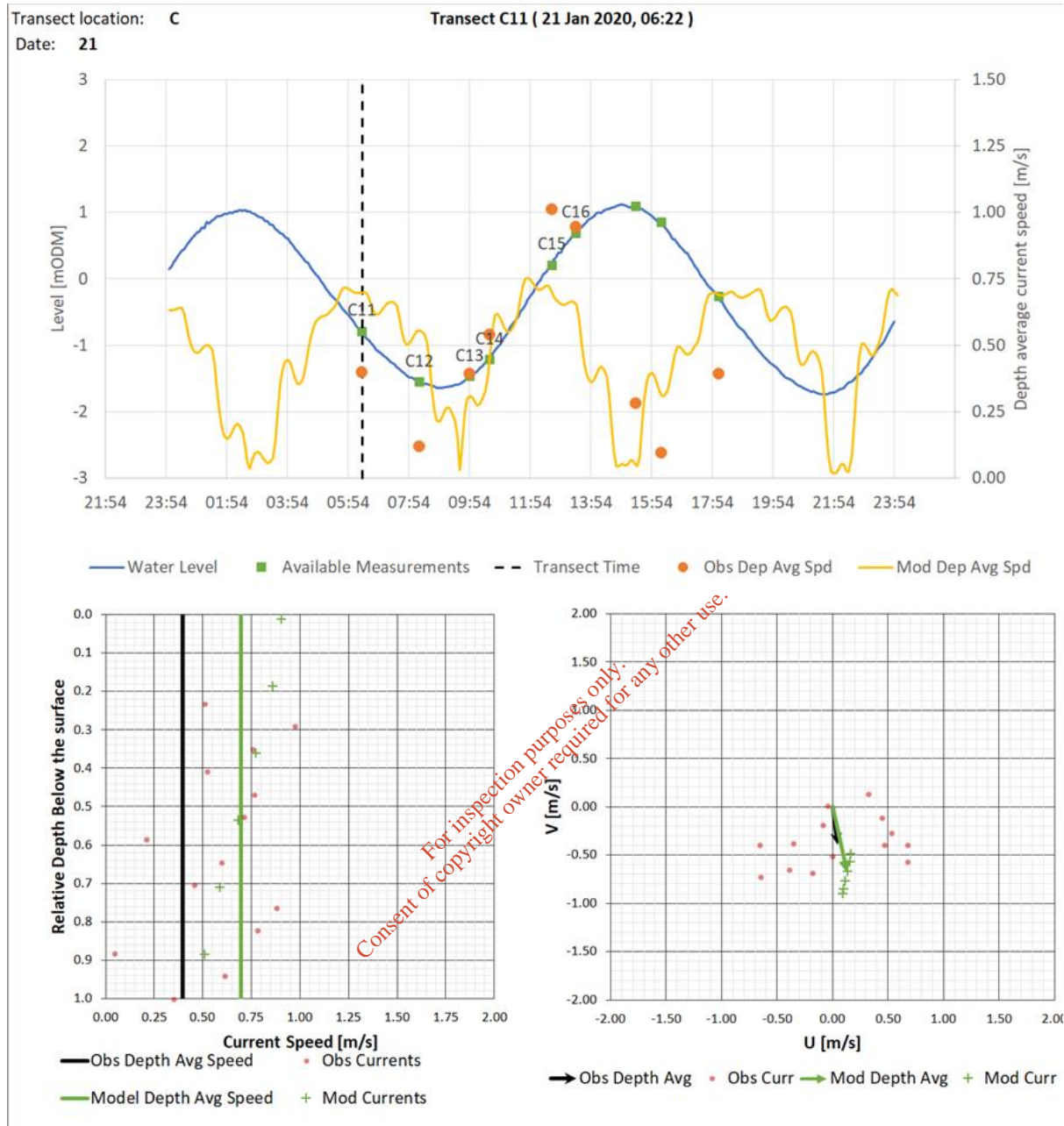
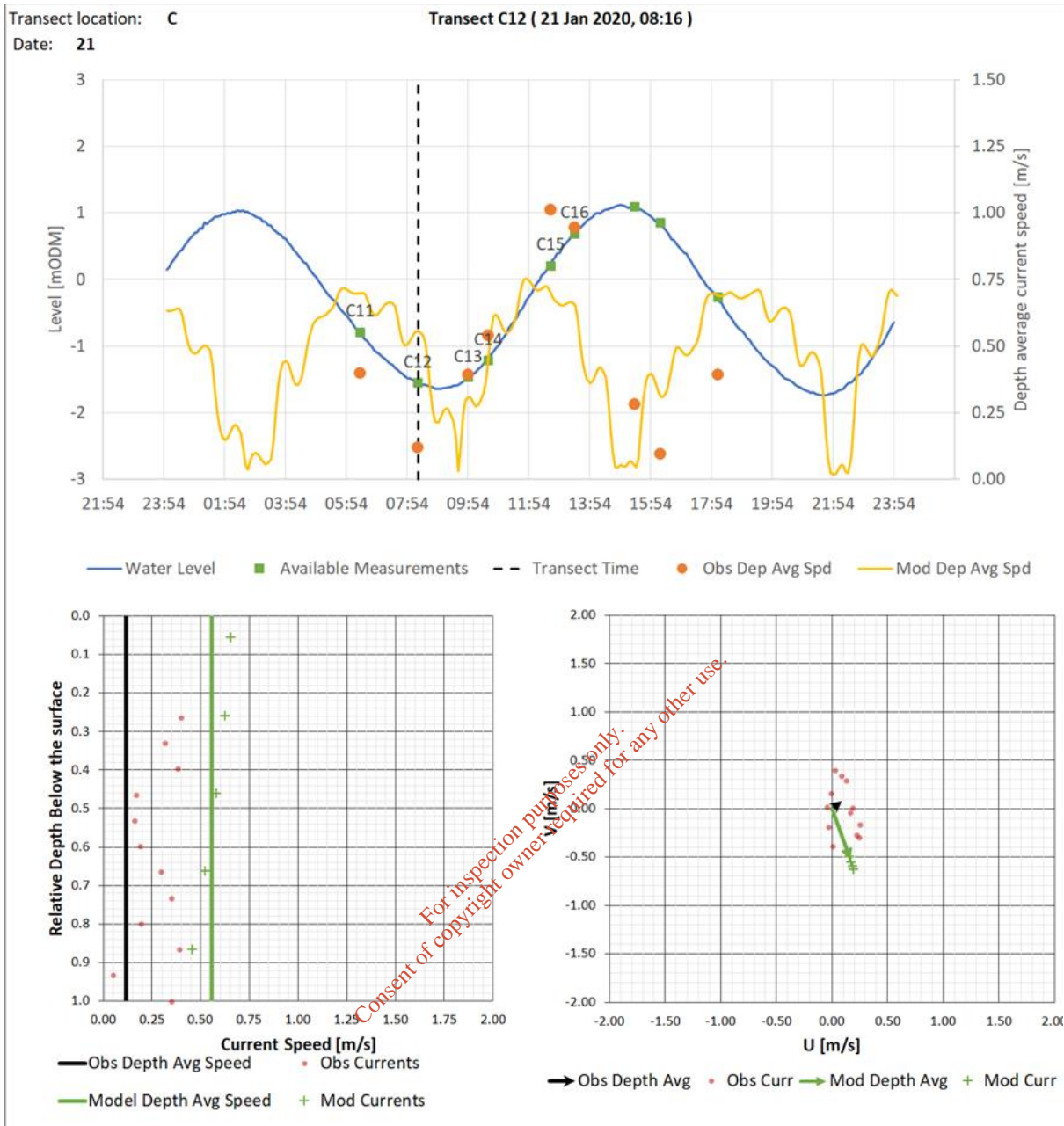
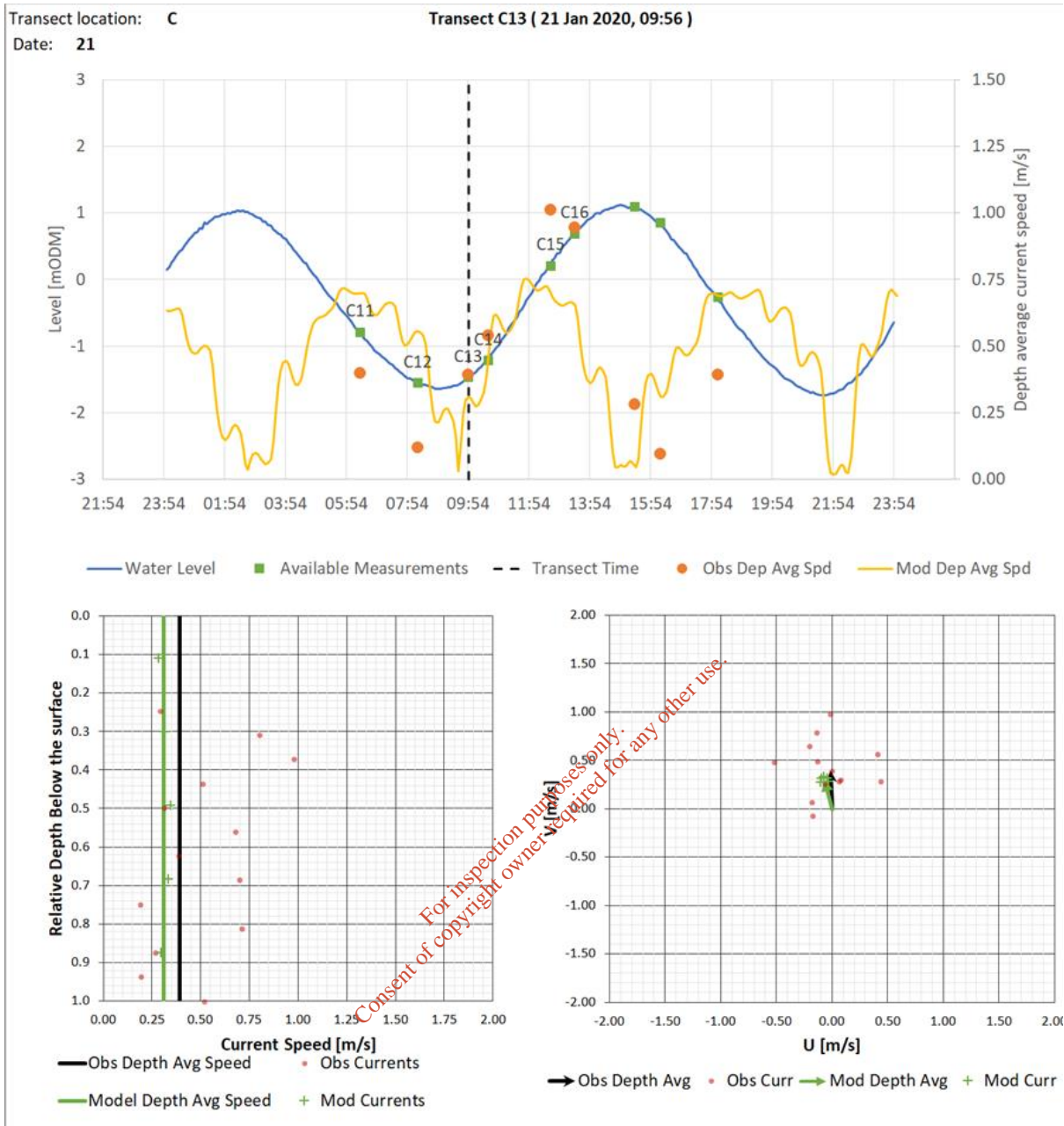
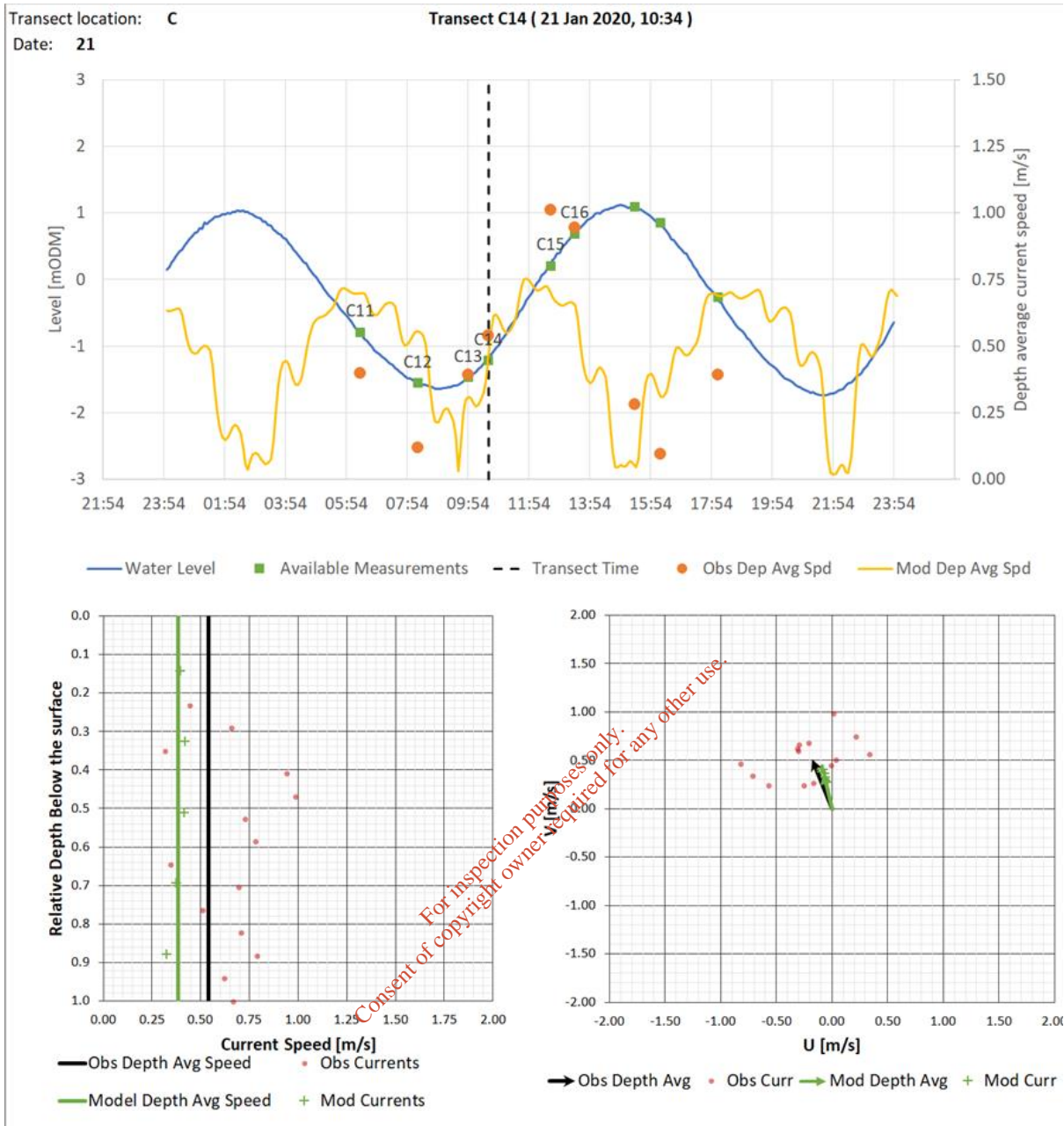


