Enbridge Line 5

Straits of Mackinac, MI

Supplement to the Biota Investigation Work Plan dated September 27, 2016

Enbridge Energy, Limited Partnership

Submitted: March 23, 2017

This submission supplements the Biota Investigation Work Plan originally submitted on September 27, 2016.

The dual pipelines that cross the Straits are protected by multiple layers of coating. These layers include a primer coat, a layer of enamel, and two layers (inner and outer) of glass fiber wrap. The portion of the coating system that protects against corrosion after installation of a pipeline is the enamel layer below the inner and outer wraps.

The proposed Consent Decree directs that Enbridge assess whether the accumulation of mussels and other biota have impacted the integrity of the pipelines' coating or the underlying metal, including areas where there are openings or "holidays" in the pipeline coating. See ¶ 69.a. The September 27 Work Plan reflected this requirement, and listed assessment of whether biota have impacted the integrity of the lines' coating in areas where there may be openings in the pipeline coating. See Work Plan, § 2.0 (summarizing Consent Decree requirements). References relating to assessment of openings/holidays are included in numerous sections of the Work Plan.1

Figures 4 and 5 of the Work Plan identify 18 specific anomalies in the coating that may represent holidays on the dual pipelines – 11 on the East Pipeline and 7 on the West Pipeline. Section 3.3.3.2 of the Work Plan provides that locations with possible coating anomalies will be targeted for investigation, and describes the methodology to be used for further investigation. The 18 areas originally subject to investigation included (i) areas where based on the visual inspection the outer wrap of the coating appears to have been dislodged; and (ii) areas where biota does not appear to be present on the pipe (but would normally be expected to be present).

Information in the 2016 Work Plan is based on work done by Ballard Marine Construction (BMC), the company that conducted the 2016 visual inspection of the dual pipelines. BMC has conducted additional review of the 18 areas identified in the Biota Plan and has determined that there is no evidence of "bare metal" exposed on either pipeline in any of the areas. Attached to this Supplement are photographs reviewed by BMC in reaching this conclusion. The photographs show all 18 areas identified in Figures 4 and 5. Enbridge intends to inspect all 18 locations, as per the 2016 Work Plan, in order to gather any relevant

[1] The following sections of the Work Plan contain references to holidays or potential holidays: § 3.2 (Study Areas); § 3.3.3.1 to .3 (U/W Survey, Holidays and Additional Sampling); § 3.3.4 and 3.3.4.1 (Pipe Integrity Readings and Cathodic Protection Evaluation); and § 4.0 and 4.2 (Sample and Lab Analysis and Presence/Absence Bacteria Testing). See also Figure 8 (holiday area sampling layout) and Table 2 (Holiday area sample sites: East and West pipelines).

additional data about these areas. Depending on the results of these inspections, Enbridge will make a determination on whether a review of additional areas of the Dual Lines where there are similar or other potential anomalies in biota presence or the outer wrap would yield any additional useful data.

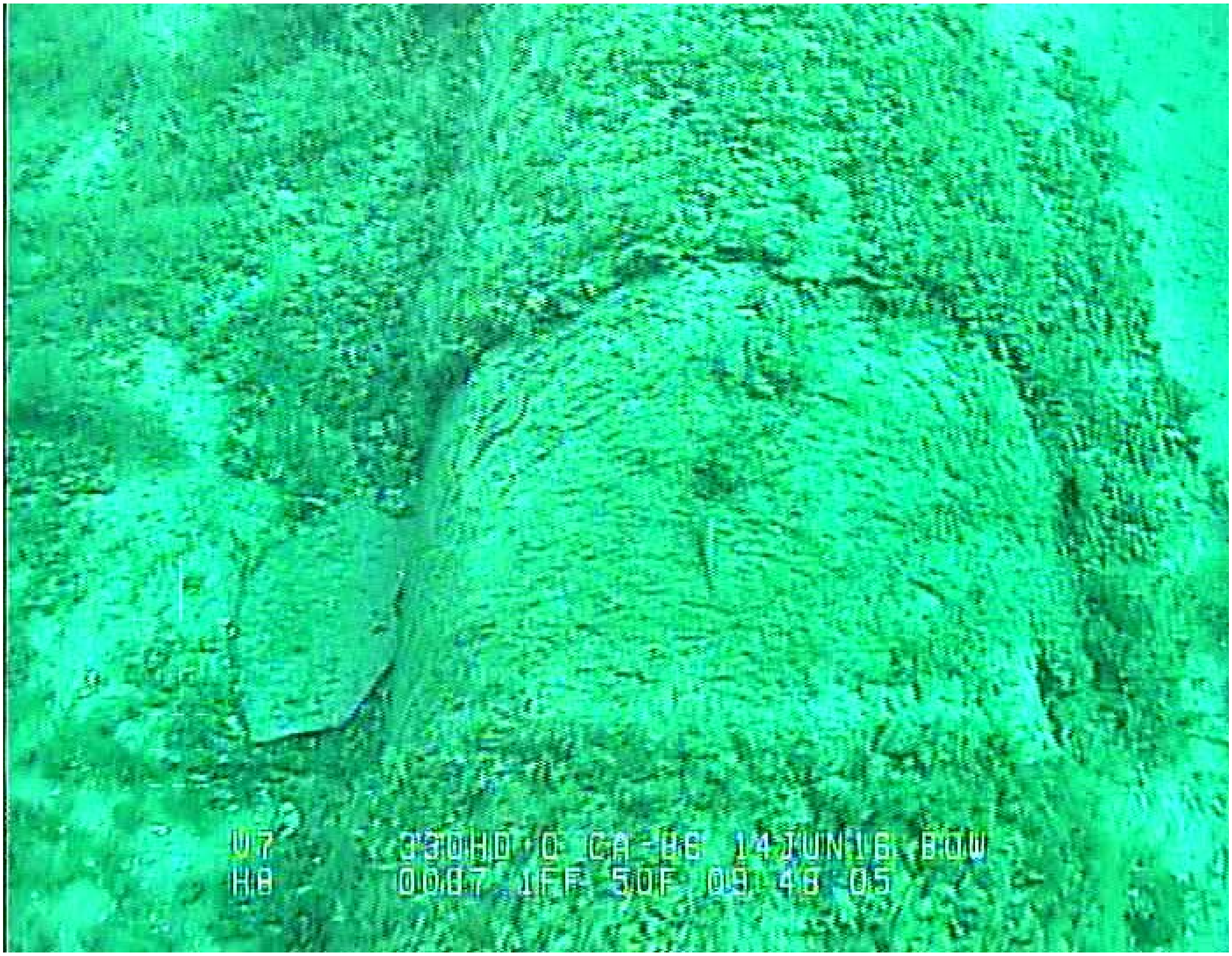
The attached photographs generally show areas of the pipelines in which biota are not present or are only minimally present and in some cases the outer wrap of the coating appears loose or dislodged. As discussed above, it is not clear at this time whether all of these locations reflect areas where the outer wrap of the coating is no longer in place or whether these locations reflect areas that simply are lacking biota. Enbridge provided EPA on March 20, 2017, a copy of the video recording of the 2016 visual inspection, from which the attached photographs were obtained. The purpose of implementing the Work Plan is to obtain further information about these or similar areas on the Dual Lines.

