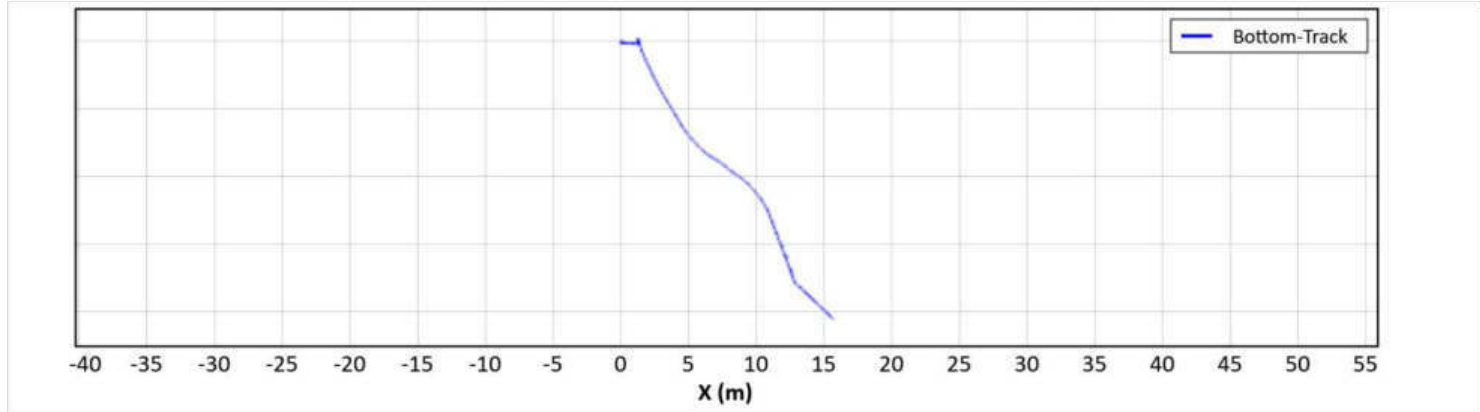
02-Transect_20220920115714 -



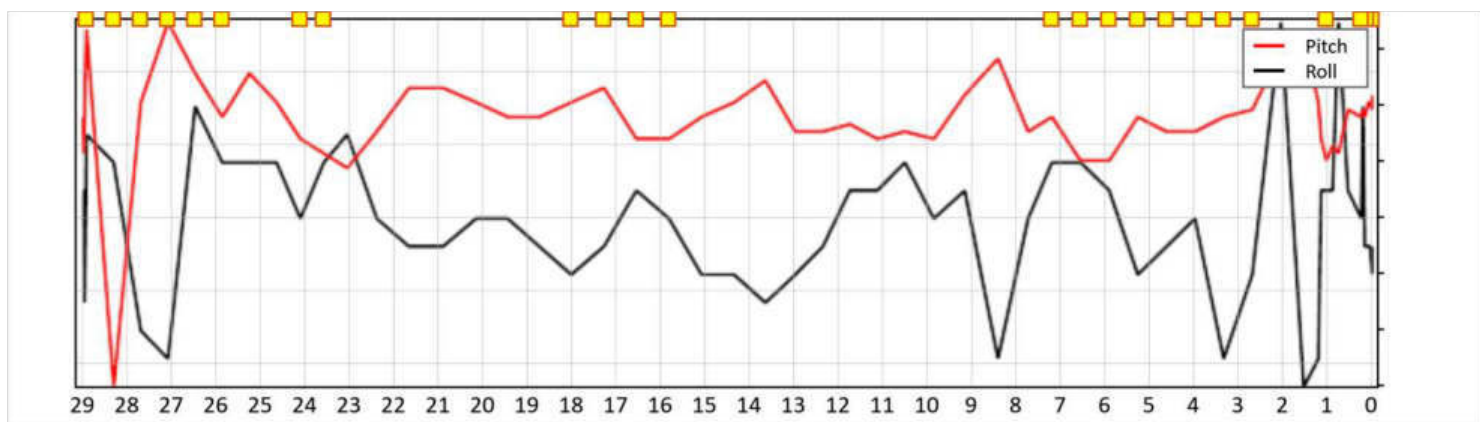
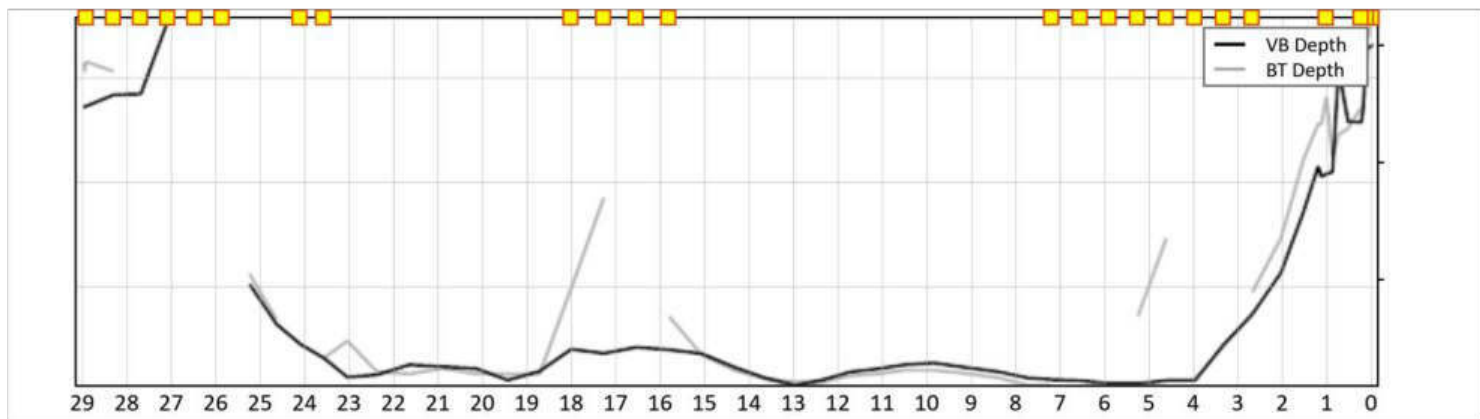


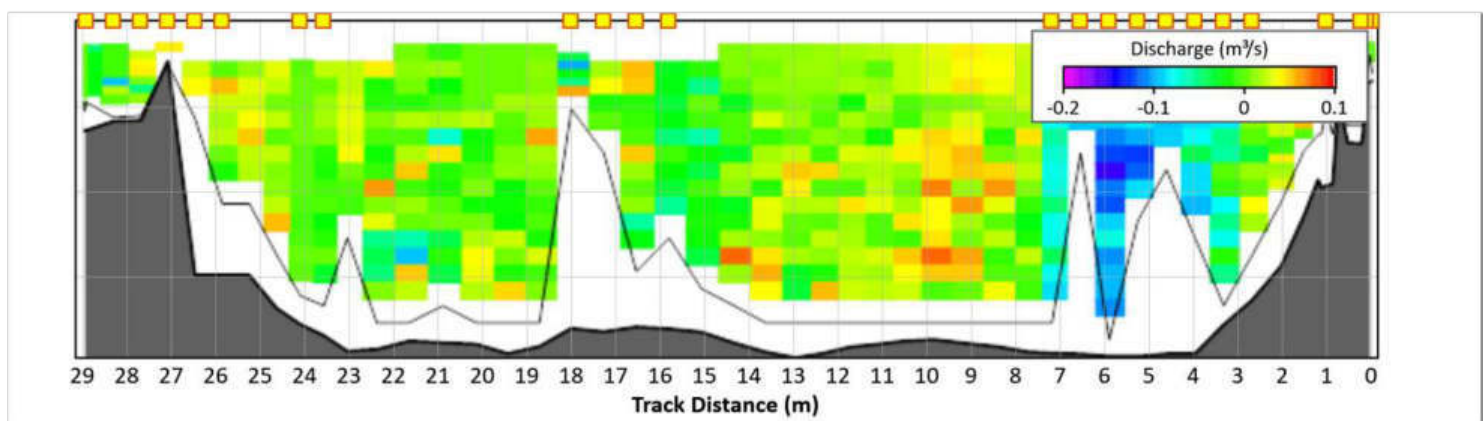
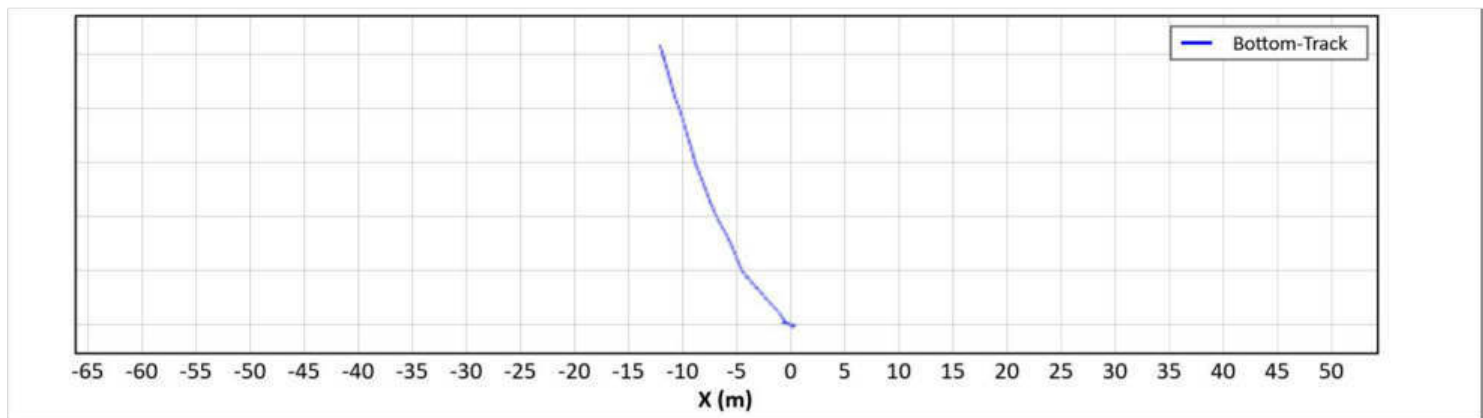
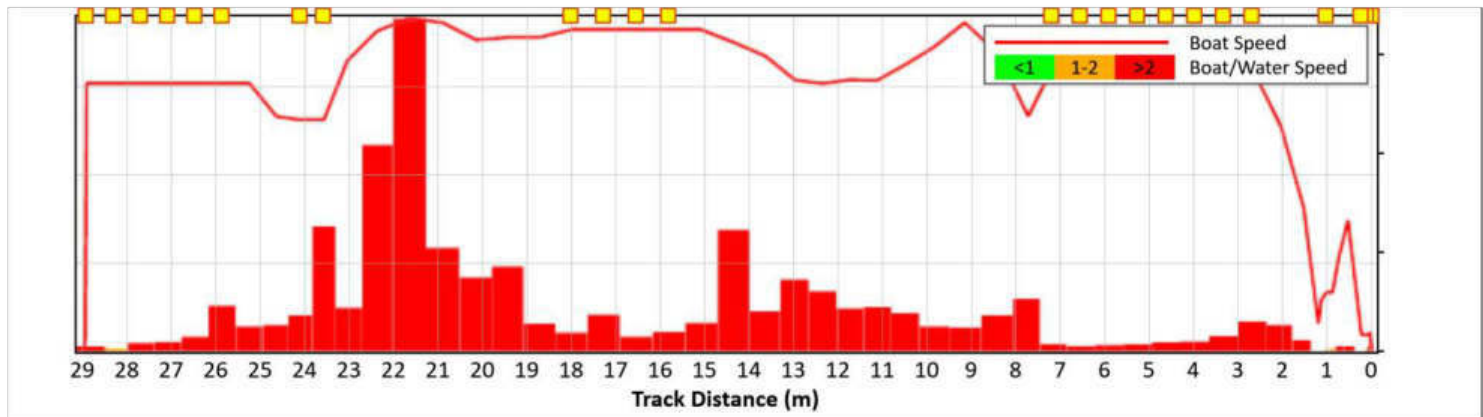
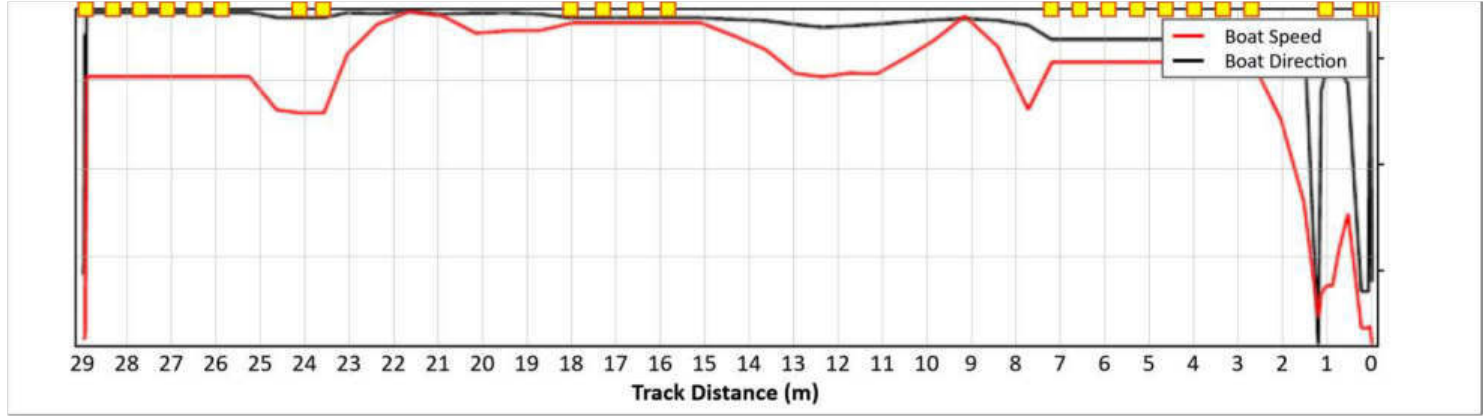
03-Transect_20220920115908 -





04-Transect_20220920120119 -





Discharge Measurement Summary

Date Measured: 2022-09-20

Site Information		Measurement Information
Site Name	Malta4_20.09.2022	Operator
Station Number		Vessel
Location		Measurement Number

System Information		System Setup		Units	
Instrument Type	RS2	Transducer Depth (m)	0.06	Distance	m
Instrument Sub-Type	RS5	Screening Distance (m)	0	Velocity	m/s
Serial Number	RS522	Salinity (PSS-78)	0	Area	m²
	13002	Magnetic Declination (deg)	1	Discharge	m³/s
Firmware Version	1.25			Temperature	°C

Discharge Calculation Settings				Discharge Results	
Track Reference	Bottom-Track	Left Method	Slope	Width (m)	26.535
Depth Reference	Vertical Beam	Right Method	Slope	Area (m²)	34.3333
Coordinate System	ENU	Top Fit Type	Power Fit		8
Moving Bed Correction	None	Bottom Fit Type	Power Fit	Mean Speed (m/s)	0.0246
				Total Q (m³/s)	0.8427
				Max Depth (m)	1.728
				Max Speed (m/s)	0.8934

Measurement Results																	
Tr #		Start Time (UTC +3)	Durati on	Track Dista nce (m)	DMG (m)	Width (m)	Area (m²)	Boat Spee d (m/ s)	Mean Spee d (m/ s)	Left Q (m³/s)	Right Q (m³/s)	Top Q (m³/s)	Botto m Q (m³/s)	Middl e Q (m³/s)	Total Q (m³/s)	Total Q Corre cted (m³/s)	% Mea sure d
01	L	12:33:42	00:02:02	25.986	22.864	24.864	32.96434	0.203	0.0265	0.007	0	0.1003	0.141	0.6268	0.8751		71.62
02	R	12:35:57	00:02:17	28.948	25.706	28.206	35.70241	0.2024	0.0227	0.0013	0	0.0752	0.132	0.6018	0.8103		74.27
Mean				27.467	24.285	26.535	34.33338	0.2027	0.0246	0.0042	0	0.0877	0.1365	0.6143	0.8427	0	72.95
Std Dev				1.481	1.421	1.671	1.36904	0.0003	0.0019	0.0028	0	0.0126	0.0045	0.0125	0.0324	0	1.32
COV				0.054	0.059	0.063	0.03987	0.0014	0.0783	0.6843	-1	0.1433	0.033	0.0204	0.0385	0	1.82

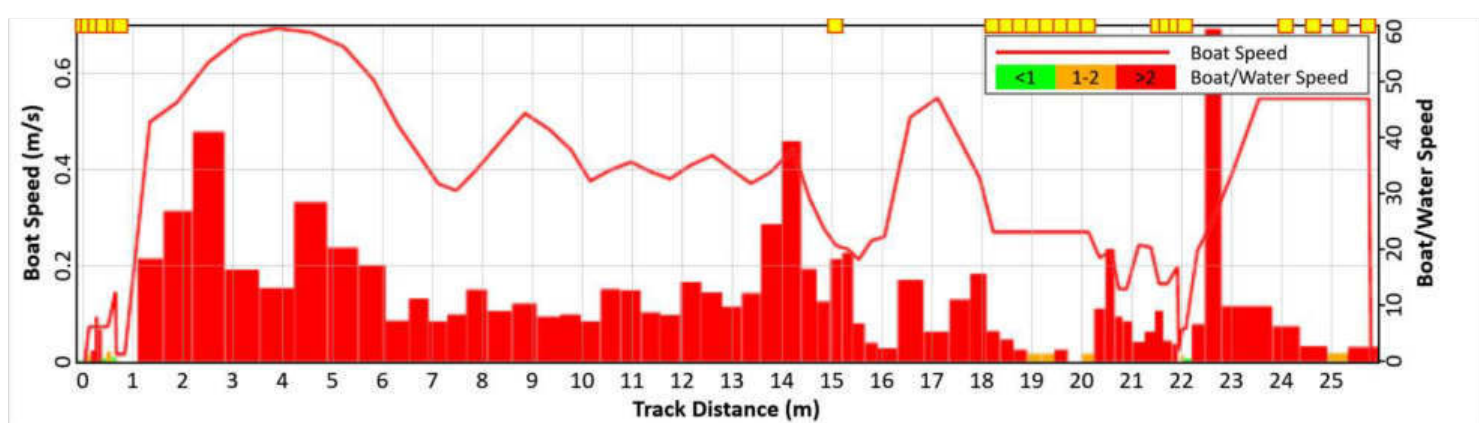
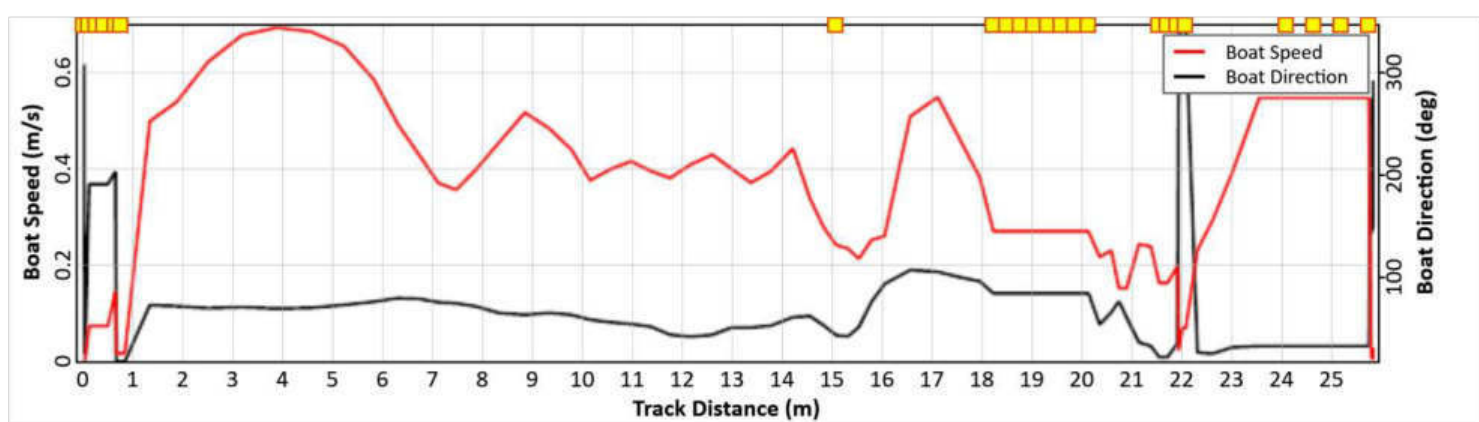
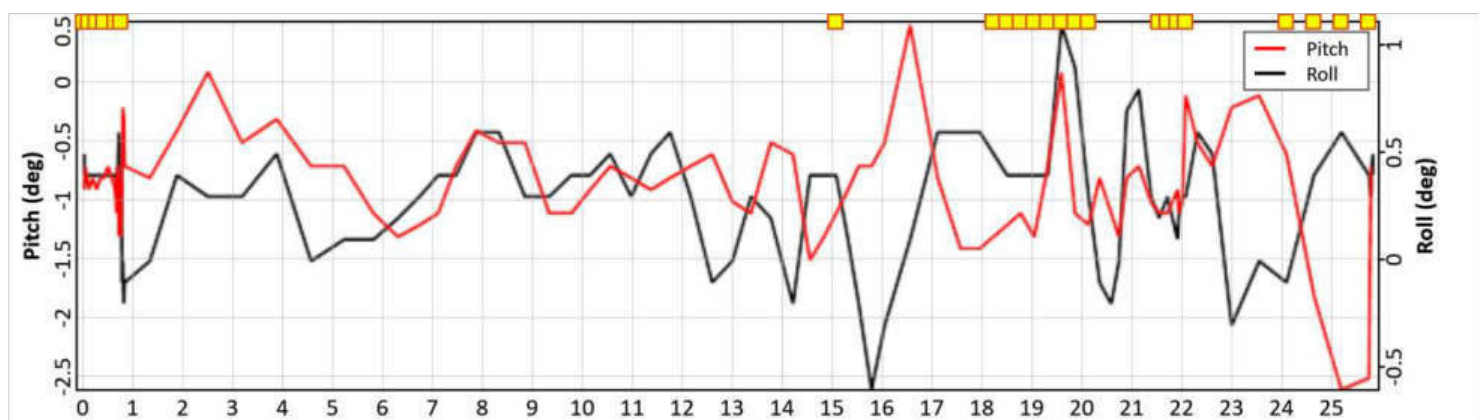
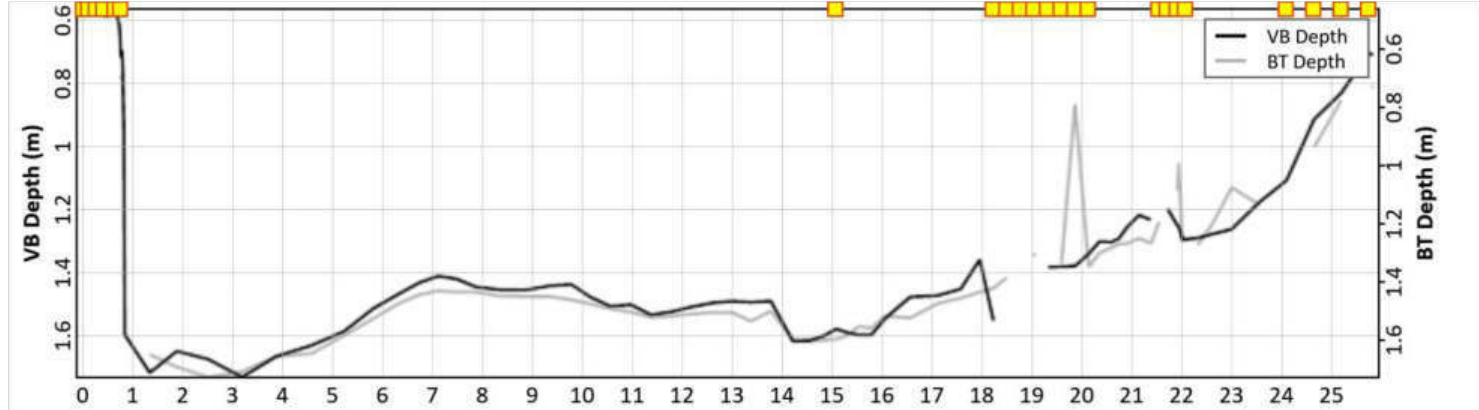
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Tr02 = 02-Transect_20220920123547;																	

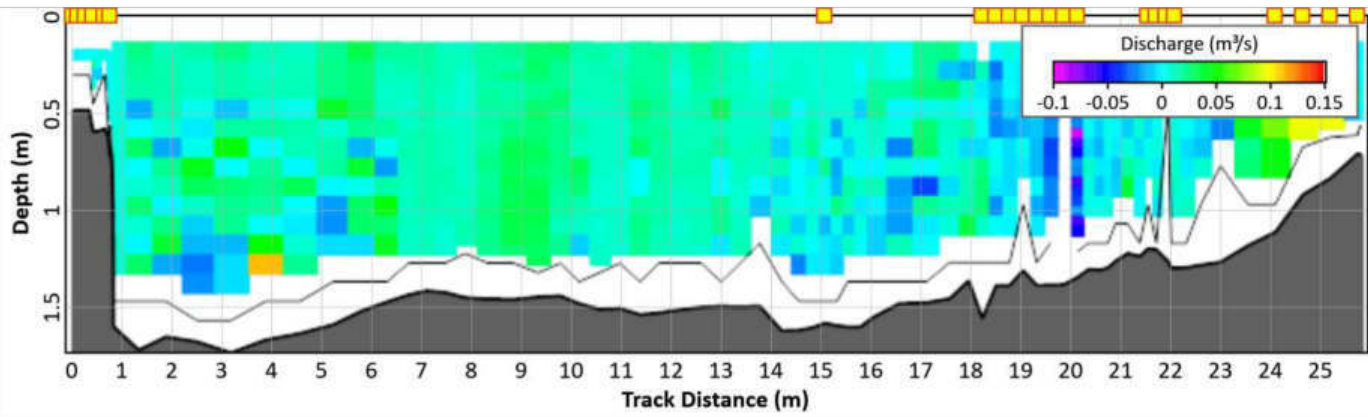
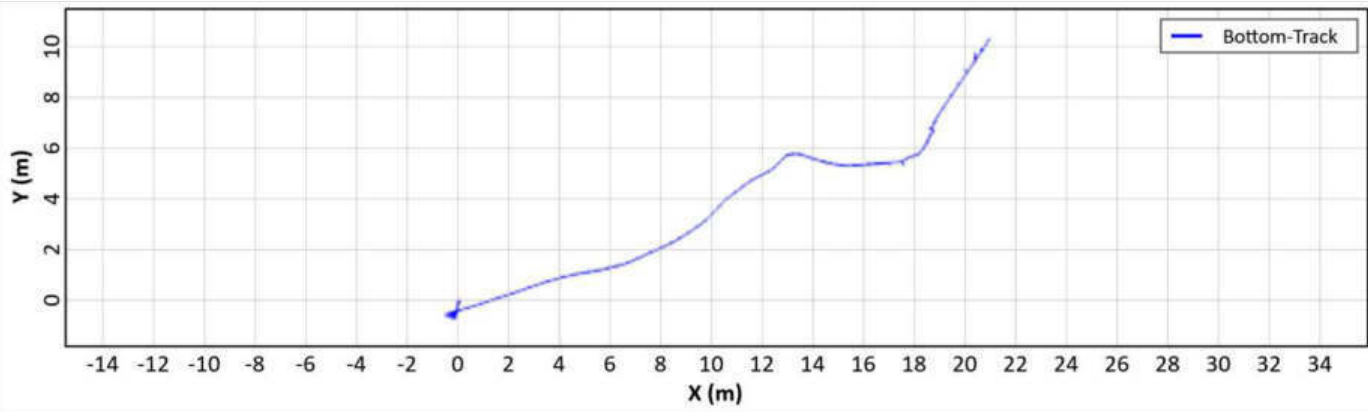
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Parameters and settings marked with a * are not constant for all files.

