From:	Cobb, Tim
To:	PSC-WaterResources
Cc:	Burnham, Katie; Jane Crossley (Guest); Carling, Bryony; Coates, John; Townend, Vicki; Emily Turpin
Subject:	IMPOUND - License Application - Meadowgate and Canklow Regulators
Date:	21 March 2024 13:26:56
Attachments:	ENVIMNE790514-JBAB-00-4_02-PT-EN-2513-Canklow_Impoundment_License_Part_A.pdf ENVIMNE790514-JBAB-00-4_02-PT-EN-2514-Canklow_Impoundment_License_Part_D.pdf ENVIMNE790514-JBAB-00-4_02-PT-EN-2515-Canklow_Impoundment_License_Part_E.pdf ENVIMNE790514-JBAB-00-4_03-PT-EN-2007-Meadowgate_Impoundment_License_Part_A.pdf ENVIMNE790514-JBAB-00-4_03-PT-EN-2008-Meadowgate_Impoundment_License_Part_D.pdf ENVIMNE790514-JBAB-00-4_03-PT-EN-2009-Meadowgate_Impoundment_License_Part_E.pdf RE Canklow and Meadowgate - Impoundment Licenses.msg

---

Hi PSC team

Please find attached the impoundment license application forms for Meadowgate and Canklow regulators respectively, covering parts A, D and E.

We have completed these to the best of our knowledge but if there are any discrepancies or corrections needed, please let me know.

I've also attached the appropriate manager approval via email, as we couldn't work out how to sign the forms electronically. I trust this will suffice?

Once you are happy with the forms, I can provide the supporting information separately either via email or link to our SharePoint page to download.

Kind Regards

Tim Cobb
Project Manager
Programme & Contract Management (PCM)
Part of Major Projects & Programme Delivery
Mobile: 07500 835657

Planned leave: 29th March – 15th April

From:	Townend, Vicki
To:	Cobb, Tim
Subject:	RE: Canklow and Meadowgate - Impoundment Licenses
Date:	21 March 2024 11:07:44
Attachments:	image001.png

Hi Tim,

Happy with those. I have tried to insert my sig but it doesn't seem to be working. I've copied it below.

Victoria Townend

South Yorkshire Operations Manager Don, Rother and Dearne

Environment Agency | Foss House, Kings Pool, 1-2 Peasholme Green, York, YO1 7PX

victoria.townend@environment-agency.gov.uk

Mobile: 07785 517321

PA: sana.yousaf@environment-agency.gov.uk

From: Cobb, Tim <tim.cobb@environment-agency.gov.uk>
Sent: Tuesday, March 19, 2024 2:39 PM
To: Townend, Vicki <victoria.townend@environment-agency.gov.uk>
Cc: Coates, John <John.Coates@environment-agency.gov.uk>; Lampard, Heather <Heather.Lampard@environment-agency.gov.uk>; Emily Turpin <Emily.Turpin@jba-bentley.co.uk>; Jane Crossley (Guest) <Jane.Crossley@jbaconsulting.com>
Subject: Canklow and Meadowgate - Impoundment Licenses

Hi Vicki

See attached the main forms with your details as the main applicant for the impoundment licenses for both Canklow and Meadowgate, as we discussed the other week. Heather, we've also included you regarding site operations as the SRO (see Form A).

Hopefully this is all ready to go. I'm not sure how to include either a signature or text for the signature box in section D14 of Form D? Maybe you can write over it with a text box and possibly insert an electronic signature? Alternatively, we may have to print it out for you to sign when in the office sometime, which all seems a bit old school! I'll ask PSC team what they require for this.

Let me know if you have any queries or trouble reading it.

Kind Regards

Tim Cobb

Project Manager

Programme & Contract Management (PCM)

Part of Major Projects & Programme Delivery

Mobile: 07500 835657

Planned leave: 29th March – 15th April

From:	PSC-WaterResources
To:	"jane.crossley@jbaconsulting.com"
Cc:	Cobb, Tim
Subject:	NPS/WR/041112-3 - Informal Acknowledgement
Date:	26 March 2024 13:54:00
Attachments:	image001.gif image002.gif image003.gif image004.gif image005.gif image006.png image007.gif

---

Dear Sir/Madam
Application number - NPS/WR/041112
Site name – Canklow
Application number - NPS/WR/041113
Site name - Meadowgate
I confirm that we have received your applications for a new licence.

We will check your application are technically valid, that the application charge you have paid is correct and decide whether it needs to be advertised or not. We will contact you again if you need to do anything else relating to your application or if you need to pay more money.
You can find full details of our application charges and additional charges that you may need to pay during determination in our Water Resources Charging Guidance on Gov.uk.
If there are no problems with your application, we will send you a letter to let you know that your application is technically valid and when we expect to reach a decision.
Currently, applications are taking on average six weeks to be allocated to a permitting officer. This is an average estimate, meaning that some applications take longer and some are allocated more quickly than this timescale.
We are taking action to resolve these delays, including recruiting more staff and reviewing our processes for efficiencies.
We aim to respond to all enquiries asking for updates, and at busy times this can have a significant impact on our ability and capacity to progress applications.
Please rest assured that we will contact you as soon as there is any update on your application.
If you have any questions about your application, please contact a member of the Permitting Support Team on 0208 4748939.
Kind regards,

Meher (Spandana) Sukkala
Permitting Support Advisor
Water Resources, Integrated Permitting Services

Environment Agency | Water Resources, Integrated Permitting Services, Quadrant 2, 99 Parkway Avenue, Parkway Business Park, Sheffield, S9 4WF

☎ Water Resources Team: 0208 474 8939
✉ Water Resources Team: PSC-WaterResources@environment-agency.gov.uk

Working days: Monday to Friday

A blue background with white text Description automatically generated

9 RIVER REGULATORS AND CONTROL SLUICES

Intentionally Left Blank

9.1 GENERAL OPERATING INFORMATION

9.1.1 RIVER ROTHER REGULATORS AND BOLTON REGULATOR (RIVER DEARNE)

9.1.1.1 From an examination of the major floods from l965 and l982 some general patterns can be found.

a) River Don at Hadfields peaks first.

b) River Rother at Whittington peaks 0-3 hours after Hadfields.

c) River Dearne at Barnsley peaks 4-6 hours after Hadfields.

d) River Don at Rotherham peaks l-2 hours after Hadfields.

e) River Rother at Woodhouse Mill peaks 8 hours after Whittington.

f) River Dearne at Adwick peaks 8 hours after Barnsley.

9.1.1.2 In order to reduce the flood peak on the River Don it is necessary to reduce the flows on the River Rother and River Dearne during the period that the Don peak is passing the respective confluences. However due to the time of travel and in order to ensure a positive effect, it is necessary to regulate while the upstream stations are still rising.

9.1.2 Rother Regulators

9.1.2.1 The operation of the Rother Regulators is on the following basis:

a) Canklow Regulator should be used when the flow at Hadfields on the River Don exceeds l30 cumecs (Level 32.0m), which is approximately a l in 5 year event.

b) The flow on the River Rother passing Canklow should be limited to 40 cumecs.

c) Meadowgate and Woodhouse Mill Regulators should be used to limit the flow reaching Canklow to 50 cumecs.

9.1.2.2 This allows Canklow to operate for a period in excess of 20 hours before reaching capacity. For most events on the River Don this period would be long enough to allow the Don peak to have passed Rotherham.

9.1.3 Dearne Regulator

9.1.3.1 In the same way the operation of Bolton Regulator is on the following basis:

a) Bolton Regulator should be used one to two hours after the flow at Rotherham (Bow Bridge) has reached 2.8m which is approximately a l in 5 year event.

b) The flow on the River Dearne passing Bolton should be limited to 40 cumecs.

c) Bolton Regulator has been fixed in the open position until a decision has been made following the results of the Regulator. **This Regulator should not be used during a flood event.**

9.1.4 Operational Sequence

9.1.4.1 Thus, the Regulators would be operated in the following sequence:

1) Canklow
2) Meadowgate
3) Woodhouse Mill.
4) Dearne Mouth Sluice.

It is anticipated that one Ops Delivery gang will now be used to check each site at the start of the remote operation procedure, to ensure that they can be operated safely on site. Once the relevant gate has been checked and is in the water, then the relevant operational instructions in the vicinity can be carried out before attending the next site under the direction of the FIDO.

Consult Emergency Response Procedures Manual – Yorkshire S&W Volume 2Y D&A for specific site operations required.

If a decision is made to operate this structures on site please consult Emergency Response Procedures Manual – Yorkshire S&W Volume 2Y D&A for risk assessments and detailed operating instructions.

9.1.5 Summary Of Operating Criteria For River Regulators

Regulator	Manning Level	Operating Range	Regulating Flow
Canklow	IF Hadfields>= 1.3	IF Hadfields >= 1.8 and event NOT snowmelt OR IF Hadfields >= 2.1 and event IS snowmelt	40 Cumecs
Meadowgate	IF Whittington is >= 2.55 AND Hadfields >= 1.3 OR IF Woodhouse Mill is >= 2.36 AND Hadfields >= 1.3 OR IF Hadfields is >= 1.8	IF Whittington is >= 3.35 AND Hadfields >= 1.3 OR IF Woodhouse Mill is >= 2.66 AND Hadfields >= 1.3 OR IF Canklow is operated AND Meadowgate d/s >= 35.7	60 Cumecs
Woodhouse Mill	IF Meadowgate u/s >= 4.7 OR IF Meadowgate is inoperable AND Woodhouse Mill d/s is >= 2.36 OR IF Meadowgate is inoperable AND Whittington is >= 2.55	IF Woodhouse Mill d/s is >= 2.66 AND Hadfields >= 1.3 OR IF Meadowgate u/s is >= 5.4	60 Cumecs
Dearne Mouth	IF Rotherham is >= 2.9 OR IF Mexborough Lock is >= 4.35	IF Mexborough Lock is >= 4.48	20-50 cumecs taken out of River Don

9.1.6 Emptying Sequence

9.1.6.1 The sequence of emptying the regulators is designed to ensure

Water is not evacuated too rapidly causing flooding problems downstream

Canklow is evacuated first, as this would need to be used first in the event of a secondary peak.

9.1.6.2 Evacuation of the washlands occurs ‘naturally’ as the flood recedes by the maintenance of the regulated flow.

9.1.6.3 Once Hadfields drops below 1.3m, evacuation at Canklow can be accelerated by maintaining a downstream level of 27.4m AOD. This should be maintained for up to 24 hours prior to accelerating release from Woodhouse Mill and Meadowgate.

9.1.6.4 After 24 hours, evacuation of Woodhouse Mill and Meadowgate washlands can also be accelerated. Both regulators can be operated simultaneously to allow a downstream level of 2.9m at Woodhouse Mill and a downstream level of 36.3m AOD at Meadowgate.

9.1.6.5 Eventually both gates can be fully opened, secured and left.

9.2 RIVER ROTHER – CANKLOW REGULATOR

9.2.1 LOCATION:

NGR is SK 434 897

Figure 9-1 is a location plan.

Refer to Vol 2Y D&A for risk assessment.

Figure 9-2 is a set of operating curves.

Figure 9-3 is a stage/discharge curve.

Canklow Regulator is a single, electrically powered vertical lift gate (9.lm wide by 6.7m high) spanning the River Rother immediately downstream of the A630 near junction 33 on the M1. It is approximately 3.5 Km u/s from the confluence of the River Rother and the River Don at Rotherham.

9.2.2 Purpose

9.2.2.1 The closing of the Regulator gate limits the flow of the Rother

9.2.2.2 This allows the Rother flood peak to be delayed until after the River Don flood peak has passed Rotherham. The closing of this Regulator gate allows the filling, over spillways, of the 7 washland compartments to a maximum level of 29.5m at the gate. This provides a total storage capacity of 1,520,600 cubic metres. The careful use of this storage can have a significant effect on flood levels on the River Don. It will be the most frequently used of the Rother Regulators.

9.2.3 Access

Key No.815

9.2.3.1 Vehicle Access to the Regulator is via the A631 (West Bawtry Road), near its junction with the A630 and a small turn off to the south is signposted “Brinsworth Switching Station”. A small metalled road leads to the Switching Station. Turn right immediately after passing under the A630 to the Regulator.

9.2.4 Structure

9.2.4.1 The sluice has the following elements:

a) An electrically operated vertical lift gate (9.1m x 6.7m)

b) The motor and gearbox are housed in a brick hut. This is located on the north side of the river, connected by a walkway to the Control House

c) A brick control house located on the south side of the river, contains the control panel, and an upstream and downstream float well. The downstream well has a Negretti & Zambra Recorder and a Dynamic Logic Telemetry device.

9.2.5 Control Panel

9.2.5.1 A single control panel is provided including a power on/off switch and, raise, lower and stop buttons.

9.2.6 Operating Criteria

9.2.6.1 Canklow Regulator should be operated in relation to Hadfields Gauging Station on the River Don

9.2.6.2 The Regulator should be MANNED when a level of 1.3m is reached at Hadfields with the river rising rapidly and rainfall continuing.

9.2.6.3 The regulator should be OPERATED when a level of 1.8m is reached at Hadfields. In general, flood rise at Hadfields is rapid, and therefore operation should not be delayed. However should the event produce a slow rise (i.e. snow melt) operation can be delayed until a level of 2.1m is reached. Above this level it is possible to reach critical conditions at Doncaster because of the additional flow from the Rother and Dearne. The Rother and Dearne flows should however be assessed to determine their likely effect on the Don flow. Regulation may not be necessary if the event is predominately Don based with low flows in the other rivers.

9.2.7 Preliminary Checks

9.2.7.1 On manning the Regulator, the gate should be checked to ensure that it is working correctly.

9.2.7.2 This Regulator is now operated remotely from the Area Incident Room.

9.2.7.3 There are a number of escape sluices and culverts that need to be checked prior to operating the washlands. The location map Figure 9-1 shows their locations. Some of the escape sluices are fitted with safety grills. These grills need to be lowered BEFORE the washland operates. Failure to do this will make emptying the washlands difficult.

9.2.8 Filling The Washlands

9.2.8.1 An inspection of the flood defences at Catcliffe and Treeton should be carried out checking particularly the outfalls and drainage systems on Orgreave Road and the outfall at Mill House. Liaise with Rotherham MBC and arrange pumping if leakage or flooding due to surface water not being able to discharge

9.2.8.2 When the action level of 1.8m at Hadfields is reached the gate should be lowered until the downstream water level equals 26.6m (40 cumecs). If the downstream water level is below this level take no action until it reaches that level

9.2.8.3 As the upstream water rises it will be necessary to close the gate further in order to counter the effect of the greater level. At all times the operator should try to keep the downstream level at 26.6m. Should the upstream level reach the maximum retention level of 29.5m a gate opening of 0.86m should give a downstream level of 26.6m.

9.2.9 Operation At Maximum Capacity

9.2.9.1 In order to prevent the upstream level exceeding 29.5m, when it reaches 29.2m the gate should be opened to allow a greater flow to pass.

9.2.9.2 The operator should try to maintain an upstream level between 29.2m and 29.5m, to allow as much water out as is coming into the system. As soon as possible the operator should close the gate again to maintain the 26.6m downstream level.

9.2.10 Operation Curves

9.2.10.1 When operating at or near the maximum retention level of 29.5m, the operator should consult Figure 9-2. This graph shows the relationship derived from Model Tests between gate opening, flow and downstream water level, for an upstream water level of 29.57m. (97 ft.).

9.2.10.2 For a given gate opening, the intersection with the downstream Stage/Discharge line gives the flow passing and the downstream water level. The graph also indicates a safety limit for opening the gate. If this gate is operated too much or too rapidly, damage to the tail bay of the structure may result.

9.2.11 Treeton Washlands

9.2.11.1 The Canklow Washlands (A,B,D/E, F,G see Figure 9-1 would require in the order of a 1 in 100 year event to operate the spillway without the Regulator being used.

9.2.11.2 The Treeton Washlands, however, overtop at a much lower flow. The west washland (right bank) would overtop at 85 cumecs.

9.2.11.3 If, prior to operating the regulator, a level of 27.5m downstream (75 cumecs) is recorded, then an inspection of the Treeton Washland should be carried out. With the operation of the regulator, inspections should be carried out at regular intervals.

9.2.11.4 As Treeton West Washland fills, it will overtop Treeton Lane and the Area Incident Room should be informed as this condition approaches. Canklow D/E & F washlands also flood Long Lane and similarly the Area Incident Room should be warned.

9.2.12 Evacuating The Washlands

9.2.12.1 As the flood recedes, maintain a downstream level of 26.6m AOD (40 cumecs).

9.2.12.2 Once the level at Hadfields is below 1.3m, Canklow regulator can be opened further to maintain a downstream level of 27.4m AOD (73 cumecs).

9.2.12.3 Eventually, Canklow can be fully opened at which time the Regulator can be secured and left. The washlands evacuate floodwater via a number of escape sluices equipped with non-return valves. Therefore they will discharge automatically.

9.2.12.4 These instructions are designed to prevent water from the washlands discharging too rapidly and causing problems downstream. The sequence of emptying is designed to ensure that Canklow washlands are evacuated first as these will be the first to be used if there is a second flood peak.

9.2.13 Authorisation And Communications

9.2.13.1 The manning and operation of Canklow Regulator can be authorised by the FIDO if the above criteria are met. If the FIDO is unavailable, then authorisation should be sought from the ABC or AFIDO.

9.2.13.2 The sluice should be manned by four persons. A report to the Area Incident Room should be made every hour giving updates to the Ops Instructions being carried out in the area and the level at Catcliffe Bridge gauge board.

9.2.14 Power Failure

9.2.14.1 In the event of power failure, A generator is located on site that is controlled remotely from the Area Incident Room.

Figure 9-1 Canklow Regulator Location Plan

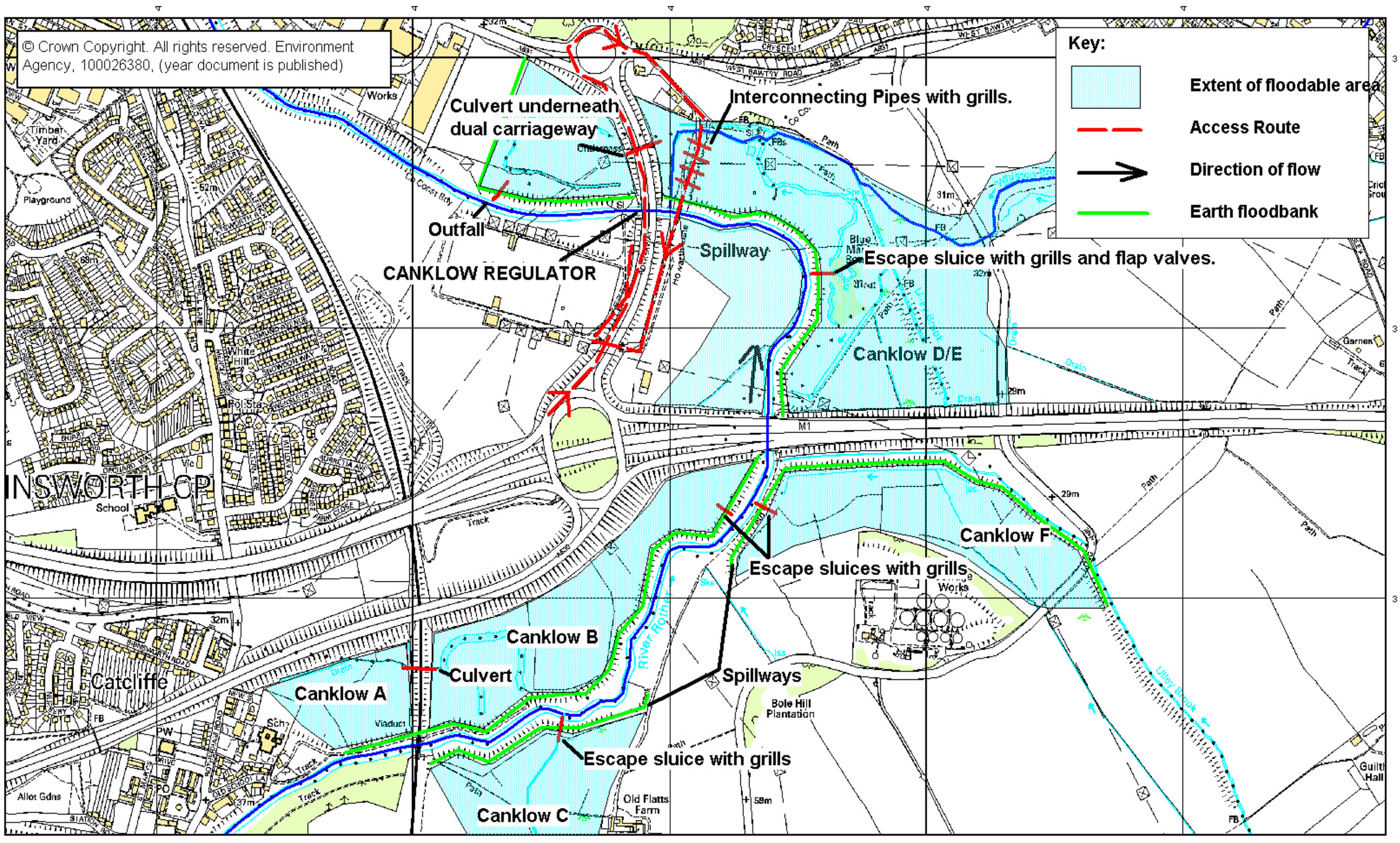


Figure 9-2 Operating Curves Canklow Regulator

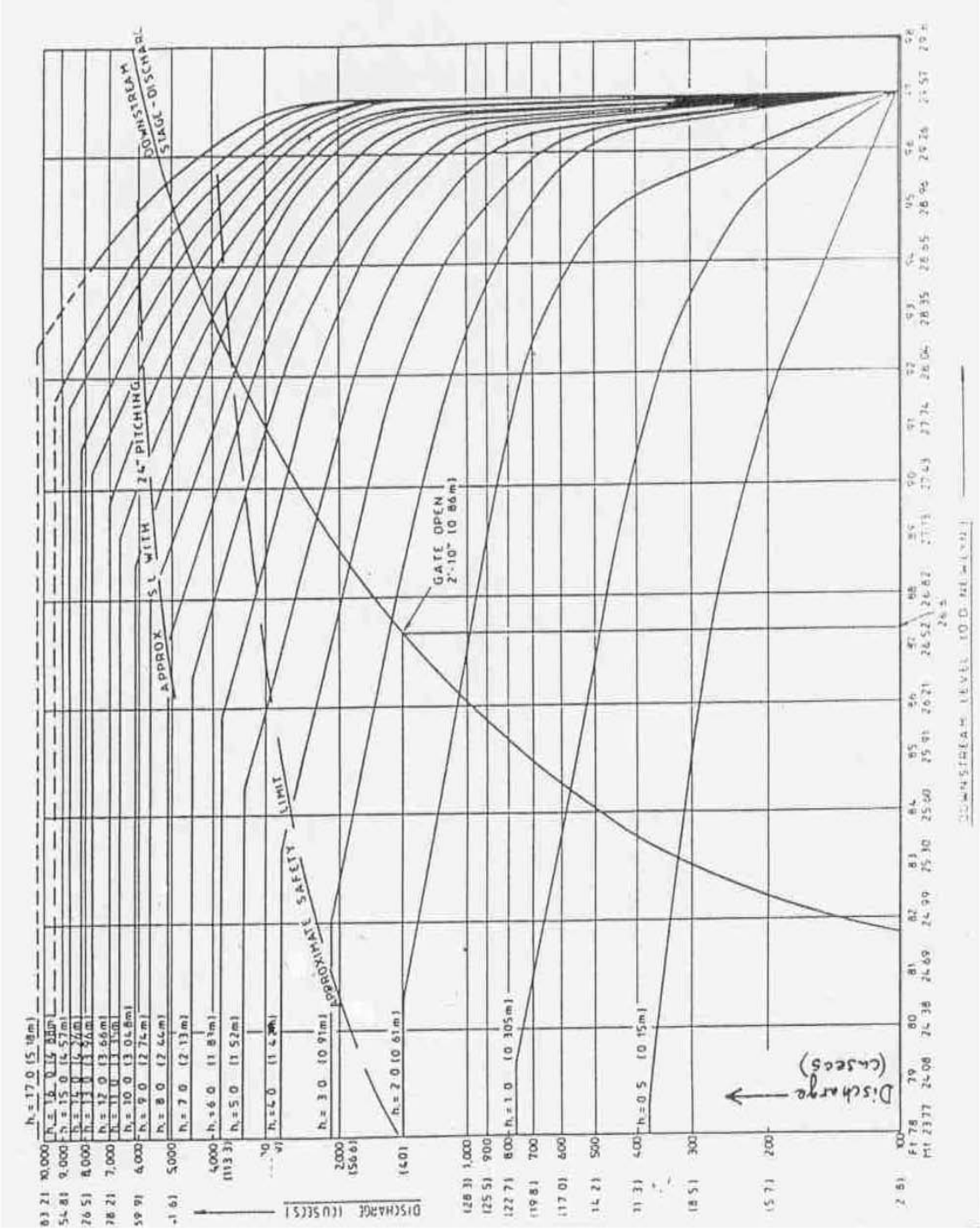
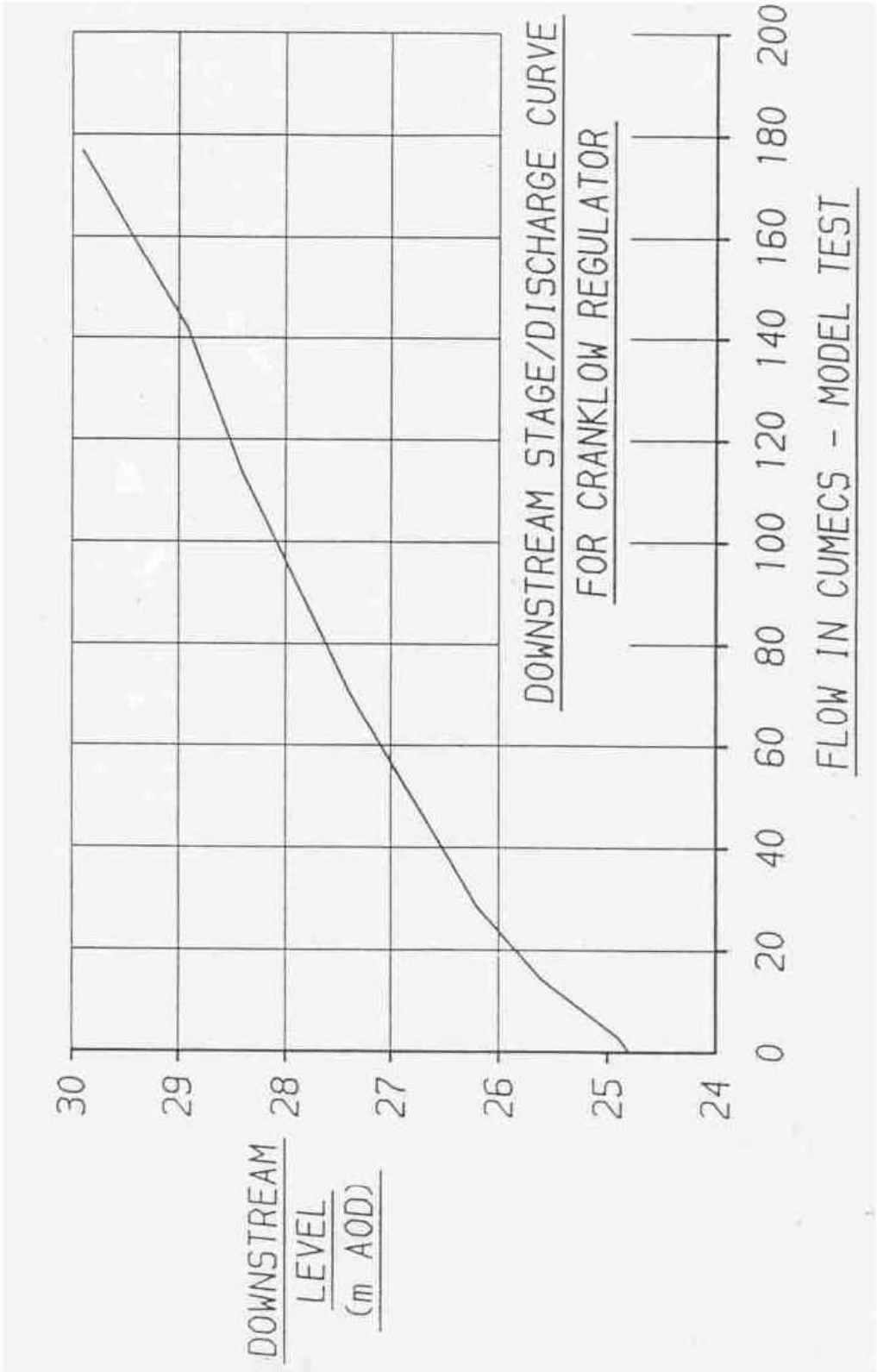


Figure 9-3 Stage/Discharge Curve (Canklow Regulator)



9.3 RIVER ROTHER - MEADOWGATE REGULATOR

9.3.1 Location

NGR is SK 455 828

Figure 9-4 is a location plan

Refer to Vol 2Y D&A for risk assessment

Refer to Vol 2Y D&A for a layout of the control panel

Figure 9-5 is a set of operating curves

Figure 9-6 is a stage/discharge curve

9.3.1.1 Meadowgate Regulator is a single fish belly bottom hinged tilting gate, operated by a single hydraulic ram electrically powered. The gate is 12.0m wide by 4.0m high and spans the River Rother. When not in use it lies on the bed of the river. It is situated in the centre of the Rother Valley Country Park, 1.5 Km downstream of Killamarsh and 4 Km upstream of Woodhouse Mill Regulator.

9.3.2 Purpose

9.3.2.1 The raising of the Regulator gate limits the flow of the Rother. This allows the Rother flood peak to be delayed and so increase the length of time that the Canklow Regulator can be used to limit the flow of the Rother into the River Don at Rotherham.

9.3.2.2 The raising of the Regulator gate impounds flood water, filling two washland compartments to a maximum level of 40.5m at the gate.

9.3.2.3 This provides a total storage capacity of 1,100,000 cubic metres.

9.3.3 Access

Key No. 815

9.3.3.1 Vehicle access to the Regulator is via the A618, the Swallownest to Killamarsh road. The “Rother Valley Country Park” is signposted off this road. The main park road leads to a bridge over the River Rother where the Regulator is sited.

9.3.4 Structure

9.3.4.1 The Regulator has the following elements.

a) A bottom hinged, fish belly tilting gate (12m x 4m) operated by a single hydraulic ram which is electrically powered.

b) A brick control house on the east side of the river contains the electrical motor, the gearbox and hydraulic motor and pump. A control panel which includes upstream and downstream charts, and a gate position indicator is also contained in the Control House.

c) A 600m diameter by-pass culvert is provided for maintenance on the west side of the river. A penstock on the downstream end controls the flow and is operated with a detachable wheel kept in the Control House. A 2m x 3.5m chamber is provided midway on the bypass culvert.

d) A road bridge spans the river immediately upstream of the Regulator. It is an integral part of the structure.

9.3.5 Control Panel

9.3.5.1 Lock check valves are fitted on the pipes from the hydraulic pump unit. The valves (2 in number.) must be opened before operating the regulator gates.

9.3.5.2 The valves are open when the lever handles are positioned in line with the adjacent pipework. The handles can be padlocked in position. The padlock keys are located in a wall box beside the entrance door.

9.3.5.2 Equipment

The control panel is fitted with the following equipment:

a) Five pole panel isolator

b) Motor control comprising of 5.5 Kw (7.5 HP) DOL starter, fuses and overloads.

c) Indicating lamps for:
   (i) Motor running
   (ii) Overload Trip/Motor Failed
   (iii) Low Oil Level
   (iv) Ultra Low Oil Level
   (v) High Oil Temperature
   (vi) Choked Filter
   (vii) Power Available
   (viii) Gate fully lowered
   (v) Gate fully raised

d) 220 AC/l2 Volt DC Transformer/Rectifier

e) “Raise” push button

f) “Lower” push button

g) Monitoring and recording equipment comprising:
   (i) Upstream chart recorder
   (ii) Downstream chart recorder
   (iii) Gate position indicator
   (iv) Model 86l Gemini AC/DC CONVERTER
   (v) 2 – off Metrosil Varistors
   (vi) 3 - off E to I convertors

h) Ammeter

i) Isolator for electric motor and cubicle heaters

j) “Hand - Off - Auto” Selector Switch

k) Clear contacts for:

(l) Remote Alarm for Low Oil Level

(2) Remote Alarm for High Oil Temperature

(3) Remote Alarm for Choked Filter

l) Panel heater with on/off switch.

For layout of Panel see Vol 2Y D&A

9.3.5.3 Alarm Indications

9.3.5.3.1 Low Oil Level Switch

9.3.5.3.1.1 This is the uppermost level switch, should the oil level drop to this level alarm indication is by the lamp on control cubicle, and also by remote indication.

9.3.5.3.2 Ultra-Low Oil Level Switch

9.3.5.3.2.1 This is the lower switch in the tank ,and if oil level continues to fall to this level, the control unit will shut down and indication is by lamp on control cubicle.

9.3.5.3.3 High Oil Temperature

9.3.5.3.3.1 The tank temperature switch will trigger the high temperature alarm. This is indicated on the control panel and by remote.

9.3.5.3.4 Choked Filter

9.3.5.3.4.1 Should the filter element become over-contaminated a lamp will show on the panel and remote indication will also be signalled.

9.3.5.3.5 Emergency Electrical Supply

9.3.5.3.5.1 A l2 volt, ten cell Nickel Cadmium Battery with l20 ampere hour rating is connected to the control cubicle and will be automatically switched on the failure of mains control circuit power supply.

9.3.5.3.5.2 Battery charging is a 4 ampere rated trickle charger.

9.3.6 Operating Criteria

9.3.6.1 Meadowgate Regulator should be operated in relation to Whittington and Woodhouse Mill Gauging Stations on the River Rother and Hadfields Gauging Station on the R Don.

9.3.6.2 The Regulator should be **manned** when either:

a) IF Whittington is >= 2.55m AND Hadfields >= 1.3m.

OR

b) IF Woodhouse Mill is >= 2.36m AND Hadfields >= 1.3m.

OR

c) IF Hadfields is >= 1.8m.

9.3.6.3 The Regulator should be OPERATED when:

a) IF Whittington is >= 3.35m AND Hadfields >= 1.3m.

OR

b) IF Woodhouse Mill Gauging station is >= 2.66m AND Hadfields >= 1.3m.

OR

c) IF Canklow is operated AND Meadowgate d/s >= 35.7m AOD

9.3.7 Preliminary Checks

9.3.7.1 On manning the Regulator the gate should be checked to ensure that it is working correctly.

9.3.7.2 **This gate is now operated from the Area Incident Room, however, as a contingency it may have to be operated from site.**

9.3.7.3 See Section 9.3.5 Ref. opening of check valves before operating the Regulator.

9.3.7.4 An inspection of the Killamarsh flood defences at the rear of Washland 'B' and at Forge Lane should be carried out and repeated at regular intervals. Arrange pumping if leakage occurs. Also inspect County Dyke outfall. A number of the culverts are fitted with safety screens. These need to be checked in order to ensure they are clear prior to the washland operating. Figure 9-4 shows the location of all outfalls to check.

9.3.8 Filling The Washlands

9.3.8.1 When the action level for Meadowgate Regulator has been reached and confirmed by the Woodhouse Mill level, then the gate should be raised using the "Hand" setting on the control panel.

9.3.8.2 The gate should be raised to the 0.5m position and then the operator should wait until the upstream level has reached the 60 cumec level given for that gate height on the Operating Curves (Figure 9-5) ie for a gate height of 0.5m and a flow of 60 cumecs, the upstream level should be 36.8m. When this is reached the gate should be raised a further 0.5m to the 1.0m position and the process repeated.

Raise to	0.5m Gate position – wait – U/S	36.80m AOD
1.0m	37.3	
1.5m	37.8	
2.0m	38.5	
2.5m	39.0	
2.7m	39.2	

9.3.8.3 When the gate height reaches 2.7m, the spillway into Washland 'A' should operate with incoming flows greater than 50 cumecs. This should be confirmed by inspection. Washland 'A' will fill until the level inside reaches that of the spillway (4m stage / 38.8m AOD) after which the spillway (also at 4m / 38.8m AOD) into Washland 'B' will operate. When Washland 'B' has filled to spillway level then both washlands will rise together to the normal retention level of 40.5m.

9.3.8.4 It is anticipated that there will be a significant period with the gate at the 2.7m position during which the washlands are filling to the 38.8m level. The gate should then be adjusted to limit the outflow to 60 cumecs using the Operation

Curves (Figure 9-5) the downstream Stage Discharge Curve (Figure 9-6) and the level at Woodhouse Mill.

9.3.9 Operation At Maximum Capacity

9.3.9.1 In order to prevent the upstream level exceeding 5.7m / 40.5mAOD, when the level reaches 5.4m/40.2m, the gate should be lowered to allow a flow greater then 60 cumecs to pass. The operator should try to maintain an upstream level between 40.2m and 40.5m allowing as much water out as is coming into the system. This is particularly important as the emergency spillway into the Recreation Lake (Washland 'C') operates at 40.8m. As soon as possible the operator should raise the gate in order to resume the 60 cumecs flow limit.

9.3.9.2 A decision must then be made to either use the Recreation Lake or bring Woodhouse Mill into operation.

9.3.10 "Auto" Setting On The Control Panel

9.3.10.1 The "Auto" setting on the Control Panel does not operate correctly and therefore should not be used.

9.3.11 Evacuating The Washlands

9.3.11.1 As the flood recedes it will be necessary to lower the gate to maintain the 50 cumec flow a downstream level of 35.8m AOD

9.3.11.2 Up to 24 hours after Hadfields has dropped below 1.3m the regulator can be adjusted to give a downstream level of 36.3m AOD allowing a greater flow to pass. This should be done at about the same time that Woodhouse Mill is also raised. This delay is designed to allow Canklow to evacuate first.

