
3.0 CANAL BANK SURVEY

Report on a survey of the canal banks along the full length of the canal within Widnes, Warrington and St Helens Boroughs.

A visual inspection of the canal walls and banks was undertaken from the towpath over the full length of the canal. There are various forms of construction including:-

- Masonry wall and coping
- Natural earth banks
- Concrete wall and coping
- Timber posts and panels
- Steel sheet pile and concrete capping beam

Generally the canal banks are in good condition and appear stable but there are some sections which are in poor condition, as follows:

- In two locations, at the Railway Embankment (Ref A16, chainage 23,930m) and between chainages 8,900m and 9,500m, the masonry canal wall is damaged in localised areas but the overall stability remains satisfactory.
- The masonry wall and coping has fallen into the canal in places between chainages 5,500m and 7,800m. This section of the canal lies next to Gatewath Tip which is currently owned by Cheshire County Council. A detailed report was commissioned by Warrington Borough Council from Manstock Geotechnical Consultancy Services Ltd to assess the cause of this wall instability. The report, dated February 1995, concluded that the instability was due to the raising of the groundwater profile caused by the landfill tip. Various remedial measures were proposed, with the preferred option being to install drainage to the toe of the tip with a cut-off between the towpath and landfill site. This would intercept surface water run-off and leachate from the landfill thus reducing both the hydrostatic pressure on the canal wall and the potential for pollution of the canal. At the request of Warrington Borough Council we have briefly reviewed this report and, on the basis of the information contained therein, would agree with the reports' conclusions and recommendations.

Besides the section alongside Gatewarth Tip, there are other areas where the canal wall is positioned at the toe of slopes, including:-

- (a) Merton Bank Road Bridge (B26) to the end of Gerrards Bridge Branch
- (b) Ravenshead Glass Access (B17) to Technology Campus Access (B11)
- (c) Bradley Swing Bridge (G3) to Bradley Lock (G1)
- (d) Johnsons Lane Culvert (M12) to Concrete Wall (M9)

Section (d) comprises the earth slope which form the lagoons to Fiddlers Ferry Power Station. The canal has been infilled in this area to prevent slope instability which was encountered. On all other sections the slopes appear stable and are covered in vegetation.

During the inspection, major remedial works to the masonry canal walls between chainages 23,900 and 24,130m were in progress with the walls being completely rebuilt.

Location (Structure Reference)	Description/Inspection Results		Photograph Number	Recommendations/ Actions
	West Bank	East Bank		
<u>Section N</u>				
N3 - N2	Masonry wall with areas of concrete infill. Original masonry coping remains.	Masonry wall with new concrete coping.	5/14	None.
N2 - N1	Natural canal bank with medium sized trees growing near canal side.	Masonry wall with new concrete coping.	5/13	None.
N1 - M18	Natural canal bank with medium sized trees growing near canal side.	Masonry wall with new concrete coping. Extensive vegetation growth in front of wall.	5/11 5/12	Remove vegetation.
<u>Section M</u>				
M18- M17	Natural canal bank with railway nearby.	Masonry wall with new concrete coping.	5/10	No action.
M17- M12	Natural canal bank with railway nearby.	Masonry wall with new concrete coping.	5/8 5/9	No action.
M12 - M9	Natural canal bank with railway nearby.	Original canal bank has been infilled by Powergen to improve slope stability of lagoons. Canal width reduced to 4m with oversized towpath now provided.	5/5 5/6 5/7	Assess original slope stability problems.
M9 - M8	Natural canal bank with railway nearby.	Masonry canal wall with concrete/masonry coping.	5/4	No action.
M8 - M2	Natural canal bank with railway nearby.	Natural canal bank.	5/3	No action.
M2 - L24	Natural canal bank with railway nearby.	Natural canal bank.	5/2	No action.