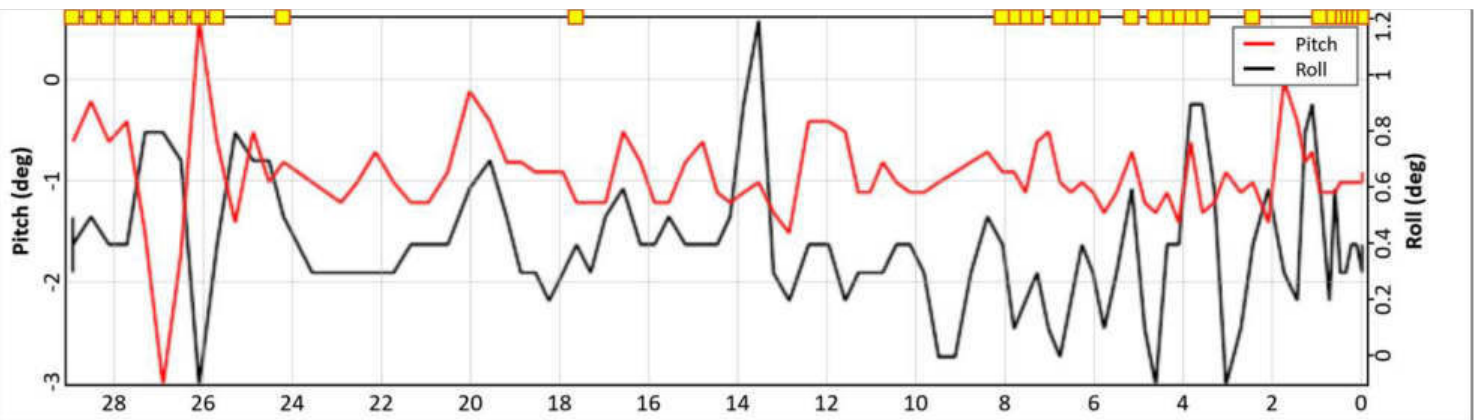
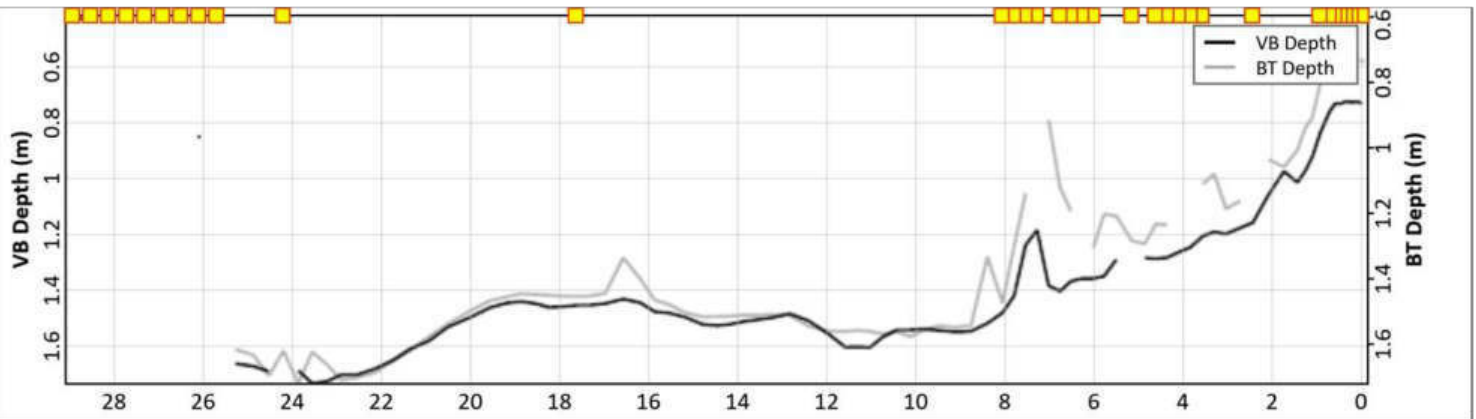
Report generated using SonTek RSQ v2.1

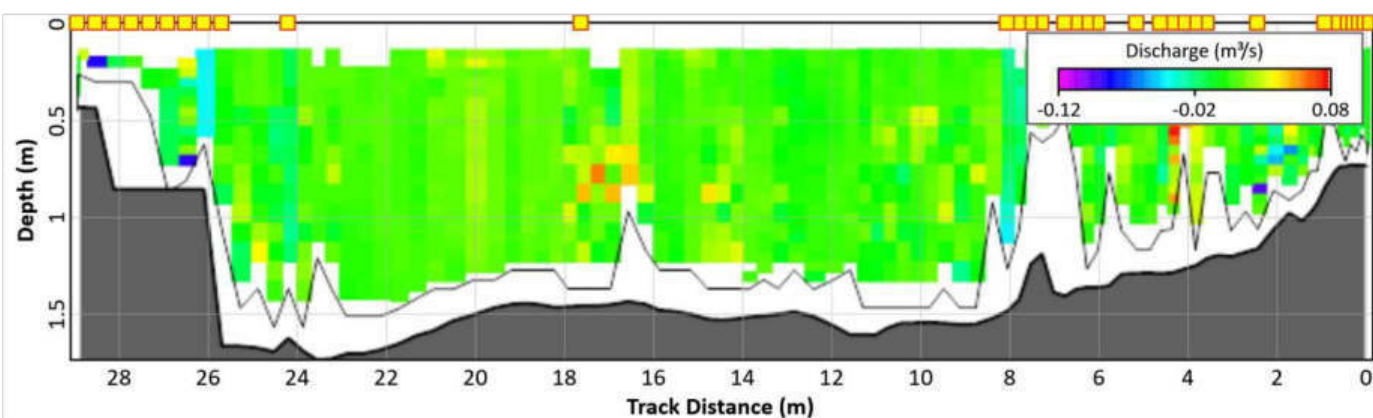
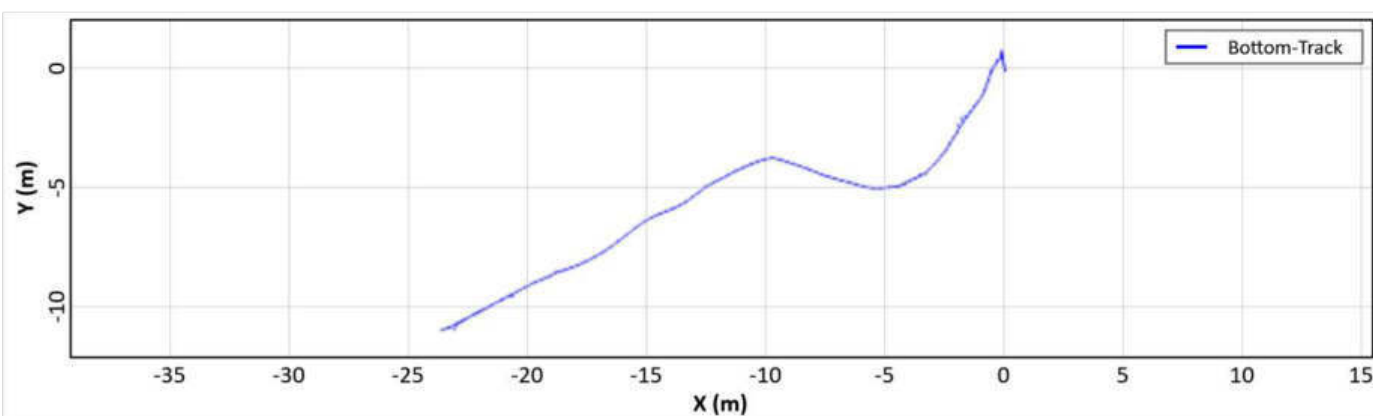
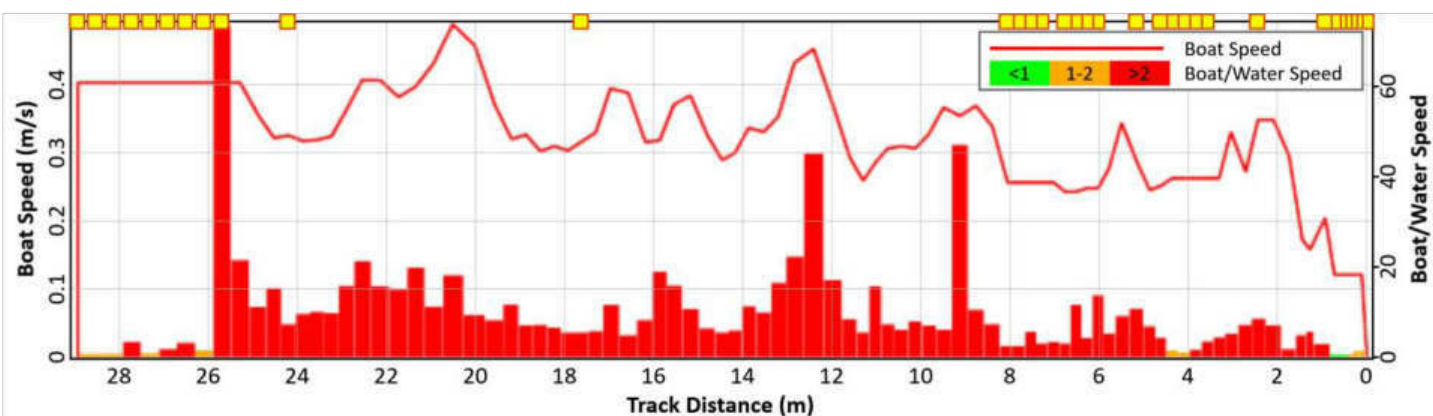
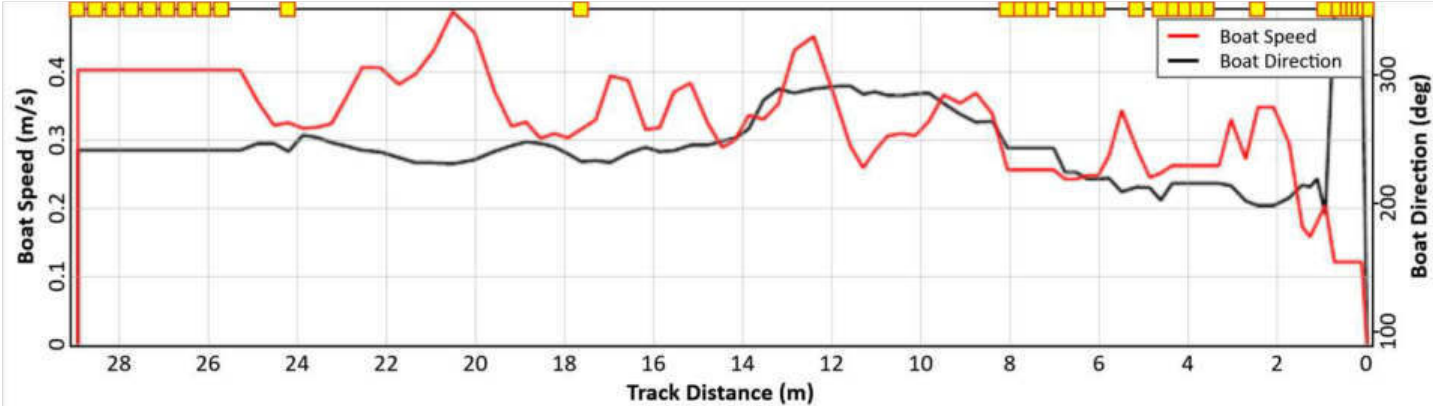
01-Transect_20220920123130 -





02-Transect_20220920123547 -





Discharge Measurement Summary

Date Measured: 2022-09-20

Site Information		Measurement Information
Site Name	Malta_5_20.09.2022	Operator
Station Number		Vessel
Location		Measurement Number

System Information		System Setup		Units	
Instrument Type	RS2	Transducer Depth (m)	0.06	Distance	m
Instrument Sub-Type	RS5	Screening Distance (m)	0	Velocity	m/s
Serial Number	RS522	Salinity (PSS-78)	0	Area	m²
	13002	Magnetic Declination (deg)	1	Discharge	m³/s
Firmware Version	1.25			Temperature	°C

Discharge Calculation Settings				Discharge Results	
Track Reference	Bottom-Track	Left Method	Slope	Width (m)	24.395
Depth Reference	Vertical Beam	Right Method	Slope	Area (m²)	21.0595
Coordinate System	ENU	Top Fit Type	Power Fit		8
Moving Bed Correction	None	Bottom Fit Type	Power Fit	Mean Speed (m/s)	0.0458
				Total Q (m³/s)	0.9652
				Max Depth (m)	1.27
				Max Speed (m/s)	0.7269

Measurement Results																	
Tr #		Start Time (UTC +3)	Durati on	Track Dista nce (m)	DMG (m)	Width (m)	Area (m²)	Boat Spee d (m/ s)	Mean Spee d (m/ s)	Left Q (m³/s)	Right Q (m³/s)	Top Q (m³/s)	Botto m Q (m³/s)	Middl e Q (m³/s)	Total Q (m³/s)	Total Q Corre cted (m³/s)	% Mea sure d
01	L	12:55:57	00:02:02	22.715	21.627	22.627	20.62242	0.1611	0.0448	0.0003	-0.0002	0.119	0.1282	0.6765	0.9238		73.23
02	R	12:58:17	00:01:44	27.286	25.162	26.162	21.49674	0.2458	0.0468	-0.0009	0.0004	0.1559	0.1542	0.6972	1.0066		69.26
Mean				25	23.395	24.395	21.05958	0.2035	0.0458	-0.0003	0.0001	0.1374	0.1412	0.6868	0.9652	0	71.24
Std Dev				2.286	1.767	1.767	0.43716	0.0424	0.001	0.0006	0.0003	0.0185	0.013	0.0103	0.0414	0	1.99
COV				0.091	0.076	0.072	0.02076	0.2082	0.0222	-1.9066	2.5107	0.1343	0.0918	0.0151	0.0429	0	2.79

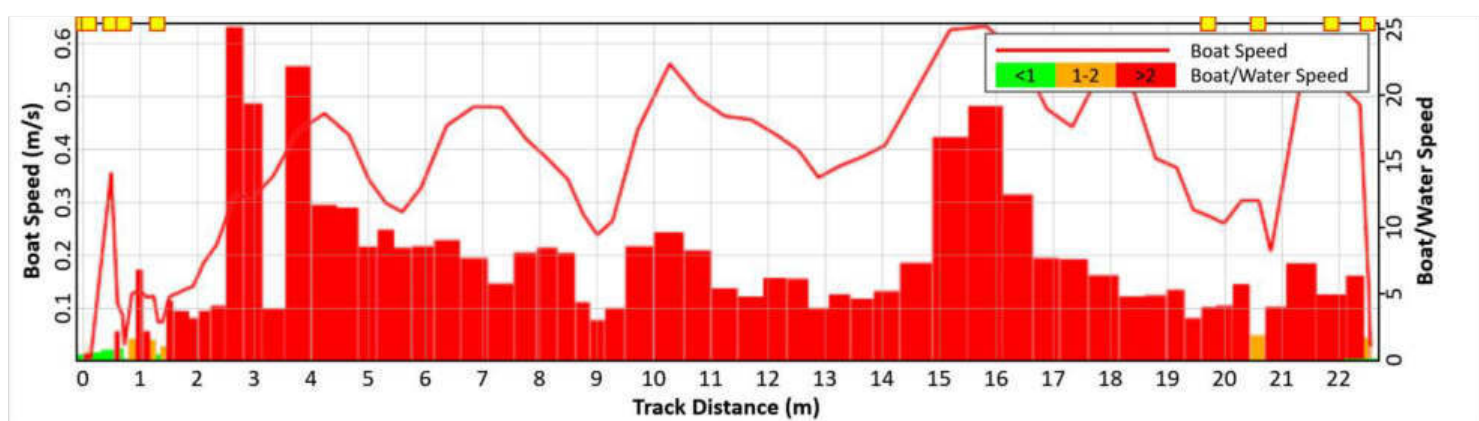
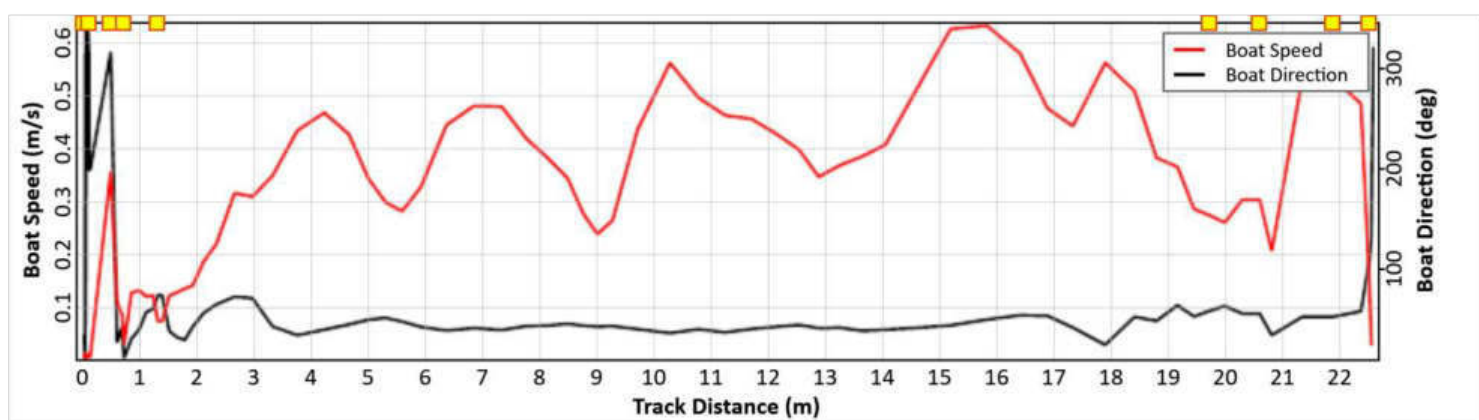
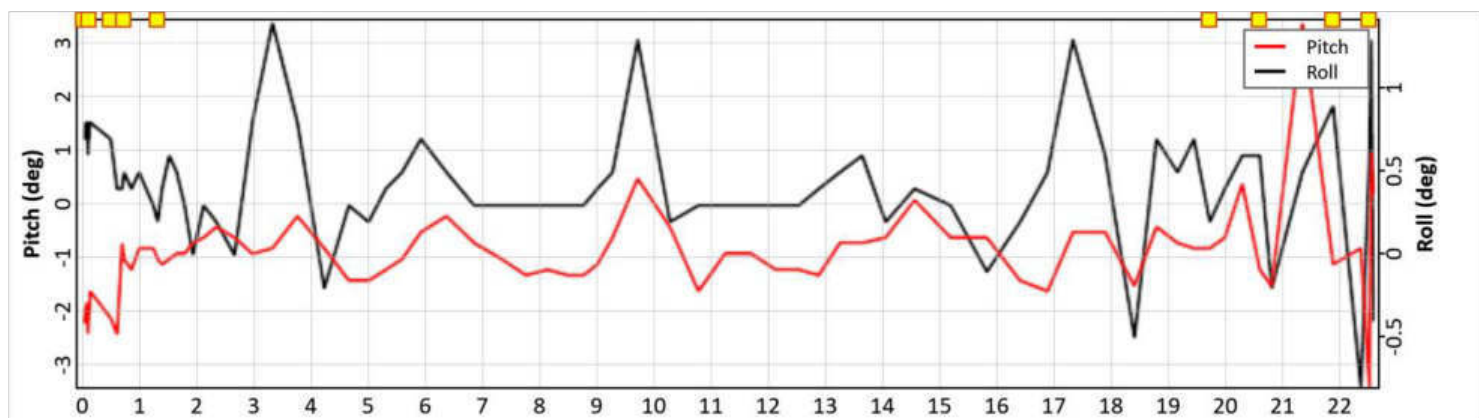
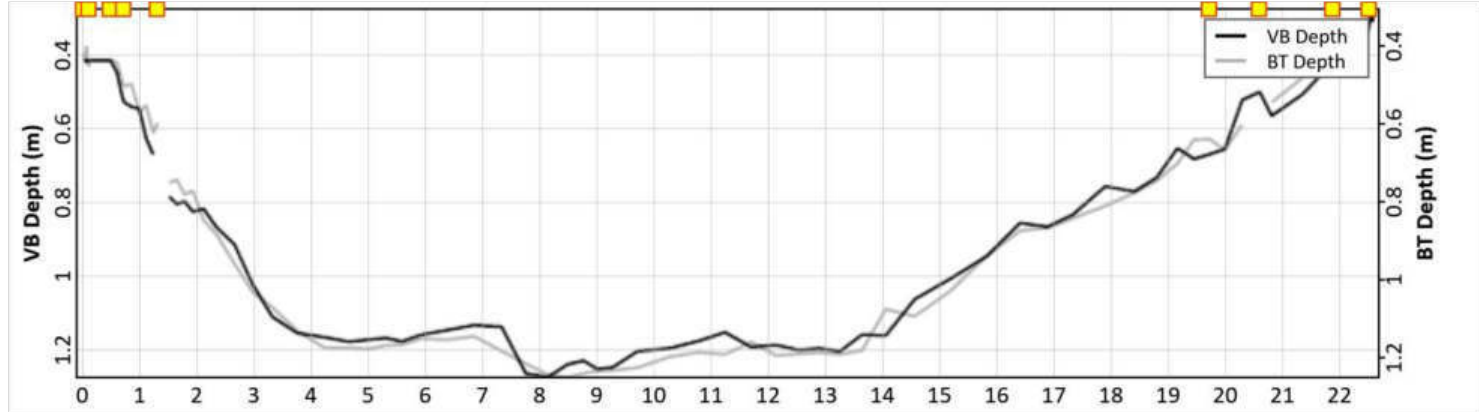
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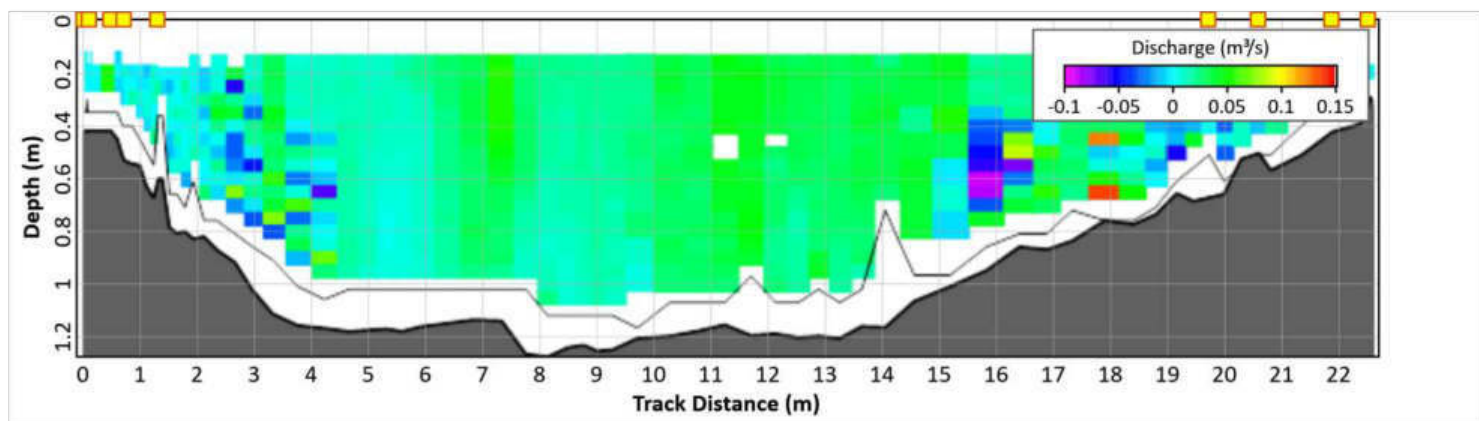
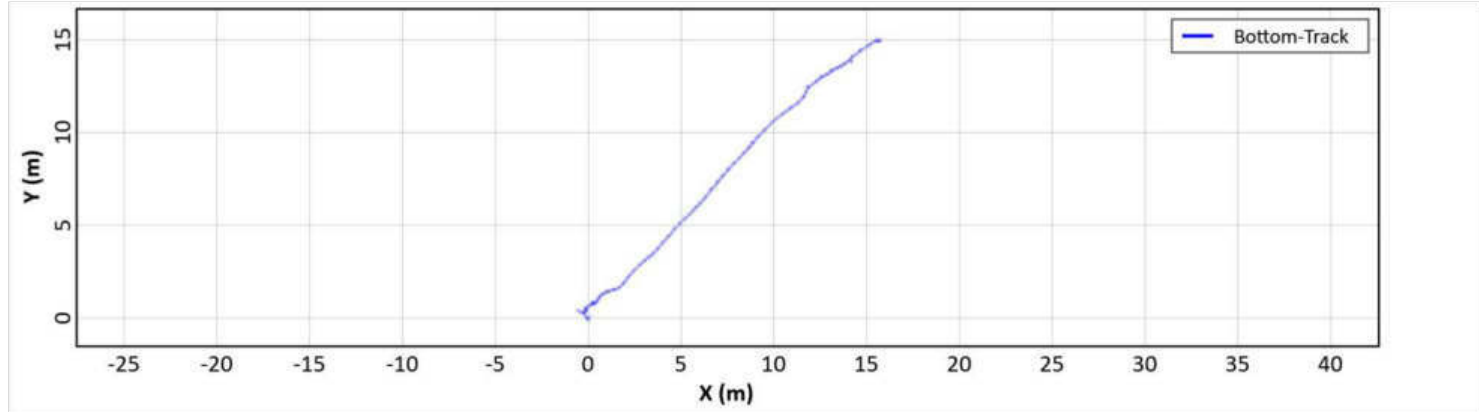
Comments																	
01-Transect_20220920125344 - ;																	
02-Transect_20220920125805 - ;																	

Parameters and settings marked with a * are not constant for all files.