9.3.11.3 Eventually the gate can be fully lowered at which time the Regulator can be secured and left. The Washlands both evacuate through escape sluices fitted with non-return valves. Washland 'A' into the river, Washland 'B' into Washland 'A'. They will therefore discharge automatically.

9.3.12 Use Of Recreation Lake As Emergency Washland

9.3.12.1 The Recreation Lake (Washland 'C') can be used as an additional Washland in extreme circumstances. These circumstances would be when:

9.3.12.2 All the Regulated Washlands were full and flood at Doncaster was imminent

OR

9.3.12.3 A Flood Defence on the River Rother had failed and flooding of property was occurring making it necessary to limit the Rother flow to a low level.

9.3.12.4 The emergency spillway operates at a level of 40.8m and the maximum retention level is 4l.8m.

9.3.12.5 Allow to eventually equalise and return to normal gate position.

9.3.12.6 Lift the gate in 0.5m lifts until the spillway starts to operate.

9.3.13 Authorisation And Communications

9.3.13.1 The manning and operation of Meadowgate Regulator can be authorised by the FIDO if the above criteria are met. If the FIDO is unavailable then authorisation should be sought from the ABC or the AFIDO. The sluice Regulator should be attended by 4 persons, A report to the Area Incident Room should be made every hour giving the upstream and downstream levels at the regulator and the levels at Forge Lane, Killamarsh.

9.3.14 Power Failure

9.3.14.1 In the event of power failure, a generator is located on site which is remotely operated by the Area Incident Room. This generator may have to be operated from site.

Figure 9-4 Meadowgate Regulator Location Plan

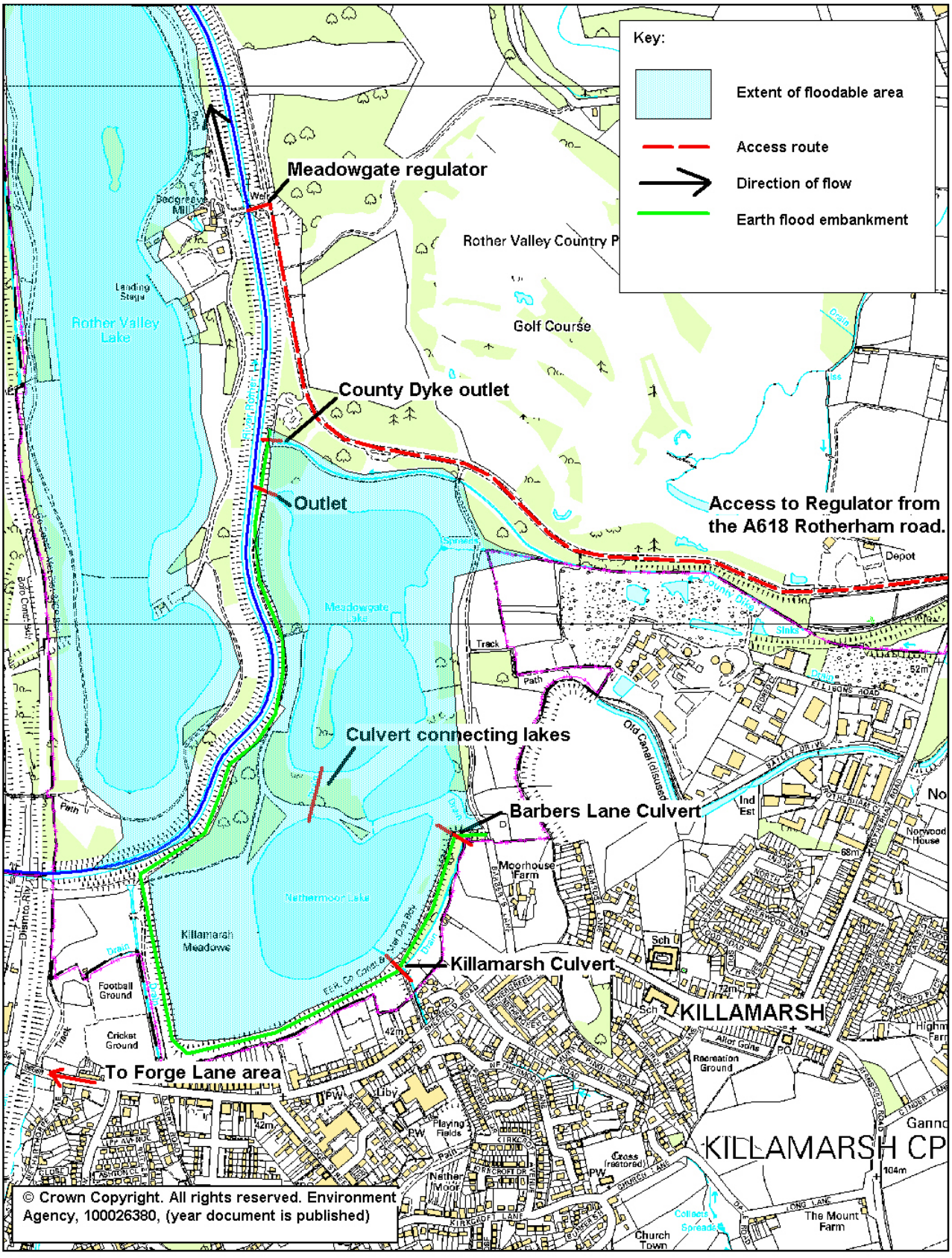


Figure 9-5 Meadowgate Regulator (Operating Curves)

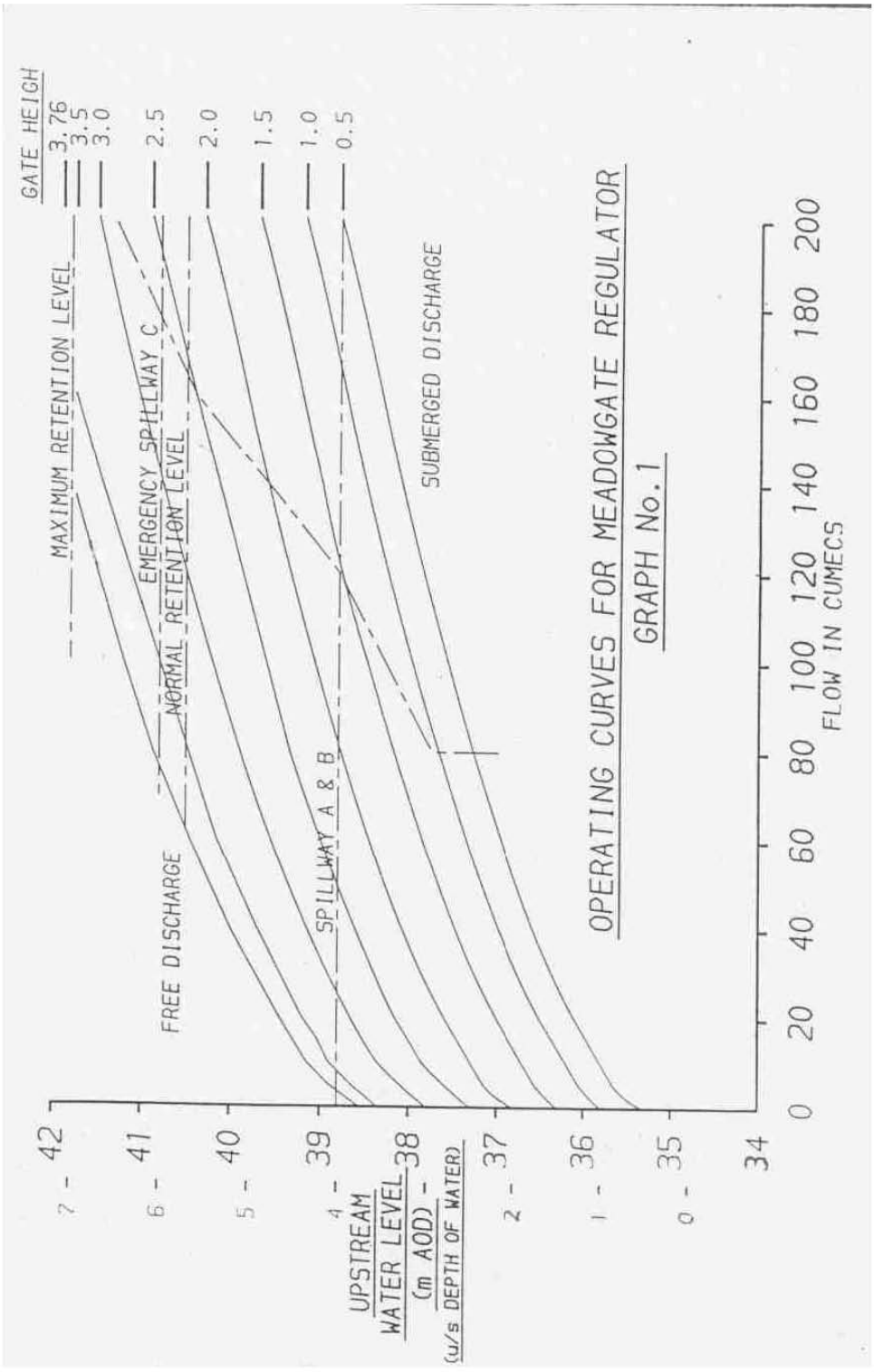
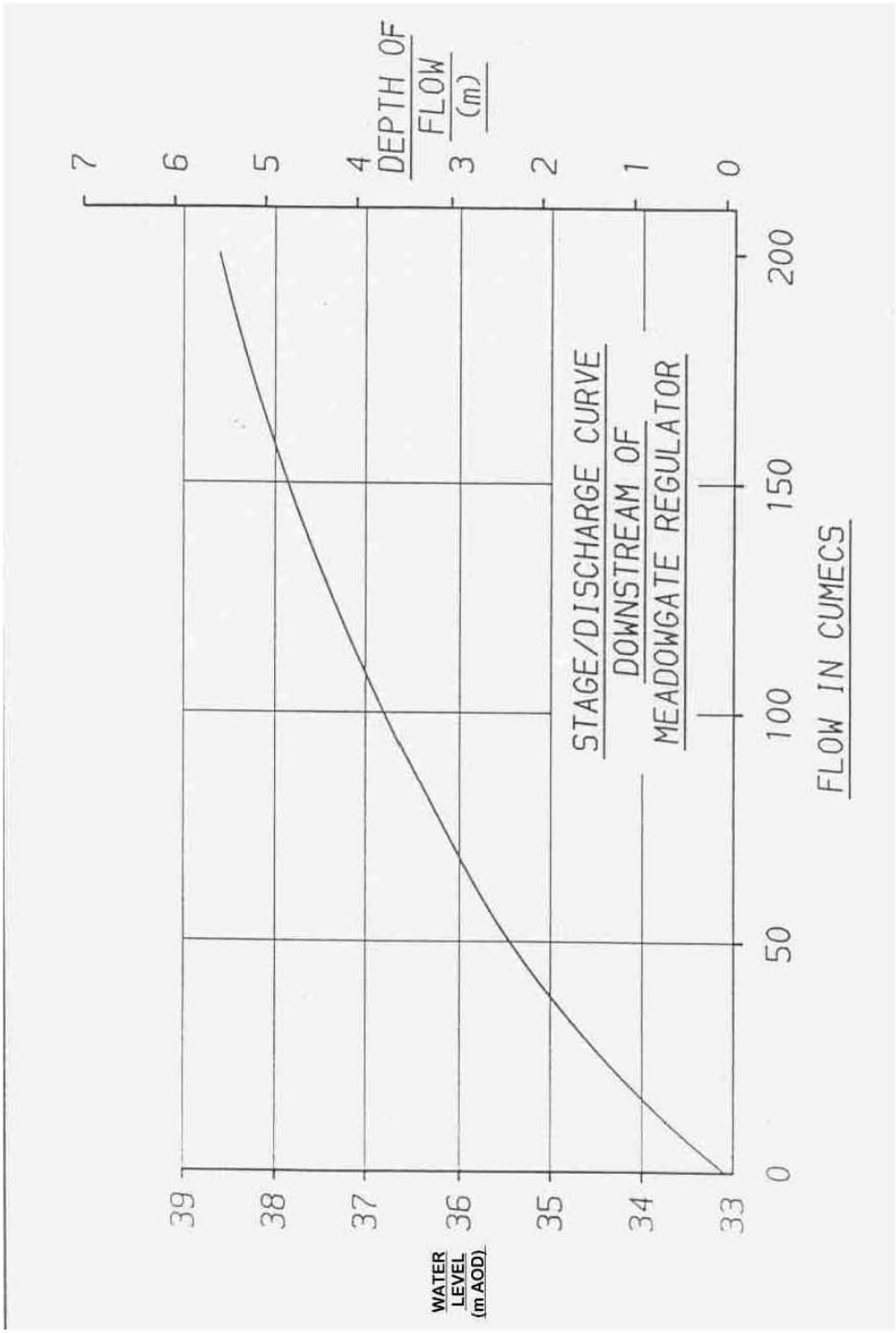


Figure 9-6 Meadowgate Regulator (Stage/Discharge Curve)



Intentionally Left Blank

9.4 RIVER ROTHER - WOODHOUSE MILL REGULATOR

9.4.1 Location

NGR is SK 433 856

Figure 9-7 is a location plan

Refer to Vol 2Y D&A is a risk assessment

Figure 9-8 is a stage/discharge curve

9.4.1.1 Woodhouse Mill Regulator is a single electrically powered vertical lift gate (13.4m wide by 4.9m high). The gate spans the River Rother, with the motors and gear box being sited on a platform above the gate. It is situated immediately upstream of the A57 at Woodhouse Mill, near Sheffield. The Regulator and its washland are sited downstream of the Meadowgate Regulator and upstream of the Canklow Regulator.

9.4.2 Purpose

9.4.2.1 The closing of the Woodhouse Mill gate impounds flood water in the washland immediately upstream, thus limiting the flow of the River Rother. This allows the Rother flood peak to be delayed and so increase the time that the Canklow Regulator can be used to limit the flow of the River Rother into the River Don at Rotherham.

9.4.2.2 Woodhouse Mill washland is a single low lying area divided by a railway embankment with flood arches. There are no floodbanks at the side of the river and flood waters therefore overspill, generally soon after the gate is closed. The maximum retention level is 34.3m OD, providing 339,800 cubic metres of storage. This is relatively small compared with the 1,520,600 cubic metres at Canklow and the 1,100,000 cubic metres at Meadowgate. Woodhouse Mill would only be used if Meadowgate washlands were full and overtopping the recreation spillway ,or Meadowgate were inoperable.

9.4.3 Access

Key No. 815

9.4.3.1 Vehicle access to the Regulator is from the A57 directly into car parks on either side of the gate. The control building is on the East side of the structure, and access to the platform above the gate is via an external ladder on the West side. The Padlock on the gate is a XZX206 key.

9.4.4 Structure

9.4.4.1 The sluice has the following elements:

a) An electrically powered vertical lift gate (13.4m x 4.9m).

b) A brick Control House containing the control panel, gate position indicator, upstream and downstream float wells, chart recorder and telemetry equipment.

c) A platform above the gate on which the motor and gearbox are sited.

9.4.5 Control Panel

9.4.5.1 A simple Control Panel is provided including a power on/off switch and Raise, Lower and Stop buttons. The gate position indicator is a mechanical device showing the gate opening in feet.

9.4.6 Operating Criteria

9.4.6.1 Woodhouse Mill Regulator should be operated in relation to levels at Whittington Gauging Station, Meadowgate Regulator and Hadfields Gauging Station on the River Don.

9.4.6.2 The Regulator should be MANNED when either:

a) Meadowgate Regulator upstream levels are greater than 4.7m stage.

OR

b) Meadowgate Regulator is inoperable AND Woodhouse Mill downstream is greater than 2.36 m stage.

OR

c) Meadowgate Regulator is inoperable AND Whittington is greater than 2.55m stage.

9.4.6.3 The Regulator should be OPERATED when conditions on the River Don require the operation of the Canklow Regulator and either of the following conditions are met:

a) Woodhouse Mill downstream is greater than 2.66m stage AND Hadfields is greater than 1.3m stage.

OR

b) Meadowgate upstream is greater then 5.4m stage.

9.4.7 Preliminary Checks

9.4.7.1 On manning the Regulator the gate should be checked to ensure that it is working correctly. Upstream and downstream water levels should be taken every 15 minutes.

9.4.7.2 An inspection of the outfalls at the upstream end of the washland should be carried out, particularly the two carrying surface water from Beighton under the railway. The position of these two outfalls is shown on the location plan, Figure 9-7.

9.4.7.3 The downstream outfall is that for Shire Brook and is unflapped. The Southern bank of Shire Brook at the entrance to the railway culvert, has been levelled at 34.9m compared with the retention level of 34.3m. This inlet to the outfall culvert should be checked regularly for blockages. There is a history of flooding in Beighton from Shire Brook, and it must be ensured that the operation of the Regulator does not make the situation worse. Sandbagging or clearing debris may be required.

9.4.8 Filling The Washland

9.4.8.1 When the action level has been reached, the gate should be lowered to reduce the downstream level to 2.6m / 31.32m (60 cumecs). As the water level upstream rises the operator will have to adjust the gate position to maintain this downstream level. Very quickly the riverbanks will overtop and the floodplain area will start to fill.

9.4.8.2 The maximum retention level in the washland is 34.3m, and this should be strictly adhered to as there is a risk of flooding to property if it is exceeded. These properties are protected by a small floodbank and this should be inspected. Therefore, when the upstream water level reaches 5.02m / 34.0mAOD, the gate should be opened to allow a flow greater than the 60 cumecs to pass. The operator should try and maintain the upstream water level at the 5.02m / 34.0m AOD stage

9.4.8.3 When the washland has filled the regulator should be passing the same flow out as is coming in.

9.4.9 Evacuating The Washland

9.4.9.1 Assuming the washland has been filled, as the flood begins to recede the gate should be closed to again restrict the flow to 60 cumecs at the 2.55m level.

9.4.9.2 This level should be maintained until up to 24 hours after Hadfields has dropped below 1.3m. The regulator may then be further opened (in parallel with Meadowgate) to allow a downstream level of 2.9m.

9.4.9.3 The washland empties directly into the river and the evacuation must be strictly controlled. When the upstream and downstream water levels equate, then the gate may be fully raised and safely left.

9.4.10 Authorisations And Communications

9.4.10.1 The manning and operation of the Woodhouse Mill Regulator can be authorised by the FIDO if the above criteria have been met. If the FIDO is unavailable, then authorisation should be sought from the ABC or the AFIDO.

9.4.10.2 The Regulator should be manned by 4 persons. A report to the Area Incident Room should be made every hour giving the upstream and downstream water levels at the regulator and at Rotherham Road at the upstream ends of the washland.

9.4.11 Power Failure

9.4.11.1 In the event of power failure, a generator is located on site, this is controlled remotely from the Area Incident Room, but as a contingency may have to be operated from site.

Figure 9-7 Woodhouse Mill Regulator Location Plan

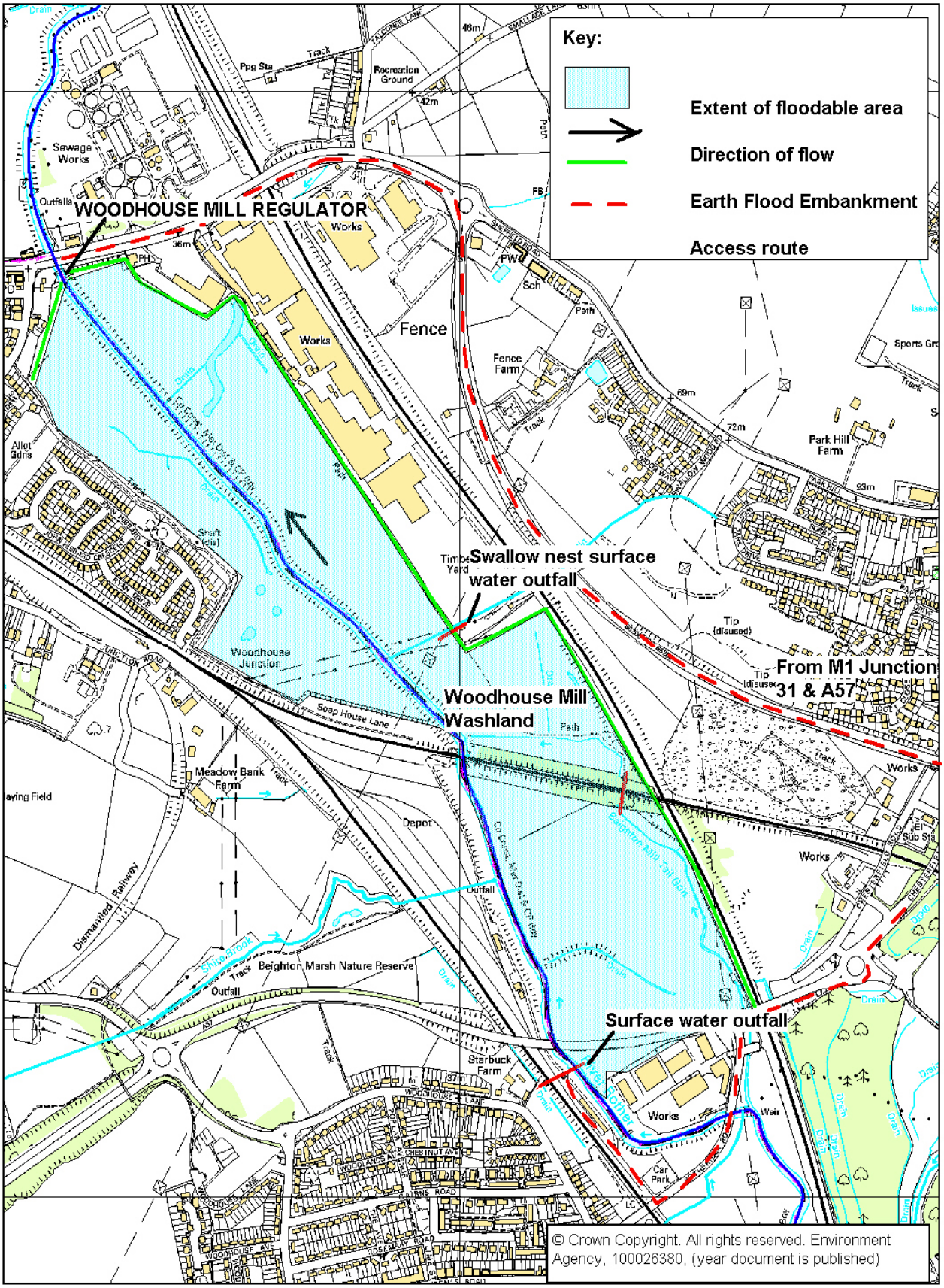
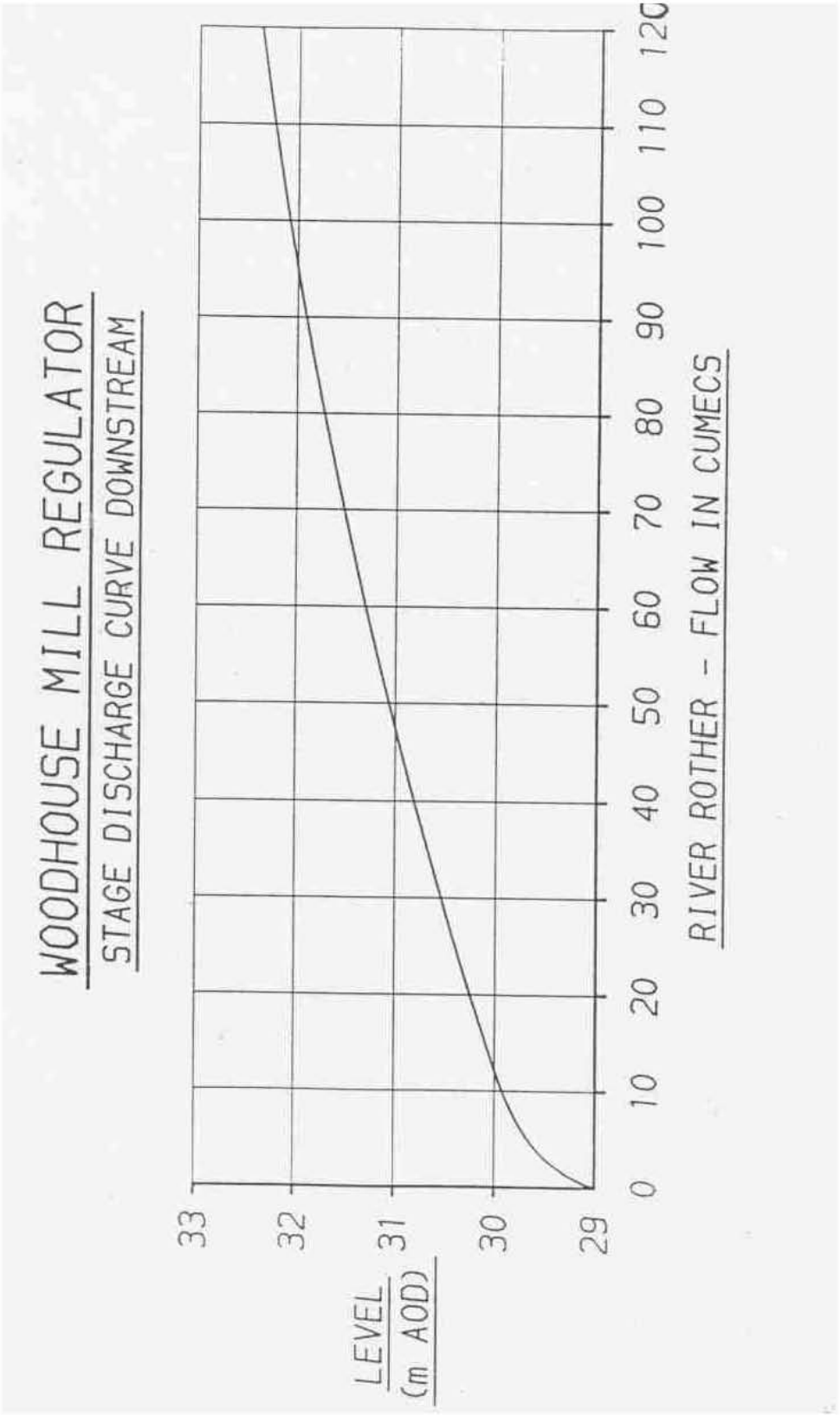


Figure 9-8 Woodhouse Mill Regulator (Stage/Discharge Curve)



Intentionally Left Blank

9.5 RIVER DON – DEARNE MOUTH SLUICES & PASTURES ROAD P.S.

9.5.1 LOCATION

NGR is SE 504 004

Figure 9-9 is a location plan.

Refer to Vol 1Y D&A for a risk assessment.

Figure 9-10 is a stage/discharge curve

Figure 9-11 is a flow/level correlation (Dearne and Don)

Figure 9-12 is a set of operating curves

9.5.1.1 Dearne Mouth Sluices consist of four electrically operated penstocks, 6ft. wide x 5ft. high (1.83m. x 1.52 m.) at the side of the River Dearne some 800m. upstream of its confluence with the River Don. There is a generator on site that provides the power. This generator is remotely controlled from the incident room, however, it can be operated from site.

9.5.2 Purpose

9.5.2.1 The opening of the penstocks allow floodwaters to fill a single washland compartment to a level equal to that of the river and to a maximum of 14.63m. A.O.D. providing a total storage capacity of 1,415,800 cubic metres. This storage capacity should be used to delay the rise in flood level on the River Don and thus reduce the possibility of flooding downstream particularly at Doncaster.

9.5.3 Access

Key No. 815

9.5.3.1 Vehicle access to the sluice can be achieved via a gated track on the south of Pastures Lane following the edge of the British Coal colliery tip. Pedestrian access may also be gained from the disused railway embankment where a footpath leads to the sluice control house. This access is usable only with normal flows in the River Dearne. This latter access and car park, however, must not be used once the washland has begun to fill, access is then only possible via the tip track approaching from Cadeby Village.

9.5.4 Structure

9.5.4.1 The sluice has the following elements:-

a) 4 No. manually operated Penstocks (1.83m. x 1.52m.).

   Each penstock is raised and lowered individually by means of a detachable winding handle operated manually.

b) A brick control house sited at the southern end of the sluice containing winding handles and Negratti Zambra water level recorder and telephone.

c) Low level washland drain outfall consisting of a flapped outlet to the river and a penstock on the washland side of the flood embankment. This outfall, however, is now redundant and is no longer required for operational purposes.

9.5.5 Operating Criteria

9.5.5.1 Dearne Mouth Sluices should only be operated in the event of a major flood on the River Don where flows in excess of 300 cumecs are expected and the washlands at Sprotborough and Hexthorpe are likely to come into operation. It is likely that by the time that Dearne Mouth Sluices are required that the Regulator at Bolton Ings and the Regulators on the River Rother will also have been used.

9.5.5.2 **These sluices are operated remotely from the Area Incident Room, however, as a contingency may have to be operated from site.**

9.5.5.3 The sluice should be manned when a level of 25.9m. A.O.D. (235 cumecs) is reached at Bow Bridge, Rotherham. Immediately the washland should be primed with floodwater to a depth of 11.28m. A.O.D. This operation should be carried out in order to prevent scour when the sluice is used at the peak of the flood. Priming of the washland should be carried out slowly using only two of the penstocks. Check water level in relation to Pastures Road.

9.5.6 Operation Of Sluices

9.5.6.1 A level of 4.35m may be expected at the level site at Mexborough Lock 6-7 hours after the level of 2.9m. was reached at Bow Bridge, Rotherham. Should flood level at Mexborough Lock rise further than this level and approach 4.48m then the operation of the sluice should commence.

9.5.6.2 Referring to the characteristic curves for Dearne Mouth Sluice (Figure 9-12) the safe operation of the sluices can be determined. The curves show the discharge through the sluice into the washland with reference to the washland (downstream) water level, the river (upstream) water level and the penstock opening. For a given washland water level and penstock opening, the discharge can be determined and a likely scour effect estimated. Generally the sluices should be operated within the area of the graph to the right of the zero scour line. In exceptional circumstances where the river is rising very rapidly the sluices can be operated in the area of the graph between the zero scour line and the safety line. Under no circumstances should the sluice be operated in the area of the graph to the left of the safety line. Operation within this area is likely to result in excessive scour and possible damage to the structure of the sluice.

9.5.6.3 As a starting point, it is suggested that all four sluices are opened to the 1ft. mark on the spindle indicator. The sluices should then be adjusted in order to maintain the level of 14.0m. in the river. If the level of the river drops below 13.92m. the sluice opening should be reduced or completely closed.

9.5.6.4 Consideration should be given when operating the sluice to the prevailing conditions at Bow Bridge, Rotherham on the River Don and Barnsley and Bolton on the River Dearne. An estimate of the likely level at Dearne Mouth should be made from the flow passing Bolton on the Dearne and Rotherham on the Don (see Figure 9-11). It may be necessary to delay the use of the sluice should a second peak be forecast. Every effort should be made to prevent the Sprotborough/Hexthorpe Washlands filling prior to the filling of Dearne Mouth Washland.

9.5.7 Pastures Road Pumping Station

9.5.7.1 Pastures Road Pumping Station collects surface water drainage from Dearne Mouth Washlands and drainage from North Ings Washland via a culvert beneath the river. When floodwaters begin to overtop the spillways into North Ings Washlands, a gate valve located in a manhole downstream of the pumping station on the left bank should be closed. This prevents floodwaters from the North Ings Washland filling the Dearne Mouth Washland. When priming the Dearne Mouth Washland the pumping station should be switched off before the sluices are opened.

9.5.7.2 **N.B. Gate valve removed at present for maintenance**.

9.5.8 Evacuating The Washland

9.5.8.1 Evacuation of Dearne Mouth sluices is dependent upon flow in the Dearne being less than 50 cumecs (else the washland will fill).

9.5.8.2 Once Bolton Regulator **(Now redundant)** is fully raised and levels at Adwick have dropped below 1.35m the sluices may be fully opened and the washland will then discharge safely provided no overtopping is taking place in Doncaster. Should a second flood peak be forecast then care should be taken to close the sluices as soon as the flood level at Dearne Mouth begins to rise.

9.5.8.3 The sluice should then be used as described above, bearing in mind the reduced capacity. As soon as levels equalise again the sluice may be fully opened and the washland discharged.

9.5.9 Authorisation And Communications

9.5.9.1 The priming and filling of Dearne Washlands can be authorised by the FIDO above criteria are met. If the FIDO is unavailable, then authorisation should be sought from the ABC or the AFIDO. The sluice should be manned by four persons.

9.5.9.2 A report should be made to the Area Incident Room every hour stating the river level and the washland level in both Dearne Mouth and North Ings Washlands if applicable.