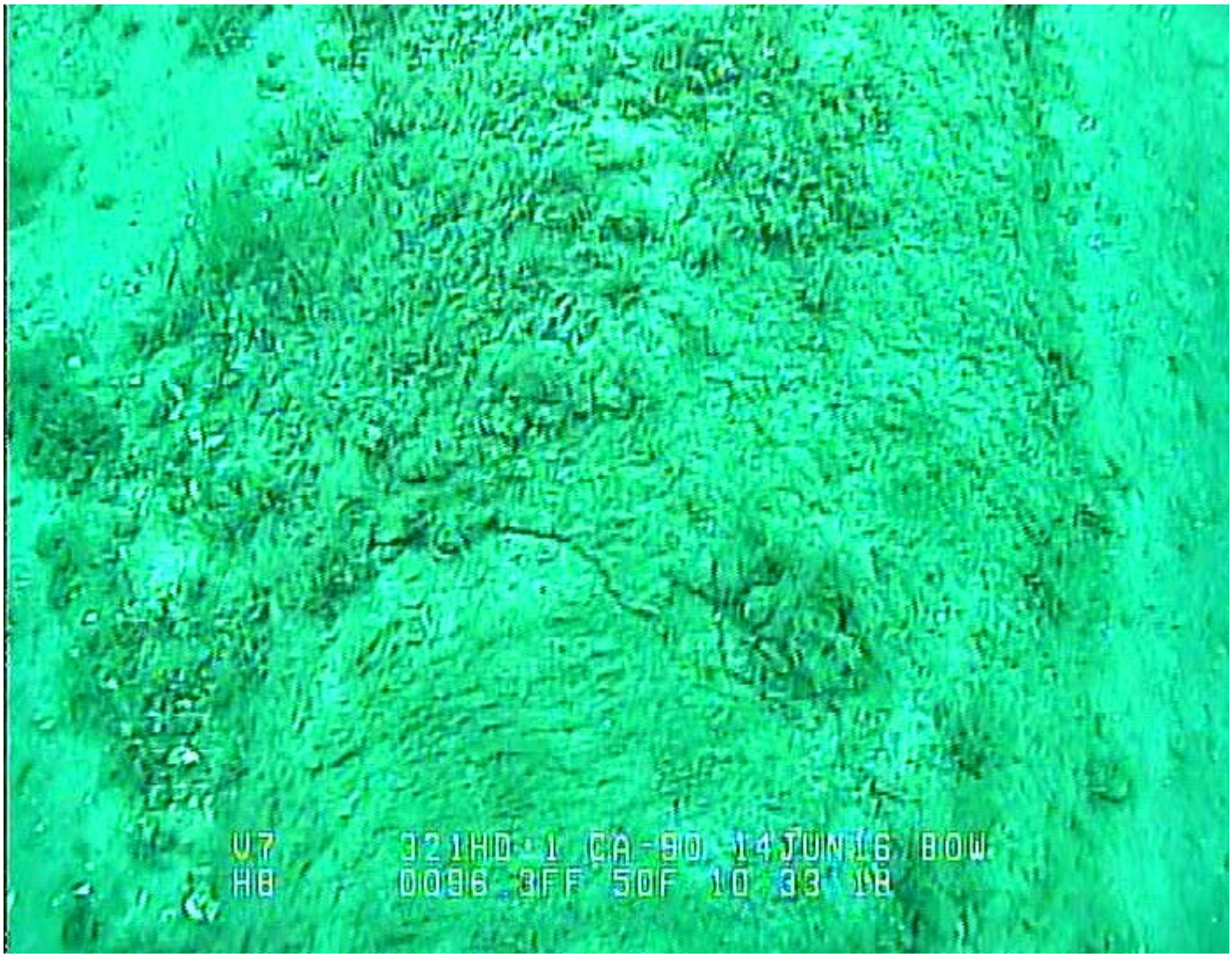
Enbridge also plans to investigate an additional 3 locations that have previously been assessed for coating damage in connection with prior inspections to confirm the integrity of the coating at these locations. Two of the three locations are located on the east line near the E-72 and E-74 locations (45.79914358N 84.76763678W & 45.79836501N 84.76791355W) and the third is located on the west line near the W-68A location (45.817385N 84.76571649W).