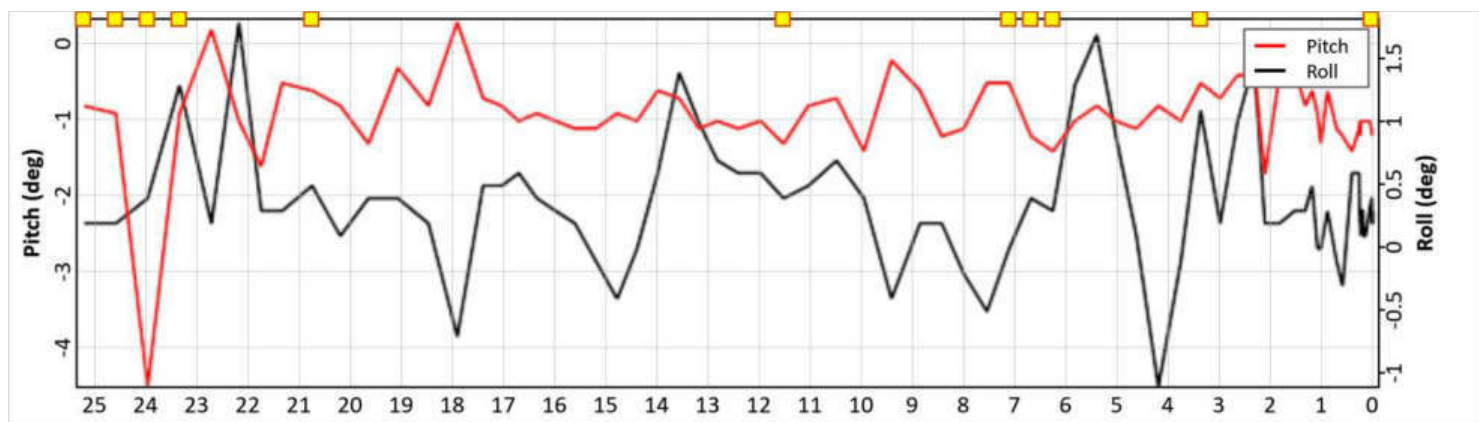
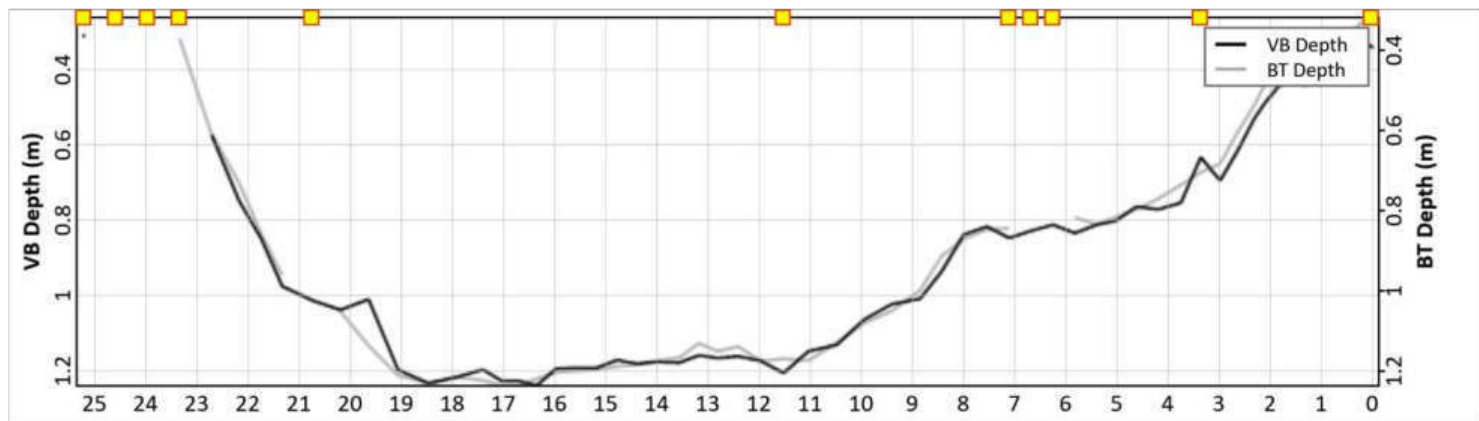
Report generated using SonTek RSQ v2.1

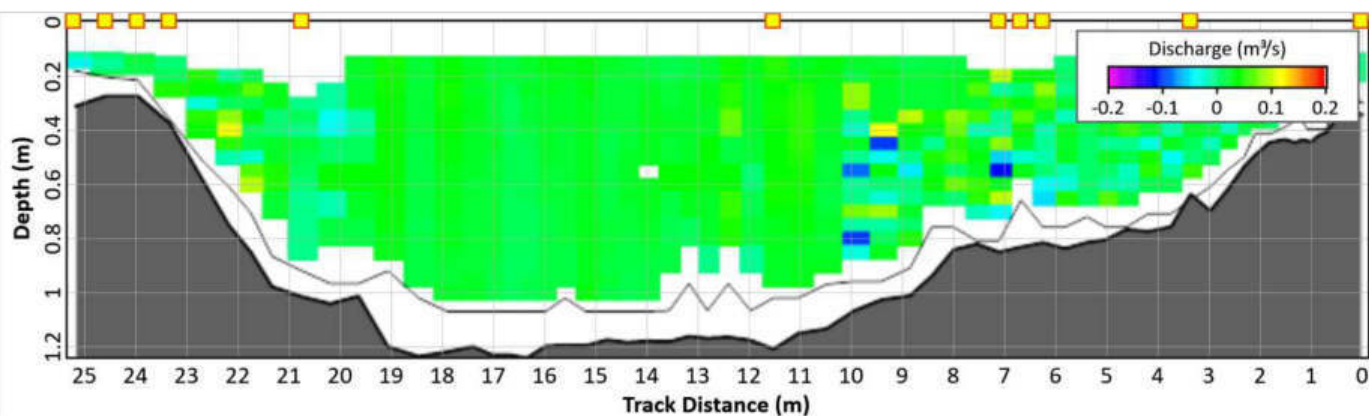
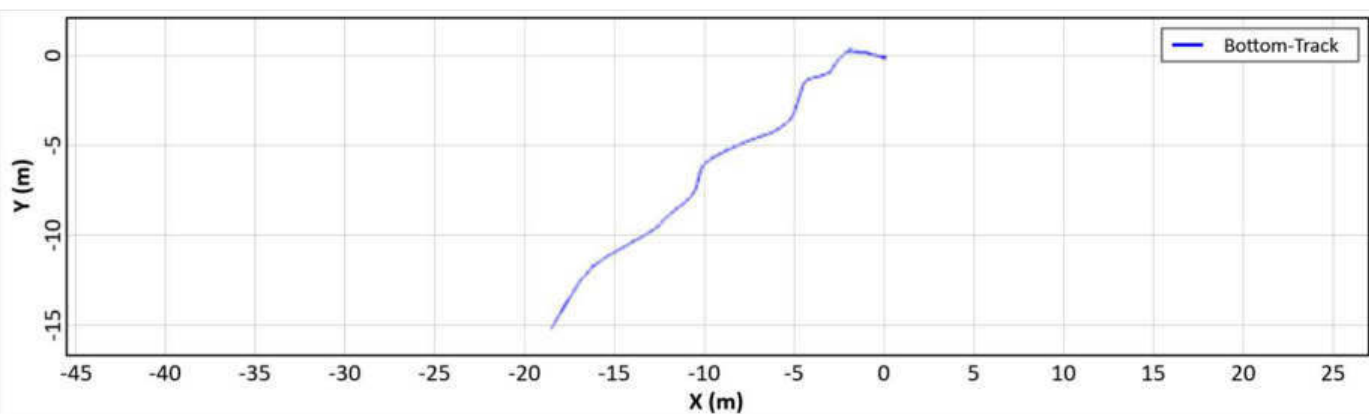
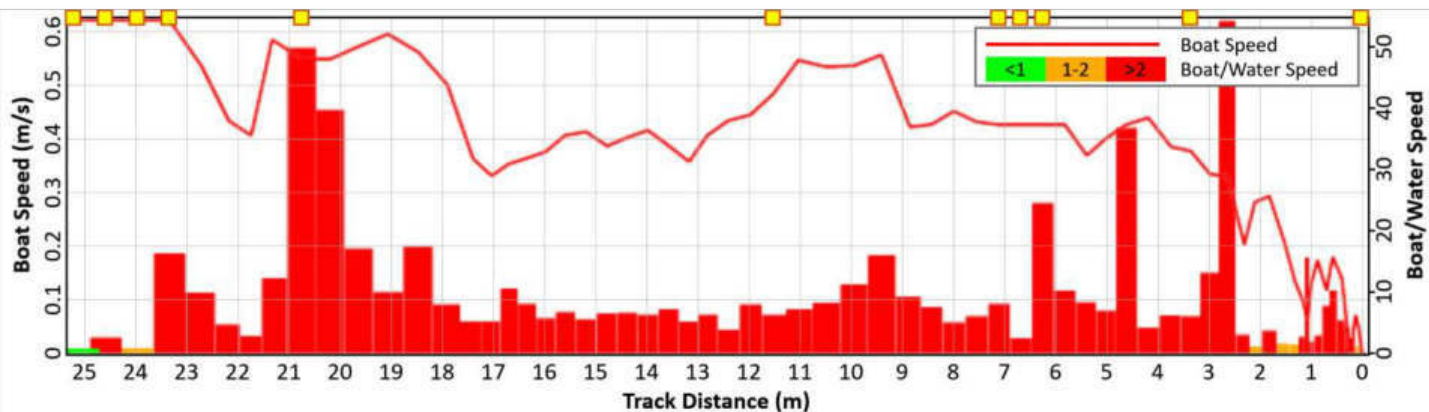
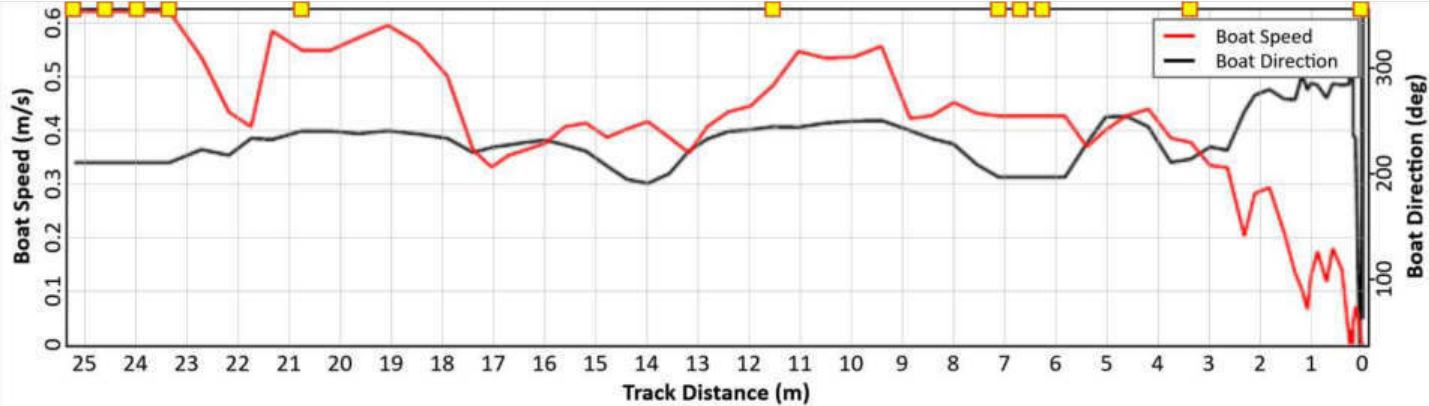
01-Transect_20220920125344 -





02-Transect_20220920125805 -





Discharge Measurement Summary

Date Measured: 2022-09-20

Site Information		Measurement Information	
Site Name	Malta5_20.09.2022	Operator	
Station Number		Vessel	
Location		Measurement Number	

System Information		System Setup		Units	
Instrument Type	RS2	Transducer Depth (m)	0.06	Distance	m
Instrument Sub-Type	RS5	Screening Distance (m)	0	Velocity	m/s
Serial Number	RS522	Salinity (PSS-78)	0	Area	m²
	13002	Magnetic Declination (deg)	1	Discharge	m³/s
Firmware Version	1.25			Temperature	°C

Discharge Calculation Settings				Discharge Results	
Track Reference	Bottom-Track	Left Method	Slope	Width (m)	21.667
Depth Reference	Vertical Beam	Right Method	Slope	Area (m²)	16.8003
Coordinate System	ENU	Top Fit Type	Power Fit		2
Moving Bed Correction	None	Bottom Fit Type	Power Fit	Mean Speed (m/s)	0.0559
				Total Q (m³/s)	0.937
				Max Depth (m)	1.444
				Max Speed (m/s)	0.4058

Measurement Results																	
Tr #		Start Time (UTC +3)	Durati on	Track Dista nce (m)	DMG (m)	Width (m)	Area (m²)	Boat Spee d (m/ s)	Mean Spee d (m/ s)	Left Q (m³/s)	Right Q (m³/s)	Top Q (m³/s)	Botto m Q (m³/s)	Middl e Q (m³/s)	Total Q (m³/s)	Total Q Corre cted (m³/s)	% Mea sure d
01	L	13:33:47	00:02:05	20.657	18.906	21.906	16.47608	0.1553	0.0606	0.0001	0.0178	0.1602	0.1842	0.6359	0.9982		63.7
02	R	13:36:04	00:02:03	22.988	18.428	21.428	17.12455	0.1796	0.0511	0.0003	0.0173	0.1279	0.1239	0.6063	0.8757		69.23
Mean				21.822	18.667	21.667	16.80032	0.1675	0.0559	0.0002	0.0176	0.144	0.1541	0.6211	0.937	0	66.47
Std Dev				1.166	0.239	0.239	0.32424	0.0121	0.0047	0.0001	0.0003	0.0162	0.0302	0.0148	0.0613	0	2.77
COV				0.053	0.013	0.011	0.0193	0.0725	0.0846	0.4792	0.0145	0.1121	0.1959	0.0238	0.0654	0	4.16

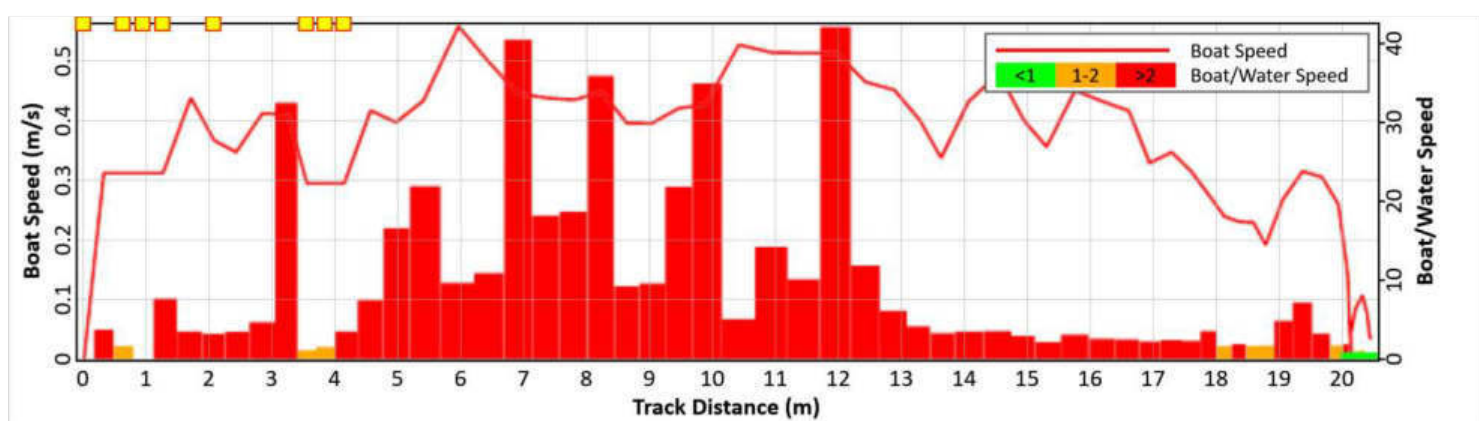
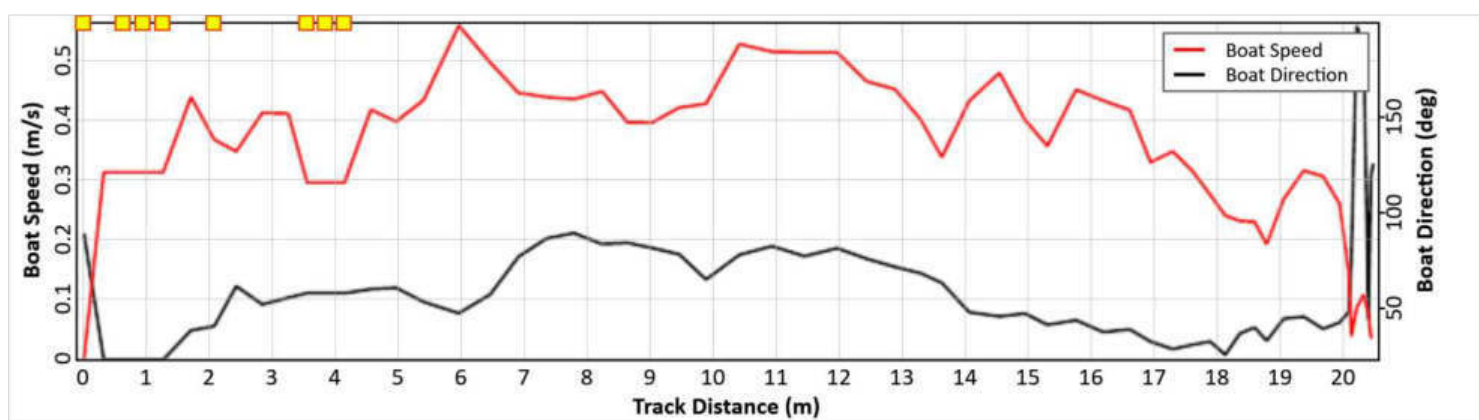
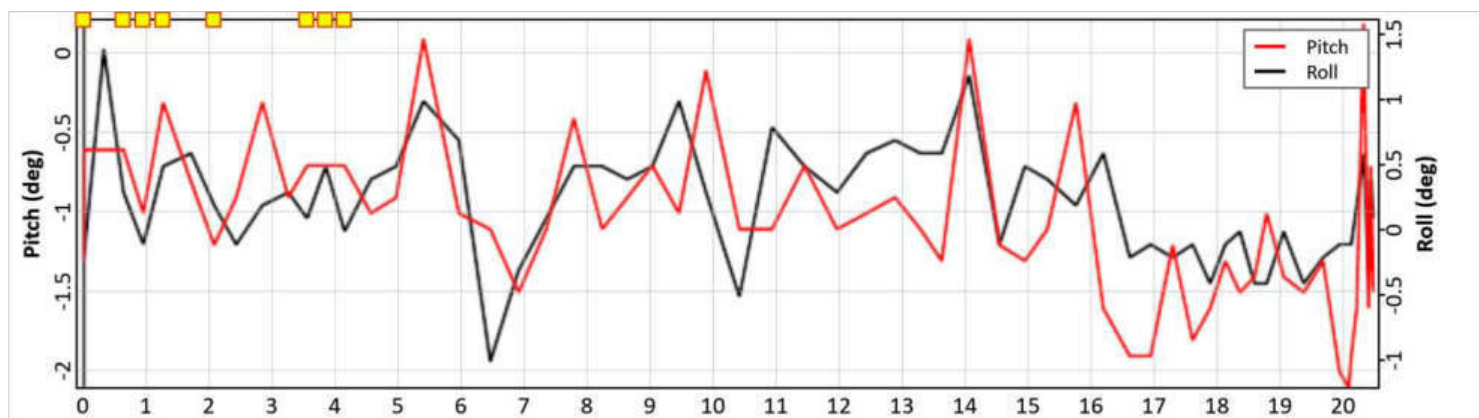
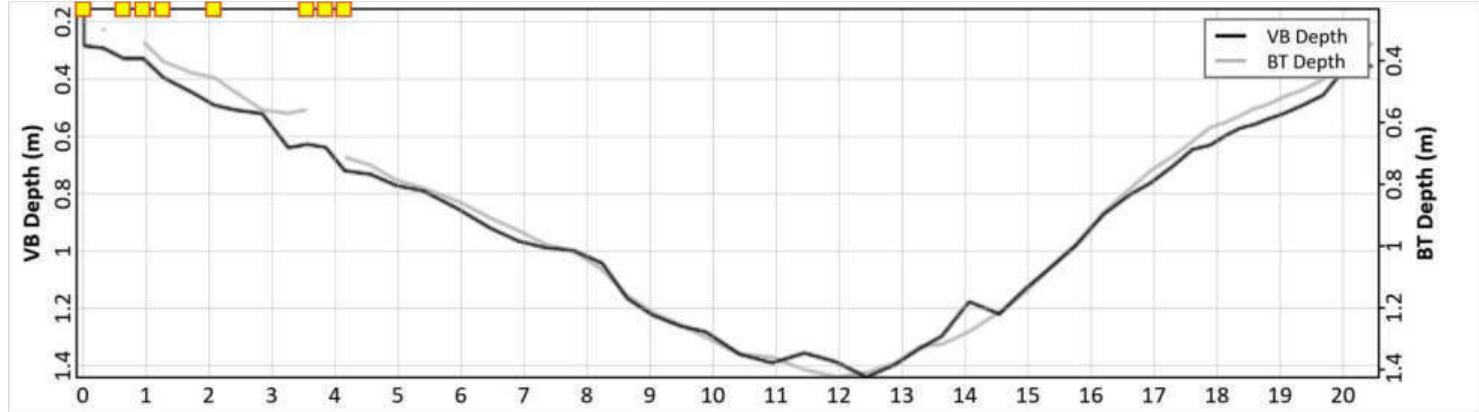
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Tr02 = 02-Transect_20220920133557;																	

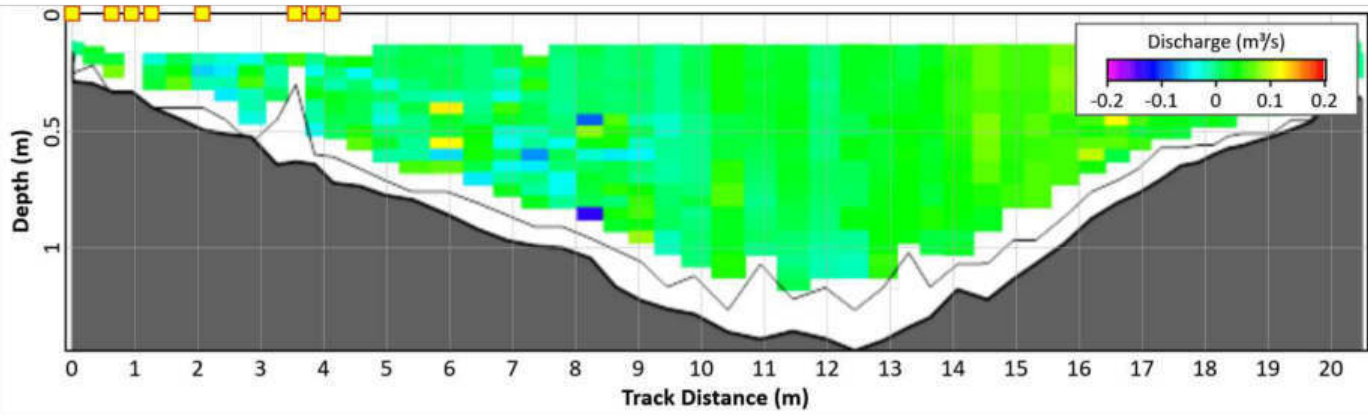
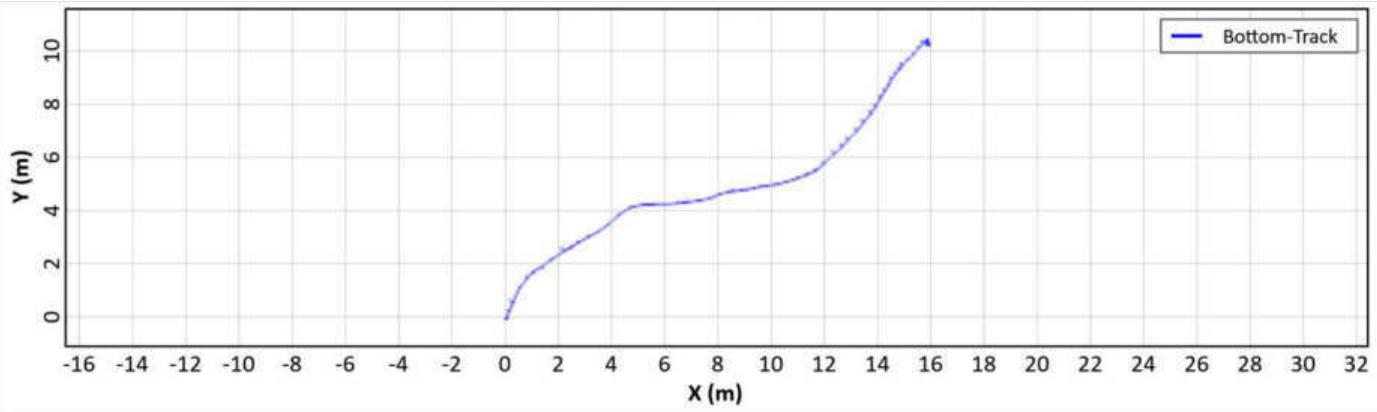
Comments																	
01-Transect_20220920133157 - ;																	
02-Transect_20220920133557 - ;																	

Parameters and settings marked with a * are not constant for all files.