Figure 9-9 Dearne Mouth Sluices Location Plan

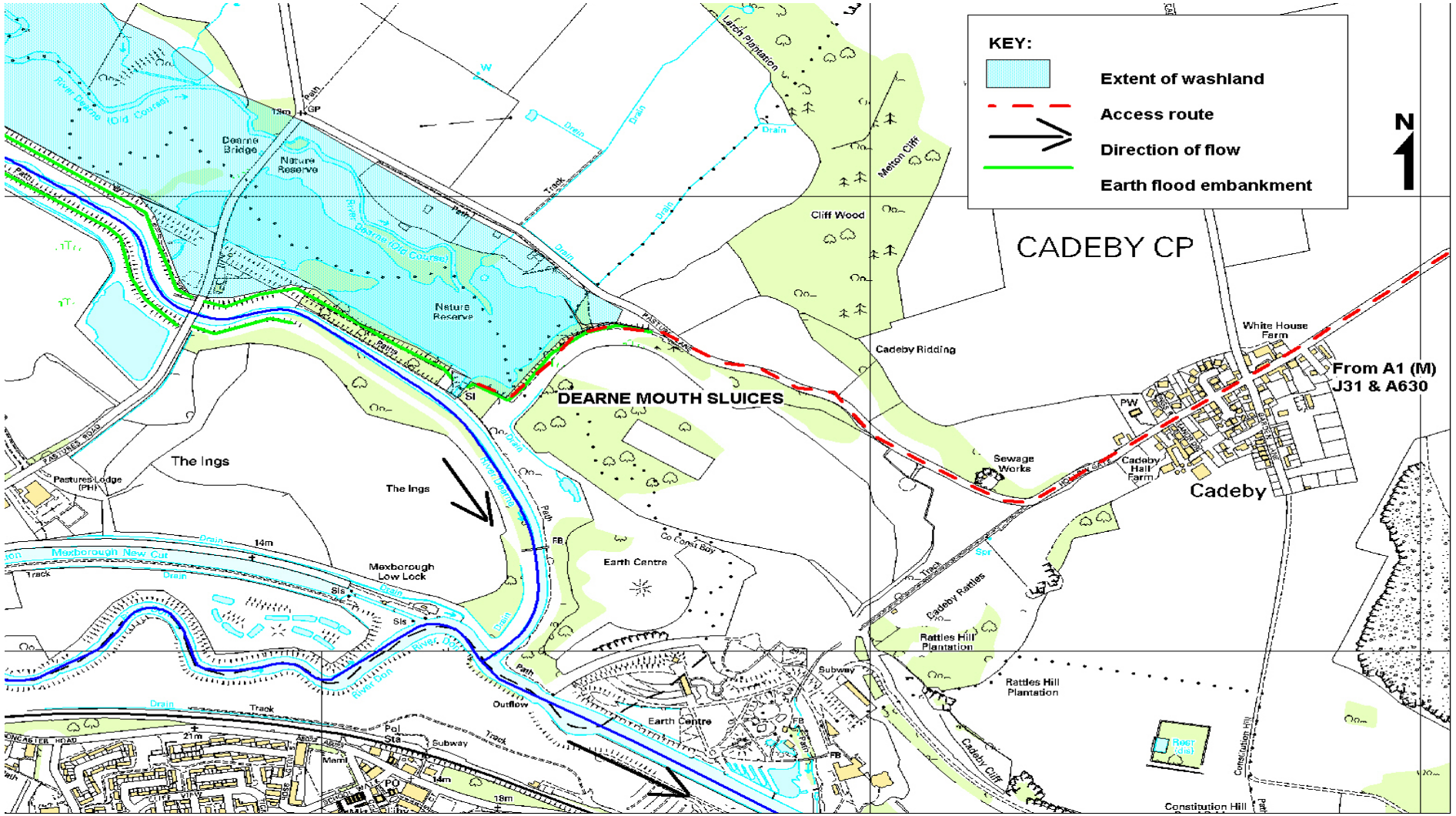


Figure 9-10 Stage/Discharge Curve (Dearne Mouth Sluices)

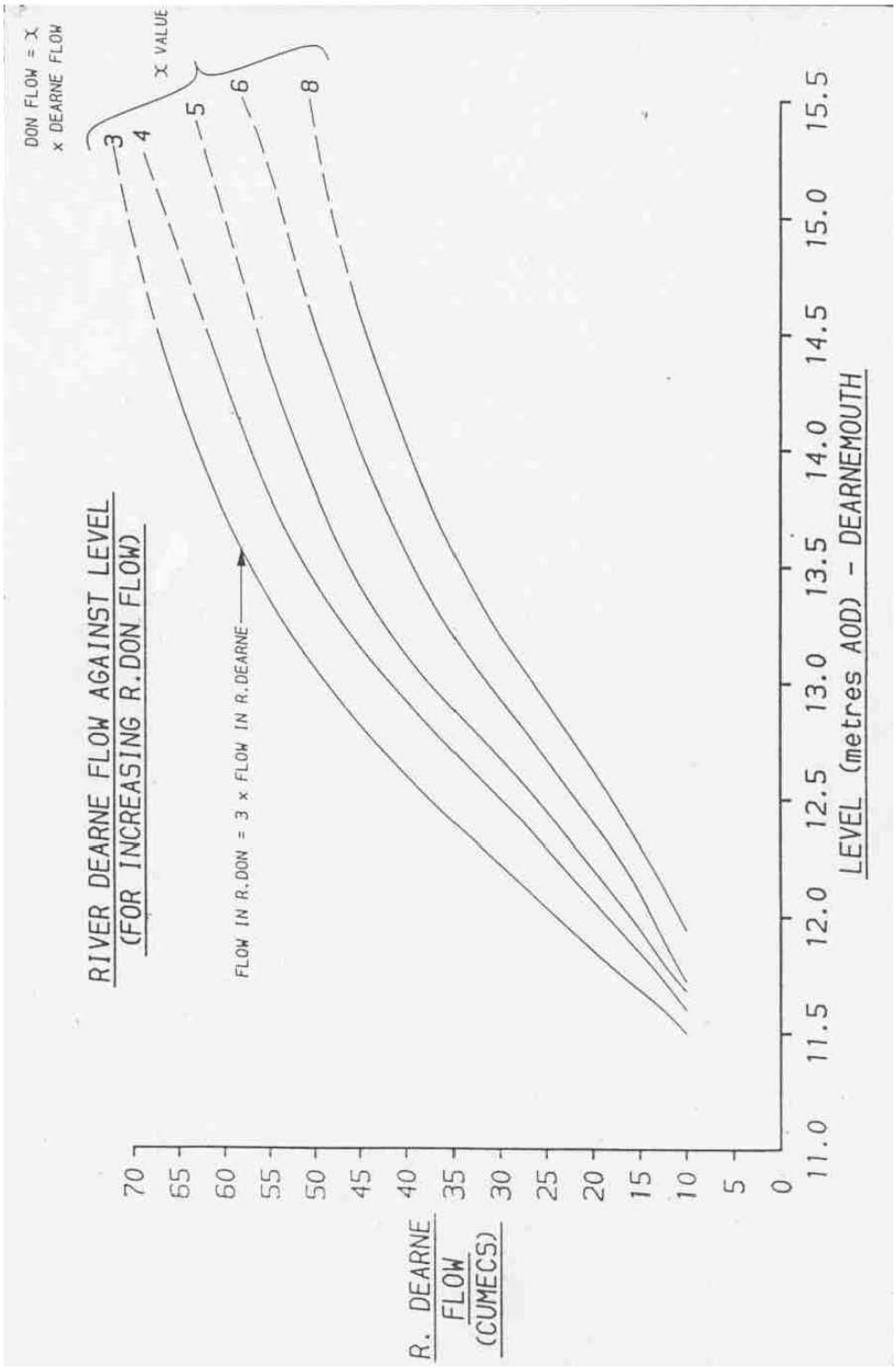


Figure 9-11 Flow/Level Correlation (Dearne & Don) Dearne Mouth Sluices

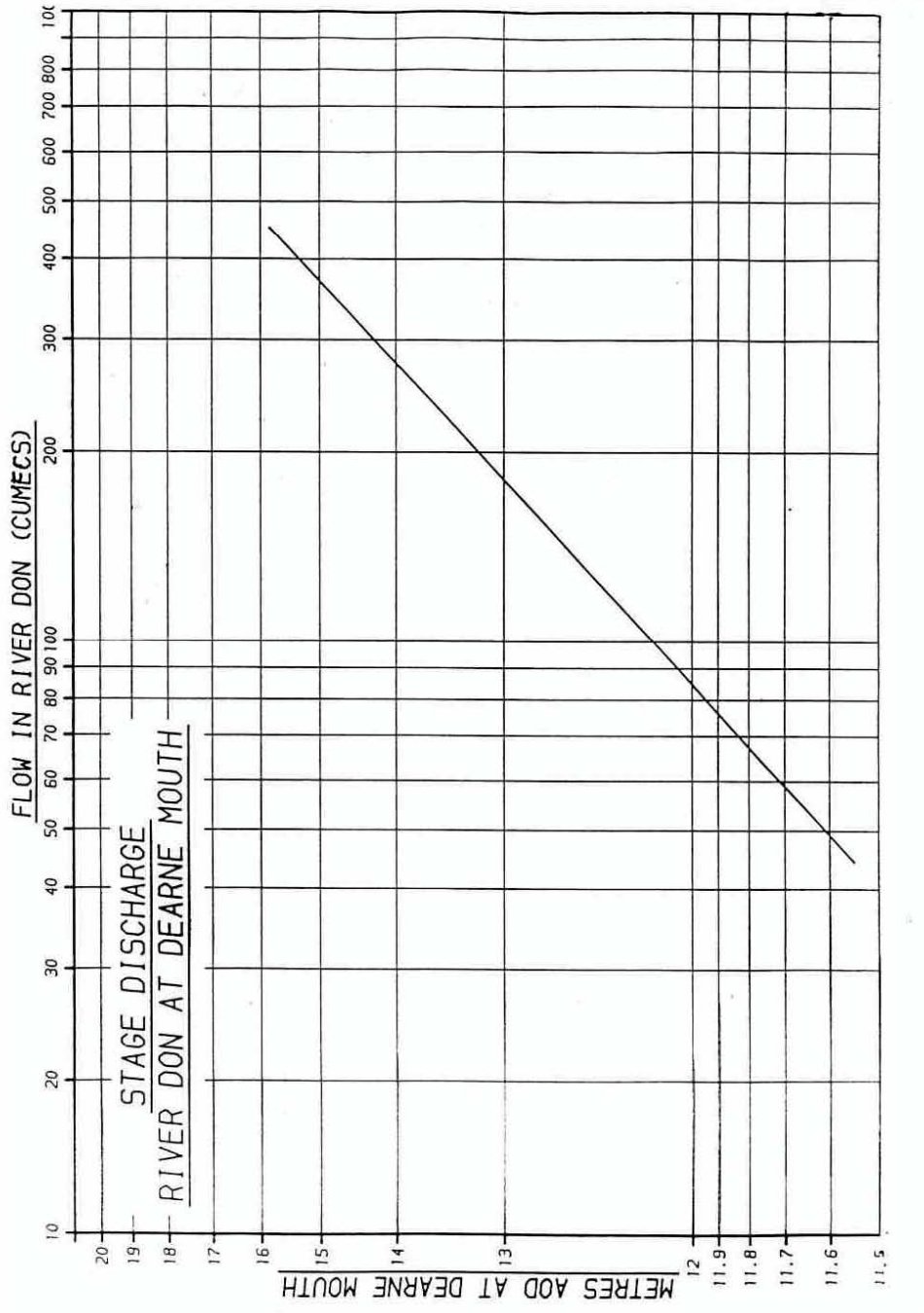
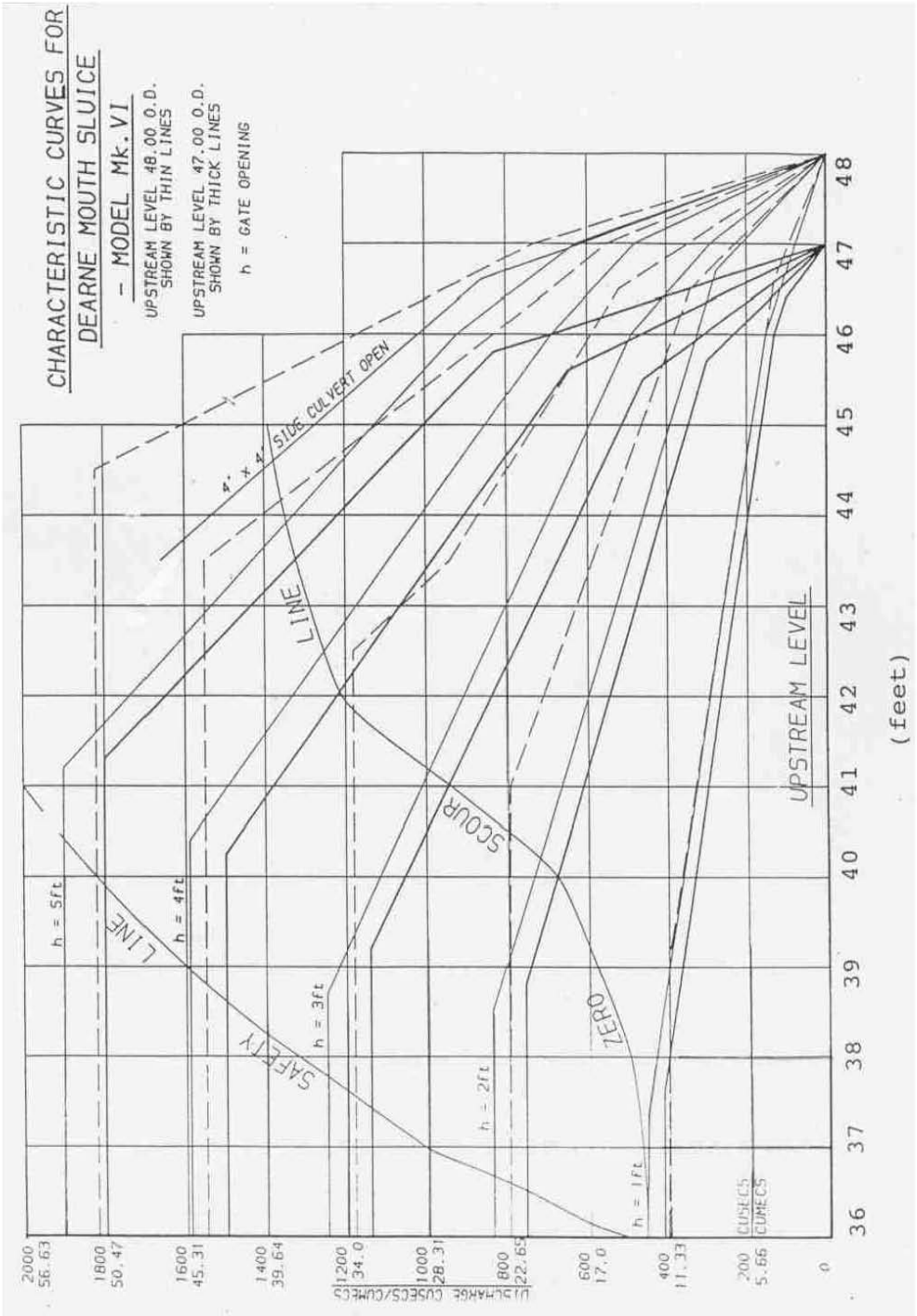


Figure 9-12 Operating Curves (Dearne Mouth Sluices)



From:	Cobb, Tim
To:	Knight, Jonathan; Jane Crossley (Guest)
Subject:	RE: NPS/WR/041112 & NPS/WR/041113 - Cranklow & Meadowgate - impoundment applications
Date:	22 July 2024 17:11:12

Hi Jonathan – no problem.

Canklow doesn't need a fish pass as the channel is all on the same level, so there is no barrier to fish passage. The gate works are mostly out of channel replacing the gate with a like for like structure (vertical drop-down gate).

Meadowgate needs a fish pass as the old gate being replaced creates a weir with a step down into the channel due to the type of gate structure which is hinged at the base of the wing walls and lies flat in the riverbed when in normal resting position. Meadowgate therefore requires a fish pass (under Freshwater and Salmon Fisheries Act) but not for Canklow.

Kind Regards

Tim Cobb
Project Manager
Programme & Contract Management (PCM)
Part of Major Projects & Programme Delivery

Mobile: 07500 835657

Planned leave: 5th – 20th and 30th August

From: Knight, Jonathan <Jonathan.Knight@environment-agency.gov.uk>
Sent: Monday, July 22, 2024 5:05 PM
To: Cobb, Tim <tim.cobb@environment-agency.gov.uk>; Jane Crossley (Guest) <Jane.Crossley@jbaconsulting.com>
Subject: NPS/WR/041112 & NPS/WR/041113 - Cranklow & Meadowgate - impoundment applications

Hi Tim and Jane,

Thank you getting the supporting information to me for these impoundment applications and your help so far. I have finished the technical checks of the applications and I believe we have the information required.

There is one item for Canklow I do have a question on, and that's the fish pass (Tim – I know we briefly discussed this when I spoke to you a couple of weeks ago but I need to go over it again). What is reasoning for having one installed at Meadowgate but not Canklow? Especially considering Meadowgate is upstream to Canklow? Was this discussed with the area fisheries team?

Many thanks,

Jonathan Knight
Permitting Officer (Water Resources)

National Permitting Service
Environment Agency | Manley House, Kestrel Way, Exeter, Devon, EX2 7LQ
jonathan.knight@environment-agency.gov.uk
External: 02087200035

Every email has a carbon footprint. With this in mind I may not send 'thank you' emails.

From:	Knight, Jonathan
To:	Cobb, Tim; Jane Crossley
Subject:	NPS/WR/041112 - Canklow Regulator - Acknowledgement of your application for a licence
Date:	24 July 2024 12:08:00

Hi Tim/Jane,

Application number: NPS/WR/041112
Licence number: NE/027/0003/014

Thank you for your application for an impounding licence. I confirm that we have now assessed and accepted your application.

I also confirm that your application:

- began the formal decision process on 09 July 2024;
- will be decided by 09 November 2024. Note: there is no statutory determination date for Environment Agency applications, but the applicable statutory date has been included here 'for information only.'
- needs to be advertised. (We will do this for you by publishing a press notice in a local newspaper and on our website. You will need to pay the costs of advertising in a local newspaper, but we waive the £100 administration fee. We will send you an invoice setting out the advertising cost at the appropriate time.)

We must be satisfied that you have a right of access before we can grant you a licence. The right of access must be in place from the date we issue the licence and last for at least one year, or the duration of the licence if this is less.

We may ask you to provide evidence of the right of access and this could be in the form of a deed, lease or tenancy agreement. We won't accept an options agreement as evidence of a right of access.

Where we do need to see evidence of your right of access, we'll ideally need to see this at least seven days before the decision date shown above. This is to allow us time to check your evidence and confirm that we're satisfied that a right of access is in place.

If you can't satisfy us that you have a right of access before the decision date shown above, we'll refuse your application. We won't agree to extend a decision date for your application if you don't have the right of access. However, this won't prevent you from making a new application once you have the rights in place. You can also withdraw the application if you prefer to do so.

If you have any questions about your application, please contact using the details below.

Yours sincerely,

Jonathan Knight
Permitting Officer (Water Resources)
National Permitting Service
Environment Agency | Manley House, Kestrel Way, Exeter, Devon, EX2 7LQ

jonathan.knight@environment-agency.gov.uk
External: 02087200035

Every email has a carbon footprint. With this in mind I may not send 'thank you' emails.

Risk Assessment / Method Statement

General Information

Contract Name:	Canklow	**Contract No:**	**CT05-04**
Activity:	Site establishment & maintenance plan	**Location:**	Canklow-Regulator,Rotherway, Brinsworth, Catcliffe, Rotherham, South Yorkshire, S60 4NB
Initial RA / MS prepared by:	Liam Gallagher	**Date:**	07/02/2024
RA / MS Reference No:	003		

Review and Revision Details

RAMS is to be reviewed in operation, at least weekly and where there is a significant change to the activity/task (as per OSS 002)

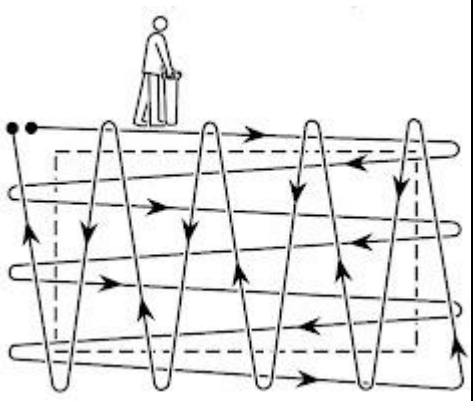
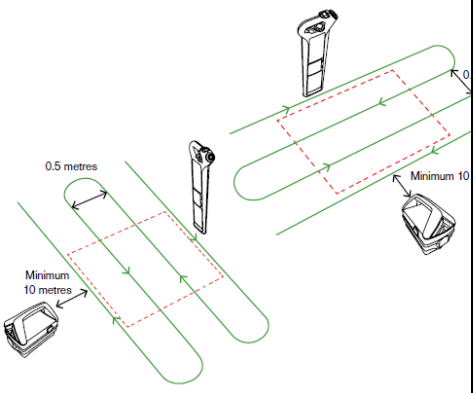
Revision	Date of last review	Amended (Yes / No)	Reviewed / Amended By	Reason for Amendment
A	-	-	-	First Issue
B	22/5/24	Yes	Shaun Hyett	General update
C	05/06/24	Yes	Shaun Hyett	Added grass strimming methodology
D	18/6/24	Yes	Shaun Hyett	Update to RA
E	25/7/24	Yes	Shaun Hyett	Environmental risks updated to include EA back up generator

Section 1 - Risk Assessment - Health & Safety

SEVERITY	Fatality	MEDIUM	HIGH	VERY HIGH	VERY HIGH
	Reportable Injury	LOW	MEDIUM	HIGH	VERY HIGH
	Lost Time Injury	LOW	MEDIUM	MEDIUM	HIGH
	Minor Injury	LOW	LOW	MEDIUM	MEDIUM
J N Bentley Risk Matrix		Remote	Possible	Likely	Very Likely
		PROBABILITY			

Hazard	Person(s) at Risk	Risk Level	Control Measures	Residual Risk
'SHOW STOPPERS' (Initial Risk Level Very High or High)				
Collision with moving plant / vehicles 	All on site	Likely x Fatality =Very High	• All operators to be competent and trained. External hired in excavator operators to have their competency checked • All operatives to wear mandatory hi-vis vests/tops, hard hats, gloves, steel toe cap boots and eye protection • Plant movements to be controlled by banksman. • Access roads and paths to be kept free of obstructions. • Speed limit to be 10MPH when not on the public highway • Information boards shall be displayed in accordance with procedures and kept in a legible and clean condition. • Heras fence panels will secure compounds / working area. • Pedestrian & plant to be segregated by appropriate fencing / crowd barriers / chain link. • Do not approach machines unless driver has eye contact or walk up blind side of an excavator. Thumbs up policy to be implemented • Use plant in designated areas. • Site staff not to work in the public highway at any time	Remote x Fatality = Medium
Collision with site transport / delivery vehicles (including loads) 	All on site	Likely x Fatality =Very High	• Traffic Marshall required to bank reversing vehicles around site and to monitor delivery movements. • Unauthorised pedestrians prevented from entering site compound and working area • Site speed limit set at 10mph	Remote x Fatality = Medium
Lifting Operations	All on site	Likely x Fatality =Very High	• Specific Lift Plans for all the plant and operations to be in place and to be briefed to all involved • Compliance with OSS 102 for all lifts.	Remote x Fatality = Medium

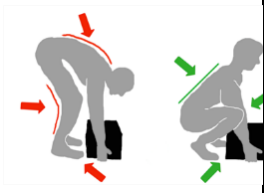
			• Lifting plant to be sited on firm, level ground. If outriggers are deployed they should be fully extended and locked off unless lift plan states otherwise • All the loads, heights and radius restrictions to be included within the lift plans • Lorry Loader deliveries shall be treated as basic lifts with the responsibility lying with the supplier (or delegated third party, i.e. deliverer) and will not usually require the preparation of a Lift Plan. • Competency cards and certificates of thorough examination to be checked prior any lifting • Only authorised personnel to be in the area when unloading container • Control zone around plant to be strictly enforced including thumbs up policy • No persons to be under loads at any times • Lifting to be controlled by slinger/signaller	
OH Services	Site operatives Plant operatives	Likely x Fatality =Very High	• Competent person to provide GS6 assessment for all OH services within the work areas and advise suitable safe working height • No works to take place under OH lines **Only passing** • Machine movement will avoid passing under services whenever possible. • If unavoidable the machine will pass beneath the services with lowered arm and with the assistance of a trained banksman and only under erected safety goalposts. • No excavation should be undertaken within 10m of a powerline (on poles) or 15m (on pylons) without further specific risk assessment • In the event of plant contact with OH powerlines, move the machine away from the contacted service if possible. If the machine is immobile, stay in the machine. If there is an imminent danger to life (e.g. fire) the procedure is for driver to jump clear without touching any part of the machine, and driver and any nearby staff to 'bunny-hop' away from the machine to minimise ground contact. • OSS 111 – Avoidance of services to be followed • GS6 – Avoiding dangers from overhead power lines to be followed • Statutory service plans to be available on site • Plant capable of breaching the exclusion zone of an overhead powerline must be controlled by either a height/reach restrictor or a dedicated Traffic Marshal.	Remote x Fatality = Medium
Excavation (underground services)	All on site	Likely x Fatality =Very High	• All ground breaking activities must be covered by a permit to dig prior to works commencing • HSG47 to be followed	Remote x Fatality = Medium

			• Prior to a permit being issued the proposed area for excavation must be checked against utilities information, ensured that the excavation is within the utility search extents, and CAT and Genny'ed by a competent operator with a minimum 2 day service avoidance training qualification. • Any known services are to be traced and marked with exclusion zones sprayed. These can be confirmed by tracing back to manholes or visible features • Any visible features (streetlights, tracer points etc.) must be connected to and traced • Any properties in the immediate area must be investigated for services feeding it • The excavation area is to be scanned in a grid or a zig zag pattern or grid as below on power and radio •  • Figure showing power and radio sweep pattern • Genny sweeps are also to be carried out as below •  • Figure showing a genny sweep, CAT follows the green line, genny moves parallel to CAT. Two ops required • All known services are to be marked out, exclusion zones marked • All of the above must be recorded on the permit prior to issue	

			• Permit is to be briefed to the full team by a the permit issuer. • Once excavation has begun the excavation must be further scanned every 300mm down from ground level. • Excavation to be slow and careful to avoid damaging any unknown services that may be present, and constantly monitored for the presence of marker tape/sand/gravel or any other indicators of a possible service. • No mechanical excavation is to take place within 500mm distance of a known service or anywhere that there has been an indication of a potential unknown service. • Toothless bucket to be used when excavating within National Grid land • All hand excavating must use electrically insulated hand tools and wear overalls that are both arc resistant and flame retardant • On completion of the excavation the permit must be signed and returned to the issuer for records. • A permit to break ground may only last for a maximum of seven consecutive days (including weekends)	
Excavation - UXO	All on site	Poss x Fatality = High	• Desktop UXO survey carried out details the area as being low risk for UXO • Workforce to remain vigilant whilst carrying out excavations and stop if suspicious of any materials • Excavation for compound hardstanding less than 500mm, envisaged to be made ground	Remote x Fatality = Medium
GENERAL				
Use of hand tools 		Likely x Reportable = High	• All mobile plant, equipment, electrical power tools and hand tools shall comply as a minimum with European conformity (CE marked) • Use the correct equipment/most appropriate, electrical power tools and hand tools. Don't improvise! • 110V or cordless tools are to be used, additional specific RA required for 240V/415V. • 3 monthly PA testing for all electric tools. • Only use plant or equipment that you are trained and authorised to operate. If you are asked to operate or use anything that you are not trained/competent on don't do it. • Any PPE listed in the risk assessment must be worn. • Never remove, tamper or disable any guard or device that is there to improve safety. • All equipment and electrical power tools must be subject to a pre-use inspection and a formal weekly inspection which is recorded in the PUWER register.	Remote x Reportable = Low

			• The Site Manager and User must have access to the instructions / manual for the item of plant /equipment & following the instructions within; namely two-handed grip required on tools such as circular saws & cutting items secured. • Any mobile plant, equipment, electrical power tools found to be unfit for use must be segregated, immobilised and clearly marked 'Do Not Use' to prevent further use. • Power down tools prior to inspecting any faults	
Weather conditions		Likely x Lost time injury = Medium	• Heat – take more breaks if necessary, rotate people in highly physical tasks, suncream to be available, plenty of water on site • Heavy rain – assess whether the rain has affected ground conditions and caused a significant increase in risk of STF's • Lightning – if lighting is seen in the area, stop works immediately and do not restart until it's safe to do so • Cold – wear thermals, take regular breaks, beware of icy conditions, take the time to warm up prior to physical wor, walkways to be gritted	Remote x Lost time injury = Low
Electrical connection and testing	Cabin suppliers/electrical contractor	Med Pos x RI	• Electricity Supplies for Welfare Facilities to be installed in compliance with OSS 100a. • Electrical Contractor only to connect cabins where cabins to be wired in. • Record of test to be kept in the safety file and displayed on the site cabin walls. • RCD's to be checked weekly	Low Rem x RI
Strimming - Flying debri - Cuts	Site operatives	Low Poss x MI	• Use the body strap that is fitted to the harness • Wear the face guard that is provided • Wear long sleeved tops whilst carrying out this activity • Enusre that the equipment is powered down prior to touching the head of the strimmer • Ensure that other ops and members of the public are well away from the area	Low Rem x MI
National Grid Electric fencing	All on site	Low Poss x MI	• Visitors and site personell to be made aware of the electric fencing that surrounds the National Grid Substation • Signage already in place to warn of the electric fencing	Low Rem x MI
Lone Working		Med Pos x RI	• No Lone working to be carrie out	Low Rem x RI

Discarded drug needles		Med Pos x RI	• Ops to be aware of the possibility of finding discarded drug needles within long grass / shrubbery • Sharps kit on site to dispose of the needles • If lotsa re being found the local council are to be contacted to organise for them to be removed	
			•	
'HIGH FREQUENCY, LOW RISK'				

Manual handling
 
	Ops	Likely x Lost time injury = Medium	• Manual handling should be avoided where at all possible and mechanical means used instead.
			• Use two person lifts where possible
			• Establish the size and weight of the load prior to lifting
			• Check ground conditions prior to moving loads across the working area.
			• Walk ways to be flat and free from obstacles.
			• Safe lifting techniques shall be applied.
			• Individuals must lift within their own capabilities.
			• Keep loads close to the body to minimise stress to the lower back, don't over reach.
			• Avoid twisting whilst carrying the load
			• T.I.L.E to be followed
			  ○ Assess the task
			  ○ Is the individual capable of carrying out the lift
			  ○ Assess the load and its centre of gravity, is there any designated lift points
			  ○ Assess the environment. Where the load is being taken from and to
				Remote x Lost time injury = Low

Repetitive strain injury	Ops	Likely x Lost time injury = Medium	• Attention to be paid when doing repetitive manual handling • Rotate tasks frequently • Notify site manager of any new pain or any medical conditions that may be exacerbated by respective tasks	Remote x Lost time injury = Low

Slips trips falls	Ops	Likely x Reportable = High	• Daily assessment of ground conditions to be carried out
			• Keep tools and leads out of walkways and access/egress points
			• Reduce trailing cables where possible, cover with ramp if necessary
			• Keep work areas neat and tidy
			• Be aware of ice on cold days on top of res. If it's not safe don't work
			  • Ice in compound / on walkways, grit floors to prevent slips
			  • Cease work if conditions become unsafe and assess whether to supply rock salt / extra stone.
				Remote x Reportable = Low

			•	
			•	
HAZARDS TO HEALTH (E.g. Noise / Vibration / Respirable Hazards / COSHH)				
COSHH	Ops	Likely x Reportable = High	• Follow guidance in COSHH datasheet at all times • Wear correct PPE as per COSHH RA • Dispose of any PPE contaminated with irritants/corrosives • Wear correct RPE when undertaking activities that may release dust	Remote x Reportable = Low
Vibration	Ops	Likely x Reportable = High	• Follow HAVS guidance on trigger times • Swap out vibrationary tasks frequently • If using power tools regularly, usage to be recorded	Remote x Reportable = Low
Noise	Ops	Likely x Reportable = High	• Remove unnecessary noise sources. • Isolate employees from noise sources. • Mandatory hearing protection for noise levels more than 85db • Hearing protection zones to be identified • Mandatory hearing protection when undertaking grinding, chopping or percussive drilling.	Remote x Reportable = Low
Dust (generated by vehicles on stone or removal of primer from concrete)	Ops	Likely x Reportable injury = High	• Where concrete dust is produced the area is to be well ventilated • When working in areas producing dust a face mask must be worn and a face fit test completed for the individual • Where dust is been caused continuously water is to be used to dampen the area • Use dust suppression where possible when cutting or grinding concrete or during any other dust creating activities	Remote x Reportable Injury = Low
Leptospirosis (Weils disease)	Site Management, Site Operatives, Visitors	Med Rep x Pos	• Welfare facilities available • Welfare to be kept clean and tidy • Good hygiene to be promoted (wash prior to eating) • Pest Control to be implemented • Waste to be disposed of in bins and skips provided	Low Rep x Rem
Bites / Stings	Site Management, Site Operatives, Visitors	Poss x RI = Med	• Gloves to be worn • Report any bites / stings to site management and attend the doctors if swelling and sympotons continue	Rem x RI = Low

			•	
Contaminated ground / material - Asbestos - Chemicals - Oils	Site Management, Site Operatives, Visitors	Poss x Lost time injury = Medium	• If suspicious of contaminated ground, works to stop until the material has been tested and safe system of work updated • Operatives to have asbestos awareness training, if suspisous of any material then stop works immediately and seek advice • 5 point PPE to be worn • Boot scrapers provided • Drying room provided to avoid track back of soils from PPE into canteen area • Good hygiene to be promoted (wash prior to eating / drinking / smoking) • Imported back fill material to have had chemincal testing and asbestos screening, alternatively virgin quaried material to be used • Land owner (BNP and NG) to be notified if unexpected contamination is encountered • Any excavated material is to be stored separately on a tarp when being stored or reinstated on NG land	Remote x Lost time injury = Low

Section 2 - Risk Assessment - Environmental

SEVERITY	Category 1 Harm	MEDIUM	HIGH	VERY HIGH	VERY HIGH
	Category 2 Harm	LOW	MEDIUM	HIGH	VERY HIGH
	Category 3 Harm	LOW	MEDIUM	MEDIUM	HIGH
	Category 4 No Harm	LOW	LOW	MEDIUM	MEDIUM
J N Bentley Risk Matrix		Remote	Possible	Likely	Very Likely
		PROBABILITY			

Environmental Aspect	Environmental Impact	Risk level	Control Measures	Residual risk
Note: list in descending order of risk level				
'SHOW STOPPERS' (Initial Risk Level Very High or High)				
Invasive species	Spread of invasive species Company reputation Fines Legal Prosecution Harm to the environment	Cat2 x Likely = High	• Signage to be installed at the known areas of Himalayan balsam • Invasive species TBT to be briefef to site ops • Bio security kit to be available on site • EAP to be followed	Cat2 x Poss = Medium
Pollution to watercourse from EA back up generator fuels and oils	Harm to the environment	Cat2 x Likely = High	• Minimal usage of the generator therefore minimal refuelling required • Generator serviced and in good condition • Generator to be refuelled using 20l jerry cans • Generator and belly tank within a bunded enclosure • Spill kit to be located within locked generator container	Cat2 x Remote = Low
OTHER RISKS (Initial Risk Level Medium or Low)				
Disruption to nearby businesses	Nuisance	Cat4 x Likely = Medium	• Nearby businesses to be notified of the planned work and timescales • Good relationships to be promoted	Cat4 x Rem = Low
Damage to flora/fauna	Company reputation Fines Legal Prosecution	Cat3 x Likely = Medium	• Materials that are hazardous to be kept away from flora, fauna , and watercourses • Refuleling to take place at a designated area and over a drip tray/plant nappy • All static plant to be stored on plant nappies when not in use • Fuel quantities above 50l to be kept in bunded area 110% of capacity	Cat3 x Remote = Low
Spills/contamination	Company reputation Fines Legal Prosecution Harm to the environment	Cat3 x Likely = Medium	• Plant nappies under static plant • Plant nappies to be used when refuelling • Spill kits available on all mobile plant and within the working area	Cat3 x Remote = Low

Nesting birds	Company reputation Fines Legal Prosecution Harm to the environment	Cat3 x Likely = Medium	• Be aware of nesting birds during nesting bird season (March-Sept) • If a nesting bird is spotted stop work in the area and inform management • Do not attempt to move or destroy bird nest • Nesting bird check to be carried out by an ecologist prior to clearing any long vegetation • Existing sluice gate to be netted to discourage birds from nesting with in it • Grass to be kept short to discourage nesting birds	Cat3 x Remote = Low
Silt run off from stockpiles / topsoil stripped land	Company reputation Fines Legal Prosecution Harm to the environment	Cat3 x Likely = Medium	• Silt netting to be erected in areas where potential for silt run off into the watercourse	Cat3 x Remote = Low
Disturbance to bats	Company reputation Fines Legal Prosecution Harm to the environment	Cat2 x Poss = Medium	• Bat survey to be carried out prior to mobilisation and findings to be documented with EAP • TBT to be briefed to site team	Cat2 x Remote = Low
Contaminated Ground	Harm to the environment	Cat3 x Poss = Medium	• If suspicious of contaminated ground, works to stop until the material has been tested and safe system of work updated • Operatives to have asbestos awareness training, if in doubt then stop works immediately and seek advice • 5 point PPE to be worn • Boot scrapers provided • Drying room provided to avoid track back of soils from PPE into canteen area • Good hygiene to be promoted (wash prior to eating / drinking / smoking) • Imported back fill material to have had chemincal testing and asbestos screening, alternatively virgin quaried material to be used • Land owner (BNP and NG) to be notified if unexpected contamination is encountered • Any excavated material is to be stored separately on a tarp when being stored or reinstated on NG land	Cat3 x Remote = Low
			•	

Section 3 - Risk Assessment - Quality

SEVERITY	Severe	MEDIUM	HIGH	VERY HIGH	VERY HIGH
	Moderate	LOW	MEDIUM	HIGH	HIGH
	Minor	LOW	LOW	MEDIUM	MEDIUM
J N Bentley Risk Matrix		Remote	Possible	Likely	Very Likely
		PROBABILITY			

Quality Aspect	Quality Impact	Risk level	Control Measures	Residual risk
Note: list in descending order of risk level				
'SHOW STOPPERS' (Initial Risk Level Very High or High)				
			•	
			•	
			•	
			•	
OTHER RISKS (Initial Risk Level Medium or Low)				
CDM BOUNDARY FENCE	**INTEGRITY OF FENCE SECURITY**	**MEDIUM**	• **DAILY END OF DAY INSPECTION THAT ALL CLIPS (DOUBLED CLIPPED) ARE SECURED.**	**LOW**
Clean/ professional company image	Bad reputation / image	MEDIUM	• Check all fencing is in good condition and suitable • All signage to be of good visibility & clean	LOW
Suitability of compound	Unfit working area	MEDIUM	• Check all fencing and signage is erected correctly. • Check adequate storage and working areas. • Check routes clearly identified for operatives and visitors	LOW
Reinstatement of compound	Bad workmanship	Medium	• Pre start photos taken • Area where compound is located is to be reinstated as per pre start photographs	Low
			•	

Section 4 Vibration and Noise from Plant / Equipment / Tools
The following plant, equipment and power tools will be used during the course of this activity. Figures for noise and vibration output are in-use figures provided by the manufacturer, supplier or hirer.
Hand Arm Vibration (HAVS) this table should be viewed in conjunction with the "HAVS Calculator" for details of cumulative use
Where vibration exposure times are calculated these will be based on the **2.5m/s² (100 points)** exposure limit value **(ELV)**

Source of Hand Arm Vibration	Specific Use	Weighted Acceleration (m/s²)	Maximum Permitted Exposure Time (mins)	Anticipated Daily Exposure Time (mins)
Combi drill	Erecting site signage boards			

Whole Body Vibration (WBV) from Mobile Plant

Plant to be Used	Person Affected	Control Measures
13T Excavator	Operator	Seat adjusted to suit the driver. Only use well maintained haul roads Minimise the length of time operating the machine Spend breaks out of machine Only use plant that is maintained in good order and serviced regularly Ensure tyres, where applicable, are not worn & at the correct pressure Comply with the JNB Working Time Policy
9t duel view dumper	Operator	
120 bomag roller	Operator	

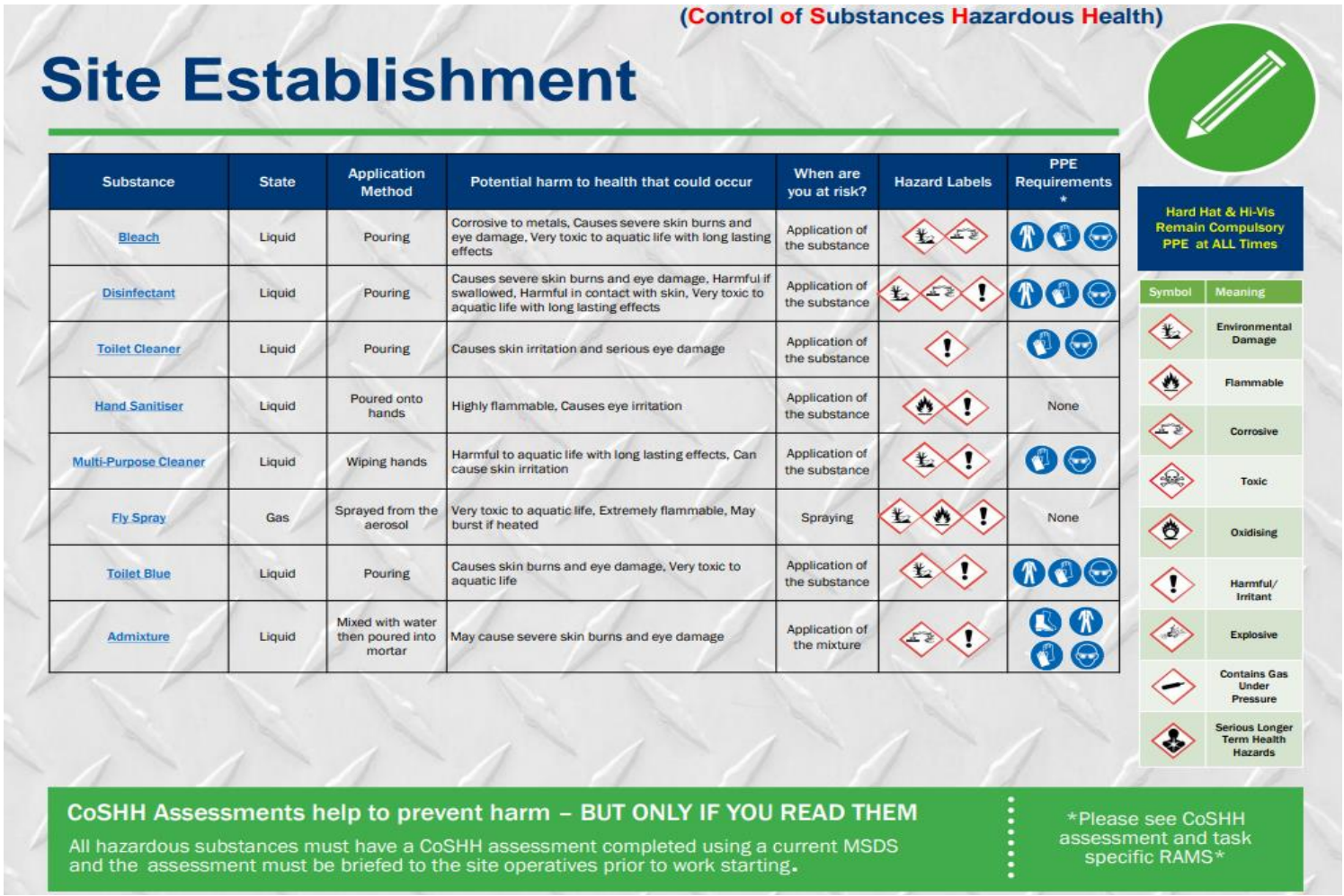
All plant operating on JN Bentley sites must have a manufacturer's provided exposure limit value (ELV) =/< 1.15m/s² (see manufacturer's instructions / manual)

Noise: For noise levels above 85 dB(A) hearing protection MUST be worn

Plant Tool and Equipment noise also affects people working adjacent to the operator: Keep a safe distance or wear ear defenders

Noise Source	Specific Use	Noise Level dB(A)	Hearing Protection (Y/N)
Hiabs/delivery vehicles	Lifting cabins/other deliveries	>85db	Y
13T Excavator	Moving/offloading materials	>85db	Y
1200 Twin Drum Roller	Compacting backfill	>85db	Y
9t duel view dumper	Moving materials	>85db	Y

Section 5	Hazardous Substances	
The following substances will be used or may be encountered during this activity. Detailed COSHH assessments are held in the site safety file; the control measures required will be briefed to the personnel involved prior to work commencing.		
Hazardous Substance	**COSHH Assessment Ref**	**Precautions / Risk Controls**
Diesel	RA854675	**Handling and Storage:** • Do not eat, drink or smoke in the vicinity of the product. • Wash thoroughly after handling. • Take off contaminated clothing and wash it before reuse or dispose of as hazardous waste. • Obtain special instructions before use. • Do not handle until all safety precautions have been read and understood. • Use only outdoors or in a well-ventilated area. • Provide adequate ventilation, including local extraction, to ensure occupational exposure limits are not exceeded. • Avoid breathing vapours/spray. • Avoid contact with skin and eyes. • Wear suitable personal protective equipment • Keep away from heat and sources of ignition. • Keep away from direct sunlight. • Store locked up. • Store in a wellventilated place. • Keep container tightly closed. Keep cool. • Empty containers retain product residue and can be hazardous.
Petrol	93	• Use in well-ventilated areas, Avoid Watercourses, wear
Hydraulic & Engine Oil	98	• Avoid ingestion, Avoid Watercourses, wear PPE
Biodegradable Hydraulic Oil	147	• Avoid ingestion, Avoid Watercourses, wear PPE
Natural Aggregates	048	• Avoid ingestion, Wear PPE



Section 6 Scope of Works

The scope of works for this document are as follows:

1. Setting up of site
2. Formation of new hardstanding
3. Setting up fencing and signage
4. Setting up GS6
5. Setting up cabins
6. Methodology for small tasks, i.e. refuelling, manual handling, deliveries
7. Loadig and unloading plant and materials
8. Storage of materials
9. Dust management

Any works that are required not detailed above the following **will** be followed:

- Stop works
- Management to be notified
- Works to be discussed with all involved
- RAMs to be amended, signed off; and re-briefed to all involved

Section 7 Related Documentation

This method statement is to be read in conjunction with the following documents:

Site Management Drawings.
Manufacturer's instructions / hirers notes provided with all plant and equipment

J N Bentley OSS/Safe System of Work OSS 001 Golden Rules, OSS 100 site establishment and maintenance, OSS 100a electrical services to welfare, OSS 101 Breaking ground, OSS 106 use of plant and equipment, OSS 111 Avoidance of services, OSS 113 COSHH, OSS 116 Fire safety.