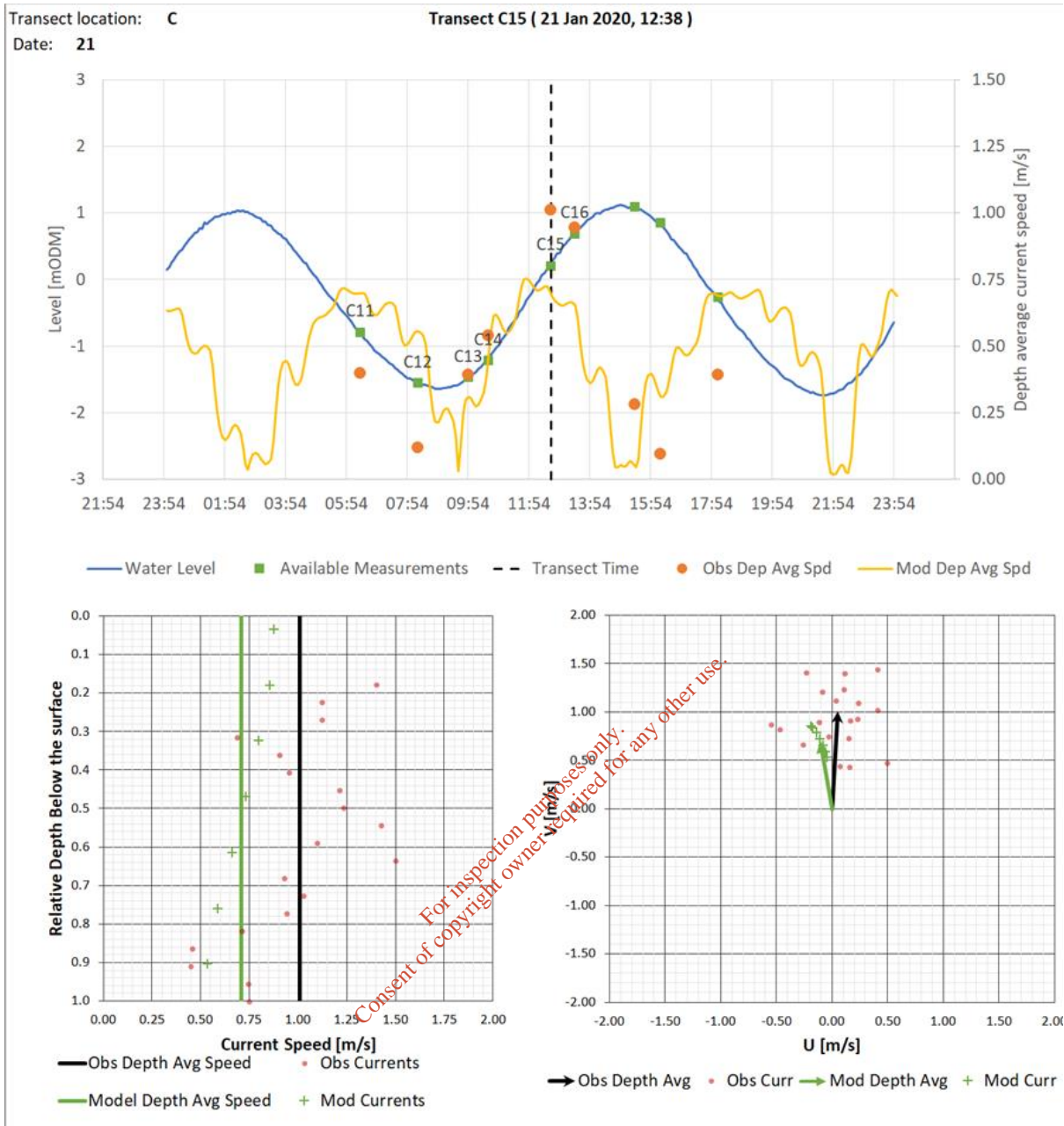
## D.7 Event D: Transect C



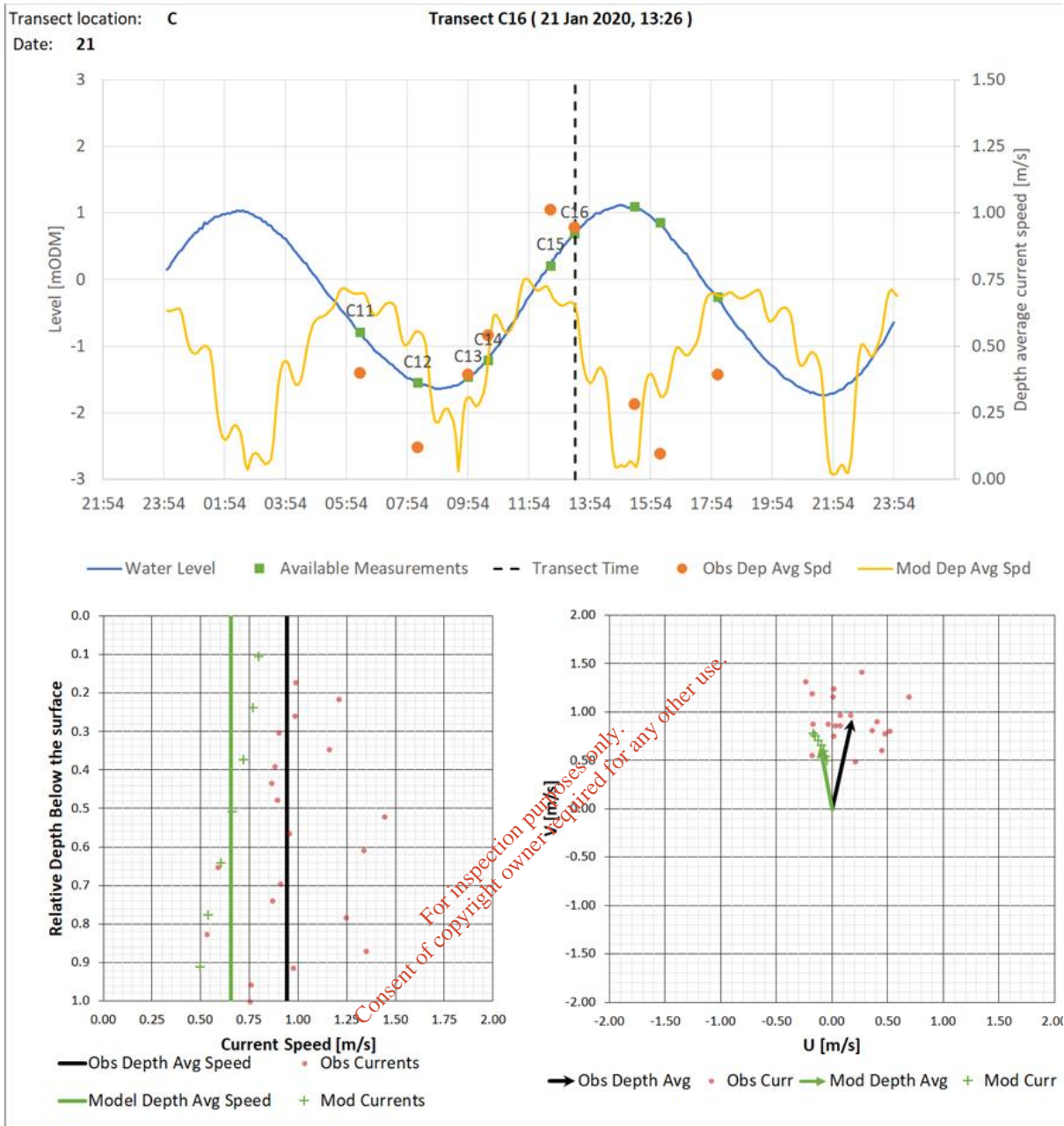


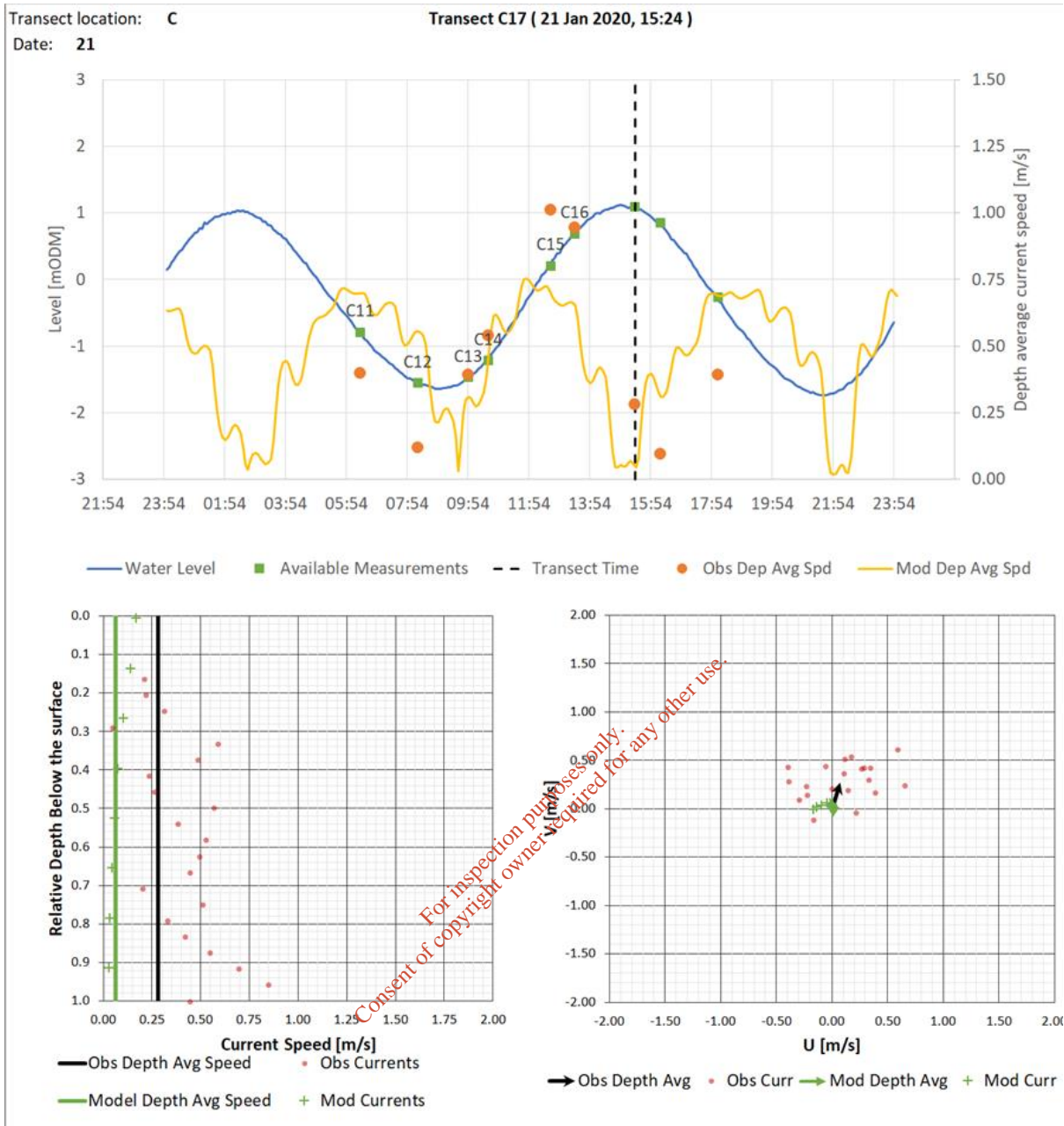


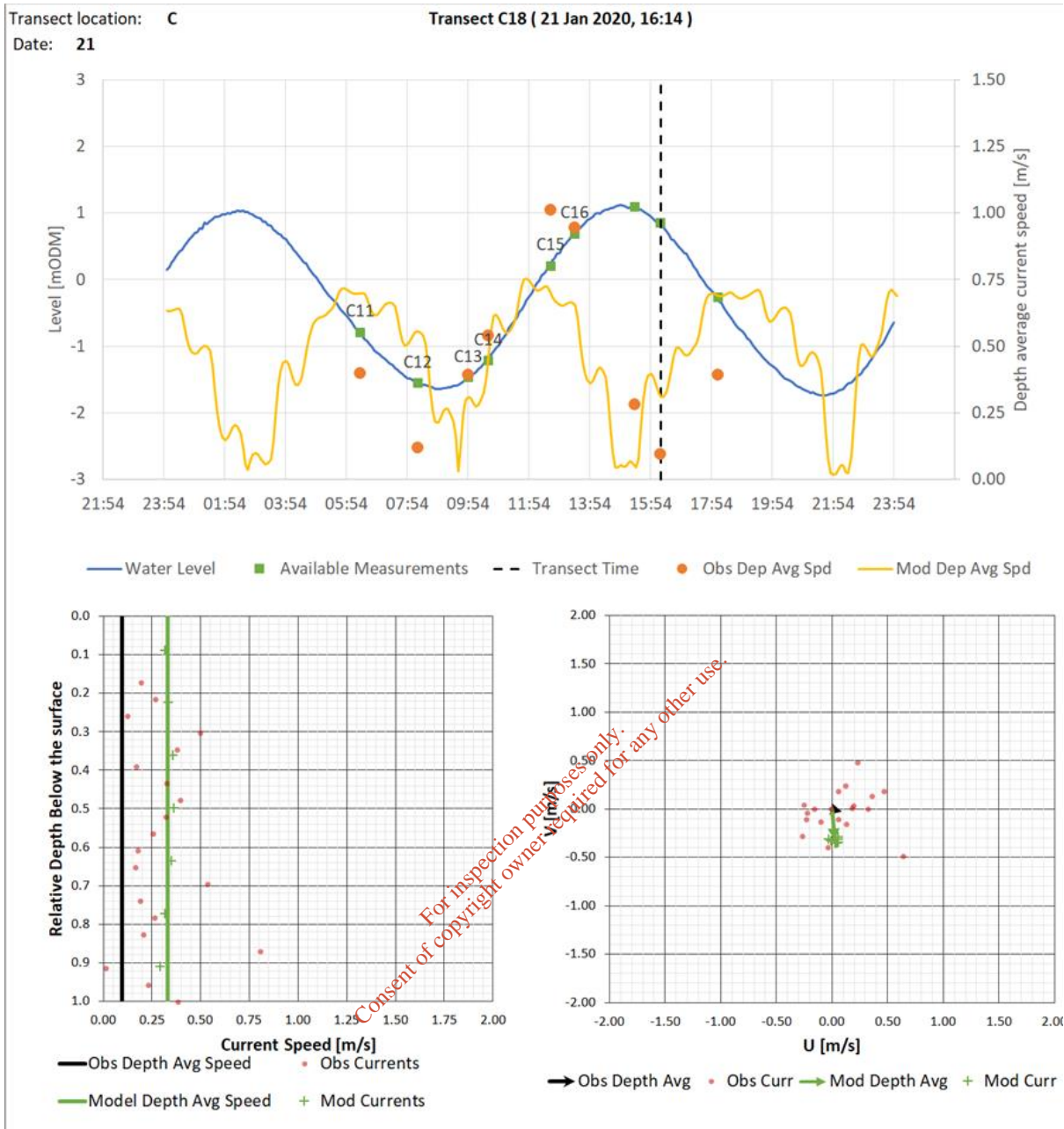


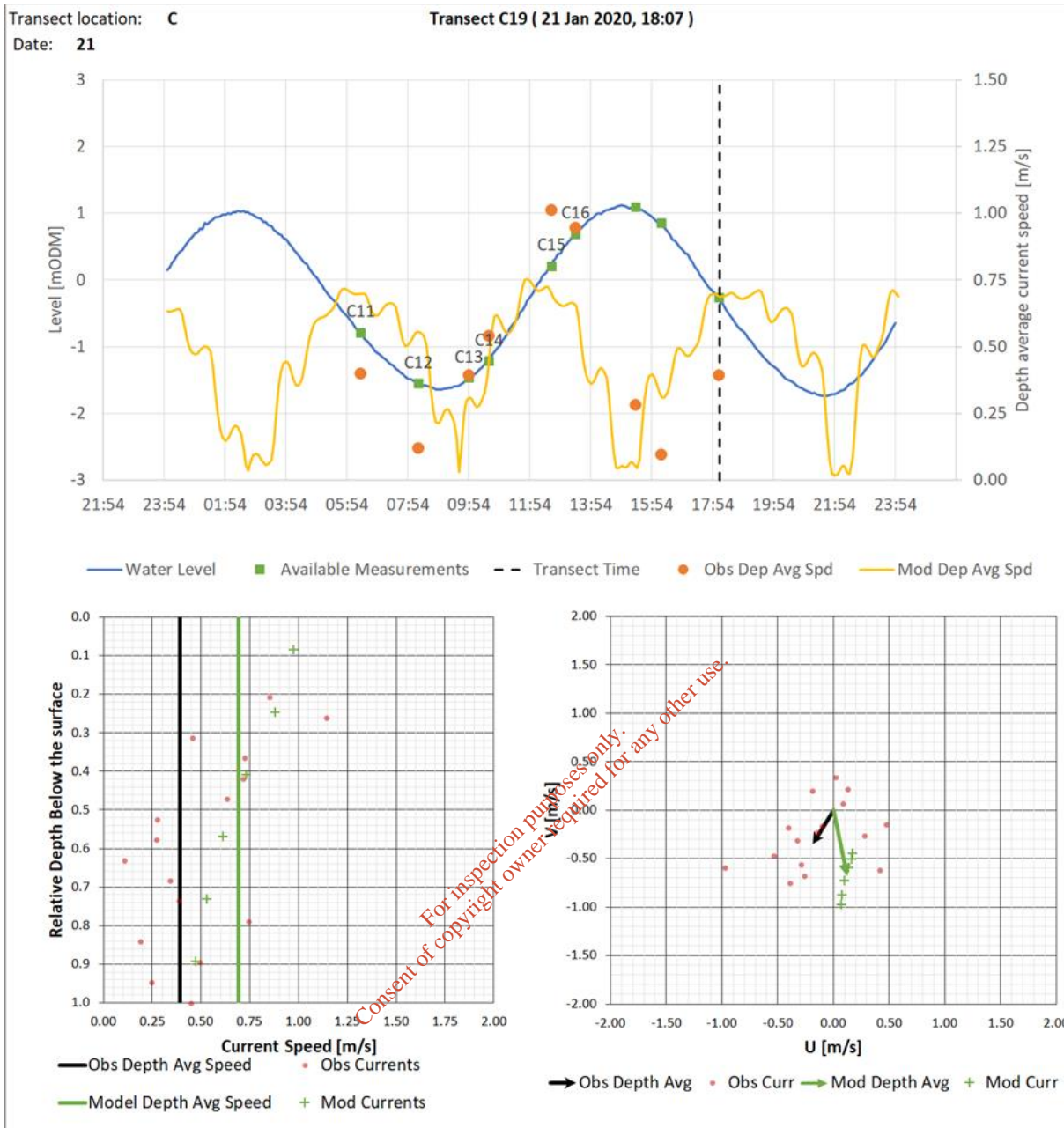




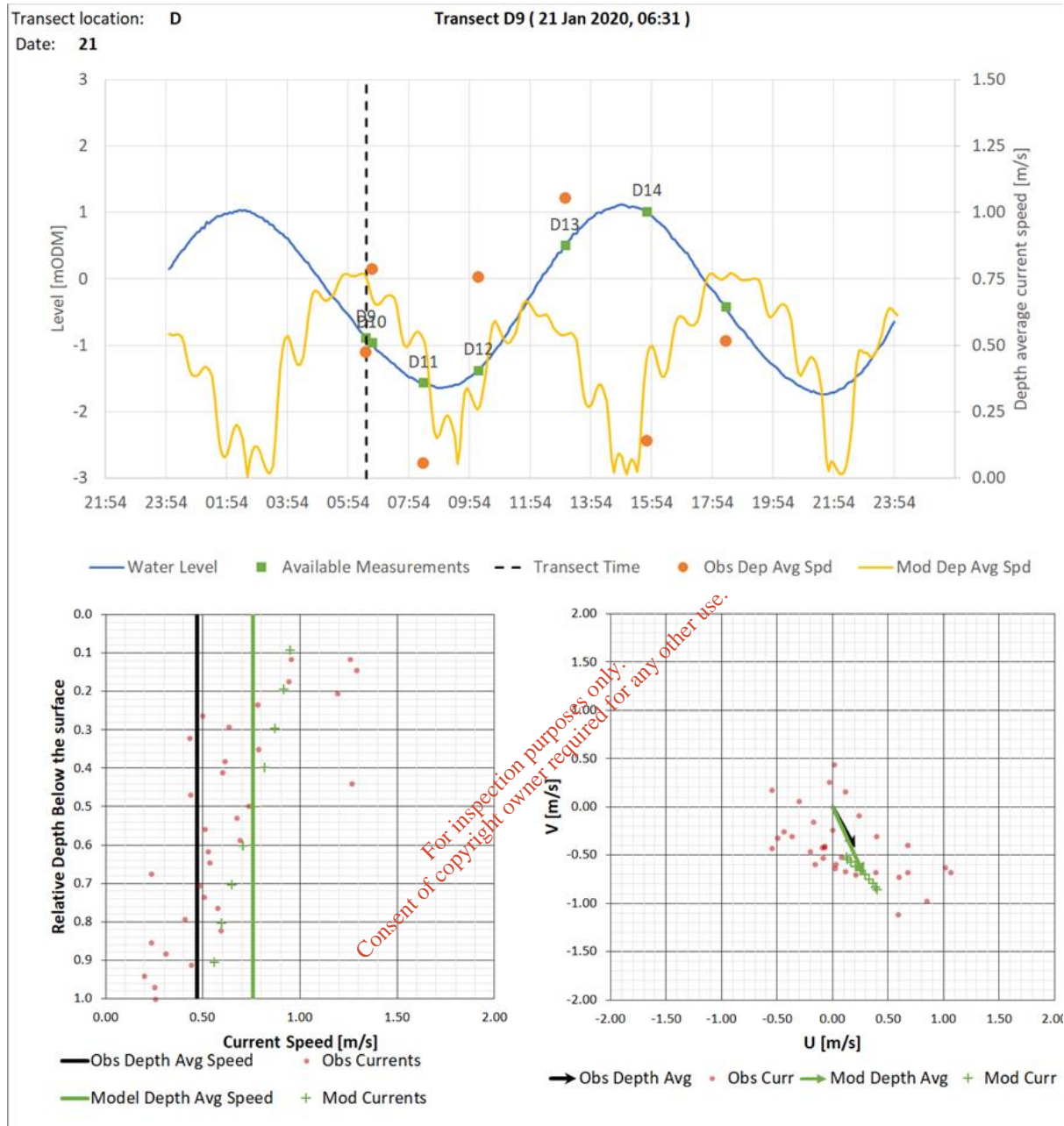


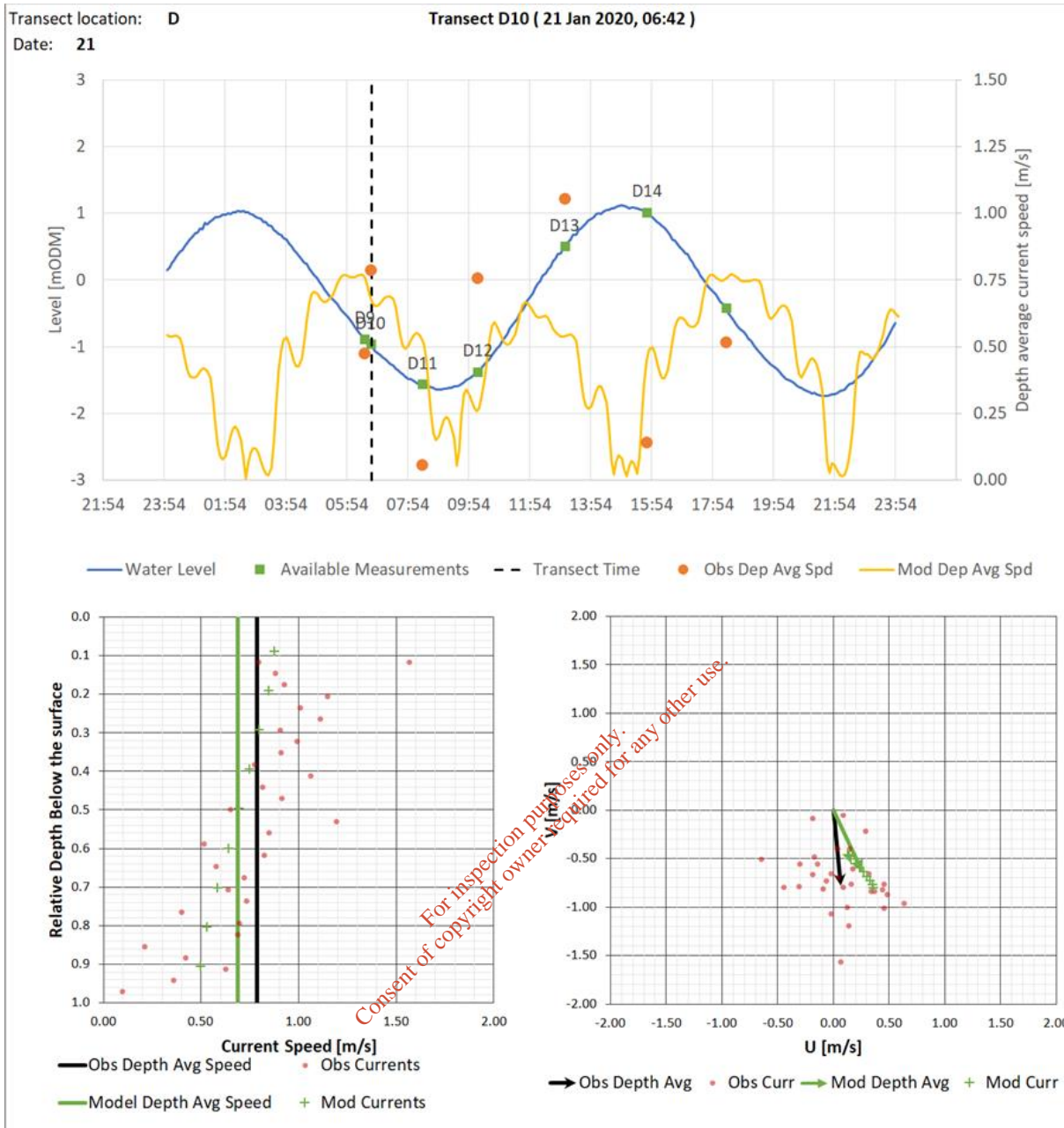


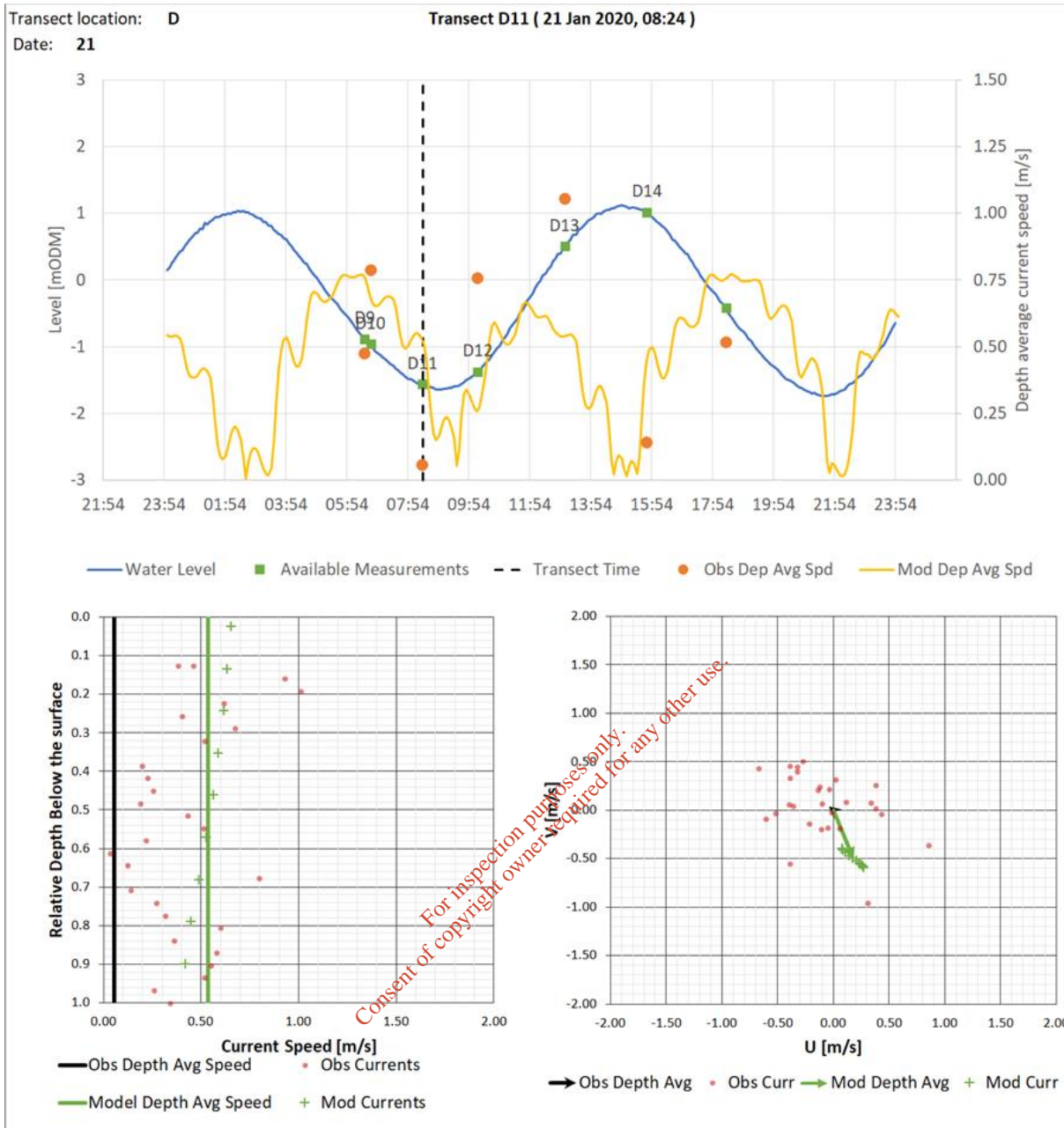


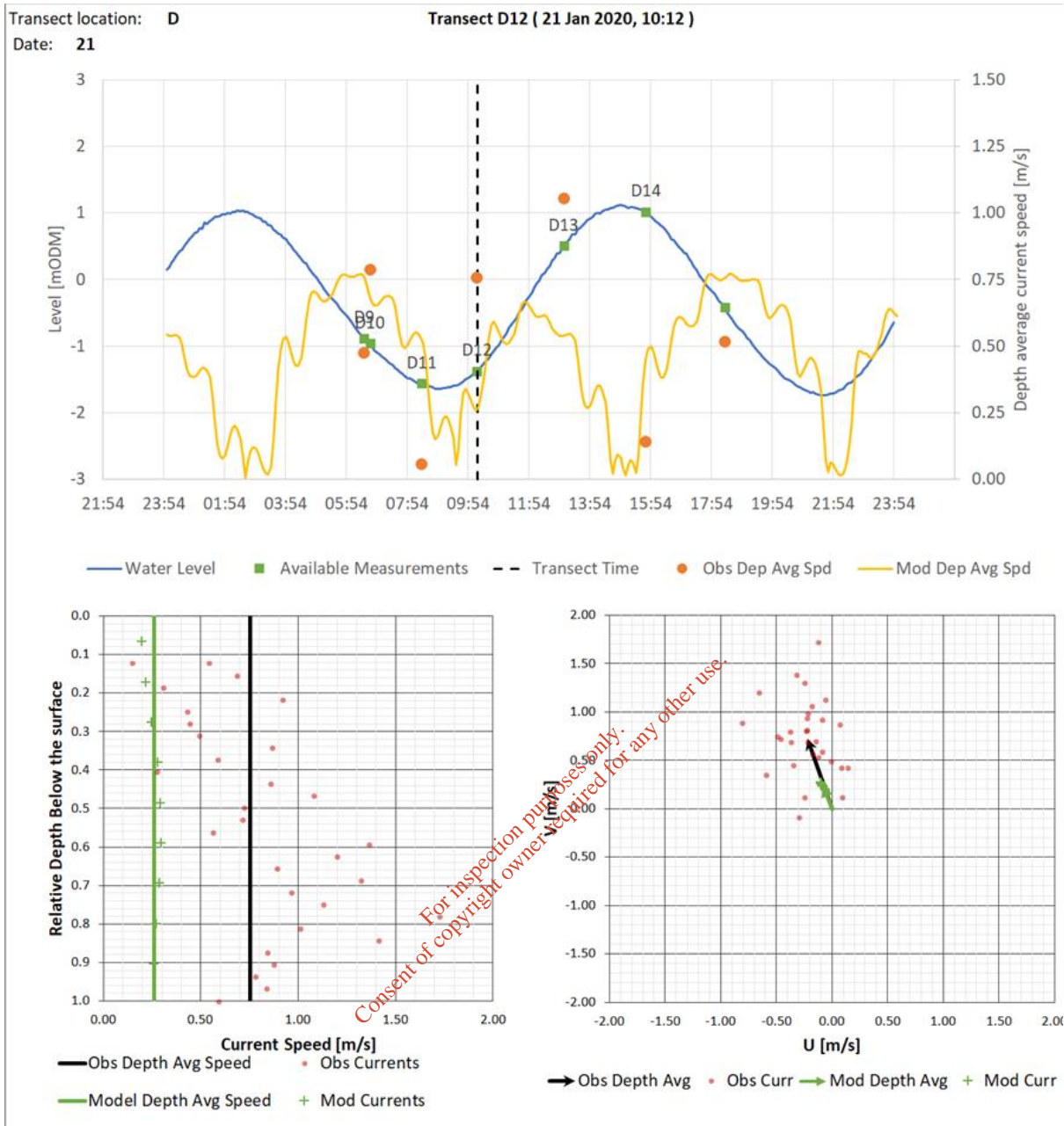


## D.8 Event D: Transect D

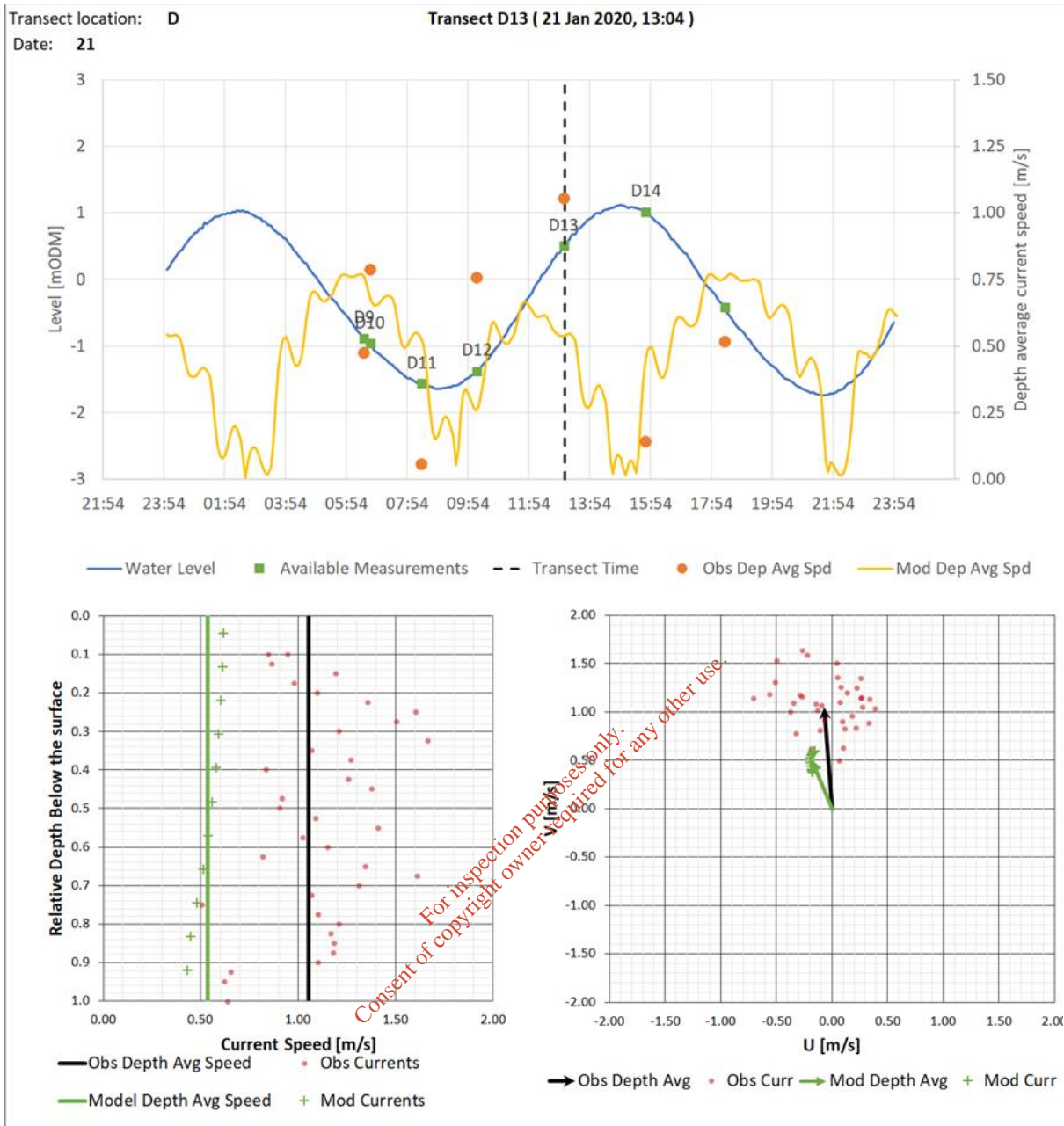


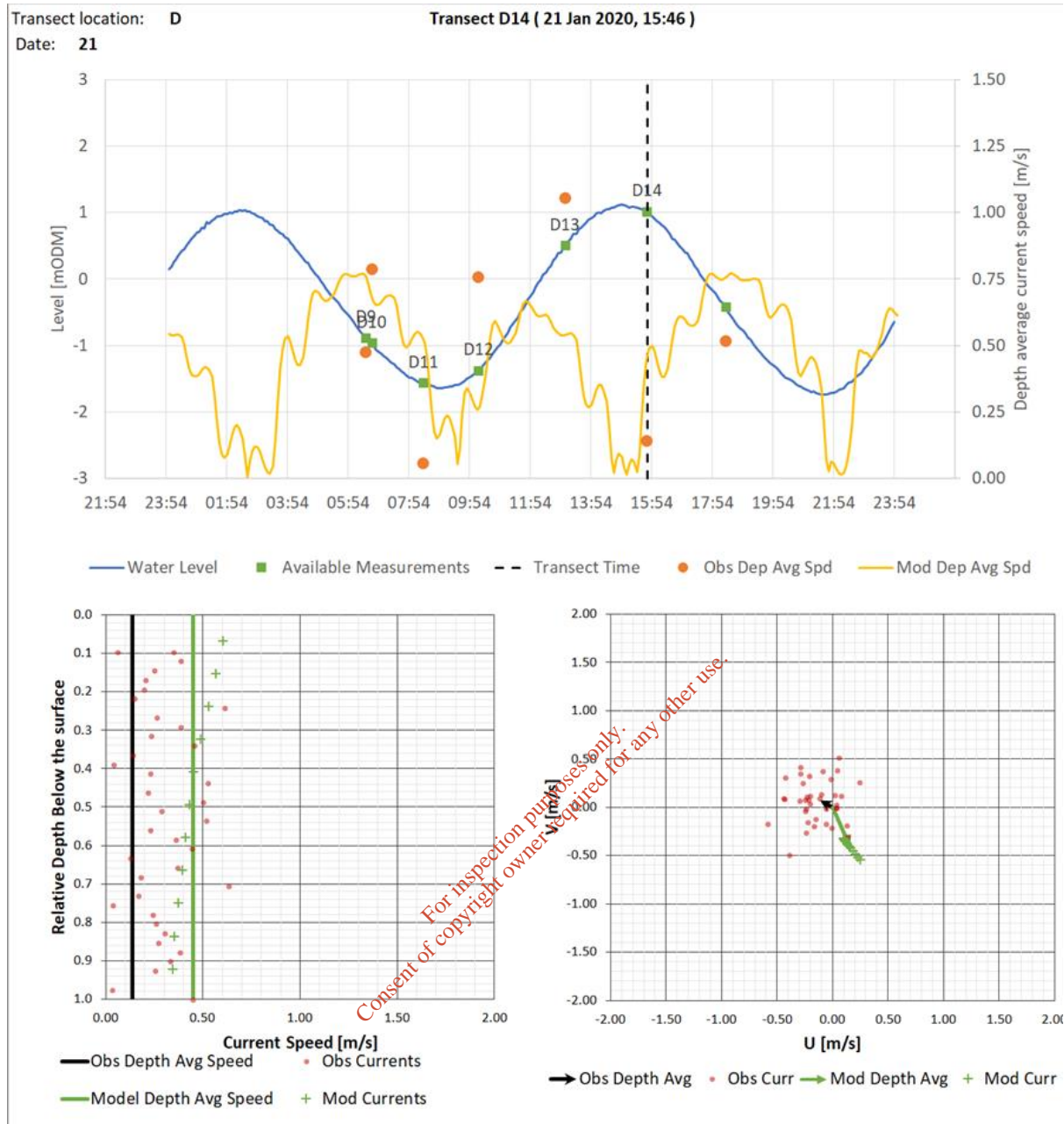


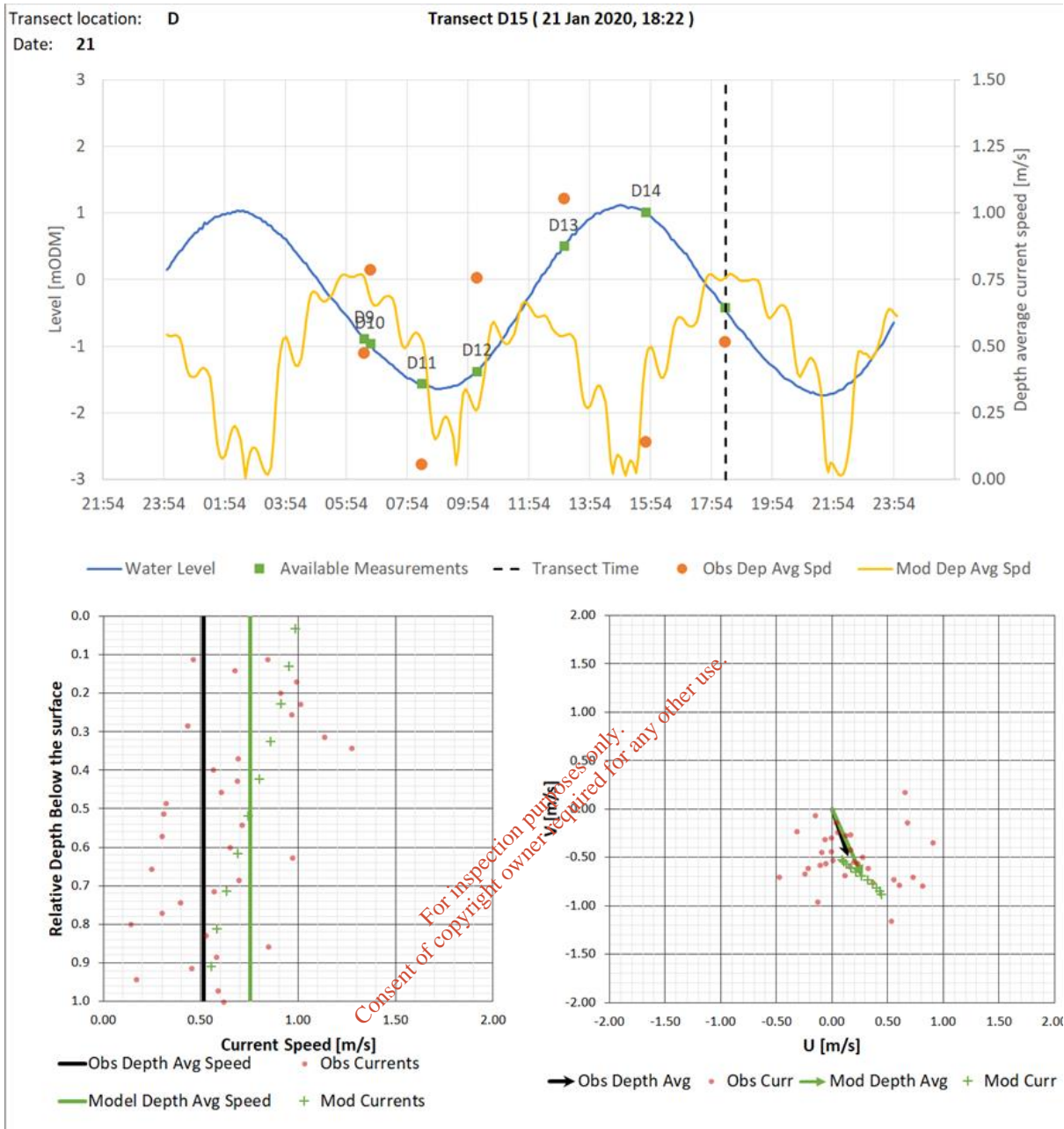




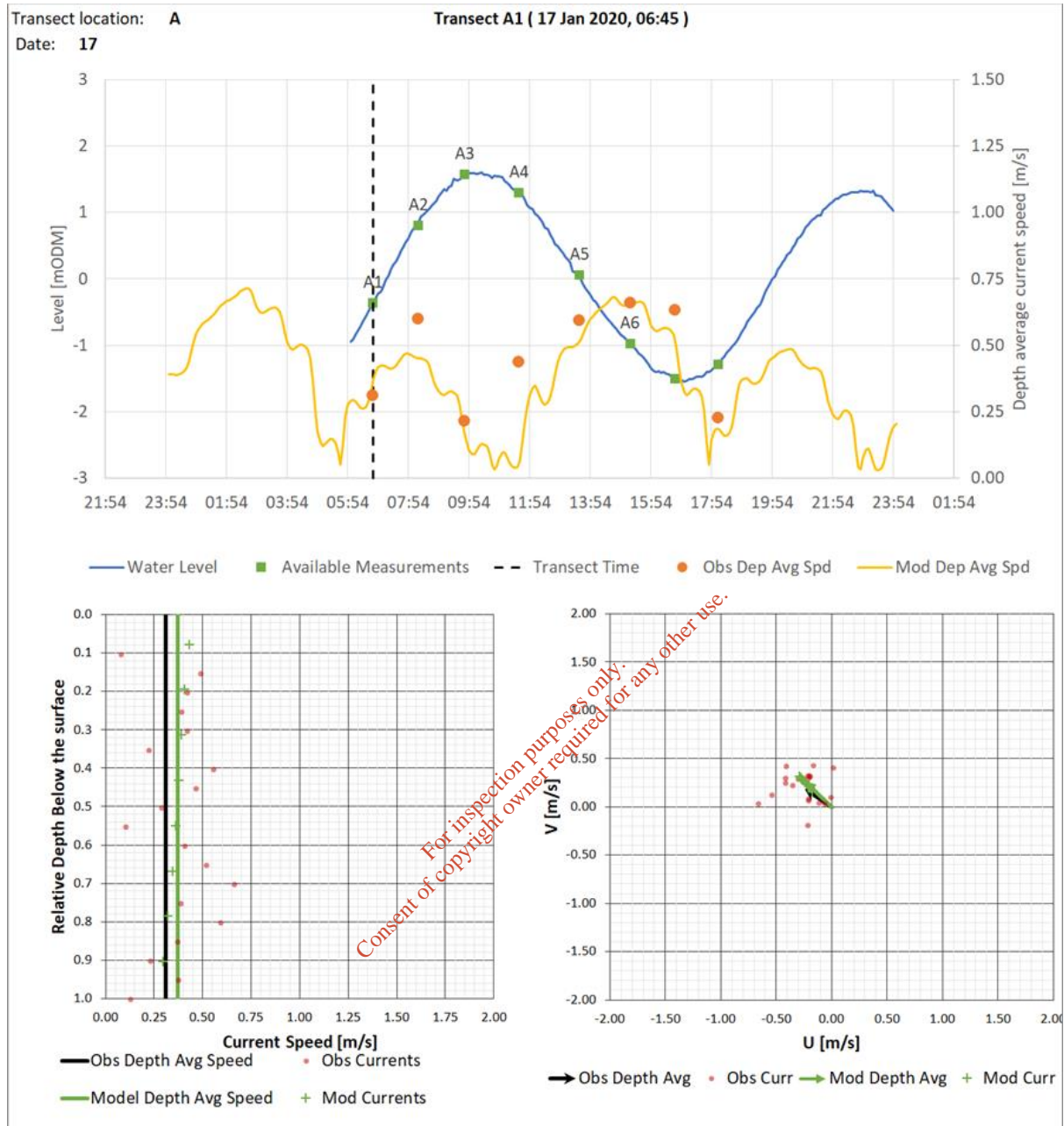


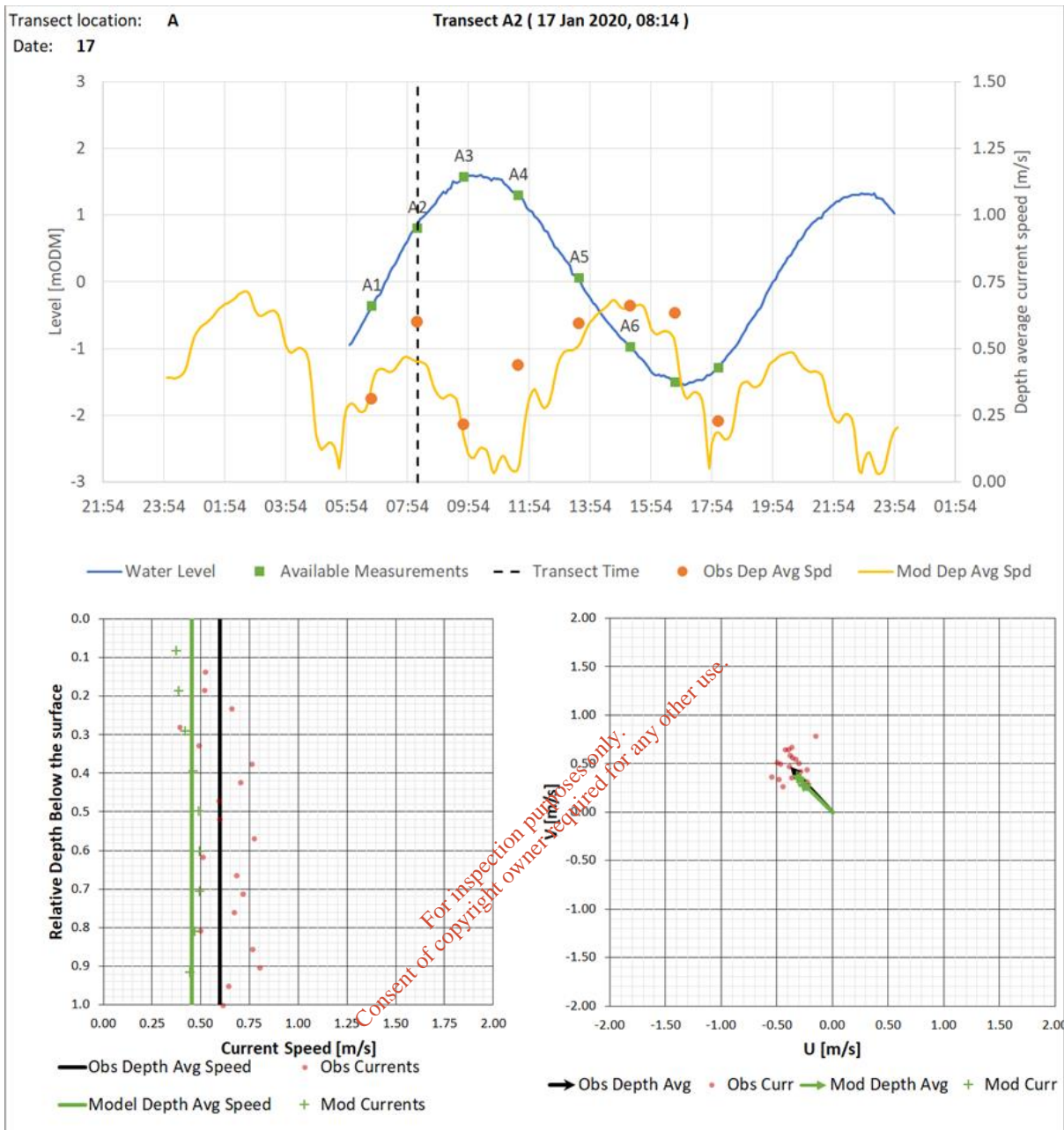


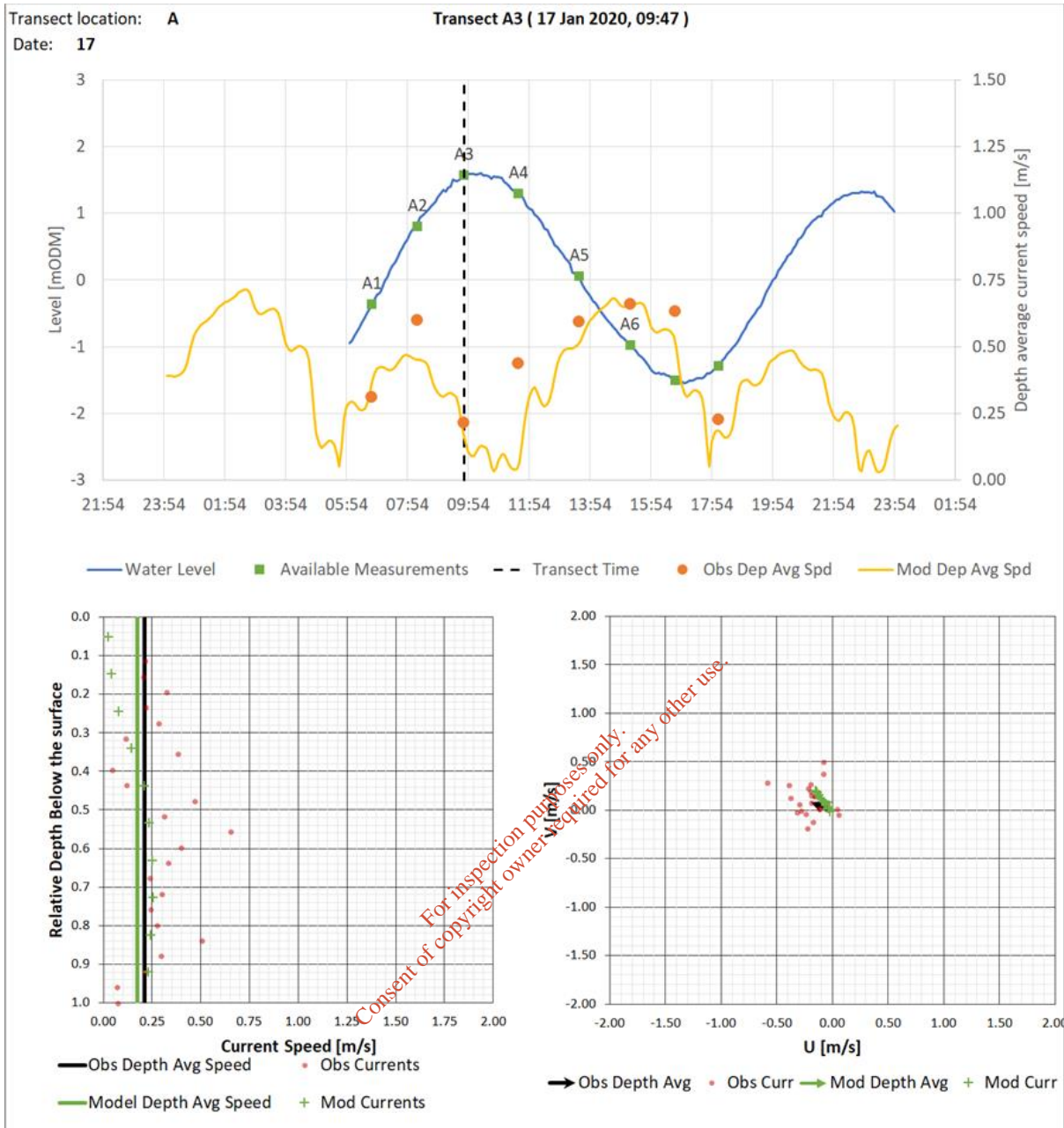


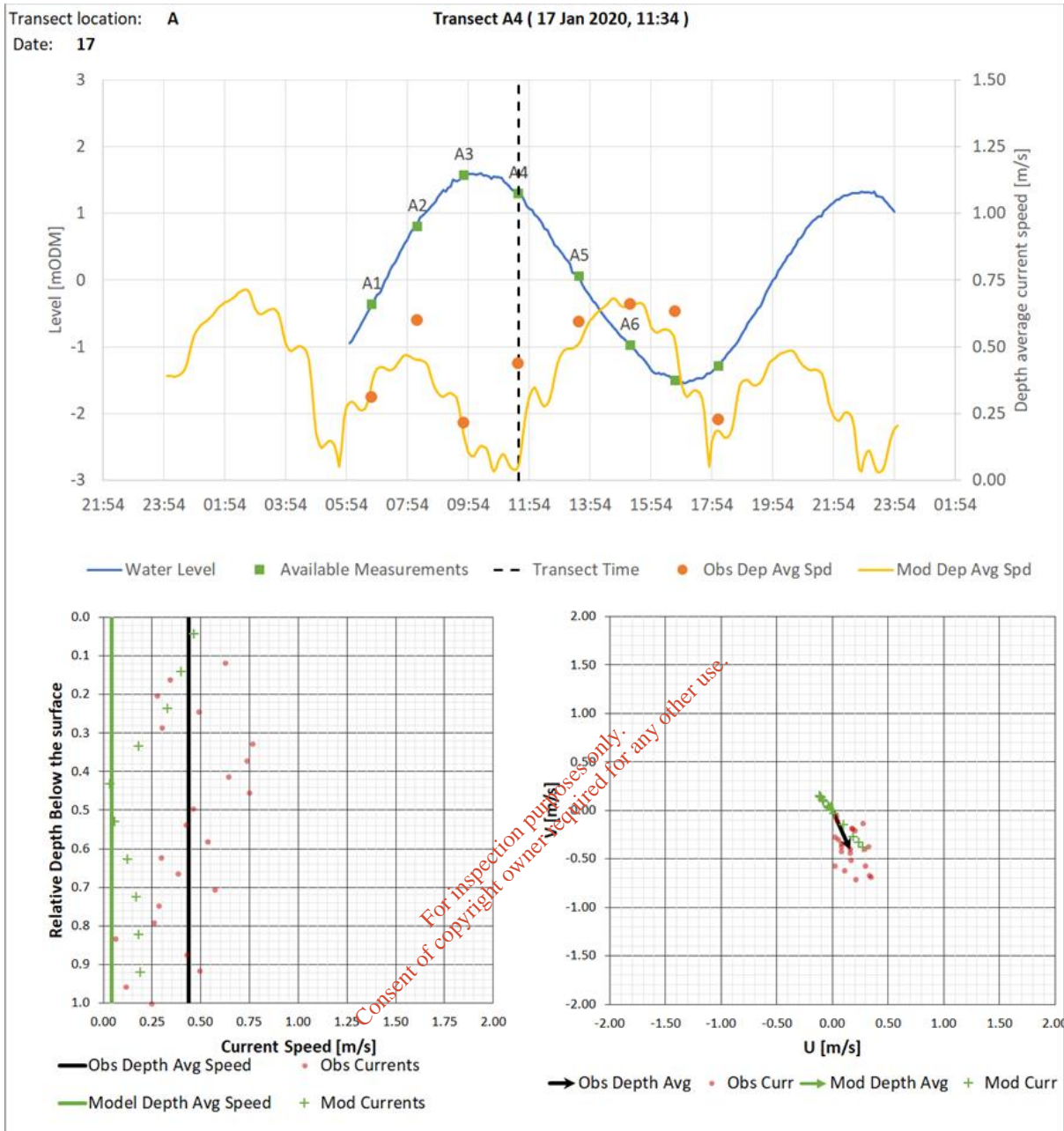


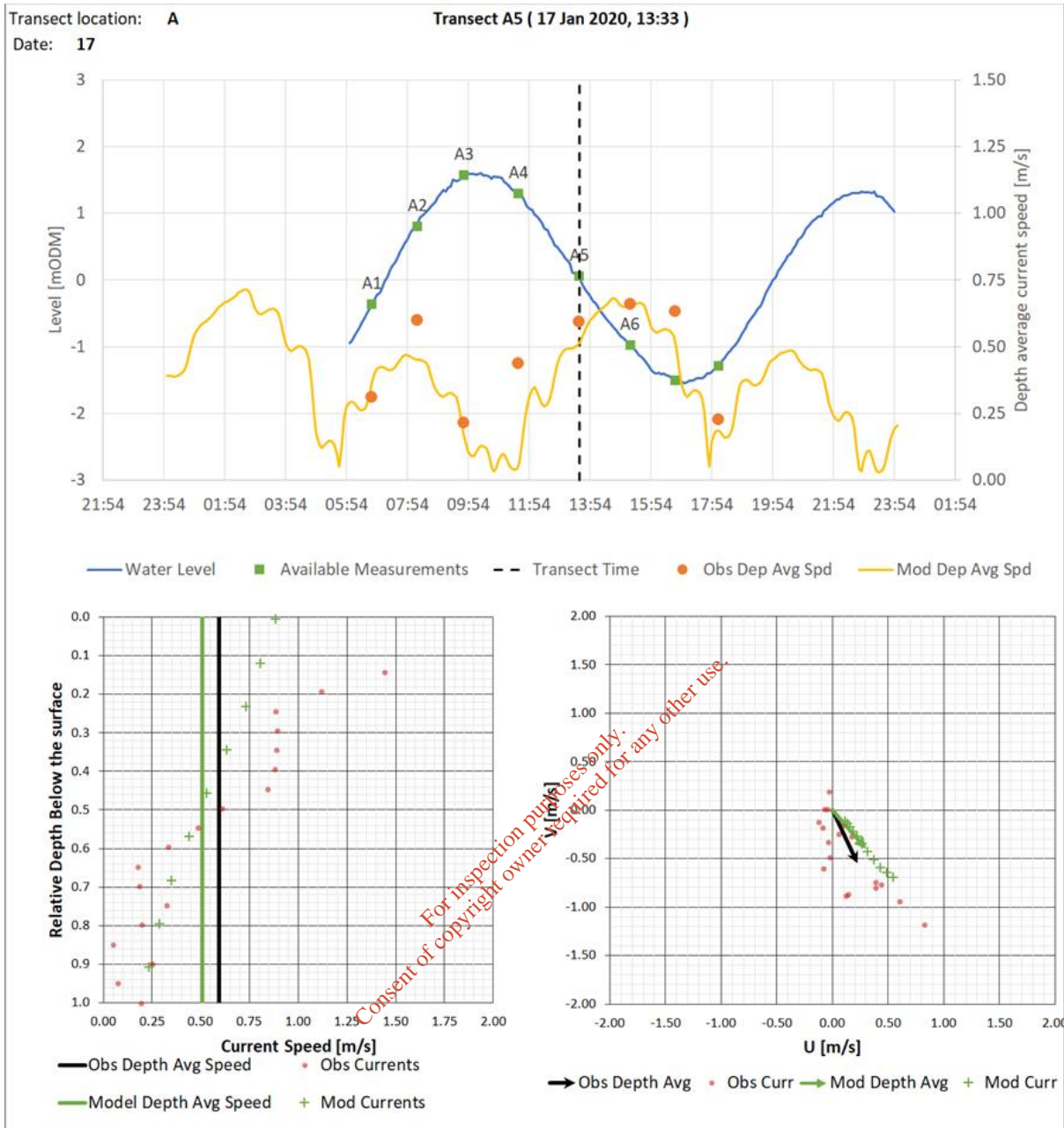
## D.9 Event E: Transect A



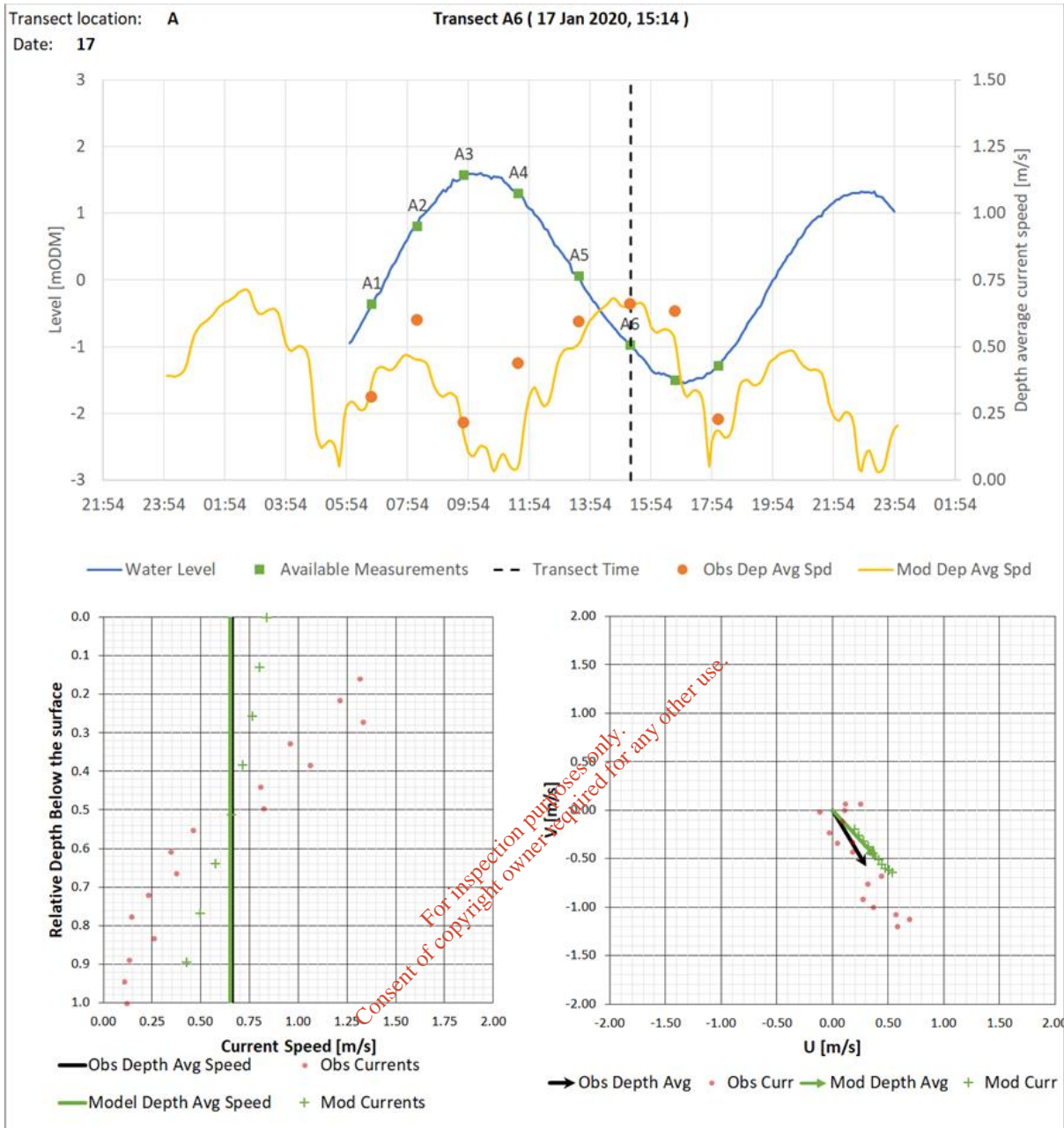


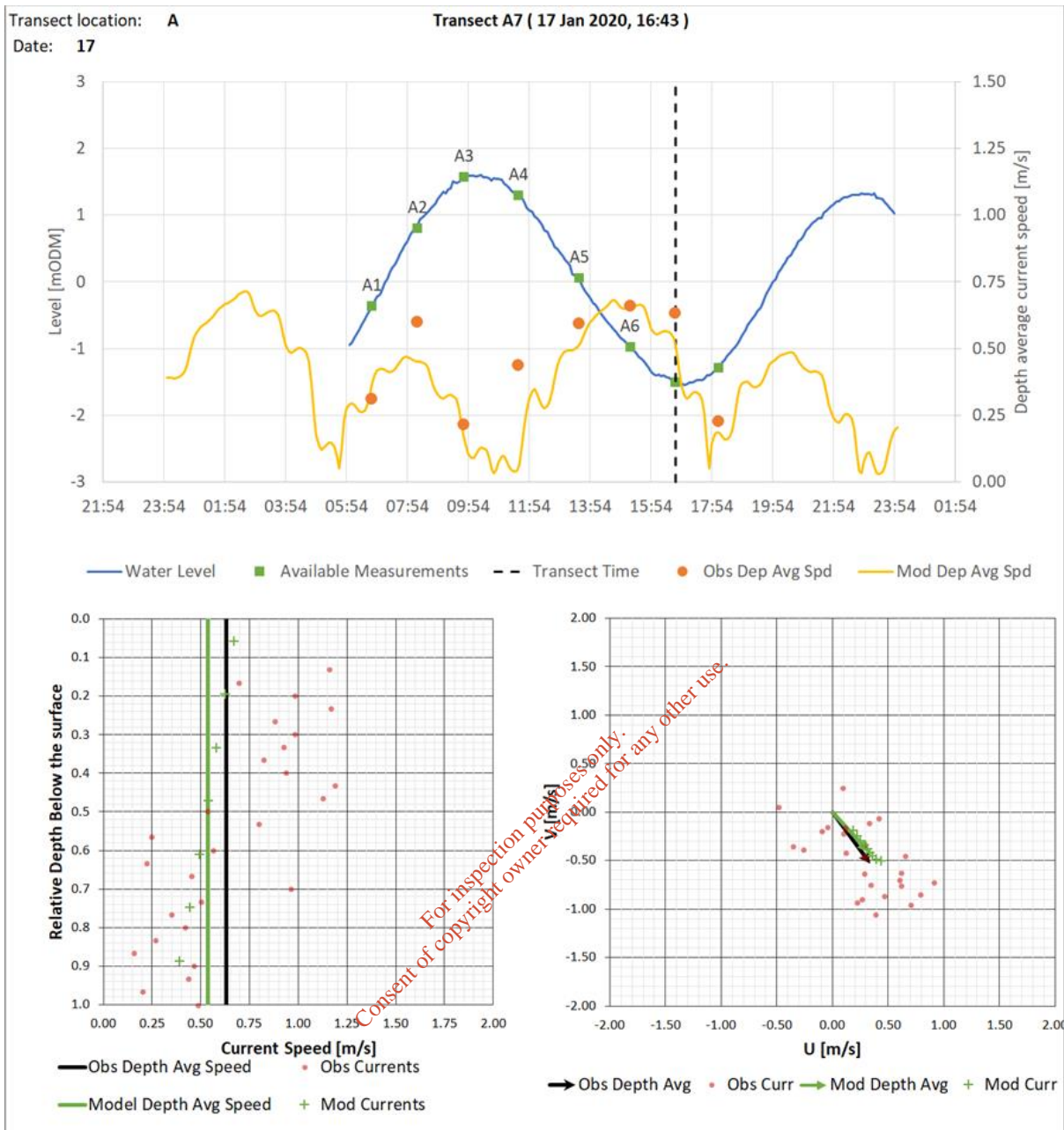


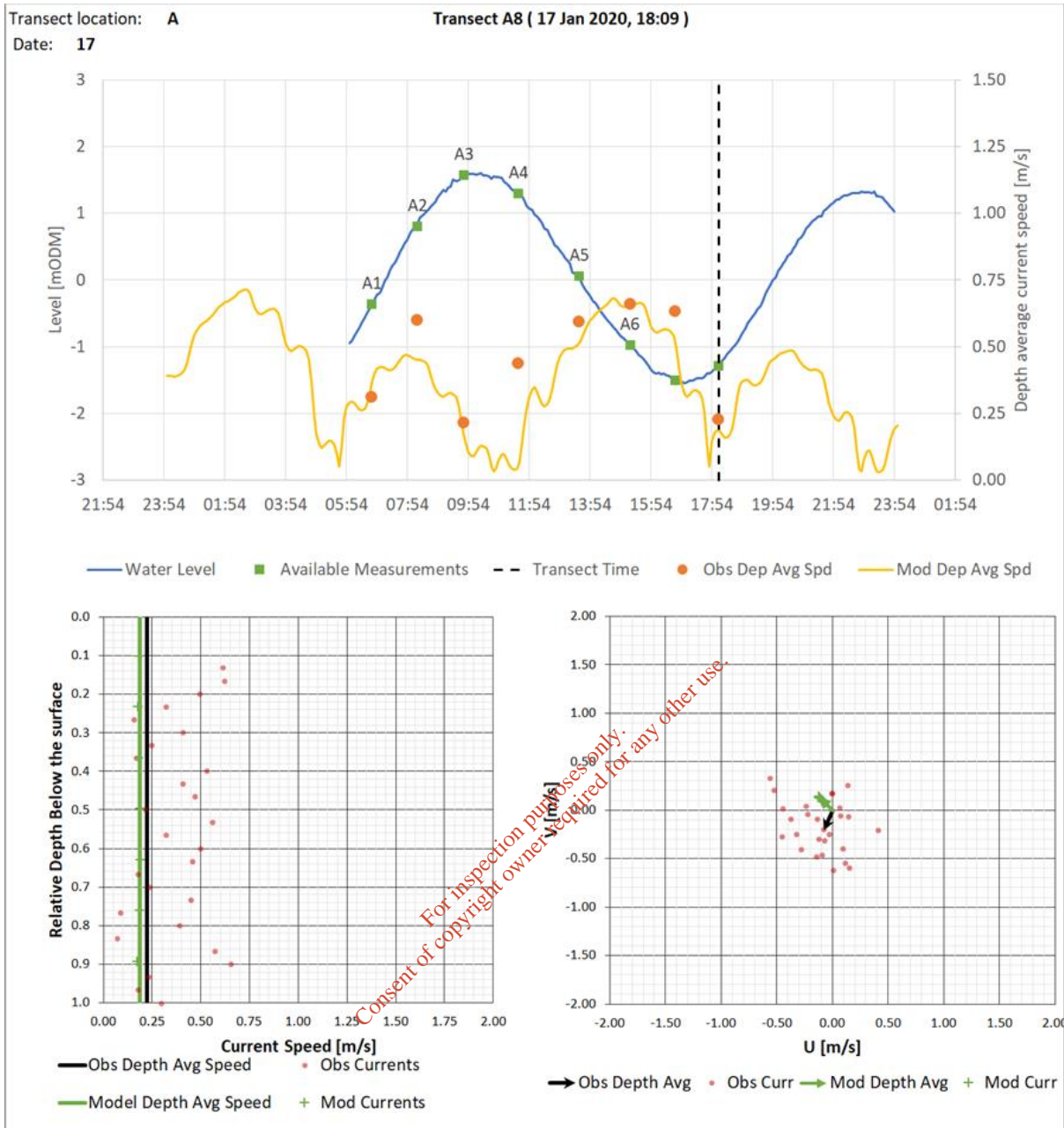




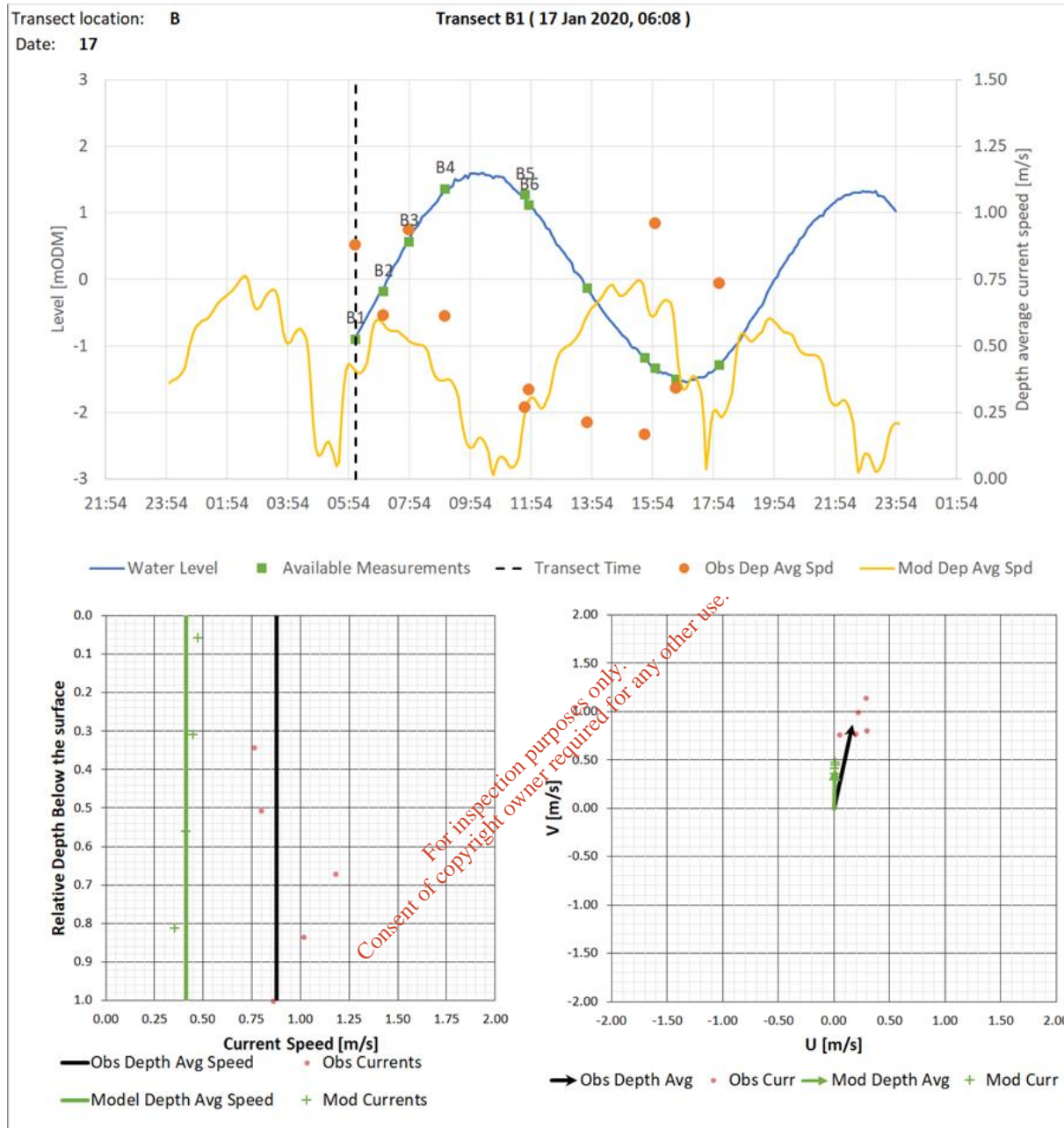


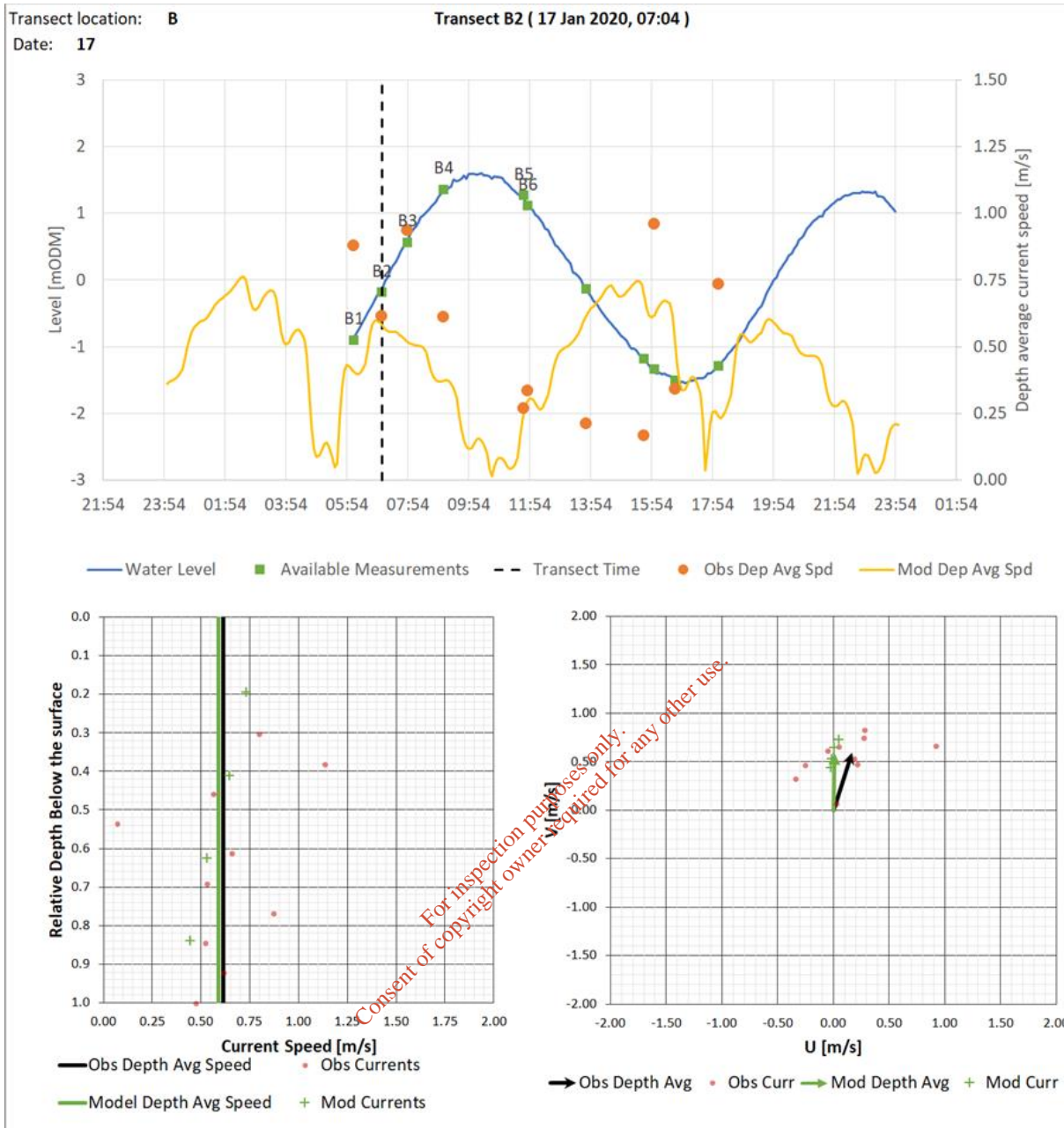


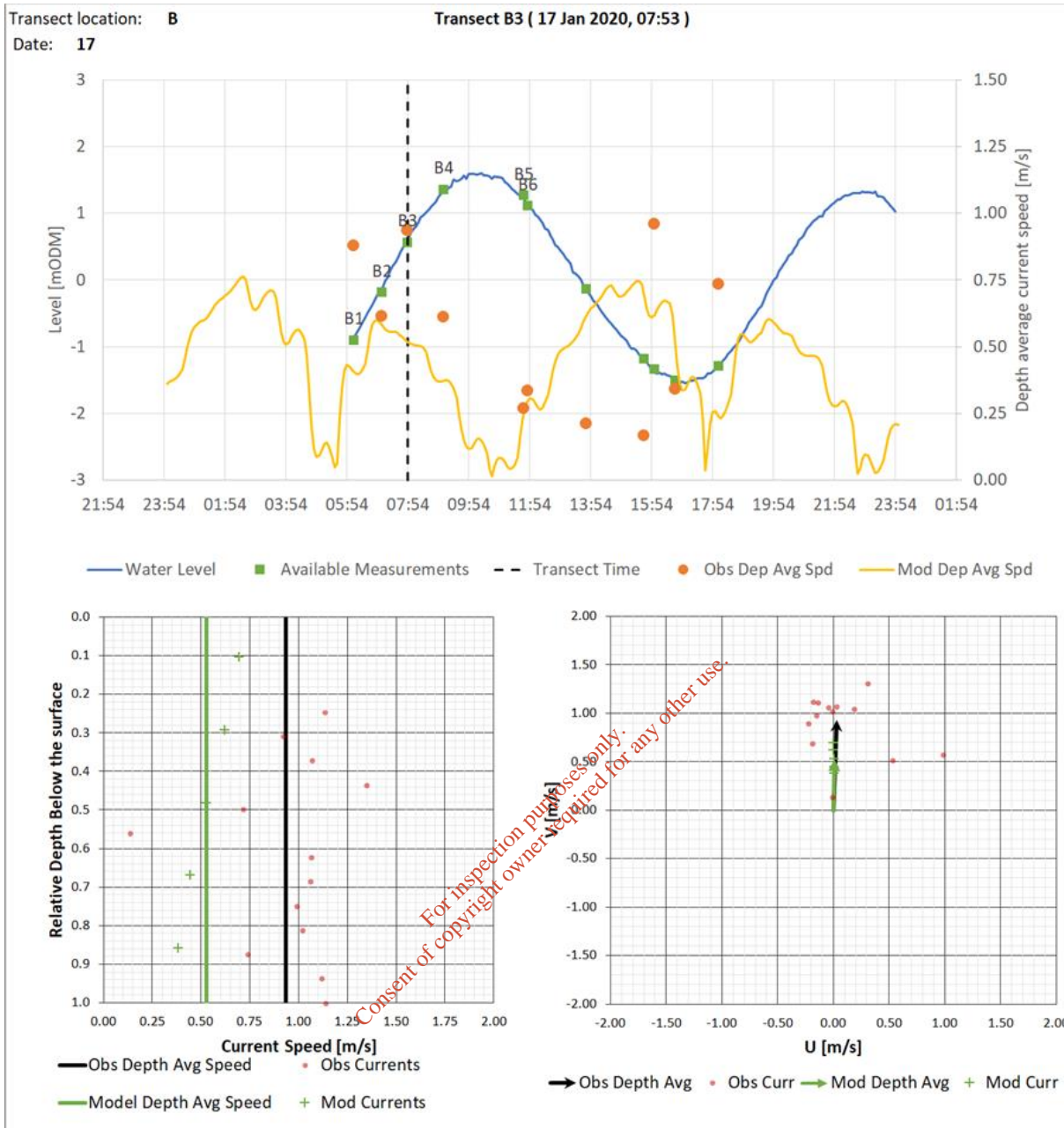


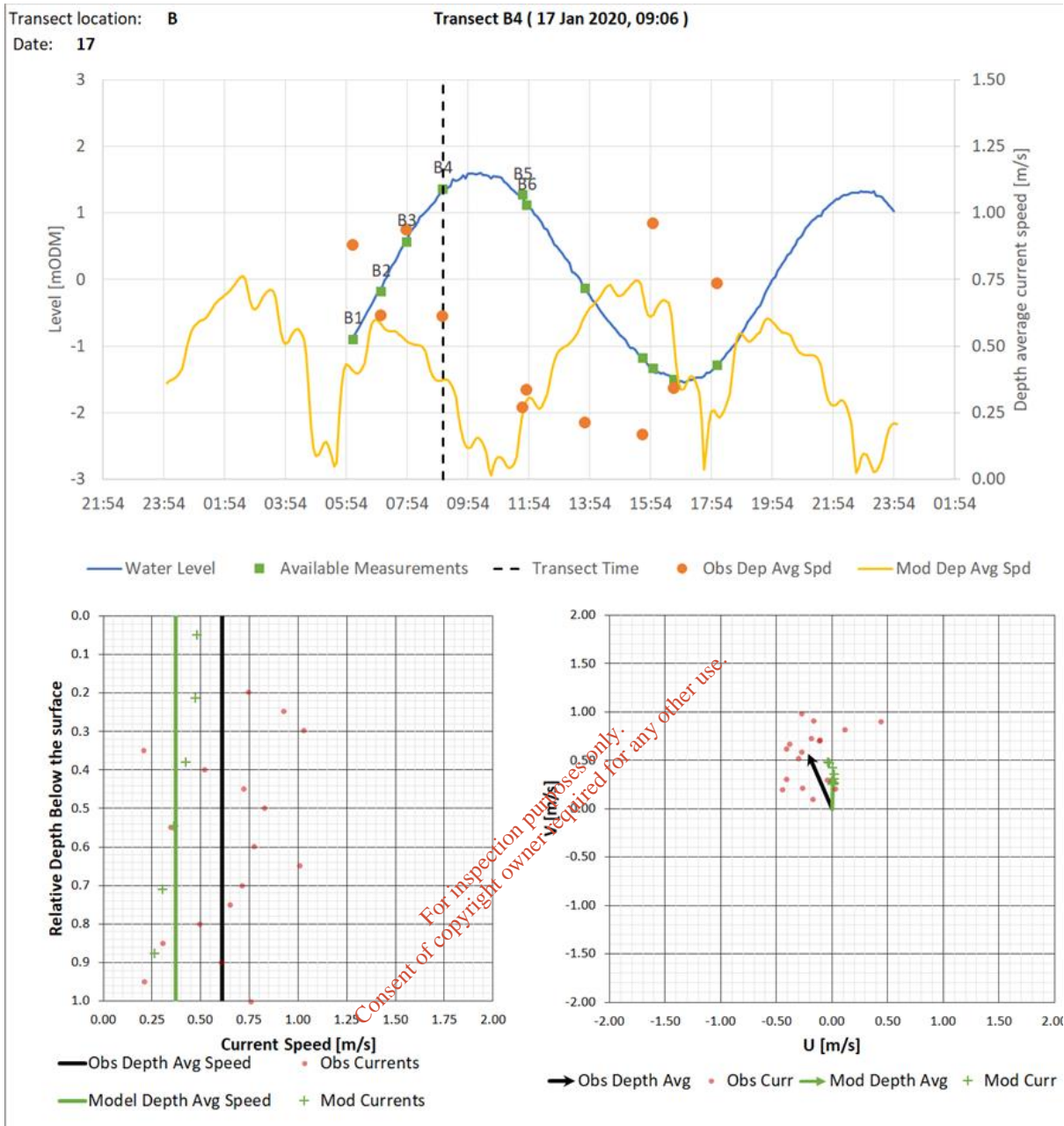


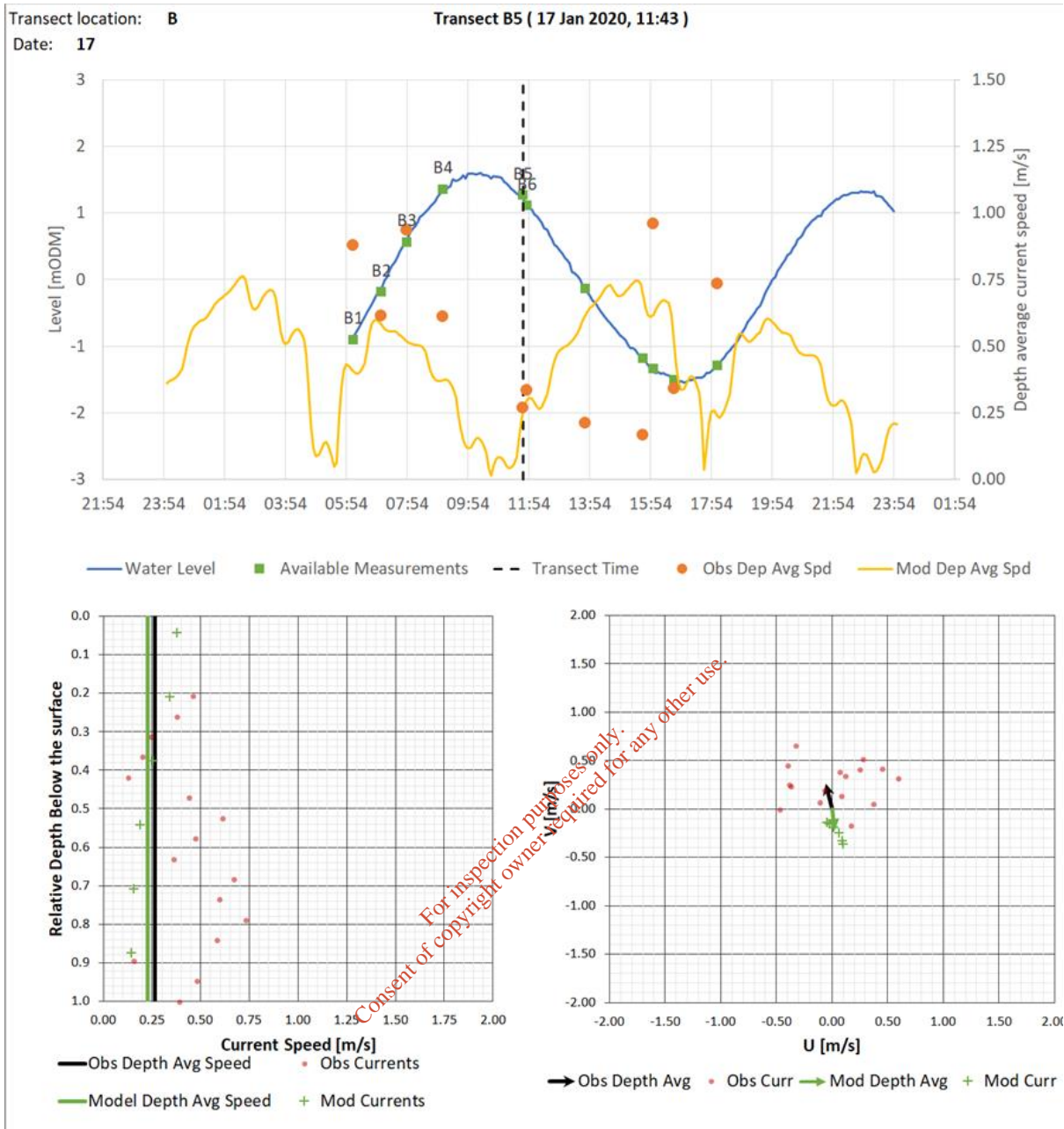
### D.10 Event E: Transect B



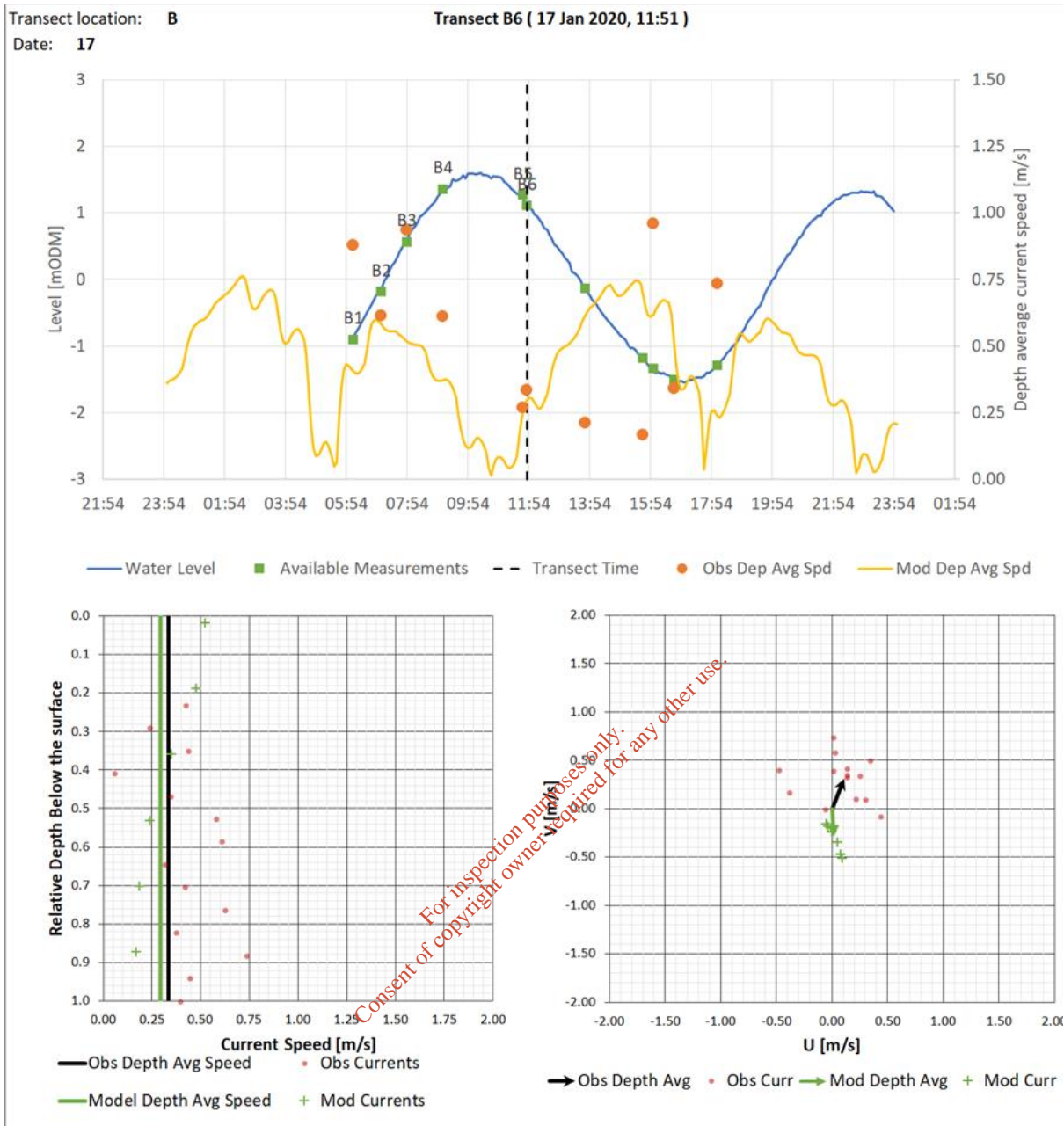


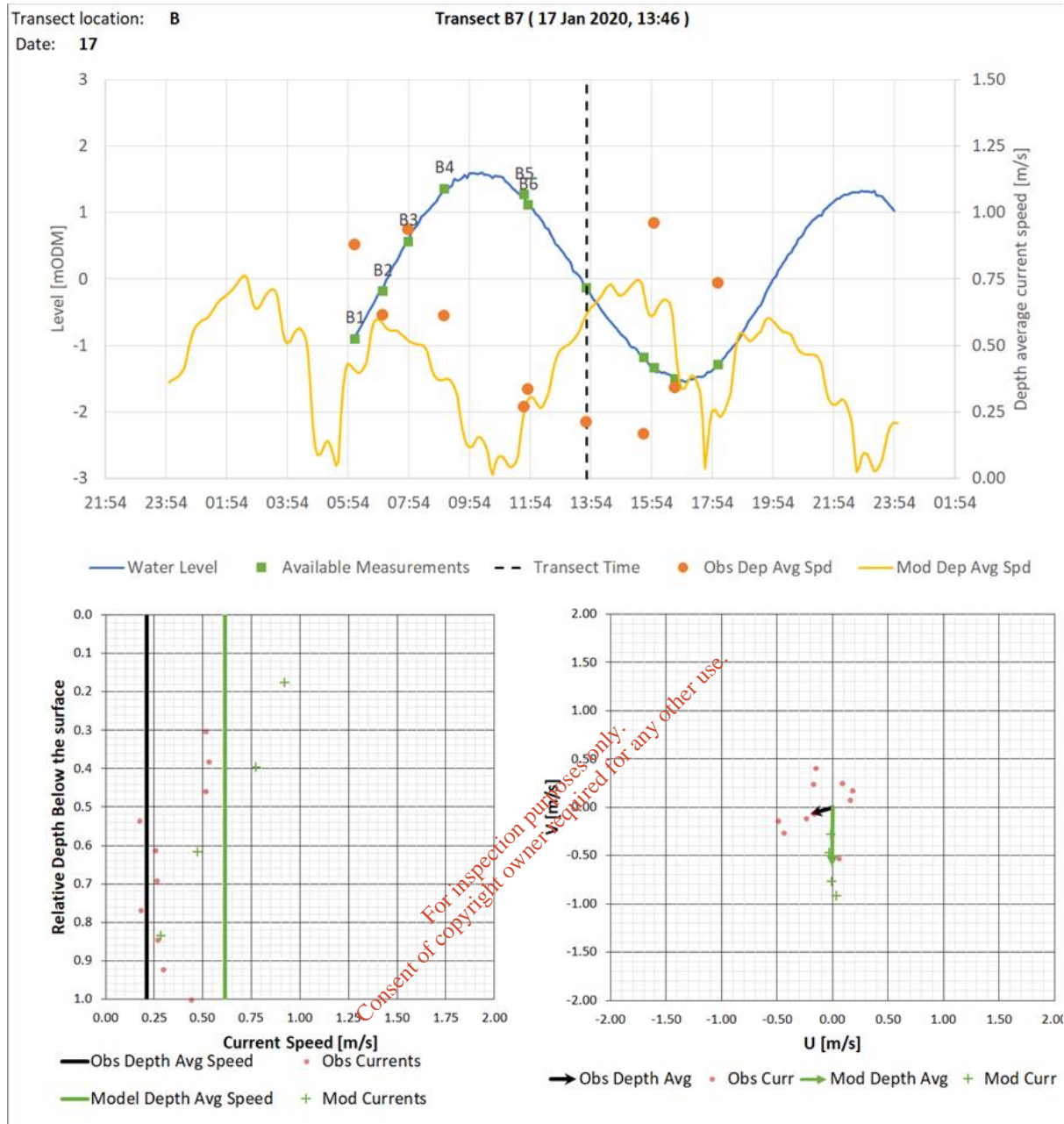


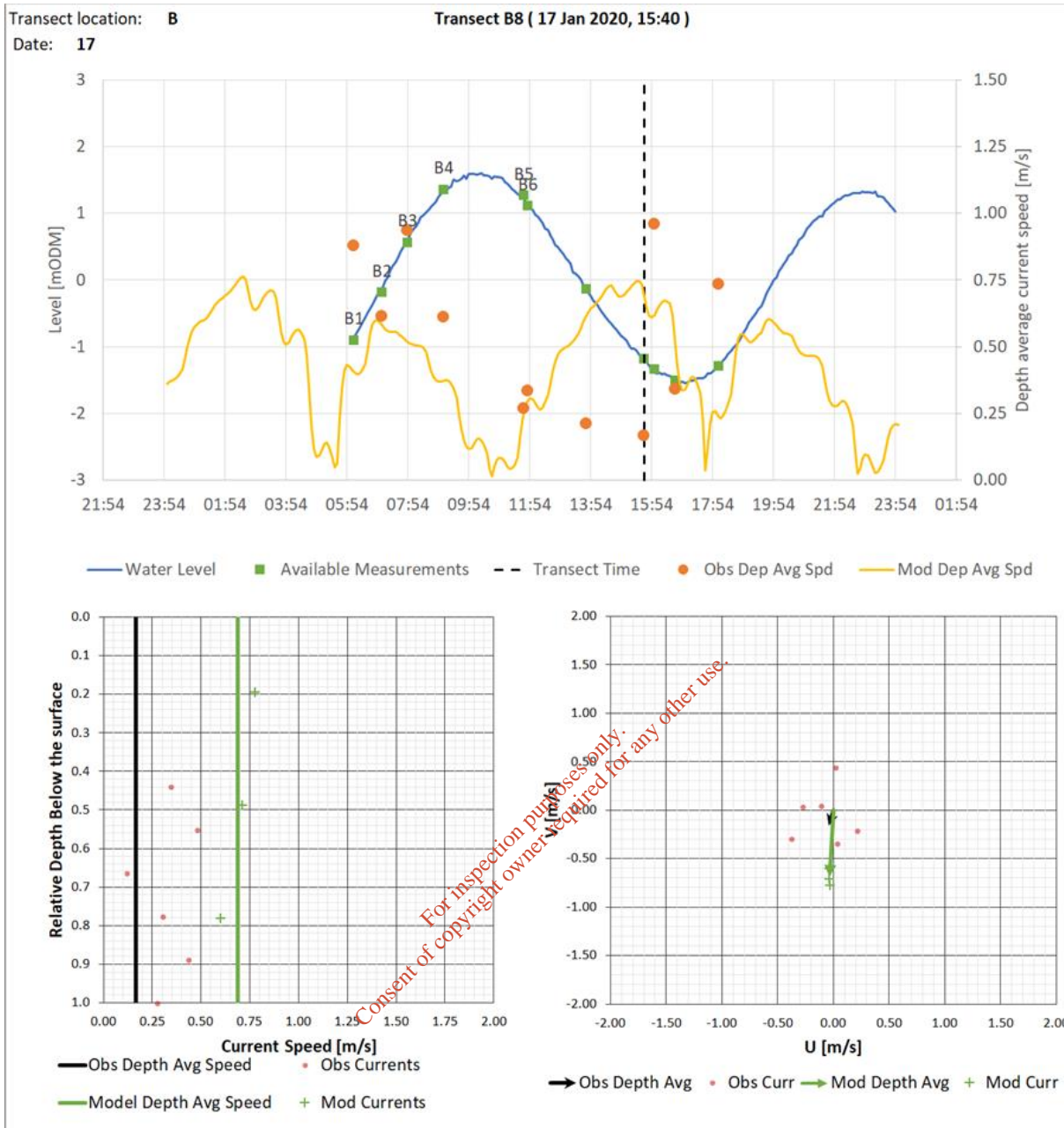


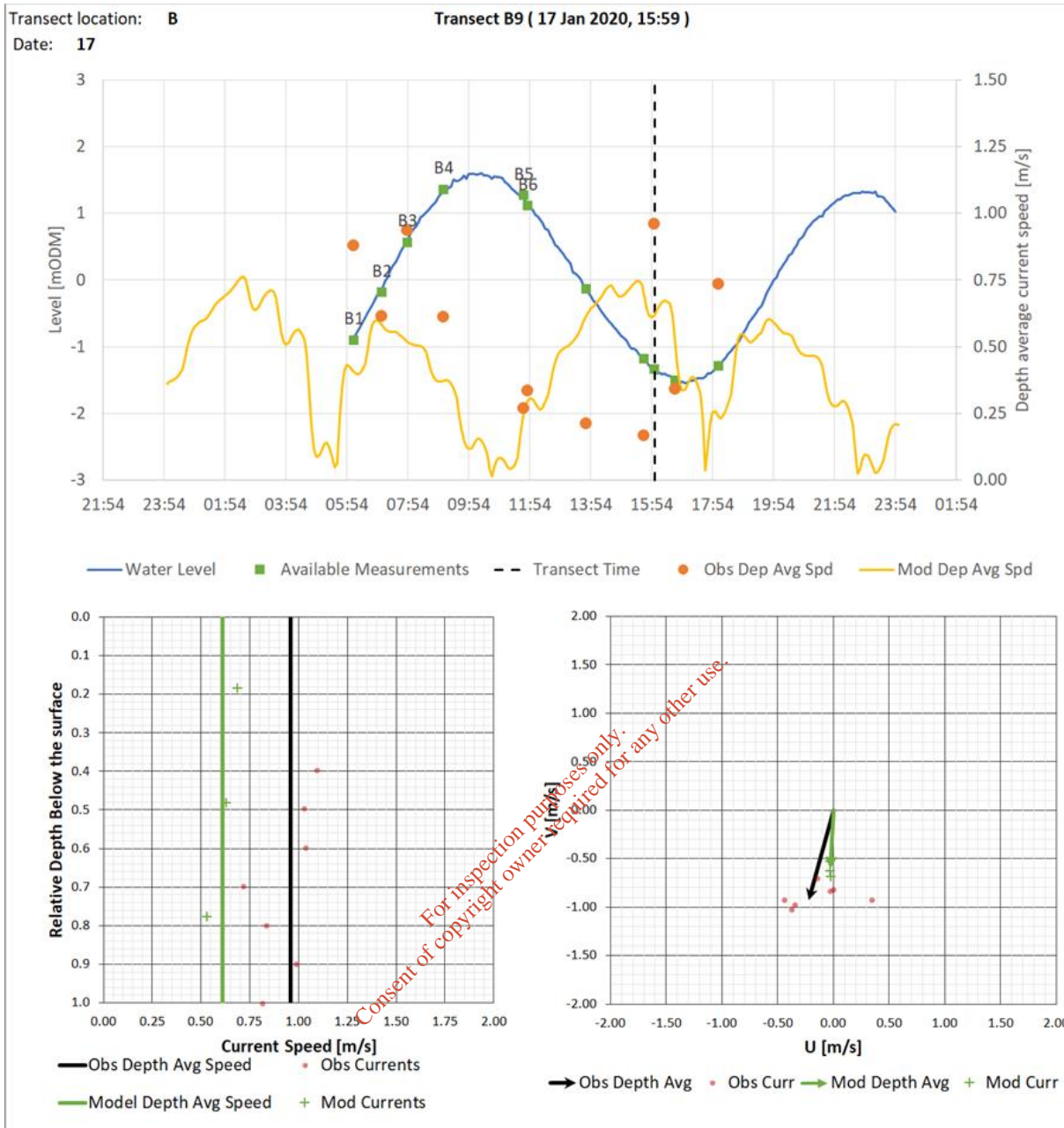


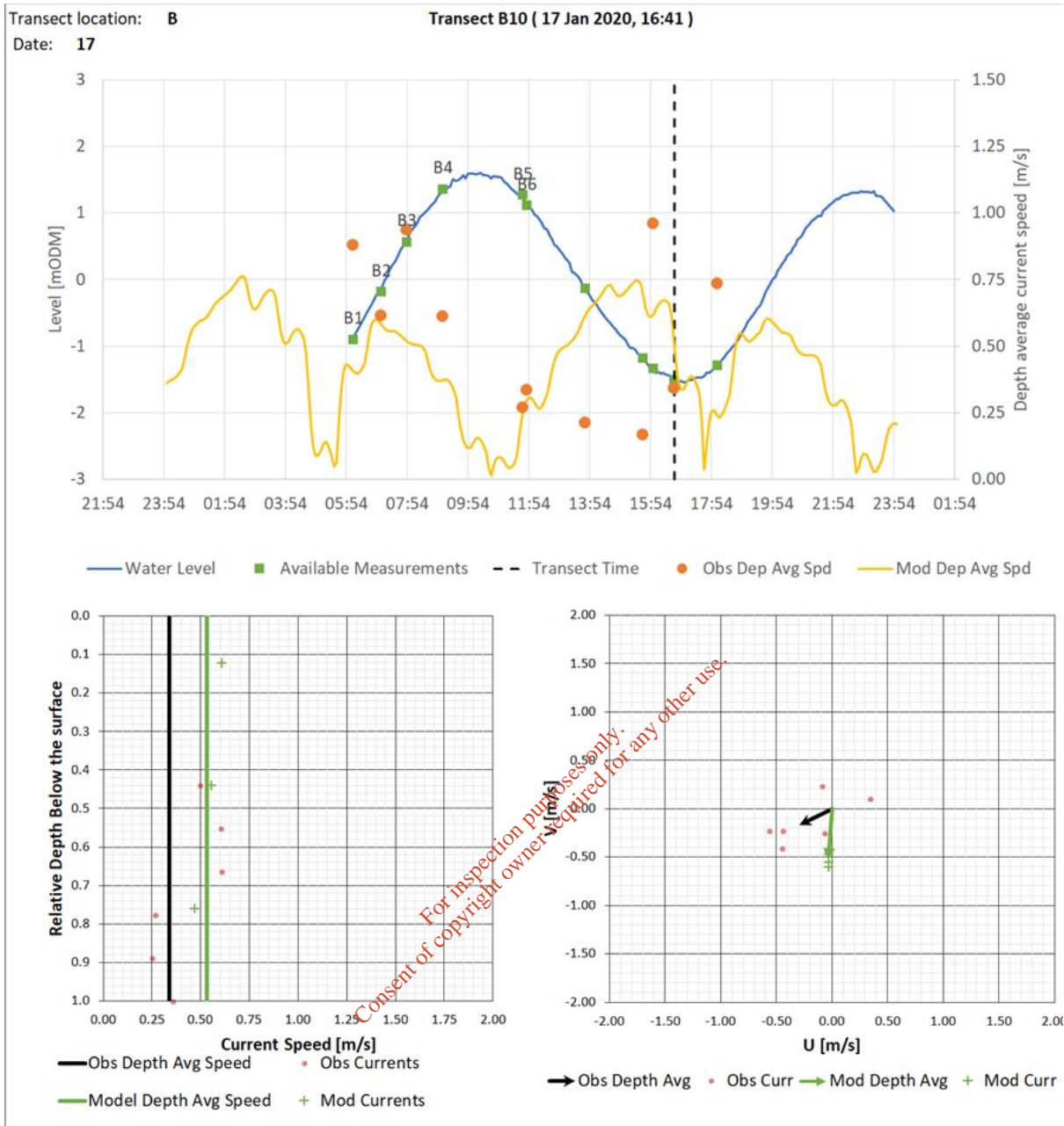


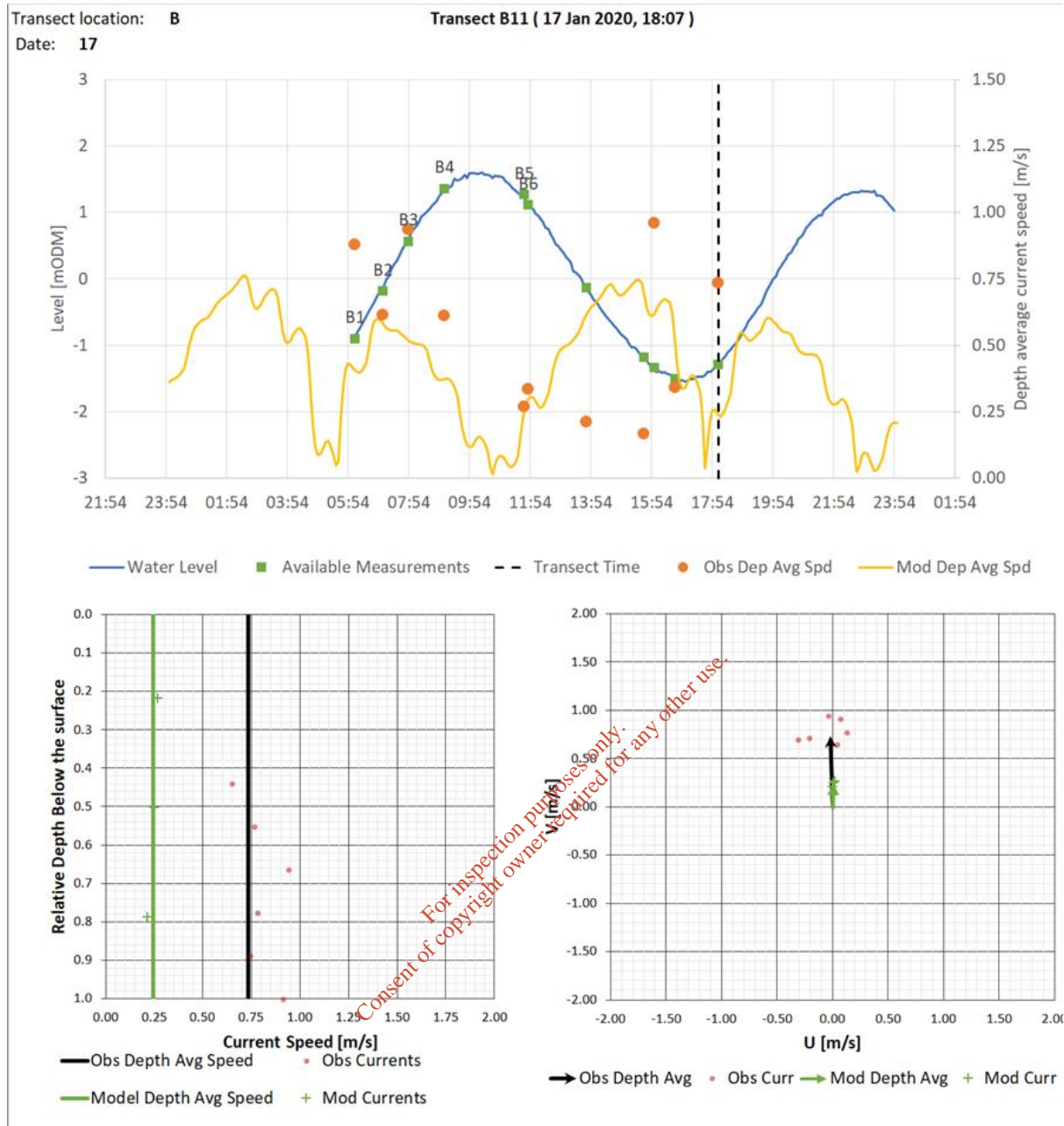




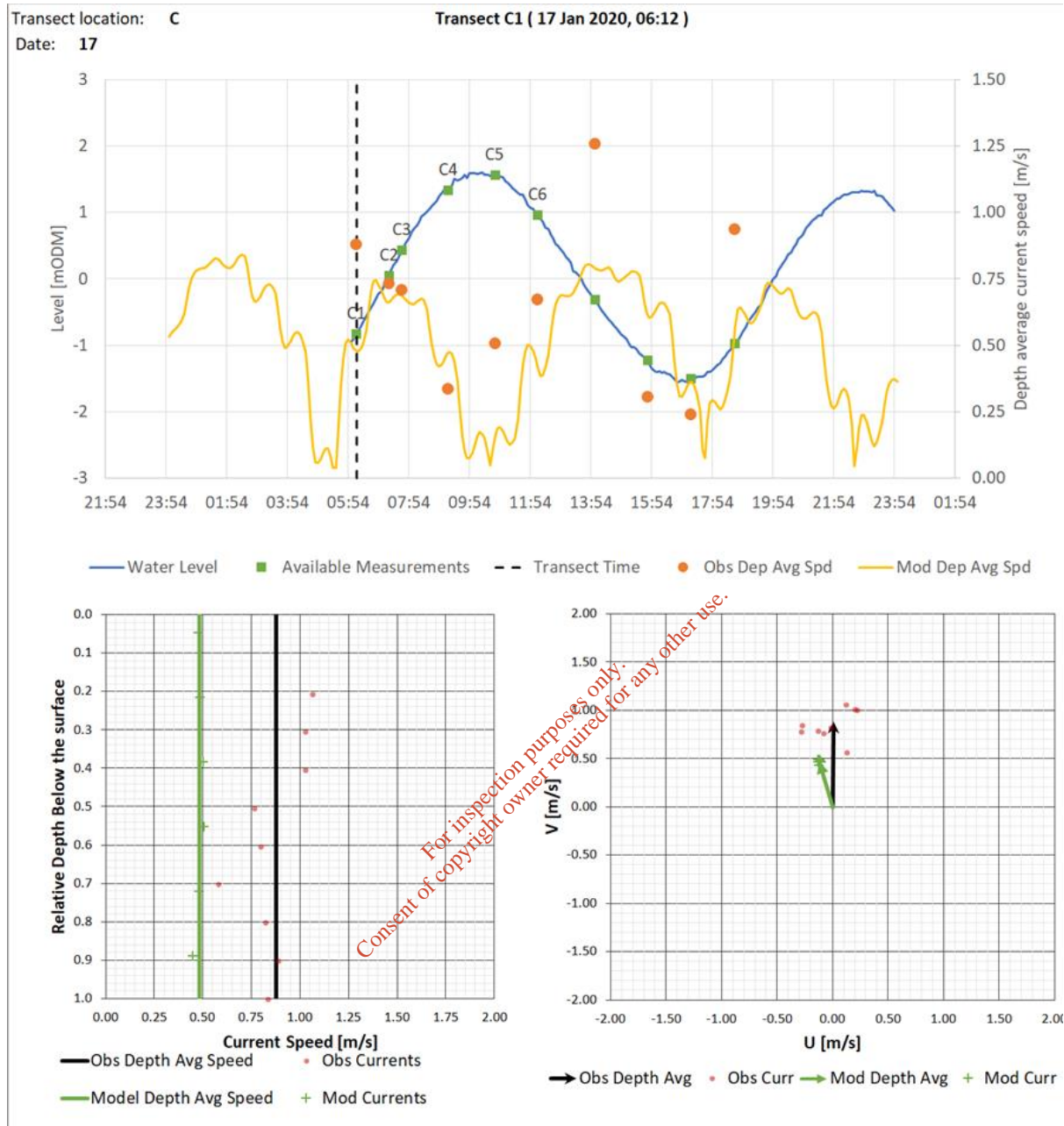


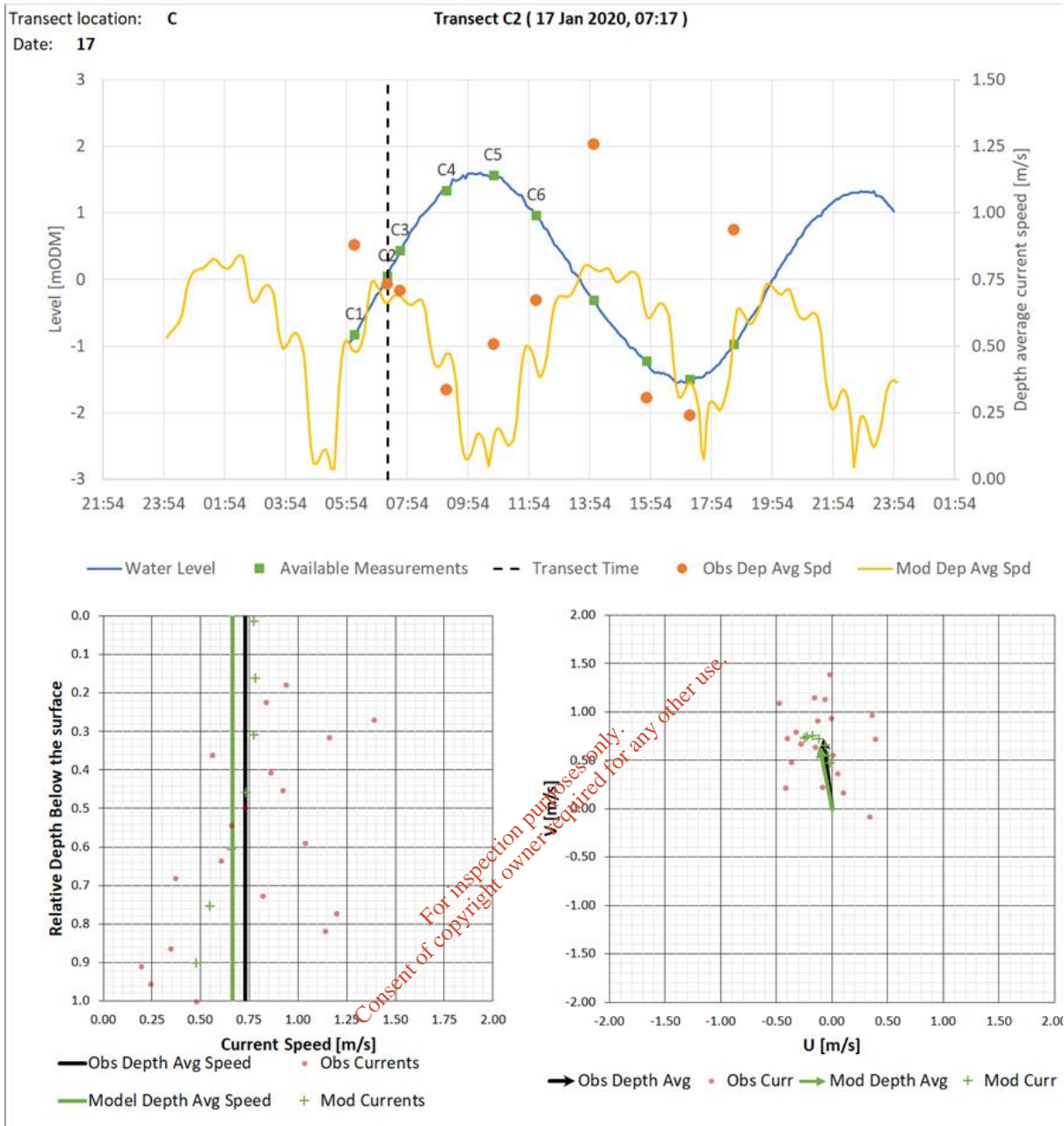




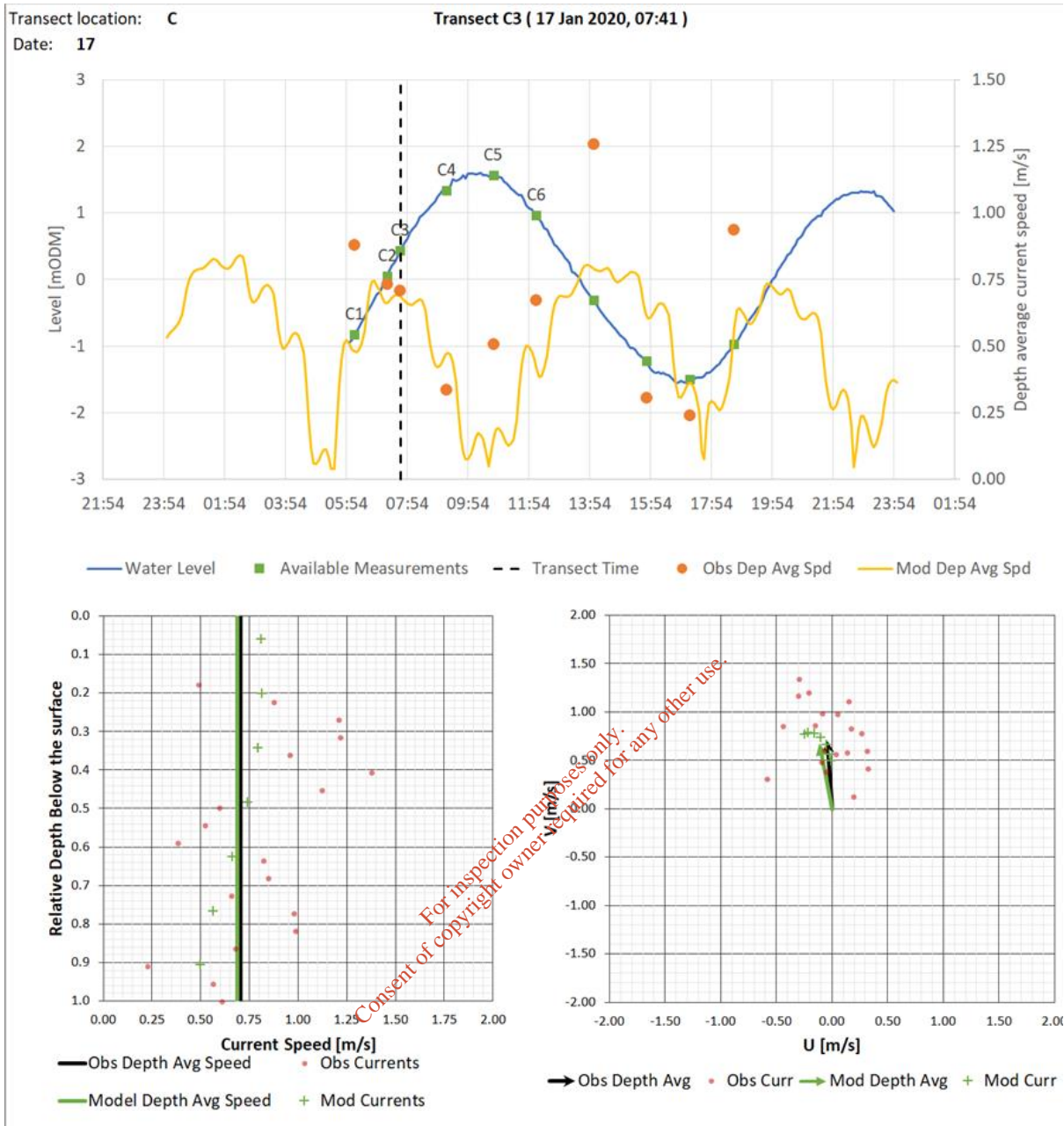


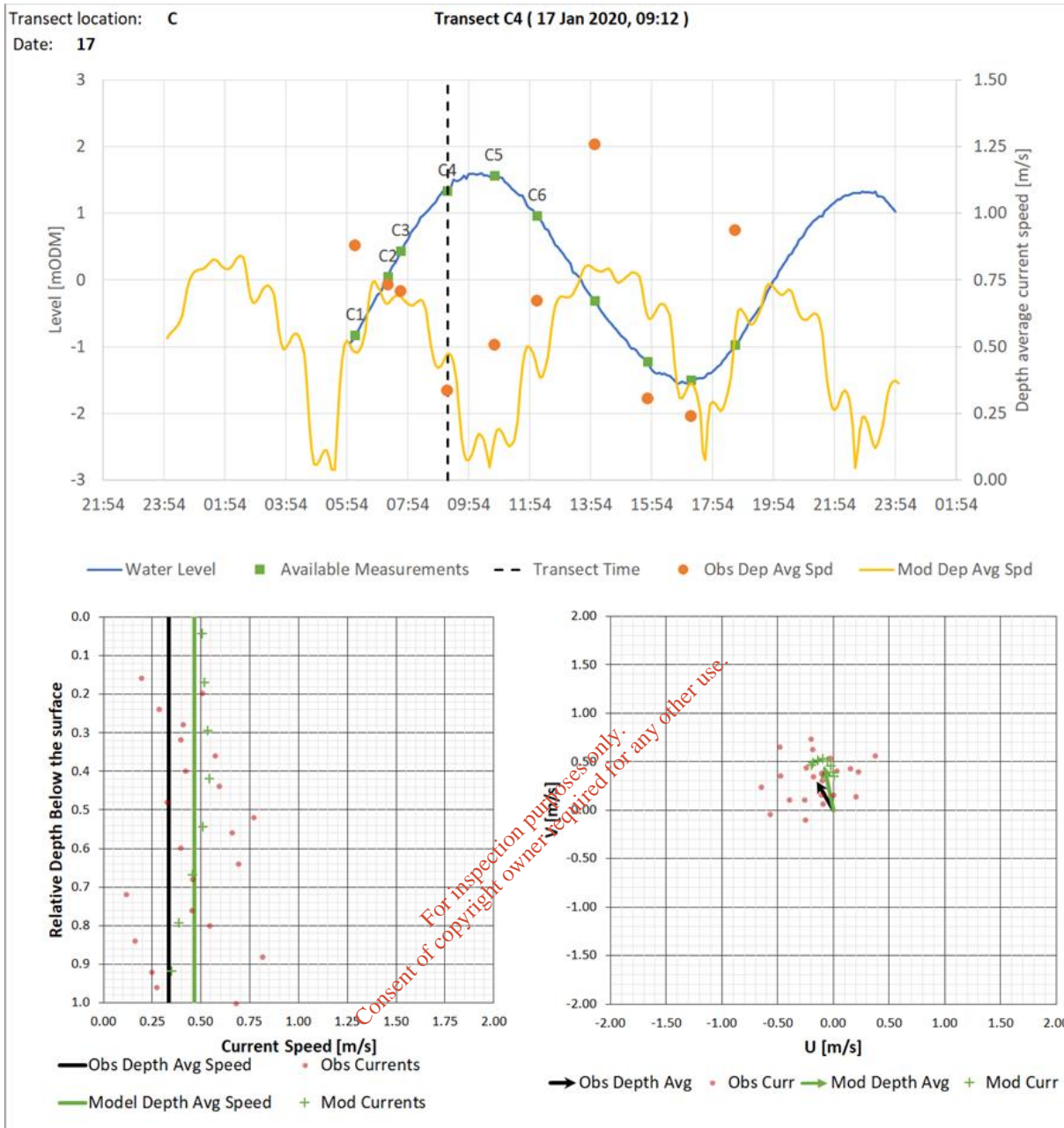
## D.11 Event E: Transect C

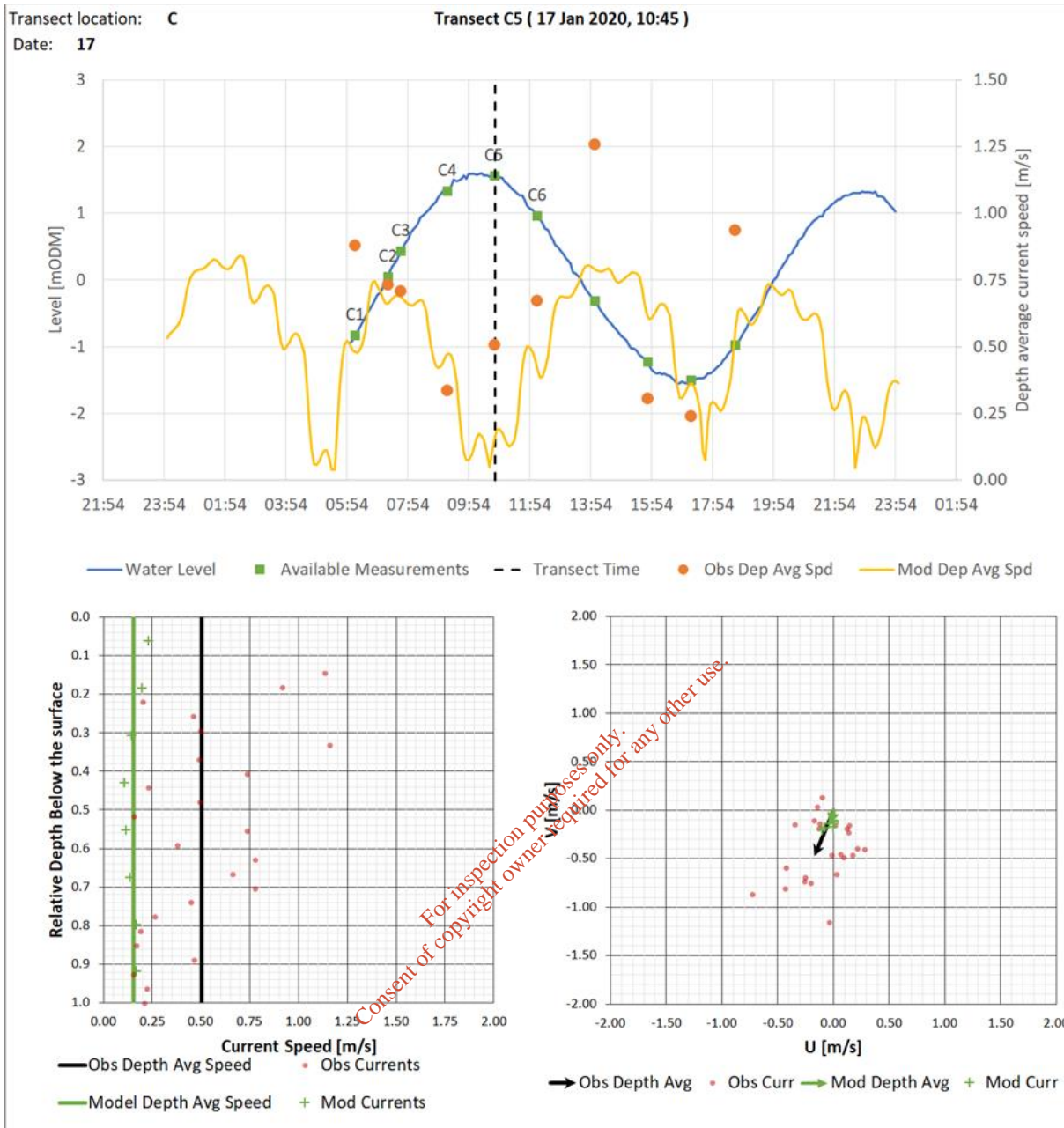


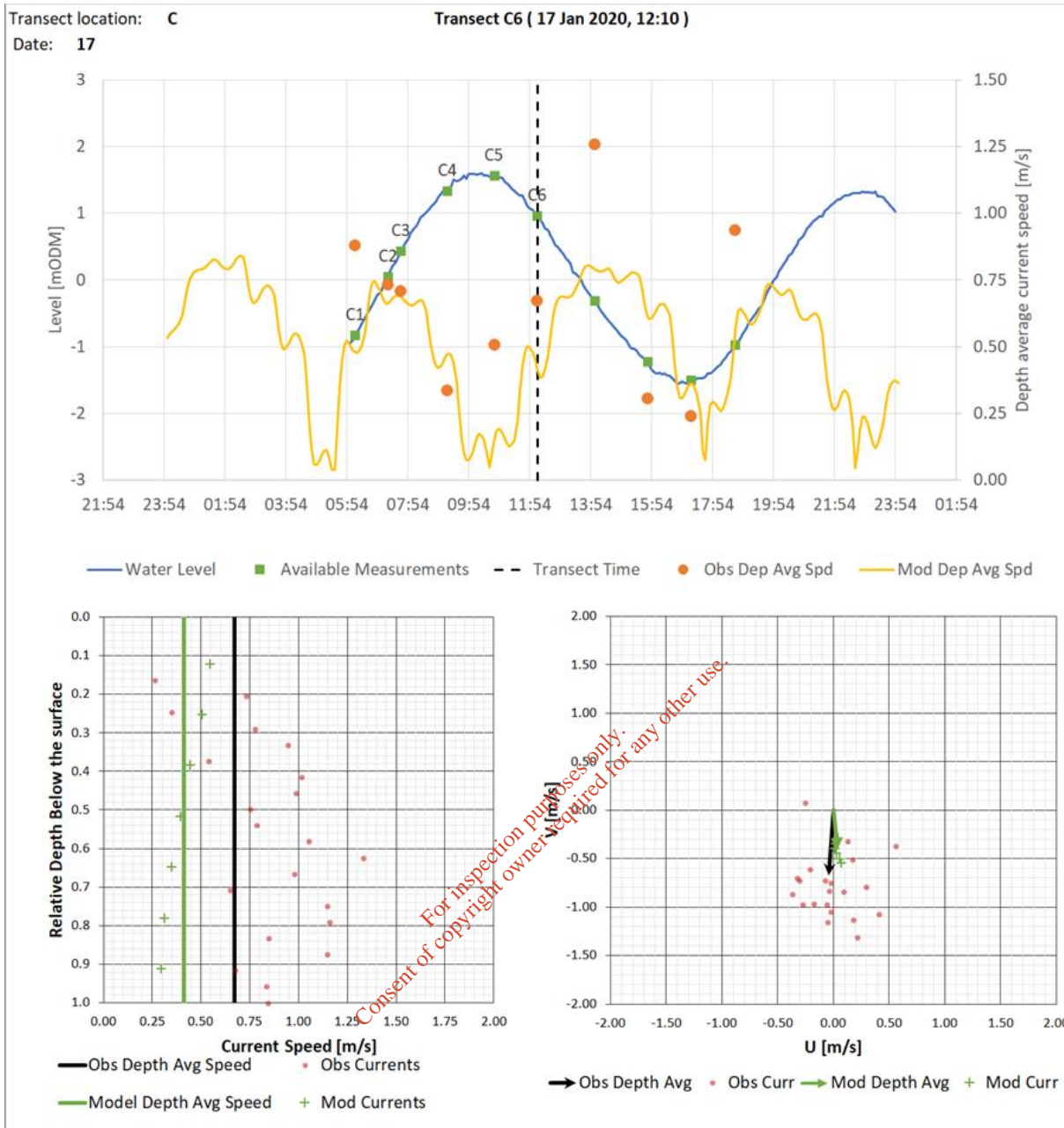


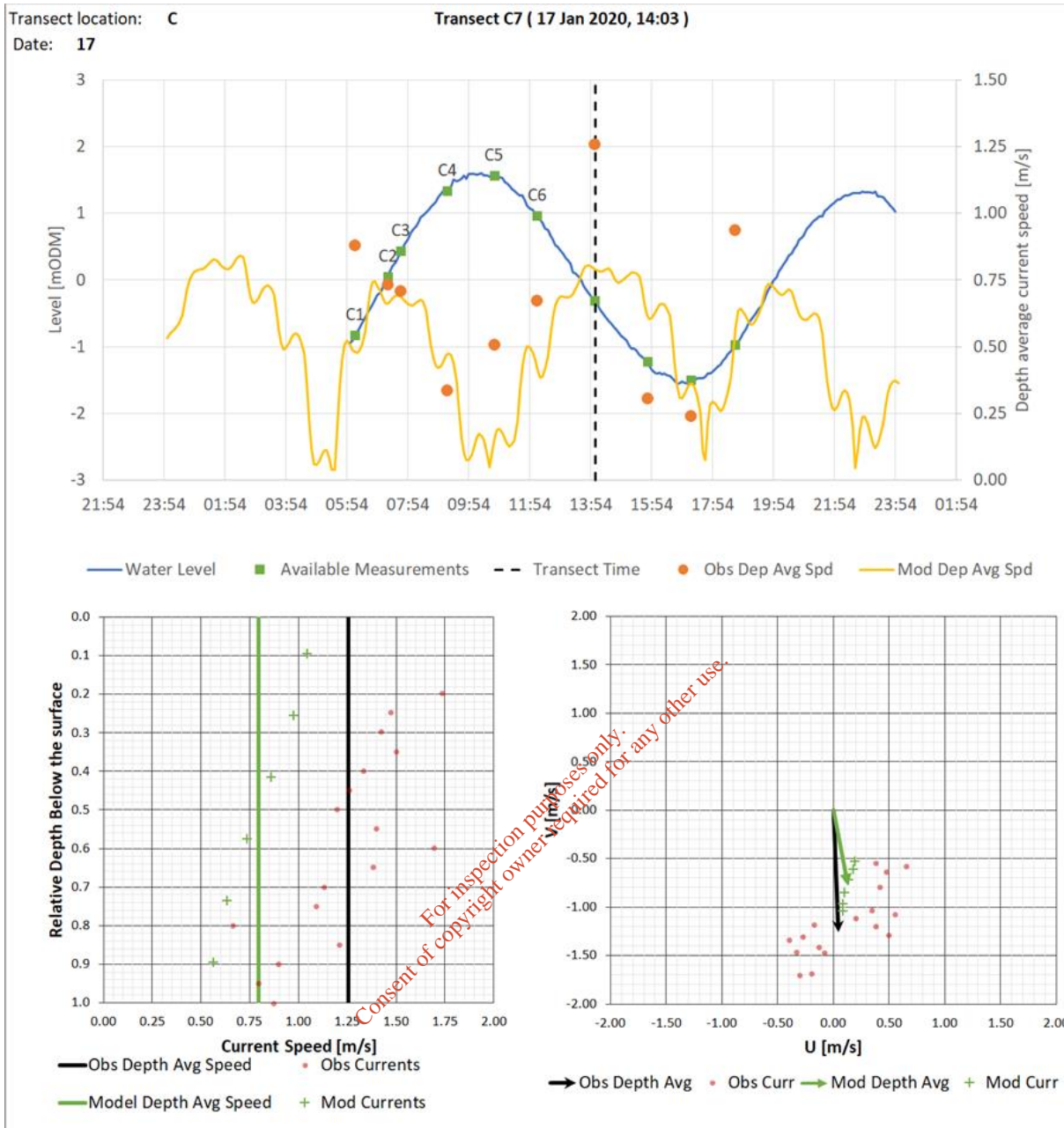


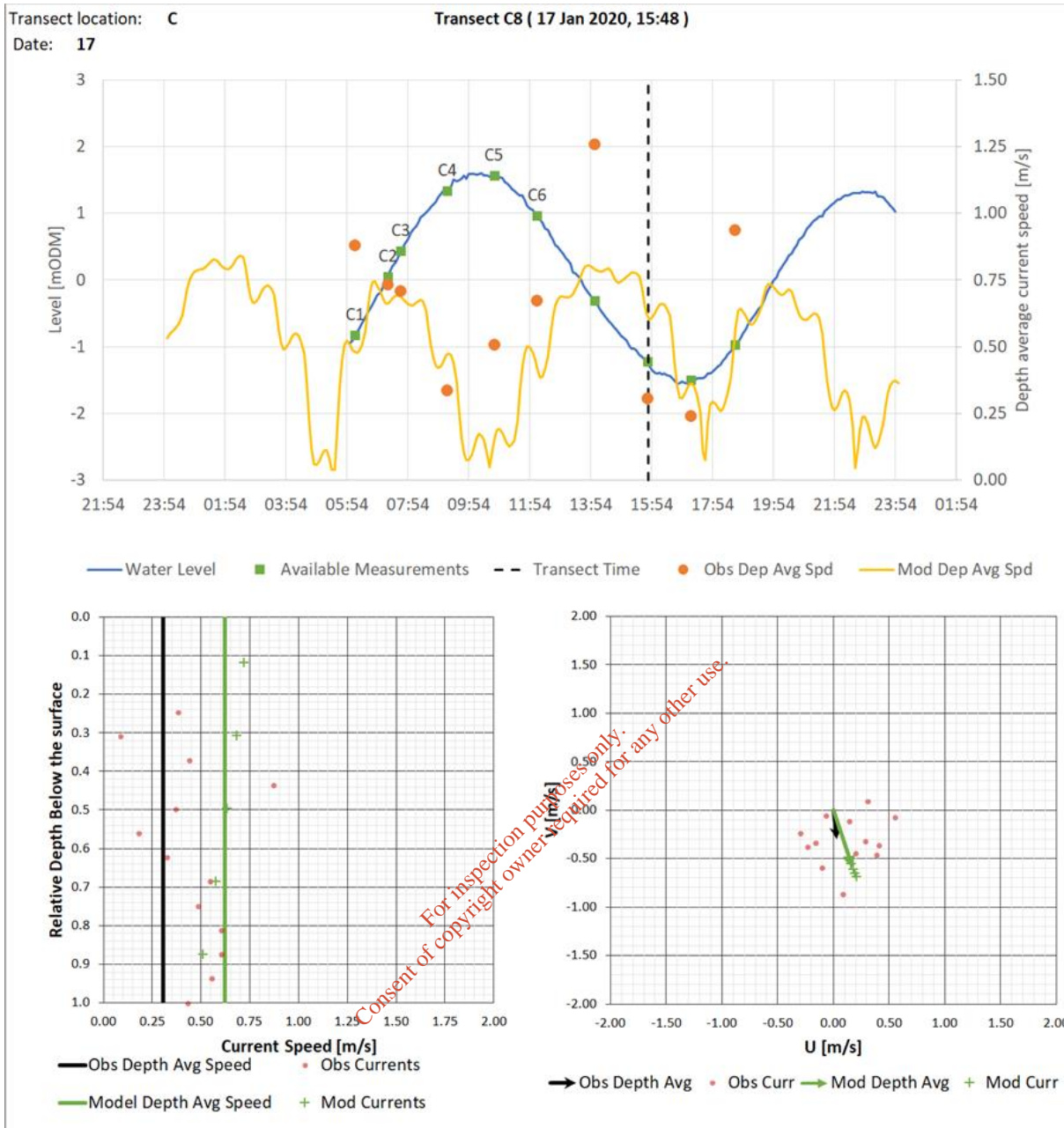


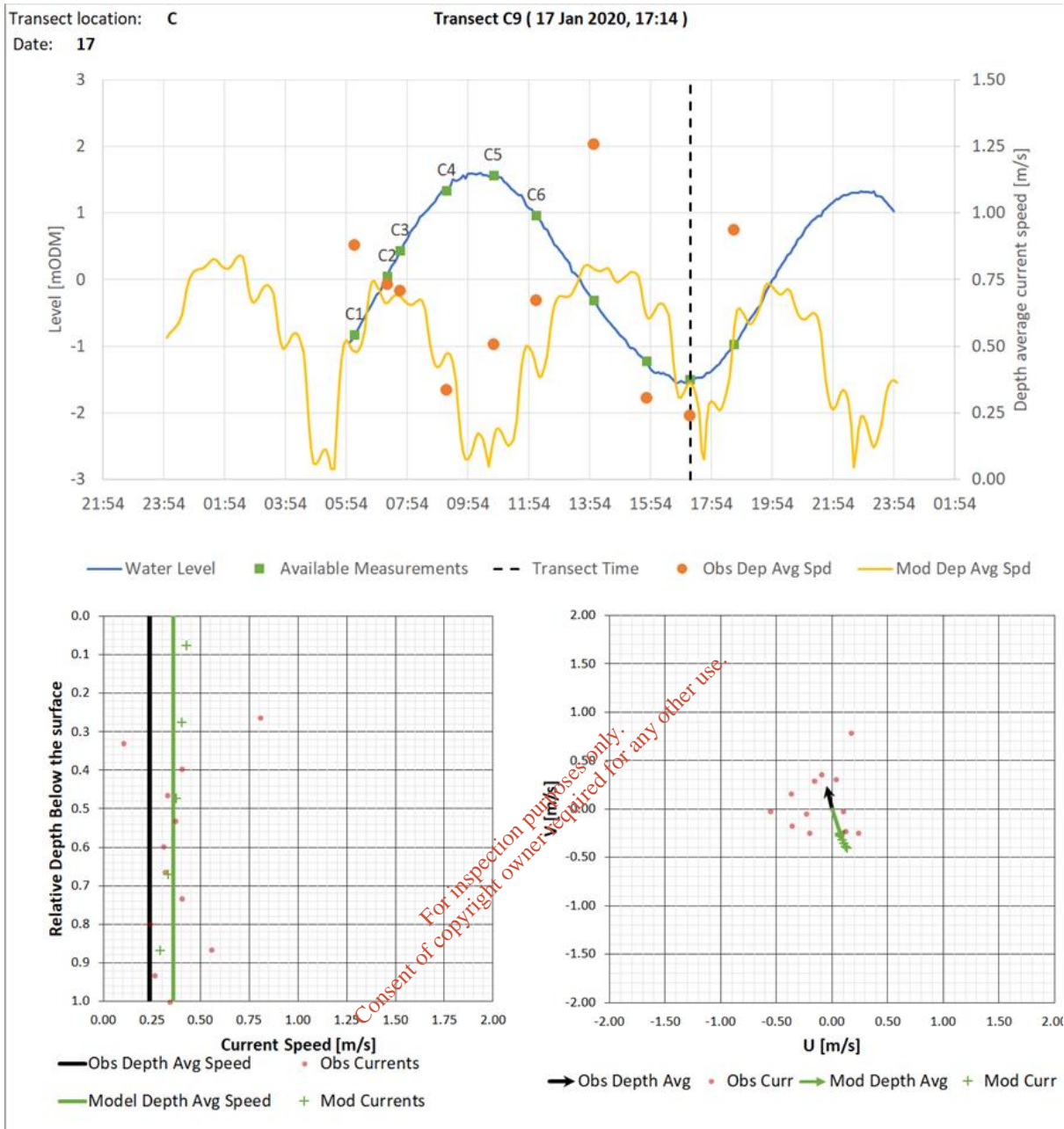


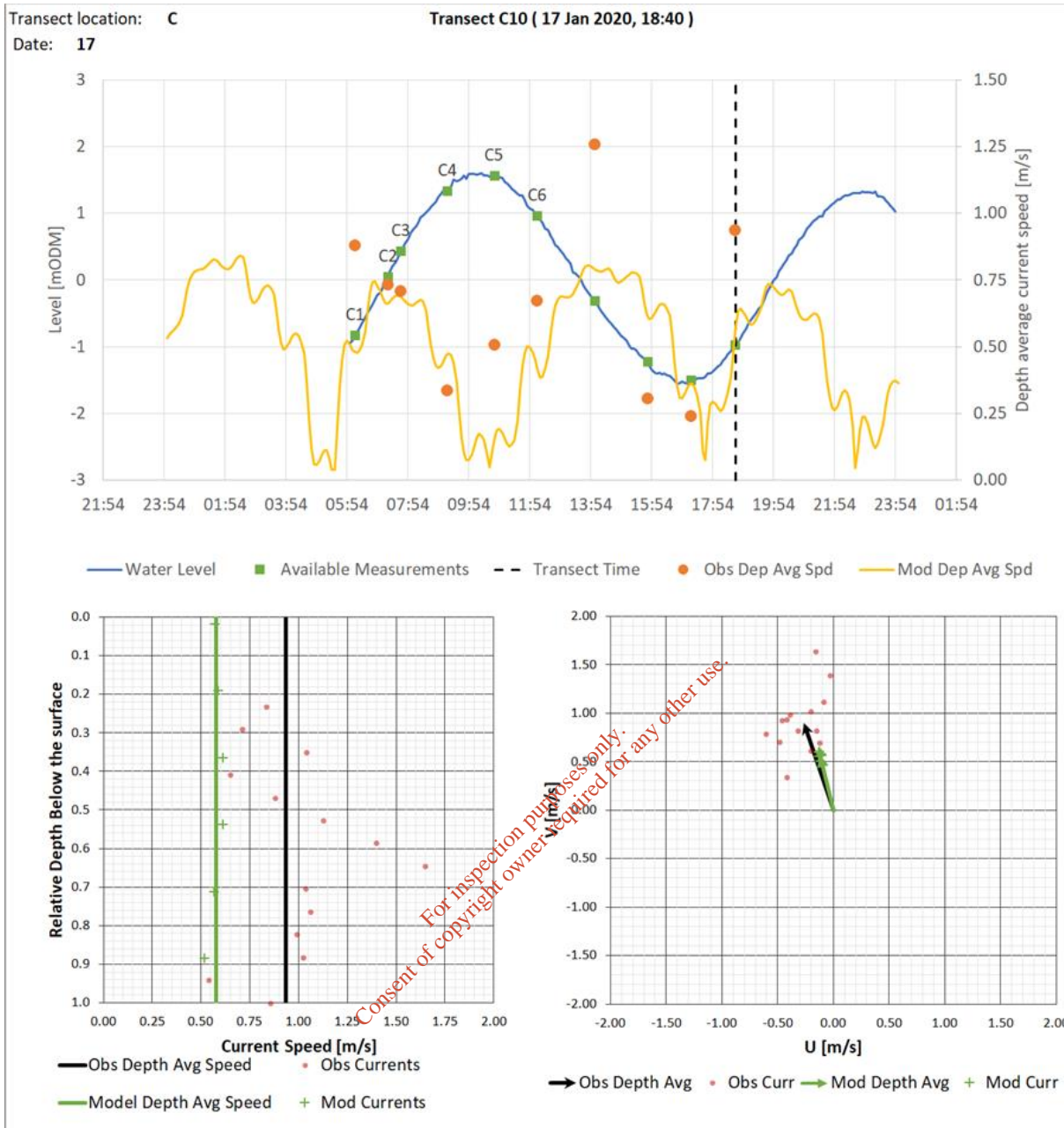






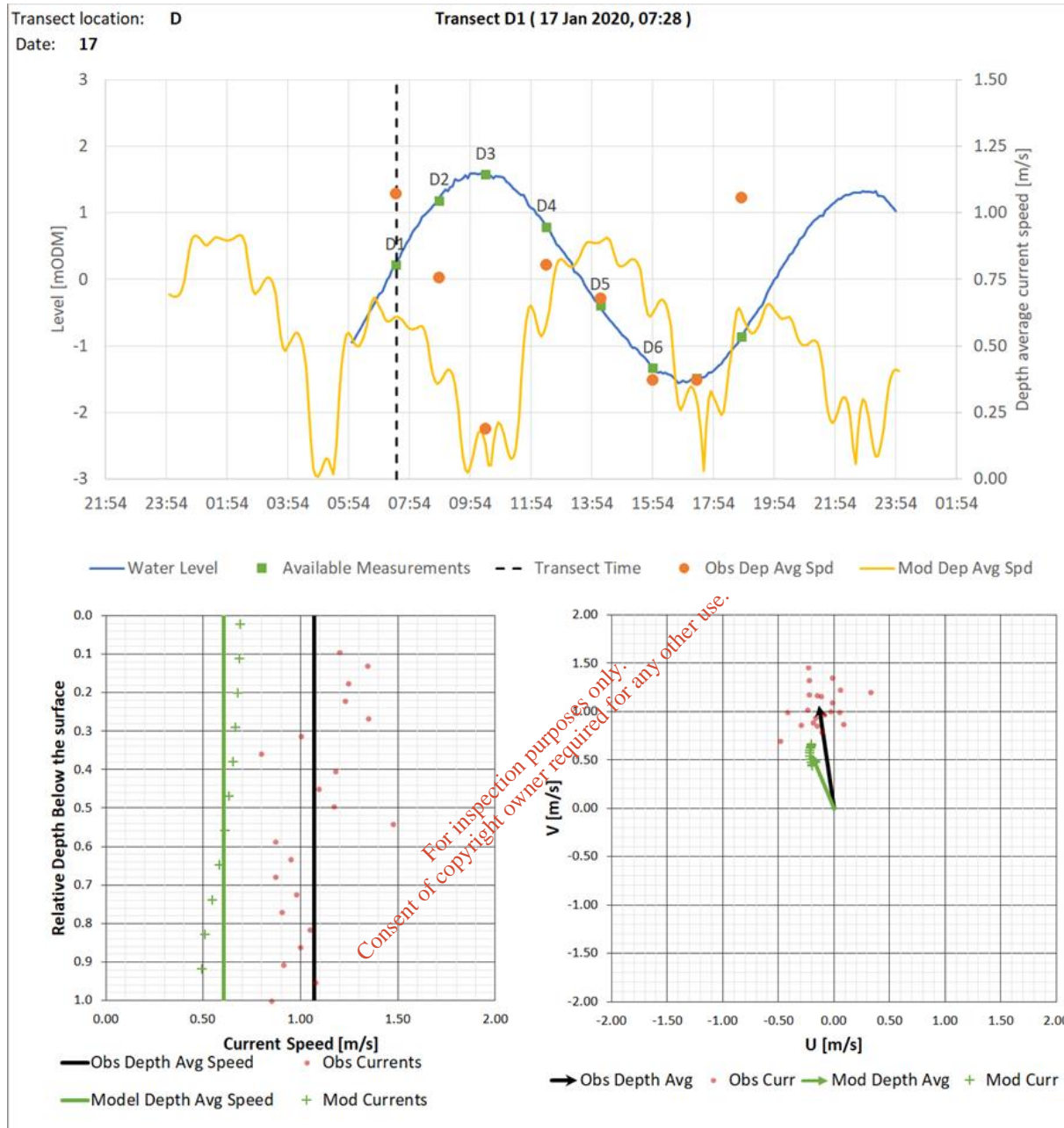


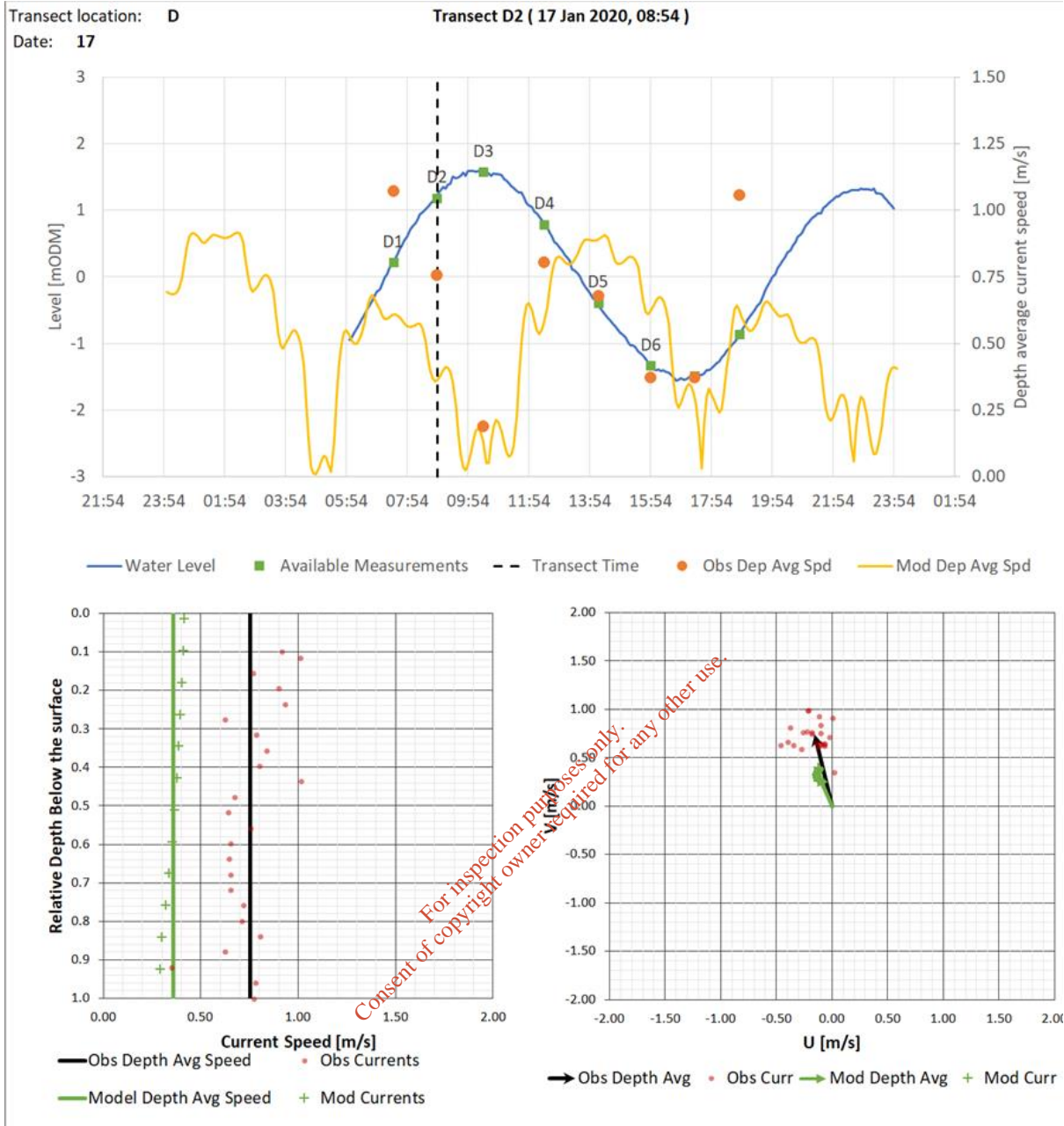


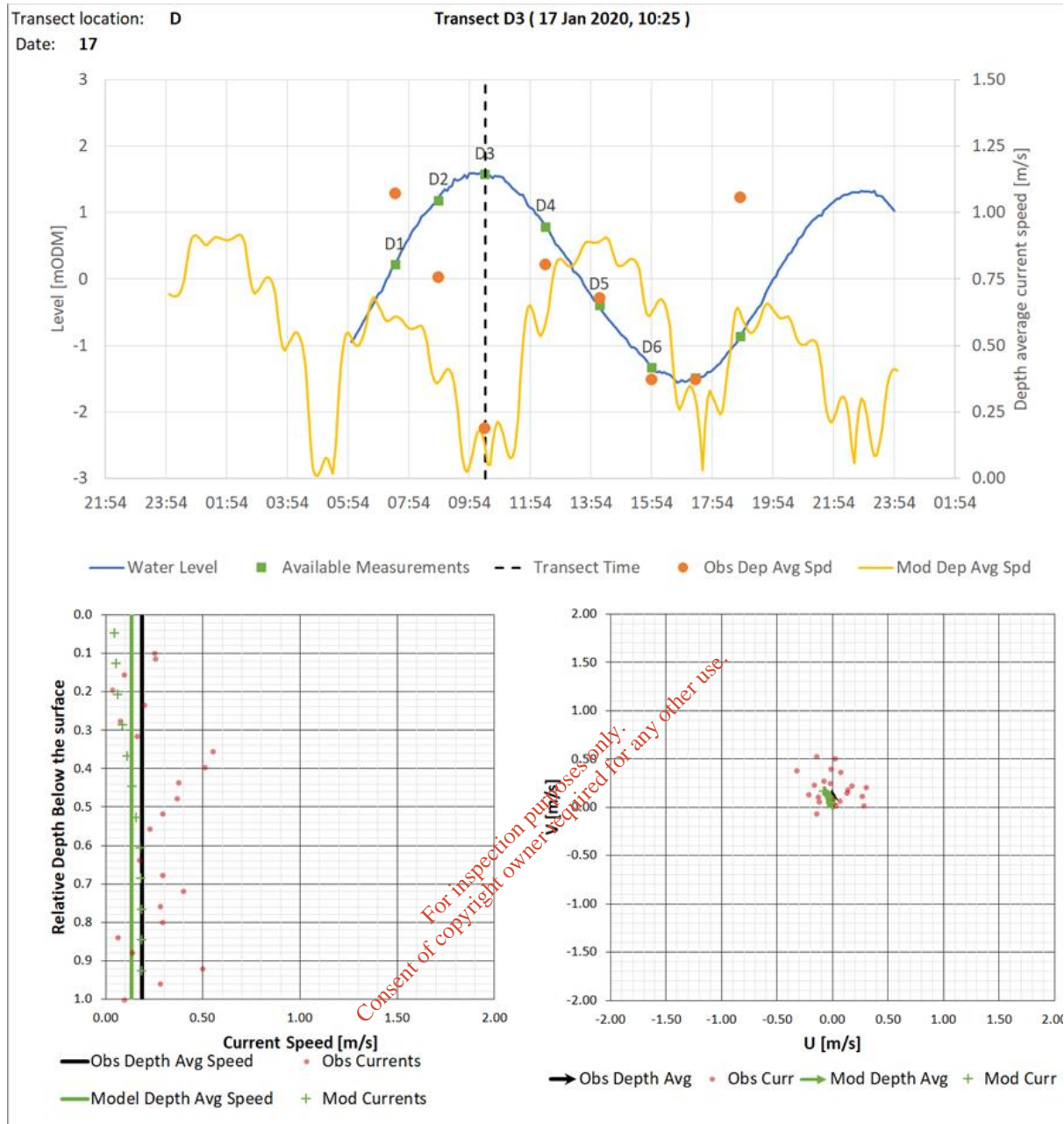


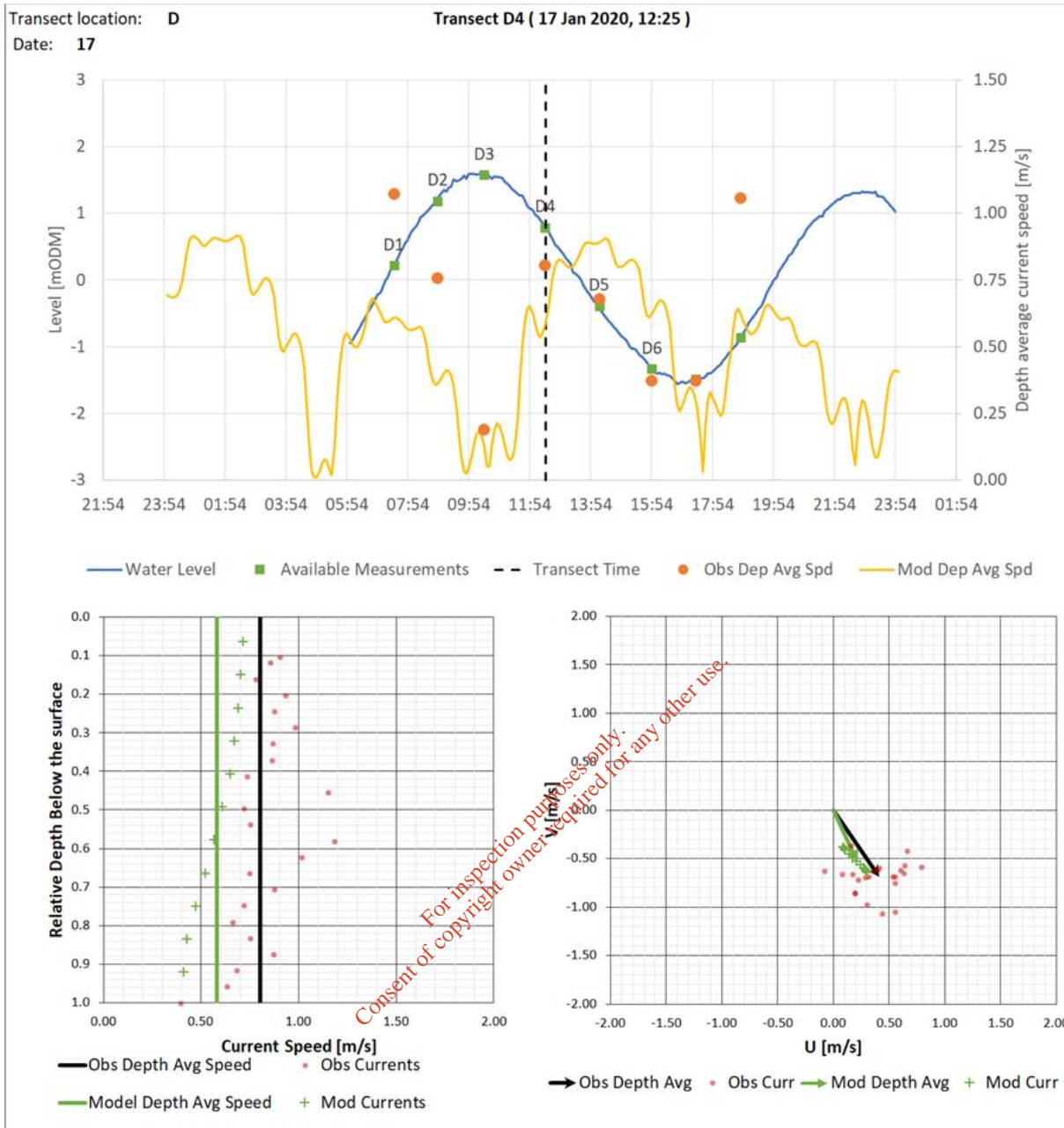


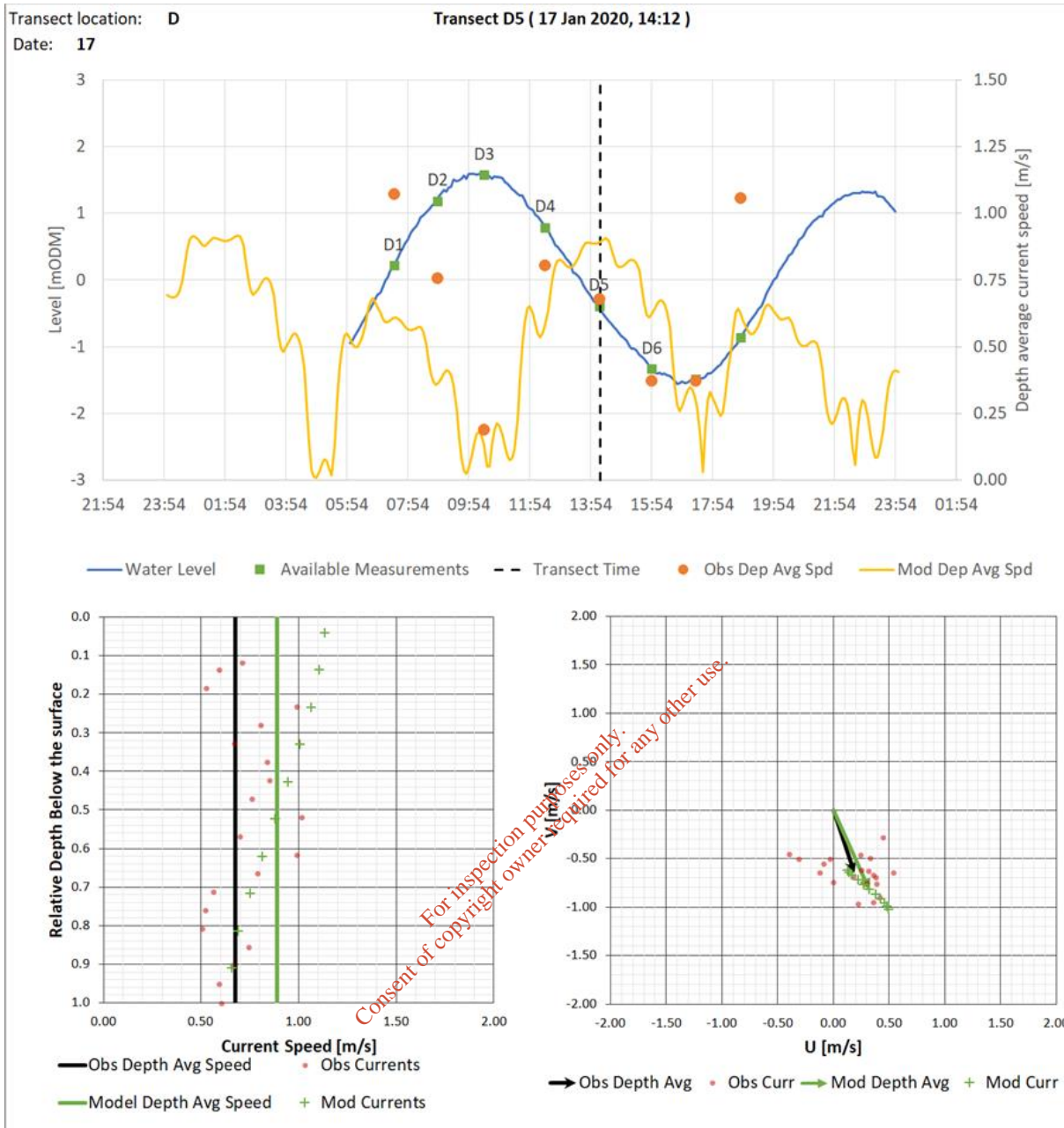
### D.12 Event E: Transect D

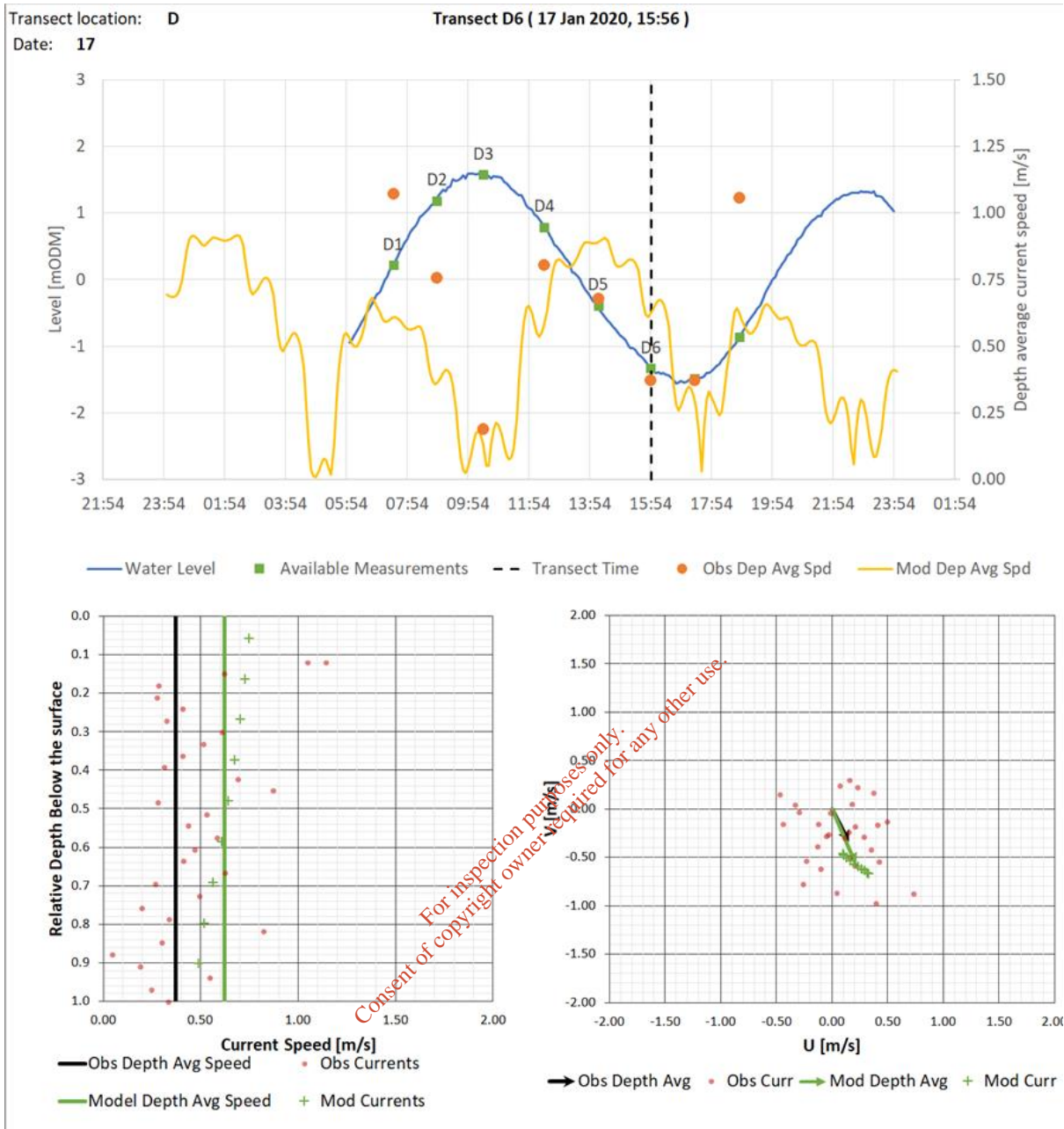