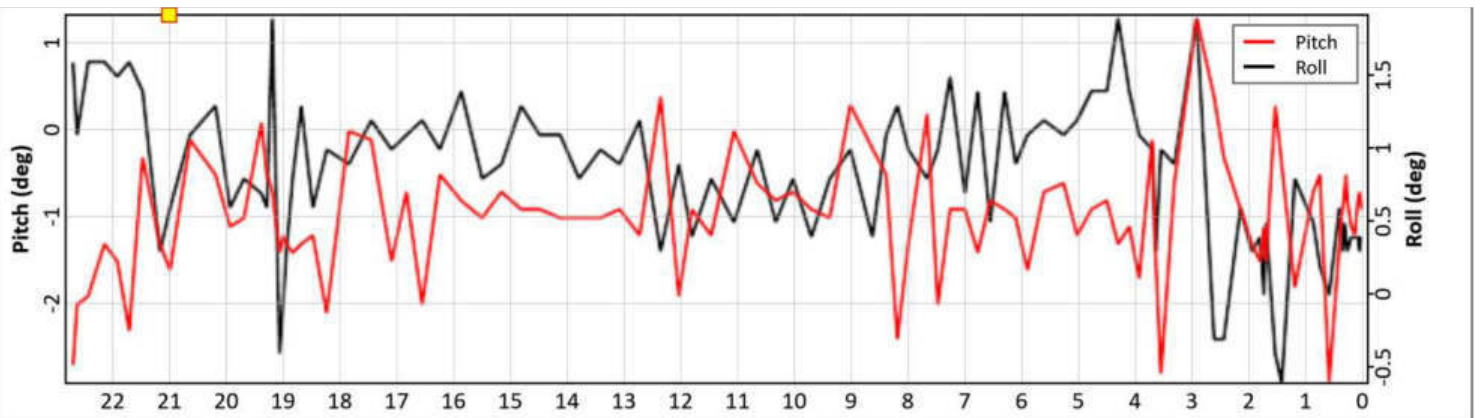
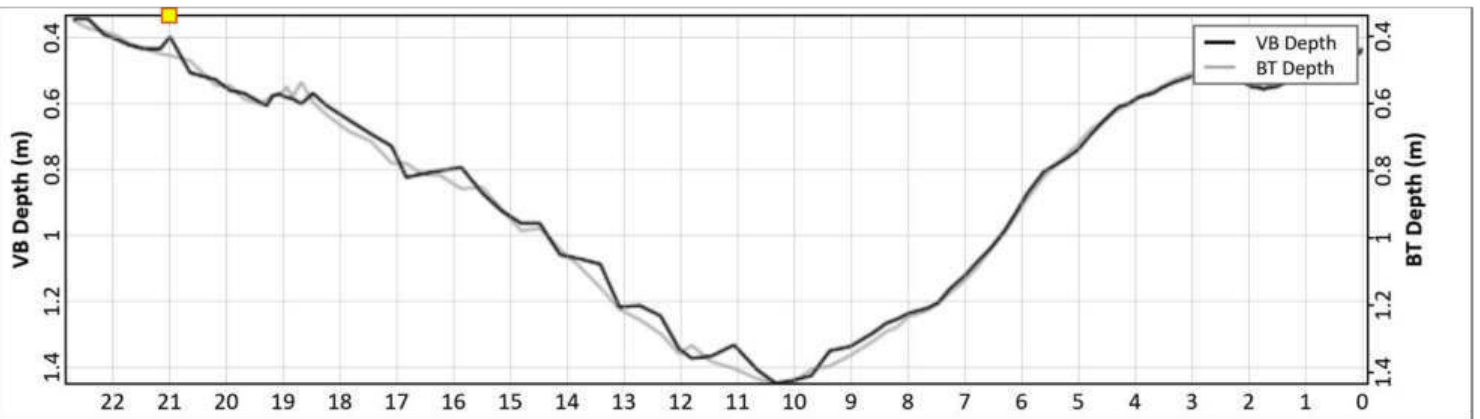
Report generated using SonTek RSQ v2.1

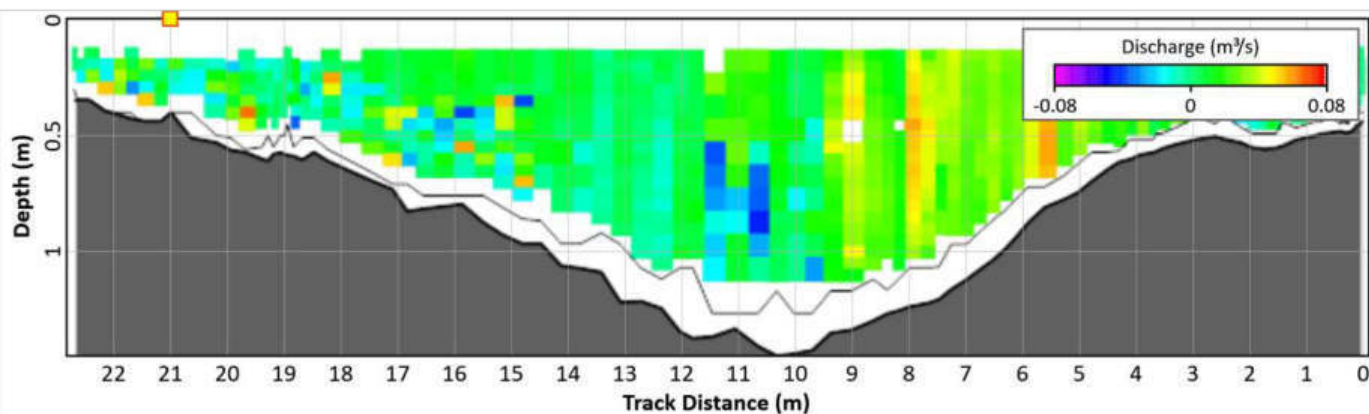
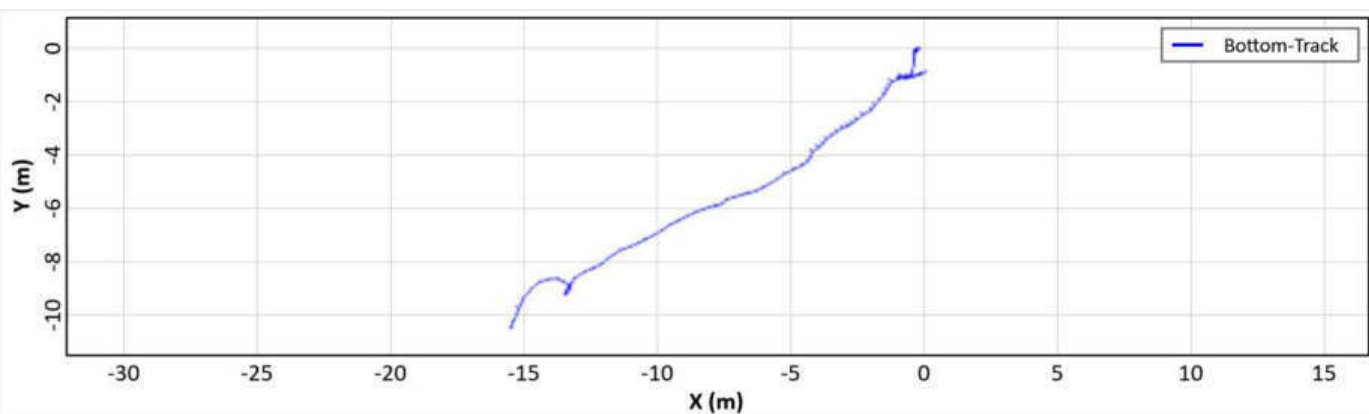
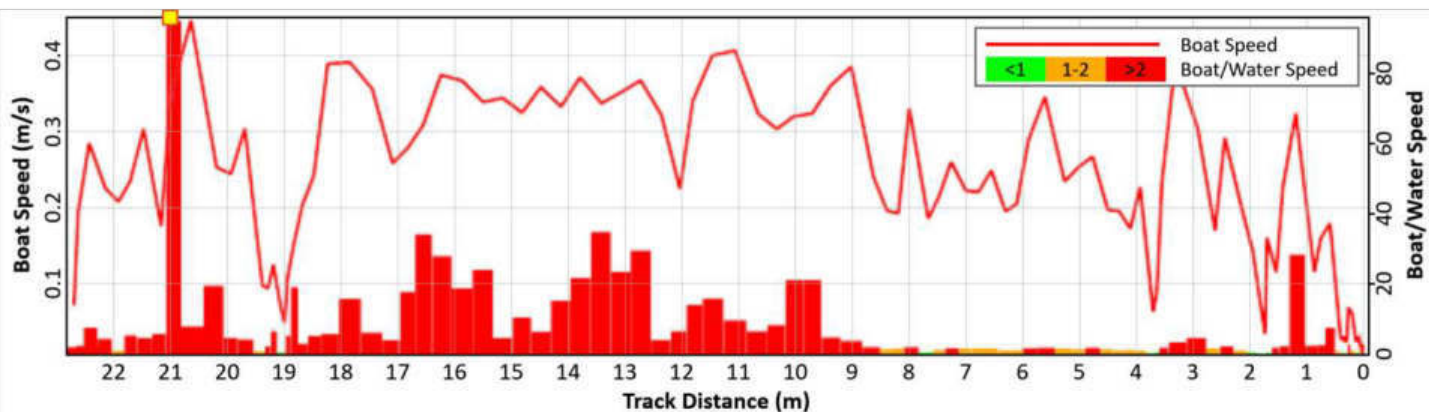
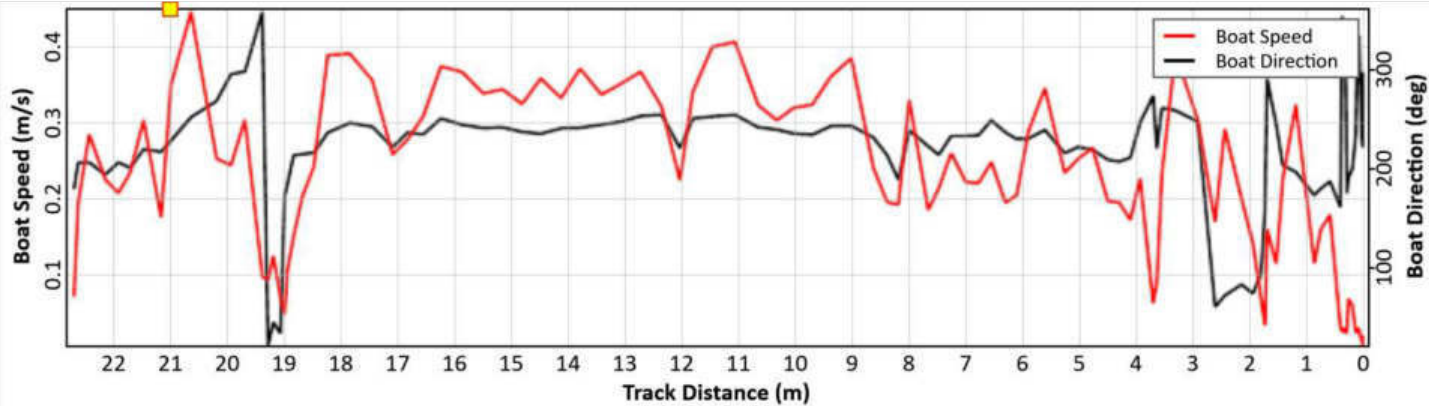
01-Transect_20220920133157 -





02-Transect_20220920133557 -





Discharge Measurement Summary

Date Measured: 2022-09-20

Site Information		Measurement Information
Site Name	Malta6_20.09.2022	Operator
Station Number		Vessel
Location		Measurement Number

System Information		System Setup		Units	
Instrument Type	RS2	Transducer Depth (m)	0.06	Distance	m
Instrument Sub-Type	RS5	Screening Distance (m)	0	Velocity	m/s
Serial Number	RS522	Salinity (PSS-78)	0	Area	m²
	13002	Magnetic Declination (deg)	1	Discharge	m³/s
Firmware Version	1.25			Temperature	°C

Discharge Calculation Settings				Discharge Results	
Track Reference	Bottom-Track	Left Method	Slope	Width (m)	25.385
Depth Reference	Vertical Beam	Right Method	Slope	Area (m²)	15.0550
Coordinate System	ENU	Top Fit Type	Power Fit		7
Moving Bed Correction	None	Bottom Fit Type	Power Fit	Mean Speed (m/s)	0.0567
				Total Q (m³/s)	0.856
				Max Depth (m)	1.369
				Max Speed (m/s)	0.6518

Measurement Results																	
Tr #		Start Time (UTC +3)	Durati on	Track Dista nce (m)	DMG (m)	Width (m)	Area (m²)	Boat Spee d (m/ s)	Mean Spee d (m/ s)	Left Q (m³/s)	Right Q (m³/s)	Top Q (m³/s)	Botto m Q (m³/s)	Middl e Q (m³/s)	Total Q (m³/s)	Total Q Corre cted (m³/s)	% Mea sure d
01	L	14:00:39	00:02:25	17.301	12.27	29.27	15.28997	0.1146	0.0671	0.0133	0.1985	0.13	0.1421	0.5416	1.0255		52.81
02	R	14:03:32	00:01:34	16.327	14.499	21.499	14.82017	0.1408	0.0463	0.0048	0.0063	0.1053	0.1209	0.449	0.6864		65.41
Mean				16.814	13.385	25.385	15.05507	0.1277	0.0567	0.0091	0.1024	0.1177	0.1315	0.4953	0.856	0	59.11
Std Dev				0.487	1.114	3.886	0.2349	0.0131	0.0104	0.0042	0.0961	0.0123	0.0106	0.0463	0.1695	0	6.3
COV				0.029	0.083	0.153	0.0156	0.1025	0.183	0.466	0.9382	0.1049	0.0807	0.0935	0.1981	0	10.66

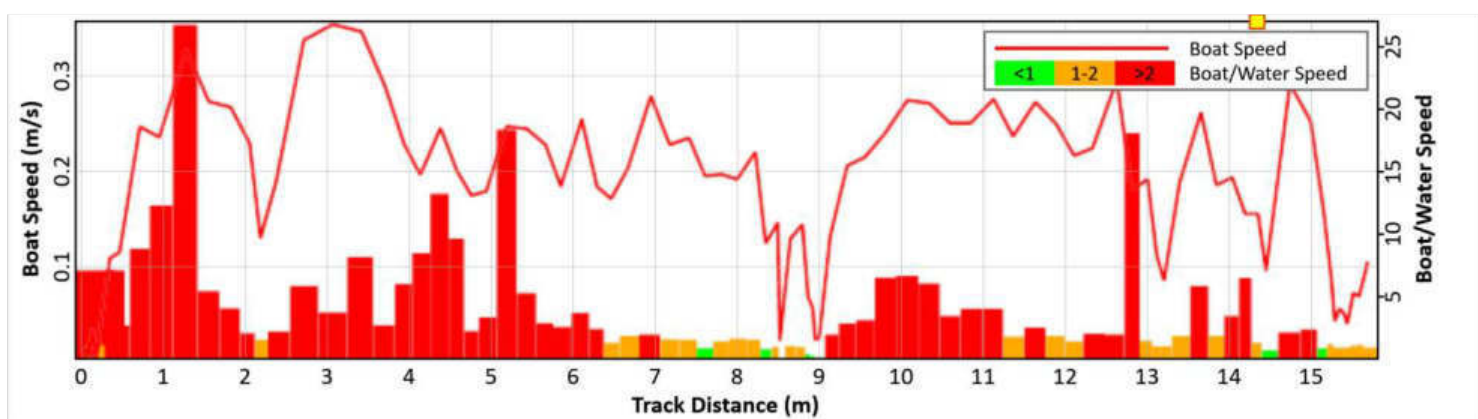
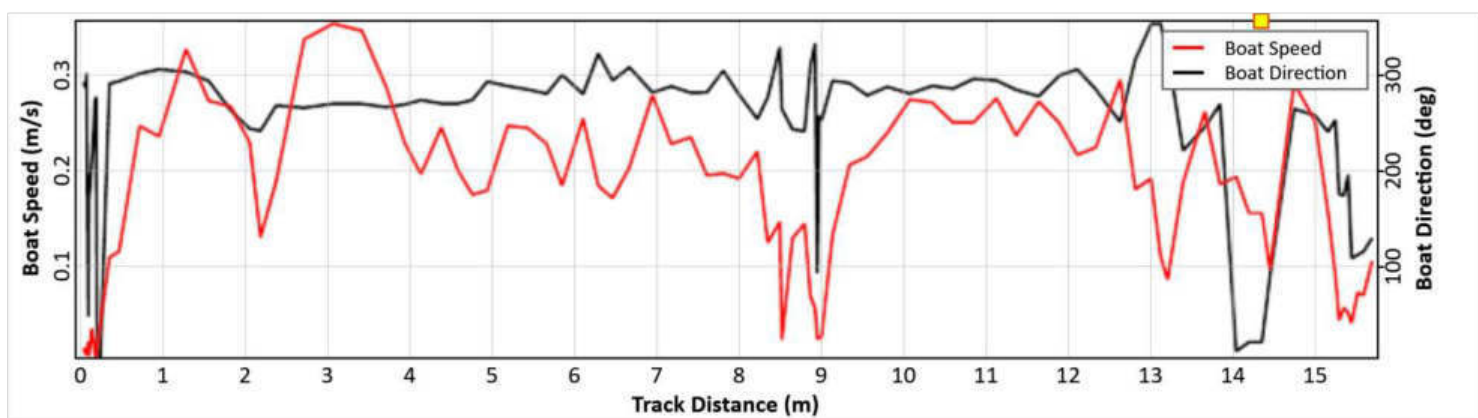
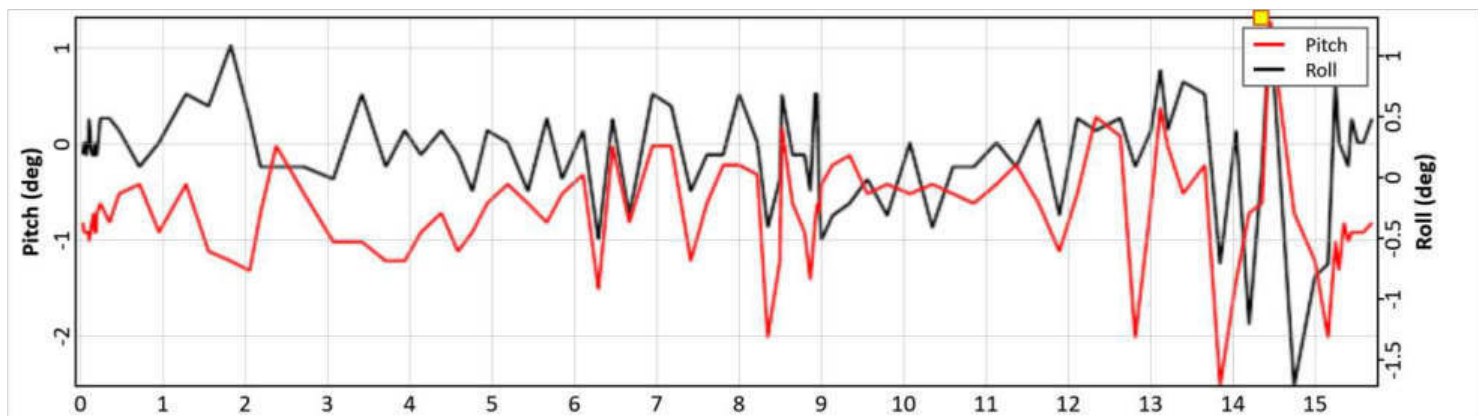
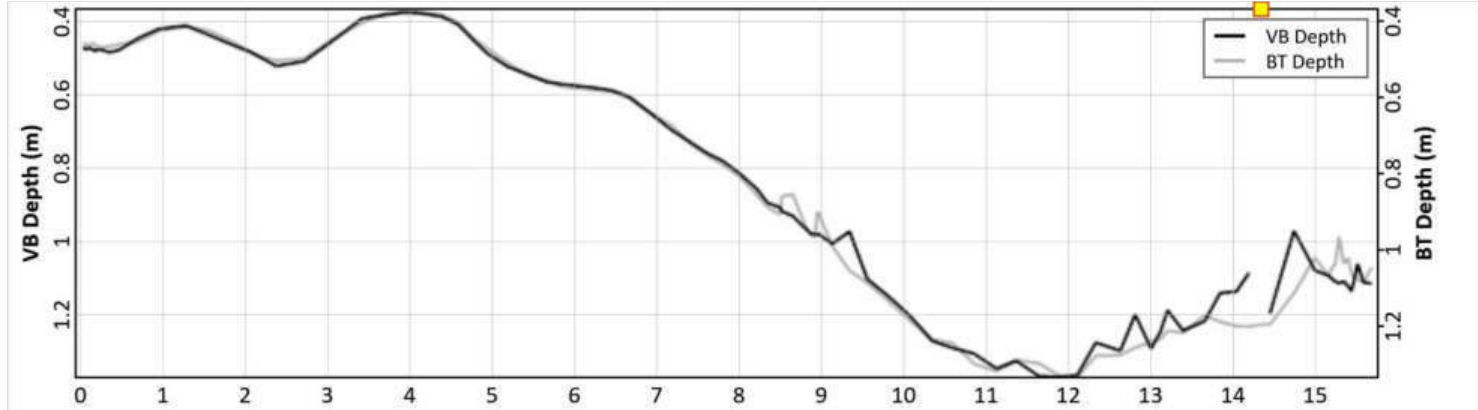
Exposure Time: 00:03:59																	
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Tr02 = 02-Transect_20220920140308;																	

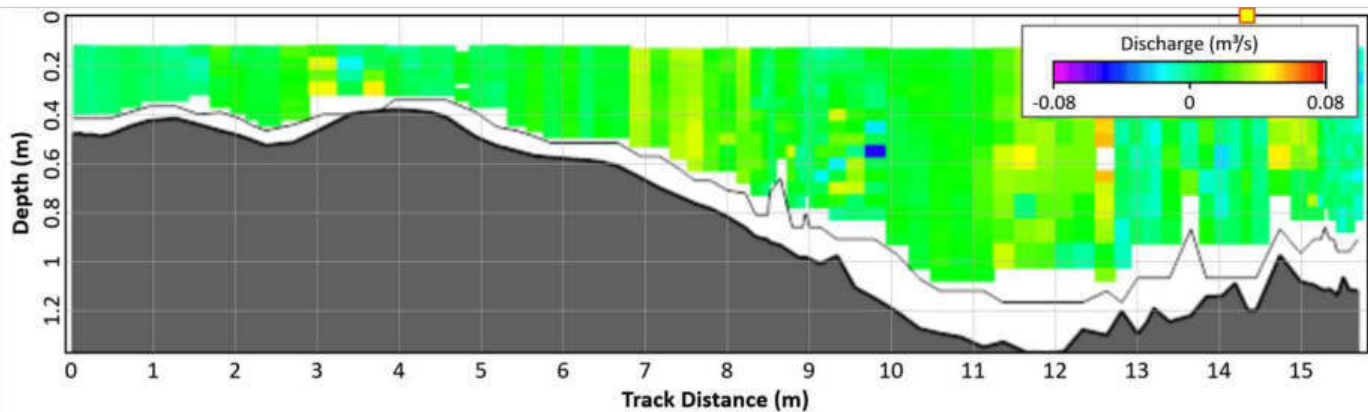
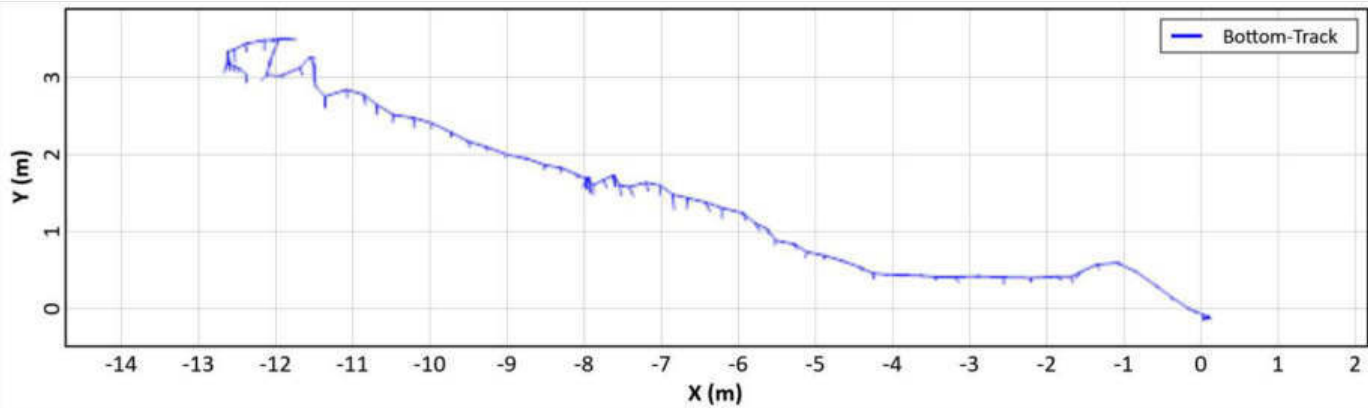
Comments																	
01-Transect_20220920135902 - ;																	
02-Transect_20220920140308 - ;																	

Parameters and settings marked with a * are not constant for all files.

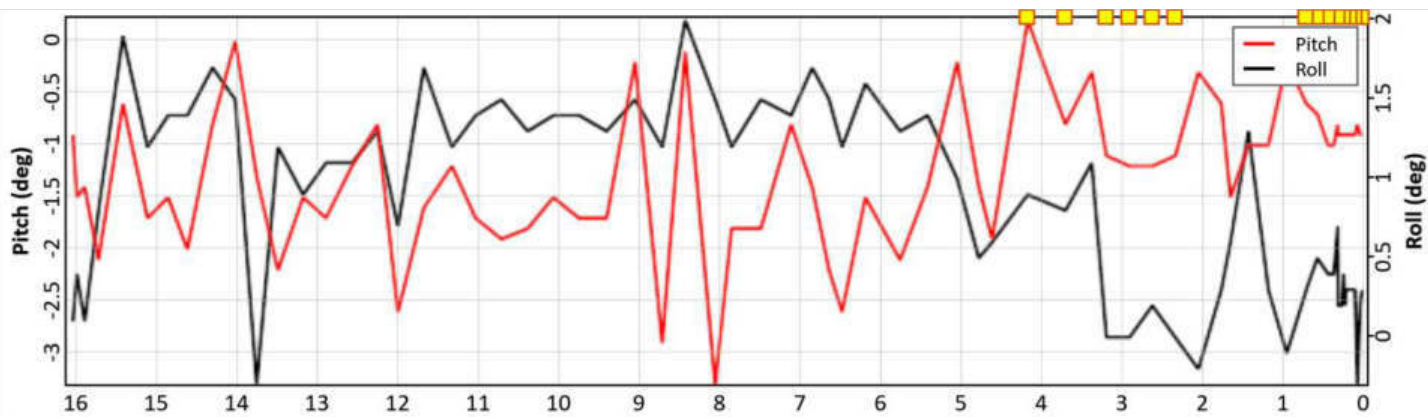
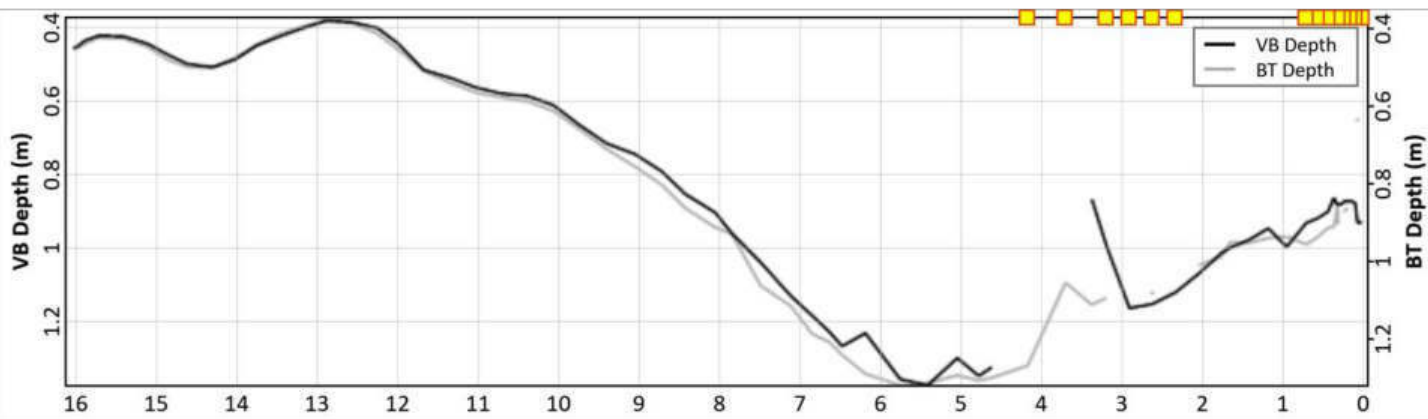
Report generated using SonTek RSQ v2.1