- HSG 47.
- Cabin Suppliers RAMS & Lift Plans.
- Site Induction.
- Site Emergency Plan.
- Site GA Drawings.
- Site Utility Drawings.
- COSHH assessments.

Section 8 Critical Pre-start Activities

Prior to work commencing on the activity, the following items must be completed:

- F10 issued by client
- QES 3a and QES 3b documents to be signed off
- Signage to be erected in accordance with site management drawing and JN Bentley procedures.
- Traffic and pedestrian routes to be clearly identified on site.
- All Operatives who are to be involved in the site work will attend the site induction.
- In all cases except for emergencies all communication with other parties shall be via site management.
- Any temporary works that are required for the undertaking of the activity covered in this Method Statement, will be detailed on the temporary works schedule, completed by a TWC.
- Ecology surveys to have been carried out
- Permission from National Grid via email to install a temp compound adjacent to their substation
- Land entry notices issued

Section 9	Approach / Methodology

After completion of all the above pre-start activities, work will commence following the procedure below. If at any point something changes which requires amendments to the following procedure, work must be stopped and the risk assessment reviewed and methodology rewritten. Under no circumstances must work be carried on outside of this procedure.

Site Compound hardstanding construction (within National Grid Non Operational Land)

- Working area to be fenced off
- Services to be marked out at ground level and permit to dig to be issued
    - Trial holes preveously undertaken on known services to confirm line and level (under different RAMS)
- No mechanical excavation with 500mm of a known service
- Street lights to be fenced off
- >>>>>>HOLD POINT <<<<<<<
- **>>>>>Permit to dig to be issued <<<<<<**
- Topsoil to be stripped (approx 300mm) and loaded into dumper
- Topsoil to be transported to stockpile area and stored
    - Topsoil to be stored no more than 2m high and sealed.
    - Topsoil bund to have a break in it every 10 linear metres
- Geotextile to be layed on the ground
    - Geotextile to be overlapped by 300mm
- Stone to be delivered to site on 8 wheelers
- Wagon to be banked to the required location and tipped
- Stone to be levelled using excavator and compacted using roller
- Repeat until the hardstanding area is complete
- Tarmac plainings to be delivered to site and spread evenly (50mm deep) over the hardstanding
- Plainings to be rolled
- Monitor the hardstanding over the duration of the project and top up where necessary

Entrance Widening

- Seek permisiion from Costain (Highways England) to work in this area
- Install chapter 8 barriers and signage
- Remove the stop blocks and store locally
- Expose and protect the existing services as per RAMS 004
- Install a stone surface
- Install sand bag / legato block adjacent to the existing lighting tower

Placement of welfare

- Welfare will be a JNB standard Type A package
- The positions of these will be agreed upon and marked prior to delivery.
- Delivery will be by a hiab and low loader, a hiab will act as the crane for all deliveries. The lifts are to be conducted under a lift plan provided by the supplier/delivery company which must be reviewed and approved by the JNB appointed person (AP) for lifting for the site
- The hiab operator must be inducted and the supervisor on site will review the operator's card and the test certs for the crane and any lifting accessories prior to lifting commencing
- The cabins will then be lifted into place. While this operation is ongoing, all non essential personnel will leave the area. A lifting exclusion zone will be put up and maintained by JNB
- Low loaders delivering welfare to be offloaded will be banked by a trained banksman

- Supplier will then be responsible for all connections of services and linking of cabins

Materials Handling and storage on Site (Refer to manual handling hazard in Risk Assessment)

- Wherever possible, materials should be handled by mechanical means, unless the load is light enough to be comfortably handled manually.
- Loads lifted by machines should not exceed there safe working load (SWL) and the machine should have the appropriate certification.
- If manual handling is required, safe lifting techniques should be applied. If a load cannot be safely handled, then the operative must seek help.
- Loads must only be slung by a competent slinger / signaller.

- If materials are not to be placed immediately (i.e. pipe work or type 1), then they must be stored correctly.
- Materials should be stored in the designated lay down areas.
- Stacks of materials should be stable and not too high. If there is a likelihood that materials will roll away (i.e. pipes/ducts) then they should be chocked.
- Where possible, all materials should be locked in the secure store container. If this is not possible, then they should be placed in a secure compound of Heras fencing panels.
- Due to the amount of intruders to site, care should be taken to ensure that all moveable items are secure at close of site in the evening.
- It is not anticipated that any gas bottles will be kept on site, however should this change an addendum will be written to this method statement.

Existing services, overhead

- GS6 assessment to be carried out and the correct control measures put in place as per the GS assessment
- As per the GS6 guidance, a safety zone 6m horizontally from the nearest wire on either side of the overhead line is to be established
- A qualified and competent person will conduct a GS6 survey. This must be recorded
- A clearly defined crossing point will be set out using goalposts, blue cones, and signage set out as detailed below. A pin and chain barrier may be set out 10m from the outermost line if tracking parallel to lines or working close to 10m from line to ensure the machine does not stray into the 10m exclusion zone providing this does not impede farmers access/activities
- Setting up GS6
- The bases will be set up in the intended location a minimum of 6m horizontal distance away from the outermost line on either side of the overhead. They will be loaded with adequate ballast as per the manufactures instructions to prevent falling over.
    - Alternatively the upright posts may be concreted into barrels
- The goalposts will be laid on the floor next to feet perpendicular to the line, extended to the required length as per the GS6 assessment and measured before erecting
- The bunting/crossbar will be fitted and adjusted to suit the size of the crossing and the goalposts may be stood up and fitted into the bases (2 operatives minimum req'd)
- At 10m a minimum of two blue cones to be set up either side of the OH line parallel to goalposts
- Overhead cable warning signs to be erected on approach to the lines with the height restriction written on the sign
- GS6 is not to be erected in the public highway.

Footpaths, TM & Parking

- Parking areas will be clearly demarcated and "reverse parking" signs mounted
- Footpaths to be identified using pedestrian barriers or chain link fencing

Storage of chemicals as required under COSHH

- All chemicals stored within the compound are to be stored as per the requirements of the COSHH register, within section 12 of the Site Safety File.
- All COSHH materials must have a COSHH RA that is available on site and adhered to at all times. This is to include storage, PPE, handling and disposal

Refuelling

- Ensure all oils are fuels are stored in secured containers within bunds and that refuelling/repairs are not undertaken within 10m of a watercourse/receptor
- Plant to use biodegradable oils and to have checks of integrity of hydraulic systems prior to use each day.
- Plant nappies available on site and used where necessary. Drip tray/plant nappy must be under refuelling point when in use
- Fuel cans to be stored in stores when not in use and bunded.
- Spill kits on-site at all times at high risk points and in stores
- Follow emergency response procedures.
- Ensure adequate maintenance of plant.
- Good housekeeping and personal hygiene must be adhered to when fuelling.

Maintenance Of The Site Set Up

- Clean and maintain the cabin set up as the contract proceeds
- Monitor and maintain access roads and footways
- Monitor and maintain consumables, replace when required
- Monitor and maintain the fencing and gates
- Ensure everything is squared away at the end of the day
- Reorder items in a timely manner, DO NOT run out and then say something
- If something new is required, ask for it! Do not just "get by"
- Report faults when they arise
- Follow the manufacturer's operating instructions
- Regular checks on water and waste levels
- Use bins and the skips
- Litter pick when required
- Keep the skip covered with the debris netting
- Regular sweeping out and cleaning
- Regular mopping up of the floors
- Regular checks on the diesel levels
- Regular checks on the wash water
- Outside contractor will visit to empty the septic tank and fill wash water

Noise

- Acoustic hoarding to be set up in any sensitive areas.

Waste arrangements

- Waste collection to be in accordance with the Site Waste Management Plan and Waste Transfer Notes to be filed for each collection.

Security fencing

- The site perimeter is to be established using 3.5m wide Heras fencing with feet and clips.
- Feet to be put down first, two people are to move each heras fence panel into place as per correct manual handling procedure outlined in the RA and secure in the feet as appropriate
- Heras fencing to be double clipped
- Plant / pedestrians / work areas are to be segregated by fencing where possible. Pedestrian barriers will be installed along pedestrian walkways within the compound.
- Handling shall only be by personnel wearing gloves and safety glasses
- Weekly inspections shall be carried out to check for damaged panels – spiked ends – protruding wires.

Environmental / Dust management

- Road sweeping as required by site conditions.
- Dust suppression to be applied by dumper and water bowser when required

Grass cutting

- Area that requires strimming to be identified and assessed weather ecology checks need to be carried out
- **If required** >>> Assist the ecologist carrying out any checks e.g nesting birs checks
- Once the checks have been carried out and the ecologist has advised on their findings strim the grass in the allowable areas
    - If the grass is long strim it in 2-3 passess
    - Use the body strap that is fitted to the harness
    - Wear the face guard that is provided
    - Wear long sleeved tops whilst carrying out this activity
    - Enusre that the equipment is powered down prior to touching the head of the strimmer

Section 10 Emergency procedures
Certain activities will require the development of specific emergency procedures. Examples include confined space entry, working from MEWP/MCWP, roof work, working in proximity to overhead power cables, working in areas that are hazardous to health e.g. presence of substances/chemicals whether they are present as part of Client operations or as part of our activities. This section shall be completed in these events and shall contain details of the procedure to be followed, the names of responsible persons, their roles and contact numbers/details
Procedure in response to a Safety Incident
Near Miss or unsafe situation; Report to the MMB/JNB Site manager or supervisor **Accident Response**; - As per Site Emergency Response Plan Familiarise yourself with site First Aiders. Notify the emergency services where required. As soon as reasonably practicable notify the site manager of any accidents or emergencies. **Follow JN Bentley Accident Reporting procedures.**
Procedure in response to an Environmental Incident
Pollution Response - As per Site Emergency Response Plan Failure of an asset can lead to a pollution incident, property flooding, loss of agricultural crops or other damage/loss to a third party. Such impacts may adversely impact our customers, may result in a legal prosecution, claims for compensation and/or unwelcome media publicity. Planned work Any significant incident during planned work must be reported immediately on **0800 807 060 (Pollution Incident Line)**. In order to meet expected levels of service a 2-hour response time to any potential or actual emergency incident is required. Emergency work Failure during an emergency operation that may result in a pollution incident or affect customers must be reported to the relevant Field Engineer immediately. If the Field Engineer is not available, or out of hours, then the incident must be reported to 0844 902 2965 (Pollution Incident Line)
Procedure in response to a Fire
Fire procedures will be explained to all operatives within the site induction. The Muster Point and site travel routes should be included in the site-specific induction Familiarise yourself with fire extinguisher locations on site. Follow Site Emergency Response Plan
Procedure in response to other Activity Specific incidents
Please refer to the Site Emergency Response Plan
Special First Aid Requirements
A First Aid Kit is carried in all our vans &/or located in the site office. Defibrillators are in the site office and site managers van
Emergency Contacts
• Safety Advisor – Derrick Kent – 07890 561 914 • Contracts manager – Tim Jarvis – 07974 625 114 • Site Manager – Shaun Hyett – 07973 640 757 • **Refer to site emergency contact posters in the site welfare for alternative contacts.**

Risk Assessment / Method Statement

Section 11	Personal Protective Equipment
In accordance with Company site rules, personnel must wear hard hats, safety boots and high visibility jackets / vests and gloves at all times in work areas. On some of our Frameworks; light eye protection is also mandatory. In addition to mandatory PPE; the work covered by this method statement also requires:	

Light eye protection	✓	Face fitted RPE		Waterproofs	
Medium impact goggles		Safety wellingtons		Life Jacket / Preserver	
Hi-viz jacket / vest (yellow)		Harness		Gauntlets	
Ear plugs	✓	Restraint Lanyard		Cut resistant gloves	
Ear muffs	✓	Fall Arrest Lanyard		Other (describe)	
Other (describe)		Other (describe)		Other (describe)	

Section 12	Permits to Work
The following Permits to Work will be required for this activity (refer to OSS 004);	
Permit to dig	

Section 13	Labour	
The following labour resources are expected to be utilised during the course of this activity.		
Job Title / Designation	Number	Specific Training / Competence Required
Lead Hand	1	SSSTS, First aid,
Skilled op / Dumper op	1	CPCS , Slinger signaller
Skilled op / banksman	1	CPCS
Excavator operator >10t	1	CPCS

Section 14	Management and Supervision

Implementation of the approach / methodology and various risk control measures identified in this risk assessment and method statement will be monitored by the Site Supervisor with the assistance (where applicable) of the Site Engineer / Works Manager / Foreman / Lead Hands. Details as below:

Site Supervisor Name:	Shaun Hyett	**Role:**	Site Manager

Section 15	Briefing

Before any work commences, the Site Supervisor will ensure that a briefing is provided for all personnel involved in carrying out this work activity.

The work activity briefing is intended to be a two-way process and all operatives are expected to challenge the proposed approach, particularly if they feel that a safer and more practical work method can be adopted.

All personnel will sign below to confirm that they understand the content of this risk assessment and method statement.

Risk Assessment / Method Statement

Name (Print)	Name (signature)	Company	Date

Risk Assessment / Method Statement

Section 16 Management of Change Record

Date	Details of change to methodology / environment	Additional Hazards and Control Measures documented in RA (Sections 1 / 2 / 3) **(Y / N)**	Changed Approved by **(sign)**

Stage 1 Habitats Regulations Assessment

Environment Agency record of screening for likely significant effects

This is a record of the screening for likely significant effects required by Regulation 63 of the Conservation of Habitats and Species Regulations 2017 (as amended), undertaken by the Environment Agency in respect of the permission, plan or project (PPP) detailed in Section 1, for the following relevant site(s):

Humber Estuary SAC (UK0030170)^~

Humber Estuary SPA (UK9006111)^~

Humber Estuary Ramsar (UK11031)^

Version: Draft 1 - 01/10/2024

This record was not sent to Natural England for consultation.

|| For EPR permits only (excluding Flood Risk Activity Permits): An additional component charge for habitats assessment was levied / was not levied / was not applicable for this application ||

1. Permission, plan or project (PPP) details

Type of PPP: Impoundment Licences

Environment Agency reference:

Meadowgate - Licence number: NE/027/0003/015

- Application number: NPS/WR/041113

Canklow - Licence number: NE/027/0003/014

- Application number: NPS/WR/041112

National grid reference: SK 45432 82777 / SK 45444 82781 (Meadowgate) SK 43409 89723 / SK 43411 89706 (Canklow)

Site/project name or reference: Meadowgate and Canklow

2. Description of proposal

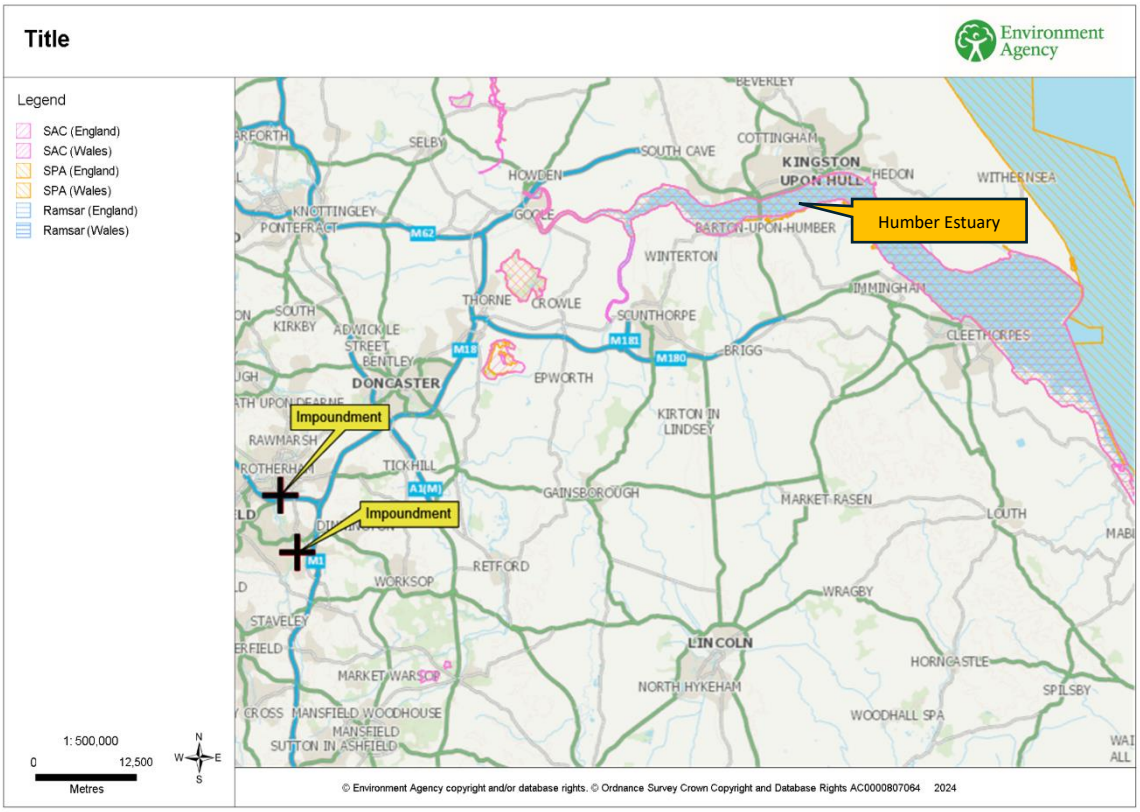
The Environment Agency has applied for two new impoundment licences to authorise the replacement of the bottom hinged, fish belly tilting gate, with a vertical lift gate at Meadowgate on the River Rother and replacement of the single, electrically powered vertical lift gate spanning the River Rother at Canklow. Both are sited in Yorkshire and are currently unlicensed.

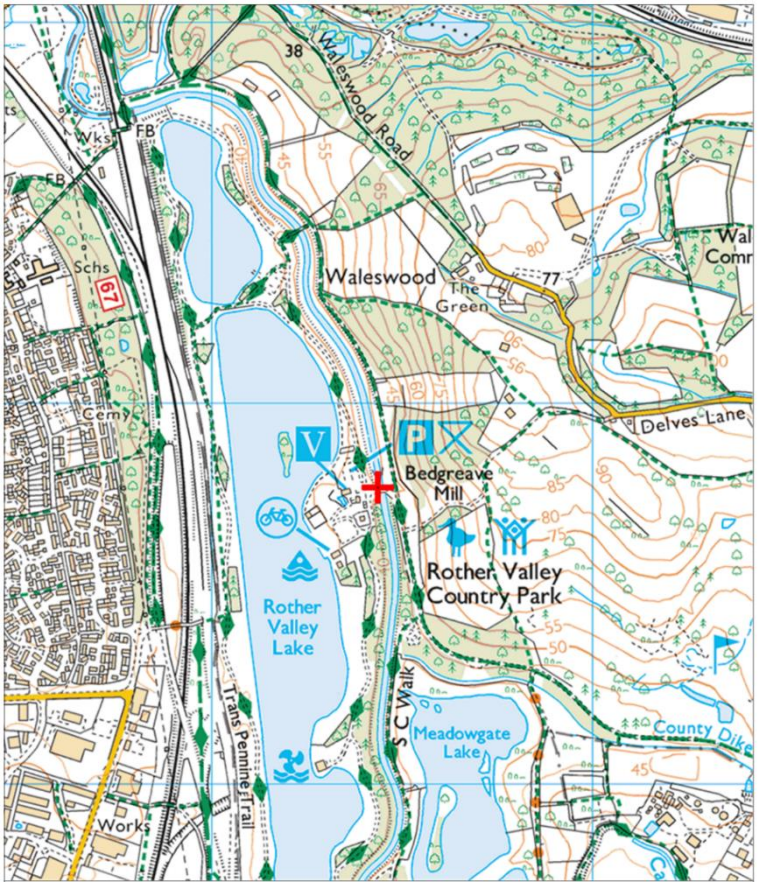
These gates are known as regulators and the Meadowgate and Canklow Regulators are two of three regulators on the River Rother, referred to as the Don Regulators.

For both sites the outlined works will replace the old regulator currently in-situ on the River Rother and impound the same volume of water. The purpose of the works is to reduce the risk of flooding to settlements within the Don catchments by attenuating flows. The works will support the schemes being safely and reliably operated for another 25 years.

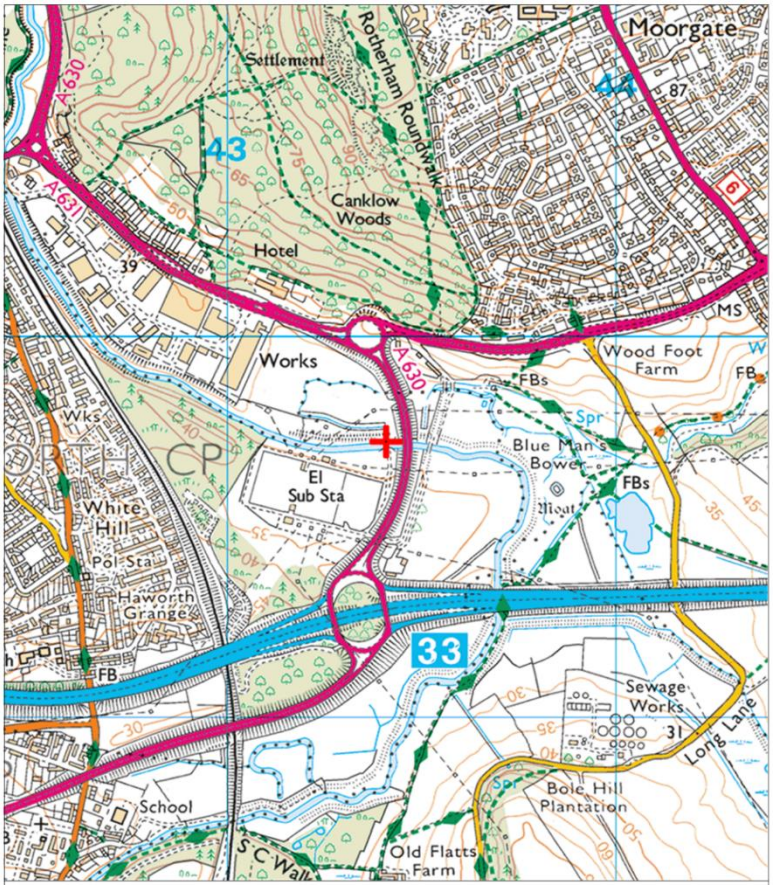
The three Don regulators will only be used to attenuate the flow of water into the River Don. They will be used in synchronisation.

3. Map(s) showing PPP location and European site(s)





Meadowgate


Moorgate
Settlement
Rotherham Roundwalk
A630
A631
43
44
87
6
Canklow Woods
Hotel
39
MS
Works
Wood Foot Farm
FBs
FB
Wks
CP
Spr
Blue Man's Bower
El Sub Sta
Mound
White Hill
Pol Sta
Haworth Grange
33
Sewage Works
31
Long Lane
School
Bole Hill Plantation
S C Wall
Old Flatts Farm
Canklow

4. European sites requiring assessment[1]

Humber Estuary SAC (UK0030170)^~

Atlantic salt meadows (Glauco-Puccinellietalia maritimae); Coastal lagoons*; Dunes with Hippophae rhamnoides; Embryonic shifting dunes; Estuaries; Fixed dunes with herbaceous vegetation ('Grey dunes')*; Grey seal; Mudflats and sandflats not covered by seawater at low tide; River lamprey; Salicornia and other annuals colonising mud and sand; Sandbanks which are slightly covered by sea water all the time; Sea lamprey; Shifting dunes along the shoreline with Ammophila arenaria ('White dunes')

Humber Estuary SPA (UK9006111)^~

Avocet (breeding); Avocet (non-breeding); Bar-tailed godwit (non-breeding); Bittern (breeding); Bittern (non-breeding); Black-tailed godwit (non-breeding); Dunlin (non-breeding); Golden plover (non-breeding); Hen harrier (non-breeding); Knot (non-breeding); Little tern (breeding); Marsh Harrier (breeding); Redshank (non-breeding); Ruff (non-breeding); Shelduck (non-breeding); Waterbird assemblage

Humber Estuary Ramsar (UK11031)^

Bar-tailed godwit (wintering); Black-tailed godwit (wintering); Dunlin (wintering); Estuaries; Golden plover (passage); Grey seal; Knot (wintering); Natterjack toad; Redshank (wintering); River lamprey; Sea lamprey; Shelduck (wintering); Waterbird assemblage (wintering)

5. Conservation objectives

The screening for likely significant effects (and appropriate assessment, if required) will consider the implications of the proposal in view of the site's conservation objectives.

Humber Estuary SAC (UK0030170)^~: *https://designatedsites.naturalengland.org.uk/Marine/MarineSiteDetail.aspx?SiteCode=UK0030170* and *https://designatedsites.naturalengland.org.uk/Marine/SupAdvice.aspx?SiteCode=UK0030170*

Humber Estuary SPA (UK9006111)^~: *https://designatedsites.naturalengland.org.uk/Marine/MarineSiteDetail.aspx?SiteCode=UK9006111* and

[1] This is based on screening criteria the Environment Agency consider appropriate to identify possible significant risk.
^ Protected area under the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017
* Priority natural habitat/priority species
~ Marine Protected Area
Feature information sourced from Natural England

https://designatedsites.naturalengland.org.uk/Marine/SupAdvice.aspx?SiteCode=UK9006111

Humber Estuary Ramsar (UK11031)^: There are currently no conservation objectives for Ramsar sites. The SAC/SPA conservation objectives will be used when the qualifying features are the same, and advice sought from Natural England in other cases if necessary.

Site condition - Humber Estuary SAC/SPA/Ramsar

The best available information we have on the status of this site is the condition assessment of the Humber Estuary SSSI which overlaps this SAC/SPA/Ramsar. As per the last Natural England condition statement the condition of this site is as follows:

Favourable	Unfavourable - Recovering	Unfavourable – No Change	Unfavourable - Declining	Not Recorded
36.36%	4.55%	11.36%	18.18%	29.55%

The site improvement plan does not state any pressures or threats in relation to water impoundments. While the site is partly unfavourable declining or no change and just over a third is favourable, none of the qualifying features would be impacted by an impoundment nearly 50km upstream.

6. Risks (pressures) relevant to the type of PPP being assessed

These are the reasonably foreseeable risks for this type of PPP. Some of these risks may not be relevant to the particular activity being assessed and this is explained here. The risks which are not relevant do not require further assessment.

Change in flow or velocity regime

Change in freshwater flow to estuary - This risk is not relevant because the TRaC boundary is almost 50km downstream from the impoundment point. It is anticipated there will be no likely significant effect to the freshwater flow to the Estuary.

Change in salinity regime - This risk is not relevant because the TRaC boundary is almost 50km downstream from the impoundment point. It is anticipated there will be no likely significant effect to the freshwater flow to the Estuary.

Change in surface water inundation

Change in water chemistry

Change in water levels or table

Entrainment/impingement

Habitat loss

Reduced dilution capacity

7. HRA Stage 1 screening[2]

This section is a record of the screening for each risk (pressure) and the qualifying features that could be sensitive to that risk. The features may be grouped if they will be affected in the same way and the screening is the same for each feature. If appropriate, the assessment may be considered at a site level, rather than feature by feature.

Humber Estuary Ramsar (UK11031)^

Change in flow or velocity regime

Summary of likely significant effect alone:

Hydrological conditions in rivers can be radically altered by activities such as impoundment and discharge to watercourses and man-made barriers can change water levels.

Any impoundment may cause an alteration in the flow or velocity regime, within the rivers that support the designated site, which could potentially reduce the quantity and quality of water supporting the designated site and thus alter the conditions that the notified features rely upon or the habitats which are accustomed to and reliant on the current conditions.

There will be no likely significant effect on any of the risks/pressures from these impoundments because the new impoundment licences are to authorise new regulator gates to replace the existing regulator gates that are failing. There will be no change to the volumes of water impounded. The regulator gate is kept out of the river until it is needed to attenuate flows in times of flood flow (e.g. Q1) which the existing regulator gates were installed to do. In view of this and the impoundments being nearly 50km upstream from the designated site, there is no likely significant effect on the flow or velocity regime at the estuary.

[2] Only features the Environment Agency consider likely to be sensitive to the type of PPP being assessed are included, see *Habitats Regulations Assessment: Risk definitions and matrices*

^ Protected area under the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017

* Priority natural habitat/priority species

~ Marine Protected Area

Summary of likely significant effect in combination:

There are no other impoundments in the vicinity that could act in combination with these impoundments.

The assessment of likely significant effect from this risk for the following features is:

Bar-tailed godwit (wintering) - no effect. Black-tailed godwit (wintering) - no effect. Dunlin (wintering) - no effect. Golden plover (passage) - no effect. Knot (wintering) - no effect. Redshank (wintering) - no effect. River lamprey - no effect. Sea lamprey - no effect. Shelduck (wintering) - no effect. Waterbird assemblage (wintering) - no effect.

Change in surface water inundation

Summary of likely significant effect alone:

An impoundment could cause an alteration in surface water inundation within the rivers that support the designated site, which could potentially reduce the quantity of water supporting the designated site and thus alter the conditions that the notified features rely upon or the habitats which are accustomed to and reliant on the current conditions.

However, the replacement gates will have the same function as the existing gates and will not alter the volumes of water impounded. There is no potential for change in surface water inundation as a result of this proposed variation.

See also above under **Change in flow or velocity regime.**

Summary of likely significant effect in combination:

See above under **Change in flow or velocity regime.**

The assessment of likely significant effect from this risk for the following features is:

Bar-tailed godwit (wintering) - no effect. Black-tailed godwit (wintering) - no effect. Dunlin (wintering) - no effect. Golden plover (passage) - no effect. Knot (wintering) - no effect. Natterjack toad - no effect. Redshank (wintering) - no effect. Shelduck (wintering) - no effect. Waterbird assemblage (wintering) - no effect.

Change in water chemistry

Summary of likely significant effect alone:

An impoundment could cause an alteration in water chemistry within the rivers that support the designated site, which could potentially reduce the quality of water supporting the designated site and thus alter the conditions that the notified features rely upon or the habitats which are accustomed to and reliant on the current conditions.

However, the replacement gates will have the same function as the existing gates and will not alter the water impounded. There is no potential for change in water chemistry to the estuary 50km downstream.

See also above under **Change in flow or velocity regime.**

Summary of likely significant effect in combination:

See above under **Change in flow or velocity regime.**

The assessment of likely significant effect from this risk for the following features is:

Bar-tailed godwit (wintering) - no effect. Black-tailed godwit (wintering) - no effect. Dunlin (wintering) - no effect. Estuaries - no effect. Golden plover (passage) - no effect. Knot (wintering) - no effect. Natterjack toad - no effect. Redshank (wintering) - no effect. River lamprey - no effect. Sea lamprey - no effect. Shelduck (wintering) - no effect. Waterbird assemblage (wintering) - no effect.

Change in water levels or table

Summary of likely significant effect alone:

An impoundment could cause an alteration in water levels or table within the rivers that support the designated site, which could potentially reduce the quantity and quality of water supporting the designated site and thus alter the conditions that the notified features rely upon or the habitats which are accustomed to and reliant on the current conditions.

However, the replacement gates will have the same function as the existing gates and will not alter the volumes of water impounded. There is no potential for change in water levels or table to the estuary 50km downstream.

See also above under **Change in flow or velocity regime.**

Summary of likely significant effect in combination:

See above under **Change in flow or velocity regime.**

The assessment of likely significant effect from this risk for the following features is:

Bar-tailed godwit (wintering) - no effect. Black-tailed godwit (wintering) - no effect. Dunlin (wintering) - no effect. Estuaries - no effect. Golden plover (passage) - no effect. Knot (wintering) - no effect. Natterjack toad - no effect. Redshank (wintering) - no effect. River lamprey - no effect. Sea lamprey - no effect. Shelduck (wintering) - no effect. Waterbird assemblage (wintering) - no effect.

Entrainment/impingement

Summary of likely significant effect alone:

As part of the Meadowgate scheme a fish pass will be installed which will enable fish species to travel upstream and downstream of the impoundment. For both sites the replacement gates will have the same function as the existing gates and will not alter the volumes of water impounded. There is no potential for entrainment/impingement of fish species to/from the designated site.

See also above under **Change in flow or velocity regime.**

Summary of likely significant effect in combination:

See above under **Change in flow or velocity regime.**

The assessment of likely significant effect from this risk for the following features is:

River lamprey - no effect. Sea lamprey - no effect.

Habitat loss

Summary of likely significant effect alone:

An impoundment could cause an alteration in the downstream regime within the rivers that support the designated site, which could potentially reduce the quantity and quality of water supporting the designated site and thus alter the conditions that the notified features rely upon or the habitats which are accustomed to and reliant on the current conditions.

However, the replacement gates will have the same function as the existing gates and will not alter the volumes of water impounded. There is no potential for habitat loss at the estuary 50km downstream.