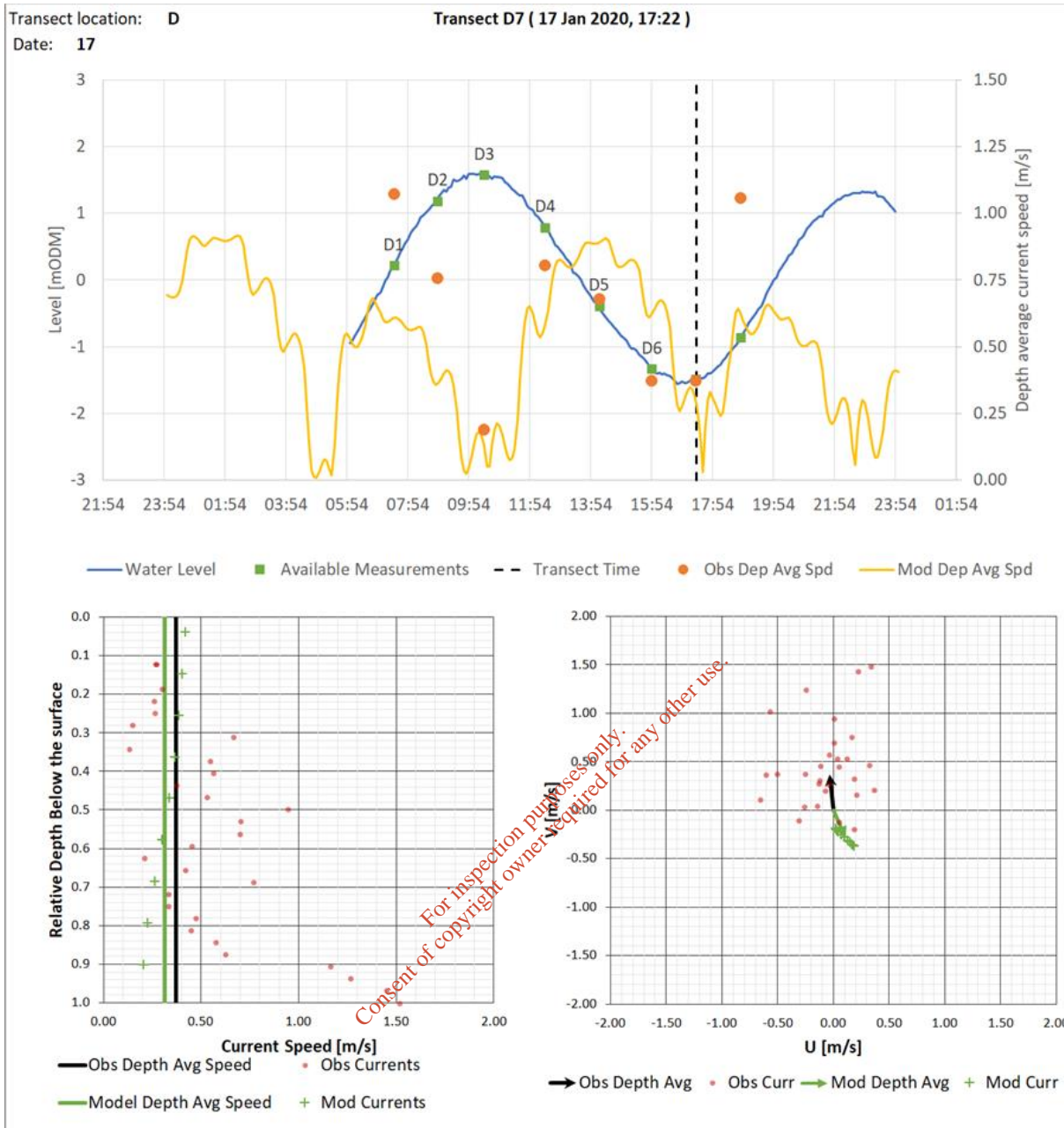


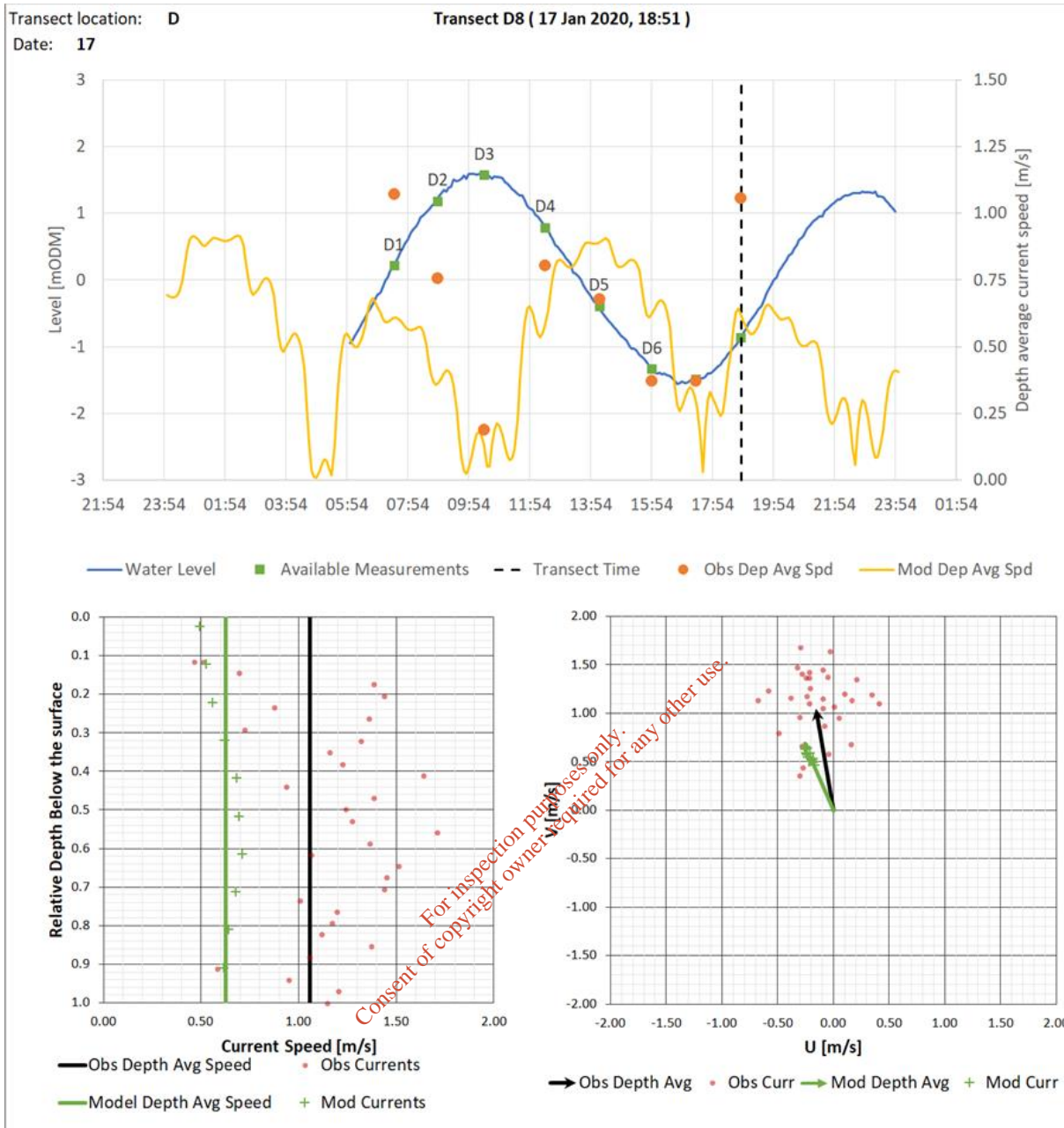














## Appendix E Temperature and Salinity profiles

### Event C: Spring tide (28<sup>th</sup> January)

### Event D: Neap tide (21<sup>st</sup> January) and

### Event E: Spring tide (17<sup>th</sup> January).

#### E.1 RMSE of all temperature and salinity measurements

Note that where no values are provided this is due to the observed data not having data for that site and time.

Drop Number	Survey Date	Location	S1b		S4a		S4b		S4c	
			Temp.	Salinity	Temp.	Salinity	Temp.	Salinity	Temp.	Salinity
1	17	Camphire Bridge	0.74	0.11	0.77	0.11	0.72	0.11	0.75	0.11
2	17	Camphire Bridge	0.76	0.11	0.97	0.11	0.76	0.11	0.77	0.11
3	17	Camphire Bridge	0.38	0.11	0.79	0.11	0.38	0.11	0.39	0.11
4	17	Camphire Bridge	0.17	0.11	0.53	0.11	0.15	0.11	0.14	0.11
5	17	Camphire Bridge	0.21	0.12	0.43	0.12	0.20	0.12	0.19	0.12
6	17	Camphire Bridge	0.24	0.12	0.42	0.12	0.23	0.12	0.22	0.12
7	17	Camphire Bridge	0.23	0.12	0.44	0.12	0.22	0.12	0.21	0.12
8	17	Camphire Bridge	0.19	0.12	0.54	0.12	0.18	0.12	0.17	0.12
9	17	Camphire Bridge	0.56	0.11	0.93	0.11	0.58	0.11	0.57	0.11
10	17	Camphire Bridge	0.49	0.11	0.41	0.11	0.47	0.11	0.50	0.11
11	17	Camphire Bridge	0.05	0.11	0.33	0.11	0.04	0.11	0.04	0.11
12	17	Camphire Bridge	0.27	0.11	0.32	0.11	0.26	0.11	0.27	0.11
13	17	Camphire Bridge	0.39	0.11	0.35	0.11	0.38	0.11	0.39	0.11
14	21	Camphire Bridge	0.63	0.13	0.81	0.13	0.63	0.13	0.63	0.13
15	21	Camphire Bridge	0.61	0.12	0.97	0.12	0.62	0.12	0.61	0.12
16	21	Camphire Bridge	0.76	0.12	1.05	0.12	0.77	0.12	0.76	0.12
17	21	Camphire Bridge	0.98	0.12	1.06	0.12	0.98	0.12	0.99	0.12
18	21	Camphire Bridge	1.01	0.12	1.01	0.12	1.01	0.12	1.01	0.12
19	21	Camphire Bridge	0.78	0.13	0.86	0.13	0.78	0.13	0.78	0.13
20	21	Camphire Bridge	0.55	0.12	0.60	0.12	0.55	0.12	0.54	0.12
21	21	Camphire Bridge	0.53	0.13	0.61	0.13	0.54	0.13	0.54	0.13
22	21	Camphire Bridge	0.60	0.12	0.66	0.12	0.60	0.12	0.61	0.12
23	21	Camphire Bridge	0.73	0.12	0.82	0.12	0.73	0.12	0.73	0.12
24	21	Camphire Bridge	1.01	0.12	1.02	0.12	1.01	0.12	1.02	0.12
25	28	Camphire Bridge	0.26	0.13	1.02	0.13	0.25	0.13	0.25	0.13