Location (Structure Reference)	Description/Inspection Results		Photograph Number	Recommendations/ Actions
	West Bank	East Bank		
Section L				
L24 - L18	Precast concrete canal wall constructed by Warrington District Council. Other sections comprise masonry canal walls and copings and steel sheet piles with concrete capping beam.	Masonry wall renovated during construction of the marina. Original masonry coping remains.	5/-1 5/0 5/1	No action.
L18 - L11	Precast concrete canal wall constructed as part of the Fiddlers Ferry marina.	Masonry wall renovated during construction of the marina. Original masonry coping remains.	4/36	No action.
L11 - L9	Natural canal bank.	Masonry wall with new concrete coping. One 10m section of masonry is in poor condition with large voids evident.	4/35 4/34	Rebuild 10m section of canal bank.
L8 - L7	Natural canal bank.	Masonry wall with new concrete coping. Two sections of masonry wall are unstable with concrete coping falling into canal.	4/32 4/33	Rebuild unstable section of canal wall (30m length).
L7 - L6	Natural canal bank.	Masonry wall with isolated areas of concrete infill and concrete copings.	4/31	No action.
L6 - L3	Masonry canal wall with coping missing in areas.	Masonry canal wall with concrete and masonry copings.	4/30	No action.
L3 - L1	Masonry canal wall with coping missing in areas.	Masonry canal wall and coping.	-	No action.
L1 - K15	Natural canal bank.	Masonry canal wall and coping.	4/29 4/28	No action.

Location (Structure Reference)	Description/Inspection Results		Photograph Number	Recommendations/ Actions
	West Bank	East Bank		
<u>Section K</u>				
K15 - K13	Canal bank formed by vertical timber posts and horizontal timber panels.	Masonry canal wall and coping.	-	No action.
K13 - K11	Canal bank formed by vertical timber posts and horizontal timber panels.	Masonry wall with areas of concrete infill. Isolated areas of masonry appear to be in poor condition.	4/27	Repair damaged concrete.
K11 - K10	Timber post and panel canal bank.	Masonry wall and coping.	4/26	No action.
K10 - K6	Timber post and panel canal bank with sections of steel sheet piles with concrete capping beam.	Masonry wall and coping.	4/25	No action.
K6 - K4	Timber post and panel canal bank.	Masonry wall and coping.	4/24	No action.
K4 - J18	Canal wall construction no longer exists and natural slopes of Sankey Brook now appear.	Canal wall construction no longer exists. Sankey Brook and the canal now take the same course. Grass slopes to Sankey Brook are now evident.	4/23	No action.
<u>Section J</u>				
J18 - K16	Natural banks to Sankey Brook.	Natural banks to Sankey Brook.	4/22	No action.
J16 - J15	Natural banks to Sankey Brook.	Natural banks to Sankey Brook.	-	No action.
J15 - J13	Natural banks to Sankey Brook.	Natural banks to Sankey Brook.	4/17	No action.
J13 - J12	Natural banks to Sankey Brook.	Natural banks to Sankey Brook.	-	No action.

Location (Structure Reference)	Description/Inspection Results		Photograph Number	Recommendations/ Actions
	West Bank	East Bank		
<p><u>Section J</u> (Continued)</p> <p>J12 - J3</p>	<p>Up to 300m upstream of Footbridge A (Structure Reference J12) the canal follows the line of Sankey Brook with both banks formed by natural grassed slopes. North of this the line of the canal diverges from Sankey Brook and runs parallel to the nearby railway. This section of the canal has been infilled but the original alignment is still distinguishable.</p>		<p>10/12 10/13 10/14 10/15 10/16</p>	<p>Re-open the canal along original alignment.</p>
<p>J3 - H15 (M62)</p>	<p>This section is also infilled with the original canal alignment following the line of a new footpath. Adjacent to the M62 there is a group of houses. The new position of the canal may encroach on this property. There is a disused dry dock in this section.</p>		<p>6/36 6/34 6/35</p>	<p>Re-open the canal along original alignment.</p>
<p><u>Section H</u></p> <p>H15 (M62) - H12</p> <p>H12 - H9</p> <p>H9 - H5</p> <p>H5 - G17</p>	<p>The canal remains infilled and is now heavily overgrown with medium sized trees. There is an access road parallel to the canal. This road crosses the canal at the bottom of the M62 embankment.</p> <p>The infilled canal runs parallel to the steel wire fence and is heavily overgrown with trees.</p> <p>The infilled canal follows the line of the footpath along the edge of a farm field. The section north of Watery Lane is again overgrown with trees.</p> <p>From Alder Lane Bridge the original masonry copings to the west canal wall are visible and are used to form the edge to the footpath. The area occupied by the original canal is overgrown with trees.</p>		<p>6/28 6/28 6/27 6/26 6/25 6/24 6/23 6/22</p>	<p>Re-open the canal along the original alignment.</p> <p>Re-open the canal along the original alignment.</p> <p>Re-open the canal along the original alignment.</p> <p>Re-open the canal along the original alignment.</p>