See also above under **Change in flow or velocity regime.**

Summary of likely significant effect in combination:

See above under **Change in flow or velocity regime.**

The assessment of likely significant effect from this risk for the following features is:

Bar-tailed godwit (wintering) - no effect. Black-tailed godwit (wintering) - no effect. Dunlin (wintering) - no effect. Estuaries - no effect. Golden plover (passage) - no effect. Knot (wintering) - no effect. Natterjack toad - no effect. Redshank (wintering) - no effect. River lamprey - no effect. Sea lamprey - no effect. Shelduck (wintering) - no effect. Waterbird assemblage (wintering) - no effect.

Reduced dilution capacity

Summary of likely significant effect alone:

An impoundment could cause an alteration in dilution capacity within the rivers that support the designated site, which could potentially reduce the quantity and quality of water supporting the designated site and thus alter the conditions that the notified features rely upon or the habitats which are accustomed to and reliant on the current conditions.

However, the replacement gates will have the same function as the existing gates and will not alter the volumes of water impounded. There is no potential for reduced dilution capacity at the estuary 50km downstream.

See also above under **Change in flow or velocity regime.**

Summary of likely significant effect in combination:

See above under **Change in flow or velocity regime.**

The assessment of likely significant effect from this risk for the following features is:

Bar-tailed godwit (wintering) - no effect. Black-tailed godwit (wintering) - no effect. Dunlin (wintering) - no effect. Estuaries - no effect. Golden plover (passage) - no effect. Grey seal - no effect. Knot (wintering) - no effect. Redshank (wintering) - no effect. River lamprey - no effect. Sea lamprey - no effect. Shelduck (wintering) - no effect. Waterbird assemblage (wintering) - no effect.

Humber Estuary SAC (UK0030170)^~

Change in flow or velocity regime

Summary of likely significant effect alone:

See above under **Change in flow or velocity regime** for **Humber Estuary Ramsar.**

Summary of likely significant effect in combination:

See above under **Change in flow or velocity regime** for **Humber Estuary Ramsar.**

The assessment of likely significant effect from this risk for the following features is:

Coastal lagoons* - no effect. River lamprey - no effect. Sandbanks which are slightly covered by sea water all the time - no effect. Sea lamprey - no effect.

Change in surface water inundation

Summary of likely significant effect alone:

> See above under **Change in flow or velocity regime** and **Change in surface water inundation** for **Humber Estuary Ramsar.**

Summary of likely significant effect in combination:

> See above under **Change in flow or velocity regime** for **Humber Estuary Ramsar.**

The assessment of likely significant effect from this risk for the following features is:

> Coastal lagoons* - no effect.

Change in water chemistry

Summary of likely significant effect alone:

> See above under **Change in flow or velocity regime** for **Humber Estuary Ramsar.**

Summary of likely significant effect in combination:

> See above under **Change in flow or velocity regime** and **Change in water chemistry** for **Humber Estuary Ramsar.**

The assessment of likely significant effect from this risk for the following features is:

> Atlantic salt meadows (Glauco-Puccinellietalia maritimae) - no effect. Coastal lagoons* - no effect. Estuaries - no effect. Mudflats and sandflats not covered by seawater at low tide - no effect. River lamprey - no effect. Salicornia and other annuals colonising mud and sand - no effect. Sandbanks which are slightly covered by sea water all the time - no effect. Sea lamprey - no effect.

Change in water levels or table

Summary of likely significant effect alone:

> See above under **Change in flow or velocity regime** and **Change in water levels or table** for **Humber Estuary Ramsar.**

Summary of likely significant effect in combination:

> See above under **Change in flow or velocity regime** for **Humber Estuary Ramsar.**

The assessment of likely significant effect from this risk for the following features is:

> Atlantic salt meadows (Glauco-Puccinellietalia maritimae) - no effect. Coastal lagoons* - no effect. Estuaries - no effect. Mudflats and

sandflats not covered by seawater at low tide - no effect. River lamprey - no effect. Salicornia and other annuals colonising mud and sand - no effect. Sea lamprey - no effect.

Entrainment/impingement

Summary of likely significant effect alone:

See above under **Entrainment/impingement** for **Humber Estuary Ramsar**

See also above under **Change in flow or velocity regime** for **Humber Estuary Ramsar.**

Summary of likely significant effect in combination:

See above under **Change in flow or velocity regime** for **Humber Estuary Ramsar.**

The assessment of likely significant effect from this risk for the following features is:

River lamprey - no effect. Sea lamprey - no effect.

Habitat loss

Summary of likely significant effect alone:

See above under **Change in flow or velocity regime** and **Habitat loss** for **Humber Estuary Ramsar.**

Summary of likely significant effect in combination:

See above under **Change in flow or velocity regime** for **Humber Estuary Ramsar.**

The assessment of likely significant effect from this risk for the following features is:

Atlantic salt meadows (Glauco-Puccinellietalia maritimae) - no effect. Coastal lagoons* - no effect. Dunes with Hippophae rhamnoides - no effect. Embryonic shifting dunes - no effect. Estuaries - no effect. Fixed dunes with herbaceous vegetation ('Grey dunes')* - no effect. Mudflats and sandflats not covered by seawater at low tide - no effect. River lamprey - no effect. Salicornia and other annuals colonising mud and sand - no effect. Sea lamprey - no effect. Shifting dunes along the shoreline with Ammophila arenaria ('White dunes') - no effect.

Reduced dilution capacity

Summary of likely significant effect alone:

See above under **Change in flow or velocity regime** and **Reduced dilution capacity** for **Humber Estuary Ramsar.**

Summary of likely significant effect in combination:

See above under **Change in flow or velocity regime** for **Humber Estuary Ramsar.**

The assessment of likely significant effect from this risk for the following features is:

Atlantic salt meadows (Glauco-Puccinellietalia maritimae) - no effect. Coastal lagoons* - no effect. Estuaries - no effect. Grey seal - no effect. Mudflats and sandflats not covered by seawater at low tide - no effect. River lamprey - no effect. Salicornia and other annuals colonising mud and sand - no effect. Sandbanks which are slightly covered by sea water all the time - no effect. Sea lamprey - no effect.

Humber Estuary SPA (UK9006111)^~

Change in flow or velocity regime

Summary of likely significant effect alone:

See above under **Change in flow or velocity regime** for **Humber Estuary Ramsar.**

Summary of likely significant effect in combination:

See above under **Change in flow or velocity regime** for **Humber Estuary Ramsar.**

The assessment of likely significant effect from this risk for the following features is:

Avocet (breeding) - no effect. Avocet (non-breeding) - no effect. Bar-tailed godwit (non-breeding) - no effect. Bittern (breeding) - no effect. Bittern (non-breeding) - no effect. Black-tailed godwit (non-breeding) - no effect. Dunlin (non-breeding) - no effect. Golden plover (non-breeding) - no effect. Hen harrier (non-breeding) - no effect. Knot (non-breeding) - no effect. Little tern (breeding) - no effect. Marsh Harrier (breeding) - no effect. Redshank (non-breeding) - no effect. Ruff (non-breeding) - no effect. Shelduck (non-breeding) - no effect. Waterbird assemblage - no effect.

Change in surface water inundation

Summary of likely significant effect alone:

See above under **Change in flow or velocity regime** and **Change in surface water inundation** for **Humber Estuary Ramsar.**

Summary of likely significant effect in combination:

See above under **Change in flow or velocity regime** for **Humber Estuary Ramsar.**

The assessment of likely significant effect from this risk for the following features is:

> Avocet (breeding) - no effect. Avocet (non-breeding) - no effect. Bar-tailed godwit (non-breeding) - no effect. Bittern (breeding) - no effect. Bittern (non-breeding) - no effect. Black-tailed godwit (non-breeding) - no effect. Dunlin (non-breeding) - no effect. Golden plover (non-breeding) - no effect. Hen harrier (non-breeding) - no effect. Knot (non-breeding) - no effect. Little tern (breeding) - no effect. Marsh Harrier (breeding) - no effect. Redshank (non-breeding) - no effect. Ruff (non-breeding) - no effect. Shelduck (non-breeding) - no effect. Waterbird assemblage - no effect.

Change in water chemistry

Summary of likely significant effect alone:

> See above under **Change in flow or velocity regime** and **Change in water chemistry** for **Humber Estuary Ramsar.**

Summary of likely significant effect in combination:

> See above under **Change in flow or velocity regime** for **Humber Estuary Ramsar.**

The assessment of likely significant effect from this risk for the following features is:

> Bar-tailed godwit (non-breeding) - no effect. Bittern (breeding) - no effect. Bittern (non-breeding) - no effect. Black-tailed godwit (non-breeding) - no effect. Dunlin (non-breeding) - no effect. Golden plover (non-breeding) - no effect. Hen harrier (non-breeding) - no effect. Knot (non-breeding) - no effect. Marsh Harrier (breeding) - no effect. Redshank (non-breeding) - no effect. Ruff (non-breeding) - no effect. Shelduck (non-breeding) - no effect. Waterbird assemblage - no effect.

Change in water levels or table

Summary of likely significant effect alone:

> See above under **Change in flow or velocity regime** and **Change in water levels or table** for **Humber Estuary Ramsar.**

Summary of likely significant effect in combination:

> See above under **Change in flow or velocity regime** for **Humber Estuary Ramsar.**

The assessment of likely significant effect from this risk for the following features is:

> Avocet (breeding) - no effect. Avocet (non-breeding) - no effect. Bar-tailed godwit (non-breeding) - no effect. Bittern (breeding) - no effect.

Bittern (non-breeding) - no effect. Black-tailed godwit (non-breeding) - no effect. Dunlin (non-breeding) - no effect. Golden plover (non-breeding) - no effect. Hen harrier (non-breeding) - no effect. Knot (non-breeding) - no effect. Little tern (breeding) - no effect. Marsh Harrier (breeding) - no effect. Redshank (non-breeding) - no effect. Ruff (non-breeding) - no effect. Shelduck (non-breeding) - no effect. Waterbird assemblage - no effect.

Habitat loss

Summary of likely significant effect alone:

See above under **Change in flow or velocity regime** and **Habitat loss** for **Humber Estuary Ramsar.**

Summary of likely significant effect in combination:

See above under **Change in flow or velocity regime** for **Humber Estuary Ramsar.**

The assessment of likely significant effect from this risk for the following features is:

Avocet (breeding) - no effect. Avocet (non-breeding) - no effect. Bar-tailed godwit (non-breeding) - no effect. Bittern (breeding) - no effect. Bittern (non-breeding) - no effect. Black-tailed godwit (non-breeding) - no effect. Dunlin (non-breeding) - no effect. Golden plover (non-breeding) - no effect. Hen harrier (non-breeding) - no effect. Knot (non-breeding) - no effect. Little tern (breeding) - no effect. Marsh Harrier (breeding) - no effect. Redshank (non-breeding) - no effect. Ruff (non-breeding) - no effect. Shelduck (non-breeding) - no effect. Waterbird assemblage - no effect.

Reduced dilution capacity

Summary of likely significant effect alone:

See above under **Change in flow or velocity regime** and **Reduced dilution capacity** for **Humber Estuary Ramsar.**

Summary of likely significant effect in combination:

See above under **Change in flow or velocity regime** for **Humber Estuary Ramsar.**

The assessment of likely significant effect from this risk for the following features is:

Avocet (breeding) - no effect. Avocet (non-breeding) - no effect. Bar-tailed godwit (non-breeding) - no effect. Bittern (breeding) - no effect. Bittern (non-breeding) - no effect. Black-tailed godwit (non-breeding) - no effect. Dunlin (non-breeding) - no effect. Golden plover (non-breeding) - no effect. Hen harrier (non-breeding) - no effect. Knot (non-

breeding) - no effect. Little tern (breeding) - no effect. Marsh Harrier (breeding) - no effect. Redshank (non-breeding) - no effect. Ruff (non-breeding) - no effect. Shelduck (non-breeding) - no effect. Waterbird assemblage - no effect.

8. Alone assessment (further details)

The Humber Estuary is located between 47 and 49 kilometres downstream of the impoundment. Due to this distance from the designated sites and the fact these regulator gates will only operate during times of exceptional flood flows, we have assessed that there is no likely significant effect from replacing the existing regulator gates with new gates. These gates will attenuate flows only at times of high flows in order to reduce the risk of flooding to settlements within the Don catchment.

The regulator at Canklow has historically only been deployed to impound the highest flood flows. These are flows at Whittington greater than 29 m^3/s which is the Q1 (i.e. exceeded only 1% of the time) and in excess of the Qmed (mean annual flood) of 37 m^3/s. In recent events such as Storm Babet in 2023 the regulator gate was only impounding flow in the range of 64 to 140 m^3/s at Whittington. At all flow ranges below the Q1 the impoundment does not occur as the regulator gate is not operated.

These gates are only deployed at times of exceptional flood flows and the downstream effects are detectable as far downstream as Doncaster. There are multiple sources of hydrological evidence for this and this is, in fact, the purpose of the impoundments. However, the time at which the flow is impounded means that the volumes in the downstream watercourses of the River Don are such that the impacts on habitat, water quality or WFD status are undetectable and short lived.

They are unlikely to have a significant effect on protected sites as the impoundments reduce downstream flood flows and have no impact at all on other flow regimes.

These are replacements for proven and well-developed assets for which there is much evidence of no impact.

9. In combination assessment (further details)

There is no anticipated in combination effect from these replacement regulator gates.

10. Information / Advice

This section summarises the information and or advice requested / received during the screening.

Environment Agency internal advice and consultation (if applicable)

The Humber Estuary SAC/SPA/Ramsar were identified using our Water Resources Screening Tool. Internal consultation and advice were sought and the results of this is presented above. The Agency do not anticipate any impact from these impoundments on the designated sites. A fish pass on the Meadowgate regulator will ensure any potential barrier to fish species is overcome, however this is not

mitigation because the fish species which are a feature of the designated sites are not present at the impoundments.

Natural England information / advice (if applicable)

Write here...

Third party advice (if applicable)

Write here...

11. References

Write here...

12. Decision

The Environment Agency concludes there is no likely significant effect.

Name of Environment Agency officer: Helen Folland

Job title: Permitting Officer

Date: 17 October 2024

13. Consultation (if applicable)

Date sent to Natural England for consultation: || Select date ||

Date response received from Natural England: || Select date ||

Natural England advice on the screening for likely significant effects (if applicable)

Write here...

Do Natural England have concerns about the assessment? || Yes / No ||

Do Natural England have concerns about the decision? || Yes / No ||

Name of Natural England officer:

Job title:

Date: || Select date ||

SSSI Assessment form: Appendix 3

Environment Agency own works - Formal Notice (For Assent)

This is a formal notice from the Environment Agency (EA) to Natural England (NE) (or other relevant Statutory Nature Conservation Body (SNCB)) to meet the requirements under Section 28H of the Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act (CRoW) 2000).

This is the duty in relation to carrying out operational activities likely to damage Sites of Special Scientific Interest (SSSI). We must seek assent (consult NE or other SNCB) before carrying out operational activities that may damage a SSSI.

This notice was not sent to Natural England (or other SNCB) for assent.

Version number and date: Draft 1 - 16/10/2024

1. EA area

Yorkshire

2. Name of SSSI

Humber Estuary - 2000480 SSSI

3. Type of activity

Impoundment Licences.

4. Proposed start and finish dates for EA to carry out activity

On licence issue and ongoing – no expiry date for impoundment licences.

5. Predicted 28 day date for NE (or other SNCB) response (under S28 H (3))

N/A

6. EA reference number or location / name of river if part of EA operational maintenance programme

NE/027/0003/014 - Canklow

NE/027/0003/015 - Meadowgate

7. National grid reference

SK 45432 82777 / SK 45444 82781 (Meadowgate)

SK 43409 89723 / SK 43411 89706 (Canklow)

8. Description of proposal

The Environment Agency has applied for two new impoundment licences to authorise the replacement of the bottom hinged, fish belly tilting gate, with a vertical lift gate at Meadowgate on the River Rother and replacement of the single, electrically powered vertical lift gate spanning the River Rother at Canklow. Both are sited in Yorkshire and are currently unlicensed.

These gates are known as regulators and the Meadowgate and Canklow Regulators are two of three regulators on the River Rother, referred to as the Don Regulators.

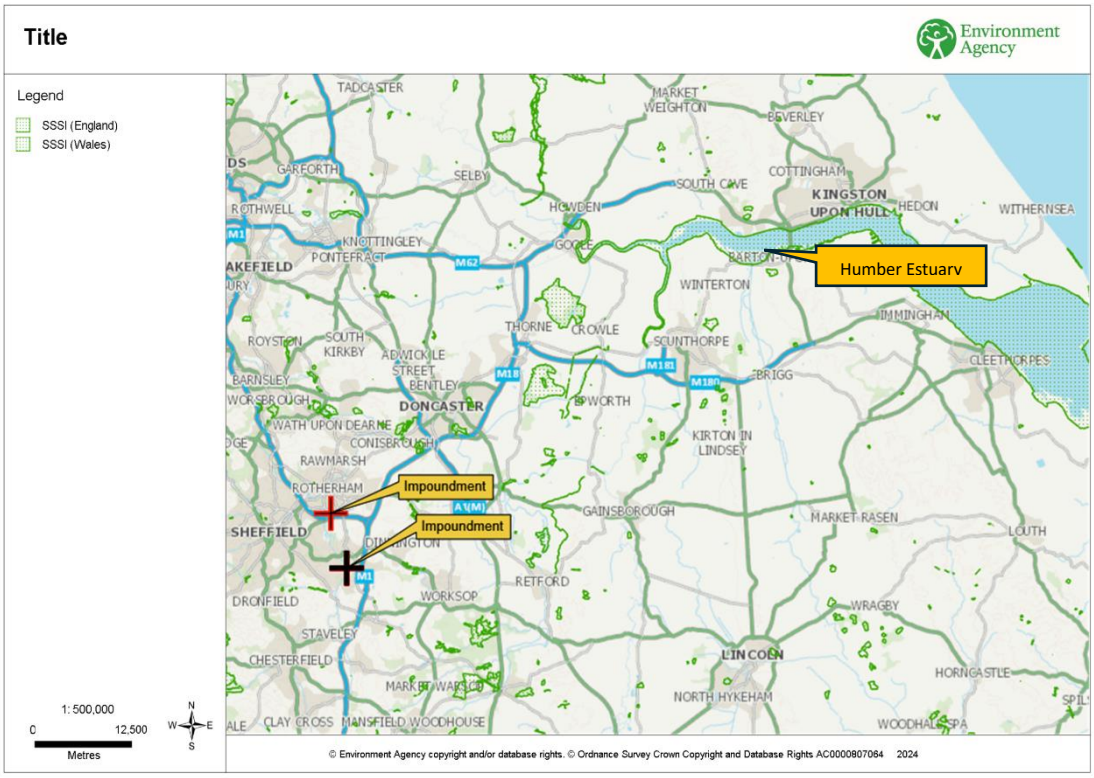
The works at Meadowgate and Canklow aim to design and install replacement regulators.

For both sites the outlined works will replace the old regulator currently in-situ on the River Rother and impound the same volume of water. The purpose of the works is to reduce the risk of flooding to settlements within the Don catchments by attenuating flows. The works will support the schemes being safely and reliably operated for another 25 years.

The three Don regulators will only be used to attenuate the flow of water into the River Don. They will be used in synchronisation.

9. Is the proposed activity within (wholly or partially) the SSSI boundary?

No. The SSSI is located approximately 47 kilometres downstream of the impoundments.



10. Has there been any discussion or correspondence with NE or other SNCB?

We are also sending HRA Stage 1 For Information Only.

11. Operations Requiring Consent or other activities associated with the work

The following 'Operations Requiring Consent' (or other activities associated with the work) that may cause damage are relevant to the proposed works:

> 14. Alterations to water levels and tables and water utilisation (including irrigation, storage and abstraction from existing water bodies and through boreholes). Also, the modification of current drainage operations.

12. Assessment of effects on features[1]

Humber Estuary SSSI

The Humber Estuary is a nationally important site with a series of nationally important habitats. These are the estuary itself with its component habitats of intertidal mudflats and sandflats and coastal saltmarsh and the associated saline lagoons, sand dunes and standing waters. The site is also of national importance

[1] List of notified features provided by Natural England on 02 February 2024

for the geological interest at South Ferriby Cliff Late Pleistocene sediments and for the coastal geomorphology of Spurn. The estuary supports nationally important numbers of 22 wintering waterfowl and nine passage waders, and a nationally important assemblage of breeding birds of lowland open waters and their margins. It is also nationally important for a breeding colony of grey seals Halichoerus grypus, river lamprey Lampetra fluviatilis and sea lamprey Petromyzon marinus, a vascular plant assemblage and an invertebrate assemblage.

Hydrological conditions in rivers can be radically altered by activities such as impoundment and discharge to watercourses and man-made barriers can change water levels. Any impoundment upstream of the protected site may alter the current hydrological regime causing an alteration to the habitats which are accustomed to and reliant on the current conditions and subsequently reducing or changing the habitat on which the species rely.

Humber Estuary - 2000480 SSSI

Feature	Exposure, mechanism/pathway and scale of effect
Aggregations of non-breeding birds - Avocet, Recurvirostra avosetta	**No mechanism of damage** Habitat loss is the greatest threat to birds. Non-breeding birds use this habitat and could be adversely affected if changes to water levels impacted the sources of their food. This could lead to indirect effects of lower flows on stream ecosystems such as the deterioration of water quality, alteration of food resources, and changes in the strength and structure of interspecific interactions. However, the site improvement plan does not state any pressures or threats in relation to water impoundments. We have assessed that there is no mechanism of damage from replacing the existing regulator gates with new gates. These gates will attenuate flows only at times of high flows in
Aggregations of non-breeding birds - Bar-tailed Godwit, Limosa lapponica	
Aggregations of non-breeding birds - Bittern, Botaurus stellaris	
Aggregations of non-breeding birds - Black-tailed Godwit, Limosa limosa islandica	
Aggregations of non-breeding birds - Brent Goose (Dark-bellied), Branta bernicla bernicla	
Aggregations of non-breeding birds - Curlew, Numenius arquata	
Aggregations of non-breeding birds - Dunlin, Calidris alpina alpina	
Aggregations of non-breeding birds - Golden Plover, Pluvialis apricaria	

Feature	Exposure, mechanism/pathway and scale of effect
Aggregations of non-breeding birds - Goldeneye, Bucephala clangula	order to reduce the risk of flooding to settlements within the Don catchment. These gates are only deployed at times of exceptional flood flows and the time at which the flow is impounded means that the volumes in the downstream watercourses of the River Don are such that the impacts on habitat, water quality or WFD status are undetectable and short lived. There is no mechanism whereby the proposal could impact these features. We do not therefore anticipate an impact on these features because of this application.
Aggregations of non-breeding birds - Greenshank, Tringa nebularia	
Aggregations of non-breeding birds - Grey Plover, Pluvialis squatarola	
Aggregations of non-breeding birds - Knot, Calidris canutus	
Aggregations of non-breeding birds - Lapwing, Vanellus vanellus	
Aggregations of non-breeding birds - Oystercatcher, Haematopus ostralegus	
Aggregations of non-breeding birds - Pochard, Aythya ferina	
Aggregations of non-breeding birds - Redshank, Tringa totanus	
Aggregations of non-breeding birds - Ringed Plover, Charadrius hiaticula	
Aggregations of non-breeding birds - Ruff, Philomachus pugnax	
Aggregations of non-breeding birds - Sanderling, Calidris alba	
Aggregations of non-breeding birds - Scaup, Aythya marila	
Aggregations of non-breeding birds - Shelduck, Tadorna tadorna	
Aggregations of non-breeding birds - Teal, Anas crecca	
Aggregations of non-breeding birds - Turnstone, Arenaria interpres	

Feature	Exposure, mechanism/pathway and scale of effect
Aggregations of non-breeding birds - Whimbrel, Numenius phaeopus	
Aggregations of non-breeding birds - Wigeon, Anas penelope	
Assemblages of breeding birds - Lowland open waters and their margins	
EC - Quaternary of East England - A geological feature.	**No mechanism of damage**
IA - Coastal Geomorphology - A geological feature.	
Estuaries	**No mechanism of damage** Changes to hydrological conditions could cause a decline of many of the plant species associated with this habitat which could be disturbed by the impoundment activity. See above under Aggregations of birds.
Grey seal, Halichoerus grypus	
Invertebrate assemblage	
Vascular plant assemblage	
River lamprey, Lampetra fluviatilis	**No mechanism of damage** There is no mechanism for entrainment/impingement of lamprey species which is beyond their migratory reach. For other fish species, a fish pass will ensure they can move upstream and downstream unimpeded.
Sea lamprey, Petromyzon marinus	
S21 - Scirpus maritimus Swamp	**No mechanism of damage** These communities are exclusively coastal. Grasslands are characteristic of the upper salt-marsh and strandline.
S26 - Phragmites australis - Urtica dioica tall-herb fen	
S4 - Phragmites australis swamp and reed-beds	

Feature	Exposure, mechanism/pathway and scale of effect
Saline coastal lagoons	Exposed and moderately exposed rocky shores are dominated by species of plant and animal that are adapted to the rigours of a life of alternating immersion in seawater and exposure to the air. The composition of these communities is determined mainly by the ability of these species to survive the desiccating effects of exposure to air and the various degrees of wave action. Muddy gravel shores and shores of stones and sediment are mainly affected by tidal action. Estuary-wide fluctuations in the wind-wave climate over recent centuries have led to major movements of the high-tide shoreline and intertidal mudflats will be lost in future due to rising sea levels. This is the main risk to these communities and not upstream impoundment. There is no pathway or mechanism whereby the proposed application could impact these features. Consequently, the proposal does not have a mechanism of damage on these features.
SD10 - Carex arenaria dune community	
SD15 - Salix repens - Calliergon cuspidatum dune-slack community	
SD17 - Potentilla anserina - Carex nigra dune-slack community	
SD18 - Hippophae rhamnoides dune scrub	
SD2 - Cakile maritima-Honkenya peploides strandline community	
SD4 - Elymus farctus ssp. Boreali-atlanticus foredune community	
SD5 - Leymus arenarius mobile dune community	
SD6 - Ammophila arenaria mobile dune community	
SD7 - Ammophila arenaria - Festuca rubra semi-fixed dune community	
SD8 - Festuca rubra - Galium verum fixed dune grassland	
SD9 - Ammophila arenaria - arrhenatherum elatius dune grassland	
Sheltered muddy shores (including estuarine muds)	
SM10 - Transitional low marsh vegetation with Puccinellia maritima, annual Salicornia species and Suaeda maritima	
SM11 - Aster tripolium var. discoides - saltmarsh	

Feature	Exposure, mechanism/pathway and scale of effect
SM12 - Rayed Aster tripolium on saltmarsh	
SM13a - Puccinellia maritima saltmarsh, Puccinellia maritima dominant sub-community	
SM13b - Puccinellia maritima saltmarsh, Glaux maritima sub-community	
SM13c - Puccinellia maritima saltmarsh, Limonium vulgare - Armeria maritima sub-community	
SM13d - Puccinellia maritima saltmarsh, Plantago maritima - Armeria maritima sub-community	
SM13f - Puccinellia maritima - Spartina maritima sub-community	
SM14 - Atriplex portulacoides saltmarsh	
SM15 - Juncus maritimus - Triglochin maritima saltmarsh	
SM16a - Festuca rubra saltmarsh Puccinellia maritima sub-community	
SM16b - Festuca rubra saltmarsh Juncus gerardii sub-community	
SM16c - Festuca rubra saltmarsh Festuca rubra - Glaux maritima sub-community	
SM16e - Festuca rubra saltmarsh Leontodon autumnalis sub-community	
SM2 - Ruppia maritima salt-marsh community	
SM24 - Elytrigia atherica saltmarsh	

Feature	Exposure, mechanism/pathway and scale of effect
SM28 - Elytrigia repens saltmarsh	
SM6 - Spartina anglica saltmarsh	
SM8 - Annual Salicornia saltmarsh	
SM9 - Suaeda maritima saltmarsh	
Standing waters	
Moderately exposed sandy shores (with polychaetes and bivalves)	
Wave exposed sandy shores (with burrowing crustaceans and polychaetes)	

13. Decision

Humber Estuary - 2000480 SSSI

The proposed works are not likely to damage any of the flora, fauna or geological or physiological features which are of special interest.

Site condition

The site improvement plan does not state any pressures or threats in relation to water impoundments. While the site is mostly unfavourable recovering and only a small percentage is favourable, unfavourable declining or no change, none of the qualifying features would be impacted by an impoundment nearly 50km upstream.

There will be no mechanism of damage on any of the features from these impoundments because the new impoundment licences are to authorise new regulator gates to replace the existing regulator gates that are failing. There will be no change to the volumes of water impounded. The regulator gate is kept out of the river until it is needed to attenuate flows in times of flood flow (e.g. Q1) which the existing regulator gates were installed to do. In view of this and the impoundments being nearly 50km upstream from the designated site, there is no mechanism of damage. Moreover, there is no mechanism for entrainment/impingement of lamprey species which is beyond their migratory reach. For other fish species, a fish pass will ensure they can move upstream and downstream unimpeded.

Name of Environment Agency officer: Helen Folland

Job title: Permitting Officer

Contact phone or e-mail: helen.folland@environment-agency.gov.uk

Date sent to NE (or other SNCB), if applicable: || Select date ||

For use when the notice has been sent to NE (or other SNCB)

14. NE (or other SNCB) comment on notice

|| Select response ||

Write here...

Name of Natural England (or other SNCB) officer:

Job title:

Contact phone or e-mail:

Date of response: || Select date ||

9 RIVER REGULATORS AND CONTROL SLUICES

Intentionally Left Blank

9.1 GENERAL OPERATING INFORMATION

9.1.1 RIVER ROTHER REGULATORS AND BOLTON REGULATOR (RIVER DEARNE)

9.1.1.1 From an examination of the major floods from l965 and l982 some general patterns can be found.

a) River Don at Hadfields peaks first.

b) River Rother at Whittington peaks 0-3 hours after Hadfields.

c) River Dearne at Barnsley peaks 4-6 hours after Hadfields.

d) River Don at Rotherham peaks l-2 hours after Hadfields.

e) River Rother at Woodhouse Mill peaks 8 hours after Whittington.

f) River Dearne at Adwick peaks 8 hours after Barnsley.

9.1.1.2 In order to reduce the flood peak on the River Don it is necessary to reduce the flows on the River Rother and River Dearne during the period that the Don peak is passing the respective confluences. However due to the time of travel and in order to ensure a positive effect, it is necessary to regulate while the upstream stations are still rising.

9.1.2 Rother Regulators

9.1.2.1 The operation of the Rother Regulators is on the following basis:

a) Canklow Regulator should be used when the flow at Hadfields on the River Don exceeds l30 cumecs (Level 32.0m), which is approximately a l in 5 year event.

b) The flow on the River Rother passing Canklow should be limited to 40 cumecs.

c) Meadowgate and Woodhouse Mill Regulators should be used to limit the flow reaching Canklow to 50 cumecs.

9.1.2.2 This allows Canklow to operate for a period in excess of 20 hours before reaching capacity. For most events on the River Don this period would be long enough to allow the Don peak to have passed Rotherham.

9.1.3 Dearne Regulator

9.1.3.1 In the same way the operation of Bolton Regulator is on the following basis:

a) Bolton Regulator should be used one to two hours after the flow at Rotherham (Bow Bridge) has reached 2.8m which is approximately a l in 5 year event.

b) The flow on the River Dearne passing Bolton should be limited to 40 cumecs.

c) Bolton Regulator has been fixed in the open position until a decision has been made following the results of the Regulator. **This Regulator should not be used during a flood event.**

9.1.4 Operational Sequence

9.1.4.1 Thus, the Regulators would be operated in the following sequence:

1) Canklow
2) Meadowgate
3) Woodhouse Mill.
4) Dearne Mouth Sluice.

It is anticipated that one Ops Delivery gang will now be used to check each site at the start of the remote operation procedure, to ensure that they can be operated safely on site. Once the relevant gate has been checked and is in the water, then the relevant operational instructions in the vicinity can be carried out before attending the next site under the direction of the FIDO.

Consult Emergency Response Procedures Manual – Yorkshire S&W Volume 2Y D&A for specific site operations required.

If a decision is made to operate this structures on site please consult Emergency Response Procedures Manual – Yorkshire S&W Volume 2Y D&A for risk assessments and detailed operating instructions.

9.1.5 Summary Of Operating Criteria For River Regulators

Regulator	Manning Level	Operating Range	Regulating Flow
Canklow	IF Hadfields>= 1.3	IF Hadfields >= 1.8 and event NOT snowmelt OR IF Hadfields >= 2.1 and event IS snowmelt	40 Cumecs
Meadowgate	IF Whittington is >= 2.55 AND Hadfields >= 1.3 OR IF Woodhouse Mill is >= 2.36 AND Hadfields >= 1.3 OR IF Hadfields is >= 1.8	IF Whittington is >= 3.35 AND Hadfields >= 1.3 OR IF Woodhouse Mill is >= 2.66 AND Hadfields >= 1.3 OR IF Canklow is operated AND Meadowgate d/s >= 35.7	60 Cumecs
Woodhouse Mill	IF Meadowgate u/s >= 4.7 OR IF Meadowgate is inoperable AND Woodhouse Mill d/s is >= 2.36 OR IF Meadowgate is inoperable AND Whittington is >= 2.55	IF Woodhouse Mill d/s is >= 2.66 AND Hadfields >= 1.3 OR IF Meadowgate u/s is >= 5.4	60 Cumecs
Dearne Mouth	IF Rotherham is >= 2.9 OR IF Mexborough Lock is >= 4.35	IF Mexborough Lock is >= 4.48	20-50 cumecs taken out of River Don

9.1.6 Emptying Sequence

9.1.6.1 The sequence of emptying the regulators is designed to ensure

Water is not evacuated too rapidly causing flooding problems downstream

Canklow is evacuated first, as this would need to be used first in the event of a secondary peak.

9.1.6.2 Evacuation of the washlands occurs ‘naturally’ as the flood recedes by the maintenance of the regulated flow.

9.1.6.3 Once Hadfields drops below 1.3m, evacuation at Canklow can be accelerated by maintaining a downstream level of 27.4m AOD. This should be maintained for up to 24 hours prior to accelerating release from Woodhouse Mill and Meadowgate.

9.1.6.4 After 24 hours, evacuation of Woodhouse Mill and Meadowgate washlands can also be accelerated. Both regulators can be operated simultaneously to allow a downstream level of 2.9m at Woodhouse Mill and a downstream level of 36.3m AOD at Meadowgate.

9.1.6.5 Eventually both gates can be fully opened, secured and left.

9.2 RIVER ROTHER – CANKLOW REGULATOR

9.2.1 LOCATION:

NGR is SK 434 897

Figure 9-1 is a location plan.

Refer to Vol 2Y D&A for risk assessment.

Figure 9-2 is a set of operating curves.

Figure 9-3 is a stage/discharge curve.

Canklow Regulator is a single, electrically powered vertical lift gate (9.lm wide by 6.7m high) spanning the River Rother immediately downstream of the A630 near junction 33 on the M1. It is approximately 3.5 Km u/s from the confluence of the River Rother and the River Don at Rotherham.

9.2.2 Purpose

9.2.2.1 The closing of the Regulator gate limits the flow of the Rother

9.2.2.2 This allows the Rother flood peak to be delayed until after the River Don flood peak has passed Rotherham. The closing of this Regulator gate allows the filling, over spillways, of the 7 washland compartments to a maximum level of 29.5m at the gate. This provides a total storage capacity of 1,520,600 cubic metres. The careful use of this storage can have a significant effect on flood levels on the River Don. It will be the most frequently used of the Rother Regulators.

9.2.3 Access

Key No.815

9.2.3.1 Vehicle Access to the Regulator is via the A631 (West Bawtry Road), near its junction with the A630 and a small turn off to the south is signposted “Brinsworth Switching Station”. A small metalled road leads to the Switching Station. Turn right immediately after passing under the A630 to the Regulator.

9.2.4 Structure

9.2.4.1 The sluice has the following elements:

a) An electrically operated vertical lift gate (9.1m x 6.7m)

b) The motor and gearbox are housed in a brick hut. This is located on the north side of the river, connected by a walkway to the Control House

c) A brick control house located on the south side of the river, contains the control panel, and an upstream and downstream float well. The downstream well has a Negretti & Zambra Recorder and a Dynamic Logic Telemetry device.

9.2.5 Control Panel

9.2.5.1 A single control panel is provided including a power on/off switch and, raise, lower and stop buttons.

9.2.6 Operating Criteria

9.2.6.1 Canklow Regulator should be operated in relation to Hadfields Gauging Station on the River Don

9.2.6.2 The Regulator should be MANNED when a level of 1.3m is reached at Hadfields with the river rising rapidly and rainfall continuing.

9.2.6.3 The regulator should be OPERATED when a level of 1.8m is reached at Hadfields. In general, flood rise at Hadfields is rapid, and therefore operation should not be delayed. However should the event produce a slow rise (i.e. snow melt) operation can be delayed until a level of 2.1m is reached. Above this level it is possible to reach critical conditions at Doncaster because of the additional flow from the Rother and Dearne. The Rother and Dearne flows should however be assessed to determine their likely effect on the Don flow. Regulation may not be necessary if the event is predominately Don based with low flows in the other rivers.

9.2.7 Preliminary Checks

9.2.7.1 On manning the Regulator, the gate should be checked to ensure that it is working correctly.

9.2.7.2 This Regulator is now operated remotely from the Area Incident Room.

9.2.7.3 There are a number of escape sluices and culverts that need to be checked prior to operating the washlands. The location map Figure 9-1 shows their locations. Some of the escape sluices are fitted with safety grills. These grills need to be lowered BEFORE the washland operates. Failure to do this will make emptying the washlands difficult.