26	28	Camphire Bridge	0.24	0.14	1.00	0.14	0.24	0.14	0.24	0.14
27	28	Camphire Bridge	0.18	0.15	1.01	0.15	0.18	0.15	0.18	0.15

Drop	Survey	Location	S1b		S4a		S4b		S4c	
28	28	Camphire Bridge	0.19	0.14	1.05	0.14	0.19	0.14	0.19	0.14
29	28	Camphire Bridge	0.31	0.14	1.08	0.14	0.31	0.14	0.31	0.14
30	28	Camphire Bridge	0.61	0.13	1.24	0.13	0.61	0.13	0.61	0.13
31	28	Camphire Bridge	0.67	0.13	1.18	0.13	0.66	0.13	0.67	0.13
32	28	Camphire Bridge	0.45	0.12	1.09	0.12	0.45	0.12	0.44	0.12
33	28	Camphire Bridge	0.35	0.12	1.04	0.12	0.35	0.12	0.34	0.12
34	28	Camphire Bridge	0.31	0.13	0.99	0.13	0.31	0.13	0.31	0.13
35	28	Camphire Bridge	0.07	0.13	1.03	0.13	0.07	0.13	0.06	0.13
36	28	Camphire Bridge	0.36	0.13	0.97	0.13	0.36	0.13	0.36	0.13
37	17	Cappoquin Bridge	0.01	0.09	0.03	0.09	0.01	0.09	0.01	0.09
38	17	Cappoquin Bridge	0.02	0.09	0.06	0.09	0.02	0.09	0.02	0.09
39	17	Cappoquin Bridge	0.04	0.09	0.08	0.09	0.04	0.09	0.04	0.09
40	17	Cappoquin Bridge	0.04	0.09	0.08	0.09	0.04	0.09	0.04	0.09
41	17	Cappoquin Bridge	0.04	0.09	0.08	0.09	0.04	0.09	0.04	0.09
42	17	Cappoquin Bridge	0.06	0.09	0.09	0.09	0.06	0.09	0.06	0.09
43	17	Cappoquin Bridge	0.06	0.09	0.07	0.09	0.06	0.09	0.06	0.09
44	17	Cappoquin Bridge	0.05	0.09	0.06	0.09	0.05	0.09	0.05	0.09
45	17	Cappoquin Bridge	0.03	0.09	0.04	0.09	0.03	0.09	0.03	0.09
46	17	Cappoquin Bridge	0.02	0.10	0.04	0.10	0.02	0.10	0.02	0.10
47	17	Cappoquin Bridge	0.01	0.10	0.05	0.10	0.01	0.10	0.01	0.10
48	17	Cappoquin Bridge	0.02	0.10	0.07	0.10	0.02	0.10	0.02	0.10
49	17	Cappoquin Bridge	0.01	0.10	0.07	0.10	0.01	0.10	0.01	0.10
50	21	Cappoquin Bridge	0.15	0.13	0.10	0.13	0.14	0.13	0.14	0.13
51	21	Cappoquin Bridge	0.02	0.13	0.04	0.13	0.02	0.13	0.02	0.13
52	21	Cappoquin Bridge	0.09	0.13	0.15	0.13	0.09	0.13	0.09	0.13
53	21	Cappoquin Bridge	0.10	0.13	0.06	0.13	0.10	0.13	0.10	0.13
54	21	Cappoquin Bridge	0.13	0.13	0.10	0.13	0.13	0.13	0.13	0.13
55	21	Cappoquin Bridge	0.24	0.13	0.23	0.13	0.24	0.13	0.24	0.13
56	21	Cappoquin Bridge	0.22	0.13	0.26	0.13	0.23	0.13	0.22	0.13
57	21	Cappoquin Bridge	0.19	0.13	0.23	0.13	0.21	0.13	0.19	0.13
58	21	Cappoquin Bridge	0.18	0.13	0.28	0.13	0.26	0.13	0.18	0.13
59	21	Cappoquin Bridge	0.27	0.13	0.31	0.13	0.32	0.13	0.27	0.13
