

APPENDIX A

Sediment Dredging Exception Log

Log of Obstructions/Exceptions (as recorded and provided by Enviro NZ)

ID	Date	Description	Northing (m)	Easting (m)	Chainage
20180710b	10-07-18	Redredged KC042 area. Unable to reach DTM, as hard base encountered. Dredged down to hard base as best as practicable.	5791959.04	1946730.87	
20180712a	12-07-18	Risk of true right bank undermining due vicinity of dredge head. Dredged as best as practicable without further compromising the stopbank.	5791990	1946796	
20180713a	13-07-18	Hit something, stump tree or something. Dredged as best as practicable around this area.	5792008	1946817	
20180716b	16-07-18	Some submedged obstruction close to where truck was pulled out some time ago. Dredged as best as practicable around this area.	5792025	1946845	
20180716c	16-07-18	An obstruction was noted in this area. Dredged as best as practicable around this area.	5792030.75	1946844.66	
20180717a	17-07-18	An obstruction was noted in this area. Dredged as best as practicable around this area.	5792035.26	1946849.54	
20180718a	18-07-18	Large slip area on true right bank. Dredged as best as practicable without further compromising the stopbank.	5792063	1946887	
20180718b	18-07-18	An obstruction was noted in this area. Dredged as best as practicable around this area.	5792070	1946893	
20180719a	19-07-18	An obstruction was noted in this area. Dredged as best as practicable around this area.	5792104	1946915	
20180719b	19-07-18	Redredging area. Could not get out to DML -0.2 RL boundary profile because bank falling down. Dredged as best as practicable without further compromising the stopbank. Visual inspection made by Principal and IM confirming stopbank slip material in canal. No target material observed.	5792086.75	1946910.57	
20180719c	19-07-18	This area previously dredged. Bank has subsided post initial dredging. Dredged as best as practicable around this area while mitigating risk of further bank subsidence. Area previously validated, but being redredged to improve hydrograophic survey - i.e. improved flood conveyance.	5792102.99	1946926.77	
20180719d	19-07-18	Dredge hit stump or something. Cleaned area as best as practicable. IM collected cores visually inspected and confirmed free of target material.	5792103.3	1946915.94	
20180720a	20-07-18	Slip on LHS bank. Dredged as best as practicable slip material and around the slip. IM collected cores visually inspected and confirmed free of target material.	5792129.9	1946942.64	
20180720b	20-07-18	Slip on RHS bank. Dredged as best as practicable slip material and around the slip. IM collected cores visually inspected and confirmed free of target material.	5792124.74	1946947.92	
20180721a	21-07-18	Slip on right bank opposite KC054 (west of SH30 bridge). Slip area on right bank is inside DML profile so will be dredged. The left bank is outside of the DML line by approx 2m so treat as an exception. This exception modified by note 20180723a. See below.	5792191.22	1947000.58	
20180723a	23-07-18	Dredge was 2m upstream of KC054 at 0750. The dredge screen shows the left boundary of the DML profile is approx 2m from left bank and that KC054 is very close to boundary. This was confirmed by RB/DM and PMcG by visual inspection. It was agreed that ESL would dredge within DML profile including to the 0.2mRL level. To ensure we capture any target material around KC054 it was agreed that ESL would dredge to feel as practical between the edge of DML profile and the bank.	5792201	1947008	
20180726a	26-07-18	Dredge hit stump or something. Cleaned area as best as practicable.	5792144.88	1946956.42	
20180727a	27-07-18	Stump or something obstructing dredge. Cleaned area as best as practicable.	5792188.91	1946998.61	
20180802a	02-08-18	Dredging by feel as best as practicable on port side, as the area being dredged is outside the DTM profile.	5792267	1947077	
20180802b	02-08-18	Dredge by feel as best as practicable outside starboard side outside DTM.	5792261	1947081	
20180803a	03-08-18	Dredging by feel as best as practicable on inside corner east of SH30 in Section 5. Current DTM does not map this area.	5792260	1947080	
20180807b	07-08-18	Dredging by feel as best as practicable outside the DTM.	5792258.42	1947104.77	
20180809a	09-08-18	Dredging by feel as best as practicable on port side, as the area being dredged is outside the DTM profile.	5792267	1947145	
20180908a	08-09-18	Obstruction encountered on port side - approx 2m x 1.5m. Dredged as best a practicable around it.	5792260	1947406	