9.2.8 Filling The Washlands

9.2.8.1 An inspection of the flood defences at Catcliffe and Treeton should be carried out checking particularly the outfalls and drainage systems on Orgreave Road and the outfall at Mill House. Liaise with Rotherham MBC and arrange pumping if leakage or flooding due to surface water not being able to discharge

9.2.8.2 When the action level of 1.8m at Hadfields is reached the gate should be lowered until the downstream water level equals 26.6m (40 cumecs). If the downstream water level is below this level take no action until it reaches that level

9.2.8.3 As the upstream water rises it will be necessary to close the gate further in order to counter the effect of the greater level. At all times the operator should try to keep the downstream level at 26.6m. Should the upstream level reach the maximum retention level of 29.5m a gate opening of 0.86m should give a downstream level of 26.6m.

9.2.9 Operation At Maximum Capacity

9.2.9.1 In order to prevent the upstream level exceeding 29.5m, when it reaches 29.2m the gate should be opened to allow a greater flow to pass.

9.2.9.2 The operator should try to maintain an upstream level between 29.2m and 29.5m, to allow as much water out as is coming into the system. As soon as possible the operator should close the gate again to maintain the 26.6m downstream level.

9.2.10 Operation Curves

9.2.10.1 When operating at or near the maximum retention level of 29.5m, the operator should consult Figure 9-2. This graph shows the relationship derived from Model Tests between gate opening, flow and downstream water level, for an upstream water level of 29.57m. (97 ft.).

9.2.10.2 For a given gate opening, the intersection with the downstream Stage/Discharge line gives the flow passing and the downstream water level. The graph also indicates a safety limit for opening the gate. If this gate is operated too much or too rapidly, damage to the tail bay of the structure may result.

9.2.11 Treeton Washlands

9.2.11.1 The Canklow Washlands (A,B,D/E, F,G see Figure 9-1 would require in the order of a 1 in 100 year event to operate the spillway without the Regulator being used.

9.2.11.2 The Treeton Washlands, however, overtop at a much lower flow. The west washland (right bank) would overtop at 85 cumecs.

9.2.11.3 If, prior to operating the regulator, a level of 27.5m downstream (75 cumecs) is recorded, then an inspection of the Treeton Washland should be carried out. With the operation of the regulator, inspections should be carried out at regular intervals.

9.2.11.4 As Treeton West Washland fills, it will overtop Treeton Lane and the Area Incident Room should be informed as this condition approaches. Canklow D/E & F washlands also flood Long Lane and similarly the Area Incident Room should be warned.

9.2.12 Evacuating The Washlands

9.2.12.1 As the flood recedes, maintain a downstream level of 26.6m AOD (40 cumecs).

9.2.12.2 Once the level at Hadfields is below 1.3m, Canklow regulator can be opened further to maintain a downstream level of 27.4m AOD (73 cumecs).

9.2.12.3 Eventually, Canklow can be fully opened at which time the Regulator can be secured and left. The washlands evacuate floodwater via a number of escape sluices equipped with non-return valves. Therefore they will discharge automatically.

9.2.12.4 These instructions are designed to prevent water from the washlands discharging too rapidly and causing problems downstream. The sequence of emptying is designed to ensure that Canklow washlands are evacuated first as these will be the first to be used if there is a second flood peak.

9.2.13 Authorisation And Communications

9.2.13.1 The manning and operation of Canklow Regulator can be authorised by the FIDO if the above criteria are met. If the FIDO is unavailable, then authorisation should be sought from the ABC or AFIDO.

9.2.13.2 The sluice should be manned by four persons. A report to the Area Incident Room should be made every hour giving updates to the Ops Instructions being carried out in the area and the level at Catcliffe Bridge gauge board.

9.2.14 Power Failure

9.2.14.1 In the event of power failure, A generator is located on site that is controlled remotely from the Area Incident Room.

Figure 9-1 Canklow Regulator Location Plan

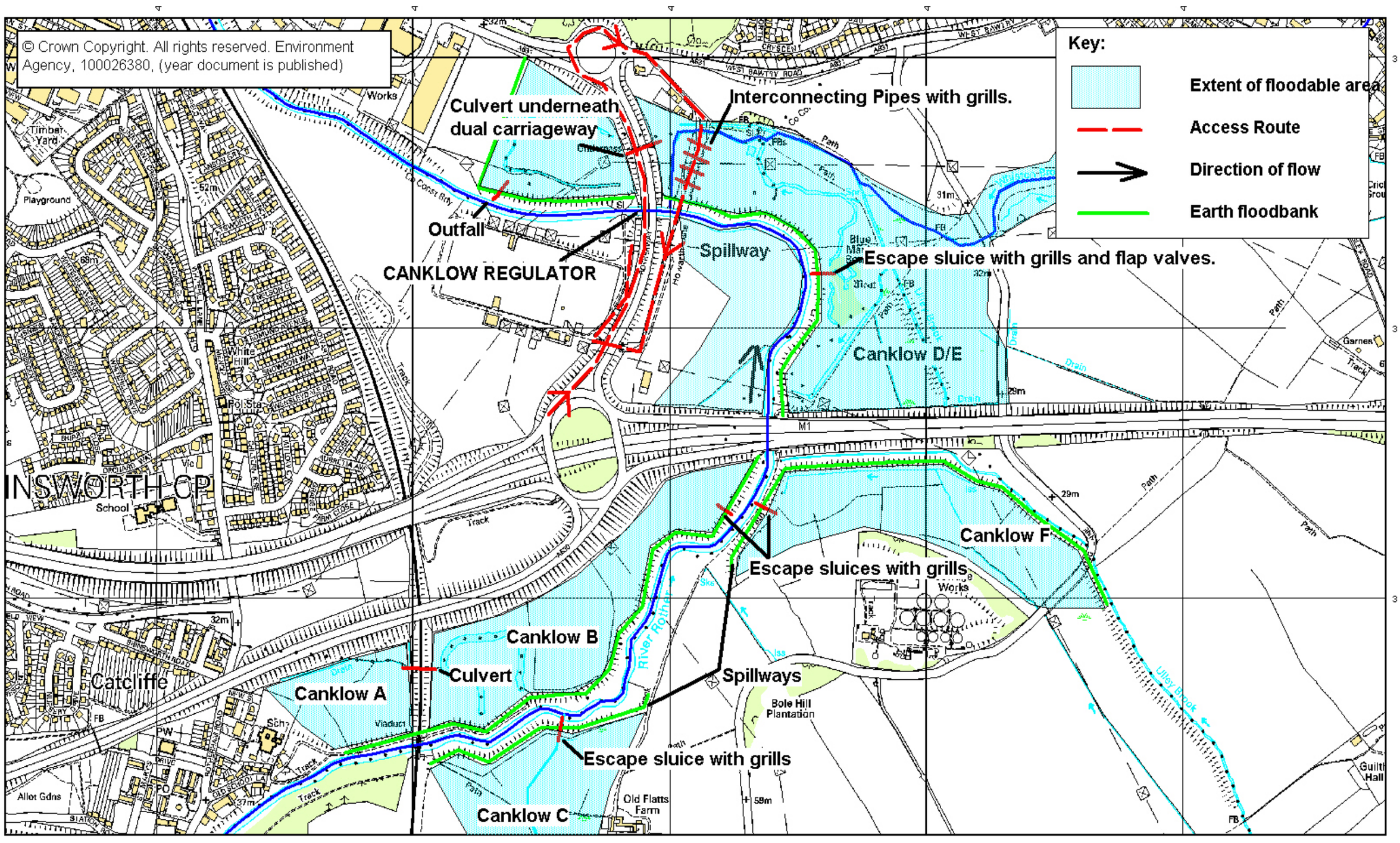


Figure 9-2 Operating Curves Canklow Regulator

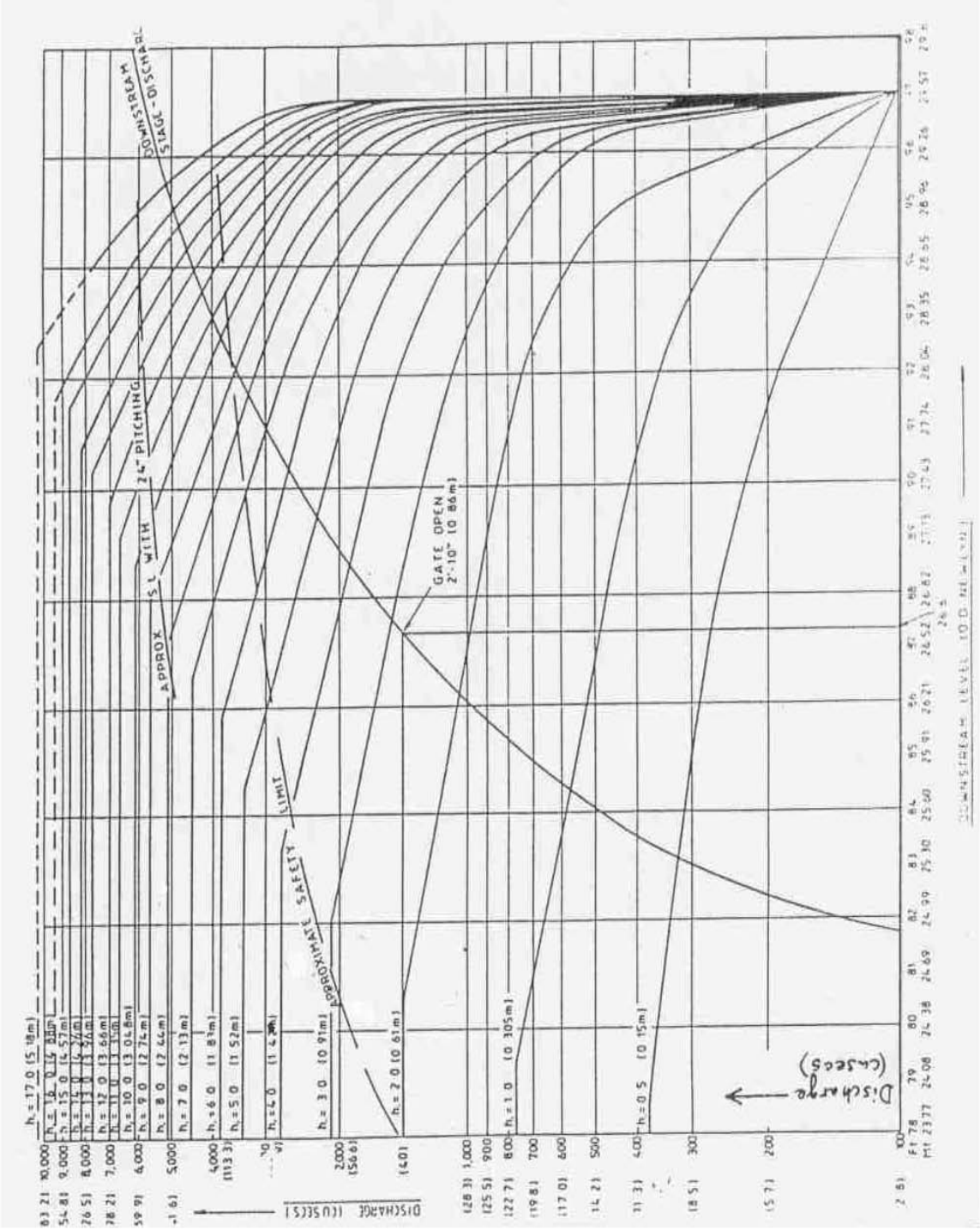
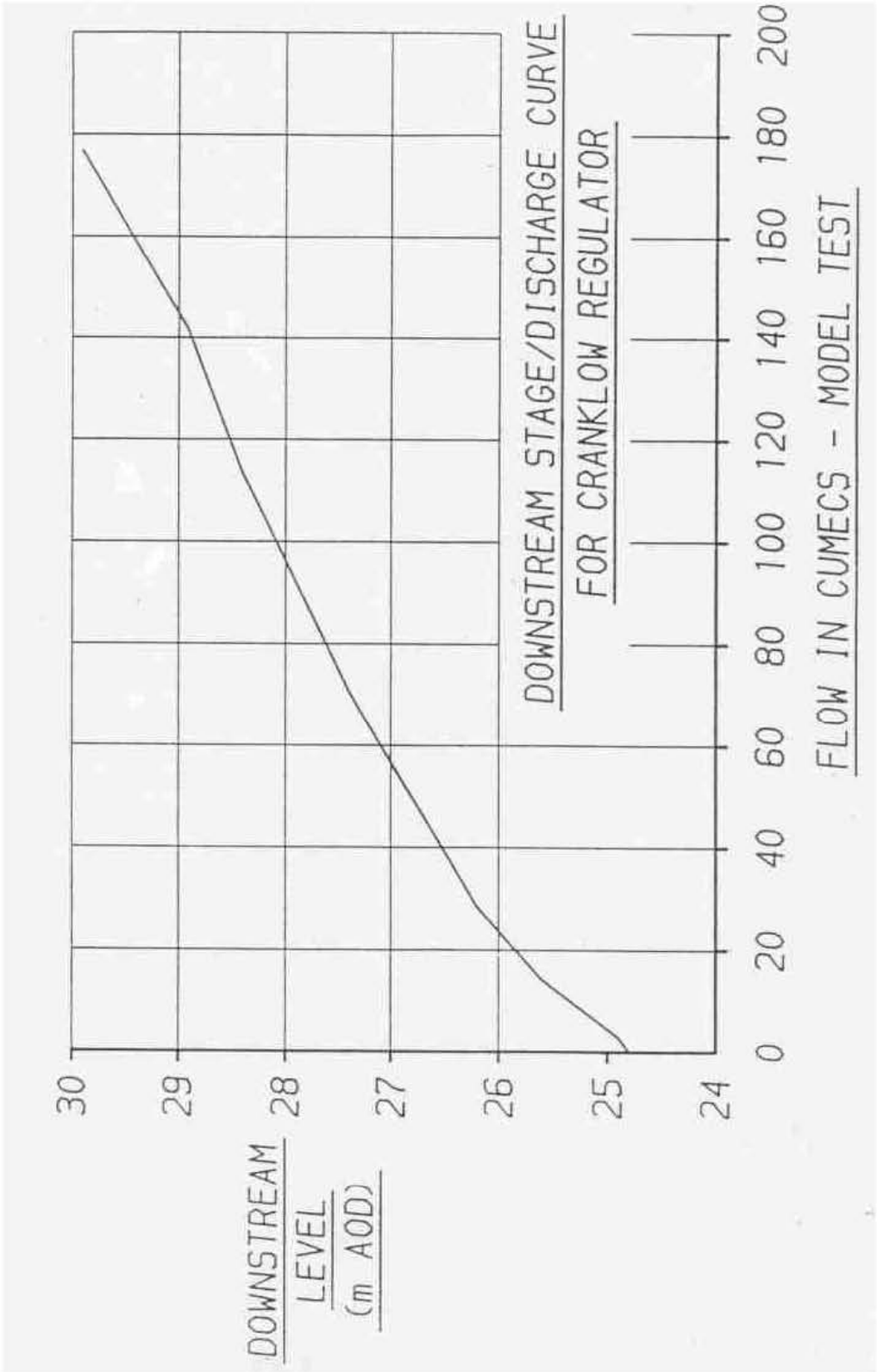


Figure 9-3 Stage/Discharge Curve (Canklow Regulator)



9.3 RIVER ROTHER - MEADOWGATE REGULATOR

9.3.1 Location

NGR is SK 455 828

Figure 9-4 is a location plan

Refer to Vol 2Y D&A for risk assessment

Refer to Vol 2Y D&A for a layout of the control panel

Figure 9-5 is a set of operating curves

Figure 9-6 is a stage/discharge curve

9.3.1.1 Meadowgate Regulator is a single fish belly bottom hinged tilting gate, operated by a single hydraulic ram electrically powered. The gate is 12.0m wide by 4.0m high and spans the River Rother. When not in use it lies on the bed of the river. It is situated in the centre of the Rother Valley Country Park, 1.5 Km downstream of Killamarsh and 4 Km upstream of Woodhouse Mill Regulator.

9.3.2 Purpose

9.3.2.1 The raising of the Regulator gate limits the flow of the Rother. This allows the Rother flood peak to be delayed and so increase the length of time that the Canklow Regulator can be used to limit the flow of the Rother into the River Don at Rotherham.

9.3.2.2 The raising of the Regulator gate impounds flood water, filling two washland compartments to a maximum level of 40.5m at the gate.

9.3.2.3 This provides a total storage capacity of 1,100,000 cubic metres.

9.3.3 Access

Key No. 815

9.3.3.1 Vehicle access to the Regulator is via the A618, the Swallownest to Killamarsh road. The “Rother Valley Country Park” is signposted off this road. The main park road leads to a bridge over the River Rother where the Regulator is sited.

9.3.4 Structure

9.3.4.1 The Regulator has the following elements.

a) A bottom hinged, fish belly tilting gate (12m x 4m) operated by a single hydraulic ram which is electrically powered.

b) A brick control house on the east side of the river contains the electrical motor, the gearbox and hydraulic motor and pump. A control panel which includes upstream and downstream charts, and a gate position indicator is also contained in the Control House.

c) A 600m diameter by-pass culvert is provided for maintenance on the west side of the river. A penstock on the downstream end controls the flow and is operated with a detachable wheel kept in the Control House. A 2m x 3.5m chamber is provided midway on the bypass culvert.

d) A road bridge spans the river immediately upstream of the Regulator. It is an integral part of the structure.

9.3.5 Control Panel

9.3.5.1 Lock check valves are fitted on the pipes from the hydraulic pump unit. The valves (2 in number.) must be opened before operating the regulator gates.

9.3.5.2 The valves are open when the lever handles are positioned in line with the adjacent pipework. The handles can be padlocked in position. The padlock keys are located in a wall box beside the entrance door.

9.3.5.2 Equipment

The control panel is fitted with the following equipment:

a) Five pole panel isolator

b) Motor control comprising of 5.5 Kw (7.5 HP) DOL starter, fuses and overloads.

c) Indicating lamps for:
   (i) Motor running
   (ii) Overload Trip/Motor Failed
   (iii) Low Oil Level
   (iv) Ultra Low Oil Level
   (v) High Oil Temperature
   (vi) Choked Filter
   (vii) Power Available
   (viii) Gate fully lowered
   (v) Gate fully raised

d) 220 AC/l2 Volt DC Transformer/Rectifier

e) “Raise” push button

f) “Lower” push button

g) Monitoring and recording equipment comprising:
   (i) Upstream chart recorder
   (ii) Downstream chart recorder
   (iii) Gate position indicator
   (iv) Model 86l Gemini AC/DC CONVERTER
   (v) 2 – off Metrosil Varistors
   (vi) 3 - off E to I convertors

h) Ammeter

i) Isolator for electric motor and cubicle heaters

j) “Hand - Off - Auto” Selector Switch

k) Clear contacts for:

(l) Remote Alarm for Low Oil Level

(2) Remote Alarm for High Oil Temperature

(3) Remote Alarm for Choked Filter

l) Panel heater with on/off switch.

For layout of Panel see Vol 2Y D&A

9.3.5.3 Alarm Indications

9.3.5.3.1 Low Oil Level Switch

9.3.5.3.1.1 This is the uppermost level switch, should the oil level drop to this level alarm indication is by the lamp on control cubicle, and also by remote indication.

9.3.5.3.2 Ultra-Low Oil Level Switch

9.3.5.3.2.1 This is the lower switch in the tank ,and if oil level continues to fall to this level, the control unit will shut down and indication is by lamp on control cubicle.

9.3.5.3.3 High Oil Temperature

9.3.5.3.3.1 The tank temperature switch will trigger the high temperature alarm. This is indicated on the control panel and by remote.

9.3.5.3.4 Choked Filter

9.3.5.3.4.1 Should the filter element become over-contaminated a lamp will show on the panel and remote indication will also be signalled.

9.3.5.3.5 Emergency Electrical Supply

9.3.5.3.5.1 A l2 volt, ten cell Nickel Cadmium Battery with l20 ampere hour rating is connected to the control cubicle and will be automatically switched on the failure of mains control circuit power supply.

9.3.5.3.5.2 Battery charging is a 4 ampere rated trickle charger.

9.3.6 Operating Criteria

9.3.6.1 Meadowgate Regulator should be operated in relation to Whittington and Woodhouse Mill Gauging Stations on the River Rother and Hadfields Gauging Station on the R Don.

9.3.6.2 The Regulator should be **manned** when either:

a) IF Whittington is >= 2.55m AND Hadfields >= 1.3m.

OR

b) IF Woodhouse Mill is >= 2.36m AND Hadfields >= 1.3m.

OR

c) IF Hadfields is >= 1.8m.

9.3.6.3 The Regulator should be OPERATED when:

a) IF Whittington is >= 3.35m AND Hadfields >= 1.3m.

OR

b) IF Woodhouse Mill Gauging station is >= 2.66m AND Hadfields >= 1.3m.

OR

c) IF Canklow is operated AND Meadowgate d/s >= 35.7m AOD

9.3.7 Preliminary Checks

9.3.7.1 On manning the Regulator the gate should be checked to ensure that it is working correctly.

9.3.7.2 **This gate is now operated from the Area Incident Room, however, as a contingency it may have to be operated from site.**

9.3.7.3 See Section 9.3.5 Ref. opening of check valves before operating the Regulator.

9.3.7.4 An inspection of the Killamarsh flood defences at the rear of Washland 'B' and at Forge Lane should be carried out and repeated at regular intervals. Arrange pumping if leakage occurs. Also inspect County Dyke outfall. A number of the culverts are fitted with safety screens. These need to be checked in order to ensure they are clear prior to the washland operating. Figure 9-4 shows the location of all outfalls to check.

9.3.8 Filling The Washlands

9.3.8.1 When the action level for Meadowgate Regulator has been reached and confirmed by the Woodhouse Mill level, then the gate should be raised using the "Hand" setting on the control panel.

9.3.8.2 The gate should be raised to the 0.5m position and then the operator should wait until the upstream level has reached the 60 cumec level given for that gate height on the Operating Curves (Figure 9-5) ie for a gate height of 0.5m and a flow of 60 cumecs, the upstream level should be 36.8m. When this is reached the gate should be raised a further 0.5m to the 1.0m position and the process repeated.

Raise to	0.5m Gate position – wait – U/S	36.80m AOD
1.0m	37.3	
1.5m	37.8	
2.0m	38.5	
2.5m	39.0	
2.7m	39.2	

9.3.8.3 When the gate height reaches 2.7m, the spillway into Washland 'A' should operate with incoming flows greater than 50 cumecs. This should be confirmed by inspection. Washland 'A' will fill until the level inside reaches that of the spillway (4m stage / 38.8m AOD) after which the spillway (also at 4m / 38.8m AOD) into Washland 'B' will operate. When Washland 'B' has filled to spillway level then both washlands will rise together to the normal retention level of 40.5m.

9.3.8.4 It is anticipated that there will be a significant period with the gate at the 2.7m position during which the washlands are filling to the 38.8m level. The gate should then be adjusted to limit the outflow to 60 cumecs using the Operation

Curves (Figure 9-5) the downstream Stage Discharge Curve (Figure 9-6) and the level at Woodhouse Mill.

9.3.9 Operation At Maximum Capacity

9.3.9.1 In order to prevent the upstream level exceeding 5.7m / 40.5mAOD, when the level reaches 5.4m/40.2m, the gate should be lowered to allow a flow greater then 60 cumecs to pass. The operator should try to maintain an upstream level between 40.2m and 40.5m allowing as much water out as is coming into the system. This is particularly important as the emergency spillway into the Recreation Lake (Washland 'C') operates at 40.8m. As soon as possible the operator should raise the gate in order to resume the 60 cumecs flow limit.

9.3.9.2 A decision must then be made to either use the Recreation Lake or bring Woodhouse Mill into operation.

9.3.10 "Auto" Setting On The Control Panel

9.3.10.1 The "Auto" setting on the Control Panel does not operate correctly and therefore should not be used.

9.3.11 Evacuating The Washlands

9.3.11.1 As the flood recedes it will be necessary to lower the gate to maintain the 50 cumec flow a downstream level of 35.8m AOD

9.3.11.2 Up to 24 hours after Hadfields has dropped below 1.3m the regulator can be adjusted to give a downstream level of 36.3m AOD allowing a greater flow to pass. This should be done at about the same time that Woodhouse Mill is also raised. This delay is designed to allow Canklow to evacuate first.

9.3.11.3 Eventually the gate can be fully lowered at which time the Regulator can be secured and left. The Washlands both evacuate through escape sluices fitted with non-return valves. Washland 'A' into the river, Washland 'B' into Washland 'A'. They will therefore discharge automatically.

9.3.12 Use Of Recreation Lake As Emergency Washland

9.3.12.1 The Recreation Lake (Washland 'C') can be used as an additional Washland in extreme circumstances. These circumstances would be when:

9.3.12.2 All the Regulated Washlands were full and flood at Doncaster was imminent

OR

9.3.12.3 A Flood Defence on the River Rother had failed and flooding of property was occurring making it necessary to limit the Rother flow to a low level.

9.3.12.4 The emergency spillway operates at a level of 40.8m and the maximum retention level is 4l.8m.

9.3.12.5 Allow to eventually equalise and return to normal gate position.

9.3.12.6 Lift the gate in 0.5m lifts until the spillway starts to operate.

9.3.13 Authorisation And Communications

9.3.13.1 The manning and operation of Meadowgate Regulator can be authorised by the FIDO if the above criteria are met. If the FIDO is unavailable then authorisation should be sought from the ABC or the AFIDO. The sluice Regulator should be attended by 4 persons, A report to the Area Incident Room should be made every hour giving the upstream and downstream levels at the regulator and the levels at Forge Lane, Killamarsh.

9.3.14 Power Failure

9.3.14.1 In the event of power failure, a generator is located on site which is remotely operated by the Area Incident Room. This generator may have to be operated from site.

Figure 9-4 Meadowgate Regulator Location Plan

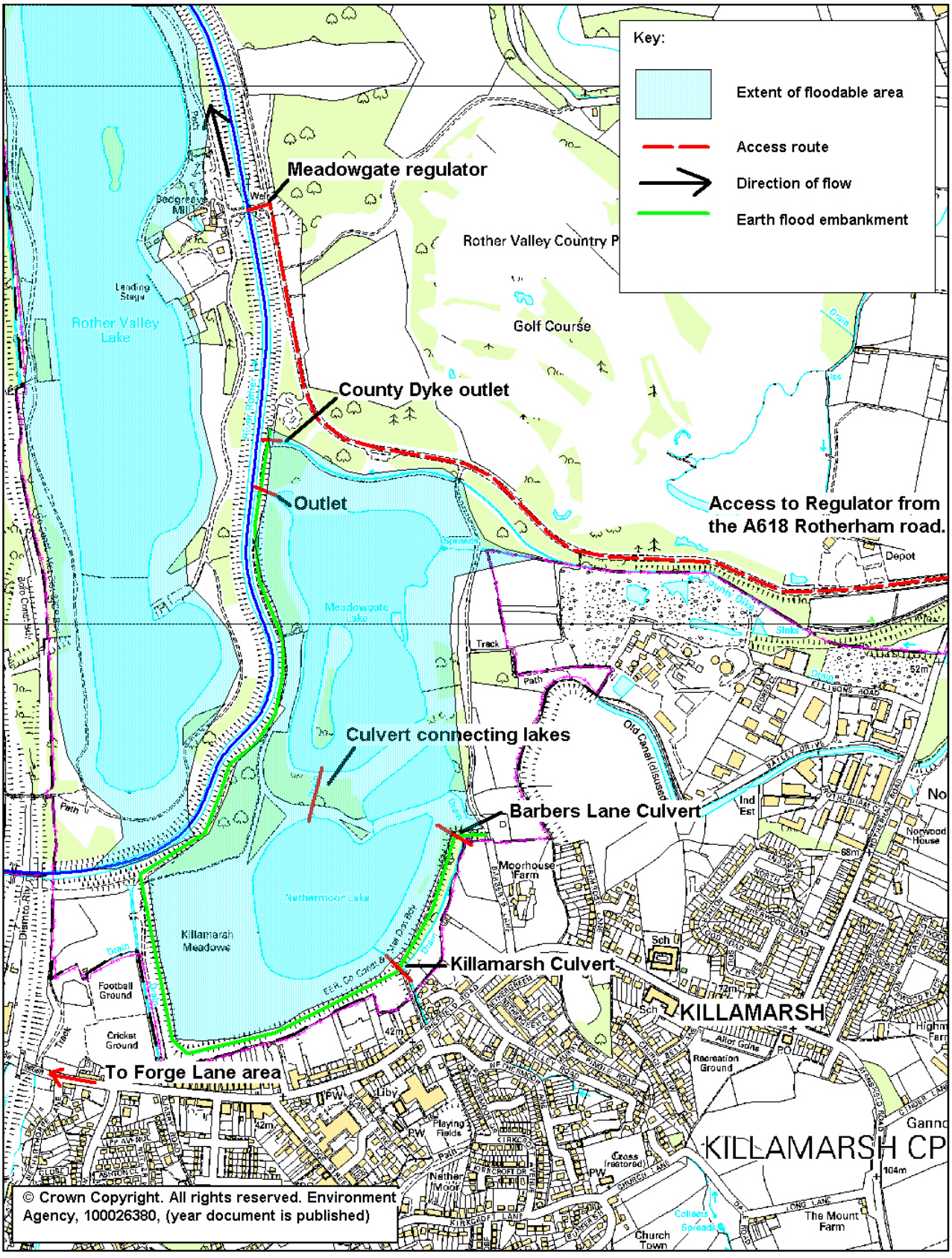


Figure 9-5 Meadowgate Regulator (Operating Curves)

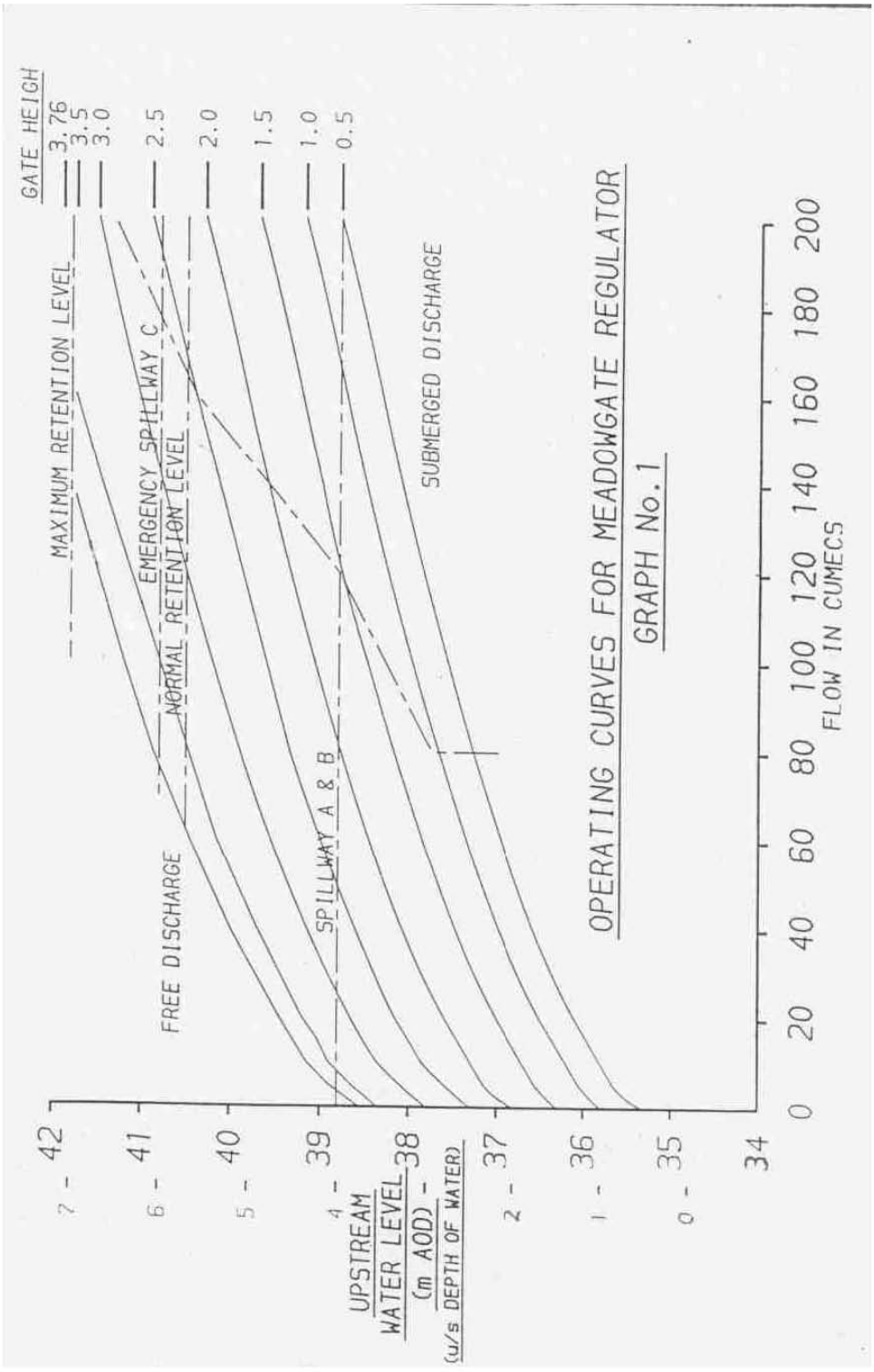
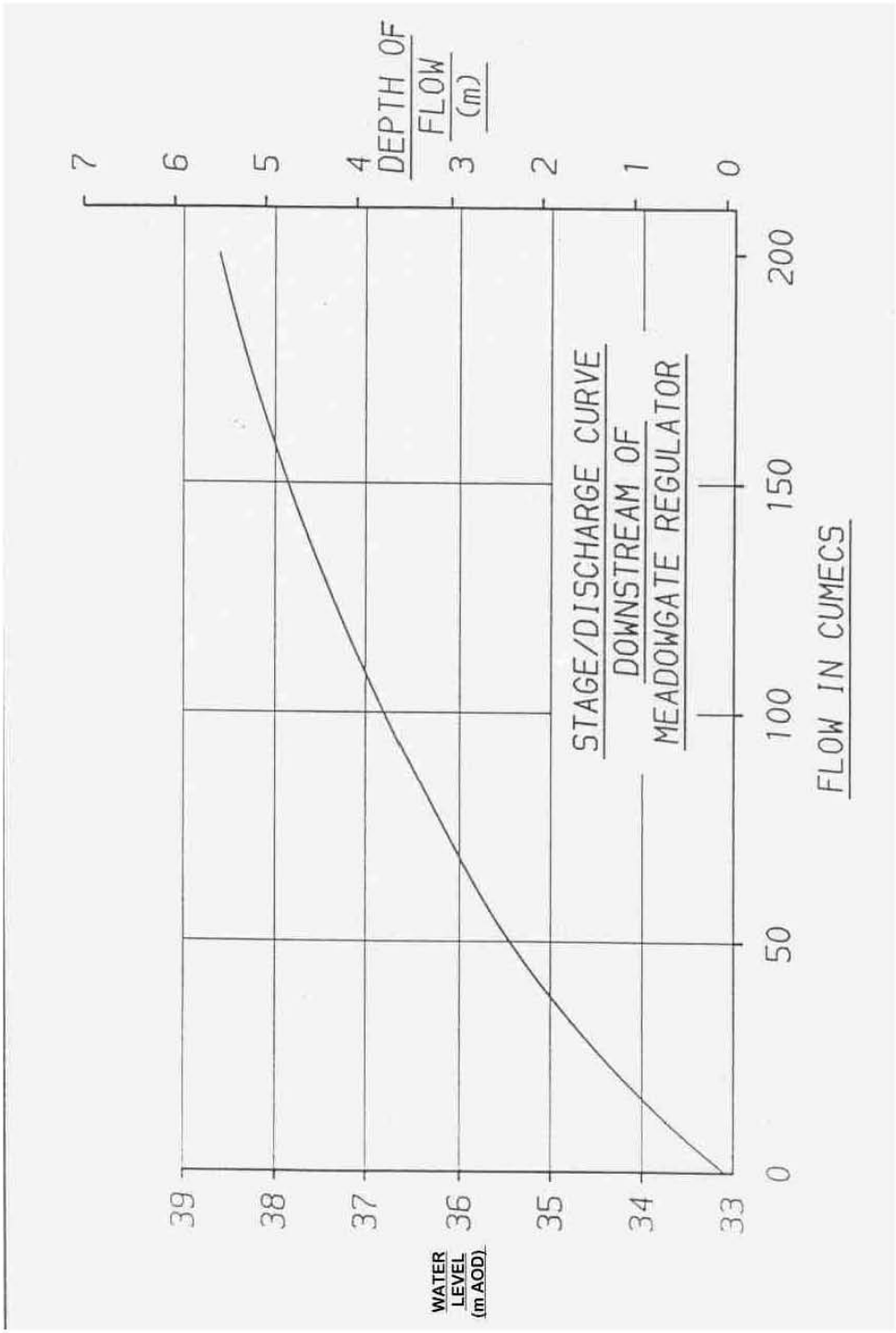


Figure 9-6 Meadowgate Regulator (Stage/Discharge Curve)



Intentionally Left Blank

9.4 RIVER ROTHER - WOODHOUSE MILL REGULATOR

9.4.1 Location

NGR is SK 433 856

Figure 9-7 is a location plan

Refer to Vol 2Y D&A is a risk assessment

Figure 9-8 is a stage/discharge curve

9.4.1.1 Woodhouse Mill Regulator is a single electrically powered vertical lift gate (13.4m wide by 4.9m high). The gate spans the River Rother, with the motors and gear box being sited on a platform above the gate. It is situated immediately upstream of the A57 at Woodhouse Mill, near Sheffield. The Regulator and its washland are sited downstream of the Meadowgate Regulator and upstream of the Canklow Regulator.