60	21	Cappoquin Bridge	0.36	0.13	0.37	0.13	0.39	0.13	0.36	0.13
61	28	Cappoquin Bridge	0.04	0.13	0.30	0.13	0.03	0.13	0.04	0.13
62	28	Cappoquin Bridge	0.05	0.13	0.37	0.13	0.06	0.13	0.05	0.13
63	28	Cappoquin Bridge	0.02	0.13	0.27	0.13	0.02	0.13	0.02	0.13
64	28	Cappoquin Bridge	0.17	0.13	0.37	0.13	0.17	0.13	0.17	0.13

Drop	Survey	Location	S1b		S4a		S4b		S4c	
65	28	Cappoquin Bridge	0.07	0.13	0.24	0.13	0.08	0.13	0.07	0.13
66	28	Cappoquin Bridge	0.15	0.13	0.23	0.13	0.14	0.13	0.15	0.13
67	28	Cappoquin Bridge	1.52	0.10	1.16	0.12	1.09	0.12	1.52	0.10
68	28	Cappoquin Bridge	0.00	0.13	0.06	0.13	0.00	0.13	0.00	0.13
69	28	Cappoquin Bridge	1.00	0.13	1.06	0.13	1.00	0.13	1.00	0.13
70	28	Cappoquin Bridge	0.02	0.13	0.13	0.13	0.02	0.13	0.02	0.13
71	28	Cappoquin Bridge	0.01	0.02	0.12	0.02	0.00	0.02	0.01	0.02
72	28	Cappoquin Bridge	2.01	0.13	2.16	0.13	2.01	0.13	2.01	0.13
73	17	Dromana Bridge	2.65	0.14	2.33	0.14	2.64	0.14	2.65	0.14
74	17	Dromana Bridge	1.52	0.14	1.05	0.14	1.43	0.14	1.51	0.14
75	17	Dromana Bridge	1.04	0.14	0.72	0.14	0.96	0.14	1.03	0.14
76	17	Dromana Bridge	0.83	0.14	0.62	0.14	0.78	0.14	0.83	0.14
77	17	Dromana Bridge	0.76	0.14	0.56	0.14	0.71	0.14	0.75	0.14
78	17	Dromana Bridge	0.63	0.14	0.44	0.14	0.59	0.14	0.62	0.14
79	17	Dromana Bridge	0.65	0.13	0.59	0.13	0.62	0.13	0.65	0.13
80	17	Dromana Bridge	0.79	0.13	0.41	0.13	0.77	0.13	0.79	0.13
81	17	Dromana Bridge	0.72	0.13	0.42	0.13	0.70	0.13	0.72	0.13
82	17	Dromana Bridge	0.82	0.13	0.53	0.13	0.80	0.13	0.82	0.13
83	17	Dromana Bridge	0.83	0.13	0.66	0.13	0.82	0.13	0.83	0.13
84	17	Dromana Bridge			0.60	0.13	0.67	0.13		
85	17	Dromana Bridge			0.23	0.13	0.35	0.13		
86	21	Dromana Bridge	2.35	0.13	2.43	0.13	2.36	0.13	2.35	0.13
87	21	Dromana Bridge			2.67	0.13	2.38	0.13		
88	21	Dromana Bridge			1.77	0.13	1.95	0.13		
89	21	Dromana Bridge	1.72	0.13	1.79	0.13	1.70	0.13	1.69	0.13
90	21	Dromana Bridge	2.27	0.13	2.17	0.13	2.25	0.13	2.25	0.13
91	21	Dromana Bridge	0.56	0.13	0.53	0.13	0.56	0.13	0.56	0.13
92	21	Dromana Bridge	0.53	0.13	0.52	0.13	0.53	0.13	0.53	0.13
93	21	Dromana Bridge	0.50	0.13	0.47	0.13	0.50	0.13	0.50	0.13
94	21	Dromana Bridge	0.89	0.13	0.86	0.13	0.89	0.13	0.89	0.13