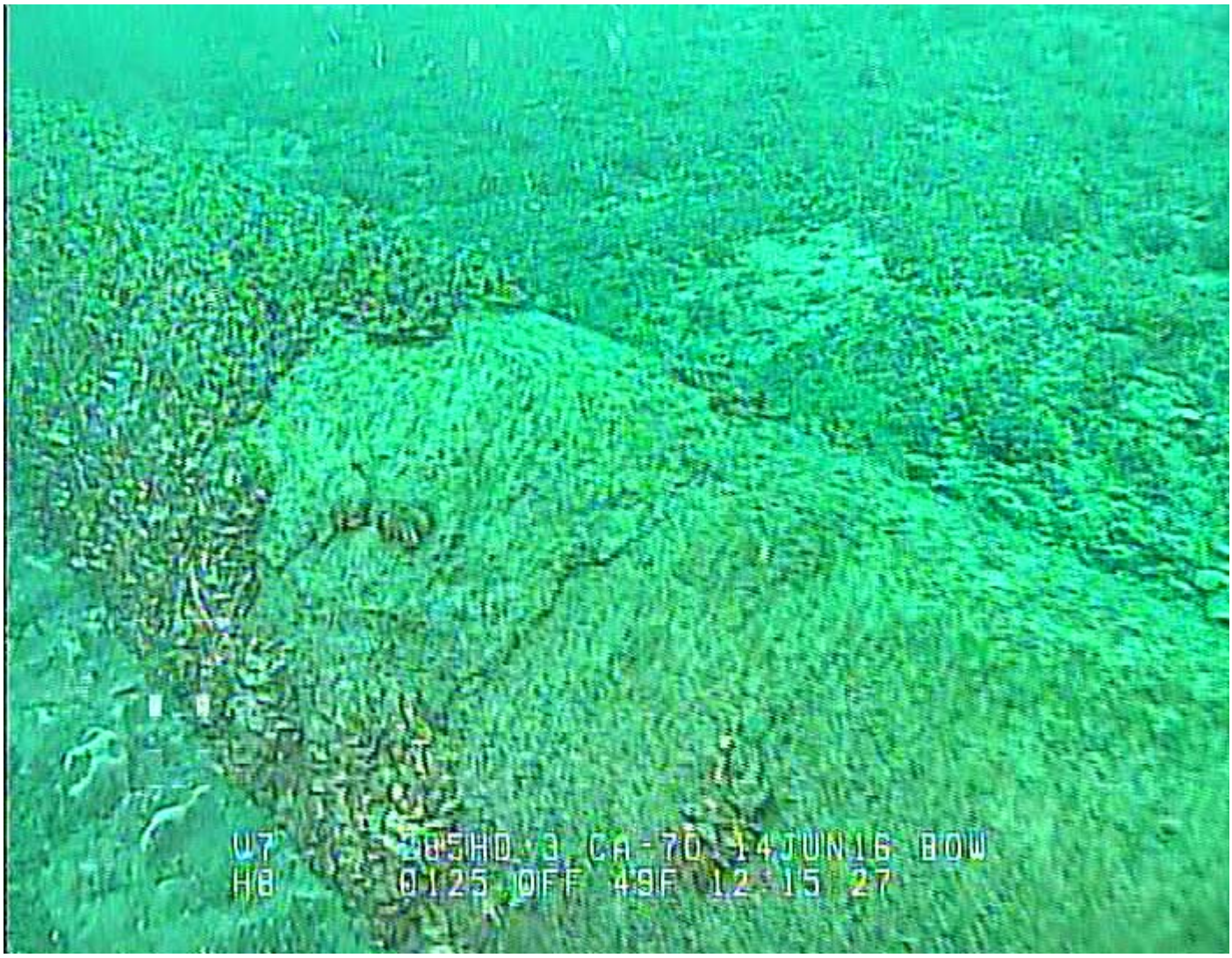
As noted, the portion of the coating system that protects against corrosion after installation of a pipeline is the enamel layer below the inner and outer wraps. Photographs from the 2016 inspection of the dual pipelines do not show any loss of the underlying enamel coating. These observations will be subject to further review as part of the Biota Investigation Work Plan. Section 3.3.4.1 of the Work Plan (Cathodic Protection Evaluation) as submitted can be read to suggest that there may be holiday areas of exposed metal.2 However, as noted, subsequent review of the visual data from 2016 has not shown any areas of bare metal. Implementation of the Work Plan will determine whether the current conclusion that no bare metal is exposed can be confirmed. The cathodic protection evaluation described in § 3.3.4.1 would be employed if any bare metal areas were identified.