9.4.2 Purpose

9.4.2.1 The closing of the Woodhouse Mill gate impounds flood water in the washland immediately upstream, thus limiting the flow of the River Rother. This allows the Rother flood peak to be delayed and so increase the time that the Canklow Regulator can be used to limit the flow of the River Rother into the River Don at Rotherham.

9.4.2.2 Woodhouse Mill washland is a single low lying area divided by a railway embankment with flood arches. There are no floodbanks at the side of the river and flood waters therefore overspill, generally soon after the gate is closed. The maximum retention level is 34.3m OD, providing 339,800 cubic metres of storage. This is relatively small compared with the 1,520,600 cubic metres at Canklow and the 1,100,000 cubic metres at Meadowgate. Woodhouse Mill would only be used if Meadowgate washlands were full and overtopping the recreation spillway ,or Meadowgate were inoperable.

9.4.3 Access

Key No. 815

9.4.3.1 Vehicle access to the Regulator is from the A57 directly into car parks on either side of the gate. The control building is on the East side of the structure, and access to the platform above the gate is via an external ladder on the West side. The Padlock on the gate is a XZX206 key.

9.4.4 Structure

9.4.4.1 The sluice has the following elements:

a) An electrically powered vertical lift gate (13.4m x 4.9m).

b) A brick Control House containing the control panel, gate position indicator, upstream and downstream float wells, chart recorder and telemetry equipment.

c) A platform above the gate on which the motor and gearbox are sited.

9.4.5 Control Panel

9.4.5.1 A simple Control Panel is provided including a power on/off switch and Raise, Lower and Stop buttons. The gate position indicator is a mechanical device showing the gate opening in feet.

9.4.6 Operating Criteria

9.4.6.1 Woodhouse Mill Regulator should be operated in relation to levels at Whittington Gauging Station, Meadowgate Regulator and Hadfields Gauging Station on the River Don.

9.4.6.2 The Regulator should be MANNED when either:

a) Meadowgate Regulator upstream levels are greater than 4.7m stage.

OR

b) Meadowgate Regulator is inoperable AND Woodhouse Mill downstream is greater than 2.36 m stage.

OR

c) Meadowgate Regulator is inoperable AND Whittington is greater than 2.55m stage.

9.4.6.3 The Regulator should be OPERATED when conditions on the River Don require the operation of the Canklow Regulator and either of the following conditions are met:

a) Woodhouse Mill downstream is greater than 2.66m stage AND Hadfields is greater than 1.3m stage.

OR

b) Meadowgate upstream is greater then 5.4m stage.

9.4.7 Preliminary Checks

9.4.7.1 On manning the Regulator the gate should be checked to ensure that it is working correctly. Upstream and downstream water levels should be taken every 15 minutes.

9.4.7.2 An inspection of the outfalls at the upstream end of the washland should be carried out, particularly the two carrying surface water from Beighton under the railway. The position of these two outfalls is shown on the location plan, Figure 9-7.

9.4.7.3 The downstream outfall is that for Shire Brook and is unflapped. The Southern bank of Shire Brook at the entrance to the railway culvert, has been levelled at 34.9m compared with the retention level of 34.3m. This inlet to the outfall culvert should be checked regularly for blockages. There is a history of flooding in Beighton from Shire Brook, and it must be ensured that the operation of the Regulator does not make the situation worse. Sandbagging or clearing debris may be required.

9.4.8 Filling The Washland

9.4.8.1 When the action level has been reached, the gate should be lowered to reduce the downstream level to 2.6m / 31.32m (60 cumecs). As the water level upstream rises the operator will have to adjust the gate position to maintain this downstream level. Very quickly the riverbanks will overtop and the floodplain area will start to fill.

9.4.8.2 The maximum retention level in the washland is 34.3m, and this should be strictly adhered to as there is a risk of flooding to property if it is exceeded. These properties are protected by a small floodbank and this should be inspected. Therefore, when the upstream water level reaches 5.02m / 34.0mAOD, the gate should be opened to allow a flow greater than the 60 cumecs to pass. The operator should try and maintain the upstream water level at the 5.02m / 34.0m AOD stage

9.4.8.3 When the washland has filled the regulator should be passing the same flow out as is coming in.

9.4.9 Evacuating The Washland

9.4.9.1 Assuming the washland has been filled, as the flood begins to recede the gate should be closed to again restrict the flow to 60 cumecs at the 2.55m level.

9.4.9.2 This level should be maintained until up to 24 hours after Hadfields has dropped below 1.3m. The regulator may then be further opened (in parallel with Meadowgate) to allow a downstream level of 2.9m.

9.4.9.3 The washland empties directly into the river and the evacuation must be strictly controlled. When the upstream and downstream water levels equate, then the gate may be fully raised and safely left.

9.4.10 Authorisations And Communications

9.4.10.1 The manning and operation of the Woodhouse Mill Regulator can be authorised by the FIDO if the above criteria have been met. If the FIDO is unavailable, then authorisation should be sought from the ABC or the AFIDO.

9.4.10.2 The Regulator should be manned by 4 persons. A report to the Area Incident Room should be made every hour giving the upstream and downstream water levels at the regulator and at Rotherham Road at the upstream ends of the washland.

9.4.11 Power Failure

9.4.11.1 In the event of power failure, a generator is located on site, this is controlled remotely from the Area Incident Room, but as a contingency may have to be operated from site.

Figure 9-7 Woodhouse Mill Regulator Location Plan

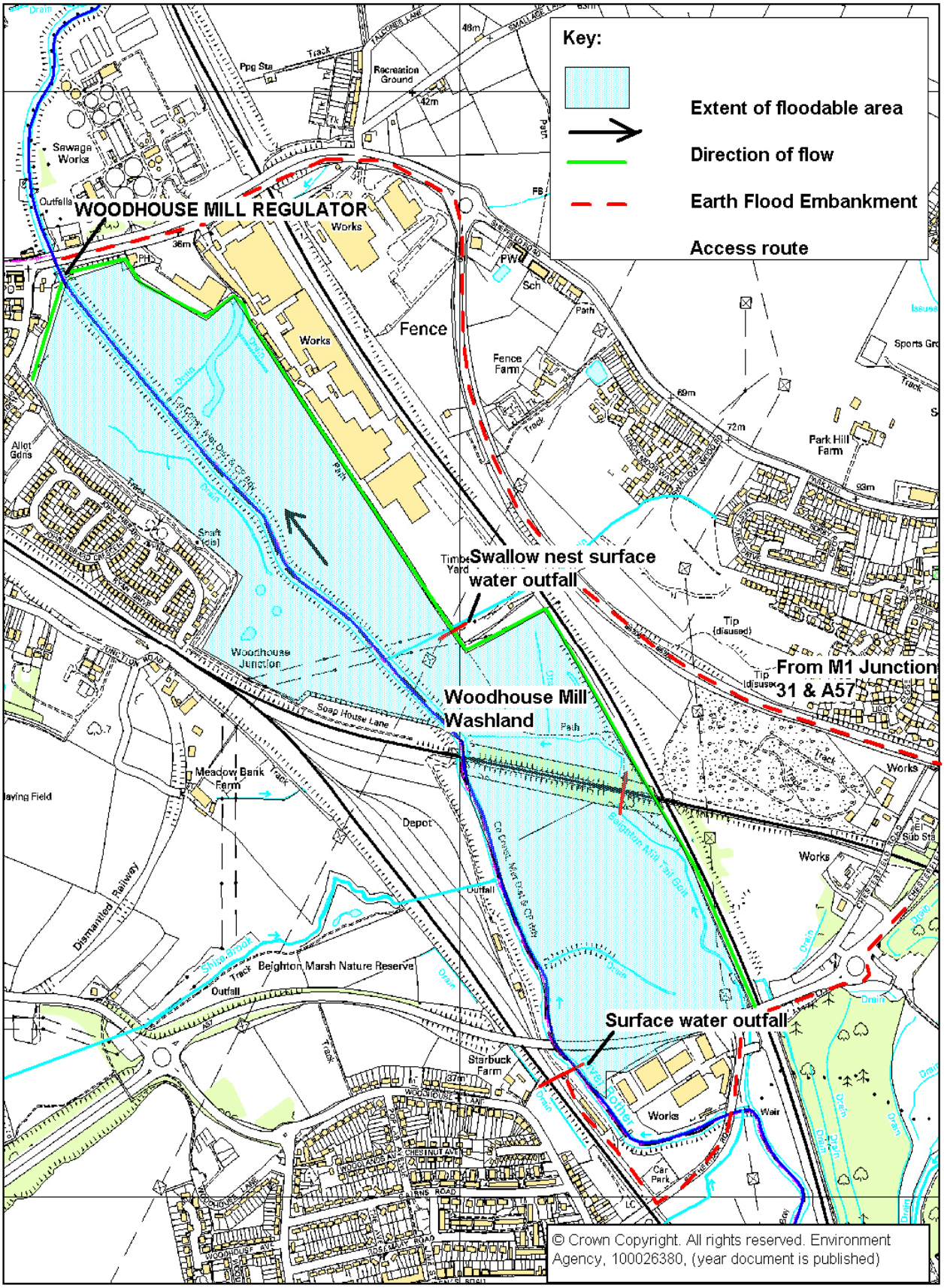
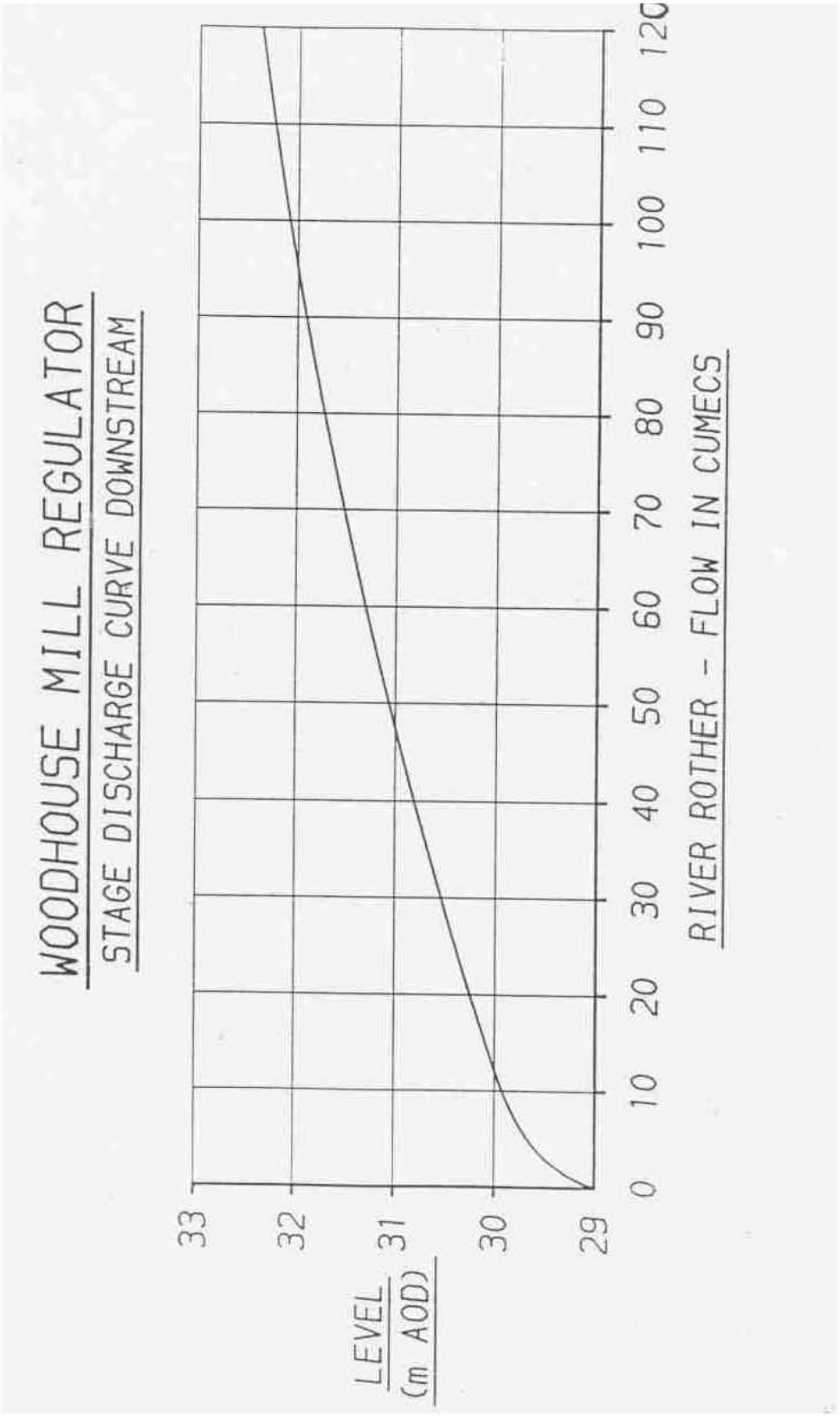


Figure 9-8 Woodhouse Mill Regulator (Stage/Discharge Curve)



Intentionally Left Blank

9.5 RIVER DON – DEARNE MOUTH SLUICES & PASTURES ROAD P.S.

9.5.1 LOCATION

NGR is SE 504 004

Figure 9-9 is a location plan.

Refer to Vol 1Y D&A for a risk assessment.

Figure 9-10 is a stage/discharge curve

Figure 9-11 is a flow/level correlation (Dearne and Don)

Figure 9-12 is a set of operating curves

9.5.1.1 Dearne Mouth Sluices consist of four electrically operated penstocks, 6ft. wide x 5ft. high (1.83m. x 1.52 m.) at the side of the River Dearne some 800m. upstream of its confluence with the River Don. There is a generator on site that provides the power. This generator is remotely controlled from the incident room, however, it can be operated from site.

9.5.2 Purpose

9.5.2.1 The opening of the penstocks allow floodwaters to fill a single washland compartment to a level equal to that of the river and to a maximum of 14.63m. A.O.D. providing a total storage capacity of 1,415,800 cubic metres. This storage capacity should be used to delay the rise in flood level on the River Don and thus reduce the possibility of flooding downstream particularly at Doncaster.

9.5.3 Access

Key No. 815

9.5.3.1 Vehicle access to the sluice can be achieved via a gated track on the south of Pastures Lane following the edge of the British Coal colliery tip. Pedestrian access may also be gained from the disused railway embankment where a footpath leads to the sluice control house. This access is usable only with normal flows in the River Dearne. This latter access and car park, however, must not be used once the washland has begun to fill, access is then only possible via the tip track approaching from Cadeby Village.

9.5.4 Structure

9.5.4.1 The sluice has the following elements:-

a) 4 No. manually operated Penstocks (1.83m. x 1.52m.).

   Each penstock is raised and lowered individually by means of a detachable winding handle operated manually.

b) A brick control house sited at the southern end of the sluice containing winding handles and Negratti Zambra water level recorder and telephone.

c) Low level washland drain outfall consisting of a flapped outlet to the river and a penstock on the washland side of the flood embankment. This outfall, however, is now redundant and is no longer required for operational purposes.

9.5.5 Operating Criteria

9.5.5.1 Dearne Mouth Sluices should only be operated in the event of a major flood on the River Don where flows in excess of 300 cumecs are expected and the washlands at Sprotborough and Hexthorpe are likely to come into operation. It is likely that by the time that Dearne Mouth Sluices are required that the Regulator at Bolton Ings and the Regulators on the River Rother will also have been used.

9.5.5.2 **These sluices are operated remotely from the Area Incident Room, however, as a contingency may have to be operated from site.**

9.5.5.3 The sluice should be manned when a level of 25.9m. A.O.D. (235 cumecs) is reached at Bow Bridge, Rotherham. Immediately the washland should be primed with floodwater to a depth of 11.28m. A.O.D. This operation should be carried out in order to prevent scour when the sluice is used at the peak of the flood. Priming of the washland should be carried out slowly using only two of the penstocks. Check water level in relation to Pastures Road.

9.5.6 Operation Of Sluices

9.5.6.1 A level of 4.35m may be expected at the level site at Mexborough Lock 6-7 hours after the level of 2.9m. was reached at Bow Bridge, Rotherham. Should flood level at Mexborough Lock rise further than this level and approach 4.48m then the operation of the sluice should commence.

9.5.6.2 Referring to the characteristic curves for Dearne Mouth Sluice (Figure 9-12) the safe operation of the sluices can be determined. The curves show the discharge through the sluice into the washland with reference to the washland (downstream) water level, the river (upstream) water level and the penstock opening. For a given washland water level and penstock opening, the discharge can be determined and a likely scour effect estimated. Generally the sluices should be operated within the area of the graph to the right of the zero scour line. In exceptional circumstances where the river is rising very rapidly the sluices can be operated in the area of the graph between the zero scour line and the safety line. Under no circumstances should the sluice be operated in the area of the graph to the left of the safety line. Operation within this area is likely to result in excessive scour and possible damage to the structure of the sluice.

9.5.6.3 As a starting point, it is suggested that all four sluices are opened to the 1ft. mark on the spindle indicator. The sluices should then be adjusted in order to maintain the level of 14.0m. in the river. If the level of the river drops below 13.92m. the sluice opening should be reduced or completely closed.

9.5.6.4 Consideration should be given when operating the sluice to the prevailing conditions at Bow Bridge, Rotherham on the River Don and Barnsley and Bolton on the River Dearne. An estimate of the likely level at Dearne Mouth should be made from the flow passing Bolton on the Dearne and Rotherham on the Don (see Figure 9-11). It may be necessary to delay the use of the sluice should a second peak be forecast. Every effort should be made to prevent the Sprotborough/Hexthorpe Washlands filling prior to the filling of Dearne Mouth Washland.

9.5.7 Pastures Road Pumping Station

9.5.7.1 Pastures Road Pumping Station collects surface water drainage from Dearne Mouth Washlands and drainage from North Ings Washland via a culvert beneath the river. When floodwaters begin to overtop the spillways into North Ings Washlands, a gate valve located in a manhole downstream of the pumping station on the left bank should be closed. This prevents floodwaters from the North Ings Washland filling the Dearne Mouth Washland. When priming the Dearne Mouth Washland the pumping station should be switched off before the sluices are opened.

9.5.7.2 **N.B. Gate valve removed at present for maintenance**.

9.5.8 Evacuating The Washland

9.5.8.1 Evacuation of Dearne Mouth sluices is dependent upon flow in the Dearne being less than 50 cumecs (else the washland will fill).

9.5.8.2 Once Bolton Regulator **(Now redundant)** is fully raised and levels at Adwick have dropped below 1.35m the sluices may be fully opened and the washland will then discharge safely provided no overtopping is taking place in Doncaster. Should a second flood peak be forecast then care should be taken to close the sluices as soon as the flood level at Dearne Mouth begins to rise.

9.5.8.3 The sluice should then be used as described above, bearing in mind the reduced capacity. As soon as levels equalise again the sluice may be fully opened and the washland discharged.

9.5.9 Authorisation And Communications

9.5.9.1 The priming and filling of Dearne Washlands can be authorised by the FIDO above criteria are met. If the FIDO is unavailable, then authorisation should be sought from the ABC or the AFIDO. The sluice should be manned by four persons.

9.5.9.2 A report should be made to the Area Incident Room every hour stating the river level and the washland level in both Dearne Mouth and North Ings Washlands if applicable.

Figure 9-9 Dearne Mouth Sluices Location Plan

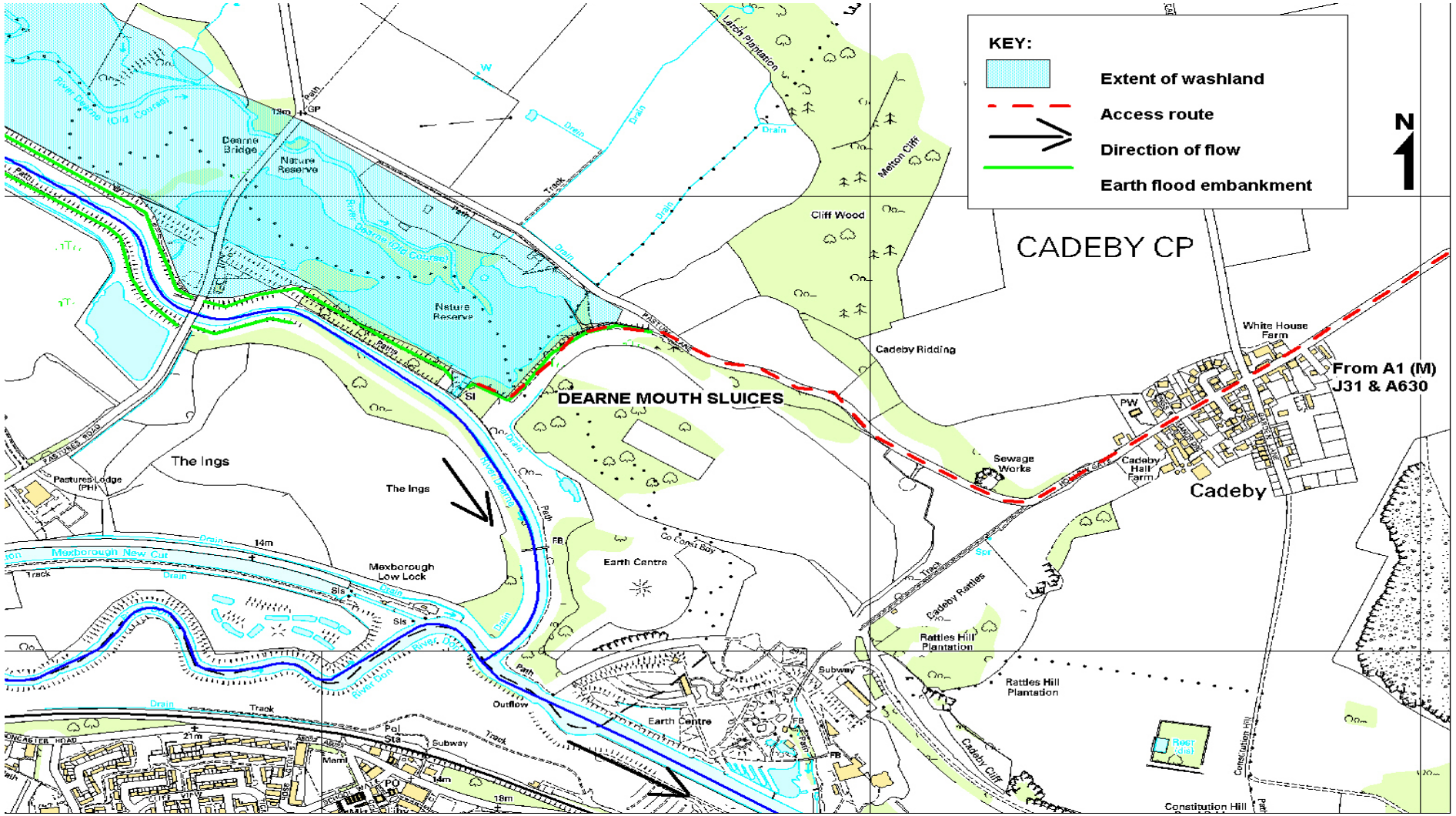


Figure 9-10 Stage/Discharge Curve (Dearne Mouth Sluices)

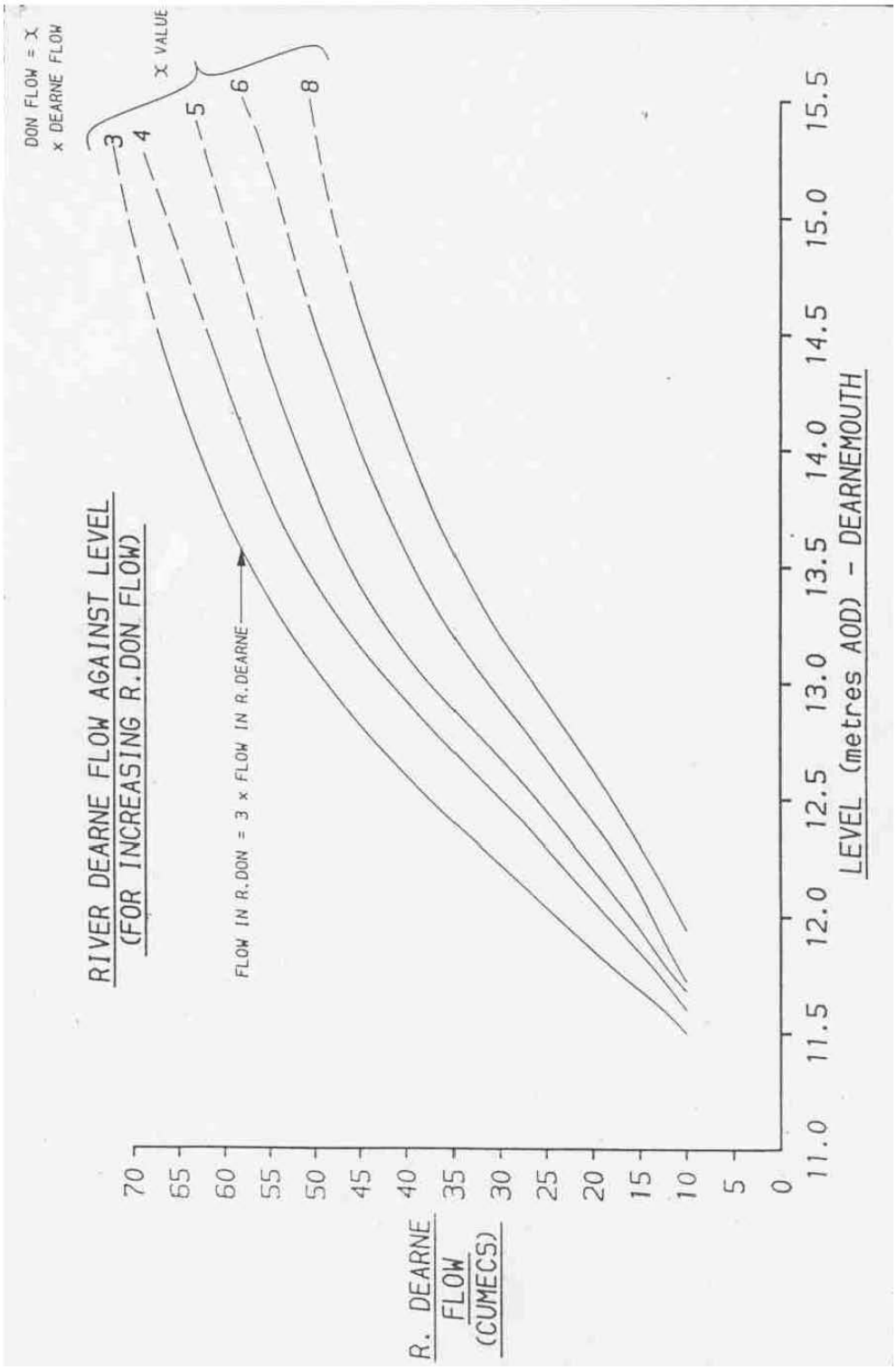


Figure 9-11 Flow/Level Correlation (Dearne & Don) Dearne Mouth Sluices

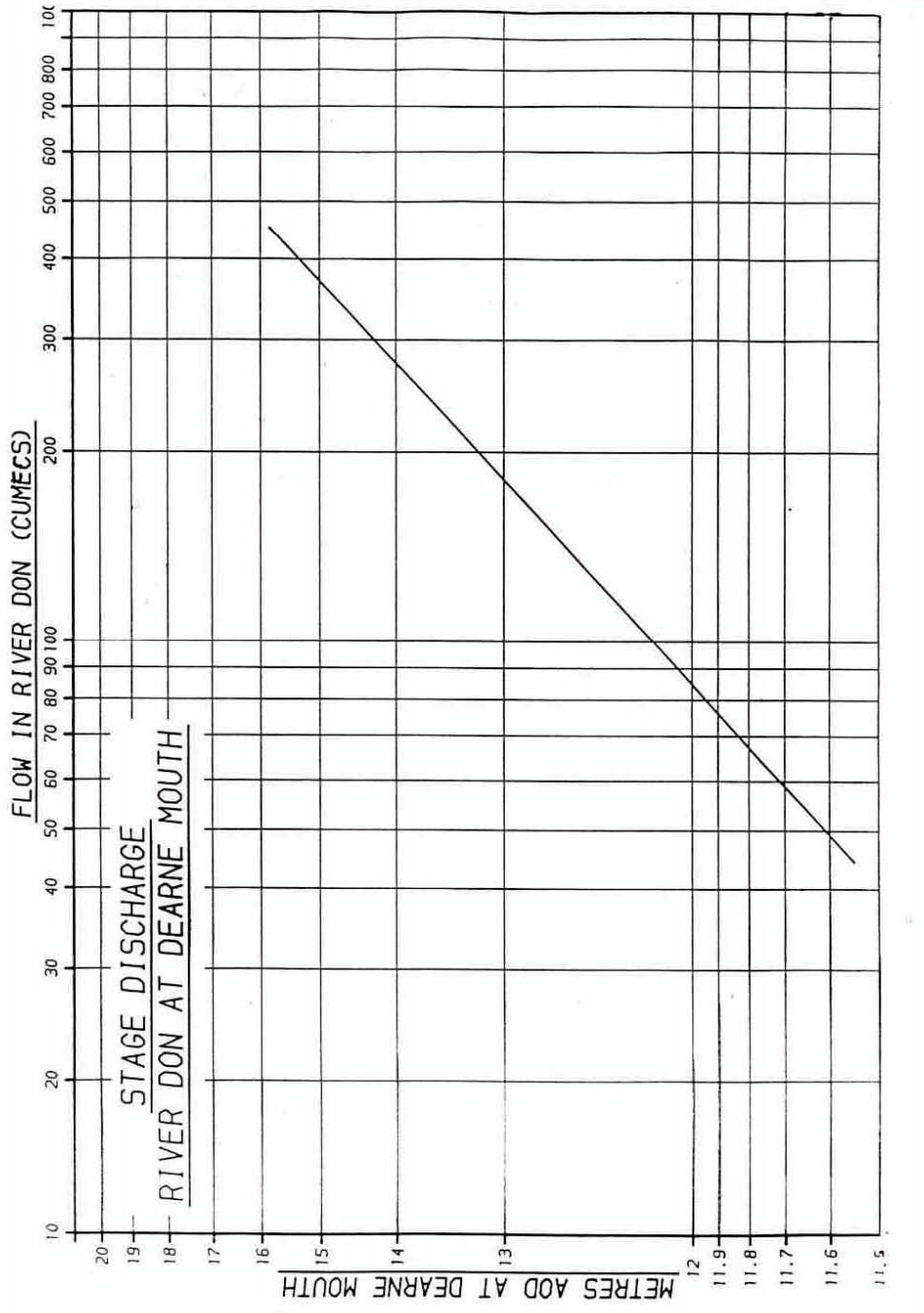
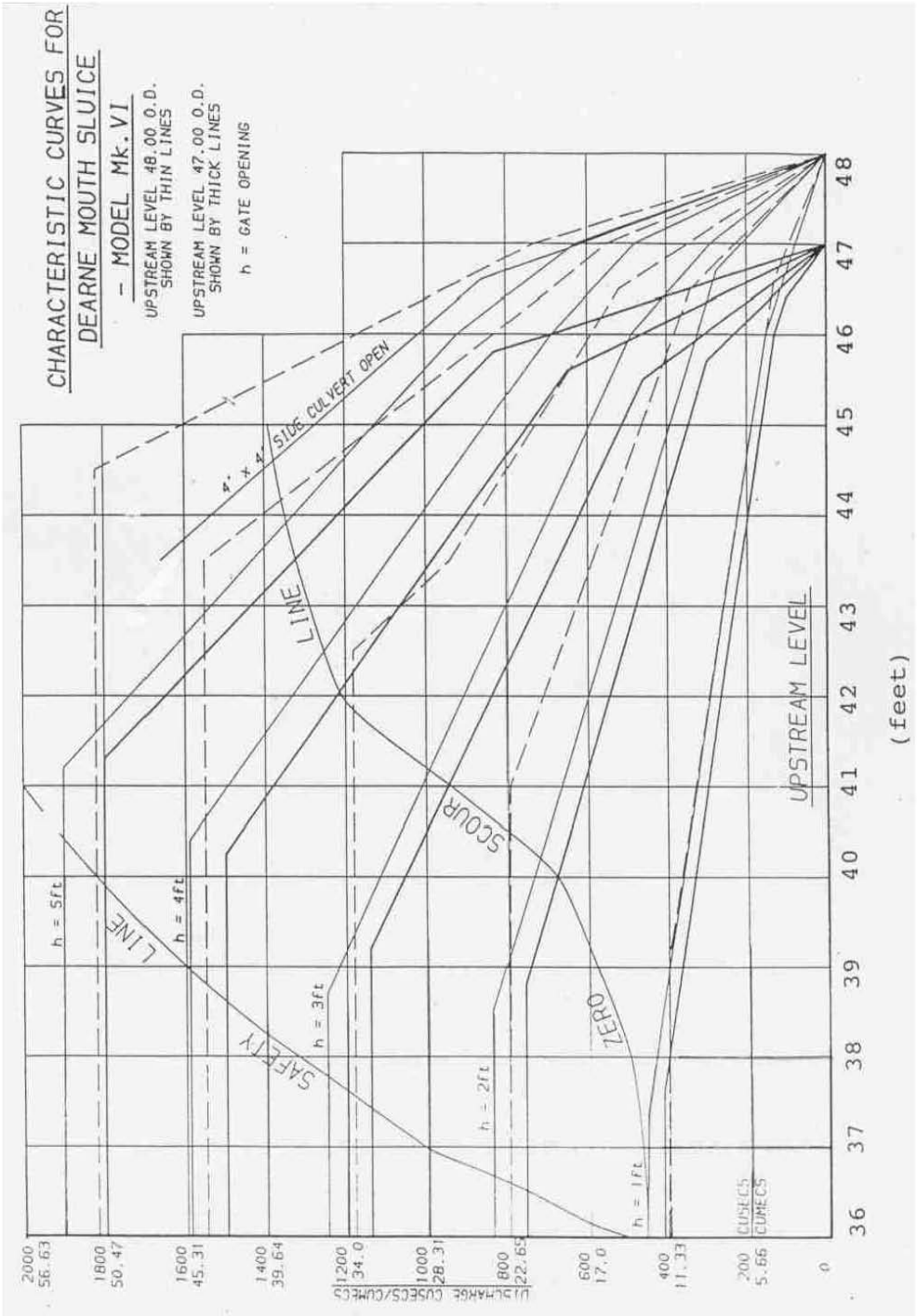


Figure 9-12 Operating Curves (Dearne Mouth Sluices)



From:	Knight, Jonathan
To:	Jane Crossley; Cobb, Tim
Subject:	NPS/WR/041113 - Meadowgate Regulator - Acknowledgement of your application for a licence
Date:	24 July 2024 12:08:00

Hi Tim/Jane,

Application number: NPS/WR/041113
Licence number: NE/027/0003/015

Thank you for your application for an impounding licence. I confirm that we have now assessed and accepted your application.

I also confirm that your application:

- began the formal decision process on 09 July 2024;
- will be decided by 09 November 2024. Note: there is no statutory determination date for Environment Agency applications, but the applicable statutory date has been included here 'for information only.'
- needs to be advertised. (We will do this for you by publishing a press notice in a local newspaper and on our website. You will need to pay the costs of advertising in a local newspaper, but we waive the £100 administration fee. We will send you an invoice setting out the advertising cost at the appropriate time.)

We must be satisfied that you have a right of access before we can grant you a licence. The right of access must be in place from the date we issue the licence and last for at least one year, or the duration of the licence if this is less.

We may ask you to provide evidence of the right of access and this could be in the form of a deed, lease or tenancy agreement. We won't accept an options agreement as evidence of a right of access.

Where we do need to see evidence of your right of access, we'll ideally need to see this at least seven days before the decision date shown above. This is to allow us time to check your evidence and confirm that we're satisfied that a right of access is in place.

If you can't satisfy us that you have a right of access before the decision date shown above, we'll refuse your application. We won't agree to extend a decision date for your application if you don't have the right of access. However, this won't prevent you from making a new application once you have the rights in place. You can also withdraw the application if you prefer to do so.

If you have any questions about your application, please contact using the details below.

Yours sincerely,

Jonathan Knight
Permitting Officer (Water Resources)
National Permitting Service
Environment Agency | Manley House, Kestrel Way, Exeter, Devon, EX2 7LQ

jonathan.knight@environment-agency.gov.uk
External: 02087200035

Every email has a carbon footprint. With this in mind I may not send 'thank you' emails.