95	21	Dromana Bridge	1.66	0.11	1.64	0.11	1.64	0.11	1.64	0.11
96	21	Dromana Bridge	2.23	0.12	2.22	0.12	2.22	0.12	2.22	0.12
97	28	Dromana Bridge	0.29	0.13	0.77	0.13	0.30	0.13	0.29	0.13
98	28	Dromana Bridge	0.12	0.13	0.78	0.13	0.14	0.13	0.12	0.13
99	28	Dromana Bridge	0.09	0.13	0.78	0.13	0.08	0.13	0.09	0.13
100	28	Dromana Bridge	0.16	0.13	0.77	0.13	0.15	0.13	0.16	0.13
101	28	Dromana Bridge	0.05	0.13	0.60	0.13	0.02	0.13	0.03	0.13

Drop	Survey	Location	S1b		S4a		S4b		S4c	
102	28	Dromana Bridge	0.64	0.12	0.37	0.12	0.62	0.12	0.62	0.12
103	28	Dromana Bridge	0.71	0.13	1.03	0.13	0.70	0.13	0.71	0.13
104	28	Dromana Bridge	0.74	0.14	0.51	0.14	0.73	0.14	0.73	0.14
105	28	Dromana Bridge	0.74	0.14	0.75	0.14	0.75	0.14	0.74	0.14
106	28	Dromana Bridge	1.53	0.14	1.31	0.14	1.54	0.14	1.54	0.14
107	28	Dromana Bridge	1.33	0.14	1.05	0.14	1.32	0.14	1.31	0.14
108	28	Dromana Bridge	0.13	0.13	0.21	0.13	0.12	0.13	0.12	0.13
109	28	Dromana Bridge	0.18	0.13	0.36	0.13	0.18	0.13	0.18	0.13
110	17	Youghal Harbour 1	1.14	9.75	0.73	2.73	0.95	6.48	1.15	9.57
111	17	Youghal Harbour 1	0.93	6.40	0.78	3.49	0.81	4.56	0.95	6.35
112	17	Youghal Harbour 1	0.98	6.66	0.69	3.20	0.87	5.22	1.00	6.75
113	17	Youghal Harbour 1	1.21	9.56	0.99	4.64	1.11	7.68	1.22	9.49
114	17	Youghal Harbour 1	1.08	6.58	0.56	1.56	0.97	4.88	1.08	6.55
115	17	Youghal Harbour 1	1.23	5.09	0.39	6.69	0.98	1.87	1.24	5.20
116	17	Youghal Harbour 1	1.50	4.92	0.74	5.90	1.32	2.13	1.50	4.88
117	17	Youghal Harbour 1	1.46	2.71	0.72	7.62	1.32	1.51	1.45	2.65
118	21	Youghal Harbour 1								
119	21	Youghal Harbour 1	0.29	3.19	1.06	8.28	0.47	2.89	0.28	3.29
120	21	Youghal Harbour 1								
121	21	Youghal Harbour 1	0.62	3.35	0.44	5.10	0.52	3.06	0.63	3.33
122	21	Youghal Harbour 1								
123	21	Youghal Harbour 1	0.24	1.44	0.20	1.90	0.14	0.40	0.25	1.49
124	21	Youghal Harbour 1								
125	21	Youghal Harbour 1	1.08	5.11	0.86	2.73	0.93	3.16	1.09	5.20
126	28	Youghal Harbour 1	0.33	0.45	0.84	2.65	0.22	0.49	0.33	0.46
127	28	Youghal Harbour 1	0.85	3.53	0.67	9.74	0.60	3.35	0.84	3.61
128	28	Youghal Harbour 1	3.02	22.24	2.32	16.18	2.85	19.66	2.99	21.56
129	28	Youghal Harbour 1	0.49	11.64	0.83	8.72	0.44	6.44	0.48	11.71
130	28	Youghal Harbour 1	0.68	2.13	0.47	12.92	0.55	5.05	0.67	2.21