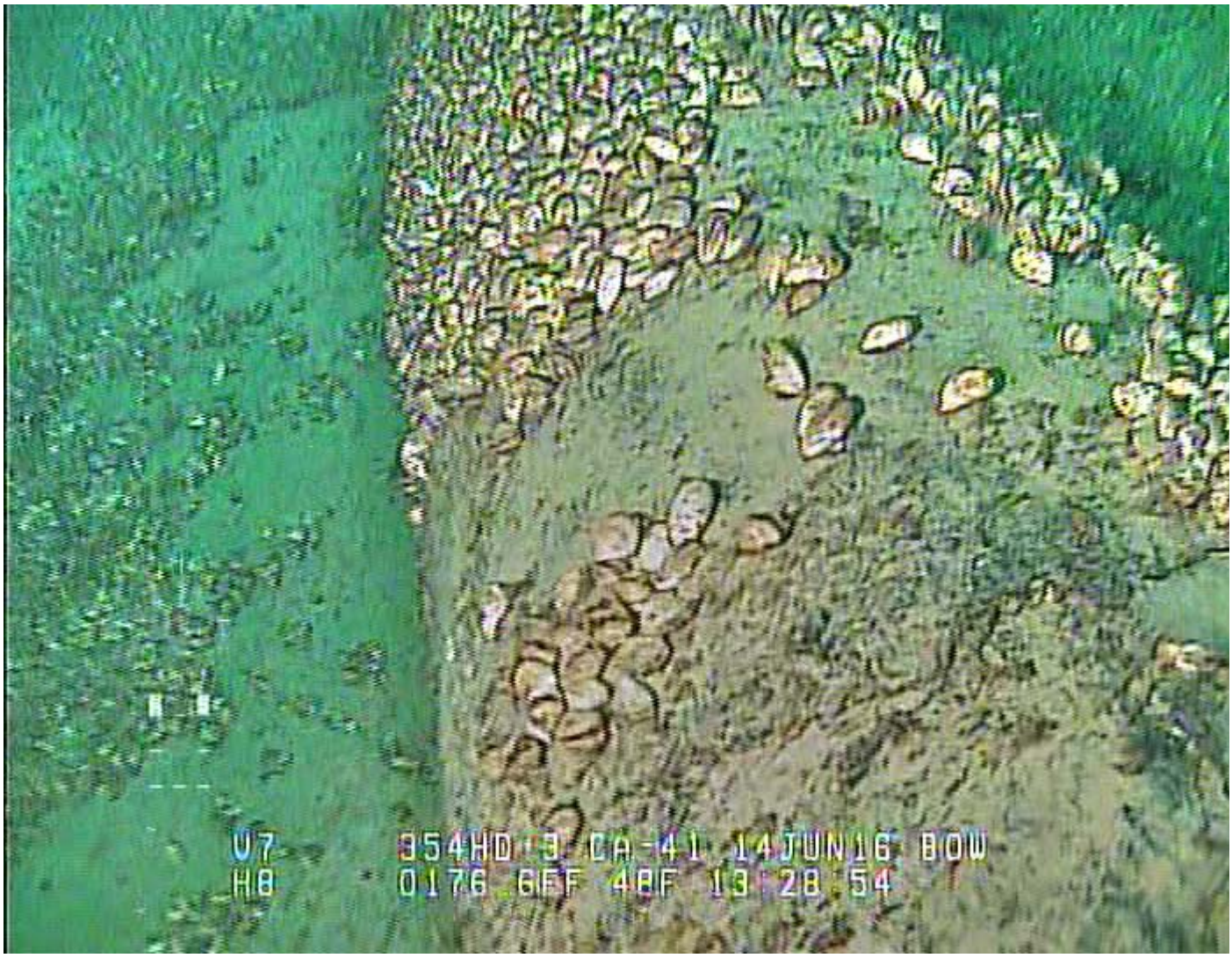
[2] See §3.3.4.1 at page 12 ("Cathodic protection readings will be taken at each holiday area where bare metal is exposed.")