Location (Structure Reference)	Description/Inspection Results		Photograph Number	Recommendations/ Actions
	West Bank	East Bank		
Section G G17 - G10	Large sections of the original masonry canal wall have been rebuilt in concrete. The timber shutters used during construction have been left in place.	Natural canal bank with extensive vegetation growth including medium and large trees.	6/21 10/8 10/11	No action.
G10 - G3	Masonry canal wall with coping formed from concrete with a trowelled finish. Some isolated sections have been completely rebuilt in concrete.	Natural canal bank with extensive vegetation. A 100m section adjacent to the bridge consists of a masonry/concrete wall.	10/7 10/5 10/6	No action.
G3 - G1	Masonry canal wall with no coping. A 100m section of the wall has been rebuilt using the original masonry.	Natural canal bank with extensive vegetation. Behind the canal bank there is a steep sided slope which is approximately 10-15m high.	10/4 10/3 10/2	Assess the stability of the steep sided slope.
G1 - F5	This section of the canal is infilled and there is no evidence of the original canal walls and copings. This area is now heavily overgrown with vegetation including large trees.		9/37 9/36	Re-open the canal along the original alignment.
Section F F5 - F4	This section of the canal is infilled and there is no evidence of the original canal walls and copings. This area is now moderately overgrown.		9/35	Re-open the canal along the original alignment.
F4 - E15	This section of the canal is infilled and there is no evidence of the original canal walls and copings. This area is heavily overgrown with vegetation including large trees.			Re-open the canal along the original alignment.

Location (Structure Reference)	Description/Inspection Results		Photograph Number	Recommendations/ Actions
	West Bank	East Bank		
Section E E15 - E12 E12 - D18	Masonry canal walls with masonry coping.	Natural canal bank.	9/34	No action.
	A short section of the canal near the bridge remains in water with natural canal banks on both sides. Behind the east bank there is a moderate/steep slope which is well grassed. From the end of this section the canal is infilled and there is extensive vegetation along the original line of the canal.		9/33 9/32 9/31 9/30	Re-open the canal along the original alignment.
Section D D18 - D15 D15 - D7 D7 - C11 (Also D1)	This section of the canal is infilled and there is no evidence of the original canal walls and copings. This area is heavily overgrown in areas.		8/5	Re-open the canal along the original alignment.
	The canal in this section is a narrow channel with natural banks. It follows the original line of the canal but is generally heavily overgrown. In one location there is a very large tree growing in the canal bed.		9/26 9/25	Re-open the canal along the original alignment.
	The canal continues in the narrow channel with natural banks. Again the channel is heavily overgrown. Along the west bank the original masonry wall is visible for a height of up to 0.5m.		9/24 9/23 9/22	Re-open the canal along the original alignment.

Location (Structure Reference)	Description/Inspection Results		Photograph Number	Recommendations/ Actions
	West Bank	East Bank		
<u>Section C</u>				
<u>Blackbrook Branch</u>				
C12 - C13	Natural canal bank.	Natural canal bank.		No action.
C13 - C14	Natural canal bank.	Natural canal bank.	9/8	No action.
C14 - END	Natural canal bank.	Natural canal bank.	8/20 8/19	No action.
<u>Main Canal</u>				
C12 - C6	This section of the canal is infilled and the land is now the site of a secondary school. Along the line of the canal there is the school playing fields and a new extension to the main school building.		9/21 9/20 9/19	Re-open the canal along the original alignment.
C6 - C4	This section of the canal is infilled and is now the site of a car wash and Wood Weston & Co. Printers.		9/18 9/17 9/15	Re-open the canal along the original alignment.
C4 - B26	Natural banks form both sides of the canal in this section. The channel is heavily overgrown and the depth of water is less than 500mm. Adjacent to the east bank there is a relatively new housing estate.		15/5 15/4 15/3 15/2	Widen the existing channel.