131	28	Youghal Harbour 1	1.39	12.25	0.40	2.36	1.17	10.37	1.39	12.15
132	28	Youghal Harbour 2	1.70	9.44	0.74	4.58	1.44	7.07	1.69	9.32
133	28	Youghal Harbour 2	2.81	23.29	1.60	13.31	2.51	20.49	2.80	23.27
134	17	Youghal Harbour 3	0.59	2.63	0.60	2.43	0.56	2.14	0.61	2.64
135	17	Youghal Harbour 3	0.59	1.77	0.49	8.41	0.56	4.29	0.60	2.04
136	17	Youghal Harbour 3	1.38	9.07	0.58	5.01	1.18	6.69	1.38	8.95
137	17	Youghal Harbour 3	2.12	17.83	0.91	6.48	1.98	16.02	2.12	17.70
138	17	Youghal Harbour 3	1.66	12.09	0.78	3.21	1.40	8.91	1.69	12.26

Drop	Survey	Location	S1b		S4a		S4b		S4c	
139	20	Youghal Harbour 3	0.40	0.53	0.28	2.90	0.37	0.32	0.40	0.53
140	21	Youghal Harbour 3	0.23	8.55	0.90	7.64	0.50	7.57	0.24	8.50
141	21	Youghal Harbour 3	0.34	10.59	1.10	4.09	0.28	7.72	0.34	10.49
142	21	Youghal Harbour 3								
143	21	Youghal Harbour 3	0.93	14.19	0.92	4.75	0.65	9.36	0.93	14.09
144	21	Youghal Harbour 3	0.20	0.89	0.12	1.55	0.21	1.34	0.20	0.86
145	21	Youghal Harbour 3	0.31	1.93	0.41	3.21	0.29	2.63	0.31	1.95
146	21	Youghal Harbour 3								
147	21	Youghal Harbour 3	0.20	1.67	0.40	2.43	0.22	2.05	0.20	1.70
148	21	Youghal Harbour 3	0.36	2.17	0.57	2.27	0.38	2.07	0.36	2.22
149	21	Youghal Harbour 3	0.01	4.24	0.49	7.64	0.12	5.76	0.01	4.27
150	21	Youghal Harbour 3	0.27	1.51	0.73	3.69	0.46	1.35	0.29	1.46
151	28	Youghal Harbour 3	0.16	1.51	1.10	2.89	0.41	1.88	0.15	1.51
152	28	Youghal Harbour 3	0.66	1.80	1.66	2.39	0.94	1.30	0.65	1.80
153	28	Youghal Harbour 3	0.51	0.72	0.62	3.58	0.42	1.36	0.53	0.66
154	28	Youghal Harbour 3	0.46	2.29	0.96	8.44	0.27	1.27	0.45	2.28

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## Appendix F EPA monitoring data and Irish Water survey data.

This appendix contains the summary data for assessment of the water quality model and the input parameters used for the water quality model.

**App Table F-1. Summary statistics for the EPA sampling points using winter (October to February) samples.**

Parameter	Location	Min	Mean	Median	95%ile	Max
BOD	BR110	0.50	1.11	1.00	1.94	2.00
BOD	BR220	0.50	0.75	0.75	1.00	1.00
BOD	BR230	0.50	0.67	0.50	1.00	1.00
BOD	BR240	0.50	0.67	0.50	0.95	1.00
DIN	BR110	1.71	2.83	2.72	4.04	4.32