V7 321HD 0 CA 37 14JUN16 BOW
H8 0076 1FF 50F 09:37:15


14JUN16


V7 921HD-1 CA-90 14JUN16 BOW
H8 0096 8FF 50F 10 33 18

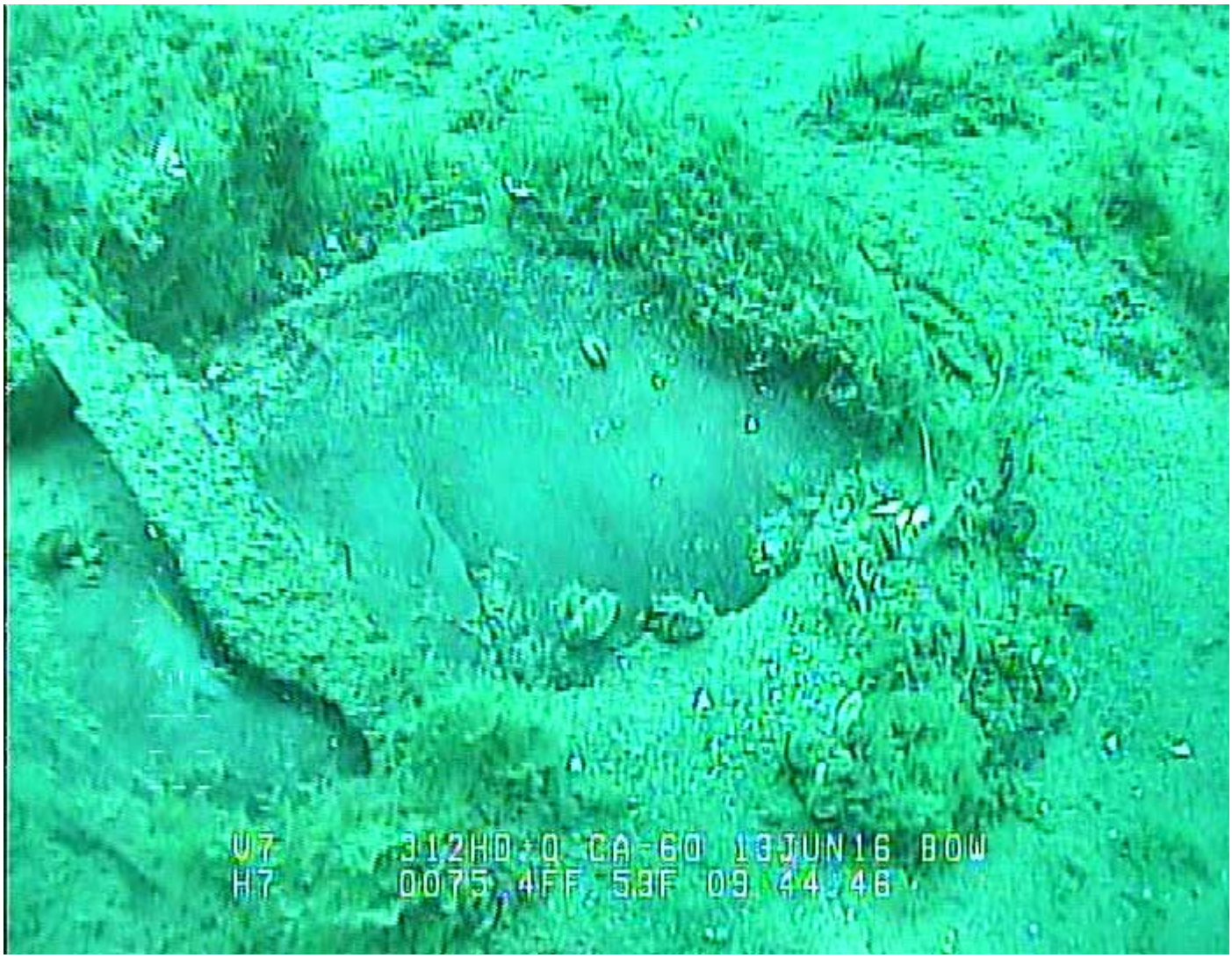

W7 2005HD-3 CA-7D 14JUN16 BOW
H8 0125 0FF 49F 12:15 27


V7 354HD 3 CA-41 14JUN16 BOW