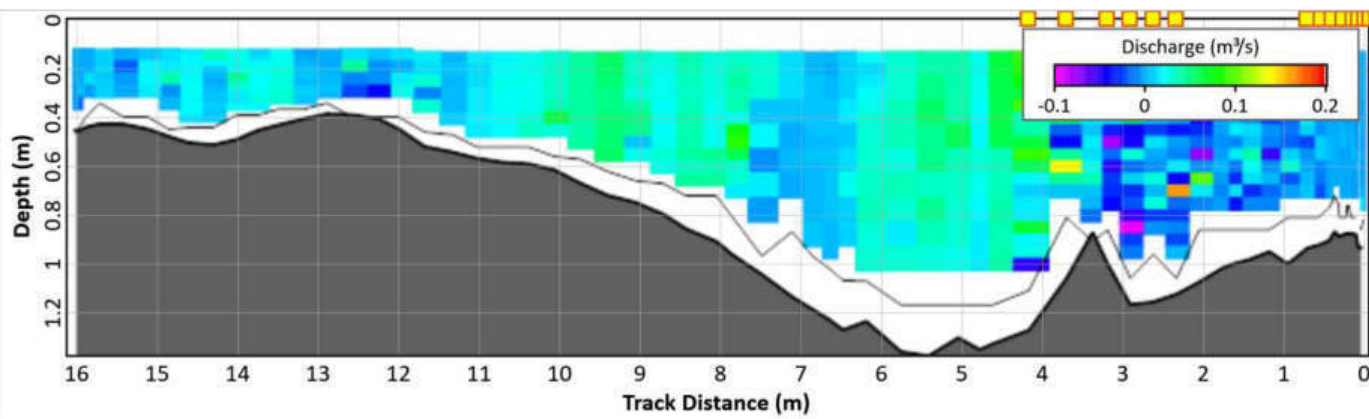
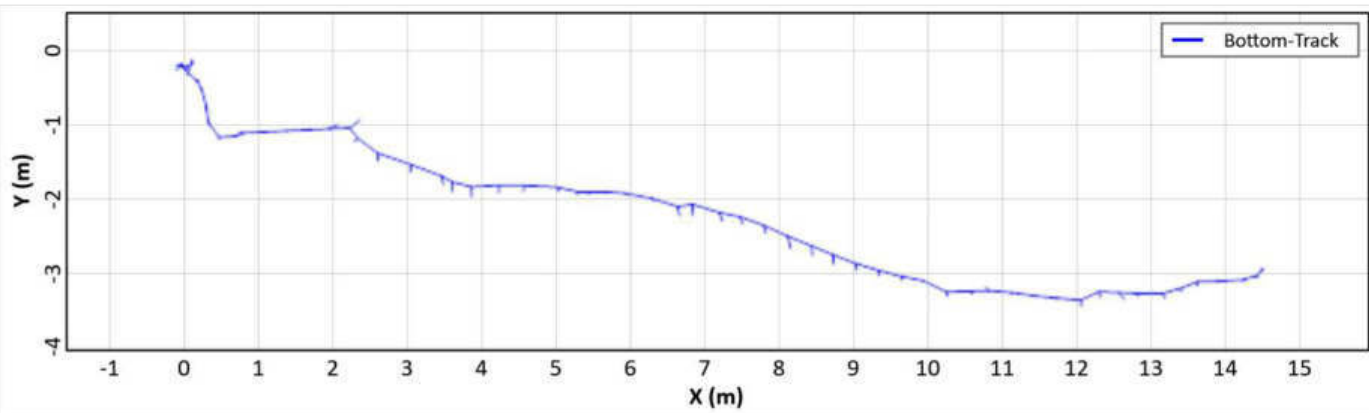
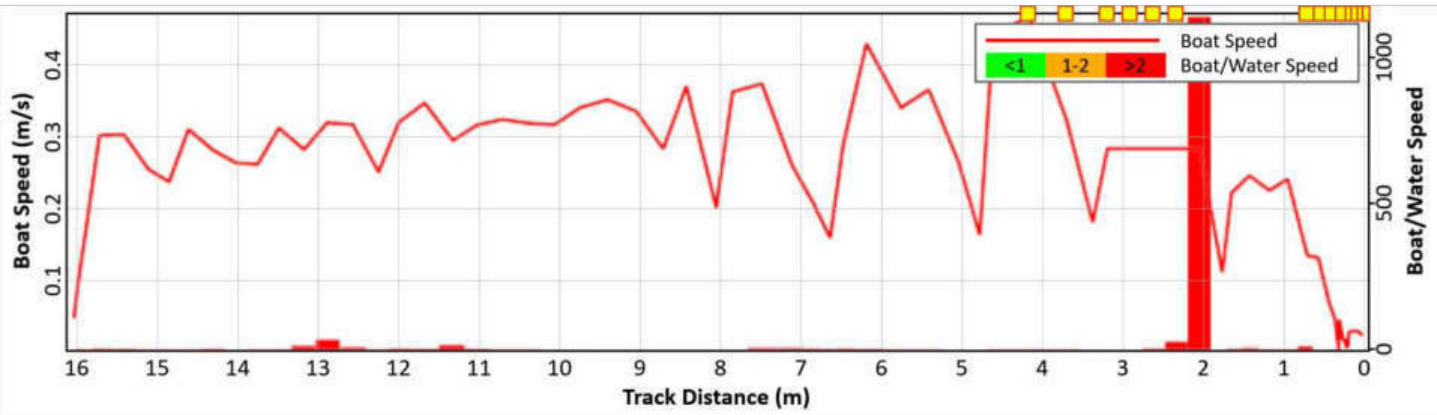
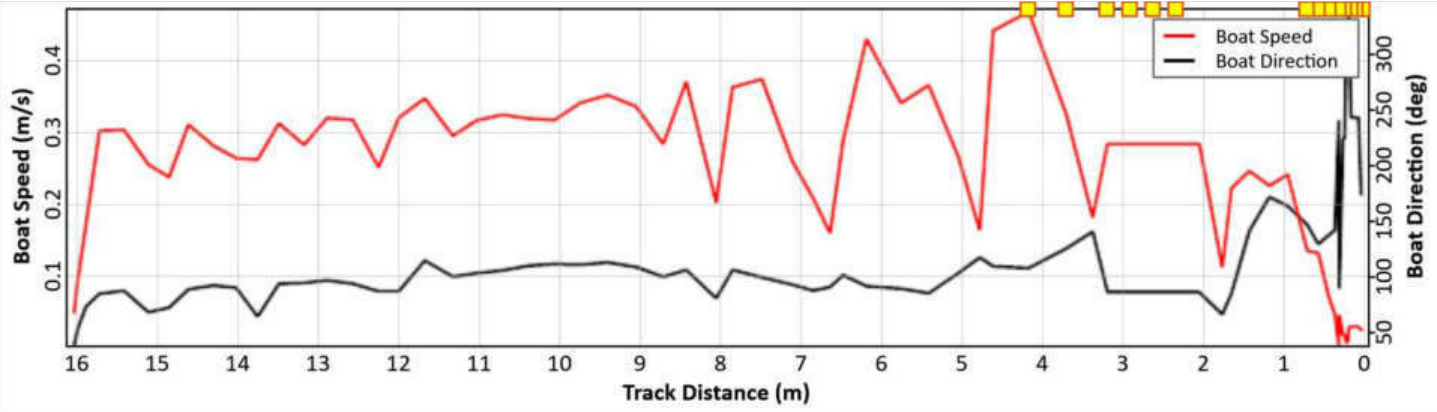
01-Transect_20220920135902 -





02-Transect_20220920140308 -





Discharge Measurement Summary

Date Measured: 2022-09-20

Site Information		Measurement Information
Site Name	Malta7_20.09.2022	Operator
Station Number		Vessel
Location		Measurement Number

System Information		System Setup	Units
Instrument Type	RS2	Transducer Depth (m)	0.06
Instrument Sub-Type	RS5	Screening Distance (m)	0
Serial Number	RS522	Salinity (PSS-78)	0
	13002	Magnetic Declination (deg)	1
Firmware Version	1.25		
			Distance m
			Velocity m/s
			Area m²
			Discharge m³/s
			Temperature °C

Discharge Calculation Settings				Discharge Results	
Track Reference	Bottom-Track	Left Method	Slope	Width (m)	17.163
Depth Reference	Vertical Beam	Right Method	Slope	Area (m²)	7.4245
Coordinate System	ENU	Top Fit Type	Power Fit	Mean Speed (m/s)	0.1483
Moving Bed Correction	None	Bottom Fit Type	Power Fit	Total Q (m³/s)	1.1012
				Max Depth (m)	0.727
				Max Speed (m/s)	0.7529

Measurement Results																	
Tr #		Start Time (UTC +3)	Durati on	Track Dista nce (m)	DMG (m)	Width (m)	Area (m²)	Boat Spee d (m/ s)	Mean Spee d (m/ s)	Left Q (m³/s)	Right Q (m³/s)	Top Q (m³/s)	Botto m Q (m³/s)	Middl e Q (m³/s)	Total Q (m³/s)	Total Q Corre cted (m³/s)	% Mea sure d
01	R	14:34:38	00:03:15	19.746	15.69	16.69	7.36409	0.0982	0.1473	-0.0005	0.0006	0.344	0.2317	0.5086	1.0845		46.9
02	L	14:38:11	00:01:38	17.59	16.635	17.635	7.4849	0.1599	0.1494	0	0	0.3309	0.2425	0.5447	1.118		48.72
Mean				18.668	16.163	17.163	7.4245	0.1291	0.1483	-0.0003	0.0003	0.3375	0.2371	0.5267	1.1012	0	47.81
Std Dev				1.078	0.473	0.473	0.06041	0.0308	0.001	0.0002	0.0003	0.0066	0.0054	0.018	0.0167	0	0.91
COV				0.058	0.029	0.028	0.00814	0.2389	0.0071	-0.871	1	0.0195	0.0227	0.0342	0.0152	0	1.9

Exposure Time: 00:04:53

Tr01 = 01-Transect_20220920143301;

Tr02 = 02-Transect_20220920143756;

Comments

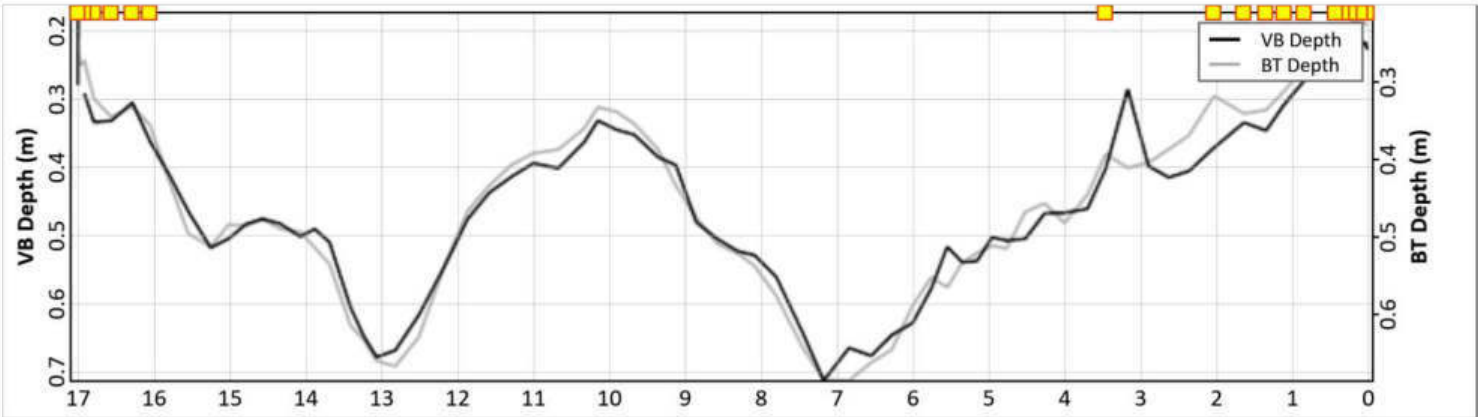
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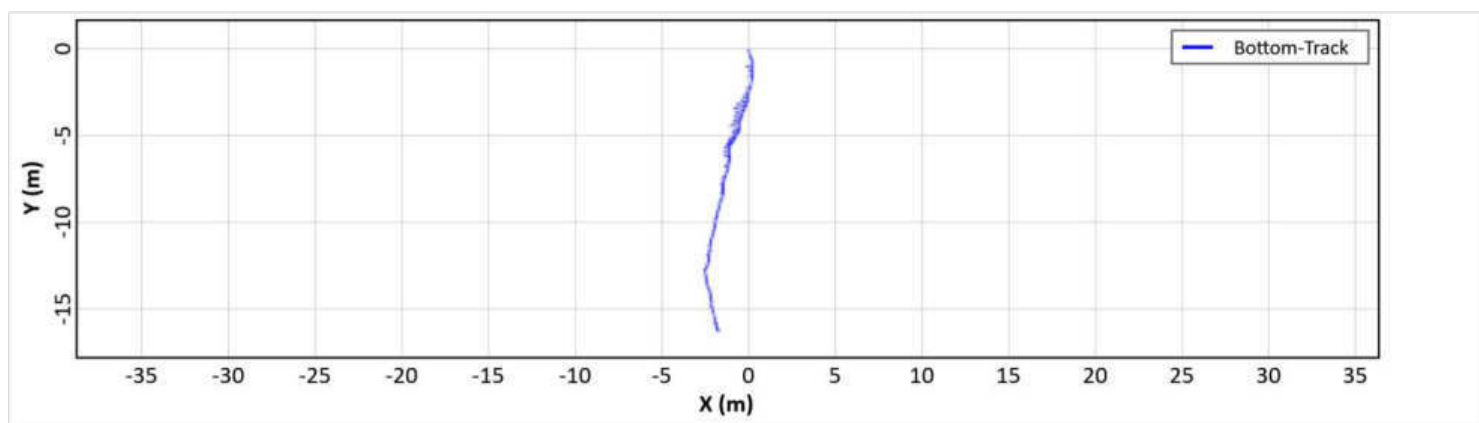
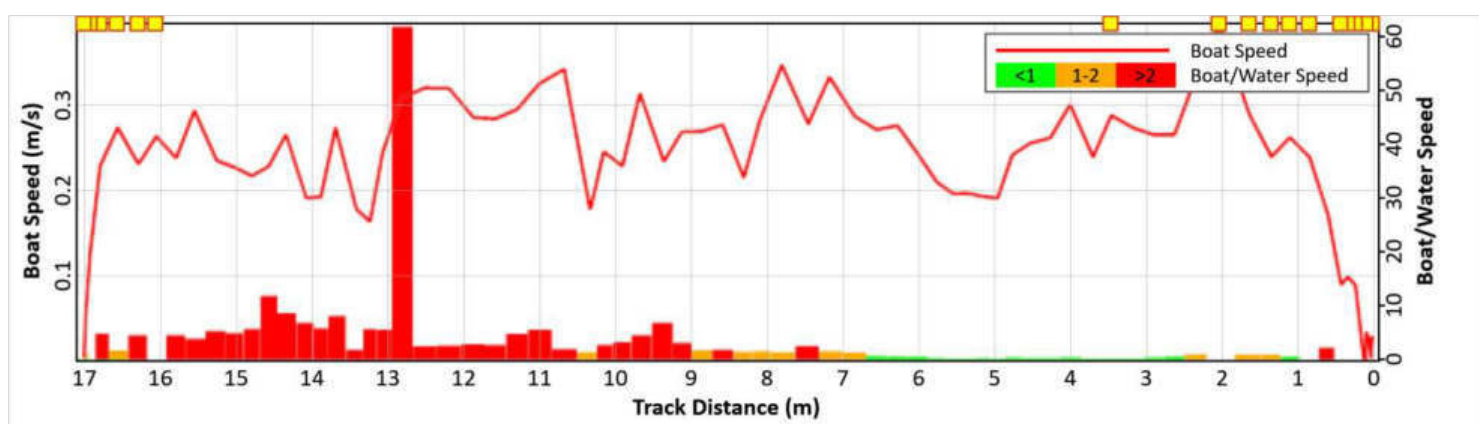
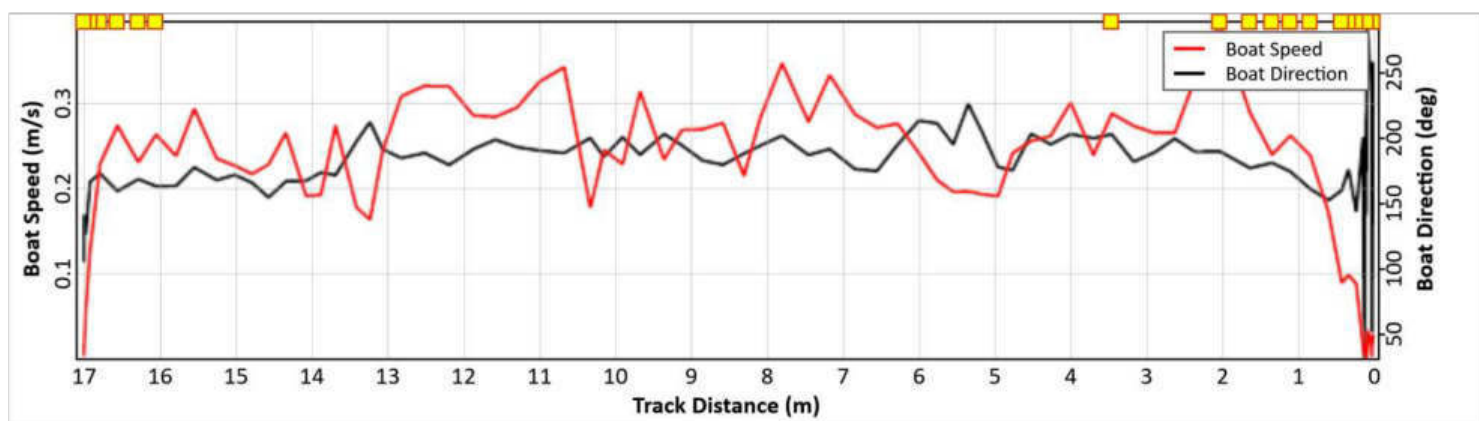
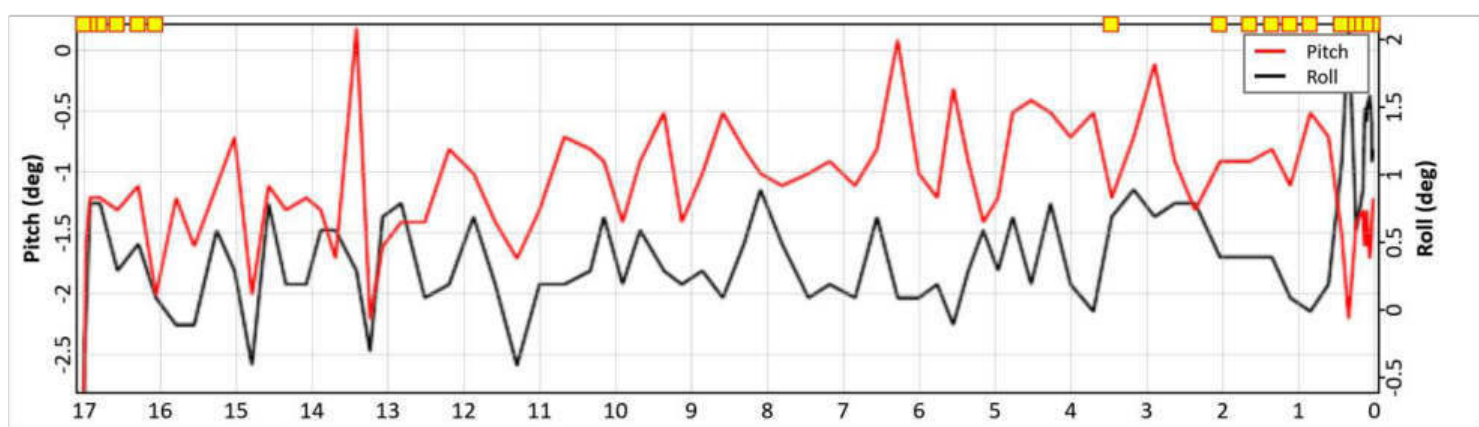
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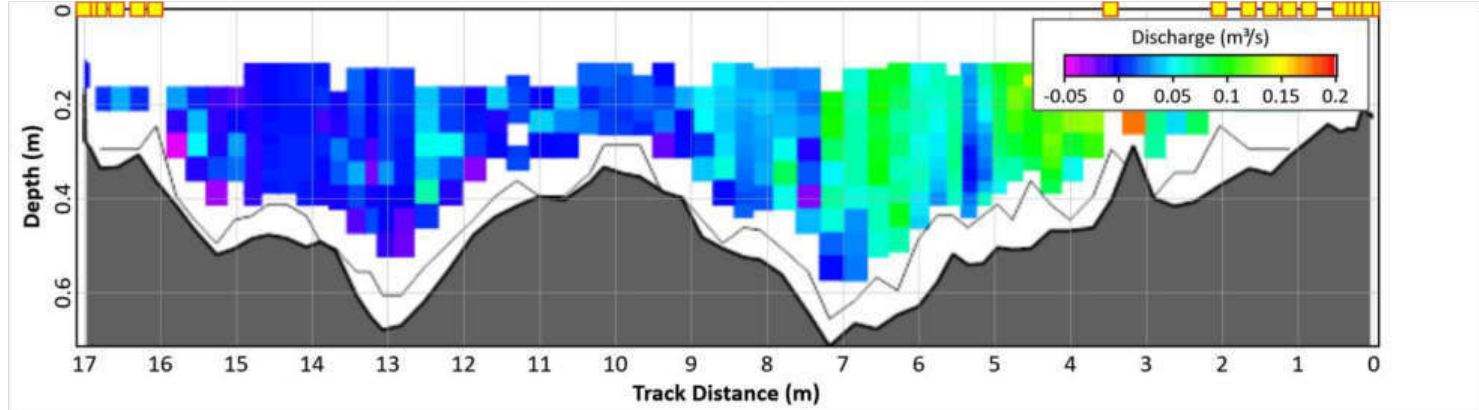
Parameters and settings marked with a * are not constant for all files.

Report generated using SonTek RSQ v2.1

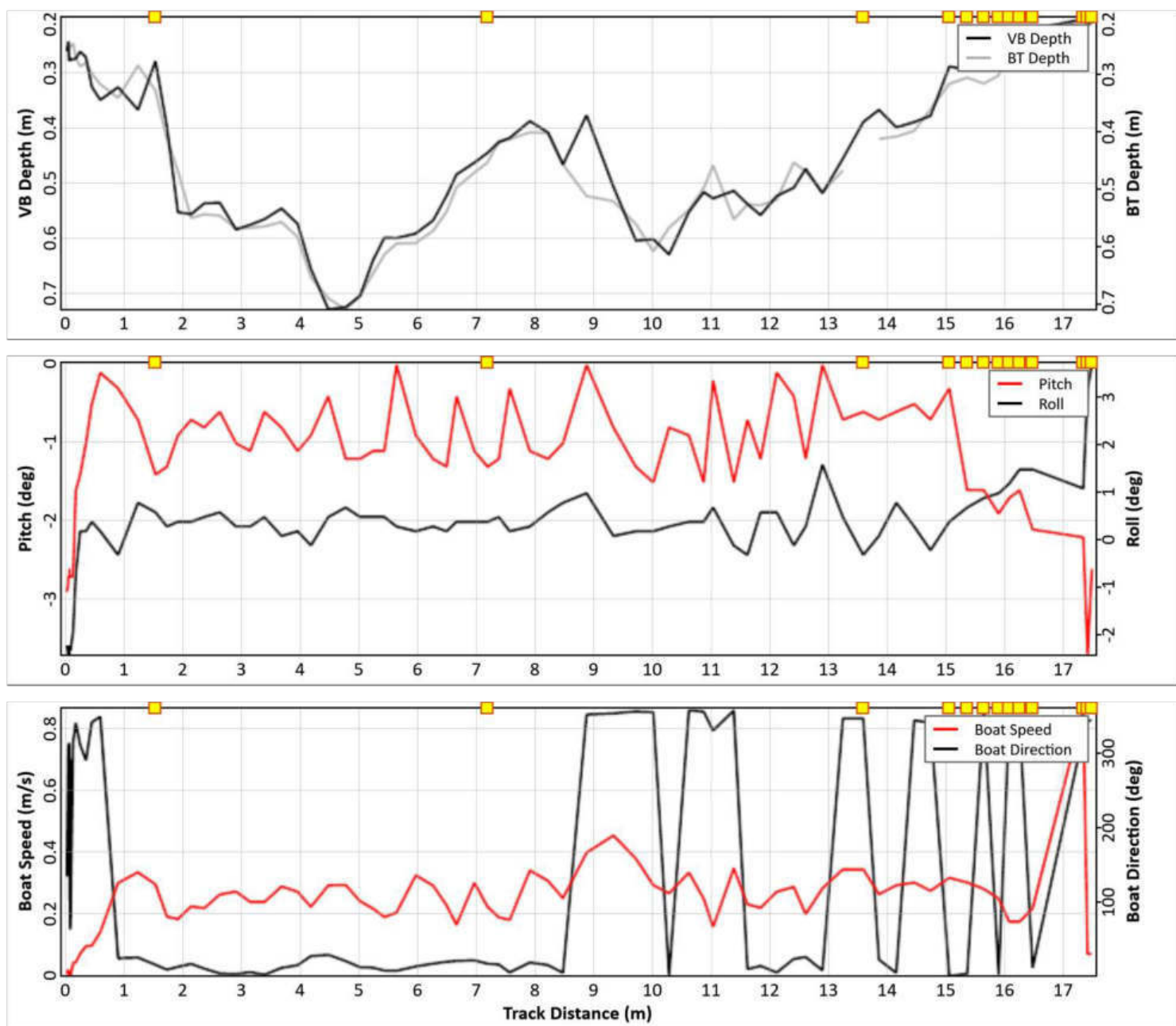
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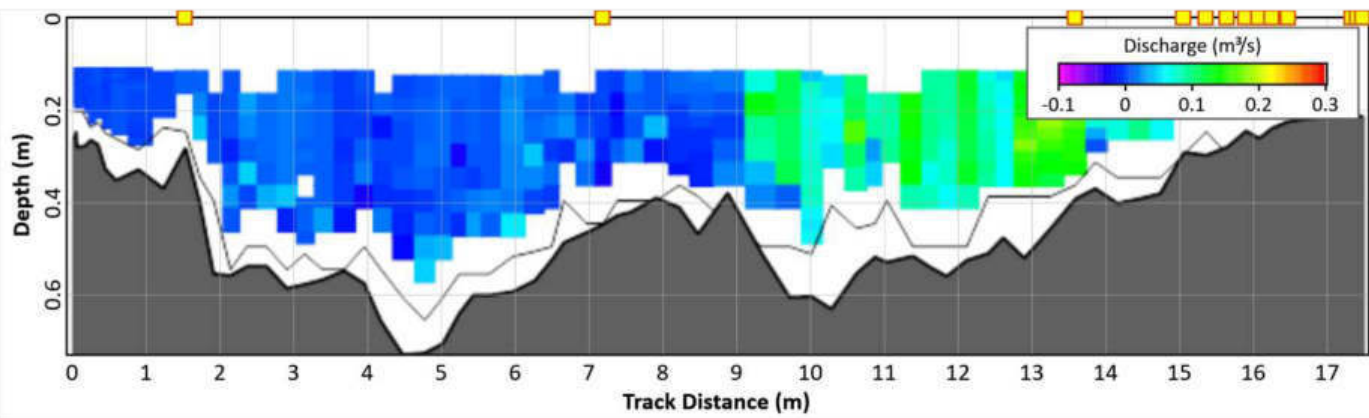
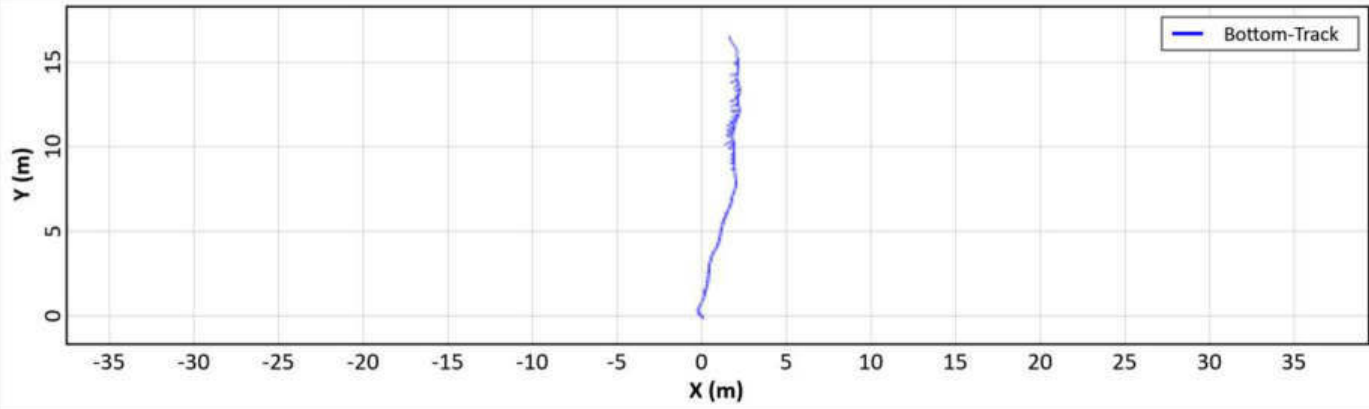
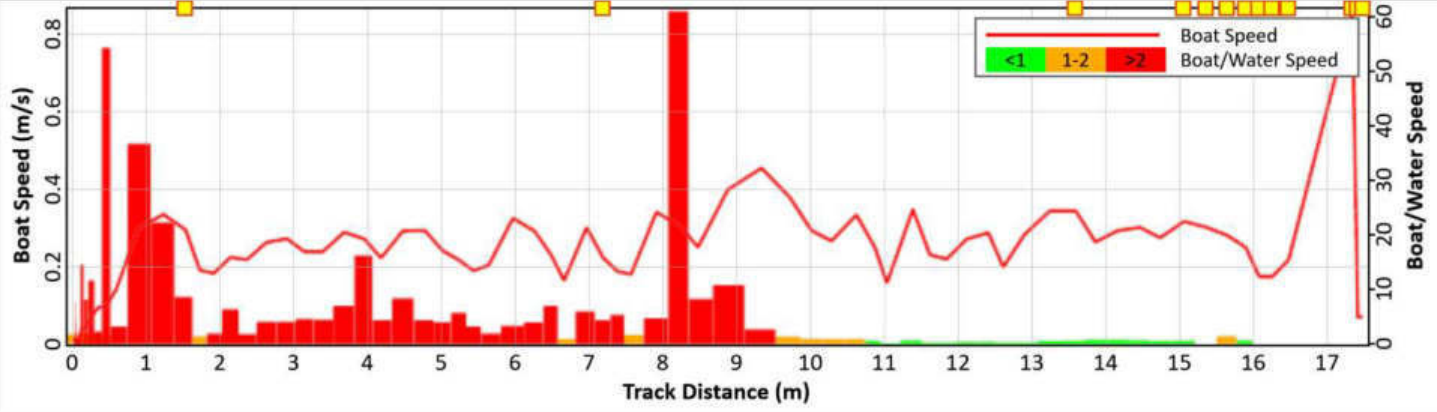