ID	Date	Description	Northing (m)	Easting (m)	Chainage
20180911	11-09-18	Obstruction encountered on port side - approx 2.5m x 2.5m. Dredged as best a practicable around it.	5792254.34	1947411.72	
20180913	13-09-18	Obstruction encountered on TLB - approx 2m x 2m. Dredged as best a practicable around it.	5792254.55	1947447.49	
20181003	3/10/2018 ----- ---- 26/11/2018 on redredge	Log approx. 8m long, 1.5m wide, noted on left bank. Dredged around as best as practical. ----- Log encountered again on redredge. Approx 36m west of KC070 on TLB. Dredged again as best as practicable around the obstruction.	5792251.42 to 5792250.66	1947532.50 to 1947537.34	----- Ch2330 to Ch 2340
20181010	10-10-18	Port side (Easting locations noted) for approx. 15m yesterday was unable to be dredged as the head was on a hard surface above the DTM design surface. Fred has worked/cleaned as best as practicable in this area.	5792250	1947635 to 1947650	
20181030	30-10-18	Hard clay base on port side - approx 8m in length. Unable to dredge to the DTM. Dredged as best as possible.			Ch2748 to Ch2756
20181115	15-11-18	Dredged as best as practicable by feel between CH1884 and 1990 due to undulating profile of base not showing up on DTM. Redredged as best practicable between CH1890 and 1920.			Ch1884 to Ch1990 Ch1890 to Ch1920
20181116	16-11-18	Based on the location of KC084 it is not possible to dredge 16.5m to the east due to the presence of the wastewater pipe over the canal. Dredge as far as possible under the wastewater pipe (without damaging), and collect phase 2 sample as close as possible to the sample location specified by the EMVP.			Ch2800
20181128	28-11-18	Dredged as deep as possible on true left bank between Ch2524 to 2557. Hard clay present. Barge sampling showed target material has been removed.			Ch2545 to Ch2557
20190426	26-04-19	Unable to dredge 15m from Ch3900 to Ch3915 due to the old concrete abutment. Concrete base of abutment is unable to be dredged. Swept across with suction only to remove any target sediment as best as possible.			Ch3900 to Ch3915
20190429	29-04-19	Dredged as best as practicable in the vicinity of the old abutment on the true right bank just upstream and just downstream of the old abutment at Ch3900 and Ch3918-3920.			Ch3900 and Ch3918 to 3920
20190501	01-05-19	Dredging as best as practicable from approx. Ch3980m to the other side (east) of Keepa Rd bridge. Dredged under Keepa Rd bridge and to the east as practicable using the sandbug.			Ch3980 to Keepa Rd Bridge
20190525	25-05-19	Exception noted for obstruction. Possibly old car or stump at Ch4418. Dredged as best as practicable around the area - approx 4m x 2m.			Ch4418
20190607	07-06-19	Exception noted for fallen tree and debris. Operator has dredged as best as possible on TLB and TRB in vicinity of Ch4782.			Ch4782
20190608	08-06-19	Between approx Ch4800 and Ch4840 on the true left bank there is a shallow section of canal which was heavily impacted by trees and debris. Area dredged as best as practicable, until too shallow to dredge, or when dredge became blocked with debris.			Ch4800 to Ch 4840

ID	Date	Description	Northing (m)	Easting (m)	Chainage
20190627a	27-06-19	Canal bank immediately east of Keepa Rd bridge previously identified as having levels above target (Opus 2016). The sample locations were above mean high tide and cannot be removed by dredging. Investigation of remediation identified that considerable vegetation and canal bank disturbance was required to gain access to area. This would possibly generate short term effects and increased exposure risks. Bank area samples in the area are 48, 50, and 270 pg/g or an average of residual material being 122 pg/g. Given the area sampled is above the mean high tide it can be expected that it is beyond margins of eel habitat. In situations where residual soil is beyond eel habitat an appropriate land use soil contaminant standard should be applied. In this instance the recreational soil contaminant standards should be used due to short term and infrequent exposure pathways. This value is 520 pg/g. It is also proposed that a dedicated small water craft access point is constructed near the Orini-Kopeopeo confluence to provide a safe entry-exit point for canal users resulting in a reduction in direct contact with residual contaminants on the edges of the canal.			
20190627b	27-06-19	Saltmarsh area previously identified as having levels above target (Opus 2016). The sample locations were at mean high tide and cannot be removed by dredging. Investigation of remediation options identified that considerable vegetation and canal bank disturbance was required to gain access to area. This would possibly generate short term effects and increased exposure risks. Saltmarsh area samples ranged in concentration between 23-130 pg/g with an average of residual material being 57.9 pg/g, which is below the site and pathway specific remediation target (60 pg/g) which was derived to be protective of health risks associated with eel tissue consumption. Given the area sampled is frequently dry it can be expected that it is beyond the normal margins of eel habitat. In situations where residual soil is beyond eel habitat an appropriate land use soil contaminant standard should be applied. In this instance the recreational soil contaminant standards should be used due to short term and infrequent exposure pathways. This value is 520 pg/g.			

All exceptions in these highlighted cells are associated with the dredging profile, and flood conveyance. They all relate to Section 4 redredging. These areas had already achieved chemical validation below the remedial target.