H8 0176 6FF 48F 13:28:54

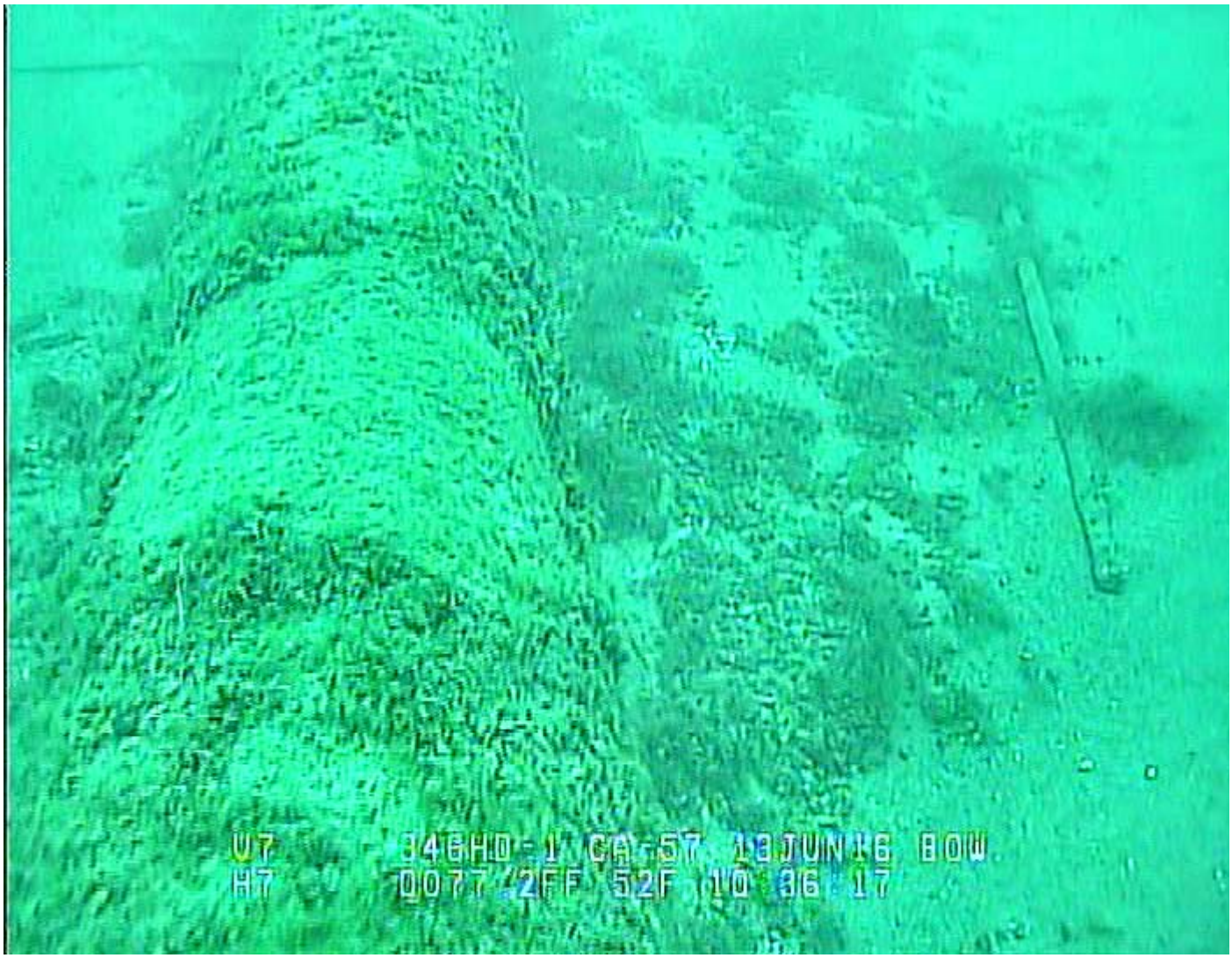

W7
H8


V7 027HD 1 CA-37 14JUN16 BOW
H8 0234.0FF 48F 14:24:21

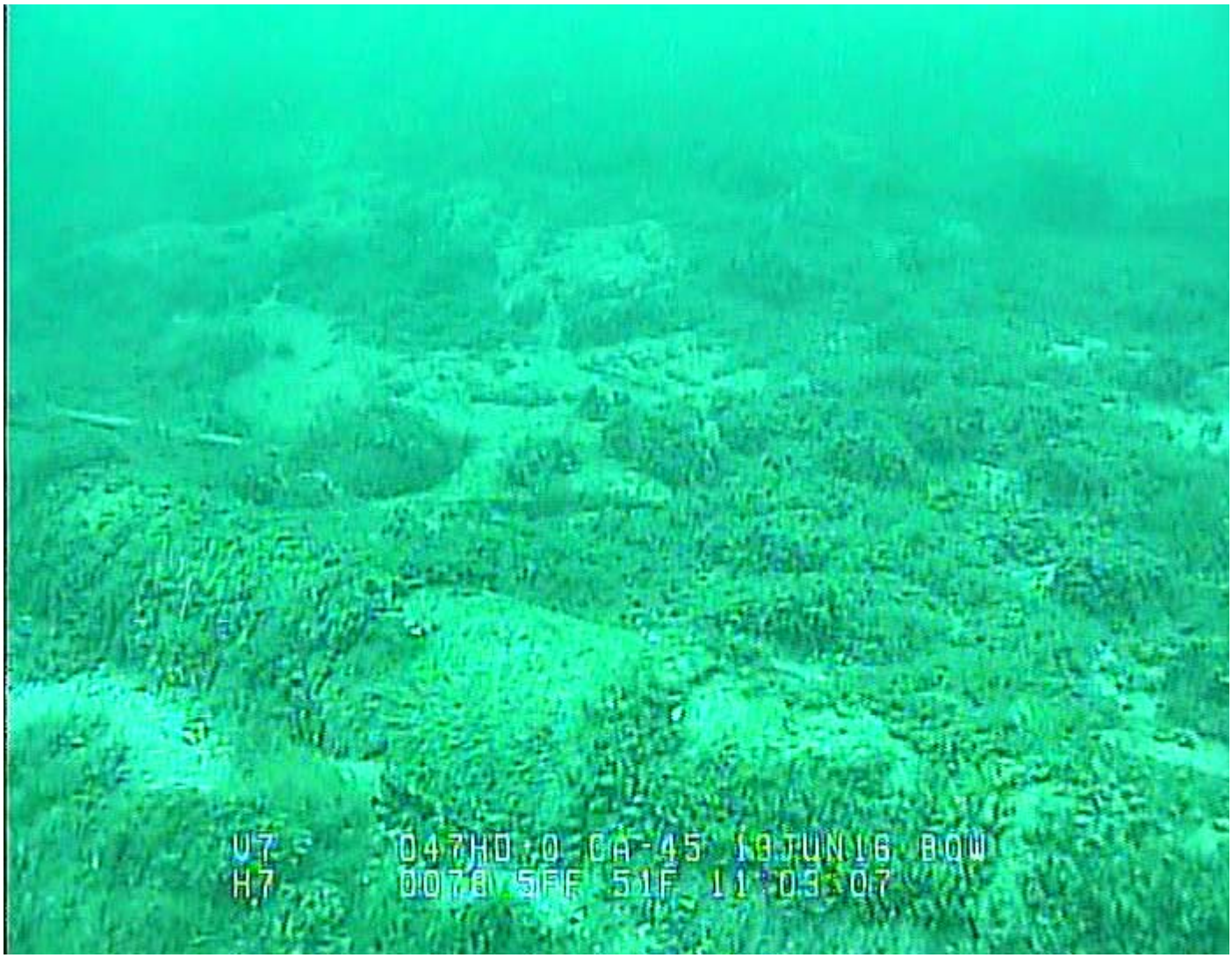

V7
H7


V7 312HD+Q CA-60 13JUN16 BOW
H7 0075 4FF 53F 09 44 46