02-Transect_20220920143756 -





Discharge Measurement Summary

Date Measured: 2022-08-03

Site Information		Measurement Information
Site Name	503.08.2022	Operator
Station Number		Vessel
Location		Measurement Number

System Information		System Setup		Units	
Instrument Type	RS2	Transducer Depth (m)	0.06	Distance	m
Instrument Sub-Type	RS5	Screening Distance (m)	0	Velocity	m/s
Serial Number	RS522	Salinity (PSS-78)	0	Area	m²
	13002	Magnetic Declination (deg)	2	Discharge	m³/s
Firmware Version	1.25			Temperature	°C

Discharge Calculation Settings				Discharge Results	
Track Reference	Bottom-Track	Left Method	Slope	Width (m)	13.731
Depth Reference	Vertical Beam	Right Method	Slope	Area (m²)	15.3609
Coordinate System	ENU	Top Fit Type	Power Fit		9
Moving Bed Correction	None	Bottom Fit Type	Power Fit	Mean Speed (m/s)	0.2263
				Total Q (m³/s)	3.4756
				Max Depth (m)	1.731
				Max Speed (m/s)	0.7211

Measurement Results																		
Tr #		Start Time (UTC +3)	Durati on	Track Dista nce (m)	DMG (m)	Width (m)	Area (m²)	Boat Spee d (m/ s)	Mean Spee d (m/ s)	Left Q (m³/s)	Right Q (m³/s)	Top Q (m³/s)	Botto m Q (m³/s)	Middl e Q (m³/s)	Total Q (m³/s)	Total Q Corre cted (m³/s)	% Mea sure d	
01	L	15:05:54	00:02:43	13.518	12.087	13.587	15.30037	0.0795	0.2347	-0.0012	-0.0092	0.3239	0.6237	2.6543	3.5916		73.9	
02	R	15:08:50	00:02:04	13.914	12.375	13.875	15.42161	0.1079	0.2179	-0.001	-0.0046	0.2966	0.4986	2.5701	3.3596		76.5	
Mean				13.716	12.231	13.731	15.36099	0.0937	0.2263	-0.0011	-0.0069	0.3103	0.5612	2.6122	3.4756	0	75.2	
Std Dev				0.198	0.144	0.144	0.06062	0.0142	0.0084	0.0001	0.0023	0.0137	0.0626	0.0421	0.116	0	1.3	
COV				0.014	0.012	0.01	0.00395	0.1512	0.0373	-0.0876	-0.3329	0.044	0.1115	0.0161	0.0334	0	1.72	

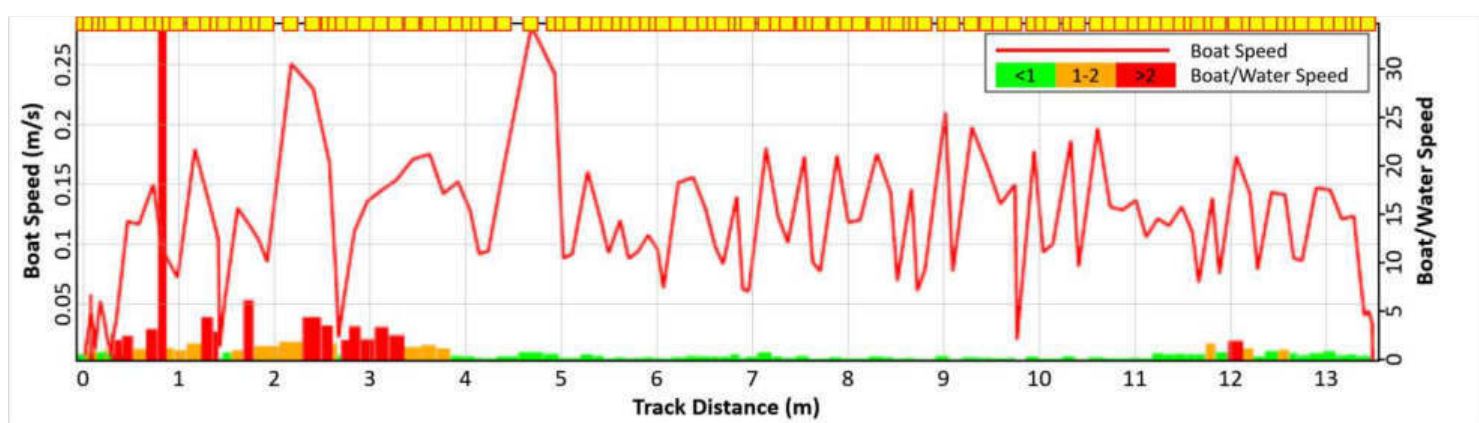
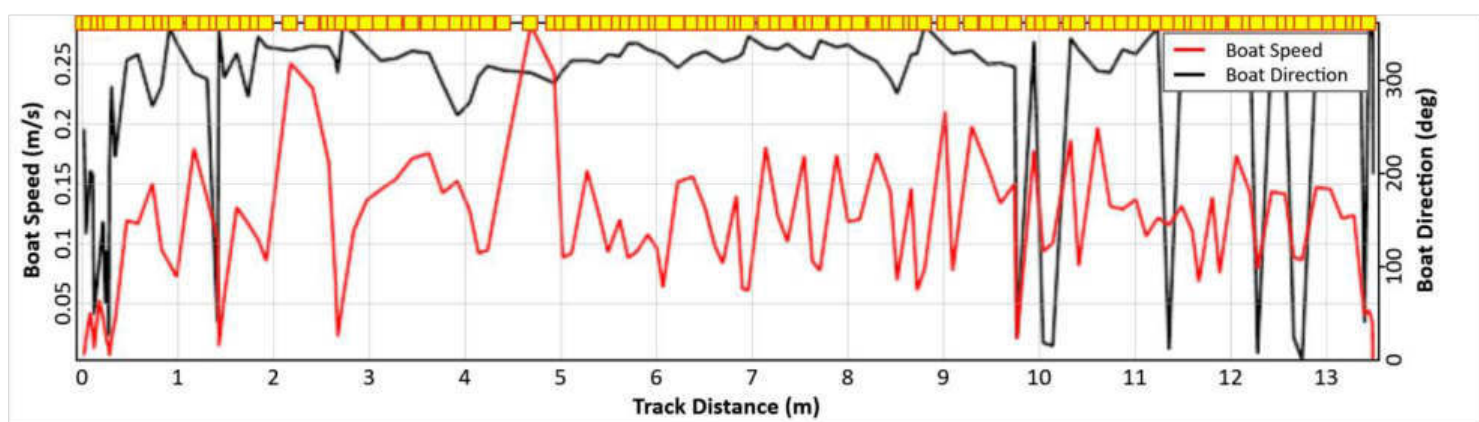
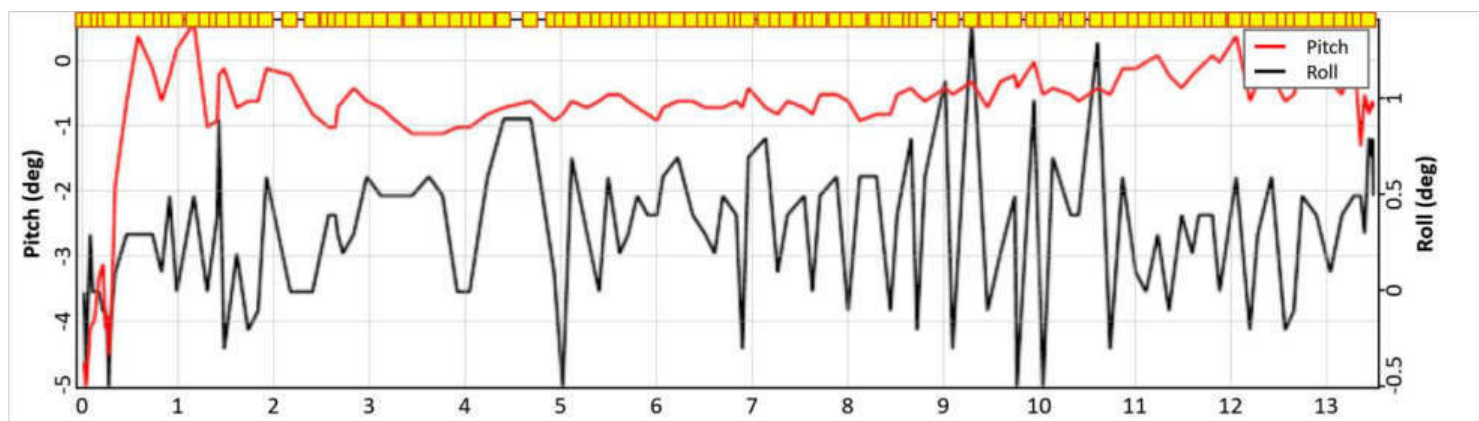
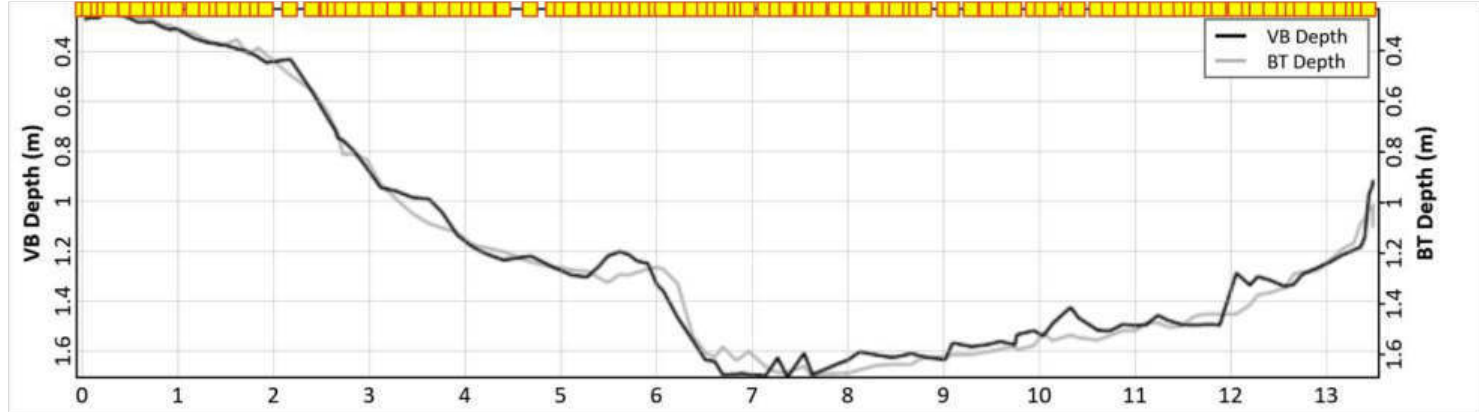
Exposure Time: 00:04:47																
Tr01 = 01-Transect_20220803150411;																
Tr02 = 02-Transect_20220803150842;																

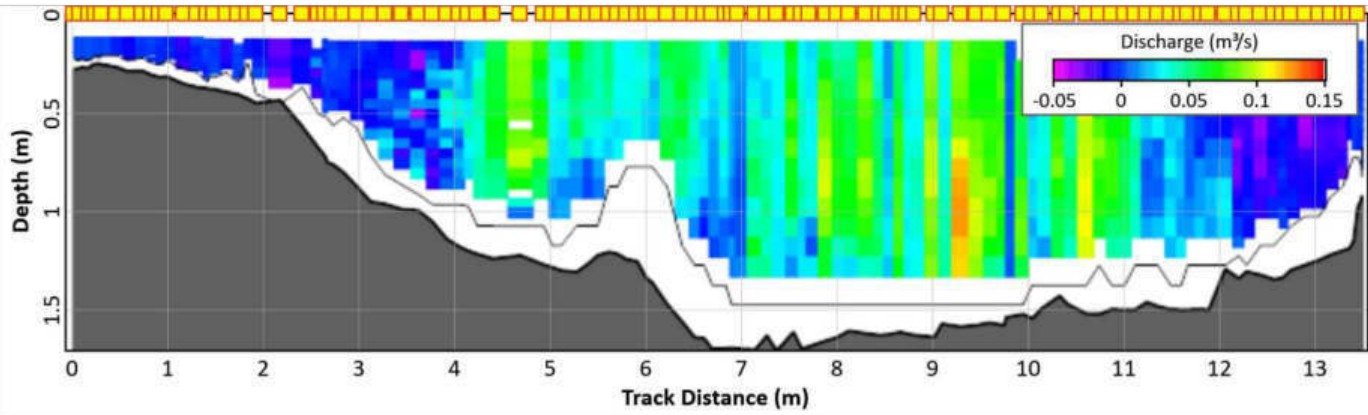
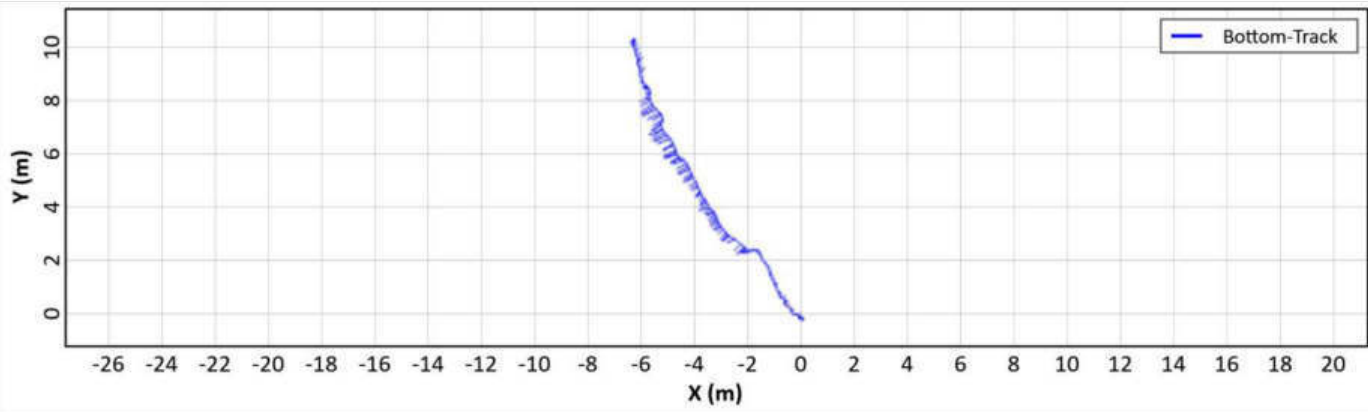
Comments																
01-Transect_20220803150411 - ;																
02-Transect_20220803150842 - ;																

Parameters and settings marked with a * are not constant for all files.

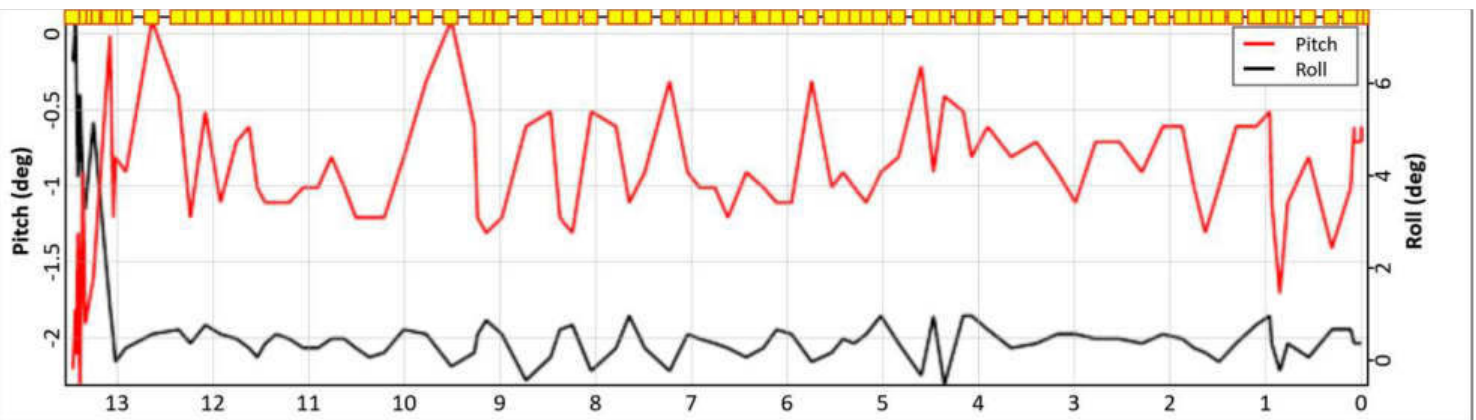
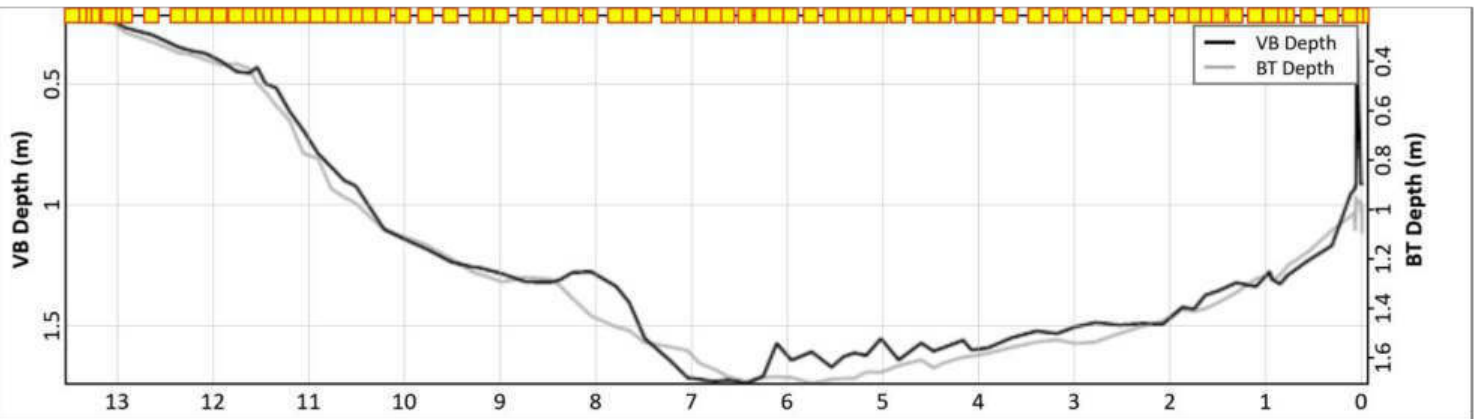
Report generated using SonTek RSQ v2.1

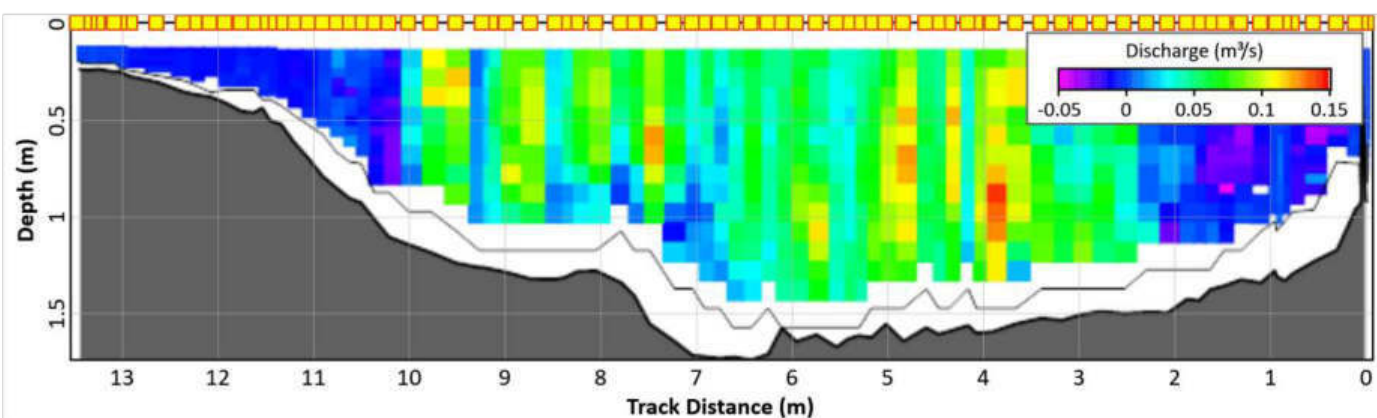
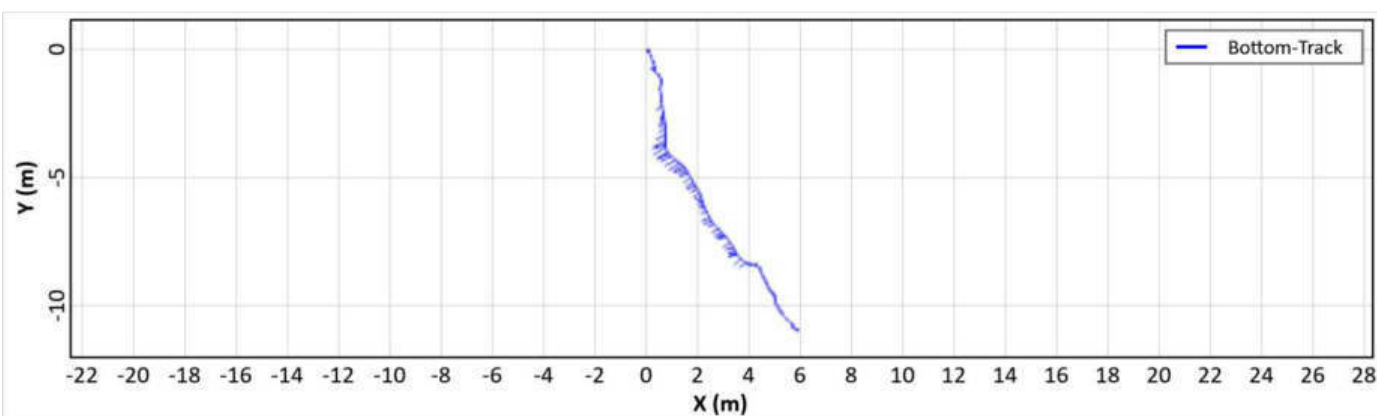
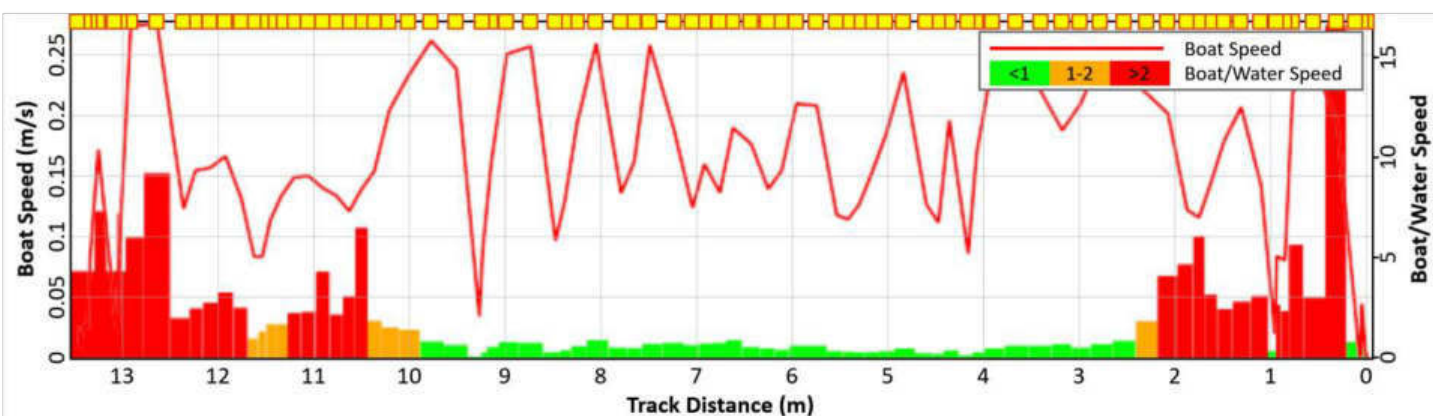
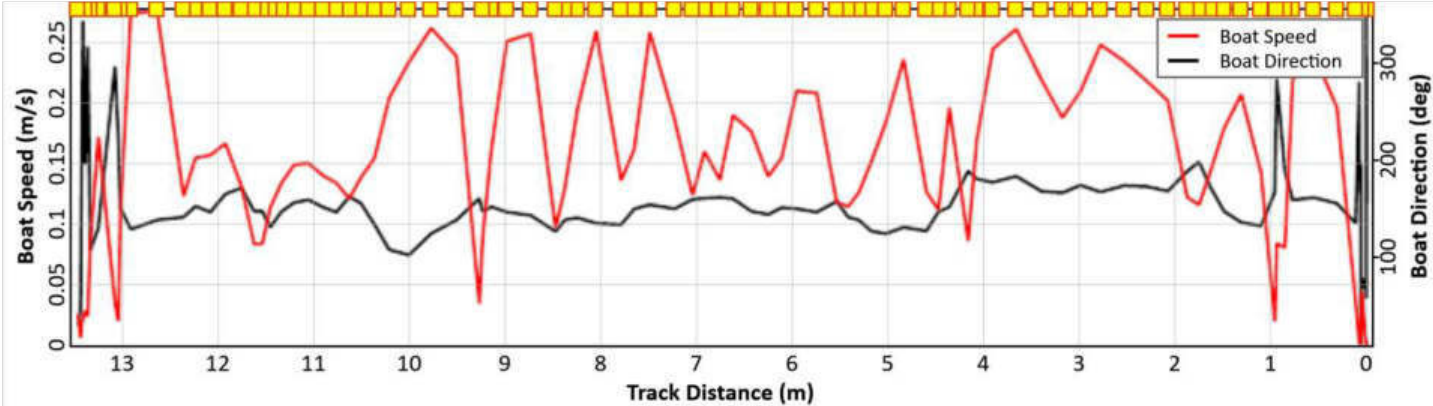
01-Transect_20220803150411 -