Risk Assessment / Method Statement

General Information

Contract Name:	**Don Regs**	**Contract No:**	**CT05-02**
Activity:	**Site Establishment, Maintenance & works generally.**	**Location:**	**Site**
Initial RA / MS prepared by:	**Liam Gallagher**	**Date:**	**03/05/24**
RA / MS Reference No:	**006**		

Review and Revision Details

RAMS is to be reviewed in operation, at least weekly and where there is a significant change to the activity/task (as per OSS 002)

Revision	Date of last review	Amended (Yes / No)	Reviewed / Amended By	Reason for Amendment
A	-	-	-	First Issue

Section 1 - Risk Assessment - Health & Safety

SEVERITY	Fatality	MEDIUM	HIGH	VERY HIGH	VERY HIGH
	Reportable Injury	LOW	MEDIUM	HIGH	VERY HIGH
	Lost Time Injury	LOW	MEDIUM	MEDIUM	HIGH
	Minor Injury	LOW	LOW	MEDIUM	MEDIUM
J N Bentley Risk Matrix		Remote	Possible	Likely	Very Likely
		PROBABILITY			

Hazard	Person(s) at Risk	Risk Level	Control Measures	Residual Risk
'SHOW STOPPERS' (Initial Risk Level Very High or High)				
OPEN EXCAVATIONS	**JNB OPERATIVES, SUBCONTRACTORS, CLIENT,**	**FA+PO = HIGH**	**ALL EXCAVATIONS TO BE UNDER A PERMIT TO DIG SYSTEM.** • **BURIED SERVICES WILL BE LOCATED PRIOR TO EXCAVATING BY MECHANICAL EXCAVATOR.** • **MACHINES WILL NOT BE ALLOWED TO DIG WITHIN 500MM OF BURIED SERVICES.** • **BURIED SERVICES MUST FIRST BE LOCATED BY TRIAL HOLE.** • **EDGE PROTECTION MUST BE PLACED AROUND OPEN EXCAVATIONS TO PROTECT PERSONS FROM FALLS FROM HEIGHT.** • **MATERIALS AND PLANT TO BE STORED NO LESS THAN 1500MM FROM EXCAVATION EDGES.** • **ACCESS STEPS INTO EXCAVATIONS WILL BE CREATED** • **DEEP EXCAVATION SIGNS WILL BE DISPLAYED AROUND THE SITE COMPOUND.** • **BLOCK PAVING TO BE REMOVED LOCALLY TO PREVENT IN ROLLING INTO THE TRENCH** • **IT IS NOT ANTICIPATED THAT ANY WATER WILL BE ENCOUNTERED**	**RI + RE = LOW**
BURIED SERVICES	**JNB EMPLOYEES, SUBCONTRACTORS, CLIENT**	**FA+PO = HIGH**	• **SERVICE PLANS AND RECORDS HAVE BEEN OBTAINED FROM ALL UTILITY SUPPLIERS FOR THE AREA.** • **GPR SURVEY HAS BEEN CARRIED OUT BY FIRST HORIZON** • **ENTIRE AREA CAT SCANNED BY COMPETANT PERSON AND FINDINGS MARKED ON GROUND AND TRIAL HOLED TO CONFIRM.** • **TRIAL HOLES WILL BE UNDERTAKEN USING INSULATED SHOVELS.** • **ANY MARKERS AND PROTECTION MEASURES INSTALLED WILL BE**	**RI+RE = MEDIUM**

			PROPERLY MAINTAINED THROUGHOUT THE PROJECT. • EMERGENCY RESPONSE PROCEEDURES FOR DAMAGING ANY SERVICES WILL BE INCLUDED IN THESE RAMS • ADEQUATE SUPPORT SYSTEM TO BE IN PLACE TO SUPPORT ANY SERVICES	
MATERIAL & PLANT DELIVERIES & COLLECTIONS	JNB EMPLOYEES, SUBCONTRACTORS, CLIENT	FA + PO = HIGH	• MATERIAL AND SMALL PLANT OFFLOADS WILL ADHERE TO *BIMS GN007 LIFTING WITH LORRY LOADERS.* • LAYDOWN AND STORAGE AREAS WILL BE INDENTIFIED AT PLANNING STAGE AND MAINTAINED THROUGHOUT THE PROJECT. • ALL DELIVERIES WILL BE SUPERVISED AND CHECKED AGAINST DELIVERY TICKETS. • COMPETANCY OF LORRY LOADER PERATIVES TO BE CHECKED. • LIFTING EQUIPMENT TO BE CHECKED FOR INSEPCTION PERIOD AND FAULTS. • TAG LINES TO BE USED ON BULKY LOADS. • OPERATIVES TO MAINTAIN A SAFE DISTANCE FROM LIFT OPERATIONS	RI + RE = LOW
LIFTING OPERATIONS	JNB OPERATIVES, SUBCONTRACTORS, CLIENT,	FA + PO = HIGH	*ALL LIFTS ON SITE ARE CLASSED AS STANDARD LIFTS* • A LIFT PLAN WILL BE PREPARED FOR ANY CRANE / EXCAVATOR / TELEHANDLER . • THE LIFT PLAN WILL BE DEVELOPED TO TAKE INTO ACCOUNT ON SITE HAZARDS • IF GROUND CONDITIONS ARE DIFFERENT THAN EXPECTED ADVICE WILL BE SOUGH AS TO THE SUITABILITY AS A PAD. • COPIES OF CERTIFICATES OF THOROUGH EXAMINATION WILL BE OBTAINED AND STORED IN SITE H&S FILE. • WEIGHTS OF LOADS WILL BE OBTAINED AND MODIFED TO INCLUDE TRACKING WITH LOADS. • ALL LIFTING OPERATIONS WILL TAKE PLACEUNDER THE SUPERVISION OF A LIFT SUPERVISOR. • EXCAVATOR DRIVERS UTILISED FOR LIFTING OPERATIONS WILL HAVE SUITABLE QULIFICATIONS.	RI + PO = MEDIUM
WORKING AT HEIGHT	JNB EMPLOYEES, SUBCONTRACTORS, CLIENT	MAJ + PO = HIGH	• ALL WAH OPPERATIONS CARRIED OUT IN LINE WITH JNB OSS109 • AVOID WAH IF POSSIBLE • PREVENT FALLS BY SELECTION OF THE MOST APPROPRIATE WAH EQUIPMENT • REDUCE DISTANCE OF CONSEQUENCE OF FALL • GIVE COLLECTIVE PROTECTIVE MEASURES PREFERENCE OVER PROTECTION MEASURES	RI + RE = LOW

			• THE MOST APPROPRIATE ITEM OF WAH EQUIPMENT TO BE USED SHALL BE DISCUSSED & AGREEDBY THE JNB SITE MANAGER IN ADVANCE OF THE WORKS & SHOULD BE REFLECTED IN THE RA. • NB; STEPLADDERS CAN ONLY BE USED FOR LIGHT WORKS OF SHORT DURATION, WHEN OPENED FULLY, & ONLY WHEN NO OTHER WAH EQUIPMENT HAS BEEN AGREED AS SUITABLE BY THE JNB SM	
REVERSING VEHICLES	JNB EMPLOYEES, SUBCONTRACTORS, CLIENT,	MAJ + PO = HIGH	• ELIMINATE REVERSING WHERE POSSIBLE • BANKSMAN TO BE PROVIDED	RI + PO = MEDIUM
ABRASIVE WHEELS	JNB EMPLOYEES, SUBCONTRACTORS, CLIENT,	MAJ + PO = HIGH	• ALL OPERATIVES TO HAVE ABRASIVE WHEELS TRAINING. • COMPETANCY ACCESSED ON SITE. • CORRECT PPE OBTAINED AND USED AT ALL TIMES I.E. GOGGLES, GAUNTLET GLOVES, FLAME RETARDANT OVERALLS, DUST MASKS. • CORRECT BLADES USED FOR CORRECT MATERIALS. • ABRASIVE WHEEL EQUIPMENT USED CORRECTLY	RI + RE = MEDIUM
STRUCK BY MACHINE / PLANT MOVEMENT	JNB OPERATIVES, SUBCONTRACTORS, CLIENT, PUBLIC	FA+PO = HIGH	• *DO NOT WORK WITHIN TELEHANDLER WORKING AREA ZONE WHEN MACHINE IS OPERATING WHERE EVER POSSIBLE* • *IF PERSONS WITHIN WORKING AREA MACHINE MUST BE TURNED OFF OR DEAD MAN ENGAGED* • *EYE CONTACT TO BE MADE WITH OPERATOR PRIOR TO PERSONNEL WALKING ADJACENT TO TELEHANDLER (THUMBS UP)TO ENABLE MACHINE TO BE ISOLATED AS ABOVE*	RI + RE = LOW
GENERAL				
WINTER WORKING	JNB OPERATIVES, SUBCONTRACTORS, CLIENT, PUBLIC	FA+PO = HIGH	DARK MORNINGS & EVENINGS • ENSURE ADEQUATE LIGHTING LEVELS ARE MAINTAINED • PLAN ACTIVITIES AROUND DAYLIGHT HOURS SNOW & ICE • PRE-INSPECTION OF WORKING AREAS (GRIT AS REQUIRED) • WEAR APPROPRIATE FOOTWARE • KEEP TO DESIGNATED FOOTWAYS DRIVING • ELIMINATE THE RISK-IS YOUR JOURNEY NECESSARY • PLAN YOUR ROUTE & KEEP AN EYE ON THE WEATHER • CARRY SPARE WARM CLOTHING & MOBILE PHONE IN VEHICLE • CHECK TYRES, LIGHTS, WIPERS & FLUID LEVELS HEALTH • KEEP WARM WEAR EXTRA LAYERS • HEATINGCHECK SITE OFFICE HEATING WORKING CORRECTLY •	RI + RE = LOW

USE OF LEAF BLOWER NOISE, DUST & EYE INJURY	SITE OPERATIVES	RI + PO = MEDIUM	• WEAR EAR DEFENDERS, MASK & GOGGLES • KEEP ALL OTHER PERSONNEL AWAY FROM WORKING AREA	RI + RE = LOW
CONTACT WITH PIGEON FEACES CAUSING HISTOPLASMOSIS, PSITTACOSIS AND CRYPTOCOCCOSIS.	SITE OPERATIVES	RI + RE = LOW	• MASK, LEP & PROTECTIVE COVERALLS TO BE WORN AS A PRECAUTION. • DUST SUPPRESSION TECNIQUES TO BE USED • KEEP ALL OTHER PERSONNEL AWAY FROM WORKING AREA •	RI + RE = LOW
NOISE	JNB EMPLOYEES, SUBCONTRACTORS, CLIENT,	RI + PO = MEDIUM	• EAR PROTTECTION SHOULD BE READILY AVAILABLE ON SITE AND WORN AS REQUIRED. • EAR PROTECTION ZONES SET UP AND ESTABLISHED IF REQUIRED • NOISE ASSESMENTS TO BE UNDERTAKEN WHEN REQUIRED	RI + RE = LOW
CONFLICT WITH CLIENTS STAFF, CONTRACTORS, PEDESTRIANS	SITE MANAGEMENT, SITE OPERATIVES, DELIVERY DRIVERS, VISITORS	RI + PO = MEDIUM	• PRE-START MEETING TO BE HELD WITH CLIENT • CDM BOUNDARY TO BE AGREED WITH CLIENT/CONTRACTOR • FENCING AND DEMARCATION (TRAFFIC / PEDESTRIAN SEGREGATION) • DETAILED SITE INDUCTION TO BE DELIVERED TO ALL WORKERS AND SITE MANAGEMENT	RI + RE = LOW
CoSHH	JNB EMPLOYEES,	RI + PO = MEDIUM	• ALL SUBSTANCES ON SITE TO HAVE COSHH ASSESMENT. • ASSESMENT BRIEFED TO SITE PERSONNEL BEFORE TASK STARTS. • ASSESMENTS TO BE READILY AVAIILABLE IN SITE WELFARE FACILITIES. • JNB COSHH POSTERS DISPLAYED ON SITE. • STORAGE OF SUBSTANCES PLANNED • APPROPRIATE PPE IDENTIFIED AND SUPPLIED • PRIOR TO START ON SITE.	RI + RE = LOW
'HIGH FREQUENCY, LOW RISK'				
GENERAL STORAGE OF MTERIALS - SLIPS, TRIPS & FALLS	JNB EMPLOYEES, MEMBERS OF THE PUBLIC, SUBCONTRACTORS, CLIENT	RI + PO = MEDIUM	• GOOD HOUSEKEEPING MAINTAINED • DESIGNATED STORAGE AREAS • KEEP WALKWAYS & WORKING AREAS CLEAR • SPILL KITS PROVIDED & TO HAND	RI + RE = LOW
ERECTING FENCING AND SITE SIGNAGE	SITE OPERATIVES	RI + PO = MEDIUM	• FENCING TO DELIVERED CLOSE TO AREA OF WORK • MANUAL HANDLING GUIDELINES TO BE ADHERED TO • HERAS PANEL AND FEET WEIGH LESS THAN 25KG • IN WINDY CONDITIONS, MOVEMENT OF FENCE PANELS MUST STOP IF WIND IS STRONG.	RI + RE = LOW

			• FINAL INSTALLATION OF FENCING TO BE TIED TO ADJACENT FIXED ITEMS OR ADDITIONAL PANELS TO BE USED TO PROVIDE WIND RESISTANCE. • ALL FENCE PANELS TO BE CHECKED DAILY AND BEFORE AND AFTER EACH WIND/FLOOD EVENT. • AFTER ANY FLOOD EVENT, DEBRIS TO BE REMOVED BY HAND OR JET WASHED.	
HAND HELD TOOLS & EQUIPMENT	JNB OPERATIVES,	RI + PO = MEDIUM	• HAND HELD POWERED TOOLS TO BE 110V AND HAVE CURRENT PA TEST RECORD. • MOBILE PLANT WILL BE SUBJECT TO DAILY INSPECTIONS – ANY FAULTS RECORDED AND SITE MANAGER NOTIFIED • NOISE LIMITS AND HAVs EXPOSURE POINTS WILL BE INCLUDED IN THIS DOCUMENT AND BRIEFED, UNDERSTOOD BY ALL OPERATIVES. • OPERATIVES TO BE TRAINED AND COMPETANT ON ALL ITEMS OF LANT TOBE USED ON SITE. • A PUWER REGISTER WILL BE MAINTAINED ON SITE. • ALL HIRED IN PLANT TO HAVE IN DATE CERTIFICATE OF INSPECTION WHICH WILL BE STORED IN SITE SAFETY FILE. • ALL PPE AND GURADING MEASURES WILL BE IN PLACE AND UTILISED DURING THE OPERATION OF EQUIPMENT	MIN + RE = LOW
RUNAWAY VEHICLES	SITE OPERATIVES, CLIENTS STAFF, CONTRACTORS	RI + PO = MEDIUM	• DELIVERY AREAS WILL BE FLAT AND LEVEL • DELIVERY AREAS WILL NOT BE PLANNED SO AS TO AFFECT THE WORKFORCE SHOULD A DELIVERY VEHICLE RUNAWAY	RI + RE = LOW
FLOODING/ DROWNING	SITE OPERATIVES	RI + PO = MEDIUM	• IN AN EVENT OF A FLOOD WARNING, THE TEMPORARY SITE CABINS WILL BE BARRIERED OFF BY USING EITHER SAND BAGS OR AN PROPRIETARY FLOOD DEFENCE SYSTEM. • ALL MATERIALS AND LOOSE ITEMS WILL BE PLACED IN SAFE AREAS OR WILL BE TIDE UP TO PREVENT UNREQUIRED MOVEMENT OF ITEMS. • NO PLANNED WORK WILL BE CARRIED OUT IN FLOODED AREAS. • AFTER ANY FLOOD EVENTS, A ROAD SWEEPER WITH A JET WASH WILL BE USED TO CLEAN ANY DEBRIS WHICH MAY REMAIN ON THE SURFACE OF THE SITE. • REFER ALSO TO FLOOD EMERGENCY PLAN •	RI + RE = LOW

HAZARDS TO HEALTH (E.g. Noise / Vibration / Respirable Hazards / COSHH)				
HAVs	**JNB EMPLOYEES, SUBCONTRACTORS,**	**RI + PO = MEDIUM**	• **ALL ITEMS OF PLANT TO HAVE HAVs READING ON THEM AND MARKED WITH MAXIMUM DAILY USAGE.** • **HAVS EXPOSURE LIMITS BRIEFED TO OPERATIVES PRIOR TO START OF TASK.** • **OPERATIVES TO ENSURE THEY DO NOT BREAK THERE EXPOSURE LIMITS.** • **ANNUAL SCREENING OF SITE OPERATIVES TO.** • **OPERATIVES ON BANS INDENTIFIED AND TASKS PLANNED AROUND THEM**	**RI + RE = LOW**
NOISE	**JNB EMPLOYEES, SUBCONTRACTORS, CLIENT,**	**MEDIUM**	• **EAR PROTTECTION OF APPROPRIATE RATING SHOULD BE READILY AVAILABLE ON SITE AND WORN AS REQUIRED.** • **EAR PROTECTION ZONES SET UP AND ESTABLISHED IF REQUIRED** • **NOISE ASSESMENTS TO BE UNDERTAKEN WHEN REQUIRED**	**LOW**
DUST	**JNB EMPLOYEES, SUBCONTRACTORS, CLIENT,**	**RI + PO = MEDIUM**	• **WEAR FFP3 DUST MASKS WHEN MIXING OR CUTTING – (NOTE ALL OPPS TO BE FF TESTED)**	**RI + RE = LOW**
			•	

Section 2 - Risk Assessment - Environmental

SEVERITY	Category 1 Harm	MEDIUM	HIGH	VERY HIGH	VERY HIGH
	Category 2 Harm	LOW	MEDIUM	HIGH	VERY HIGH
	Category 3 Harm	LOW	MEDIUM	MEDIUM	HIGH
	Category 4 No Harm	LOW	LOW	MEDIUM	MEDIUM
J N Bentley Risk Matrix		Remote	Possible	Likely	Very Likely
		PROBABILITY			

Environmental Aspect	Environmental Impact	Risk level	Control Measures	Residual risk
Note: list in descending order of risk level				
'SHOW STOPPERS' (Initial Risk Level Very High or High)				
FLOODING OF WORKING AREA	**JNB EMPLOYEES, SUBCONTRACTORS, CLIENT**	**RI + PO = MEDIUM**	• **OBSERVE LOCAL WEATHER FORECAST** • **VISUAL INSPECTION OF WORKING AREA ON DAILY BASIS NO WORK TO TAKE PLACE IF INCREASED FLOWS ARE ENCOUNTERED** • **SILT MITIGATION ARRANGEMENTS TO BE IMPLEMENTED IF REQUIRED IE USE OF SILT SOCKS / SAND BAGGING AREAS OF DISTURBANCE / SILT CURTAINS**	**RI + RE = LOW**

RE-FUELLING OF PLANT / OIL SPILLAGE FROM MECHANICLE PLANT WHEN WORKING NEAR WATER COURSE	JNB EMPLOYEES, MEMBERS OF THE PUBLIC, SUBCONTRACTORS, CLIENT	RI + PO = MEDIUM	• PLANT NAPPYS TO BE USED WHEN MACHINE OUT OF USE • PRE-CHECK PLANT SHEETS TO ENSURE THEY HAVE NO DEFECTS AND ARE IN GOOD WORKING ORDER • SPILL KITS AVAILABLE • ENVIRONMENTAL EMERGENCY RESPONSE PROCEDURE IN PLACE. • DISPENSING SHOULD BE CONDUCTED IN A CONTROLLED MANNER I.E. OVER DRIP TRAY/SECONDARY CONTAINMENT' AND 'OILS OR FUELS MUST NOT BE STORED WITHIN 10 METRES OF A WATERCOURSE' AS THESE ARE CONDITIONS OF OES 003.	RI + RE = LOW
DUST	JNB EMPLOYEES, MEMBERS OF THE PUBLIC, SUBCONTRACTORS, CLIENT	RI + PO = MEDIUM	• MONITOR DAILY • DAMPING DOWN • FFP3 MASKS / LEP TO BE WORN	RI + RE = LOW
ECOLOGY IE NESTING BIRDS, TREE PROTECTION, BATS, FISH, INVASIVE SPECIES, ETC	EVERYONE	RI + PO = MEDIUM	• REFERENCE TO TOOL BOX TALKS • REGULAR MONITOING • COMMUNICATION	RI + RE = LOW
			•	
OTHER RISKS (Initial Risk Level Medium or Low)				
RE-FUELLING OF PLANT / OIL SPILLAGE FROM MECHANICLE PLANT WHEN WORKING NEAR WATER COURSE	JNB EMPLOYEES, MEMBERS OF THE PUBLIC, SUBCONTRACTORS, CLIENT	RI + PO = MEDIUM	• PLANT NAPPYS TO BE USED WHEN MACHINE OUT OF USE • PRE-CHECK PLANT SHEETS TO ENSURE THEY HAVE NO DEFECTS AND ARE IN GOOD WORKING ORDER • SPILL KITS AVAILABLE • ENVIRONMENTAL EMERGENCY RESPONSE PROCEDURE IN PLACE.	RI + RE = LOW
SILT MITIGATION	POLOUTION OF WATER COURSE	RI + PO = MEDIUM	• SILT BARRIER TO BE PLACED ADJACENT TO WATER COURSE WHERE POTENTIAL FOR RUN-OFF COULD OCCUR •	RI + RE = LOW
DUTY OF CARE – DEBRIS ON PUBLIC HIGHWAY	WATER CONTAMINATION / POLLUTION	MO+LO = MEDIUM	• ACCES WAYS ON SITE KEPT CLEAN AND FREE FROM DEBRIS. • PUBLIC HIGHWAYS INSPECTED REGULARLY AND DEBRIS CLEANED UP IMMIEDIATELY • ROADSWEEPER ON STANDBY FOR DURATION OF WORKS.	RI + RE = LOW
DUTY OF CARE – WASTE DISPOSAL	LAND/WATER CONTAMINATION/POLLUTION	MO+LO = MEDIUM	• WASTE CARRIERS OBTAINED VIA BUYING DEPARTMENT. • TYPE OF MATERIAL SUPPLIED BEFORE ORDER PLACED TO ENABLE BEST DISPOSAL METHOD. • WHERE POSSIBLE, DUG MATERIALS WILL BE RE-USED AS BACKFILL. • SURPLUS MATERIAL DISPOSED OF OFF SITE AT A REGISTERED SITE ACCEPTING WASTE.	RI + RE = LOW
HAZARDOUS WASTE	POLLUTION OF WATER COURSES	RI + PO = MEDIUM	• ANY SMALL QUANTITIES PRODUCED WILL BE DEPOSITED IN THE HAZIBAGS WE HAVE ON SITE.	RI + RE = LOW

			• LARGER QUANTITIES WILL BE DEALT WITH AS STAND-ALONE WASTE STREAMS & DISPOSED OF WITH APPRORIATE HAZARDOUS WASTE DOCUMENTATION • CONCRETE WASHOUT FACILITY TO BE UTILISED	

Section 3 - Risk Assessment - Quality

SEVERITY	Severe	MEDIUM	HIGH	VERY HIGH	VERY HIGH
	Moderate	LOW	MEDIUM	HIGH	HIGH
	Minor	LOW	LOW	MEDIUM	MEDIUM
J N Bentley Risk Matrix		Remote	Possible	Likely	Very Likely
		PROBABILITY			

Quality Aspect	Quality Impact	Risk level	Control Measures	Residual risk
Note: list in descending order of risk level				
'SHOW STOPPERS' (Initial Risk Level Very High or High)				
			•	
			•	
			•	
			•	
OTHER RISKS (Initial Risk Level Medium or Low)				
CDM BOUNDARY FENCE	**INTEGRITY OF FENCE SECURITY**	**MEDIUM**	• **DAILY END OF DAY INSPECTION THAT ALL CLIPS (DOUBLED CLIPPED) ARE SECURED.**	**LOW**
			•	
			•	

			•	

Section 4	**Vibration and Noise from Plant / Equipment / Tools**			
The following plant, equipment and power tools will be used during the course of this activity. Figures for noise and vibration output are in-use figures provided by the manufacturer, supplier or hirer.				
Hand Arm Vibration (HAVS) this table should be viewed in conjunction with the "HAVS Calculator" for details of cumulative use				
Where vibration exposure times are calculated these will be based on the **2.5m/s² (100 points)** exposure limit value **(ELV)**				
Source of Hand Arm Vibration	**Specific Use**	**Weighted Acceleration (m/s²)**	**Maximum Permitted Exposure Time (mins)**	**Anticipated Daily Exposure Time (mins)**
CONCRETE POKER	GENERAL TO SITE	3.4	*260*	30
HAND BREAKER	GENERAL TO SITE	7.5	*53*	50
CIRCULAR SAW	FABRICATION OF FORMWORK	7.3	*56*	50
JIGSAW	FABRICATION OF FORMWORK	5.4	*103*	60
MEDIUM AIR BREAKER	BREAKING DOWN PILES	4.6	148	130
CP9	BREAKING DOWN PILES	8.9	37	30

Whole Body Vibration (WBV) from Mobile Plant		
Plant to be Used	**Person Affected**	**Control Measures**
ROLLER	OPERATOR	Seat adjusted to suit the driver. Only use well maintained haul roads Minimise the length of time operating the machine Spend breaks out of machine Only use plant that is maintained in good order and serviced regularly Ensure tyres, where applicable, are not worn & at the correct pressure Comply with the JNB Working Time Policy
EXCAVATOR	OPERATOR	
DUMPER	OPERATOR	
TRACKED DUMPER	OPERATOR	
All plant operating on JN Bentley sites must have a manufacturer's provided exposure limit value (ELV) =/< 1.15m/s² (see manufacturer's instructions / manual)		

Noise: For noise levels above 85 dB(A) hearing protection MUST be worn			
Plant Tool and Equipment noise also affects people working adjacent to the operator: Keep a safe distance or wear ear defenders			
Noise Source	**Specific Use**	**Noise Level dB(A)**	**Hearing Protection (Y/N)**
CONCRETE POKER	GENERAL TO SITE	>85dB	Y
HAMMER DRILL	GENERAL TO SITE	>85dB	Y
CIRCULAR SAW	FABRICATION OF FORMWORK	>85dB	Y
JIGSAW	FABRICATION OF FORMWORK	>85dB	Y
MEDIUM AIR BREAKER	BREAKING DOWN PILES	>85dB	Y
CP9	BREAKING DOWN PILES	>85dB	Y
ROLLER	GENERAL TO SITE	>85dB	Y
EXCAVATOR	GENERAL TO SITE	>85dB	Y
DUMPER	GENERAL TO SITE	>85dB	Y

Section 5 Hazardous Substances		
The following substances will be used or may be encountered during this activity. Detailed COSHH assessments are held in the site safety file; the control measures required will be briefed to the personnel involved prior to work commencing.		
Hazardous Substance	**COSHH Assessment Ref**	**Precautions / Risk Controls**
Gas Oil (Red Diesel) 002		• Refer to COSHH file
Biodegradable Hydraulic Oil		• Refer to COSHH file
Petrol		• Refer to COSHH file
Hydraulic Engine Oil		• Refer to COSHH file
Marking paint		• Refer to COSHH file
Two Stroke Oil		• Refer to COSHH file
Grease		• Refer to COSHH file
Bleach		• Refer to COSHH file
Pine disinfectant		• Refer to COSHH file
Furniture polish		• Refer to COSHH file
Multisurface cleaner		• Refer to COSHH file

Is a Methodology required?	Yes	No
Following the detailed assessment of Hazards, risk and control measures, is a written Methodology required?	Y	
If the answer is **No** the severity and consequence of an injury, environmental or quality incident must be low and control measures in the form of Site Rules, Golden Rules etc must be sufficient and adequately briefed to those involved in the task. If a written Methodology is not required then omit Section 9 (Approach / Methodology), only.		

Method Statement

Section 6	Scope of Works

Section 7	Related Documentation

This method statement is to be read in conjunction with the following documents:

J N Bentley OSS/Safe System of Work JNB HEALTH & SAFETY STRATERGY 2010+

JNB 10 Golden Rules OSS 001 Compliance with Site & Golden Rules

J N Bentley OSS/Safe System of Work OSS100 Site Establishment and Maintenance

J N Bentley OSS / Safe System of Work OSS100a, Electricity Supplies for Site Welfare Facilities

Refer also to flood emergency plan

Section 8	Critical Pre-start Activities

Prior to work commencing on the activity, the following items must be completed:

Site induction to all operatives and visitors by JNB

Section 9	Approach / Methodology

After completion of all the above pre-start activities, work will commence following the procedure below. If at any point something changes which requires amendments to the following procedure, work must be stopped and the risk assessment reviewed and methodology rewritten. Under no circumstances must work be carried on outside of this procedure.

Site Set up

- Whole site to be checked for services PLAN.PROOVE.PROTECT
- Disused play equipment to be dismantled & disposed of in skips
- Bark to be stripped from proposed compound area
- Bulk fill & type 1 to be laid & compacted on Terram 1000
- Planings to be laid over car park area
- Cabins to be placed as per site layout drawing
- Hoarding to be fixed to existing fence to add extra reinforcment
- Trench to be excavated to extend temporary services – water & electric across the site. Ducts to be placed in fill sand & backfill trench with type 1 & compact
- All equipment to be placed as per site compound layout plan.

General deliveries etc

On arrival at site vehicles will be parked inside the large carpark. From here JNB staff will give specific directions to the site off-loading area & give details of specific hazards that may be encountered through the site.

Site signage will be set up to aid this process.

Speed limits should be observed at all times.

Accident & emergency routes will follow the main access road up to the site & in through the main site access.

Deliveries will be off loaded at the materials off loading and storage area and at locations designated within the site fenced area. This area will be surrounded with suitable barrier fencing.

Offloading inspection plan

- Vehicles arriving at site location ready to be offloaded, to be visually inspected to determine load is safe to be removed.
- Climbing onto to deck of vehicle strictly prohibited – access via correct type of access ladder.
- Working at Height i.e. climbing onto/over materials on bed of vehicle will require a Pre Task Safety Risk Assessment to be carried out.
- Offloading to be carried out in a designated area only
- Offloading area to be maintained in a clean state – free of potential slips, trips & falls.
- Movement routes shall at all times be on hard standings or roads.

When deliveries arrive the driver will accompany the site manager or foreman to the off loading area to assess the off loading area. The materials will then be off loaded by hand or will be carried out to the procedure set out in delivery company's procedures.

If offloading interferes with the pedestrian walkway, barriers will be erected and pedestrians escorted past when the off loading is completed.

Security fencing

- Handling shall only be by personnel wearing gloves and safety glasses
- Weekly inspections shall be carried out to check for damaged panels – spiked ends – protruding wires.
-

Vehicles leaving site location –

-

- Reversing of vehicles shall be avoided where ever possible, HOWEVER if this is deemed impossible then a banksman will guide vehicles to their final position.
- Banks person and Driver shall collate and co-ordinate hand signals to be given for correct interpretation to be received.

Lighting levels

- Site Management shall ensure site illumination levels are adequate at all times.

Lifting Equipment and lifting tackle - Plant

- Lifting operations shall have an appropriate lifting plan in place at all times
- Lifting tackle – chains shall carry current test certification – web slings same BUT shall also be inspected BEFORE use.
- LiftingTackle and Plant Register to be in place and checked weekly.

Site Electrics

- Welfare areas to be connected to mains power/generator.
- RCD's to be tested weekly

Site drainage / piping

- Piping around cabins to be checked on a daily basis to check for leaks / breaks in the pipe work
- Any leaks or breaks in the pipe work are to be fixed immediately

Environmental

- Road sweeping as required by site conditions.

Waste skips – mixed

- **Waste to be segregated and placed in designated site waste skips where possible.**

Cleaning of pigeon faeces

- **Normal cleaning hand tools to be used – scrapers, brushes, shovels etc**
- **Face fitted dust masks, LEP, gloves & protective cover- all's to be used (hazard is now risk but PPE to be donned as a precaution.**

Builders Work

- **Holes to be broken out using hammer drill / small breaker / hammer & chisel**
- **Tower scaffold or fixed scaffold used for any WAH**

Edge protection

- **Generally, edge protection to be erected & maintained as per manufacturers recommendations as site develops.**
- **Temporary stairs ditto**

Site vegetation

- **Vegetation to be trimmed using a petrol strimmer & disposed of in appropriate skips.**

Cleaning requirements

- **No brushing inside cabins, only the hoover can be used inside cabins**

- **Cleaning of work surfaces using multi surface spray and polish – See COSHH (multi surface spray & polish)**
- **Mopping of floors, separate mops to be used when mopping the toilets and cabins – See COSHH (bleach and disinfectant)**
- **Cleaning of sinks, taps, toilets, urinals using various cleaning products – See COSHH**
- **When carrying out cleaning tasks no skin on the body is to be exposed, rubber gloves to be worn and suitable mask to be worn, safety glasses may be required in certain circumstances.**
- **Cleaning of glass where able**

All other work undertaken will follow specific method statements and risk assessments provided by JNB and / or sub-contractors

Section 10	Emergency procedures

Certain activities will require the development of specific emergency procedures. Examples include confined space entry, working from MEWP/MCWP, roof work, working in proximity to overhead power cables, working in areas that are hazardous to health e.g. presence of substances/chemicals whether they are present as part of Client operations or as part of our activities. This section shall be completed in these events and shall contain details of the procedure to be followed, the names of responsible persons, their roles and contact numbers/details

Procedure in response to a Safety Incident

1. If there is an emergency in respect of safety, the following procedure is to be adopted:

- Operative **injured/collapses or has a medical emergency** –check if the injured person is able to breath, is in a safe condition & conscious.

If it is safe to do so then a First Aider will assess the injured person & administer First Aid as appropriate.

EMERGENCY ASSISTANCE to be requested by dialling **112 or 999** clearly stating the **nature** & **exact location** of the emergency.

2. You should ensure that you are familiar with the location of the nearest land telephone or have an operational mobile phone available.

3. The first available person to summon assistance in an emergency. It is important that the emergency operator is notified which services are likely to be required and where they will be met to guide them to the incident.

4. If medical treatment is required he should be either taken to a casualty department or the emergency services should be summoned.

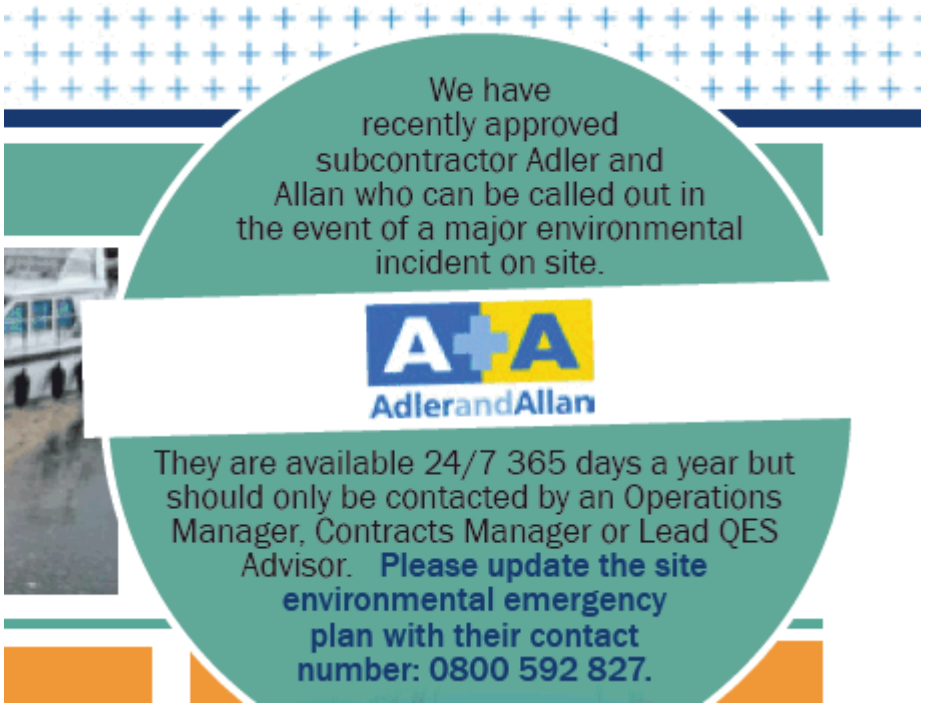
5. Great care must be exercised when handling injured personnel. Anyone who is breathing but unconscious should be placed in the recovery position.

6. Any incident must be reported to the JNB Site Manager who will notify the relevant Regulatory Authority and record it in the appropriate documents.

Procedure in response to an Environmental Incident

Minor drips & spills to be dealt with using the spill kits available around the site.

Any major incidents where assistance is required then see below –



Procedure in response to a Fire
Raise the alarm by shouting fire, fire, fire. First available person to summon assistance by calling 999 / 112 If fire is only small & can be extinguished easily deploy appropriate extinguisher Congregate at assembly point where register will be taken to account for all personnel on site
Procedure in response to other Activity Specific incidents
N/A

Section 11	**Personal Protective Equipment**
In accordance with Company site rules, personnel must wear hard hats, safety boots and high visibility jackets / vests and gloves at all times in work areas. On some of our Frameworks; light eye protection is also mandatory. In addition to mandatory PPE; the work covered by this method statement also requires:	

Light eye protection	Y	Face fitted RPE	Y	Waterproofs	Y

Medium impact goggles	Y	Safety wellingtons	Y	Life Jacket / Preserver	Y
Hi-viz jacket / vest (yellow)	Y	Harness		Gauntlets	
Ear plugs	Y	Restraint Lanyard	Y	Cut resistant gloves	
Ear muffs	Y	Fall Arrest Lanyard	Y	Cover all	Y
Other (describe)		Other (describe)		Other (describe)	

Section 12	**Permits to Work**
The following Permits to Work will be required for this activity (refer to OSS 004);	

Section 13	**Labour**	
The following labour resources are expected to be utilised during the course of this activity.		
Job Title / Designation	Number	Specific Training / Competence Required

Section 14	**Management and Supervision**

Implementation of the approach / methodology and various risk control measures identified in this risk assessment and method statement will be monitored by the Site Supervisor with the assistance (where applicable) of the Site Engineer / Works Manager / Foreman / Lead Hands. Details as below:

Site Supervisor Name:	Liam Gallagher	**Role:**	Site Agent

Risk Assessment / Method Statement

Section 15 Briefing

Before any work commences, the Site Supervisor will ensure that a briefing is provided for all personnel involved in carrying out this work activity.

The work activity briefing is intended to be a two-way process and all operatives are expected to challenge the proposed approach, particularly if they feel that a safer and more practical work method can be adopted.

All personnel will sign below to confirm that they understand the content of this risk assessment and method statement.

Name (Print)	Name (signature)	Company	Date

Risk Assessment / Method Statement

Section 16 Management of Change Record

Date	Details of change to methodology / environment	Additional Hazards and Control Measures documented in RA (Sections 1 / 2 / 3) **(Y / N)**	Changed Approved by **(sign)**