Location (Structure Reference)	Description/Inspection Results		Photograph Number	Recommendations/ Actions
	West Bank	East Bank		
Section B B26 - B26A	Natural canal bank with a towpath.	Natural canal bank with a steep sided slope adjacent to the towpath. This slope is heavily overgrown and appears stable.	15/-1 15/0	Widen the existing channel and assess the slope stability.
B26A - B19	Natural canal bank with a masonry canal wall near the New Double Lock. There is a towpath adjacent to this bank.	Natural canal bank with a masonry canal wall near the New Double Lock. There is a towpath near this bank which continues along the Gerards Bridge Branch.		Widen the existing channel.
B19 - B17	Masonry canal wall and coping which has been recently renovated. There is a tarmacked towpath adjacent to this bank.	Masonry canal wall and coping which has been recently renovated.		No action.
B17 - B11	Masonry canal wall and coping which is in reasonable condition. There is a tarmacked towpath adjacent to this bank with an access road to a nearby property running parallel to this towpath.	Masonry canal wall and coping with one section rebuilt in blue engineering bricks near a new office building which overhangs the canal. There is a small slope behind the canal wall which is well grassed and appears stable.	14/24 14/23 14/22	Assess the slope stability.
B11 - B1	Natural canal bank with a moderate/steep sided slope between the canal and the nearby red brick building. The canal bank is heavily overgrown. At each end of this section there is a masonry canal wall which is in good condition.	Masonry canal wall and coping which has been recently renovated. Adjacent to this bank there is a tarmacked towpath.	14/21 14/20	Assess the slope stability.

Location (Structure Reference)	Description/Inspection Results		Photograph Number	Recommendations/ Actions
	West Bank	East Bank		
<u>Gerards Bridge</u> <u>Branch</u> B19 - END	Natural canal bank with a moderate/steep sided slope which is heavily overgrown.	Natural canal bank with a towpath. Behind the towpath there is a steep sided slope which is heavily overgrown. Heavily polluted water is percolating through this slope onto the towpath.	11/35 11/27 11/26	Monitor the slope stability and pollution to the east bank.
<u>Section A</u> B1 - A19	This section of the canal is infilled with the original line of the canal covered by a grassed area and the site of an abattoir. The abattoir has now been demolished and the area cleared with only the original access roads remaining. The tarmac towpath continues through this section up to Parr Street.		14/17 14/16 14/18	Re-open the canal forming a new channel.
A19 - A16	Masonry canal wall is in good condition although the masonry coping is missing over long sections of the wall. There is a winding hole near the railway which has a small section of masonry missing. Adjacent to this bank there is a towpath.	Masonry canal wall which is in good condition. Large sections of the copings are missing and a 15m section of the wall is missing adjacent to the railway.	14/9 14/11	Rebuild damaged sections of the masonry wall.
A16 - A13	Masonry canal wall and coping which is generally in reasonable condition although the section which originally formed a narrowing in the canal is partially demolished. There is a towpath adjacent to this bank.	Masonry canal wall and coping which is in reasonable condition. There is a towpath adjacent to this bank.	14/0 14/1 14/4 14/3	Rebuild damaged section of the masonry wall.

Location (Structure Reference)	Description/Inspection Results		Photograph Number	Recommendations/ Actions
	West Bank	East Bank		
A13 - A7	Natural bank with a short section of masonry wall and coping adjacent to the overflow weir (Structure Ref. A13).	Masonry/concrete canal wall with masonry coping in some locations. Adjacent to this wall there is a towpath.	13/23 13/20	No action.
A7 - A7A	Steel sheet pile wall with a concrete capping beam.	Masonry canal wall and coping.	13/18	No action.
A7A - END	Concrete/masonry wall with a red stone coping and a towpath formed in block paving.	Concrete/masonry wall with a red stone coping and a towpath formed in block paving.	13/8 13/7	No action.