02-Transect_20220803150842 -





Discharge Measurement Summary

Date Measured: 2022-08-03

Site Information		Measurement Information
Site Name	303.08.2022	Operator
Station Number		Vessel
Location		Measurement Number

System Information		System Setup		Units	
Instrument Type	RS2	Transducer Depth (m)	0.06	Distance	m
Instrument Sub-Type	RS5	Screening Distance (m)	0	Velocity	m/s
Serial Number	RS522	Salinity (PSS-78)	0	Area	m ²
	13002	Magnetic Declination (deg)	2	Discharge	m ³ /s
Firmware Version	1.25			Temperature	°C

Discharge Calculation Settings				Discharge Results	
Track Reference	Bottom-Track	Left Method	Slope	Width (m)	18.954
Depth Reference	Vertical Beam	Right Method	Slope	Area (m²)	13.3964
Coordinate System	ENU	Top Fit Type	Power Fit		2
Moving Bed Correction	None	Bottom Fit Type	Power Fit	Mean Speed (m/s)	0.2432
				Total Q (m³/s)	3.2596
				Max Depth (m)	0.987
				Max Speed (m/s)	0.614

Measurement Results																	
Tr #		Start Time (UTC +3)	Durati on	Track Dista nce (m)	DMG (m)	Width (m)	Area (m²)	Boat Spee d (m/ s)	Mean Spee d (m/ s)	Left Q (m³/s)	Right Q (m³/s)	Top Q (m³/s)	Botto m Q (m³/s)	Middl e Q (m³/s)	Total Q (m³/s)	Total Q Corre cted (m³/s)	% Mea sure d
01	L	14:07:43	00:02:24	18.714	17.996	19.496	13.72957	0.1162	0.2482	0.0006	-0.0001	0.5345	0.4708	2.4016	3.4074		70.48
02	R	14:10:49	00:01:52	17.999	16.912	18.412	13.06327	0.1224	0.2382	-0.0009	0.0001	0.5339	0.4421	2.1366	3.1117		68.66
Mean				18.356	17.454	18.954	13.39642	0.1193	0.2432	-0.0002	0	0.5342	0.4565	2.2691	3.2596	0	69.57
Std Dev				0.357	0.542	0.542	0.33315	0.0031	0.005	0.0007	0.0001	0.0003	0.0144	0.1325	0.1479	0	0.91
COV				0.019	0.031	0.029	0.02487	0.026	0.0205	-4.5876	-5.4783	0.0005	0.0315	0.0584	0.0454	0	1.31

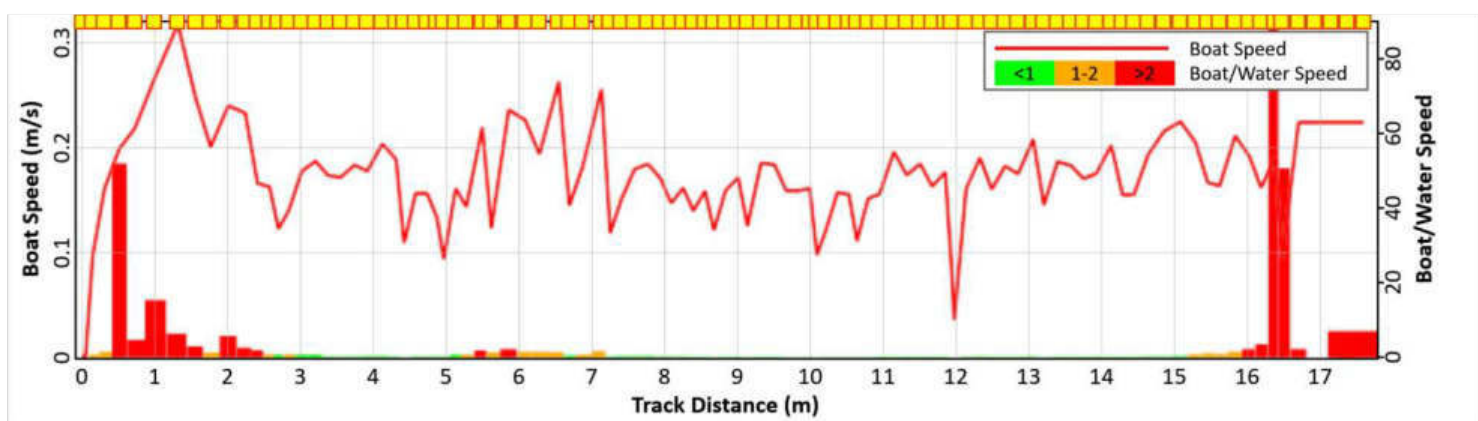
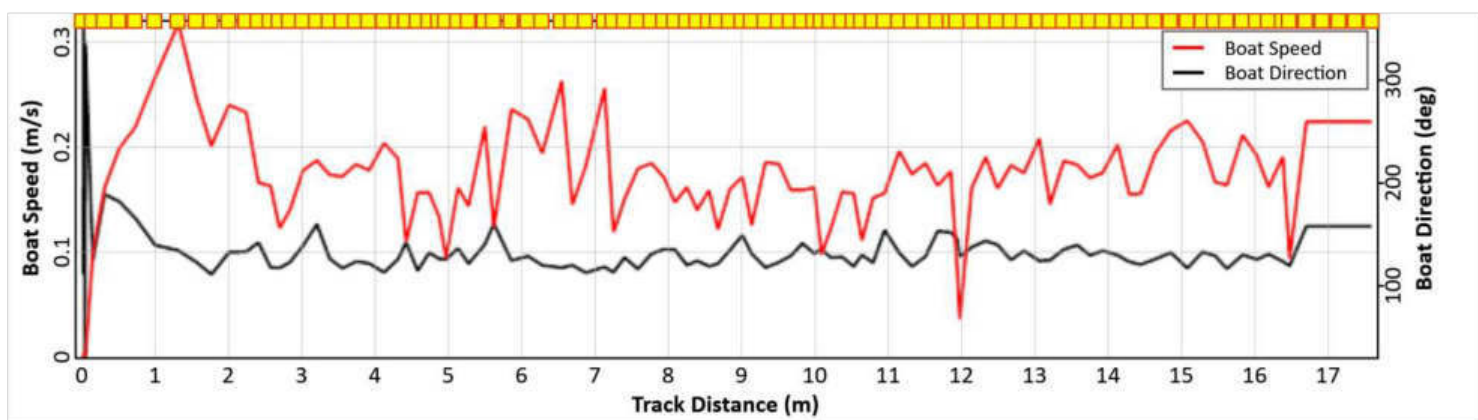
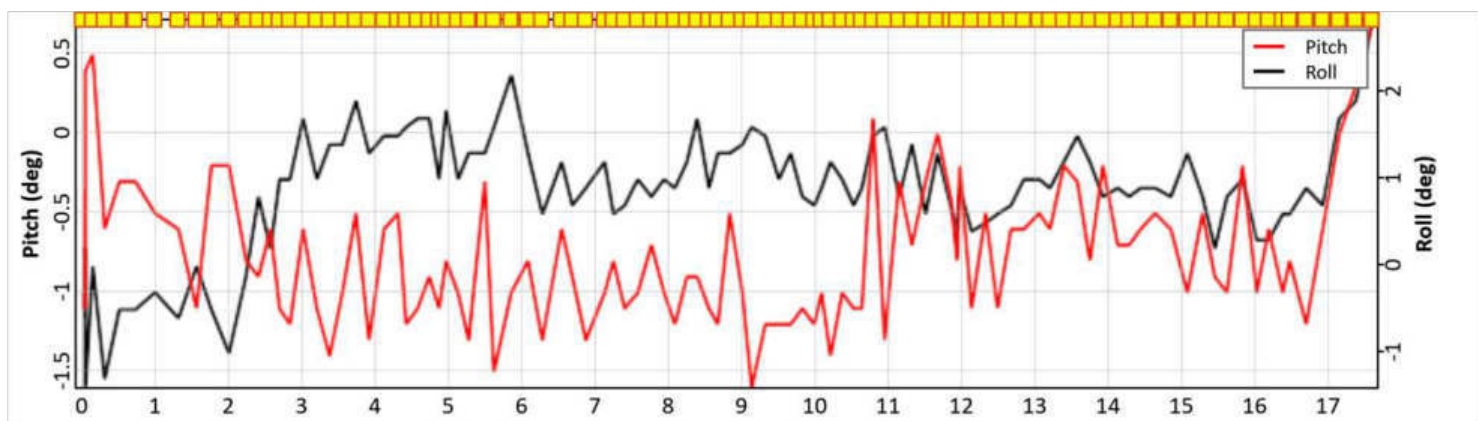
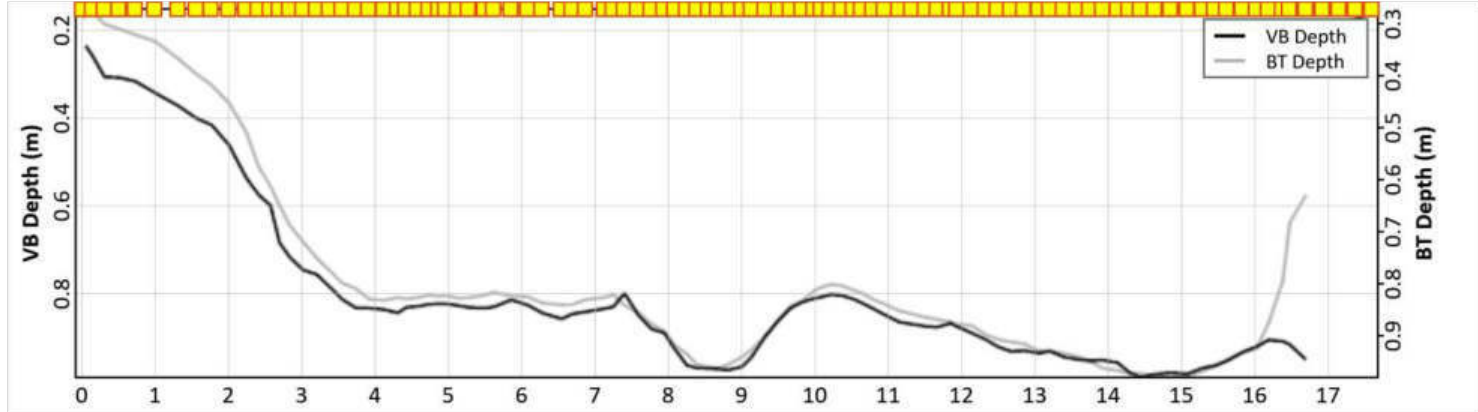
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Tr02 = 02-Transect_20220803141011;																	

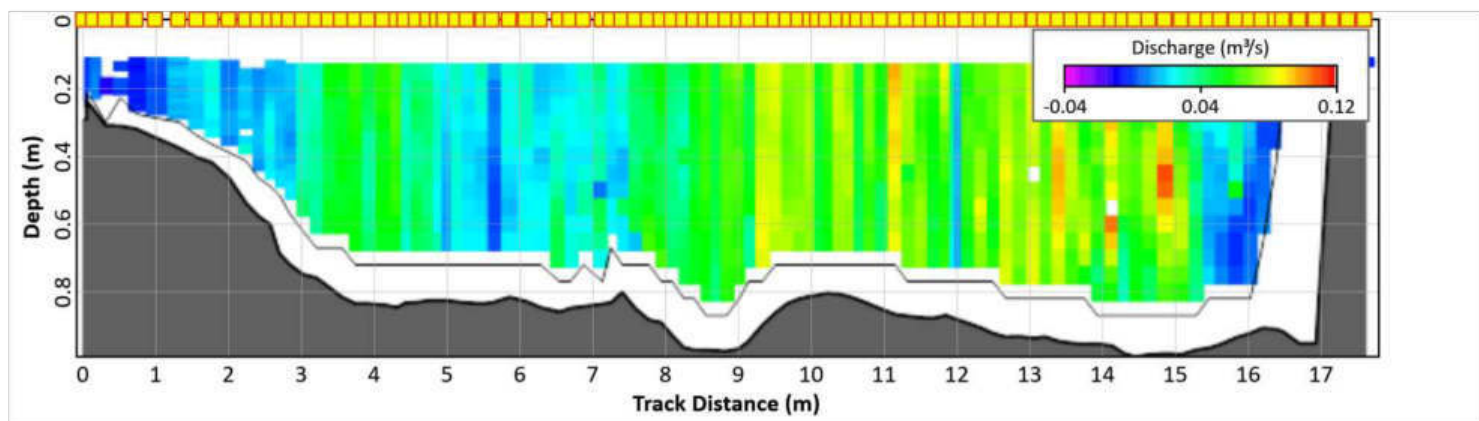
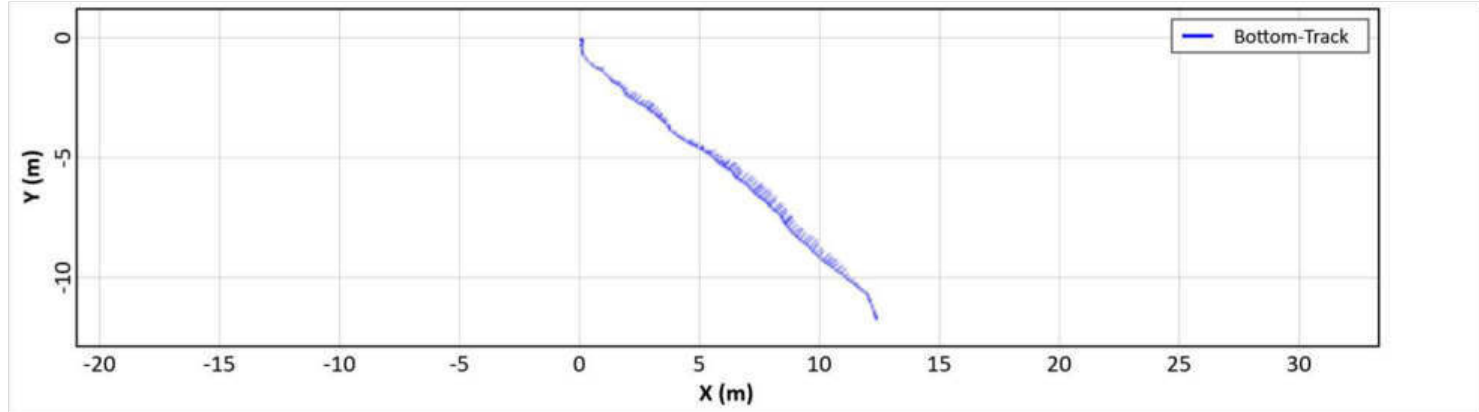
Comments																	
01-Transect_20220803140525 - ;																	
02-Transect_20220803141011 - ;																	

Parameters and settings marked with a * are not constant for all files.

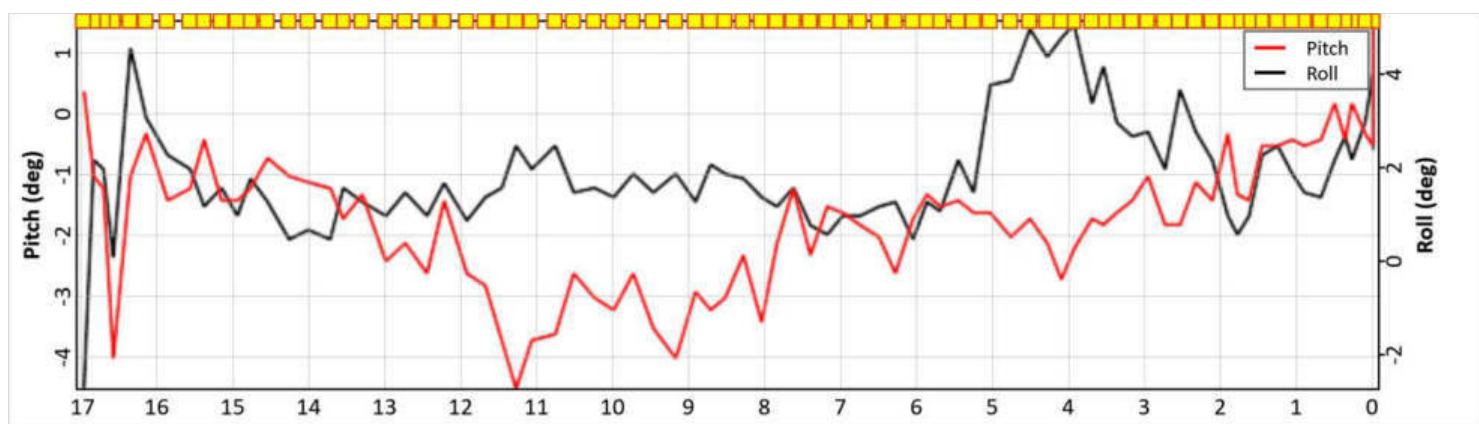
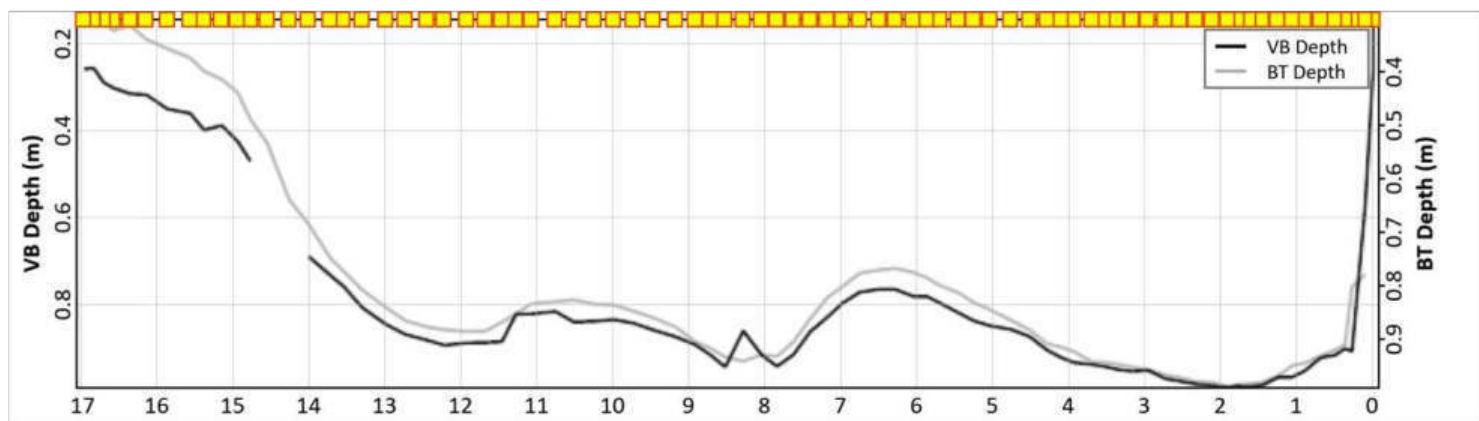
Report generated using SonTek RSQ v2.1

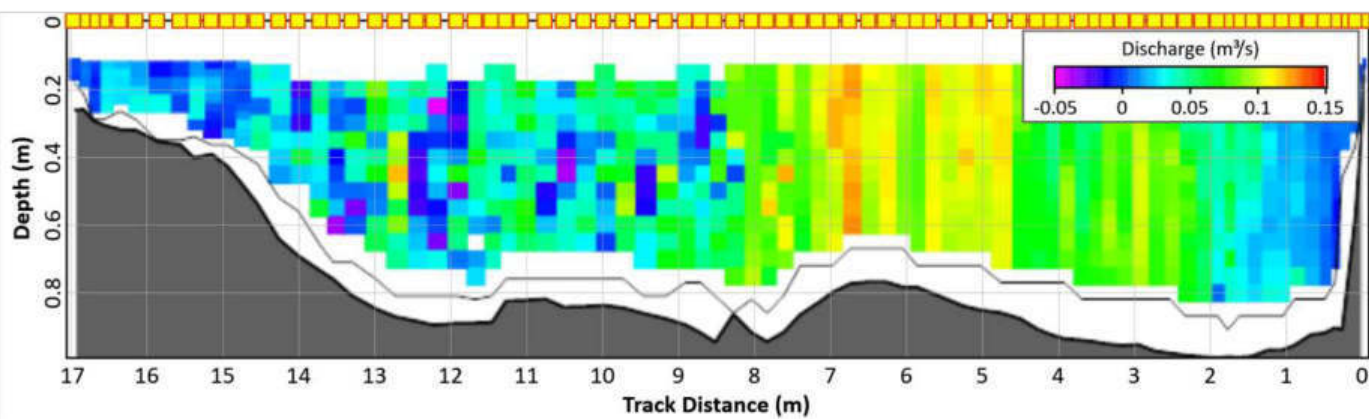
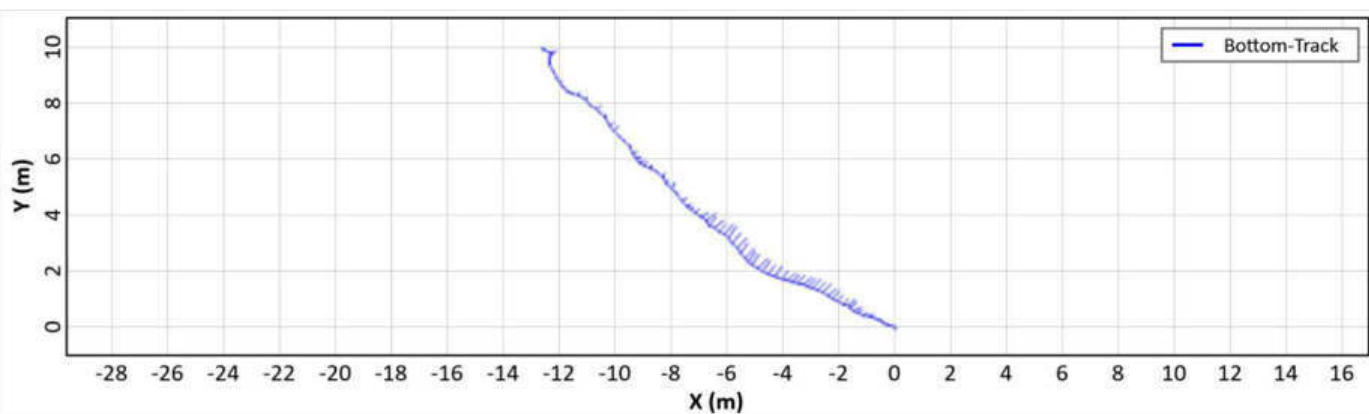
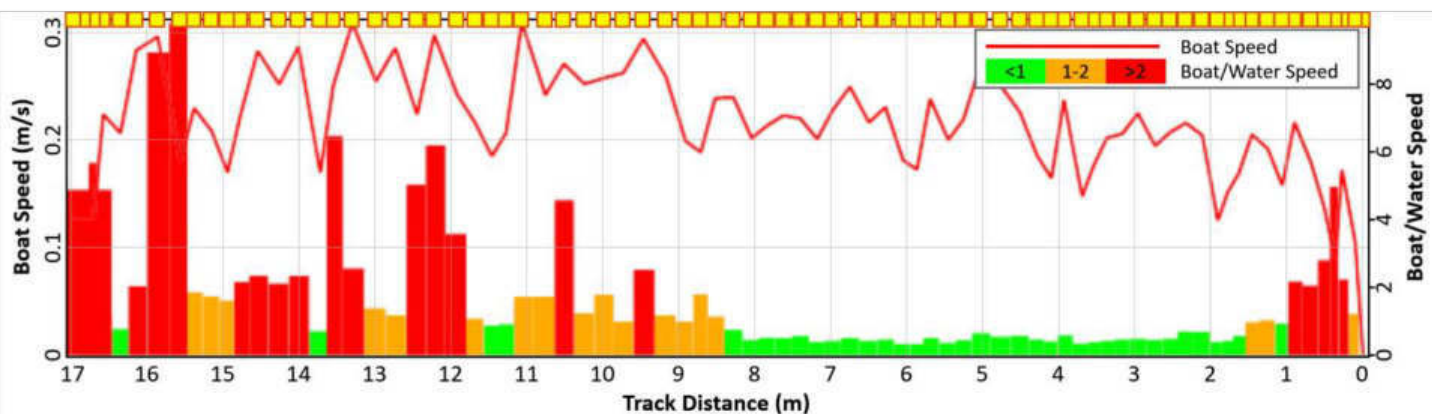
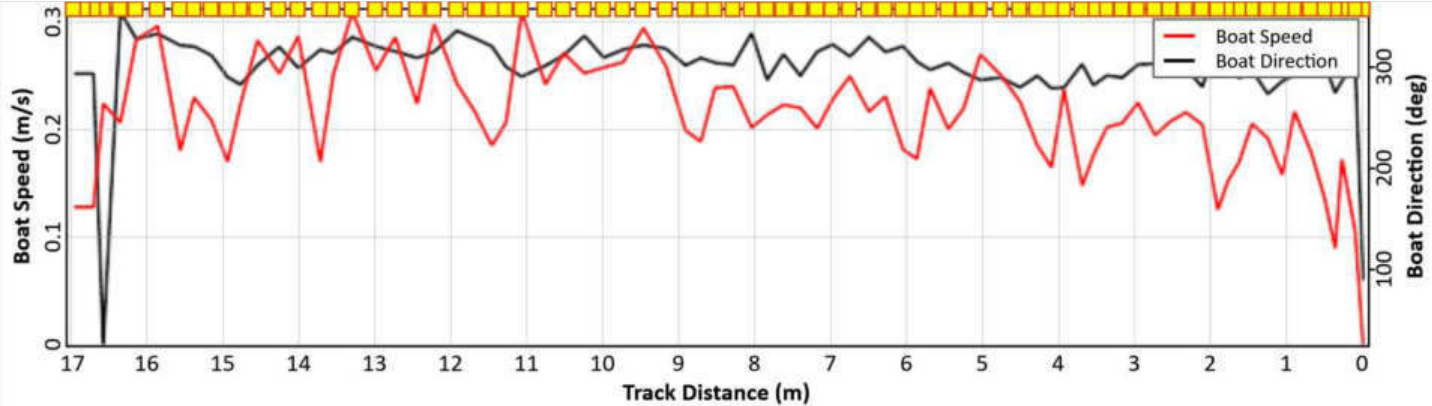
01-Transect_20220803140525 -





02-Transect_20220803141011 -





Discharge Measurement Summary

Date Measured: 2022-08-03

Site Information		Measurement Information
Site Name	403.08.2022	Operator
Station Number		Vessel
Location		Measurement Number

System Information		System Setup		Units	
Instrument Type	RS2	Transducer Depth (m)	0.06	Distance	m
Instrument Sub-Type	RS5	Screening Distance (m)	0	Velocity	m/s
Serial Number	RS522	Salinity (PSS-78)	0	Area	m²
	13002	Magnetic Declination (deg)	2	Discharge	m³/s
Firmware Version	1.25			Temperature	°C