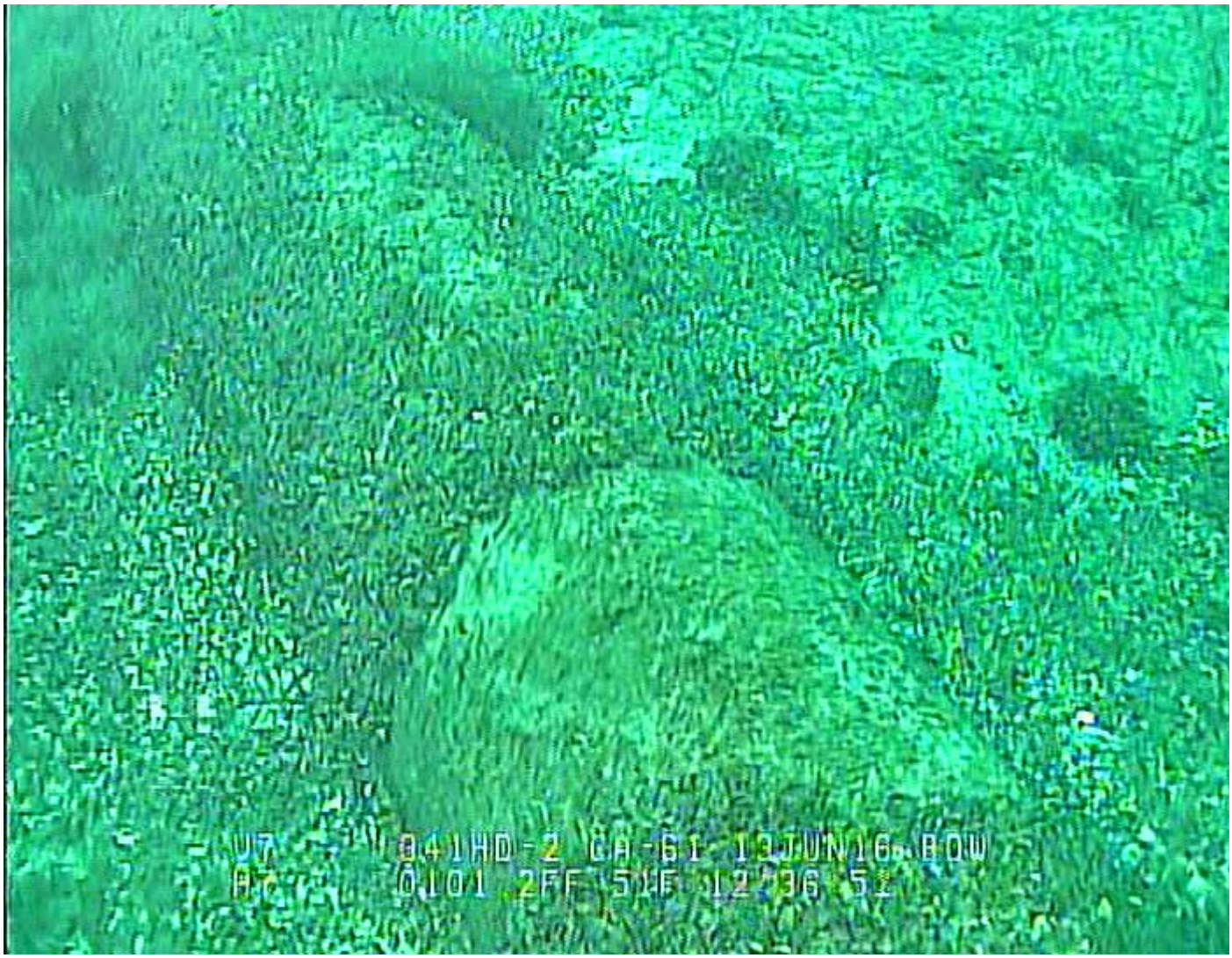

W7 353HD+0 CA-65 18JUN16 BOW
H7 0078.2FF 50F 09:54:27

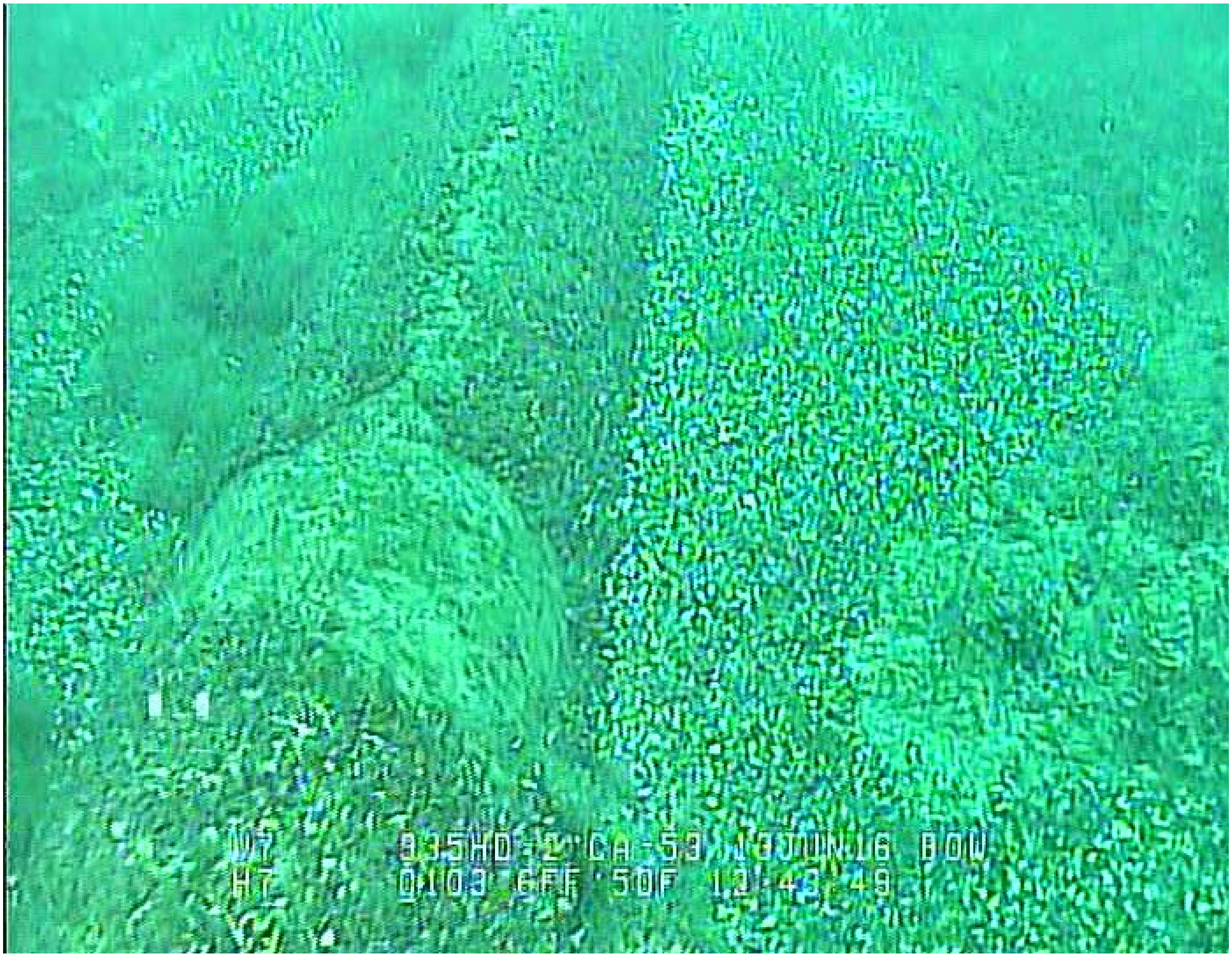

V7 346HD-1 CA-57 13JUN16 BOW
H7 0077 2FF 52F 10 86 17


V7 328HD-1 CA-52 13JUN16 BPW
H7 0074 3F/F 52F 10:47:20


V7 047HD 0 CA-45 10JUN16 BOW
H7 0078 5FF 51F 11:03:07


V7 3838HD-2 CA-35 13JUN16 BOW
H7 0098 4FF 51F 11 40 52


041HD-2 CA-61 13JUN16.BOW
0101 2FF 51E 12 36 51


W7 035HD-2 CA-53 13JUN16 BOW
H7 0103 6FF 50F 12:43:49