DIN	BR220	0.08	0.79	0.72	1.72	1.84
DIN	BR230	0.11	0.80	0.53	1.98	2.85
DIN	BR240	0.15	0.49	0.36	1.02	1.03
MRP	BR110	0.01	0.03	0.03	0.04	0.05
MRP	BR220	0.01	0.02	0.02	0.04	0.05
MRP	BR230	0.00	0.03	0.02	0.05	0.07
MRP	BR240	0.01	0.02	0.02	0.03	0.03
Amm	BR110	0.013	0.042	0.026	0.119	0.223
Amm	BR220	0.010	0.037	0.030	0.080	0.081
Amm	BR230	0.010	0.045	0.046	0.079	0.080
Amm	BR240	0.005	0.025	0.026	0.037	0.040
Unionised Ammonia	BR110	0.016	0.051	0.032	0.145	0.271
Unionised Ammonia	BR220	0.012	0.044	0.036	0.097	0.098
Unionised Ammonia	BR230	0.012	0.054	0.056	0.096	0.097
Unionised Ammonia	BR240	0.006	0.031	0.032	0.044	0.049

**App Table F-2. Observed statistics for each parameter over the 15-day survey period.**

Location	Parameter	Min	Mean	Median	95%ile	Max
Cappoquinn	BOD (95%ile)	0.71	1.61	0.89	4.58	4.66
	EC (cfu/100ml)	70	657	643	1094	1169
	IE (cfu/100ml)	42	164	140	376	590
	DIN (median)	2.12	2.70	2.73	3.06	3.07
	MRP (median)	0.00	0.71	0.03	4.52	4.62
	Amm (95%ile)	0.01	0.02	0.02	0.06	0.07
	Un. Amm. (95%ile)	0.00	0.03	0.02	0.07	0.08
Dunes Park	BOD (95%ile)	0.07	0.95	1.04	1.37	1.99
	EC (cfu/100ml)	0	451	156	1664	2755
	IE (cfu/100ml)	2	86	70	310	310
	DIN (median)	0.05	0.50	0.41	1.60	2.00
	MRP (median)	0.00	0.02	0.02	0.07	0.09
	Amm (95%ile)	0.02	0.27	0.35	0.44	0.50
	Un. Amm. (95%ile)	0.02	0.32	0.42	0.54	0.60
Paxes Lane	BOD (95%ile)	0.61	1.09	1.06	1.36	2.76
	EC (cfu/100ml)	0	237	72	1169	1785
	IE (cfu/100ml)	2	113	30	160	1480
	DIN (median)	0.03	0.40	0.35	0.50	2.09
	MRP (median)	0.00	0.03	0.03	0.09	0.29
	Amm (95%ile)	0.02	0.32	0.38	0.46	0.49
	Un. Amm. (95%ile)	0.02	0.39	0.47	0.56	0.59
Youghal Bay	BOD (95%ile)	0.09	1.11	1.12	1.57	1.58
	EC (cfu/100ml)	31	259	114	856	1267
	IE (cfu/100ml)	7	49	45	101	120
	DIN (median)	0.02	0.38	0.41	0.48	0.50
	MRP (median)	0.00	0.01	0.01	0.04	0.05
	Amm (95%ile)	0.01	0.33	0.40	0.49	0.49
	Un. Amm. (95%ile)	0.01	0.40	0.49	0.60	0.60
Effluent Input	BOD (95%ile)	4.00	8.11	8.00	13.60	16.00
	EC (cfu/100ml)	12230	89301	38730	276700	325500
	IE (cfu/100ml)	250	9713	5000	25540	28500
	DIN (median)	1.09	2.34	1.81	3.93	4.16
	MRP (median)	0.49	1.12	0.95	1.81	1.90
	Amm (95%ile)	0.30	1.08	0.91	1.85	1.97
	Un. Amm. (95%ile)	0.36	1.31	1.11	2.24	2.39