Discharge Calculation Settings				Discharge Results	
Track Reference	Bottom-Track	Left Method	Slope	Width (m)	15.961
Depth Reference	Vertical Beam	Right Method	Slope	Area (m²)	11.5084
Coordinate System	ENU	Top Fit Type	Power Fit		7
Moving Bed Correction	None	Bottom Fit Type	Power Fit	Mean Speed (m/s)	0.2509
				Total Q (m³/s)	2.8919
				Max Depth (m)	1.022
				Max Speed (m/s)	1.0927

Measurement Results																	
Tr #		Start Time (UTC +3)	Durati on	Track Dista nce (m)	DMG (m)	Width (m)	Area (m²)	Boat Spee d (m/ s)	Mean Spee d (m/ s)	Left Q (m³/s)	Right Q (m³/s)	Top Q (m³/s)	Botto m Q (m³/s)	Middl e Q (m³/s)	Total Q (m³/s)	Total Q Corre cted (m³/s)	% Mea sure d
01	L	14:24:04	00:02:58	15.909	13.375	16.375	11.38944	0.0851	0.2111	0.0084	0.0072	0.5103	0.455	1.4237	2.4047		59.21
02	R	14:27:14	00:02:48	14.864	12.546	15.546	11.6275	0.0864	0.2906	-0.0011	0.0076	0.6887	0.6579	2.0261	3.3792		59.96
Mean				15.386	12.961	15.961	11.50847	0.0857	0.2509	0.0037	0.0074	0.5995	0.5565	1.7249	2.8919	0	59.58
Std Dev				0.523	0.415	0.415	0.11903	0.0007	0.0397	0.0048	0.0002	0.0892	0.1014	0.3012	0.4873	0	0.38
COV				0.034	0.032	0.026	0.01034	0.0078	0.1584	1.289	0.0275	0.1488	0.1823	0.1746	0.1685	0	0.63

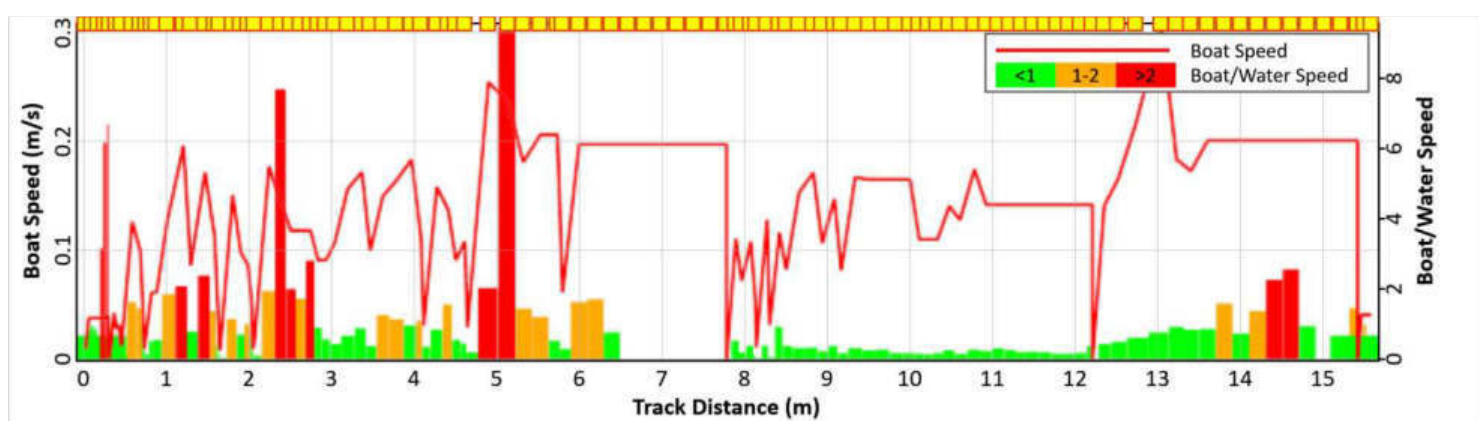
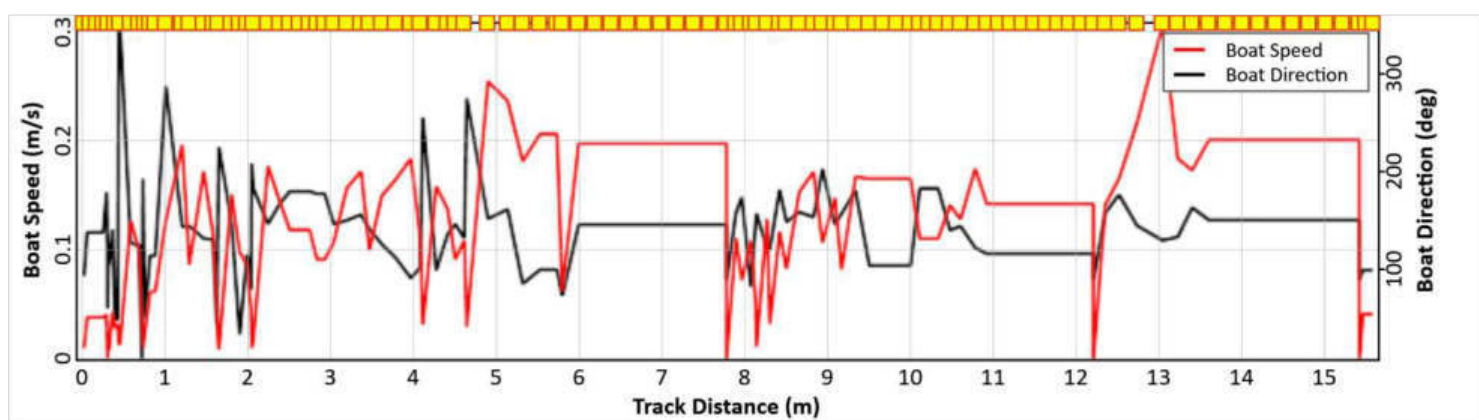
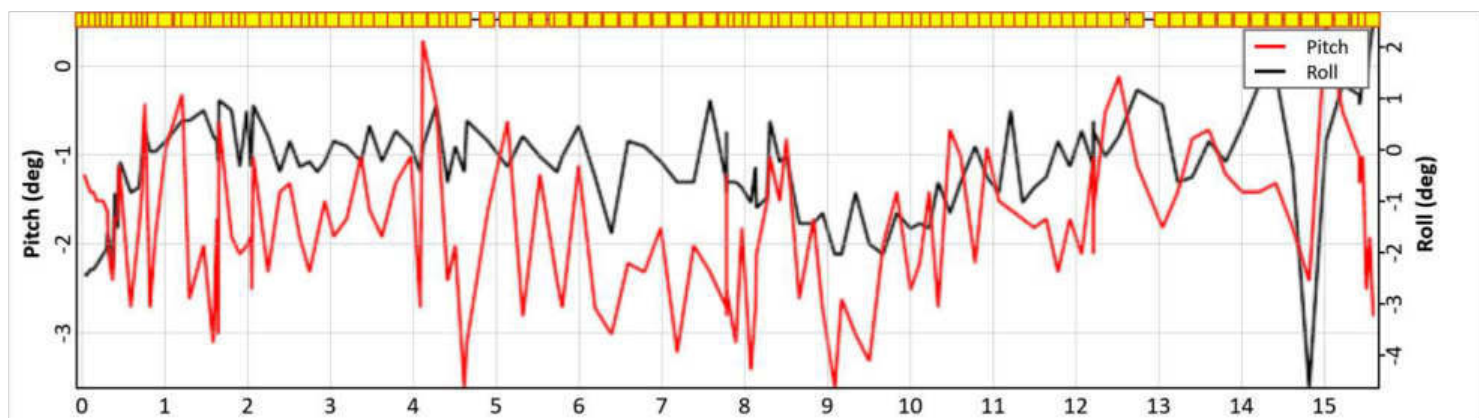
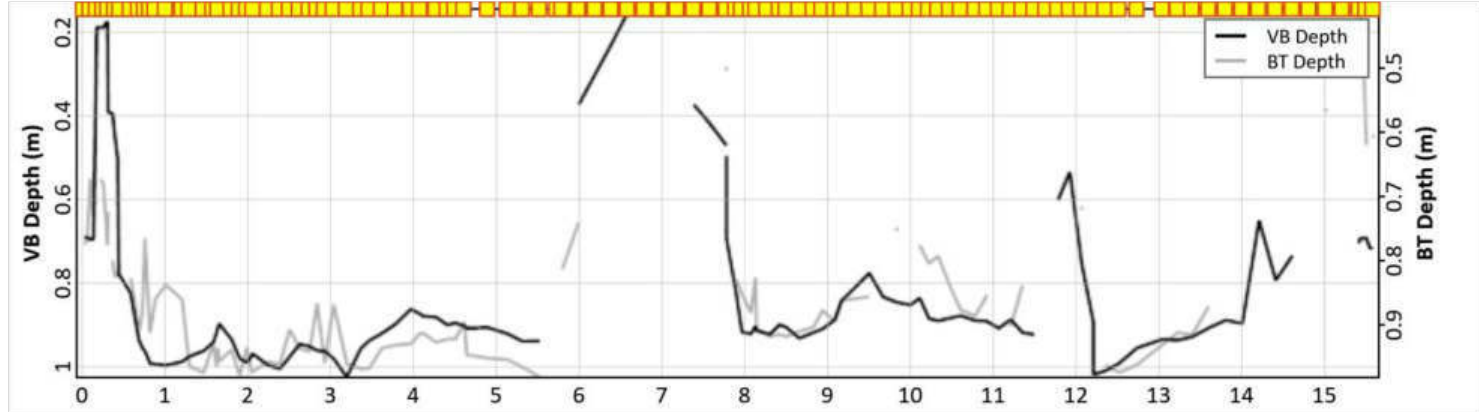
Exposure Time: 00:05:46																	
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Tr02 = 02-Transect_20220803142706;																	

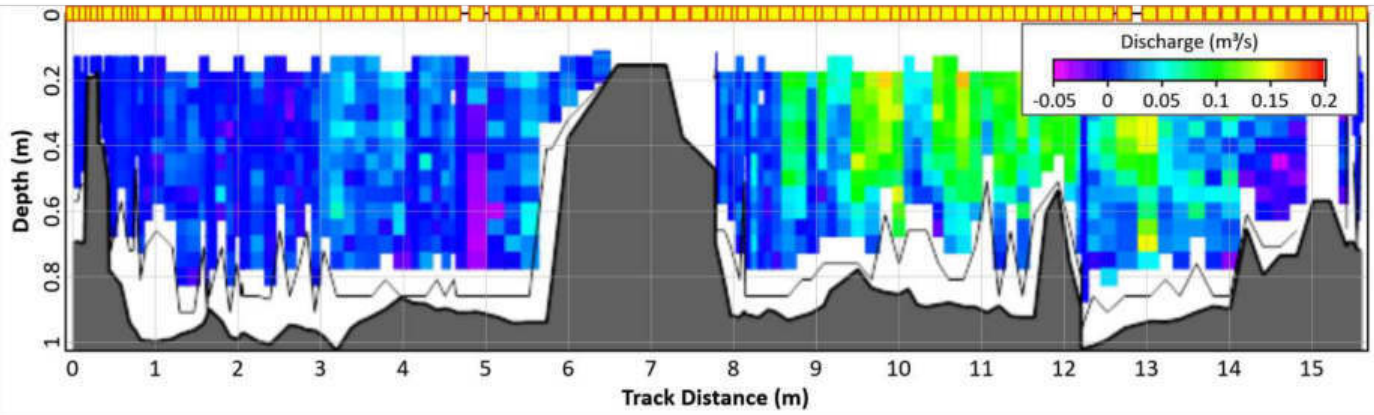
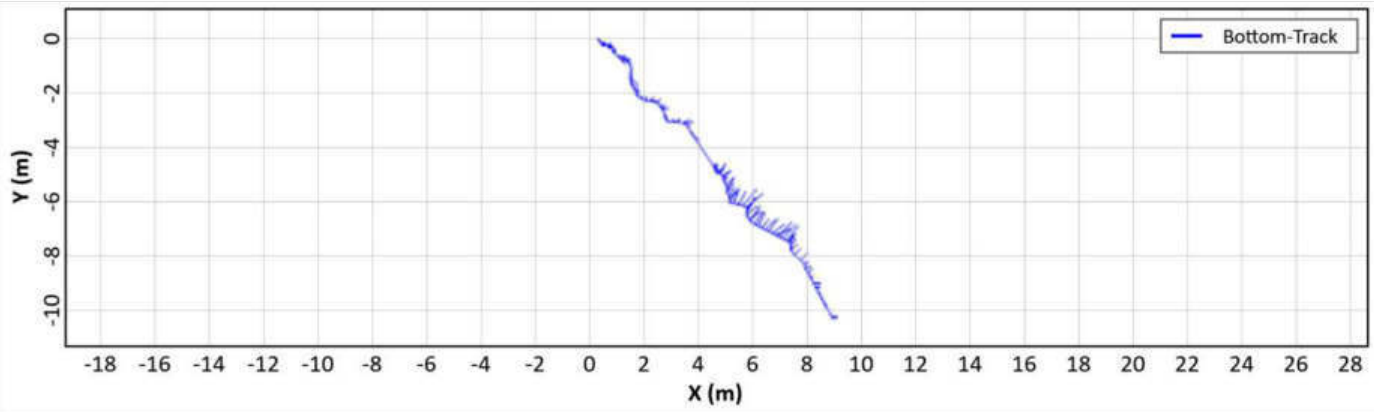
Comments																	
01-Transect_20220803142227 - ;																	
02-Transect_20220803142706 - ;																	

Parameters and settings marked with a * are not constant for all files.

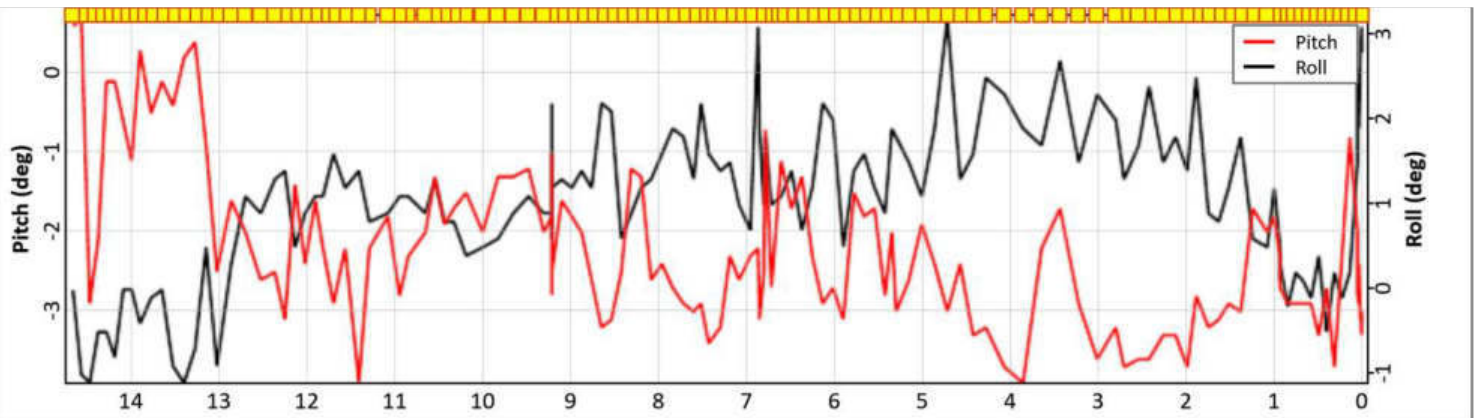
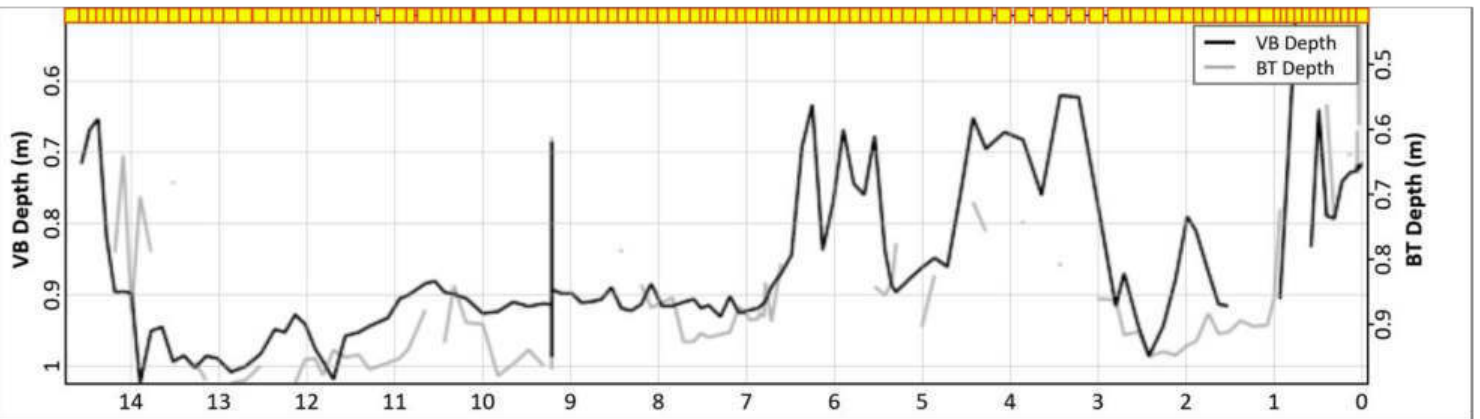
Report generated using SonTek RSQ v2.1

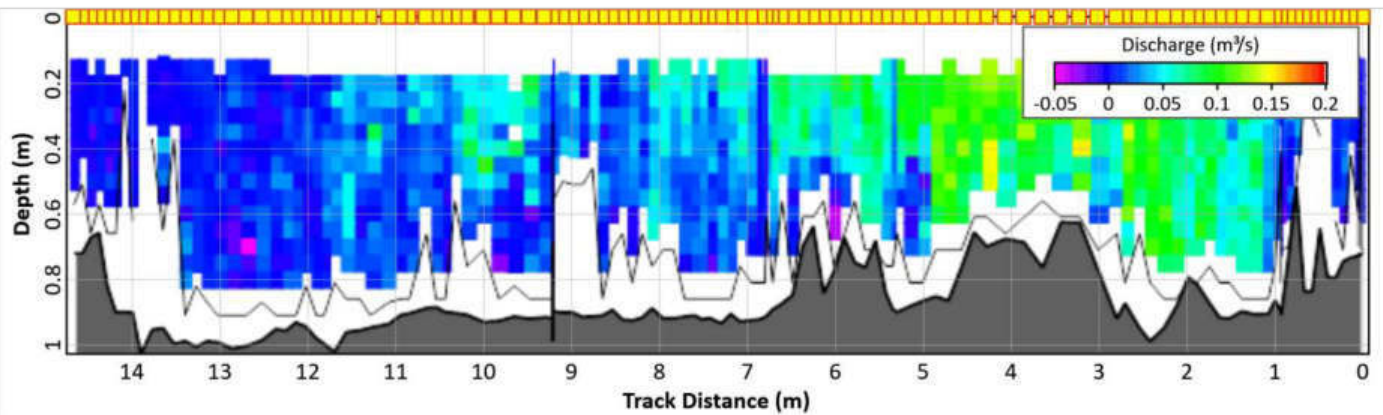
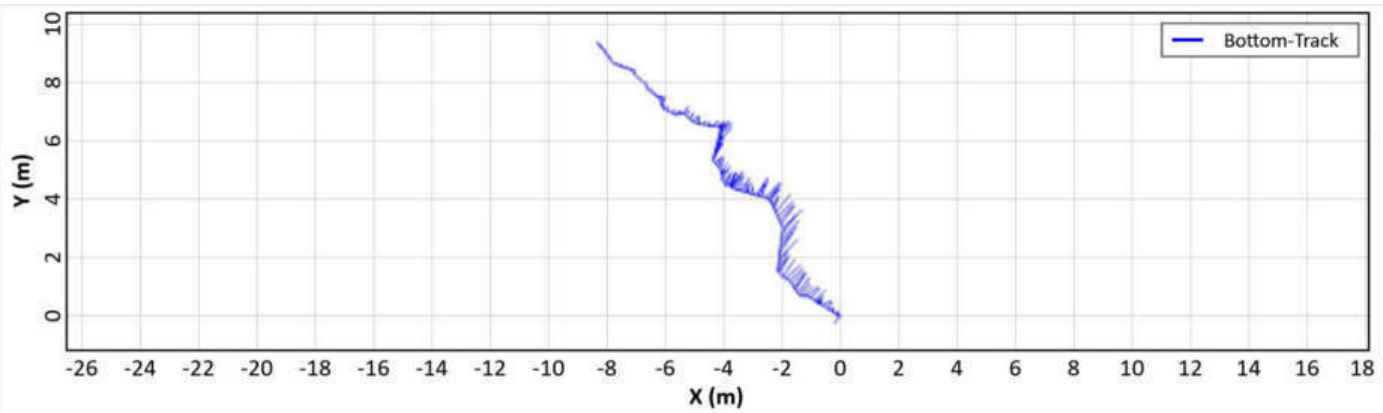
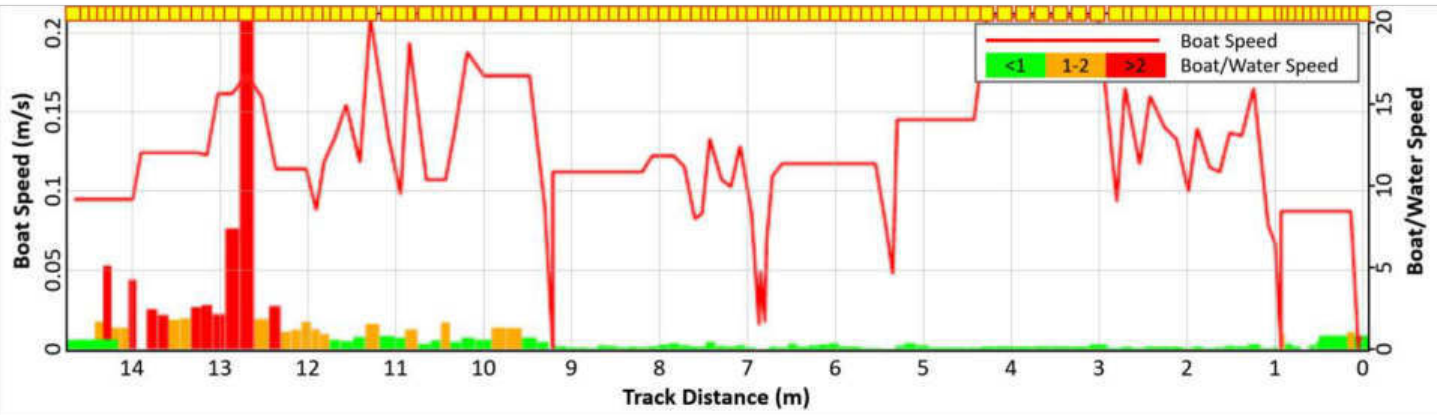
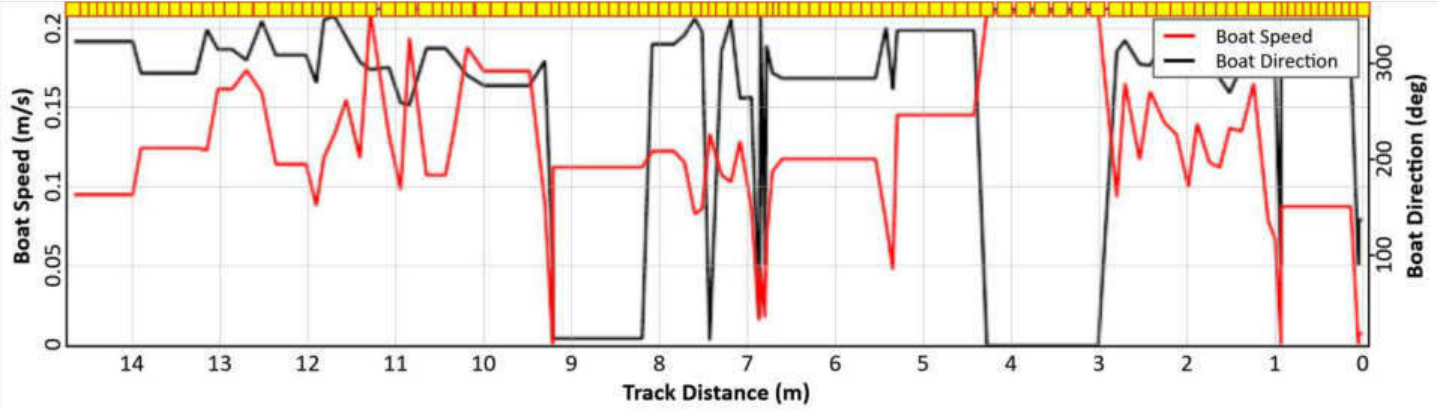
01-Transect_20220803142227 -





02-Transect_20220803142706 -





FOTOFIKSĀCIJA



1.attēls. pik.311/15. Maltas upes mērijums ar SonTek RSQ5 iekārtu. 2.attēls. pik.319/00. Skats uz lejteci.



3. attēls. pik.322/00. Grāvja 428215:02 ieteka Maltas upē.

4.attēls. pik.325/75. Maltas upi šķērso elektrolīnija.



5.attēls. pik.327/35. Skats uz augštecī.



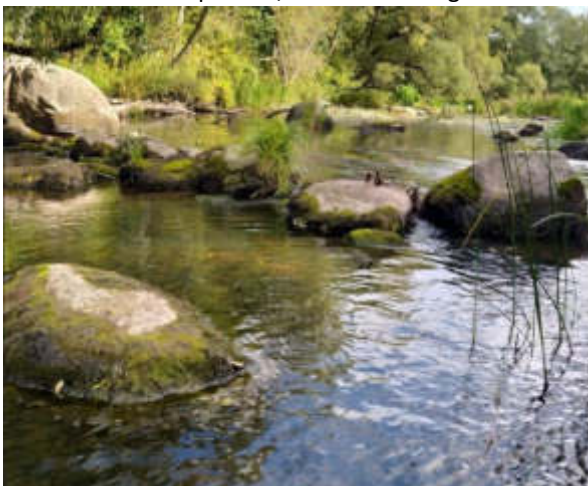
6.attēls. pik.331/00. Skats uz augštecī.



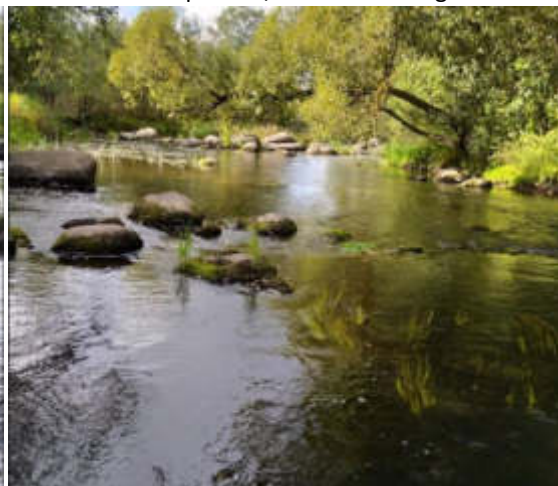
7. attēls. pik.333/30. Skats uz augštecī.



8. attēls. pik.333/50. Skats uz augštecī.



9. attēls. pik.334/00. Skats uz augštecī.



10. attēls. pik.335/00. Skats uz augštecī.